LONDON CORPORATE
ASSET MANAGEMENT PLAN 2014












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Acknowledgement

The Corporate Asset Management office would like to acknowledge the efforts of the staff of the individual City of London Service Areas, including Tangible Capital Assets and Financial Planning & Policy, for all the time, effort and support they put forth to help accumulate the data and develop the findings of this Asset Management Plan.

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SECTION 1

Executive Summary

This Corporate Asset Management Plan 2014 (the Plan) documents the current plan for the City to manage its $10.9 Billion worth of core infrastructure under the direct ownership and control of the Corporation of the City of London. One impetus of the Plan is the need to satisfy transfer funding requirements from upper tier governments. Therefore the format of the Plan has been designed to conform to the provincial '*Building Together: Guide for Municipal Asset Management Plans*.'

In its guide, the province has stated that;
'The goals of the municipal infrastructure strategy include: making good asset management planning universal; moving toward optimal use of a full range of infrastructure financing tools; and addressing the structural challenges facing small communities.'

The province has also set forth the following guiding principles:

- *Municipalities are the stewards of the infrastructure they own. The province and the federal government have an obligation to help municipalities address infrastructure challenges.*
- *Comprehensive asset management plans should guide investment decisions.*
- *Those who benefit directly from municipal infrastructure should pay for the service, whenever feasible.*
- *Opportunities should be pursued to provide infrastructure more efficiently by forging partnerships with other communities or consolidating services where possible.*
- *Maintaining roads, bridges, water, wastewater and social housing should be a top priority.*
- *Some communities face unique challenges that require tailored solutions.*
- *Infrastructure Ontario and the private sector can help address municipal infrastructure challenges.*

The City of London has crafted this first Plan to satisfy the provincial guide and associated transfer funding requirements, document and add value to existing asset management practices in London, and set forward a strategy to address the growing infrastructure gap. The Plan is a companion document to the State of Infrastructure Report 2013 that documented the current state of London's infrastructure and identified infrastructure needs over the 10 year period from 2013 to 2022and that meeting the needs is likely to require an increase in property taxes. Finally, the Plan is an important element of the developing Corporate Asset Management (CAM) program which is intended to optimize and standardize asset management practices in London.

1.1 Plan Elements

- **Section** 2 - Introduction
- **Section** 3 - State of London Infrastructure
- **Section** 4- Desired Levels of Service
- **Section** 5- Asset Management Strategy
- **Section** 6- Financing Strategy
- Conclusions and Recommendations

1.2 Section 2 - Introduction

This first Corporate Asset Management Plan sets out how London's infrastructure will be managed to ensure that it is capable of providing the levels of service needed to support Council's key Strategic Results, focusing on levels of service, lifecycle asset management planning, and the resulting long-term cash flow requirements. The Introduction section provides an overview of the Plan; its purpose and goals, where it fits with other strategic planning initiatives of the City, the scope and duration, the development methodology with its limitations and the need for enhancements, updates and monitoring.

This Plan focuses on what is needed to achieve established levels of service (LOS), plan lifecycle asset management, and identify long-term asset investment needs. Eventually this plan will be supported by more detailed individual service area asset management plans. The Plan is a living document intended to be monitored annually with full updates occurring every 5 years.

1.3 Section 3 - State of London Infrastructure

The City owns infrastructure with a total current replacement value of **$10.9 Billion**. The condition of the infrastructure is overall in Fair to Good condition meaning that the infrastructure is adequate for now with some elements showing general signs of deterioration that require attention and some elements exhibiting significant deficiencies.

The State of London Infrastructure section summarizes the findings of the companion report, the 'State of Infrastructure Report 2013'. It speaks to the asset inventory, its value, condition, age distribution, how London stores its asset data and lessons learned about current asset management practices at the City of London. It also defines and projects the infrastructure funding gap between current investment plans and future infrastructure needs.

FIGURE 1-1 CITY ASSET REPLACEMENT VALUE AND CONDITION

City of London Infrastructure Summary	
Replacement Value	Current Condition
$ 10.9 Billion	

1.4 Section 4 - Desired Levels of Service

The Desired Levels of Service section of the Plan discusses current 'levels of service' strategies practiced in London and sets forward the intent to standardize practices across the City. The City currently maintains data on several key performance indicators for use in reporting and budget. The City also operates under a myriad of functional and regulatory criteria. However, there is no consolidated registry that has been established for the purpose of optimizing service delivery. A level of service registry will be developed over time via the Corporate Asset Management (CAM) Program with pilot trials in the Transportation and Parks & Recreation service areas taking place in 2014.

This section of the Plan discusses the available level of service information, existing trends and what the future will look like once the CAM Program is fully implemented. In order to provide context to this component of asset management, each service area has provided samples of the expected levels of service to illustrate where the development of the level of service registry is headed. The results of the level of

service trends review reflects increasing or stable levels of service with the exception of the impacts predicted to be imposed by future budgetary constraints. Each service area surveyed expects their level of service to be negatively impacted by future budgets.

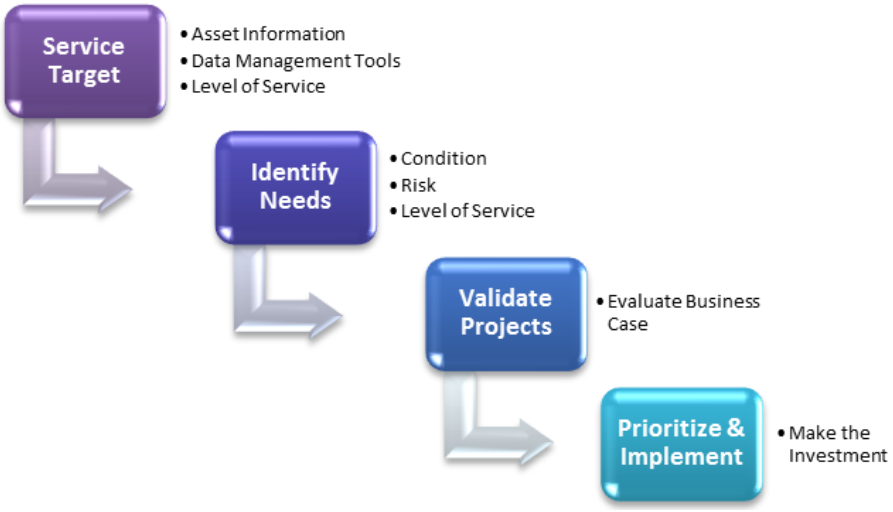
TABLE 1-1 LEVEL OF SERVICE TRENDING

Anticipated issue	Impact on Level of Service
Asset Reliability (i.e. Current and Projected Condition)	
Budget Constraints Insufficient Resources	
Operational Changes (E.g. New design Standards, Knowledge Retention)	
Legislative Changes	
Technology Changes	
Social Changes (E.g. Demographic, Demand Shifts)	
Environmental Changes (E.g. Climate Change)	

1.5 Section 5 - Asset Management Strategy

The Asset Management Strategy section of the Plan is laid out in two significant divisions. First the Plan describes the existing practices used for asset management in each service area. These have grown over time and have been personalized by each service area through their evolution. There is no standard practice across the corporation. Some asset management practices are highly evolved while others are basic in nature. There is no standardized level of service, risk or whole life cycle costing management across the corporation. The history of the City has focused on sustaining assets in acceptable condition witnessed by the overall fair to good condition currently enjoyed by the majority of the City's infrastructure. However, current asset management wisdom has re-focused on sustaining and enhancing service delivery rather than asset condition, and uses level of service, risk and whole life cycle costing methodologies. The more evolved practice affords the municipality the opportunity to make the right investment at the right time for the right amount. Standardizing the practices across the corporation enables comparisons to be made allowing decision-makers stronger grounds for their choices. The shift in asset management perspective leads to the second part of this section which summarizes the future evolution of asset management practices at the City through the CAM program. The CAM program has completed its policy and strategy phases and is currently undergoing pilot trials. The intent of the CAM program is to standardize asset management practices with the focus on service delivery.

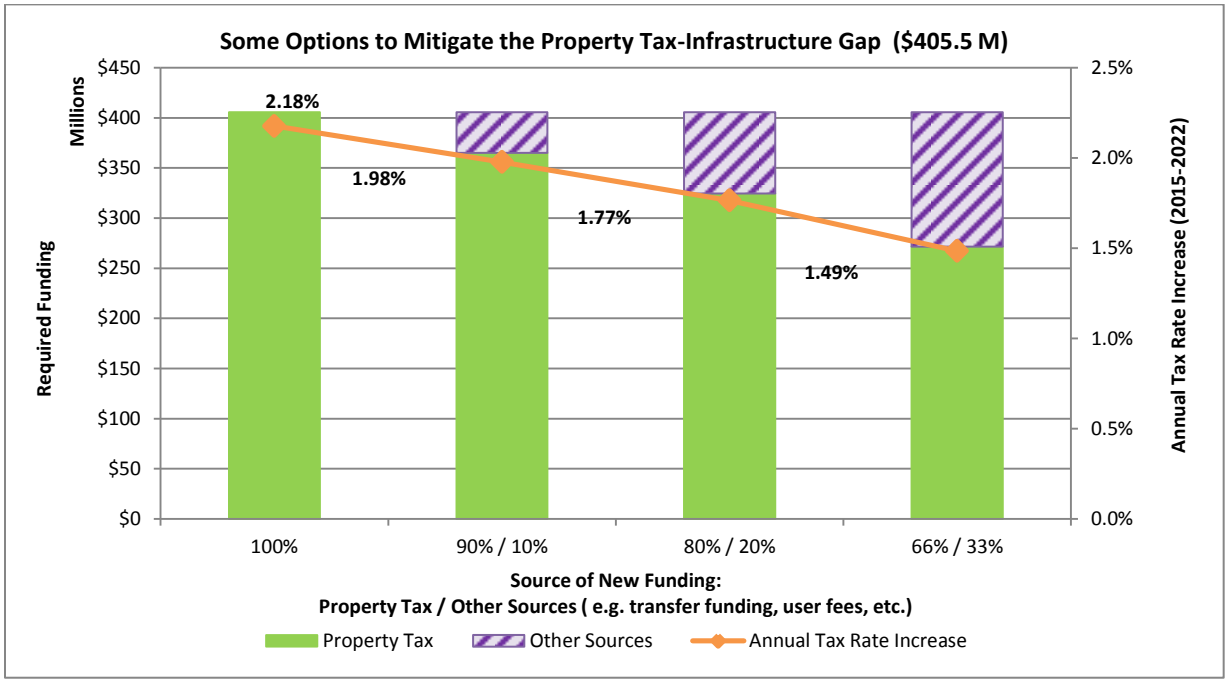
FIGURE 1-2 ASSET LIFE CYCLE INVESTMENT PROCESS



1.6 Section 6 - Financing Strategy

The Financing Strategy section is perhaps the most important element of the Plan as it provides the approach to funding the needs of the asset base to achieve service delivery goals. The City of London funds the infrastructure that falls within the scope of this plan through three capital budgets; Water, Wastewater and General. The intent of the Plan is not to eliminate existing financial practices but rather enhance them to effectively fund infrastructure. In addition to sustaining service delivery, funding is needed to address the growing infrastructure gap identified in the State of Infrastructure Report 2013. The current gap was identified at $52.1 million and projected to grow to $466.1 million by 2022. As such this Plan suggests a strategy to eliminate the gap by the year 2022. The plan assumes that the gap can be divided between property tax supported budgets and utility rate supported budgets. It assumes that the existing 20 year financial plans for the utilities will address the water, sanitary and stormwater infrastructure gaps ($60.6 million). This lowers the projected amount that needs to be addressed in 10 years to $405.5 million. Any funding to reduce this remaining infrastructure gap and sustain existing services will be additional to the current revenues projected by the City. Municipal revenue can come from property tax, government transfers, user fees or debt. The plan considers these funding sources and the associated risks. Based on historical trends in one time funding infusions from government transfers and stimulus programs, the Plan concludes that there is a need to increase property taxes in order to address the growing gap. Other sources, based on London's experience are insufficient to address the majority of the gap but should be maximized where possible. The Plan lays out a number of options for rate setting and suggests that the preferred choice is to anticipate 20% of the funding required to address the remaining $405.5 million portion of the infrastructure gap will be sourced outside of a tax increase, while the other 80% will need to be sourced in the form of property tax increases. This option results in a property tax increase of 1.77% each year for eight consecutive years (2015 – 2022), an amount dedicated to eliminating the remaining

infrastructure gap. This increase should be considered as a starting point in the 2015 budget deliberations and would be refined each year as the information evolves within the CAM program. It is important to start addressing the projected infrastructure gap as soon as possible before it grows to unmanageable proportions.



This funding is additional to any planned or required increases to address growth, service improvement, and inflation. The Plan also proposes that any new funds acquired through the dedicated property tax rate increases be placed in a reserve fund devoted to addressing the lifecycle renewal infrastructure gap and be used systematically to address the service area infrastructure gaps.

1.7 Conclusions

This Corporate Asset Management Plan is a strategic document that states how London's assets are to be managed over the period of the next ten years and beyond. The Plan describes the characteristics and condition of infrastructure assets based on the State of Infrastructure Report 2013. The Plan describes the approach the City uses and plans to implement regarding levels of service as the City moves from the management philosophy of maintaining the assets to sustaining the delivery the services using the assets. The Plan includes the actions intended to ensure the assets are providing the expected level of service, and describes the financing strategies needed to implement the planned actions. Following this Plan will likely impact the property tax rate.

The scope of the plan includes the core service areas of the City of London including Transportation, Parks & Recreation, Water, Wastewater-Sanitary, Wastewater- Stormwater, Solid Waste, Fleet, Facilities, Fire, Long Term Care, Information Technology, Corporate and Culture Facilities. This first Plan does not include assets under the ownership and control of Boards and Agencies, such as Social Housing, Police, Transit, Libraries and Regional Water.

This Corporate Asset management plan will help ensure that investments are made to minimize future repair and rehabilitation costs and maintain City of London assets. The City is moving toward standardization and consistency in asset management across its core service areas. In the future the practices evolving from the Plan can be extended to the Boards and Agencies. Ultimately, the implementation of the Corporate

Asset Management Program will satisfy provincial expectations and allow the City to make the right investments in infrastructure for the right amount at the right time.

This Plan offers a viable approach to address future asset management needs in the City of London.

1.8 Recommendations

This report is the first collective asset management plan for the City of London. This Plan will help us to manage the Corporation of the City of London's $10.9 billion infrastructure portfolio now and into the future thereby sustaining service delivery for our citizens. The Plan is a living document that is intended to meet provincial requirements and improve over time. The recommendations of the Plan are as follows:

1. Continue to aggressively pursue the Corporate Asset Management Program in order to standardize quality asset management practices across the corporation that focus on service delivery through the consideration of levels of service, risk management and life cycle management of the City's assets. This includes correcting information weaknesses, acquiring the tools needed to enable asset management and improving the quality of asset information in order to facilitate decision-making.
2. Continue to merge the new asset management program with the existing practices in order to take maximum advantage of the history of effective past practices in the City of London.
3. Continue to align the Plan with the Corporate Strategic Results/Goals.
4. Review the existing levels of service and develop a level of service registry to help define the needs of the asset base.
5. Review the results of the Corporate Asset Management Plan annually and fully update the Plan every five years to ensure its continuing suitability, adequacy, and effectiveness.
6. Continue to foster pay-as-you-go practices including the use of reserves and reserve funds to prepare for future needs.
7. Rely on existing 20 year plans and their updates as a means to manage infrastructure gaps in the water, and wastewater services.
8. Start building a reserve fund to be used exclusively for addressing the infrastructure gap. Plan for the new funding need as part of the 2015 property tax rate setting process and update the amount annually thereafter. Plan to initially eliminate the gap by 2022, a term matching the current understanding of the State of the Infrastructure Report 2013.
   As the CAM program evolves, the accuracy of required rate increases will improve. However a delay in building a reserve fund will only aggravate the gap, placing the City's infrastructure at risk and resulting in negative impacts on service delivery.
9. Continue to monitor the changing gap with the objective of meeting the needs for service delivery.
10. In the long term, extend the corporate asset management practices to the Boards & Agencies of the City as appropriate.

It's not hard to make decisions when you know what your values are. Roy Disney

SECTION 2

Introduction

2.1 Corporate Asset Management Plan Overview

The 2014 Corporate Asset Management Plan (the Plan) is the first corporate-wide asset management plan for the City of London (the City). The Plan speaks to the assets used to deliver services, levels of service, trends, risks, asset management strategies and the funding strategies needed to plan sustainable delivery of service over the course of the next ten years. The Plan is initially limited to services under the direct ownership and control of the City and does not speak to the assets owned by Boards and Agencies associated with the City. Although some asset management practices within the City are fully established, and every service area has some asset management capacity, the overarching asset management practices are part of a corporate program that is in its infancy and will evolve to encompass all City asset activities over the next several years. The plan will move the City of London toward standardization and consistency in asset management. It will help ensure that infrastructure investments are made for the right amount at the right time.

One impetus of the Plan is the need to satisfy transfer funding requirements from upper tier governments. Therefore the format of the Plan has been designed to conform to the provincial *'Building Together: Guide for Municipal Asset Management Plans.'*

In its guide, the province has stated that;
'The goals of the municipal infrastructure strategy include: making good asset management planning universal; moving toward optimal use of a full range of infrastructure financing tools; and addressing the structural challenges facing small communities.'

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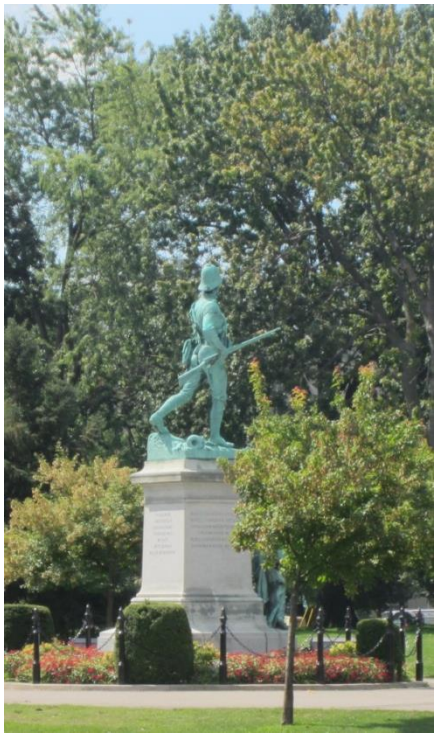
- *Infrastructure Ontario and the private sector can help address municipal infrastructure challenges.*

The City of London has crafted this first Plan to satisfy the provincial guide and associated transfer funding requirements, document and add value to existing asset management practices in London, and set forward a strategy to address the growing infrastructure gap. The Plan is a companion document to the State of Infrastructure Report 2013 that documented the current state of London's infrastructure and identified infrastructure needs over the 10 year period from 2013 to 2022. Finally, the Plan is an important element of the developing Corporate Asset Management program which is intended to optimize and standardize asset management practices in London

Although initiated in 2014, this plan is a living document and is expected to continue to evolve and be updated annually with a full re-evaluation at least every five years ensuring that projections are always available for asset management decision-makers.

In addition to supporting alignment of asset management activities, this Plan focuses on what is needed to achieve established levels of service (LOS), plan lifecycle asset management, and identify long-term asset investment needs. Eventually this plan will be supported by more detailed individual service area asset management plans.



As the Plan is applied, it will support the business planning process with regard to the identification of asset investment needs and the continual improvement of asset management practices.

2.2 Supporting the City of London's Goals

The *City of London Strategic Plan 2011-2014* laid out five key results setting the direction and vision for the 'City of Opportunity'. These key results or goals are as follows:

1. A Strong Economy
2. A Vibrant and Diverse Community
3. A Green and Growing City
4. A Sustainable Infrastructure
5. A Caring Community

This Plan is intended to support these strategic goals. Levels of service targets in this Plan have been assessed against these key results. The goals have been imbedded in the plans and strategies for asset management.

The Corporate Asset Management Plan must also consider the goals of the Official Plan which contains City Council's objectives and policies for the provision of municipal services and facilities.

To date, the City has been reasonably successful at meeting its goals. Nevertheless, the City cannot afford to become complacent in its position. The 'key results' are under continuous pressure and must continue to be carefully tended.

2.3 Linkages to Other Strategic Documents

Asset management planning is not new to the City. There is a plethora of documented information in the City that the new Corporate Asset Management Plan needs to complement and support. Currently and historically the City of London uses a number of budgets, plans and strategies to manage the wide scope of its municipal services. The key documents are summarized in Table 2-1.

TABLE 2-1 THE PLAN'S RELATIONSHIP WITH EXISTING MUNICIPAL STRATEGIC DOCUMENTS

Linkages to the Corporate Asset Management Plan	
Budgets (General, Water and Wastewater)	The budgets present the current year committed funding, a 5 year projection for operating budgets and a 10 year projection of funding for capital projects. This first Corporate Asset Management Plan focuses on the consolidated 10 year capital project list extracted from the budgets with the intent to evolve in the direction of lifecycle management introducing operational budget impacts as well. The Plan influences the budgets through the consideration of levels of service, risk and prioritization. The budgets are critical to the implementation of the plan because they set available funding approval. Without funding, the plan is not implemented.
Corporate Strategic Plan	The Corporate Strategic Plan provides direction for the activities of the Corporation which are in turn supported by the assets of the Corporation.
Official Plan	The Official Plan sets the criteria for the City in a regulatory format and provides parameters surrounding asset decision-making practices. Among other things, the Official Plan provides direction for the allocation of land use, and the provision of municipal services and facilities. The Corporate Asset Management Plan must conform to the Official Plan.
Growth Management Implementation Strategy (GMIS)	The GMIS addresses the assets needed to allow for growth on a high level, e.g. new roads. It is acknowledged that future revisions to the Corporate Asset Management Plan will need to accommodate among other drivers, further considerations for growth.
By-laws, policies, municipal studies, master plans, area plans, plans of subdivision, business plans	Generally these more detailed documents provide the information required to inform the Plan. In the future, service area asset management plans will be added to this list to provide better asset information, thus leading to more effective planning and decision-making overall.
Corporate Asset Management Administrative Policy	Sets down asset management operating principles that are applicable to all assets. This policy can be found in Appendix 1 and is centered on three fundamental goals intended to guide the Corporate Asset Management Program as follows: • Provide sustainable service to our customers • Optimize asset value while minimizing lifecycle costs • Manage risks to service delivery

The Corporate Asset Management Plan is linked to all of the above documents through sharing the criteria and decisions that have already been adopted. The City has always made its asset decisions against the background of its budgets, plans, studies and strategies. The Corporate Asset Management Plan is part of this network of strategic thinking and information. All the Plans are developed with the benefit of public involvement through Standing Committee and Council meetings and often other public opportunities like open houses and the City's public web site. The majority of these documents can be found on the City of London website at www.london.ca.

2.4 Corporate Asset Management Plan Purpose & Goals

This first Corporate Asset Management Plan sets out how London's infrastructure will be managed to ensure that it is capable of providing the levels of service needed to support Council's key Strategic Results, focusing on levels of service, lifecycle asset management planning, and the resulting long-term cash flow requirements. The Plan follows the Ministry of Infrastructure's 'Guide for Municipal Asset Management Plans'. This plan sets out a strategic framework that will guide future investments in ways that support economic growth, are fiscally responsible, and respond to changing needs. This Plan will move London forward on its asset management program towards making the best possible decisions regarding the building, operating, maintaining, renewing, replacing and disposing of infrastructure assets.

The purpose of this Plan is to:

- Comply with the requirements as defined within the Ministry of Infrastructure's 'Guide for Municipal Asset Management Plans.

- Enable standardized processes to be implemented that allow Levels of Service to be met.
- Demonstrate that due regard is being given to the long-term stewardship and sustainability of the asset base.
- Demonstrate responsible management of the asset portfolio.
- Support the development of improved practices that communicate and justify funding requirements.
- Help the City become more efficient and effective.
- Demonstrate the commitment that assets will be maintained in compliance with regulations.

This Plan provides the framework to ensure that:

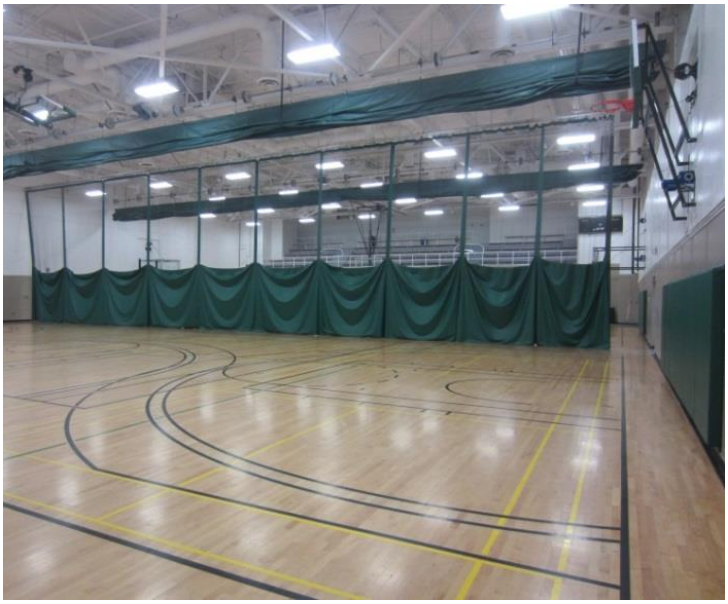
- There is a reasonable degree of stability and predictability with respect to property taxes/rates as regards to infrastructure expenditures;
- Future generations will not face massive decreases in services or unreasonable property tax/rate increases to deal with infrastructure issues deferred from their past, possibly our present;
- Council's highest priority programs (both capital and operating) can be maintained and key results achieved through the appropriate use of assets; and
- The growing "funding gap" between what is budgeted and what is required for the long term stability of the current infrastructure is managed.

Through the Corporate Asset Management Plan, the City demonstrates how the municipal infrastructure will be managed to ensure that it is capable of providing the levels of service needed to support our municipal goals.

2.5 Assets Included in the Corporate Asset Management Plan

This first version of the Plan focuses on high level planning for the services under the direct ownership and control of the City and excludes indirect services administered by City Boards and Agencies. The plan covers a wider scope than that required by the Ministry of Infrastructure's 'Guide for Municipal Asset Management Plans' with the exception of Social Housing. In London, Social Housing is owned by the London & Middlesex Housing Corporation and not the Corporation of the City of London. Although London is the sole shareholder, London administration does not manage this asset area. Therefore, this Plan does not cover Social Housing assets. What it does cover are the core Ministry service areas of roads, bridges, water, wastewater as well as other City of London service areas including parking, traffic, solid waste, parks, recreation, urban forestry, fire, long term care, fleet, facilities and information technology.

This Plan also does not cover assets managed by the various Boards and Agencies related to London but not managed by London such as the London Police, London Transit Commission (LTC), etc. The treatment of Boards and Agencies is generally not mentioned in the Ministry's guideline. As the Plan evolves over time, these areas may be covered by their own plans that could be built to conform to City asset management practices. The intent is that the Boards and Agencies would adopt similar and comparable asset management practices to those implemented by the City of London corporate asset management program.



The tables in Section 3.2.2 provide the inventory of assets considered by the Plan sorted by service area.

2.6 Duration of this Plan

This Plan is designed initially to cover a 10 year projection window consistent with City capital budget practices. It is acknowledged that significant portions of the City's asset base have estimated useful lives lasting much longer than 10 years. With time the Plan will evolve to cover a longer planning window. Table 2-2 shows the intended update frequencies of the Plan and associated documents:

TABLE 2-2 TIMEFRAMES AND FREQUENCY FOR UPDATE

Document	Frequency
AM Policy	Every 10 years
Corporate Asset Management Plan	Annual update Full re-evaluation every 5 years
State of Infrastructure Report	Every 2-3 years
Service Area Asset Management Plans	Every 5 years
Capital & Operating Budgets	Annual

2.7 Developing the Plan – Resources, etc.

This section of the plan describes how the asset management plan was developed including who was involved, what resources were used and Plan limitations.

This Asset Management Plan was produced as a deliverable of the broader CAM Program. Work on this initial plan primarily involved compiling information on current strategies, practices and tools from a variety of sources throughout the City, and align it to the Provincial reporting framework. Resources used to produce this plan are summarized in Table 2-3.

TABLE 2-3 CORPORATE ASSET MANAGEMENT (CAM) PLAN RESOURCES

Teams	Members
CAM Office	3
Senior Leadership Team • City Manager • Managing Directors	10
CAM Steering Team • Managing Directors • Service Area Directors • Service Area Managers • Management Staff	15
CAM Network Team • Service Area Managers • Management Staff • Subject Matter Experts	120+

The CAM program establishes a mechanism for making this happen, defining AM roles and responsibilities at the corporate and service area level, and providing an effective toolset supporting the effective collection, management and use of needed information.

This first Plan is being prepared based on best available information rather than a fully implemented Corporate Asset Management program. This implies a number of limitations listed in Table 2-4.

TABLE 2-4 LIMITATIONS OF FIRST CORPORATE ASSET MANAGEMENT PLAN

1	The scope of this report covers the core areas of service delivered by the City of London. There are significant services divested to Boards and Agencies which are not covered in this first Plan but are important to London and its citizens such as London Police, London Transit Commission, London Hydro, Social Housing, Libraries and more. These services are expected to be incorporated into future plans.
2	There is no current centralized asset management program in the City of London. Although one is under development, this activity takes years to fully implement. This means different areas have different practices thereby limiting asset management capabilities for comparisons and prioritization.
3	There is no centralized asset management system that offers a complete inventory or summary of project information. The City relies on its Geodatabase and its financial software engine to collect most of its asset information. However, there is no formal asset management system and there are gaps in inventory and condition information. Considerable effort is required to consolidate information from the multiple sources.
4	The City does not have a Level of Service register and has no system to track levels of service beyond the annual budget process. However the City has used performance indicators for operations and as part of the budget process for many years. The indicators used in the budget process can be improved for asset management purposes to guide future investment planning.
5	The City has not implemented an asset risk management strategy although one has been drafted and is planned for full implementation over the next few years. The City also has published the *"City of London Risk Management Framework-2012"* covering all the city interests but not specifically focusing on assets.
6	The City addresses condition information in three ways. • Condition may be technically assessed and reported on in a quantifiable technique. This method is the most accurate and most expensive (e.g. Pavement Quality Index). • Condition may be assumed based on age and estimated useful life. • Finally, condition may be based on the expert opinion of staff using the asset. However Many asset types do not have objective condition assessment information. The resultant information becomes theoretical based on estimated useful life.
7	Given the type and level of data available for condition, risk and level of service indicators. There is limited ability to accurately determine trends at a detailed level.
8	The City generally prepares business cases based on the estimated up front capital cost rationalized against the perceived need of the project. Lifecycle costs are not typically considered in the current process and usually no adjustment of the operating budget made to accommodate the project.
9	Currently projects are compared and prioritized based on cost and perception of need without the benefit of the considerations available through an optimized decision-making process that enables triple bottom line considerations, risk and level of service to enter the discussions.
10	The City does not have service area asset management plans in place that would have provided a base for authoring this Plan. However these supporting plans will be developed and implemented as part of the City's Corporate Asset Management program.

All of these limitations will be resolved over time as the Corporate Asset Management program evolves. There will be improved confidence in asset related data and the City will develop the ability to optimize decision–making using level of service and risk factors.

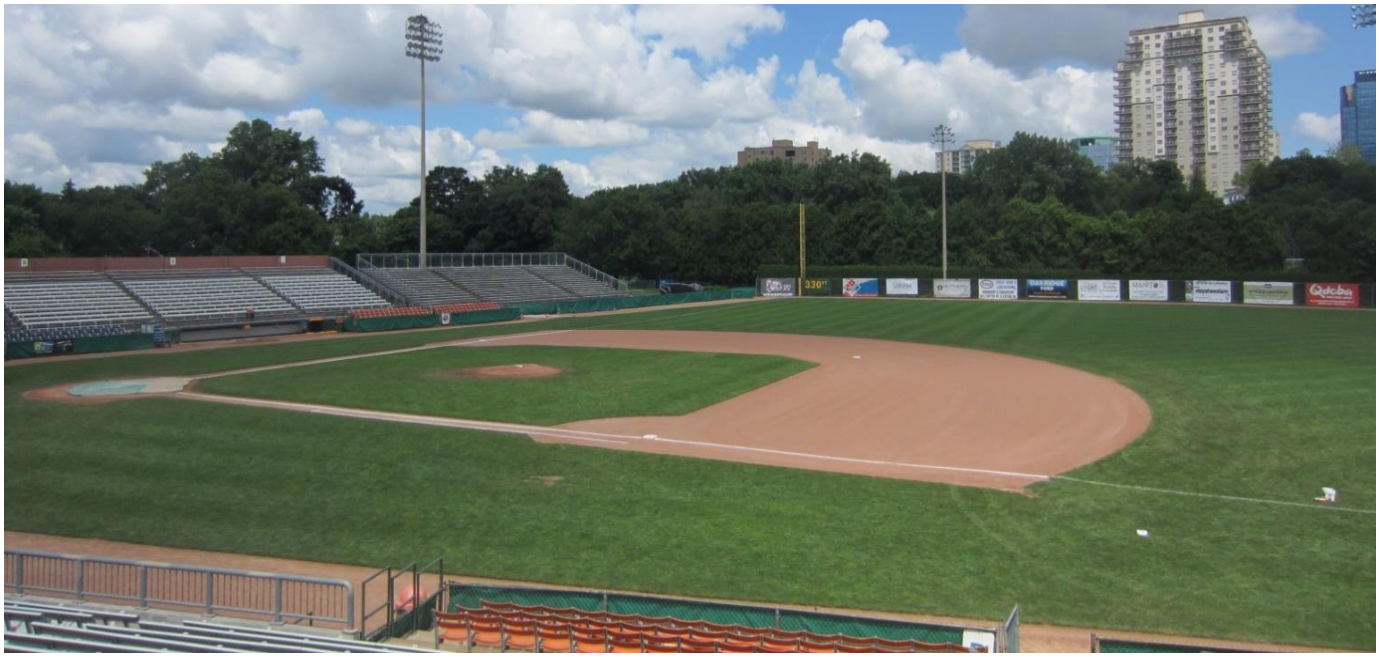
2.8 Plan Monitoring and Review

This document is London's first Corporate Asset Management Plan, an important tool for use in the Corporate Asset Management Program. Over time and the implementation of the Program, the plan is expected to develop and improve. In order to be effective it is important that the City monitor and update the plan routinely. This section of the plan sets forward the activities planned to monitor and enhance the Corporate Asset Management Plan. This work is detailed further in the Section 5 strategies.

The City of London promotes a culture of continual improvement and innovation. The intent of delivering a common structured approach to asset management across the corporation is not to restrict creativity but to enable the right decisions to be made at the right time for the right amount. In practice this means less waste and more opportunity to use limited resources on new opportunities. The asset management program is not, itself exempt from exposure to the need for continual improvement. The performance of the program needs to be managed in a disciplined way. Performance benchmarking and regular collection of customer feedback will be collected and acted upon. Initiatives to monitor the plan will include:

- Track key performance indicators to monitor and target poor performing assets and effects of maintenance/replacement strategies
- Track investments and deviations from planned investments
- Ensure plan is updated annually with a full update on a five year basis
- Include past years performance data in future plan versions and show trends
- Review improvement opportunities as part of updating the Corporate Asset Management Plan

Through these actions the City will monitor and review the plan to ensure its continuing suitability, adequacy, and effectiveness.

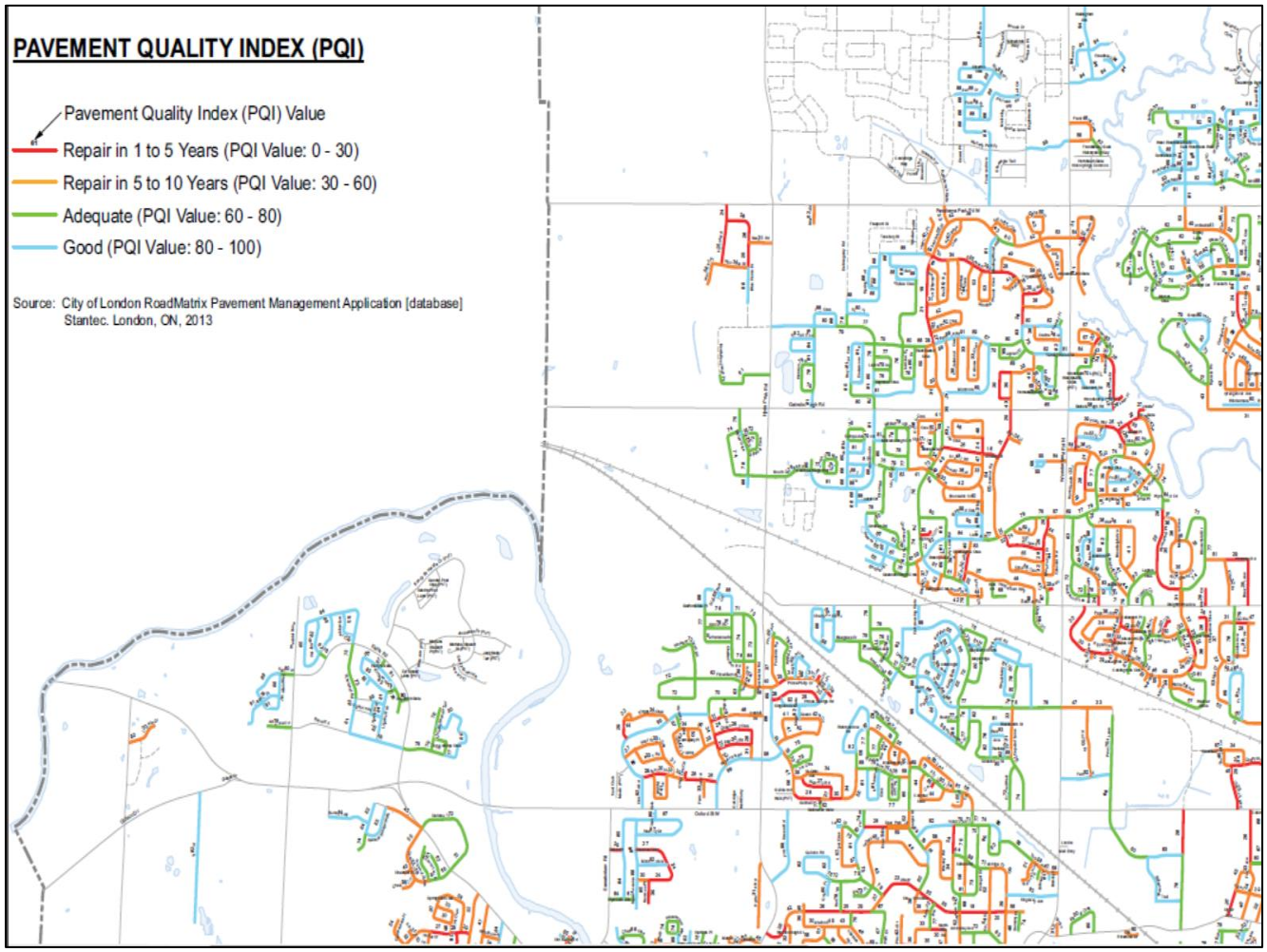


SECTION 3

State of London Infrastructure

3.1 Overview

This Chapter of the Corporate Asset Management Plan speaks to the asset inventory owned and directly managed by the City of London, it's worth and condition. The City of London owns and operates core assets currently valued at $10.9 Billion the bulk of which are in fair to good condition. Detailed information on the asset inventory, condition and value can be found in the companion document to this Plan, the 'State of Infrastructure Report 2013'.



3.2 Asset Inventory & Valuation

The major asset inventories and valuations are included for each service area and summarized in the tables in Section 3.2.2 .

As specified in the Ministry of Infrastructure's '*Guide for Municipal Asset Management Plans'*, this report presents the value of the City's assets in two different formats, 'Net Book Value' and 'Replacement Value'.

'Net Book Value' follows financial accounting practices defined by the Public Sector Accounting Board and is reported on the City's financial statements. The City of London's reported net book value covers the full scope of the City's Tangible Capital Assets including Boards and Agencies. It is not the same scope of assets considered under the Corporate Asset Management program and the State of Infrastructure Report. The 'net book value' is the original acquisition cost less accumulated depreciation, depletion or amortization. The end result of the PSAB/TCA effort is reported in the City's consolidated financial statements. The report includes a cost valuation of the City's tangible capital assets accounting for amortization, write-downs and betterments.

The City's 2012 Consolidated Financial Statement reported the net book value of the City's Tangible Capital Assets on December 31st 2012 at $3.24 billion. The 2012 report is summarized in Table 3-1.

TABLE 3-1 NET BOOK VALUE ($000'S) (PSAB)[1]

	A	B	C	D
Asset Class	**Net Book Value Dec 31, 2011**	**Net Cost Additions 2012**	**Amortization Expense Less Amortization Disposals 2012**	**Net Book Value Dec 31, 2012 (A+B-C)**
Land	$366,061	$13,311	-	$379,372
Landfill & Landfill Improvements	71,480	6,997	$3,462	75,015
Buildings & building improvements	522,021	21,758	22,257	521,522
Leasehold Improvements	1,963	221	613	1,571
Machinery, equipment & furniture	174,597	10,576	12,929	172,244
Vehicles	46,050	5,390	2,880	48,560
Water Infrastructure	425,541	32,680	11,421	446,800
Wastewater Infrastructure	756,042	51,735	18,218	789,559
Roads Infrastructure	649,403	43,496	17,095	675,804
Computers	2,453	(104)	(545)	2,894
Computers under capital lease	3,116	(1,907)	(1267)	2,476
Assets under construction	155,175	(29,939)	-	125,238
Total	**$3,173,902**	**$154,214**	**$87,063**	**$3,241,053**

In the City of London, the financial accounting valuation is undertaken annually to meet reporting requirements but is not used for asset management purposes. The City of London uses the straight line method to depreciate all of its Tangible Capital Assets. Under the financial accounting approach many long lived assets will have been fully depreciated yet remain in use across the City. For this reason net book value is not used for infrastructure renewal planning.

[1] The net book values originate in the financial statement and include all services including boards and agencies unlike the City's current asset management program which excludes boards and agencies at this time.

'Replacement values' are used to estimate potential investments for asset management purposes. Replacement values are the preferred indicator of cost used to estimate expenditures that may be required when assets reach the end of their useful life. The total replacement cost of all assets covered within this Plan is estimated at $10.9 Billion as reported in the 'State of Infrastructure Report 2013'.

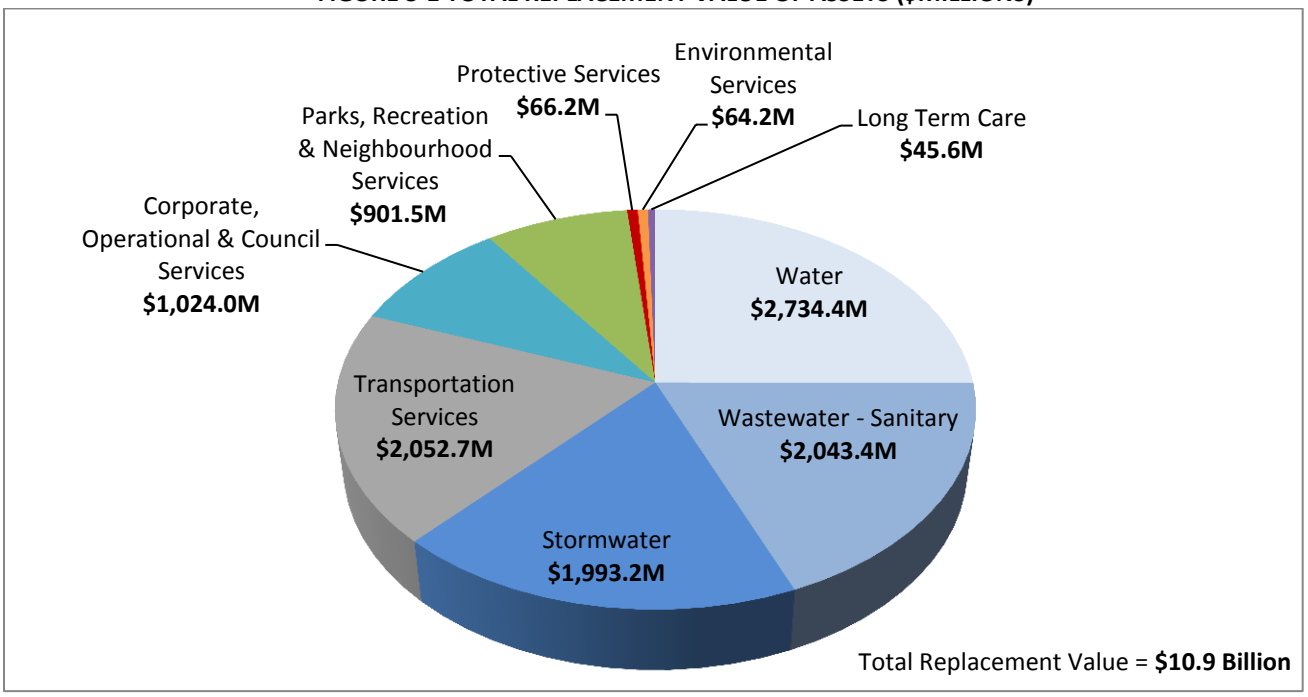
3.2.1 Replacement Cost Valuation

The City uses three basic methods to estimate replacement costs needed for infrastructure renewal planning.

1. Local price indices – This is the most accurate method. Where the City has collected recent acquisition data demonstrating similar replacement activities, these costs are applied across the asset base. This provides updated local impacts to increase the accuracy of the estimating process.
2. Published price indices – Where local indices are not available the City uses published indices which although appropriate and standardized do not account for any localized effects.
3. Accounting estimates – When assets cannot be estimated against either index, the City uses accounting methodology based on historic cost, estimated useful life and inflationary effects to determine replacement value.

The replacement value findings of the State of Infrastructure Report 2013 are reflected in Figure 3-1.

FIGURE 3-1 TOTAL REPLACEMENT VALUE OF ASSETS ($MILLIONS)



3.2.2 Detailed Inventory & Replacement Values

TABLE 3-2 WATER ASSET VALUATION

Asset Type	Asset		Inventory	Unit	Replacement Value ($000's)
LINEAR	Transmission Mains (> 450 mm)		206	km	$1,946,540
	Distribution Mains (< 450 mm)		1,364	km	
	Appurtenances	Service Connections	110,944	Ea.	$277,360
		Valves	11,057	Ea.	$164,410
		Hydrants	8,637	Ea.	$91,421
		Chambers	695	Ea.	$44,027
		PRV	10	Ea.	$2,024
	Water Meters		110,944	Ea.	$ 33,110
FACILITIES	Pump Stations (incl. Re-chlorination)		7	Ea.	$ 61,576
	Storage Reservoirs		3	Ea.	$ 58,800
	Wells		7	Ea.	$ 105
Facilities Under Construction	SE Reservoir		1	Ea.	$ 55,000
	SE Pumping Station		1	Ea.	
TOTAL					**$2,734,373**

TABLE 3-3 WASTEWATER - SANITARY ASSET VALUATION

Asset Type	Asset	Inventory	Unit	Replacement Value ($000's)
COLLECTION	Local Sewers (< 600mm)	1,268	Km	$876,000
	Trunk Sewers (600 - 1200mm)	151	Km	$332,816
	Trunk Sewers (> 1200mm)	11	Km	$50,892
TREATMENT	Wastewater Treatment Plants (Incl. Equipment)	6	Ea.	$702,232
	Pump Stations (Incl. Equipment)	34	Ea.	$81,469
TOTAL				**$2,043,409**

TABLE 3-4 WASTEWATER - STORMWATER ASSET VALUATION

Asset Type	Asset	Inventory	Unit	Replacement Value ($000's)
STORMWATER CONVEYANCE SYSTEM	Storm Sewers	1,304	km	$1,640,441
	Open Conveyance (Drains, Channels, Dykes)	26	Ea.	$157,552
STORMWATER MANAGEMENT	Storm Water Management Facilities (Ponds)	75	Ea.	$193,024
	Minor Treatment (Oil/Grit Separators and Biofilters)	18	Ea.	$2,135
TOTAL				**$1,993,152**

TABLE 3-5 ROADS & STRUCTURE ASSET VALUATION

Asset Type	Asset		Inventory	Unit	Replacement Value ($000's)
ROADWAYS	Roads	Local	1,750	Lane.km	$630,255
		Secondary Collector	507	Lane.km	$206,672
		Primary Collector	135	Lane.km	$56,166
		Arterial	1,264	Lane.km	$455,004
		Freeway	22	Lane.km	$8,360
		Expressway	39	Lane.km	$13,503
	Sidewalks		1,471	km	$78,309
STRUCTURES	Bridges		101	Ea.	$271,507
	Major Culverts (> 3m id)		94	Ea.	$56,393
	Footbridge		4	Ea.	$10,448
	Pedestrian Tunnel		7	Ea.	$7,149
	Noise Wall		44	Ea.	$29,289
	Major Retaining Walls		13	Ea.	$9,061
TOTAL					**$1,832,115**

TABLE 3-6 REMAINING CORE SERVICE AREAS ASSET VALUATION

Service area	Asset Type	Asset	Inventory	Unit	Replacement Value ($000's)	TOTAL ($000's)
Transportation (Cont.)	TRAFFIC	Lighting	33,444	Units	$120,000	**$214,937**
		Signals	388	Locations	$93,200	
		Signage	8687	Units	$1,737	
	PARKING	Pay Stations	65	Ea.	$715	**$5,694**
		Parking Meters	1,483	Ea.	1631	
		Surface Lots	11	No. of Lots	$3,348	
			1,116	No. of Stalls		
Solid Waste	DIVERSION	Material Recovery Facility & Equipment	1	Facility	$22,373	**$64,237**
		Enviro Depot	3	Ea.	$2,884	
		Household Special Waste Depot	1	Ea.	$418	
	DISPOSAL	Collection Equipment - Containers	940	Ea.	$611	
		W12A Buildings (Incl. Site Works & Equipment)	4	Ea.	$6,891	
		W12A Leachate Collection System	92	Ha	$14,101	
		W12A Landfill Gas Collection System	50	Ha	$2,867	
		W12A SWM Ponds	4	Ea.	$1,561	
		W12A Land and On-Site Buffer	142	Ha	$3,834	
		W12A Off-Site Buffer Land	221	Ha	$5,967	
		Closed Landfill Equipment	29	Ea.	$2,730	

Service area	Asset Type	Asset	Inventory	Unit	Replacement Value ($000's)	TOTAL ($000's)
Recreation	ARENA & EQUIP	Arena	11	Ea.	$103,820	$246,832
		Outdoor Ice Pad	2	Ea.		
	AQUATICS & EQUIP	Community Pool	15	Ea.	$50,526	
		Wading Pool	13	Ea.		
		Spray Pad	12	Ea.		
	COMMUNITY CENTRE & EQUIP	Community Centre	13	Ea.	$49,473	
		Other	2	Ea.		
	GOLF	Course (18 Holes)	4.5	Ea.	$15,605	
		Clubhouse	3	Ea.		
	ATTRACTION	Storybook Gardens	1	Ea.	$16,444	
	SENIOR CENTRE & EQUIP	Senior Centre	2	Ea.	$10,964	
Parks	PARKS LINEAR ASSETS	Thames Valley Parkway	41	km	$22,644	$132,826
		Multi-use Pathways	107	km	$37,450	
		Park Road	1	km	$1,000	
		Hiking Trail	58	km	$1,450	
	PARKS AMENITY ASSETS	Play Structures	161	Ea.	$15,220	
		Soccer Fields	103	Ea.	$10,558	
		Baseball Diamonds	79	Ea.	$6,330	
		Parks & Recreation Parking	6,138	Spaces	$5,161	
		Tennis Courts	64	Ea.	$3,840	
		Synthetic Turf Football Fields	2	Ea.	$3,000	
		Skate Boarding Facility	12	Ea.	$2,325	
		Basketball Courts	43	Ea.	$1,290	
		Swing Sets	130	Ea.	$813	
		Multi-use Pads	7	Ea.	$525	
		Off-leash Dog Park	3	Ea.	$450	
		Community Gardens	15	Ea.	$150	
	PARKS FACILITY ASSETS	Bandshells	3	Ea.	$2,807	
		Building, Clubhouse	7	Ea.	$6,122	
		Pavilions	2	Ea.	$1,150	
		Shelters	3	Ea.	$200	
		Stadium	1	Ea.	$3,691	
		Washrooms	21	Ea.	$5,250	
		Washrooms & Concessions	4	Ea.	$1,400	

Service area	Asset Type	Asset	Inventory	Unit	Replacement Value ($000's)	TOTAL ($000's)
Urban Forestry	URBAN FORESTRY	Trees in woodlands or wooded portions of parks (700 hectares)	869,400	Ea.	$434,700	$513,300
		Urban trees within road allowance	121,600	Ea.	$60,800	
		Trees in manicured portions of parks (1,970 hectares)	35,623	Ea.	$17,800	
Fire	STATIONS & FACILITIES	Fire Stations	14	Ea.	$38,856	$66,156
		Training Tower	1	Ea.		
		Training Building	1	Ea.		
		Storage Garage	1	Ea.		
		Fueling Station	1	Ea.		
	VEHICLES & EQUIPMENT	Fire Rescue Vehicles and Heavy Equipment	35	Ea.	$16,025	
		Light Fire Vehicles	40	Ea.	$1,140	
		Fire Fighting Apparel and Light Equipment	Not Specified - Mix		$10,135	
Long Term Care	LONG TERM CARE FACILITIES & EQUIPMENT	Dearness Retirement Home	1	Ea.	$45,593	$45,593
Facilities	CORPORATE FACILITIES	Administration Buildings	4	Ea.	$117,241	$181,003
		Main Centres	22	Ea.	$32,291	
		Other	9	Ea.		
	CULTURE FACILITIES	Heritage	13	Ea.	$31,471	
		Arts & Entertainment	1	Ea.		
Fleet	VEHICLES	Light Vehicle	227	Ea.	$5,600	$44,994
		Medium Vehicle	17	Ea.	$1,005	
		Heavy Vehicle	130	Ea.	$18,638	
		Heavy Vehicle (Off Road)	19	Ea.	$4,952	
	EQUIPMENT	Light Equipment	83	Ea.	$336	
		Light Equipment(Off Road)	637	Ea.	$3,568	
		Medium Equipment	42	Ea.	$1,424	
		Medium Equipment (Off Road)	101	Ea.	$5,849	
		Heavy Equipment	9	Ea.	$1,129	
		Heavy Equipment (Off Road)	14	Ea.	$2,493	
Information Technology	IT INFRASTRUCTURE	Network, access points, switches, routers	Not Specified - Mix		$2,000	$46,100
		Storage system, backup system			$2,000	
		Servers, blade enclosures			$1,000	

Service area	Asset Type	Asset	Inventory	Unit	Replacement Value ($000's)	TOTAL ($000's)
		Server operating systems			$500	
		Database engines			$1,000	
		Fibre network			$10,000	
	ENTERPRISE APPLICATIONS	Enterprise software	Not Specified - Mix		$14,500	
	END USER DEVICES AND APPLICATIONS	Desktops, laptops, iPads, etc.	Not Specified - Mix		$5,100	
		Blackberry, cellphones, etc.				
		Office productivity software				
	ONE VOICE COMM. SYSTEM	Infrastructure	Not Specified - Mix		$10,000	
		End users devices, communication system, software, etc.				

This Plan discusses only those services with significant asset groupings. Many services function without substantial infrastructure like Clerks or the Finance area. Most of their assets reside in general pools like Fleet, Information Technology Services and Facilities.

A specific asset category which has not been mentioned so far is land. The City owns an estimated value of $752 million worth of land mainly located in parks and road right of ways (Table 3-7). Land is managed differently than conventional assets as it exists into perpetuity without any expectation of life cycle renewal. Nevertheless it still needs to be managed.

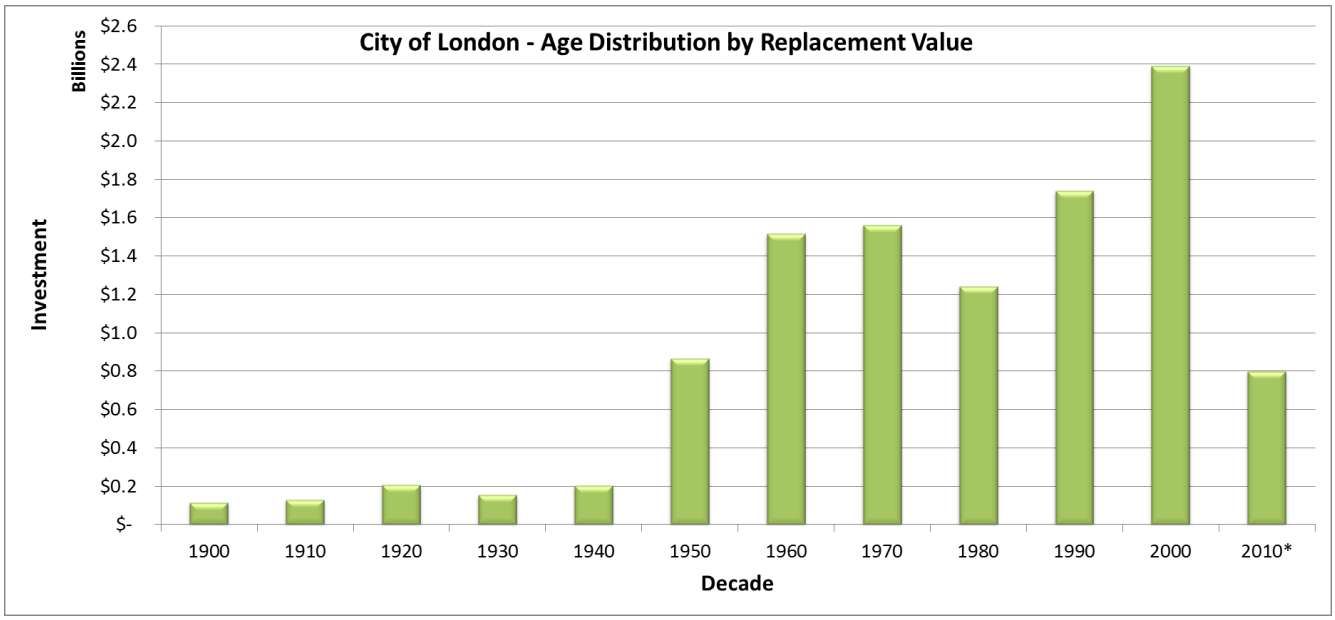
TABLE 3-7 ASSET INVENTORY SUMMARY – LAND

Asset		Inventory	Unit	Value ($000's)
Park Land	Parks	1,040	HA	$299,982
	Natural Areas	1,496	HA	
Road Allowance		1,571	HA	$271,122
General Government		358	HA	$61,838
Closed Landfill & Natural Methane Areas		339	HA	$58,556
Industrial		268	HA	$40,587
Stormwater		223	HA	$19,805
TOTAL		**5,295**	**HA**	**$751,890**

3.3 Asset Age Distribution and Useful Life

The following summarizes the age distribution of the City of London's $10.9 billion worth of core service area infrastructure. Figure 3-2 illustrates London's infrastructure replacement value installed by decade.

FIGURE 3-2 LONDON INFRASTRUCTURE AGE DISTRIBUTION



The estimate of useful life of an asset is the period of time when it can be expected to provide useful service. This is a parameter that can be used to plan for asset renewal. The estimate can be determined based on age, condition, experience and published sources. The estimated remaining useful life of a physical asset, based on age, is considered a good starting point to estimate the overall well-being of an asset inventory. The age and remaining useful life can be related to condition, as shown in Table 3-8.

TABLE 3-8 ASSET AGE – BASED CONDITION RATING

Rating	Remaining estimated useful life
Very Good	Age ≥80%
Good	80% >Age≥60%
Fair	60%>Age≥40%
Poor	40%>Age≥20%
Very Poor	Age<20%

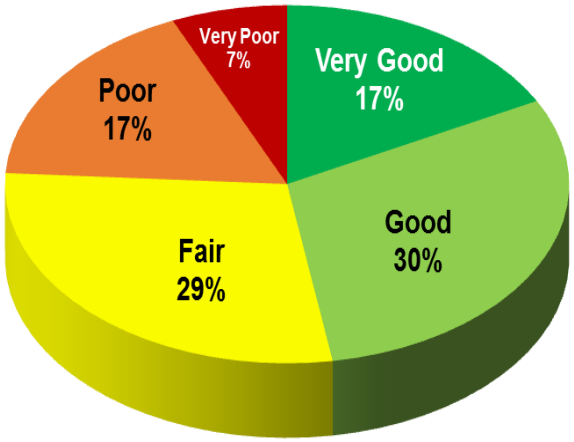
Use of an asset impacts the estimate of useful life. If the asset use is constant across an asset base, then the useful life estimates based on experience are a good tool to predict when an asset will need to be replaced. If the asset use is average, criteria offered in literature can be fairly accurate for predicting estimated useful life. Maintenance and rehabilitation can be used to change the useful life prediction. Useful life predictions need to be augmented with other information such as condition assessments, history of upgrades, and expert judgment. Although the most expensive, technical condition assessments provide the most accurate means of projecting when an asset will need to be renewed or replaced, it is also impacted by other factors. Assets that are properly constructed and maintained may provide service past their useful life estimate. Asset life is influenced through external parameters like poor workmanship and lack of proactive maintenance. The replacement timing on new technologies may be unknown. In reality, assets may also fail before they fulfill their useful life expectation. At a high level asset management planning is ideally based on condition and use information rather than the age of the City's assets.

3.4 Asset Condition

The condition of each asset group was evaluated for the purpose of the 'State of Infrastructure Report 2013' in order to determine the current 'health' of the City's infrastructure. In the future we hope to expand this assessment to include other service measures such as adequacy and reliability, to better reflect the ability of the City's assets to deliver services.

The results of the condition assessment for London's core infrastructure averages from Fair to Good with 24% measuring Very Poor to Poor and requiring renewal/replacement consideration.

FIGURE 3-3 CITY OF LONDON'S OVERALL ASSET CONDITION



A five-point rating scale was used to align with the National Infrastructure Report Card produced by the Canadian Society for Civil Engineering (CSCE), the Canadian Public Works Association (CPWA), the Canadian Construction Association (CCA) and the Federation of Canadian Municipalities (FCM). In addition to providing a sound basis for assessment, this will allow for high-level benchmarking comparable to other municipalities. Details by service area can be viewed in the 'State of Infrastructure Report 2013'.

TABLE 3-9 ASSET CONDITION DEFINITION

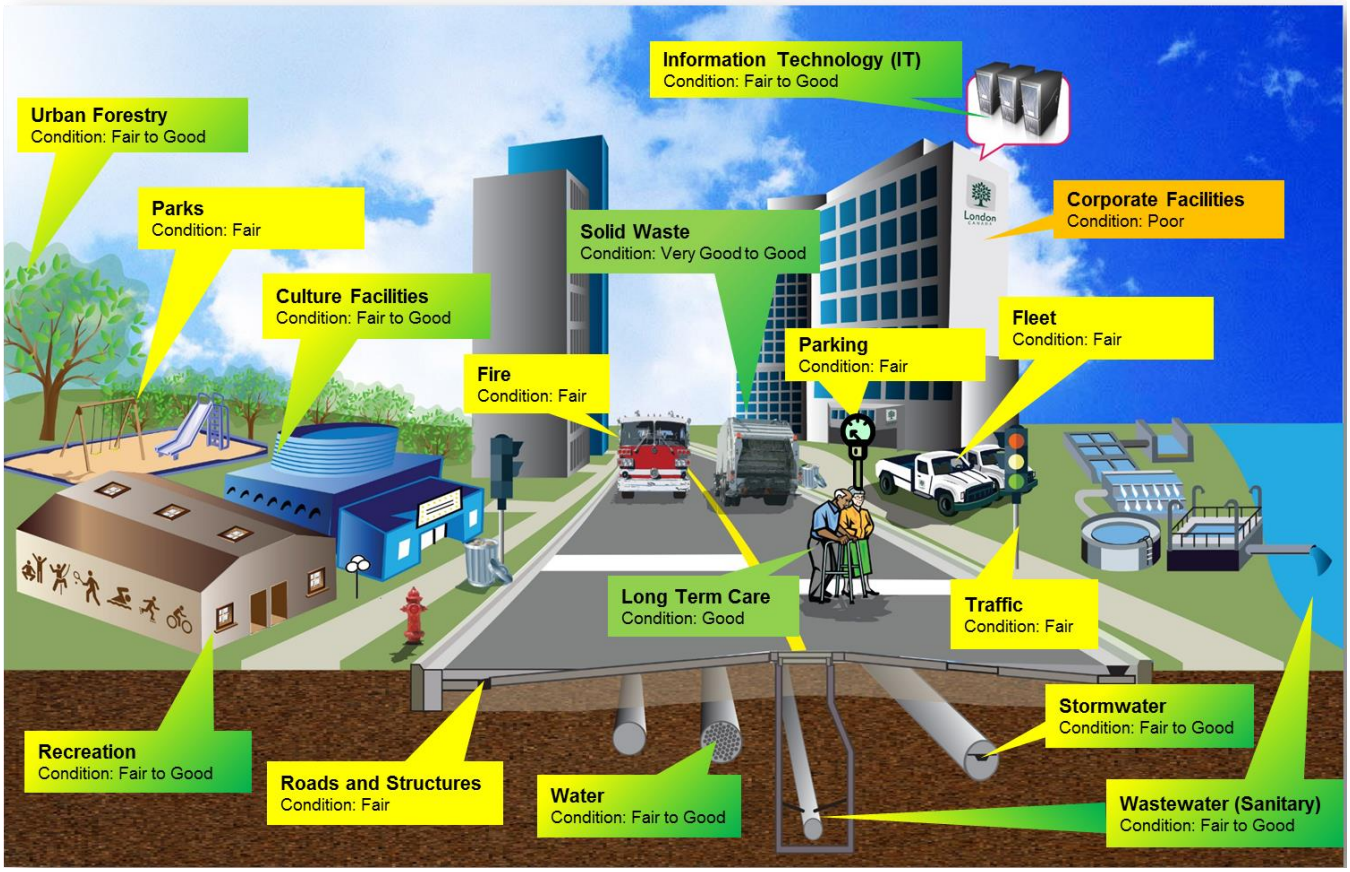
	Summary	Definition
1	**Very Good** *Fit for the future*	The infrastructure in the system or network is generally in very good condition, typically new or recently rehabilitated. A few elements show general signs of deterioration that require attention.
2	**Good** *Adequate for now*	The infrastructure in the system or network is in good condition; some elements show general signs of deterioration that require attention. A few elements exhibit significant deficiencies.
3	**Fair** *Requires attention*	The infrastructure in the system or network is in fair condition; it shows general signs of deterioration and requires attention. Some elements exhibit significant deficiencies.
4	**Poor** *At risk*	The infrastructure in the system or network is in poor condition and mostly below standard, with many elements approaching the end of their service life. A large portion of the system exhibits significant deterioration.
5	**Very Poor** *Unfit for sustained service*	The infrastructure in the system or network is in unacceptable condition with widespread signs of advanced deterioration. Many components in the system exhibit signs of imminent failure, which is affecting service.

The condition of the assets was determined using one of the three methods below based on availability and accuracy:

1. Existing condition rating systems e.g. Pavement Quality Index, Facility Condition Index, etc.
2. Estimate based on Age and the remaining useful life of the asset
3. Estimate based on expert opinion, in the absence of (1) or (2) above or where there was low confidence that age and useful life properly represented a particular asset.

The summary condition rating for each of the Service Areas is outlined in Figure 3-4 as follows:

FIGURE 3-4 CITY OF LONDON'S ASSET CONDITIONS

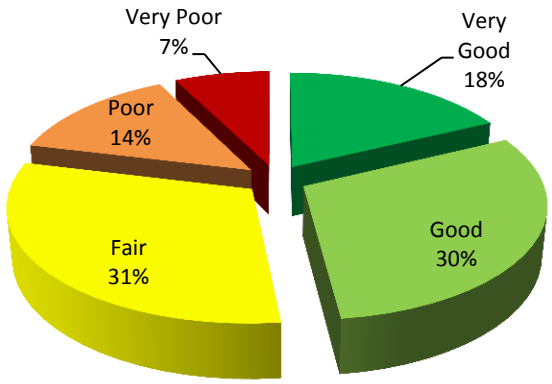


3.5 Service Area Condition Summaries

The following section summarizes the available replacement value and condition information specific to the service areas and their major asset types. Detailed information on condition by service area can be found in the companion document, the 'State of Infrastructure Report 2013'.

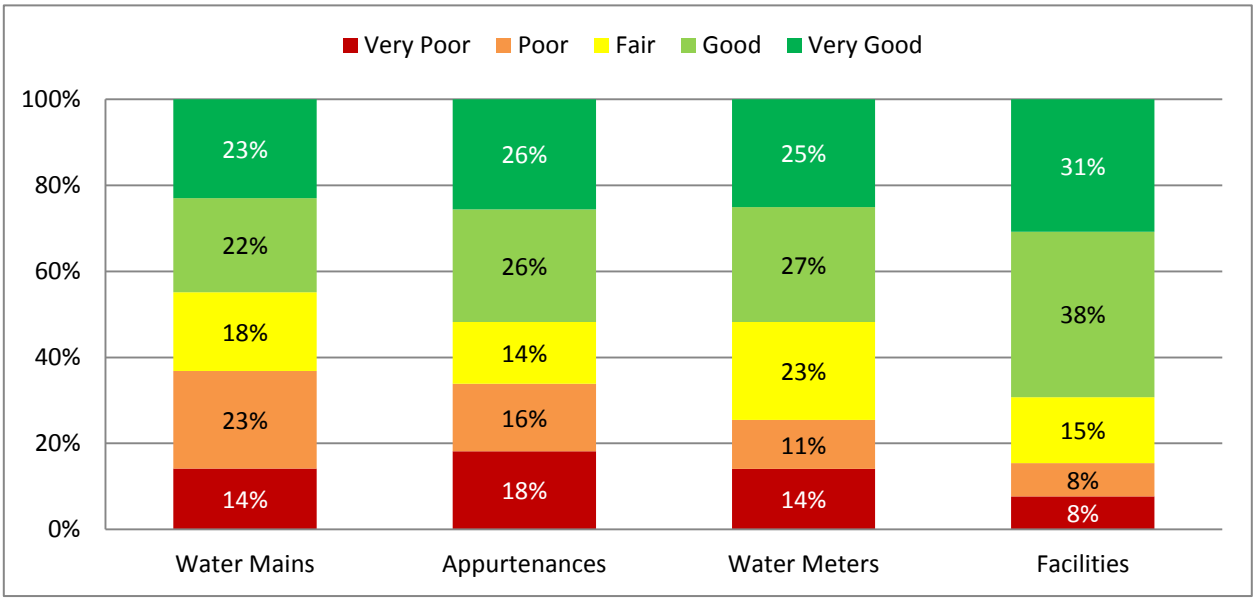
3.5.1 Water, Wastewater Services

Water and Wastewater Services: Overview	Replacement Value: $6,770,933,000
Over 75% of the City's Water and Wastewater assets (water, sanitary, stormwater) are in Fair to Very Good condition, with the remainder approaching the end of their expected useful lives, indicating a need for investment in the short to medium term. The City's water and wastewater assets are overall in Fair to Good condition, indicating that they are meeting current needs, but aging.	



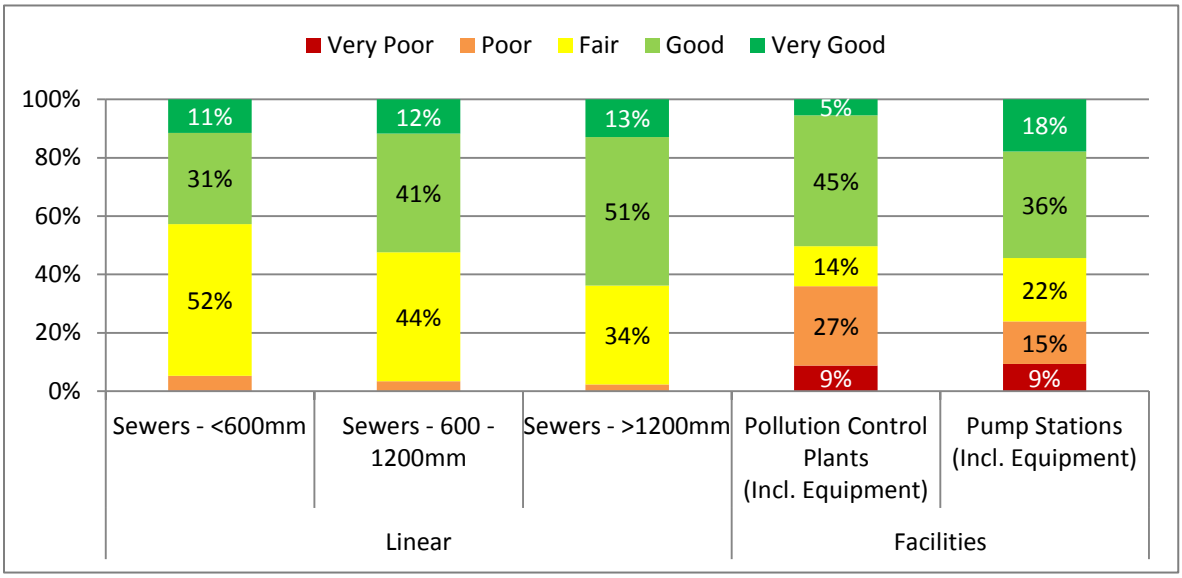
Major Asset Types within Water, Wastewater Services

Water, Wastewater Services: Water	Replacement Value: $2,734,373,000
Over 65% of the City's linear Water Main assets are in Fair to Very Good condition, with the remainder approaching the end of their expected useful lives, indicating a need for investment in the short to medium term. The City's water assets are overall in Fair to Good condition, indicating that they are meeting current needs, but are aging.	



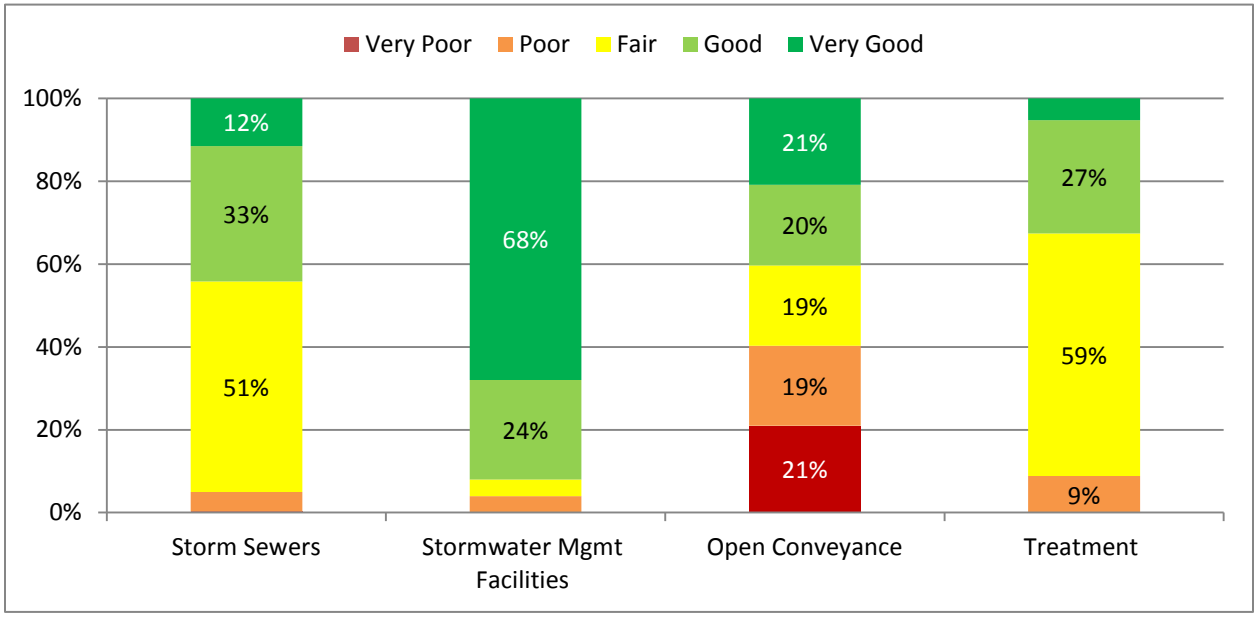
Water, Wastewater Services: Wastewater - Sanitary	Replacement Value: 2,043,409,000

Over 80% of the City's wastewater – sanitary assets are in Fair to Very Good condition, with the remainder approaching the end of their expected useful lives, indicating a need for investment in the short to medium term. The City's wastewater – sanitary assets are overall in Fair to Good condition, indicating that they are meeting current needs, but aging.



Water, Wastewater Services: Wastewater - Stormwater	Replacement Value: $ 1,993,151,000

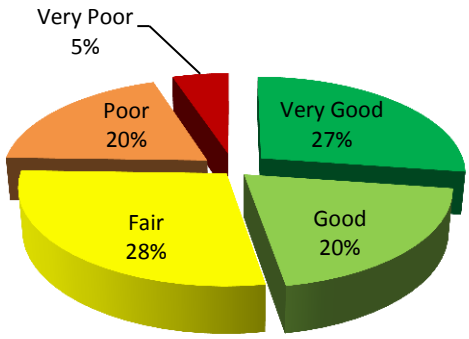
75% of the City's wastewater – stormwater assets are in Fair to Very Good condition, with the remainder approaching the end of their expected useful lives, indicating a need for investment in the short to medium term. The City's wastewater – Stormwater assets are overall in Fair to Good condition, indicating that they are meeting current needs, but aging.



3.5.2 Transportation Services

Transportation Services: Overview	Replacement Value: $2,052,746,000

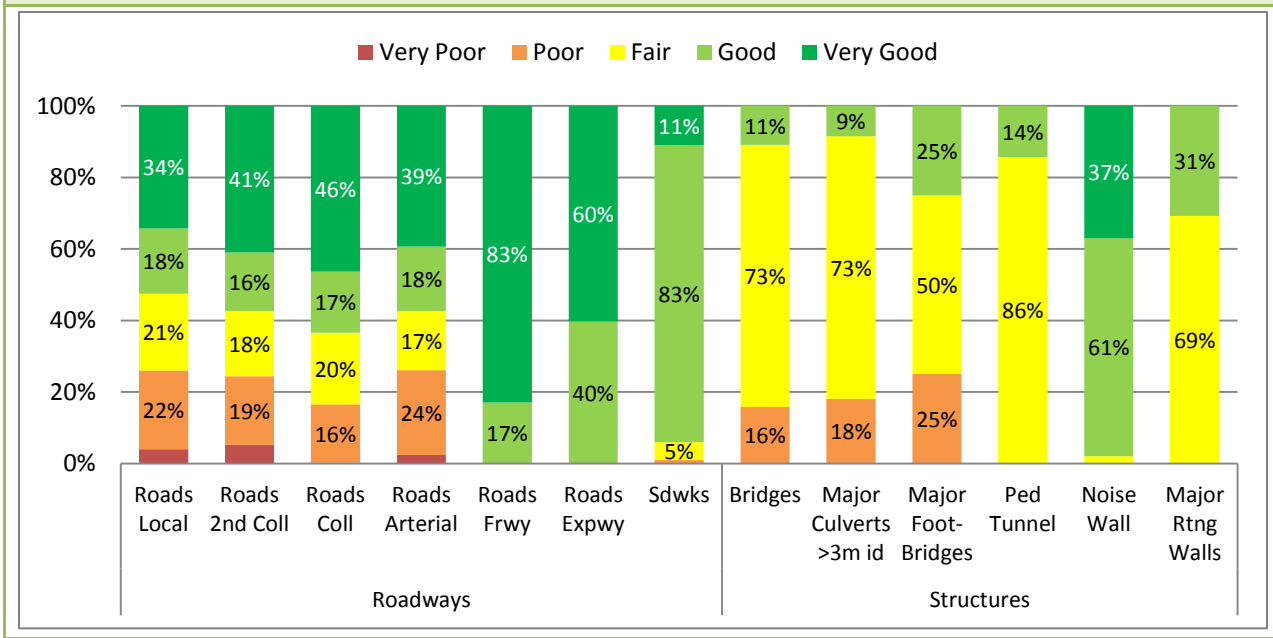
75% of the city's transportation services assets (roads, structures, traffic, parking) are in Fair to Very Good condition, with the remainder approaching the end of their expected useful lives, indicating a need for investment in the short to medium term. The City's transportation assets are overall in fair to good condition, indicating that they are meeting current needs but are aging and may require attention.



Major Asset Types within Transportation Services

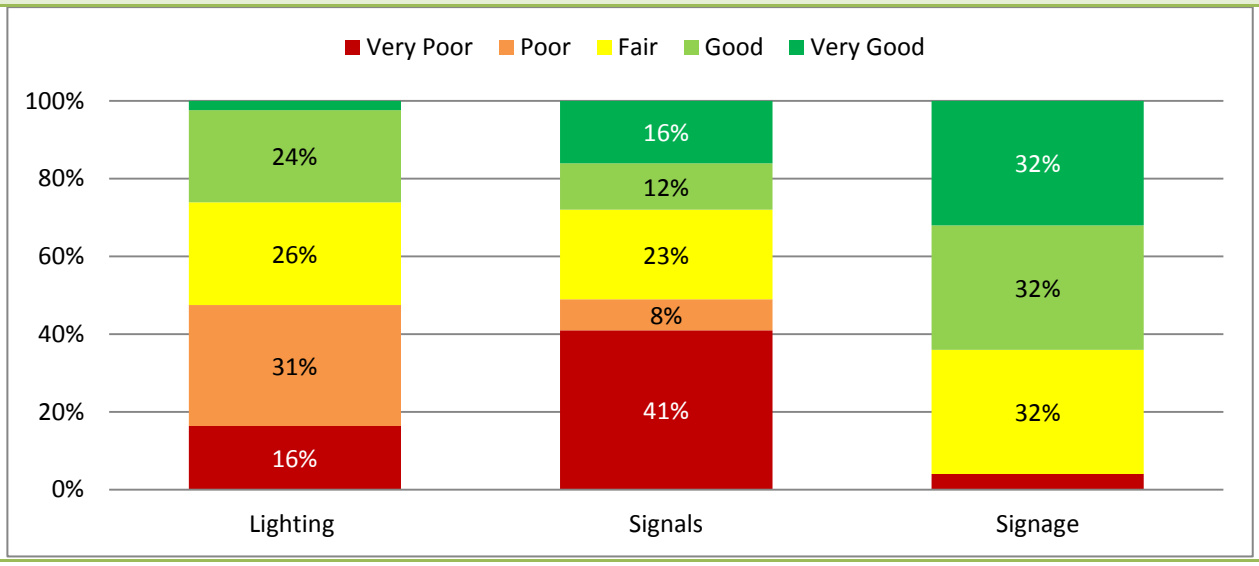
Transportation Services: Roads & Structures	Replacement Value: $1,832,115,000

The City's Roads and structures are currently rated in overall Fair condition. The majority of the network, Local Roads, Primary and Secondary Collectors and Arterial Roads are rated in Fair condition with approximately 20% of each road class being Poor to Very Poor and requiring near-term rehabilitation. Three quarters of City bridges are in Fair condition.



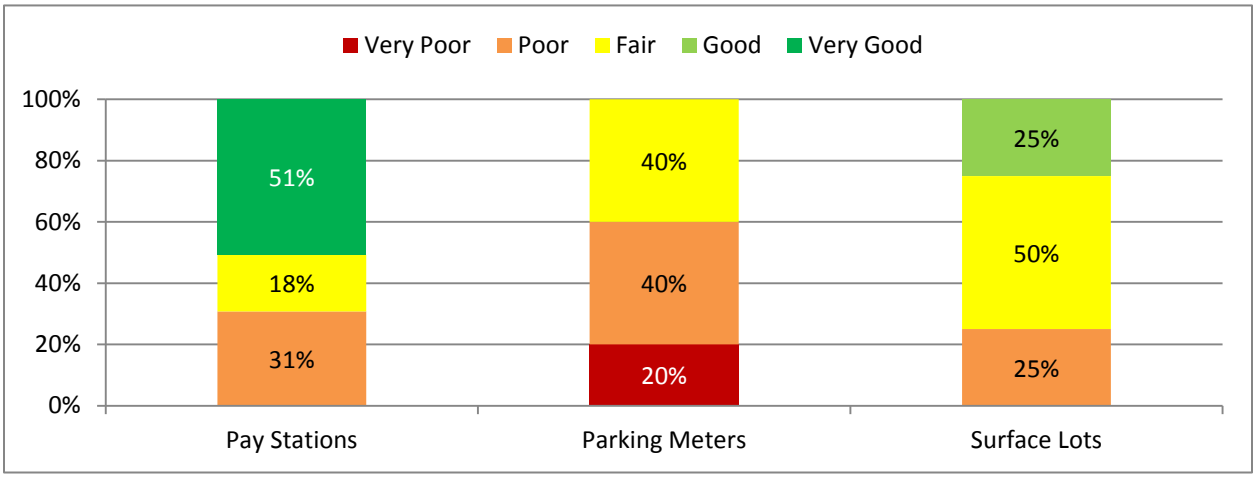
Transportation Services: Traffic	Replacement Value: $214,937,000

The City's Traffic infrastructure assets are overall in Fair condition. Traffic infrastructure is broken into 3 categories: Lighting, Signals, and Signage. Overall lighting infrastructure is in Poor to Fair condition, based on age and expected useful life. Major regulatory signage is largely in Good to Very Good condition, with few variances from reflectivity and condition standards. The condition of Minor Regulatory and Guide / Information signs is not currently tracked. Overall, 47% of Lighting and 49% of Signals were rated to be in Poor or Very Poor condition.

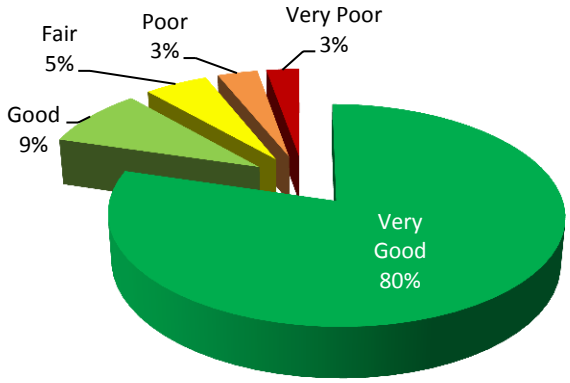


Transportation Services: Parking	Replacement Value: $ 5,694,000

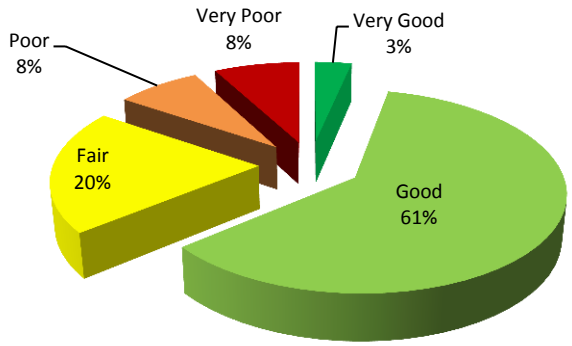
Overall, the City's Parking infrastructure assets are in Fair condition. Parking infrastructure is categorized into Pay Stations, Parking Meters and Surface Lots. The Pay Stations asset group is in Very Good condition. Current Parking Meters are generally in Poor condition. Surface lots are generally in Fair condition with three lots in Poor condition.



3.5.3 Environmental Services

Environmental Services: Solid Waste	Replacement Value: $ 64,237,000
Overall, the City's Solid Waste diversion and disposal assets are in Good to Very Good condition and are capable of meeting current and future needs. The Materials Recovery Facility (MRF) & Equipment are in Very Good condition. The condition of the EnviroDepots and HSW Depot infrastructure is variable with 75% noted to be in Good to Very Good condition. The condition of Solid Waste Collection Equipment (Containers) varies widely and on average, is in Fair condition. The W12A Land and On-Site Buffer and W12A Off-Site Buffer lands are not rated on a condition scale. The W12A Buildings (Incl. Site Works & Equipment) are generally in Very Good condition. The W12A Leachate Collection System generally in Very Good condition. The Landfill Gas Collection System is in Fair to Very Good condition. The condition of the Closed Landfill Equipment on average is Fair.	
	

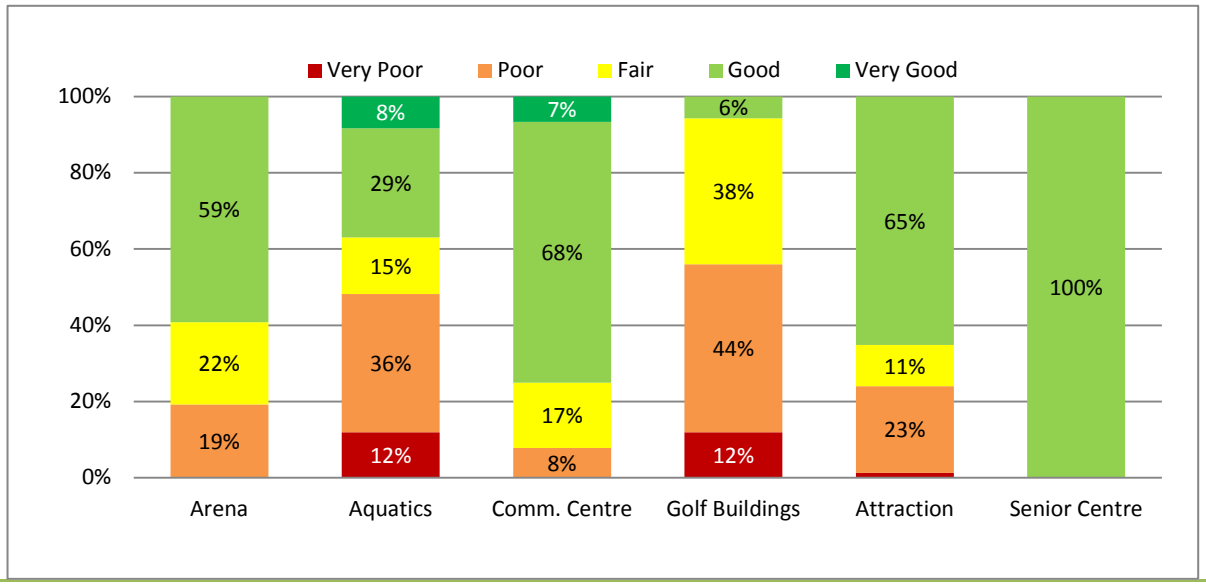
3.5.4 Parks, Recreation & Neighbourhood Services

Parks, Recreation & Neighbourhood Services: Overview	Replacement Value: $ 901,940,000
Overall the City's Parks, Recreation & Neighbourhood Services assets (Parks, Recreation, Forestry) are in Good condition with the remainder approaching the end of their expected useful lives, indicating a need for investment in the short to medium term.	
	

Major Asset Types within Parks, Recreation & Neighbourhood Services

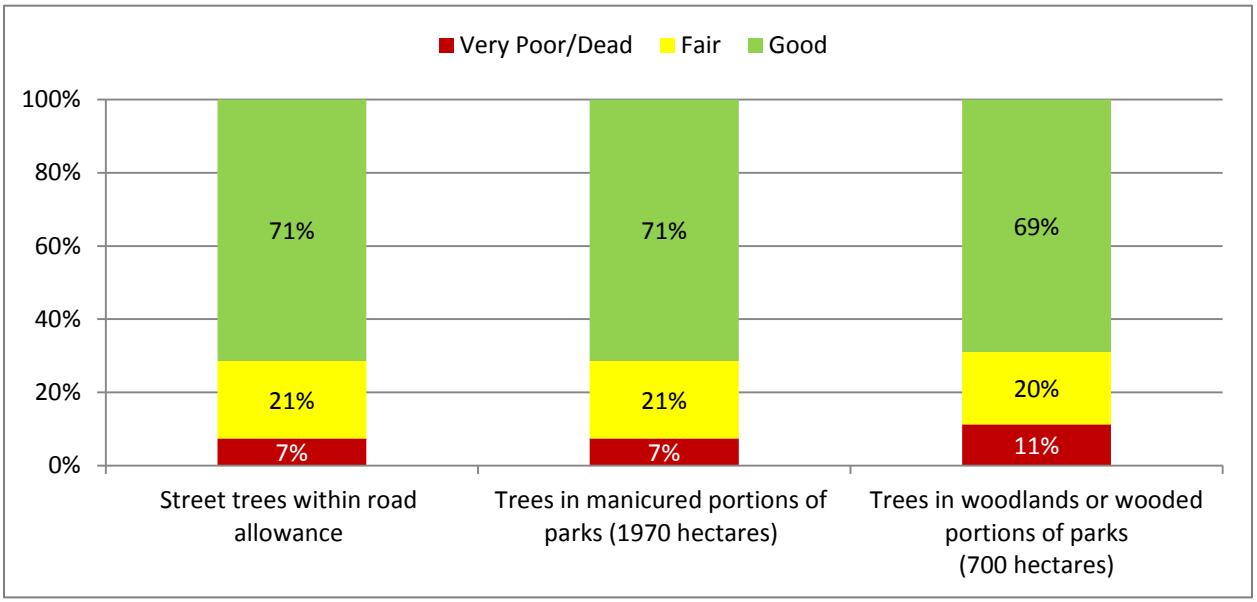
Parks, Recreation & Neighbourhood Services: Recreation	Replacement Value: $ 246,832,000

Overall, the City's Recreation assets are in Fair to Good condition. These include aquatics, arenas, community centres, golf, senior centres and Storybook Gardens. Generally the facilities in Poor to Very Poor condition include outdoor community pools and wading pools.



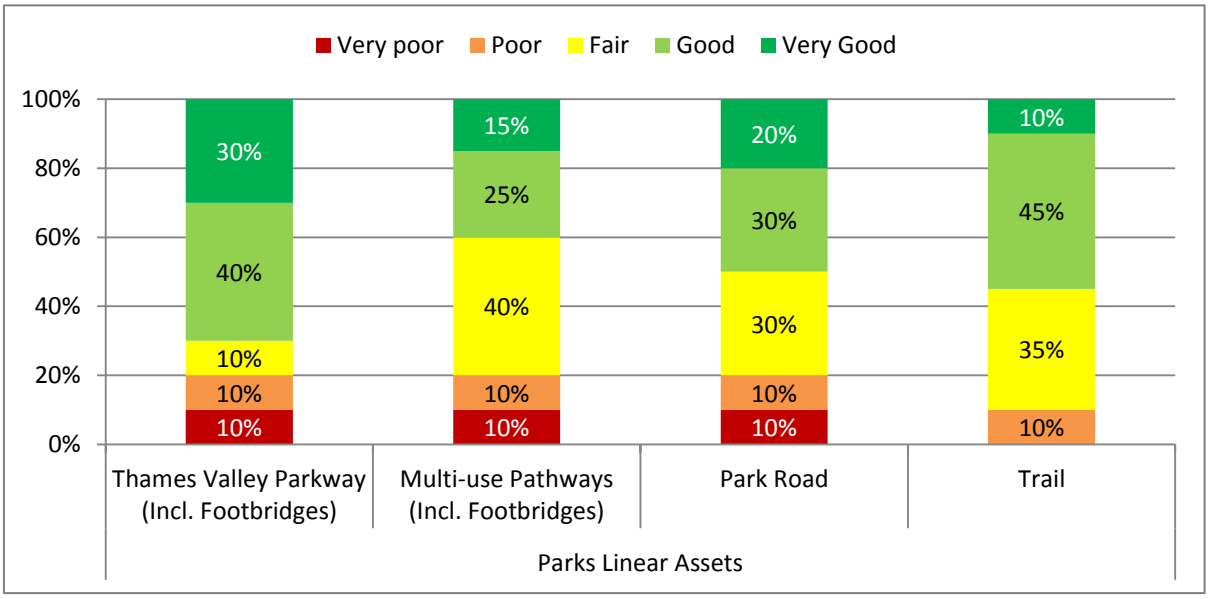
Parks, Recreation and Neighbourhood Services: Urban Forestry	Replacement Value: $ 513,300,000

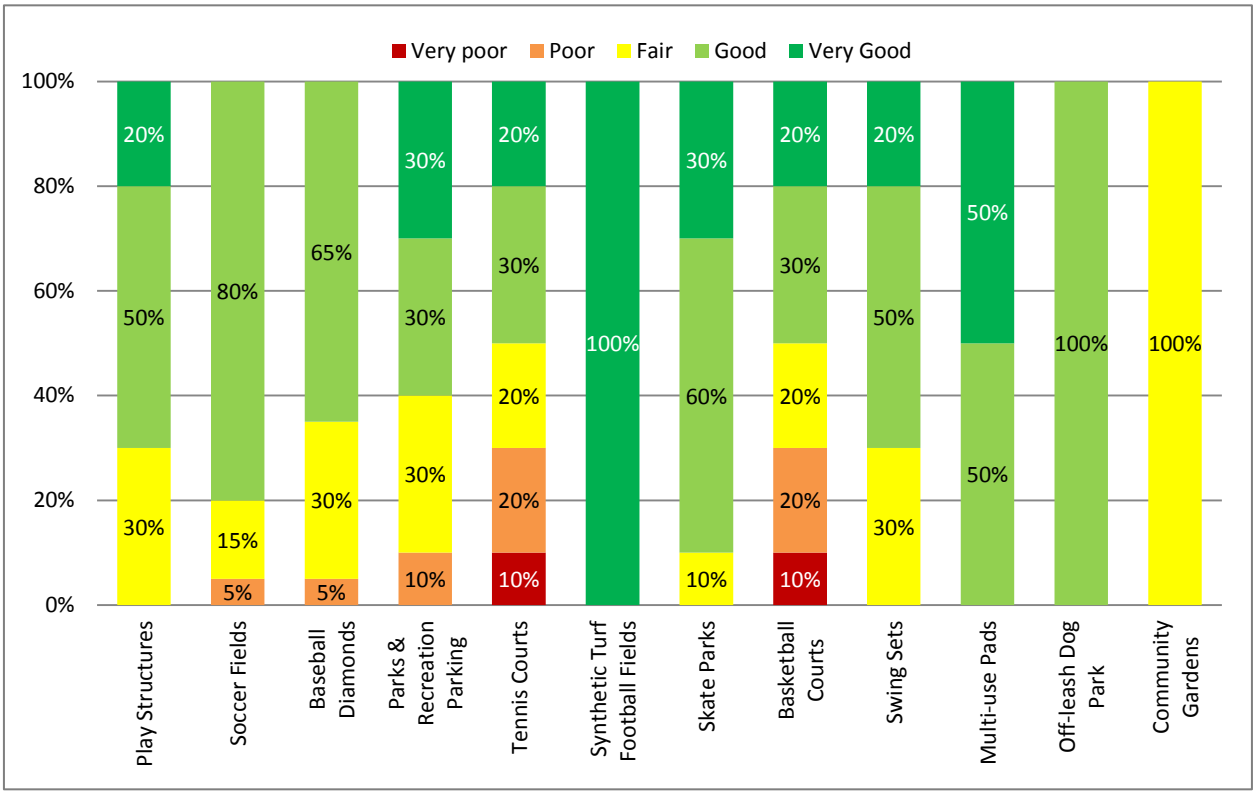
Overall, the City's forestry assets are in Fair to Good condition. Forest inventory is divided into three types of trees; woodland or wooded parkland trees, manicured parkland trees and urban road allowance trees.



Parks, Recreation & Neighbourhood Services: Parks	Replacement Value: $141,358,000

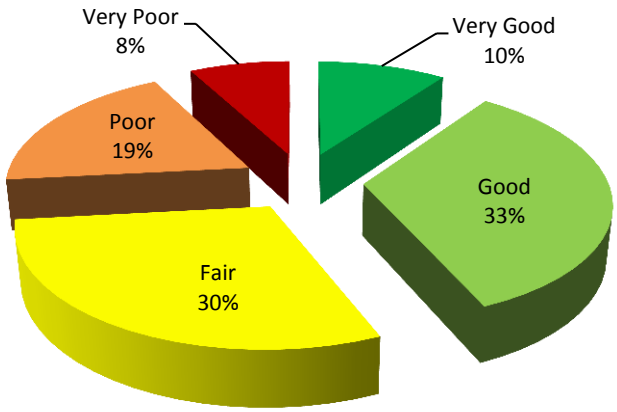
Overall, the City's Parks assets are in Fair condition, indicating that assets are functional but showing signs of deterioration. Parks infrastructure is broken into 4 categories: Parks Linear Assets, Parks Activity Assets, Park Facility Assets and Other Assets. Currently data on the condition of most of the assets is not formally collected and recorded. Linear Assets are in Fair to Good condition, based on expert opinion from staff. Activity Assets do not undergo formal assessment, but are evaluated for safety. Over 80% of Activity Assets are in Fair or better condition, based on staff input. Park Facilities are in Fair to Good condition. Other Assets are in Fair to Good condition, based on expert opinion.





3.5.5 Protective Services

Protective Services: Fire	Replacement Value: $66,156,000
Overall, the City's Fire & Rescue assets are in Fair condition. Stations and Facilities (Buildings) are in Fair to Good condition. And Fire Rescue Vehicles & Heavy Equipment are in Fair to Very Good condition and Light Fire Vehicles are shown to be in Fair condition. Fire Fighting Apparel & Light Equipment is listed in Fair to Good condition.	



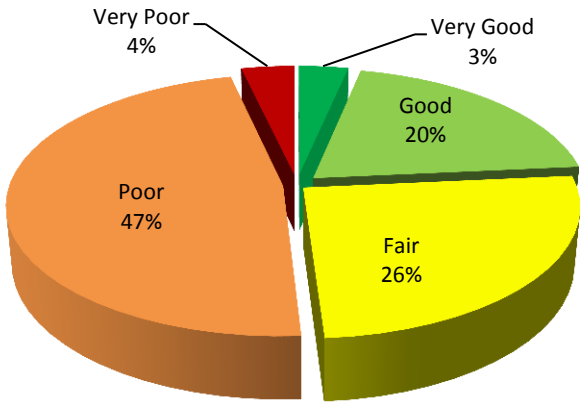
3.5.6 Social & Health Services

Social & Health Services: Long Term Care	Replacement Value: $ 45,593,000
Overall, the condition for Long Term Care is based on the condition of the Dearness Retirement Home and is shown to be Good.	

3.5.7 Corporate, Operational & Council Services

Corporate, Operational & Council Services: Overview	Replacement Value: $ 1,023,987,000

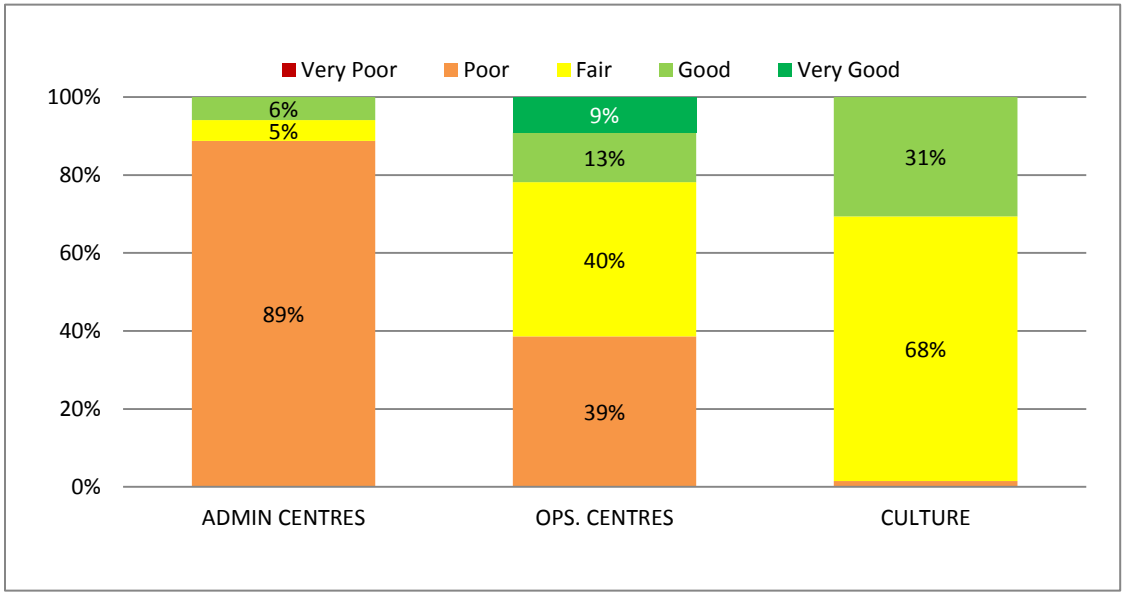
73% of the City's Corporate, Operational & Council services assets (Corporate and Culture Facilities, Fleet, Information Technology and Land) are in Poor to Fair condition, indicating a need for investment in the short to medium term. This result is strongly influenced by the condition of the city hall campus.



Major Asset Types within Corporate, Operational & Council Services

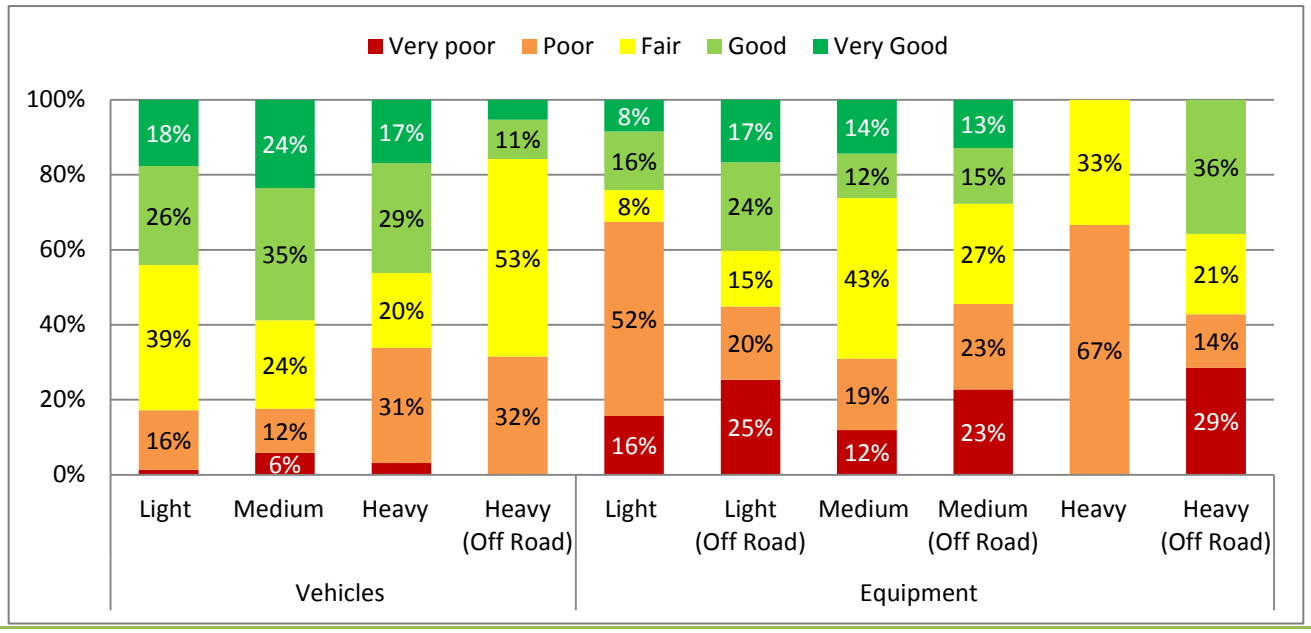
Corporate, Operational & Council Services: Facilities (Corporate & Culture)	Replacement Value: $181,003,000

Overall, the City's Facilities can be rated as Poor to Fair condition. The City's facilities are separated into to two major categories: Corporate and Culture. Corporate Facilities consists primarily of City Hall and its Parking Structure, which overall, are in Poor condition. The City's Culture Facilities are shown to be in Fair to Good condition.



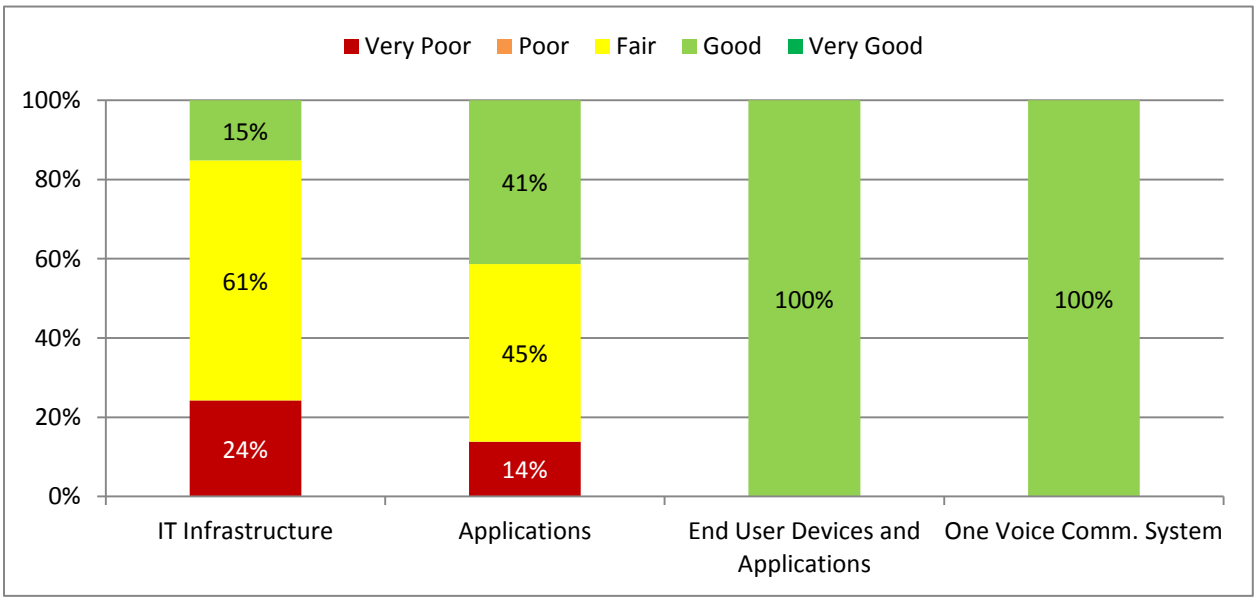
Corporate, Operational & Council Services: Fleet	Replacement Value: $44,994,000

The City's Fleet assets are overall in Fair condition, with Vehicles representing the largest value of Fleet assets. Large portions of the City's vehicle fleet are shown as being in Fair to Good condition. The Equipment ranges from Light, Medium to Large with a large portion of Light Equipment assets shown to be in Very Poor or Poor condition.



Corporate, Operational & Council Services: Information Technology (IT)	Replacement Value: $46,100,000

Overall, the City's IT assets are in Good condition. 24% of IT infrastructure is in very poor condition approaching the end of its useful life.



3.6 Asset Information Origins

The City of London documents infrastructure assets in multiple formats ranging from hard copy to enterprise systems. A major data storage system is Geodatabase which is the geographic representation of the City's assets. It is updated daily. The second major source is J.D. Edwards, the City's financial engine. It is also updated daily. For the purpose of roads and structures, water, sanitary and stormwater, the City is implementing a computerized maintenance management system, which will be fully operational in a few years providing a third significant database. Other sources of information are updated on demand. The Information Technology service area is responsible for the maintenance and security of the major systems. They use all of the tools appropriate to accomplish this task including designated user rights, passwords, restrictive data entry protocols, tools for virus and spam protection, etc. Assumptions used in the collection and storage of asset information are incorporated into individual procedures for the inventory systems.

The collection of asset information processes required by the Ministry Guide is supported by the City's 'Corporate Asset Management Administrative Policy' authorized in January, 2013. This policy addresses the Ministry Guide requirement for a data verification policy and a condition assessment policy. The policy dictates among other requirements that the City 'provide assurance to our customers through clearly defined levels of service and adhere to optimal asset management processes and practices, including investment, that are supported by continually updated asset and customer data.' Furthermore it requires that the City 'comply with all relevant legislative, regulatory and statutory requirements.' The policy is supported by a set of asset management strategies that provide a more detailed approach as to how these tasks will be approached.

3.7 Lessons Learned from the State of Infrastructure Report 2013

i. Infrastructure in the City of London is generally in Fair to Good condition which is likely the desired state and needs to be sustained if not improved.

ii. In many areas, the data regarding asset condition needs to be improved. Condition is one of the primary triggers for future investment decisions.

iii. The City of London has an infrastructure gap. The gap is the difference between what we plan to spend and what the infrastructure needs. The existing gap is currently at a manageable level, however …

iv. The infrastructure gap is expected to grow based on current budget plans meaning that the City needs to improve investment planning or there is a concern the gap will reach unmanageable levels in the near future.

v. The changing needs over the years are buffered through the use of reserve funds. Adding to the reserve funds will help control growth of the gap.

vi. The City needs to better understand the needs of its infrastructure which means we need to develop better information and asset management practices.

vii. Because the purpose of infrastructure is to deliver services, the City needs to better understand level of service objectives and the risks associated with delivering levels of service in order to make better decisions regarding infrastructure investments.

viii. Senior management and Council support the efforts to manage the City's infrastructure through improved asset management practices.

SECTION 4

Desired Levels of Service

4.1 Levels of Service

Fundamentally, delivering Levels of Service (LOS) is why the City of London is in business. Assets exist for the purpose of supporting the delivery of City services to its customers, both internal and external. The City is expanding the use of levels of service as a business measurement tool through the Corporate Asset Management program.

Traditionally the city has taken an Asset Stewardship approach in managing its infrastructure, making decisions based on maintaining assets in an acceptable condition. The CAM program will enable the city to adopt a serviceability focus, resulting in decisions that focus on the costs, risks and goals for the levels of service being provided by the asset(s).

An example of this would be:

1. An established level of service of 67% of roads in good condition. This is the goal.
2. The actual measurement was 61.5% of roads in good condition. This is the key performance indicator.

Because the level of service was not met, actions to achieve the established level are required. Plans would need to be developed that focus on road rehabilitation.

Under the CAM program levels of service are measured at three levels – Corporate, Customer and Technical. Examples are provided in Figure 4-1.

FIGURE 4-1 LEVEL OF SERVICE DESCRIPTION

Through the CAM program the City of London is working towards creating a register of current and target LOS across the City. This list will allow Council, staff and customers to have a clear understanding of the LOS currently delivered along with the target LOS that the City is striving for. Furthermore, this register will support budget debates allowing the City to quantify the impact of budget changes on levels of service.

A preliminary list of corporate levels of service is illustrated in Table 4-1. The preliminary register with customer and technical data can be found in Appendix 2.

TABLE 4-1 PRELIMINARY CORPORATE LEVELS OF SERVICE LIST

Service Area	Corporate Levels of Service
Drinking Water Supply *Water, Wastewater Services*	To provide clean, safe and reliable drinking water in a cost effective manner.
Wastewater – Sanitary *Water, Wastewater Services*	To protect the health of our citizens and protect the environment while maintaining competitive utility rates.
Wastewater – WWTOPS *Water, Wastewater Services*	To protect the health of our citizens and protect the environment while maintaining competitive utility rates.
Wastewater – Stormwater *Water, Wastewater Services*	Provide sustainable water resources and stormwater management in a safe, effective, and dependable way that ensures the protection of the environment while preserving and enhancing the quality of life and economic prosperity of the people of London.
Roads & Structures *Transportation Services*	To maintain safe roadways and roadsides enabling safe and efficient travel in a cost effective way.
	To maintain safe sidewalks enabling safe and efficient travel in a cost effective way.
	To maintain safe and efficient Transportation Structures enabling safe travel in a cost effective way.
Traffic *Transportation Services*	To provide pedestrian/vehicular traffic control, appropriate lighting, signage and pavement markings for the safe and effective mobility needs of the public in a cost effective manner.
Parking *Transportation Services*	Provide accessible parking for business, customers, employees, visitors and residents as well as maintain traffic and public safety through parking enforcement.
Solid Waste Garbage Collection and Disposal *Environmental Services*	Contribute to the health of the environment and the citizens of London through appropriate removal and management of garbage in a cost effective manner.
Solid Waste - Diversion *Environmental Services*	Contribute to the health of the environment and the citizens of London by; creating products of value from compostable /recyclable/reusable materials discarded by the citizens of London, promoting waste reduction and reuse opportunities and raising awareness of the benefits of recycling/composting to the environment in a cost effective manner.
Parks *Parks, Recreation & Neighbourhood Services*	Provide safe, clean parks and open space systems through proactive property management in a cost effective way.
Golf *Parks, Recreation & Neighbourhood Services*	Provide opportunities for individuals and families to engage in sport and the health and social benefits derived from participation in golf in an affordable way.
Community Centers *Parks, Recreation & Neighbourhood Services*	Increase public benefits of visits to Community Centres by: • Increasing usage of community centres (e.g.# of annual visits) • Maximizing the individual benefits to visitors • Increasing accessibility/inclusiveness • Maintain/improve the quality of experience for visitors
Aquatics *Parks, Recreation & Neighbourhood Services*	Provide safe, enjoyable aquatic opportunities and water safety education to the public in a cost effective way.

Arenas *Parks, Recreation & Neighbourhood Services*	Provide accessible, enjoyable community facilities that contribute to the wellbeing of individuals and families while promoting livable and inclusive neighbourhoods in a cost effective manner.
Forestry *Parks, Recreation & Neighbourhood Services*	Maintain and enhance, where possible, a safe, healthy, diverse and resilient urban forest which trees in boulevards, parks, woodlands, municipal golf courses, natural areas and other municipal properties in a cost effective way.
Fire *Protective Services*	Protect the health and welfare of the City's citizens through fire prevention, emergency response capabilities and public education.
Long Term Care *Social & Health Services*	Dearness Home: Provide long term care services to residents from the London-Middlesex catchment area that require respite, medical, nursing, personal, therapeutic and social work services in a cost effective way.
	Provide vulnerable seniors in London with a social setting that encompasses mental and physical well-being in a cost effective way.
	Homemakers: Provide light housekeeping services to selected residents from the London-Middlesex catchment area in a cost effective way.
Fleet Services *Corporate, Operational & Council Services*	Provide cost effective vehicle and equipment management services that include preventative maintenance, repairs, fuelling and capital replacement as needed to efficiently deliver municipal services.
Information Technology Services(ITS) *Corporate, Operational & Council Services*	Manage the City of London information technology ecosystem in an efficient and cost effective way.
Facilities *Corporate, Operational & Council Services*	Ensure an efficient and well maintained facility infrastructure that supports the delivery of programs and services for the wellbeing of our community in a cost effective way.

A fully established Level of Service register for the core services of the City is expected to evolve out of the CAM program over the next five years with two of the areas completed by the end of 2014. The actual register will be a living database that will change when appropriate to accommodate future service changes.

4.2 Current Performance

Good customer service, as perceived by both the City and its customers is a compromise between service levels and cost. Based on the information available the City generally meets its level of service expectations. A preliminary register of levels of service has been developed as a starting point for use in this report. Table 4-2 reflects an extract from the preliminary register illustrating the level of service framework. The entire preliminary register can be found in Appendix 2. The key elements for levels of service are embedded into the budget process and a full corporate register is planned through development of the Corporate Asset Management program. The level of service measures found in the budget, have been developed over time, based on historic interactions with customers, regulatory requirements, and technical/operational requirements. There are some key performance indicators/measures in line with national standards that have been widely communicated, and are tracked on a regular basis.

TABLE 4-2 PRELIMINARY LEVELS OF SERVICE (LOS) - TRANSPORTATION

Corporate LOS Description	Customer LOS Description	Customer LOS Target	Customer LOS Performance (2012 KPI)	Technical LOS Description	Technical LOS Target	Technical LOS Performance (2012 KPI)
Roads & Structures *Transportation Services*						
To maintain safe roadways and roadsides enabling safe and efficient travel in a cost effective way.	% of all Roads in Good to Very Good Condition	67%	61.5% (OMBI Data)	Maintain Expressway/Freeway PQI (Pavement Quality Index) (Network Average)	PQI > 70	PQI = 79
				Maintain Arterials & Primary Collectors PQI (Network Average)	PQI > 65	PQI = 62
				Maintain Secondary Collectors PQI (Network Average)	PQI > 60	PQI = 65
				Maintain Local Road PQI (Network Average)	PQI > 55	PQI = 60
	% of Arterials cleared when snow > 2.5cm	100%	100%	% of Winter event responses that are met or exceed Ontario Regulation 239/02 Min. Maintenance Standards	> 95%	100%
To maintain safe sidewalks enabling safe and efficient travel in a cost effective way.	% of Sidewalks cleared when snow > 8cm	100%	100%	% of Winter event responses that are met or exceed Ontario Regulation 239/02 Min. Maintenance Standards	> 95%	100%
To maintain safe and efficient Transportation Structures enabling safe travel in a cost effective way.	% of structures in Good to Very Good Condition	75%	64.3% (OMBI Data)	Maintain Structure BMS (Bridge Management System) Condition Rating (Network Average)	>7.5	7.1 (2011 data)

4.3 Trends

Internal and external trends and issues have the potential to impact the City's ability to deliver established levels of service. Monitoring these impacts is carried out to varying degrees of complexity depending on the individual Service Area. A high level review of trends impacting assets has been completed. This review is a snapshot of the issues/trends that have a high likelihood of impacting service over the next 10 Years. A sample of the review is shown in Table 4-3. The full results of the trend review can be found in Appendix 3.

TABLE 4-3 IMPACTS ON LEVEL OF SERVICE

Service Area	*Water, Wastewater Services* **Water Supply & Distribution**			
Corporate LOS Description	To provide safe, clean, reliable, high-quality water in a cost effective manner, for drinking, recreational, irrigation, sanitary, fire protection, and business needs.			
Anticipated Issue		**Likelihood of Issue Occurring in Next 10 Years**	**Anticipated Level of Service Impact**	**Discussion on the issues impact on service delivery**
Internal	**Asset Reliability** (I.e. Current and Projected Condition)	High		Most assets in fair to good condition and aging normally. Extended lifecycle has been realized by rehabilitative practices on some assets. Exceptions being cast iron pipe, ductile iron pipe and new copper water services, which are deteriorating extremely prematurely, causing more frequent service interruptions than desirable.
	Budget Constraints **Insufficient Resources**	High		Unanticipated funding increases may be required due to legislative changes. In addition, premature copper water service deterioration, in new subdivisions, is becoming a major concern of municipalities across Canada. Copper water services in new subdivisions are failing, requiring replacement in as little as 5 years. Cast iron and ductile iron pipe will require replacement before their projected life cycle resulting in a need for additional expenditure.
	Operational Changes (E.g. New design Standards, Knowledge Retention)	High		Replacements with different size, material or function, as well as completing the work via new methods and techniques. Implementation of DWQMS, including annual audit of Operational Plan.
	Efficient Operations	High		Implement CMMS and increase workforce mobility, gain efficiencies, and completely transition the Water Operations staff from paper-based to computer-based work orders. Complete the water meter replacement program, and establish optimized replacement schedule.
External	**Legislative Changes**	High		Legislative changes have been common over the past decade and all indications appear that they will continue to change. Predicting the associated impacts (financial, resources, time) is difficult. Maintaining City's drinking water accreditation, including operations consistent with DWQMS Operational Plan.

	Technology Changes	High		Increasing opportunities to utilize trenchless technologies, new materials/products, energy efficient equipment, and adaptive practices/processes. Increased expansion on the capabilities within GIS (Geographic Information System), with enhanced reliance on its use. Implement DMA practices, to monitor usage, find/repair leaks, and repair piping prior to catastrophic failure.
	Social Changes (E.g. Demographic, Demand Shifts)	Medium		Due to water conservation efforts, the demand is reducing for water leaving the City faced with reduced revenues meaning there is less money to spend on the assets. The conservation of a valuable resource is positive and long term cost should be lower which will reverse the direction of the arrow.
	Environmental Changes (E.g. Climate Change, Contamination)	Medium		Need to address more stringent water treatment requirements. Need to address Great Lakes Water Quality issues (e.g. algae blooms). Need to review climate change impacts on flooding and erosion of piped infrastructure, especially at river crossings.

Legend

 **No Change**	 **Positive Upward Trend**	 **Negative Downward Trend**

4.4 Summary

Overall the City of London satisfactorily meets the majority of existing levels of service monitored through historic key performance indicators. This system has been relied upon for the past several decades.

TABLE 4-4 SUMMARIZED CORPORATE LEVEL OF SERVICE TRENDING

Service area		Anticipated issue	Anticipated issue occurring in next 10 years		Impact on Levels of Service
			Likelihood	**Frequency**[2]	
The City of London	Internal	**Asset Reliability** (i.e. Current and Projected Condition)	High:	5 of 19	⇔
			Medium:	**11/19**	
			Low:	4/19	
		Budget Constraints Insufficient Resources	**High:**	**15/19**	↓
			Medium:	3/19	
			Low:	1/19	
		Operational Changes (E.g. New design Standards, Knowledge Retention)	**High:**	**8/19**	⇔
			Medium:	5/19	
			Low:	6/19	
	External	**Legislative Changes**	High:	7/19	⇔
			Medium:	**8/19**	
			Low:	4/19	
		Technology Changes	**High:**	**10/19**	↑
			Medium:	7/19	
			Low:	2/19	
		Social Changes (E.g. Demographic, Demand Shifts)	High:	5/19	↑
			Medium:	**10/19**	
			Low:	4/19	
		Environmental Changes (E.g. Climate Change)	High:	3/19	⇔
			Medium:	**9/19**	
			Low:	7/19	

Legend

⇔ **No Change**	↑ **Positive Upward Trend**	↓ **Negative Downward Trend**

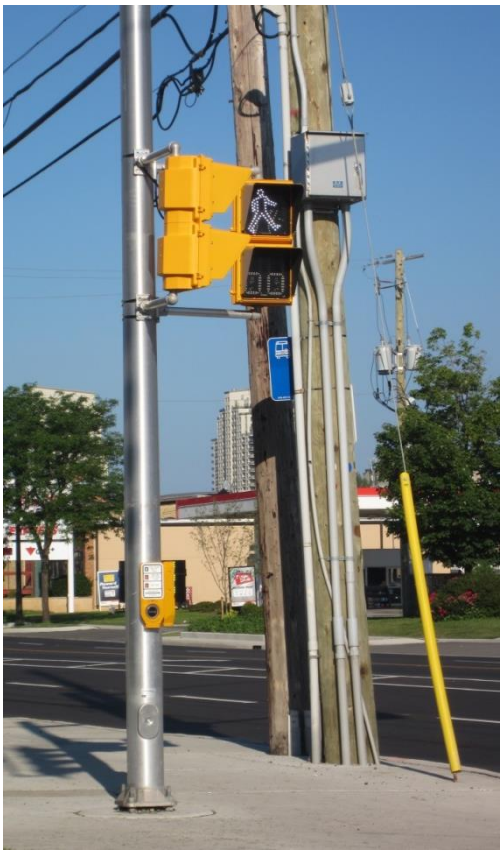
[2] Number of Service Area responses, total number of services areas participated was 19.


STORYBOOK
gardens
PLEASE ENTER THROUGH THE
TREASURE CHEST GIFT SHOP
FIRST DRAWBRIDGE ON THE LEFT!

Asset Management Strategy

5.1 Asset Management Strategy Overview

Asset Management is not new to London. It is a constantly evolving set of procedures and actions intended to obtain best value from the City's assets. This chapter describes the current and future strategies used to manage the asset base. The City of London has practiced sound asset management throughout its history in the form of a departmental asset based management style with the goal of maintaining the asset in an acceptable condition. Over time, the science of asset management has evolved to a service based focus that looks at optimizing the asset lifecycle costs considering quantifiable risk and level of service. London recognized this philosophical shift in asset management away from asset condition to the delivery of service and commenced active development of a corporate asset management program in 2011. The current state of London was analyzed and policy and strategies were written. Pilots for implementation of the new strategies are intended for implementation in 2014. This means that London is on the cusp of a major change in asset management practices. This chapter presents both existing and future asset management practices. In addition to the overall strategies, the City walks a path of continuous improvement with an ongoing flow of activities addressing asset issues. These parallel activities are also described in this chapter and are indicative of the flexibility the City exercises in the effective management of its assets.



5.2 Existing Asset Management Activities

To conform to the Ministry guideline, this section summarizes in a tabular format, indexed in Table 5-1, the planned actions (first table of each section) and describes the asset decision making approach (second table of each section) for the key Ministry focus areas; water, wastewater-sanitary, wastewater-stormwater and roads & structures. The remaining City of London service areas are overviewed in brief summaries. In addition to the life cycle and growth planned actions, the City of London undertakes many 'service improvements' in order to increase its efficiency and effectiveness.

TABLE 5-1 INDEX OF ASSET MANAGEMENT ACTIVITIES

Service Area	Planned Actions		Decision-Making Practices	
Water	Table 5-2	Page 5-2	Table 5-3	Page 5-3
Wastewater - Sanitary	Table 5-4	Page 5-4	Table 5-5	Page 5-5
Wastewater - Stormwater	Table 5-6	Page 5-6	Table 5-7	Page 5-7
Roads and Structures	Table 5-8	Page 5-8	Table 5-9	Page 5-9
	Asset Management Practices			
Remaining Service Areas	Table 5-10		Page 5-11	

5.2.1 Water

TABLE 5-2 CURRENT ASSET MANAGEMENT PRACTICES OR PLANNED ACTIONS FOR THE WATER SERVICE AREA

Non-Infrastructure Solutions *Actions or policies that can lower costs or extend useful lives*	• Operational improvements • Improvements to employee capabilities, communications, training, etc. • Ongoing search for additional funding: user fees, rates, lobby for transfer funding, P3's (Public Private Partnerships), etc. • Public involvement practices • Updating and applying design standards • Coordination efforts to optimize construction between city projects and external parties (Utility Coordinating Committees) • Financial and Planning strategies to control costs • Development controls and approvals • Encouragement of conservation of water and energy through policy, procedures, public outreach, etc. • Developing Corporate Asset Management program • Developing computerized maintenance management system
Maintenance Activities *Including regularly scheduled inspection and maintenance, or more significant repair and activities associated with unexpected events.*	• Scheduled preventative maintenance programs including air and vacuum valve maintenance program • Scheduled inspection programs for key assets – e.g. leak detection • 24 hour maintenance response capability • Reactive maintenance for significant portion of asset inventory • Maintenance also triggered by the public 'inspection' through phone and web interface available for public reports/complaints • Service improvements such as Acoustic Fibre Optic Conversion to SCADA

Renewal/Rehab Activities
Significant repairs designed to extend the life of the asset.
	• Watermain rehabilitation based on the current condition of the pipe
	  ○ Cleaning
	  ○ Re-lining including cement lining and structural lining
	  ○ Cathodic protection (anode program)
	• Water facilities are rehabilitated based on facility inspection reports
	  ○ Refurbish pumps, etc.

Replacement Activities
Activities that are expected to occur once an asset has reached the end of its useful life and renewal/rehab is no longer an option.
	• Watermain replacement based on the current condition of the pipe
	  ○ Complete open-cut replacement
	  ○ Horizontal directional drilling (HDD)
	• Meter Replacement using newer technology
	• Lead service replacement program – Water quality reasons
	• Water facilities replaced based on facility inspection reports
	  ○ Replace pumps, valves, etc.
	• Whenever assets are built, applicable service improvements are made

Disposal Activities
Activities associated with disposing of an asset once it has reached the end of its useful life, or is otherwise no longer needed by the municipality.
	• Water main disposal
	  ○ Abandoned in situ, no cost recovery
	  ○ Removed, no cost recovery
	  ○ Data on old water main is stored in GIS (Geographic Information System). GIS tracks the asset status (i.e. active, abandoned, and/ or removed)
	• Water facilities disposal
	  ○ Equipment removed. Land reused or sold
	  ○ Equipment disposed or inventoried as spare parts, no cost recovery

Expansion Activities *Planned activities required to extend services to previously unserved areas – or expand services to meet growth demands.*	• Undertake Environmental Assessments • Capital growth projects-watermain extensions and expansions, pump stations • Assumption of subdivisions, commercial and industrial extensions, local improvements, etc. • Interim works (typically one to ten years) built to provide service until major works become operational • Whenever assets are built, applicable service improvements are made

5.2.1.1 Water Assets Decision Making Approach

TABLE 5-3 DECISION MAKING APPROACH- WATER ASSETS

Asset Inventory & Condition	• It is not possible to inspect the condition of underground infrastructure with the same ease as a readily accessible surface asset. The Water service area collects available data from various sources to calculate a condition rating for the water infrastructure which is used to prioritize renewal activities. • A Water Distribution System Needs Study Update (R. V. Anderson, 2004) and London Cast Iron Water Main Renewal Plan (R. V. Anderson, 2013) provided snapshots of information on the overall condition of watermain infrastructure. Water facilities condition is assessed with occasional studies. Some studies are routine such the water reservoir inspections which are completed on a five year cycle. • Watermain base inventory information is stored in WIMS and GIS. Most of the watermain condition information is stored in an access database program called WCAP. The water meter inventory is maintained within the London Hydro SAP system that City staff have access to. • WCAP is used as a modeling tool to rank condition on a 2-10 ranking scale. It functions on demand to generate a snapshot in time. Summary condition reports assessing priorities are generated roughly every two to five years. WCAP uses soil types, age, critical customers, chlorine residual, customer complaints, poor hydraulic condition, and number of breaks, etc. to determine the condition of pipes and assign renewal priorities. • Innovative inspection techniques such as electromagnetic, acoustic fibre optic listening, acoustic leak detection are being used to more accurately determine large diameter pipe condition and remaining life of these high value assets. • Water is one of the service areas planned for incorporation in the new computerized maintenance management system which will provide work order level of information to aid asset management activities. This includes links to HR/fleet/payroll/stores, manuals and drawings, and performance measures. • Data collection is also being improved through the capture of valve/hydrant field data via tablet with GIS interface. • Considerable data continues to be collected manually including leak detection, Cathodic protection, water quality testing, meter testing and renewal, hydrant flow testing, valve maintenance records, and hydrant maintenance systems.
Evaluation of Renewal Alternatives	• WCAP is the main planning tool used to create the Water capital project list through the prioritization of pipe condition through a structured ranking process. • Financial and risk based assessments are also used to prioritize the list. • Water Services regularly evaluate newer technologies including cement lining, structural lining, anode program, HDD, CPP structural and leak inspection, etc. • Sub-standard flow and pressure are identified by using the City's hydraulic model INFO Water and routine hydrant flow tests to provide additional input for pipe replacement and fire protection decision making. • The identification of pipe renewal needs may be triggered by customer complaints on quality, measured quality deficiencies, and/or the City's water quality model INFO Water which is used to provide additional input for pipe rehabilitation or replacement decision making.
Project Prioritization/Coordination	• Water Engineering is responsible for managing the water capital project list and recommending the list for annual budget approval. They rely on a large number of background sources to make their determination including, WCAP, INFO Water, the Drinking Water Quality Management System, the Official Plan, the Growth Management Implementation Strategy, the Development Charges Study, the 20 Year Water Financial Plan, the London Water Master Plan, the Water Distribution System Needs Analysis, including reports like the cast iron pipe study and numerous other field data provided by Water Operations staff. • The City coordinates high level planning with other utilities on annual basis followed by a more detailed level of planning for actual construction through Utility Coordinating Committees (UCC). UCC deals with both internal and for external utilities and meets every two weeks to coordinate construction schedules. • Coordination is generally not required for minor scale maintenance work. • Water quality and integrity of supply are the main priorities. Risk assessments including critical customers and funding analysis are used in the assessment of priorities.
Financial Planning	• The City uses a 20 Year Water Financial Plan to describe infrastructure renewal planning, resource requirements and resulting water rates. It derives its information from estimates prepared by the Water Engineering and Operations groups. Approval of the current year projects and water rates are set annually through the budget process.

	• Regulations continue to change rapidly in the water business impacting investment planning.

5.2.2 Wastewater - Sanitary

TABLE 5-4 CURRENT ASSET MANAGEMENT PRACTICES FOR THE WASTEWATER - SANITARY SERVICE AREA

Non-Infrastructure Solutions *Actions or policies that can lower costs or extend useful lives*	• Sewer Use Bylaw that regulates discharge quality to sewer • Operational improvements • Improvements to employee capabilities, communications, training, etc. • Ongoing search for additional funding: user fees, rates, lobby for transfer funding, P3's, etc. • Changes to levels of service • Public involvement practices including awareness training, posters and website • Updating and applying design standards • Coordination efforts to optimize construction between city projects and external parties (UCC) • Financial and Planning strategies to control costs e.g. residential intensification • Development controls and approvals e.g. limit septic tank use • Developing Corporate Asset Management program • Developing computerized maintenance management system
Maintenance Activities *Including regularly scheduled inspection and maintenance, or more significant repair and activities associated with unexpected events.*	• Scheduled preventative maintenance programs for the majority of assets • Use JDE for work orders • Scheduled inspection programs for key assets – e.g. CCTV visual • 24 hour maintenance response capability • Maintenance also triggered by the public 'inspection' through phone and web interface available for public reports/complaints • Routine Flushing and Cleaning – 700 to 1000 km annually (2014 Business Plan)

Renewal/Rehab Activities
Significant repairs designed to extend the life of the asset.
	• Sanitary sewer rehabilitation is based on the current condition of the pipe
	  ○ Pipe lining e.g. Cured In Place Pipe (CIPP), structural lining using horizontal drill machine
	  ○ Spot repairs
	  ○ Manhole replacement
	  ○ Joint sealing
	  ○ Flushing & Cleaning
	• Wastewater treatment facilities are rehabilitated based on facility inspection reports
	  ○ Refurbish tanks, pumps, mixers, aerators, filters etc.
	  ○ Incinerator refurbished routinely
	• 20 to 25 km of sewer rehabilitated annually(2014 Business Plan)

Replacement Activities
Activities that are expected to occur once an asset has reached the end of its useful life and renewal/rehab is no longer an option.
	• **Sanitary sewer** Replacement is based on the condition rating of the infrastructure. In most cases, once the pipe has been inspected and given a condition rating, city staff can determine the best method for replacement.
	  ○ Complete open-cut replacement
	  ○ Horizontal direction drilling (HDD)
	  ○ Pipe bursting
	  ○ Meter replacement using newer technology
	• Full replacement is the most common method for collapsed or heavily deteriorating pipe.
	• Look for clusters of poor condition rated sewers and apply high priority.
	• Coordinate with water, roads projects and through UCC.
	• **Wastewater facilities** are replaced based on facility inspection reports and are usually done on the pieces of equipment within the facility rather than the replacement of an entire wastewater treatment plant such as replace pump station, tankage, incinerator refurbishments, etc.
	• Whenever assets are built, applicable service improvements are made. Recent

	significant improvements include upgraded sludge and ash dewatering facilities.

Disposal Activities
Activities associated with disposing of an asset once it has reached the end of its useful life, or is otherwise no longer needed by the municipality.
	• Sewer disposal
	  ○ Current practice is removal with no cost recovery. Historically some left in situ.
	  ○ Data on old sewers is stored in GIS. GIS tracks the asset status (i.e. active, abandoned, and/ or removed)
	• Wastewater facilities disposal is very infrequent, usually pump stations
	  ○ Removed and land is reused or sold
	  ○ Equipment disposed or inventoried as spare parts, usually no cost recovery

Expansion Activities *Planned activities required to extend services to previously unserved areas – or expand services to meet growth demands.*	• Undertake Environmental Assessments. • Capital growth projects-wastewater trunk extensions and expansions, pump stations, treatment process upgrades. • Assumption of subdivisions, commercial and industrial extensions, local improvements, etc. • Interim works (typically one to ten years) built to provide temporary service pending construction of permanent infrastructure assets. These are usually sanitary pump stations and force mains. • Whenever assets are built, applicable service improvements are made. These can include improved technologies such as dewatering upgrades, etc.

5.2.2.1 Wastewater - Sanitary Decision Making Approach

TABLE 5-5 DECISION MAKING APPROACH- WASTEWATER, SANITARY

Determination of Asset Condition	• Sanitary sewers face similar challenges for condition evaluation as water pipes but have the benefit of some better information through the use of video inspection capability. • Inventory information is stored in the SIMS and Geodatabase systems. • Condition information is most accurately determined through the video inspection which covers as much pipe as the budget allows usually in the order of 10 to 15% annually. All trunk pipes are video inspected within a minimum 10 year cycle. Video inspection is expensive and slow but very accurate for the pipe inspected. • Results from the CCTV investigations are used to develop strategic replacement, lining, and spot repair and excavation repair programs. This type of assessment is essential to administrators responsible for managing the City's sewer assets. • The City also uses performance indicators like maintenance history via the number of failures and blockages to monitor condition and guide rehabilitation planning. • Condition inspection and video information is stored in the Sewer Sleuth software program and used to plan renewal activities. • Major process equipment in the wastewater treatment plants is addressed through specific assessment reports as well as routine operator inspection and maintenance. This equipment is monitored through SCADA processes with a high degree of reliability. • Wastewater-sanitary is one of the service areas planned for incorporation in the new computerized maintenance management system which will provide work order level of information to aid asset management activities. This includes links to HR/fleet/payroll/stores, manuals and drawings, and performance measures.

Evaluation of Renewal Alternatives	• Sewer Sleuth is the main tool used to assess the work that is needed. The software system allows the analysis of pipe condition based on CCTV inspection, age, failure history, pipe material, hydraulics and importance factors. The Sewer Sleuth process rates the pipe as Good, Fair 1, 2, 3 Poor 1, 2, 3, etc.
	• Once the decision is made to replace the sewer, alternatives for replacement are evaluated considering needs for growth, alternate routing, capacity, available technologies and cost.
	• Based on the value of work;
	  ○ a distinct project is created,
	  ○ the work is merged into a pooled project containing several smaller locations, or
	  ○ work is absorbed as part of the routine operating and maintenance workload.

	• With respect to the wastewater treatment plants and sanitary pump stations, major refurbishments are generally undertaken based on recommendations from studies. Some equipment is routinely refurbished based on a recognized life cycle like the sludge incinerator. • New technologies for sewage treatment routinely come forward and are incorporated into refurbishments based on their merit with respect to effectiveness, growth and cost. When a major technology change is proposed, the change is justified through the business case and capital project processes.
Project Prioritization/Coordination	• When determining the timing and priority for renewals, a number of factors are considered, including: o Seriousness of condition from video assessments (where available) o Inflow and Infiltration o Environmental impacts/ issues (source water protection) o Incidents of basement flooding o Spatially located assets (e.g. Water, Roads, utilities) age and condition rating o Coordination with water and road renewal activities • Capital projects are prioritized based on available funds, growth, coordination with spatially located assets, age and condition of the asset.
Financial Planning	• The City uses a 20 Year Wastewater Financial Plan to plan wastewater rates and infrastructure renewal. It derives its information from estimates prepared by the Wastewater Engineering group. Approval of the current year projects and wastewater rates are set annually through the budget process and generally conform to the 20 Year Wastewater Financial Plan.

5.2.3 Wastewater - Stormwater

TABLE 5-6 CURRENT ASSET MANAGEMENT PRACTICES FOR THE WASTEWATER - STORMWATER SERVICE AREA

Non-Infrastructure Solutions *Actions or policies that can lower costs or extend useful lives*	• Ongoing search for funding mechanisms, fees, rates, lobby for transfer funding, P3's, etc. • Improvements to employee capabilities, communications, training, etc. • Operational improvements • Changes to levels of service • Public involvement practices • Updating and applying design standards • Coordination efforts to optimize construction between city projects and external parties (UCC) • Financial and Planning strategies to control costs e.g. encourage private property stormwater management systems • Developing Corporate Asset Management program • Developing computerized maintenance management system
Maintenance Activities *Including regularly scheduled inspection and maintenance, or more significant repair and activities associated with unexpected events.*	• Scheduled preventative maintenance programs (e.g. pipe flushing, annual clean out program for catch basins, stormwater facilities inlet/outlets cleaning, etc.) • Scheduled inspection programs for key assets • 24 hour maintenance response capability • Reactive maintenance for significant portion of asset inventory • Maintenance also triggered by the public 'inspection' through phone and web interface available for public reports/complaints
Renewal/Rehab Activities *Significant repairs designed to extend the life of the asset.*	• Stormwater pipes rehabilitation is similar to processes used for sanitary sewers and based on the condition rating. However storm sewers are inspected less often using the video inspection process. Rehabilitation activities include: Pipe lining {e.g. Cured In Place Pipe (CIPP), structural lining using horizontal drill machine}, spot repairs, Manhole replacement and joint sealing. • Stormwater facilities are generally newer and have had minimal demand for renewal to date. Two ponds have been rehabilitated. Renewals are driven by field inspections and can be triggered by observations from the public. • Dykes and other flood/erosion control mechanisms are rehabilitated triggered by field observations.

Replacement Activities *Activities that are expected to occur once an asset has reached the end of its useful life and renewal/rehab is no longer an option.*	• Full replacement is the most common method for collapsed or heavily deteriorated pipe. However lining, spot repairs, etc. can be used. Infiltration and exfiltration are not significant concerns for stormwater unless they lead to sinkholes. Rather the priority is to prevent flooding. • Stormwater facilities projects are generally developer driven. There is no history of replacement.
Disposal Activities *Activities associated with disposing of an asset once it has reached the end of its useful life, or is otherwise no longer needed by the municipality.*	• When Stormwater pipe is abandoned or replaced, the data in stored in GIS. GIS tracks the asset status (i.e. active, abandoned, and/ or removed). • Aside from occasional decommissioning of temporary ponds, stormwater facilities are not typically disposed. However should disposal of a permanent facility occur, the City could sell the land if no longer needed or retain it as parkland.
Expansion Activities *Planned activities required to extend services to previously unserved areas – or expand services to meet growth demands.*	• Undertake Environmental Assessments • Capital growth projects-stormwater trunk extensions and expansions, stormwater ponds • Assumption of subdivisions, commercial and industrial extensions, local improvements, etc. • Interim works (typically one to ten years) built to provide temporary service, usually temporary stormwater ponds, pending construction of permanent infrastructure assets. • Whenever assets are built, applicable service improvements are considered. These can include technologies such as permeable pavement, Biofilters, etc.

5.2.3.1 Wastewater – Stormwater Decision Making Approach

TABLE 5-7 DECISION MAKING APPROACH- WASTEWATER, STORMWATER

Determination of Asset Condition	• A close circuit sewer inspection (CCTV) service contract is used to obtain overall condition ratings on designated stormwater sewers. Results from the CCTV investigations are used to develop strategic full replacement, lining, and spot repair and excavation repair programs. Condition inspection and video information is stored in Sewer Sleuth and used to plan renewal activities. Filed inspections and observations reported by concerned citizens add to the condition information base. • The majority of stormwater facility equipment is too new to have reached the end of its useful life. Routine operator inspection and maintenance activities tend to trigger any significant responses if needed. Ad hoc surveys are also completed.
Evaluation of Renewal Alternatives	• Stormwater pipe renewal is triggered by condition analysis based on CCTV inspection, age, failure history, pipe material, capacity and importance factors. Sewer Sleuth rates the pipe as Good, Fair 1, 2, 3 Poor 1, 2, 3, etc. Replacements are planned based on condition and available funding. • Renewal of facilities has not been a significant need as yet although there have been some instances of premature failure which have been rectified on an unplanned basis. Alternate disposal mechanisms and new technologies are kept under consideration at all major lifecycle steps for stormwater facilities.
Project Prioritization/Coordination	• When determining the program for future years, a number of factors are considered, including: o CCTV assessments (where available) o Capacity o Environmental impacts/ issues (source water protection) o Incidents of basement flooding o Spatially located assets (e.g. Water, Roads, utilities) age and condition rating o Water and road replacement program • Renewal and rehabilitation activities are identified based on maintenance and condition assessments. Capital projects are prioritized based on growth, coordination with spatially located assets, age and condition of the asset.
Financial Planning	• The City uses a 20 Year Wastewater Financial Plan to plan wastewater rates and infrastructure renewal. It derives its information from estimates prepared by the Wastewater Engineering group. Approval of the current year projects and wastewater rates are set annually through the budget process and generally conform to the Plan.

5.2.4 Roads & Structures

TABLE 5-8 CURRENT ASSET MANAGEMENT PRACTICES FOR ROADS & STRUCTURES SERVICE AREA

Non-Infrastructure Solutions *Actions or policies that can lower costs or extend useful lives*	• Operational improvements. • Improvements to employee capabilities, communications, training, etc. • Ongoing search for funding mechanisms, fees, rates, lobby for transfer funding, P3's, etc. • Public transit incentives • Changes to levels of service • Public involvement practices such as adopt a road, spring cleanup • Updating and applying design standards • Coordination efforts to optimize construction between city projects and external parties (UCC); one of the UCC's goals is to minimize utility cuts • Financial and Planning strategies to control costs • Development controls and approvals • Promote intensification of land use • Developing Corporate Asset Management program • Developing computerized maintenance management system
Maintenance Activities *Including regularly scheduled inspection and maintenance, or more significant repair and activities associated with unexpected events.*	• 24 hour maintenance response capability • Routine maintenance such as street sweeping, pothole patching, utility cut repairs, sidewalk levelling, etc. (3717 km road, 1471 km sidewalk) • Snow and ice removal maintenance • Meet Provincial Minimum Maintenance Standards. • Scheduled preventative maintenance programs such as the rout and seal program to stop leakage damage. • Scheduled inspection programs -25% per year pavement quality and once every 2 years for structures • Reactive maintenance for significant portion of asset inventory • Maintenance also triggered by the public 'inspection' through phone and web interface available for public reports/complaints, Transportation Operations Public Service (TOPS) • 'Report a Pot Hole' Program • Maintenance of Lighting and Signals infrastructure is contracted out. The nature and frequency of re-lamping and pole maintenance are based on best practices and requirements in the contracts. The City is directly responsible for signal timing and operation. • Signage -Major regulatory signs (e.g. Stop Signs) are tested for reflectivity on a rotating basis and maintained based on the evaluation results. Minor regulatory (e.g. No Parking) and Guide/Information signs are managed reactively based on citizen inquiries and staff observations. • Line markings on major routes are reapplied semi-annually. The condition of the line markings vary throughout the year based on traffic, type of marking and time since reapplication.
Renewal/Rehab Activities *Significant repairs designed to extend the life of the asset.*	• Road & structures are maintained on a lifecycle basis through the selection of the optimal treatment based on their current condition and projected deterioration. Road renewal and rehabilitation treatments range from patching and crack sealing, to resurfacing, to total reconstruction, and are selected to minimize the lifecycle cost of operating each asset within its target state. Road sections that are at an optimal time for specific rehabilitation treatments are placed on a list for prioritization. Rehabilitation is dependent on budget availability. • Structures rehabilitation or replacement is based on structure age and assumed life spans and the result of condition surveys: Renewal and rehabilitation treatments include: Asphalt deck resurfacing, joint replacement, patching or waterproofing of concrete deck, etc.
Replacement Activities *Activities that are expected to occur once an asset has reached the end of its useful life and renewal/rehab is no longer an option.*	• Roadways are maintained on a lifecycle basis through the selection of the optimal treatment based on their current condition and projected deterioration. Congestion is an issue in London and leads to early deterioration. Replacement activities are selected to minimize the lifecycle cost of operating each asset within its target state. Road sections that are at an optimal time for replacement are placed on a list for prioritization and constructed pending budget availability.

Disposal Activities *Activities associated with disposing of an asset once it has reached the end of its useful life, or is otherwise no longer needed by the municipality.*	• Roadway disposals are infrequent and generally related to rerouting. Should a section of a road be permanently closed, the section can be deconstructed and the land sold or repurposed.
Expansion Activities *Planned activities required to extend services to previously unserved areas – or expand services to meet growth demands.*	• Undertake Environmental Assessments • Identify needs through traffic counts • Capital growth projects-road extensions and expansions, additional lanes, new bridges. • Assumption of subdivisions, commercial and industrial extensions, etc. • Whenever assets are built, applicable service improvements are made. These can include technologies such as traffic calming equipment, pavement material alternatives, etc.

5.2.4.1 Road & Structures Decision Making Approach

TABLE 5-9 DECISION MAKING APPROACH- ROADS

Determination of Asset Condition	• Condition surveys of the paved road network, are completed on approximately one- quarter of the network annually such that the entire network is assessed every four years. The assessment, using the custom built London program by Stantec called RoadMatrix, summarizes condition using the following Performance Indicators:
	  ○ Riding Comfort Index (RCI), which represents the surface roughness on a scale of zero (0) to 100, where 100 indicates a very smooth surface.
	  ○ Surface Distress Index (SDI), which represents the presence, severity, and extent of various surface defects on a scale of zero (0) to 100, where 100 indicates a pavement with no distress.
	  ○ Pavement Quality Index (PQI), which represents the overall performance of the pavement through a combination of the individual indices described above. This index is also evaluated on a scale of zero (0) to 100, where 100 indicates a "perfect" pavement.
	• Condition inspections for structures (Culvert, bridges, retaining walls, etc.) are completed in a 2 year cycle for all major structures. Bridge components are assessed for severity and extent of deterioration as well as overall condition. An overall Bridge Condition Index is provided. A value of 10 indicates that the bridge is in excellent condition and a value of zero indicates that the bridge is in extremely poor condition.
	• Sidewalks are inspected annually on a visual basis primarily for tripping hazards.

Evaluation of Renewal Alternatives	• The condition of the road determines which type of available treatment (i.e. maintenance or rehabilitation activities) is applied such as rout and seal, shave and pave, or a full rebuild. New technologies, (i.e. new pavement materials, paint type, etc.), are tested and used based on their merit. • The optimal rehabilitation alternative is determined using life cycle economic analysis techniques, which involves an assessment of both the effectiveness of each alternative and an estimate of the capital cost to implement it. The ratio of effectiveness to cost produces a cost- effectiveness number (or more accurately a net benefit/cost ratio), which allows rehabilitation alternatives to be compared to each other. • Alternatives are also assessed against design standards and guidelines.

Project Prioritization/Coordination	• Road renewal planning is accomplished via sophisticated modeling tools; Maintenance and Rehabilitation Analysis and Priority Programming (Budget) Analysis, using a number of road condition indices. Condition data is collected from the road surveys and processed to generate network averages which help set the different options available to renew the individual pavement segments from crack sealing to full replacement as warranted. Single pavement sections that exceeded rehabilitation triggers were historically selected for renewal but this practice has evolved away from "worst-first" to promote more cost-effective proactive and preventive rehabilitations. The capabilities of the road maintenance analysis have increased to the point where performance of the road can be managed more efficiently than segment by segment. The City invests in maintaining the network averages at an acceptable level rather than the individual section. The combination of pavement type and functional class define network goals as the following parameters: o Minimum acceptable PQI - when the average for the network is measured or predicted to have a PQI less than or equal to the following recently updated trigger values. o Expressway and Freeway PQI network average = 70 o Arterials and Primary Collectors PQI network average = 65 o Secondary Collectors PQI network average = 60 o Local Streets PQI network average = 55 o Minimum acceptable life - used to reject a treatment recommendation. o PQI terminal value - used to calculate a road section's remaining service life. o Traffic Limit - used to determine sectional traffic. o EGT Limit - used to determine sectional structure class (i.e. Thin, Medium, Thick). o Subgrade Limit - used to determine sectional subgrade class. o RCI/SDI/SAI/PQI (Riding Comfort Index/Surface Distress Index/Structural Adequacy Index/Pavement Quality Index) curve set settings - used to select the standard deterioration o RCI/SDI/SAI/PQI curve set for a given pavement type and functional class. • The final product of the analysis becomes a list of road segments with suggested repair methodologies and the cost estimated for the work. • Transportation employs a decision tree approach to determine the road rehabilitation strategy. The result is a documented list of roads, with a recommended rehabilitation treatment and the cost of the work. This forms the base for the road life cycle renewal budget deliberations. • Similarly Structures inspection reports recommend routine, minor or major maintenance practices and include their corresponding cost for use in budget deliberations. • Transportation works in conjunction with internal and external parties and developers to establish priorities and coordinate construction in order to optimize project costs and reduce social impact.
Financial Planning	• In a perfect world, pavement sections would be rehabilitated whenever required. In the real world, budgetary constraints determine rehabilitation implementation strategies. The Road Matrix Budget Analysis procedure is used to prioritize the projects in the most cost-effective manner through user defined budget scenarios. The budget and minimum regulatory requirements drive the road rehabilitation strategy rather than the need to optimize service delivery and asset performance.

5.2.5 Remaining Service Areas Current Asset Management Practices

The following summary (Table 5-10) is intended to briefly illustrate the existing asset management practice for the remaining service areas that although excluded from the priority provincial requirements remain important to the City's corporate asset management interests and currently fall within the scope of the Corporate Asset Management Program.

TABLE 5-10 ASSET MANAGEMENT PRACTICES OF OTHER CITY SERVICE AREAS

Service Area	Discussion
Parking	• **Parking Meters**-The City is transitioning from the existing mechanical single/double meters to solar powered digital pay stations covering from an average of 10 on-street parking stalls to entire or partial parking lots. The conversion is expected to be completed within the next five years. Spreading the transition over several years allows life cycle asset management to be used in the future once the new stations approach the end of their useful lives. • **Parking Surface lot** maintenance is primarily reactive based on responding to observations by staff and feedback from the public. The Parking service area has plans underway to complete a condition study for surface lots and address any concerns that are raised. • Parking defends their capital projects through business cases and the annual budget process.
Solid Waste	• Solid Waste has a long history of meticulous planning to manage their assets. The nature of the landfilling business is that it takes many years to garner approval for the creation or expansion of a site. The permanent nature of the land use requires a diligent assessment of alternatives. The environmental assessment process and the amount of public involvement are significant. Solid Waste formalizes major asset investment plans through a 10 year capital plan. They routinely track and document the cost of delivering services through annual budget and business plans. Solid Waste uses triple bottom-line analysis, complaint data and customer satisfaction surveys to prepare capital projects and future roadmaps. Business expansion and waste reduction programs are defined in the Road Map 2.0 - The Road to Increased Resource Recovery and Zero Waste and the Solid Waste business plan. • Routine rehabilitation and replacement activities are based on field observations against attributes determined by staff, including mechanic inspection reports. Some maintenance is triggered by feedback from the public. • Based on projected use, the current landfill will reach capacity in about 2023, at which point it will require an expansion (or other long term disposal solution) to provide the city with the space needed to meet its future needs. • Maintenance and renewal of the garbage fleet is managed by the Fleet service area, while recycle pickup is contracted such that asset management of these vehicles is the responsibility of the contractor.
Recreation	• Recreation includes arenas, aquatics, community centers, golf, attractions and senior centers. • **Buildings** - The condition of the structures used for Recreation activities is regularly evaluated through comprehensive condition assessments using an industry-standard Facility Condition Index (FCI) that accurately reflects the overall condition of the facilities (building envelope, mechanical and electrical systems, etc.). Building maintenance is undertaken by the Facilities group. • **Equipment** -Similar programs do not exist for the recreational equipment inside the facilities albeit critical to the function of the service. Equipment is monitored and problems addressed when triggered by staff observations and public feedback. • Recreation asset management decisions are made using criteria from the Planning Act, policy, the Official Plan, bylaws and are guided by design standards and Master Plans.
Parks	• **Land** is an important element in the overall value of Parks but unlike most assets, land does not have a life cycle. It is maintained into perpetuity. Asset Management practices are focused on assets other than land. • Parks facilities (structures) are formally assessed as part of the City's Facilities program, with issues resolved operationally or as part of capital improvements. • The approach to asset management for the living portion of Parks assets is somewhat unique because it entails **living assets**, grass, trees, etc. The product can be qualitative and not easily measured. Typically maintenance is undertaken based on available resources, routine schedules like grass cutting, and field observations. • Currently data on the condition on the majority of the Parks **equipment assets**, like benches, is not formally collected and recorded. Maintenance is predominantly reactive. Regular visual safety inspections are conducted as part of maintenance and grounds keeping activities. All significant safety issues are addressed immediately. Maintenance issues, along with concerns identified by staff and the public are prioritized and

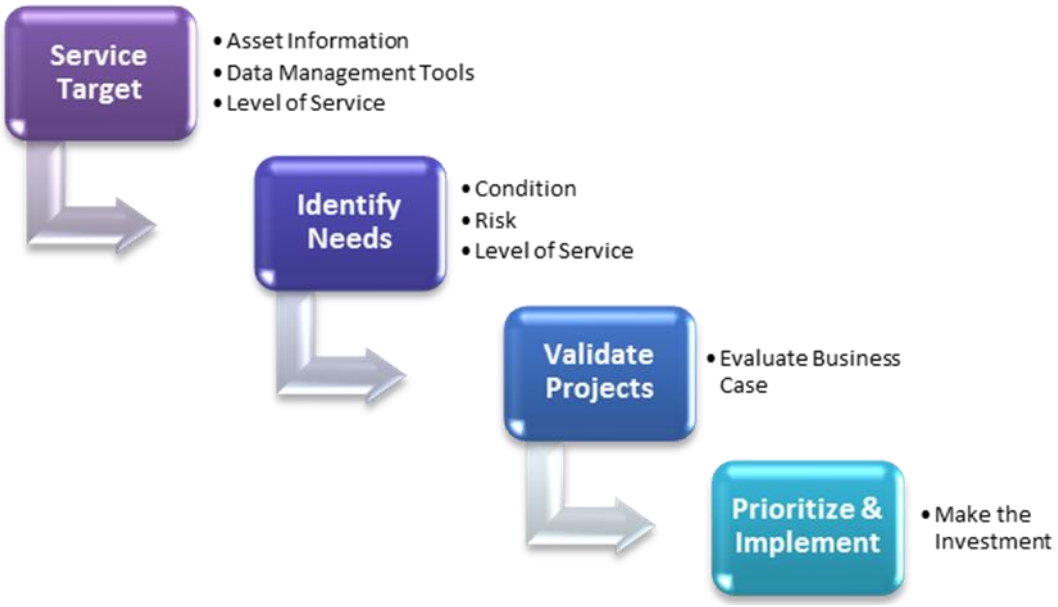
Service Area	Discussion
	addressed based on need. • Parks does not currently have computerized asset management or maintenance management capability although work has been initiated to implement a computerized maintenance management system.
Urban Forestry	• The City manages its trees through planning and maintenance activities including trimming, removals, plantings, treatment and watering based on available resources. • In general, the total number and condition of trees is decreasing with respect to the inventory of older trees and specific vulnerable species such as ash which is being devastated by Emerald Ash Borer. • Where practical trees are preserved. However, tree removal is often necessary in boulevard locations due to the ongoing replacement of aging infrastructure, increased urban intensification and development pressure, poor historical maintenance practices and environmental factors such as storms and old age. Manicured park trees are often impacted by the level of use and management practices while woodland trees are impacted more by environmental factors such as invasive species, disease and adjacent development.
Fire	• Given the critical nature of the fire protection service, these assets are rigorously maintained to support the reliable delivery of front line service. They receive monthly and more rigorous biannual and annual inspections. Unlike the rest of the City's Fleet assets, Fire maintains their own equipment. • **Fire Stations and Facilities (Buildings)** are formally assessed as part of the City's Facilities program. Investment needs are identified and prioritized based on service impact, and addressed operationally and through capital renewal. • **Fire Vehicles & Equipment** replacement decisions are based on age and expected useful life estimates for each unit, and not on condition assessment and maintenance records. • Fire & Rescue manages their assets based on a ten year plan that defines the investments needed to support ongoing facility improvements. Single purpose Fire Engines and dedicated Rescue Units are being replaced over the long term with multi-purpose vehicles capable of providing more operational flexibility, resiliency and depth of coverage; resulting in a change of the configuration of the Fire fleet. • Fire does not have a systemized asset management system to assist its decision makers.
Long Term Care	• Levels of service for Long Term Care are primarily dictated by regulatory requirements. The focus is appropriately on patient care rather than maximizing asset use. • **Building** -The City's Facilities Division is responsible for maintaining and operating the Dearness buildings in compliance with the Long-Term Care Homes Act, Provincial regulations and safety standards. The condition of the Dearness buildings are regularly evaluated through comprehensive condition assessments, which establishes and updates an industry-standard Facility Condition Index (FCI) score that reflects accurately the overall condition of the facilities (building envelope, mechanical and electrical systems, etc.). • Dearness does not have asset management capability with respect to its other **equipment assets** like beds and lifts, etc. Although minor in value compared to the other City of London assets, Dearness provides a critical service and would benefit from a formal asset inventory and management system regarding its equipment assets. This would reduce service delivery risks and is planned as part of the CAM program.
Corporate & Culture Facilities	• Most City owned buildings are maintained and renewed through the Facilities group in partnership with the service provider using the building. This includes the direct care of the building envelope, mechanical and electrical systems, etc. Most have been discussed in the previous sections. The remainder consist of facilities used by multiple service areas such as office buildings and cultural facilities. • **Facilities** - The condition of all Facilities is regularly evaluated through comprehensive condition assessments, which establish and update an industry-standard Facility Condition Index (FCI) that reflects the overall condition of the facilities. • **Contents** - Office facilities have limited asset management information on contents although IT deals with systems equipment. Remaining information gaps will be dealt with as part of the CAM program. • **Public Art** - Murals, sculptures, historical artifacts, memorials and water features- the City of London owns more than 30 pieces of public art that can be found throughout the city. One of the priorities of the Culture Office, with support from the Facilities Division has been to update the cultural asset inventory with preventative maintenance and life cycle renewal plans and costs. This will ensure that there is future longevity for each cultural asset in the City of London inventory. • The City generally budgets within service areas following a business case process when constructing a new or modifying an old facility. For significant buildings, special studies are undertaken by third parties to define needs and options for renewal. With facilities, there can be significant involvement from Boards, agencies and even contracted third parties particularly with regard to cultural assets.

Service Area	Discussion
Fleet	• The Fleet Division uses highly evolved asset management practices covering the acquisition, maintenance, repair, disposal and management of the corporate fleet. These include: ○ Operating on a full cost recovery position ○ Adopting a life cycle approach to fleet replacement including fleet replacement planning along with taking into account emerging technology and trends and reducing environmental impacts where possible. ○ Utilizing a comprehensive computerized fleet and fuel management system for tracking vehicles and equipment, work order, preventative maintenance and inspection programs, parts inventory, purchasing fuelling and associated costs ○ Carrying out regular preventive maintenance of all vehicles ○ Utilizing the optimum mix of in-house rental of vehicles supplemented by contracts with external providers of cars and construction equipment
Information Technology	• Unlike most types of assets owned by the City, many Information Technology Services (ITS) assets, like desktops and printers, have short estimated useful lives of 3 to 4 years. Many of the assets are leased rather than owned by the City. The asset base is located throughout the City. Given the normally short useful life, it is not practical to implement a condition monitoring program. Most City owned IT assets are run to failure, obsolescence or the end of useful life. However there is limited inventory information for technology assets directly owned by the City while leased inventory is well documented. • This service area is in the process of implementing a program called the Information Technology Asset Management (ITAM) which will provide more robust asset information and be useful for planning IT investments. • Technology asset concerns are captured on a reactive basis through routine maintenance program executions or problems reported by the user to the internal IT Helpdesk.

5.3 Future Asset Management Program

In the past, the City guided asset management investments primarily by considering the condition and age of the asset. Where new assets were considered for service improvements and growth, the City used business cases at a high level usually excluding information on risk or level of service and exercising little standardized methodology across the service areas. The Corporate Asset Management program is under way that will change this circumstance by adopting recognized asset life cycle management practices that include considerations for risk and level of service (Figure 5-1). An asset management policy has been approved and program strategies finalized. Pilot Trials are underway. This section of the report describes the program strategies currently being piloted in London.

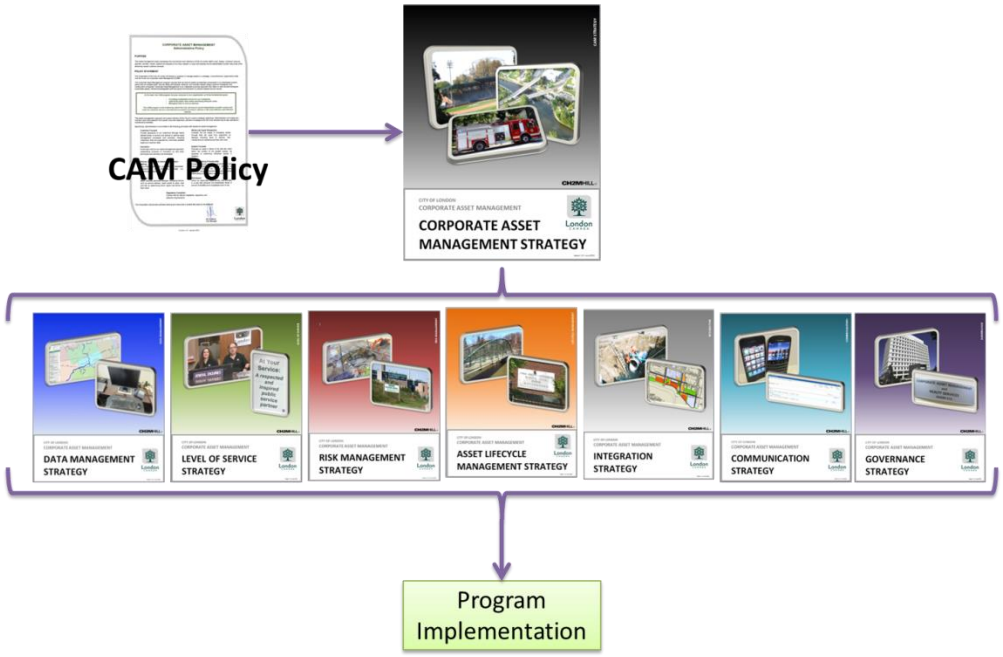
FIGURE 5-1 ASSET LIFE CYCLE INVESTMENT PROCESS



5.3.1 Overview of the New Asset Management Program

The new Corporate Asset Management strategy is centered on an overall implementation approach supported by seven specific strategies addressing different aspects of asset management intended for standardized use across the corporation (Figure 5-2).

FIGURE 5-2 CORPORATE ASSET MANAGEMENT STRATEGIES



The upgrading of asset management practices in London is intended to:

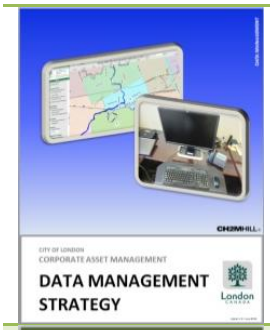
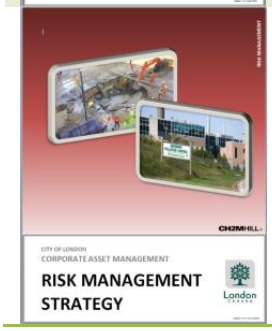
- Manage assets on the principles of sustainability, continuous improvement and simplicity
- Provide comparable information for intelligent decision-making (Lifecycle Management Strategy)
- Enable the integration of corporate priorities (Integration Strategy)
- Provide reliable data with the integrity to meet or surpass regulatory demands (Data Management Strategy)
- Quantify the outcome of decisions based on triple bottom line considerations(economical, environmental, and social) (Lifecycle Management Strategy)
- Reduce risk of environmental violations or service interruptions due to failed or poorly performing assets (Risk Management Strategy)
- Minimize lifecycle cost and link capital budget needs to the business planning process (Lifecycle Management Strategy)
- Maximize the return on corporate investment, and spend tax dollars wisely (Level of Service Strategy)
- Quantify the impact of work that does not get done (Infrastructure Gap)
- Reduce knowledge losses as the experienced workforce retires (Governance, Communications Strategy)
- Enhance the way London does business

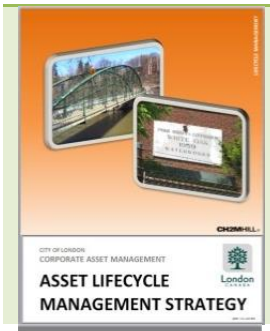
In order to achieve these objectives the City will develop and implement a number of asset management tools that will include:

- A living city-wide asset registry in a formal hierarchy for use by all city staff. It will include asset management parameters as wells conventional asset parameters such as description, location, size, etc.
- A city-wide level of service registry in a formal hierarchy for use by all.
- A city-wide risk registry for use by all.
- Modeling tools for level of service, risk and optimized decision-making.
- A computerized system or systems that enable all of the above in a user friendly fashion allowing for the analysis of options during decision-making.
- Documentation templates for reports, plans, cases, etc. to ensure the considerations of asset management are embedded in day-to-day activities.
- Procedures that embed asset management practices.

Once implemented, the new asset management practices will address the items described in the Ministry's 'Guide for Municipal Asset Management Plans' and more. The strategies form the general approach for the City to implement the new asset management practices and are summarized in Table 5-11. Full strategy documents are available upon request.

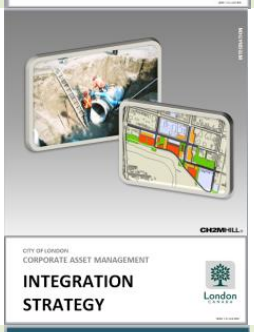
TABLE 5-11 CORPROATE ASSET MANAGEMENT SUPPORTING STRATEGIES

	**Data Management Strategy** This strategy speaks generally to the methods for acquisition, storage and analysis of asset data including inventory and asset attributes. Quality data is needed to support information, knowledge, and ultimately optimized decision making.
	**Level of Service Strategy** This strategy is focused on defining / systemizing Levels of Service across the Corporation. Once implemented, levels of service will be standardized across the corporation and documented so that administration and the public can be knowledgeable over expectations of the service provided and impacts resulting from any changes to services.
	**Risk Management Strategy** This strategy documents a risk-based approach to assessment and mitigation of asset risks. The intent is to create a clear picture of the risk profile of the asset base in order to better understand which assets are most in need of assistance.



Asset Lifecycle Management Strategy

At the core of asset management is the process to manage the life cycle of an asset. This supporting strategy speaks to the processes for maximizing the performance of an asset while minimizing its costs throughout the course of its life cycle using tools to optimize decision-making.

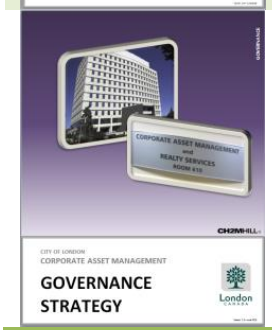


Integration Strategy

This Strategy takes a corporate-wide approach to integrating asset management practices. Practices are intended to be standardized to a degree that enables comparisons and prioritization of asset investments.

Communication Strategy

This strategy is focused on facilitating the changes required to manage assets on a cross corporation basis. Good communications are critical for managing change that impacts the entire City including development and implementation of corporate asset management.



Governance Strategy

This strategy documents and clarifies the roles and responsibilities of stakeholders involved in the management of assets through the Corporate Asset Management program.

The Corporate Asset Management program and its strategies cover all physical assets owned, operated, or maintained by the City. The program is designed to cover core services with significant assets and over time will expand to include City services provided by Boards and Agencies as well. Civic Administration is committed to ensuring that assets across the corporation are optimally managed, balancing service level expectations with cost efficiency and effectiveness. The support obtained through the implementation of the new corporate asset management strategy will ensure that the City of London is receiving the maximum return for its investment in assets, spending tax dollars wisely while mitigating risk, and meeting customer expectations for levels of service.

5.4 Procurement Methodologies

The City of London Procurement of Goods & Services Policy can be found as Schedule C under Section 270 of the Municipal Act - Council Policy By-law No. A.-6151-17 Consolidated March 26, 2013.

This is a By-law to establish policies for the sale and other disposition of land, hiring of employees, procurement of goods and services, public notice, accountability and transparency, and delegation of powers and duties, as required under section 270(1) of the Municipal Act, 2001.

The mission statement for Schedule C the Procurement of Goods & Services Policy reads:

> To obtain the right goods and/or services when needed while achieving best value through a transparent, fair and competitive process with a high focus on Customer Service.

The procurement policy addresses the acquisition of an asset in great detail including consideration of socio-economic factors and health and safety. The full policy can be found on the City's website.

The Guide for Municipal Asset Management Plans states that 'to ensure the most efficient allocation of resources, best practice is for a number of delivery mechanisms to be considered — such as working with other municipalities to pool projects and resources, or considering an AFP model.' The design-build-finance-maintain AFP (Alternate Financing and Procurement) model takes a lifecycle perspective and builds effective asset management directly into the contract. The Guide also states that municipalities should have procurement by-laws in place to serve as the basis for considering various delivery mechanisms. The City of London meets both of these requirements through existing by-laws and practices.

Numerous agreements with third parties exist to pool projects and resources, one of the most noteworthy being, the Regional Water Boards that provide water to much of southwestern Ontario. Emergency Services operate under mutual aid agreements. Facilities such as the Budweiser Gardens and the North London Community Center exist in partnership with third parties. The City even provides solid waste and sanitary sewage opportunities to third parties. Third party agreements over shared assets use and maintenance are a standard of business in London. The City's door is open to discuss any mutually effective offer regarding the delivery of service.

5.5 Risks Associated with the Plan and Strategy

Failure to deliver the Plan will ultimately impact the ability of the City to deliver established levels of service. Table 5-12 is an overview of the ways the plan could fail to generate the expected service levels and actions that can be taken in response.

TABLE 5-12 RISKS ASSOCIATED WITH THE PLAN AND STRATEGY

Identified Risk	Potential impacts	Mitigating Actions
Plan is not followed	• Wasted investments • Potential to shorten useful life • Failure to deliver service • Prioritization process fails • Inefficient investments	• Monitor and review • Implement quality asset management processes
Failed infrastructure	• Failure to deliver service • Damage to asset and neighbouring equipment	• Repair/replace • Increase investment/ available

Identified Risk	Potential impacts	Mitigating Actions
	and property (private or public) • Injury, death - staff and public • Customers unable to carry on their business • Non-compliance • Litigation • Damage to environment • Additional unplanned costs • Asset Loss • Negative social impacts • Etc.	funding • Innovative technology • Non-infrastructure solutions • Reduce or stop delivering service
Inadequate Funding	• Increased risk of failure • Service reductions • Rising maintenance costs • Prematurely shortens useful life if not maintained • Asset Loss • Shift and increment burden to future ratepayers • Defeat planning efforts • Plans become redundant • Lost opportunities • Unpredicted future impacts	• Reduce or stop delivering service • Find additional sources of funding • Increase investment/ available funding • Update Planning • Discard efforts on past planning
Poor quality asset information	• Inefficient maintenance program • Poor prioritization/projections • Poor decision-making • Improper investments • Inability to deliver service	• Invest in data systems and condition assessment • Determine appropriate level of service and risk metrics and ratings
Planning Assumptions incorrect	Defeat planning efforts	• Monitor Plan, update and correct projections
Regulatory requirements, standards, criteria change or do not exist	• Non-compliance • Mandatory investments and schedule • Disruption to Planning Efforts • Investment due to regulation reduces available funding for others • Additional costs	• Lobby against additional expenditures • Lobby for additional transfer funding • Reduce or stop delivering service • Find additional sources of funding • Increase investment/ available funding • Lobby organizations to provide standards
Economic fluctuations, inflation, downturns, revenue and use reduces/increases	• Reduced/increased needs • Wasted expense maintaining oversized/undersized infrastructure	• Change, create or stop delivering service
Occurrence of Climate Change/Adverse Weather/Unforeseen events and emergencies, resulting in funds being diverted to assets that were not originally planned for	• Additional unplanned costs • Damage and loss of assets • Defeat planning efforts • Plans become redundant • Lost opportunities • Unpredicted future impacts	• Deferral of planned renewals • Assess/increase insurance coverage • Increase/develop reserve funds • Develop contingency/emergency plans

Identified Risk	Potential impacts	Mitigating Actions
Growth projections not as planned	• Infrastructure oversized or undersized • Inefficient use of available service	• Defer or advance capital projects related to growth and update plan
Service Provision Changes	• Plan either does not address or contains redundancies	• Amend Plan

Financing Strategy

6.1 Introduction

Asset management planning in London is integrated with and dependent upon financial planning and budgeting. This chapter contains summaries of the current financial landscape in London and the City's strategies to address financial and infrastructure requirements. It also includes options for addressing the infrastructure gap.

In 2013 the City of London maintained its Aaa credit rating for a 37th straight year. Moody's Investor Services notes:

> *"The Aaa debt rating assigned to the City of London (Canada) reflects a low debt profile supported by high reserve levels and a continued management approach classified by prudent, conservative fiscal planning…the city's debt burden remains low and is expected to stay relatively stable over the medium term…London's cash and investments provide considerable liquidity and a measure of safety for debenture holders, supporting the Aaa rating."*

The City of London places importance on the use of pay-as-you-go financing including the use of reserves and reserve funds. At the same time the City strives to limit the amount of debt required to fund its annual capital budgets. London's effective use of debt is evidenced by the strong credit rating.

The three budgeting processes at the City include:

- General Budget (property tax supported)
- Water Budget (rate supported)
- Wastewater Budget (rate supported)

All three processes have operating and capital components. These budgets are a critical part of the financial process necessary for asset management. Through the capital budget processes, the City plans future expenditures and the use of debt and reserve funds to manage its financial position over a five to ten year period. Capital budgets are linked to operating budgets through the capital levy. This is the mechanism the City uses to allocate a portion of current year revenues, from property taxes and utility rates, to use in the capital budgets as a source of funding. This capital levy is used to fund current year projects, contribute to reserve funds, make debt repayments, etc. The use of debt as a source of funding impacts operating budgets by having to pay debt servicing costs (interest). During the budget process project managers at the City are requested to submit any expected operating impacts of the capital projects they are budgeting. These impacts are required to be included in the respective operating budgets forecast. However, not all assets acquired by the City receive this level of consideration. Assets contributed via developer gifts often result in stresses on the City's operating budgets. Often the life cycle costs of such assets are not considered prior to the City assuming ownership.

The financial strategy presented in this chapter of the Corporate Asset Management Plan summarizes the City's current efforts to support sustainable asset management including addressing long term asset renewal needs, desired levels of service, legislative requirements and forecasted growth requirements.

6.2 Financial Management

6.2.1 Operating Revenues & Expenditures

Table 6-1 highlights the revenue and expenditure forecasts for the three core budgets (General, Water and Wastewater budgets).

TABLE 6-1 CITY OF LONDON OPERATING BUDGETS

Value in $ Millions	2010 Actual	2011 Actual	2012 Approved	2013 Approved	2014 Projected	2015 Projected	2016 Projected	2017 Projected
Operating Expenditures:								
Total General (Tax Supported) Operating Expenditure*	$742.0	$741.9	$729.5	$752.1	$860.9	$884.8	$910.6	$934.6
Total Water Rate Supported Operating Expenditure	$56.6	$54.3	$59.7	$62.6	$67.1	$72.0	$76.5	$81.1
Total Wastewater Rate Supported Operating Expenditure	$72.1	$71.4	$75.5	$79.1	$84.2	$89.6	$95.5	$99.0
Total City of London Expenditures	**$870.4**	**$867.7**	**$864.7**	**$893.7**	**$1,012.2**	**$1,046.4**	**$1,082.6**	**$1,114.7**
Operating Revenues:								
Property Tax*	$456.4	$462.7	$467.4	$479.6	$489.4	$508.8	$524.7	$540.8
Non-Property Tax Revenues[3]*	$285.6	$279.2	$262.1	$272.5	$371.5	$376.0	$385.9	$393.8
General (Tax Supported) Budget	***$742.0***	***$741.9***	***$729.5***	***$752.1***	***$860.9***	***$884.8***	***$910.6***	***$934.6***
Water Rate	$53.7	$52.3	$57.6	$60.3	$64.7	$69.4	$73.7	$78.2
Non-Water Rate Revenues[4]	$2.9	$2.1	$2.1	$2.2	$2.4	$2.6	$2.8	$3.0
Water Budget	***$56.6***	***$54.3***	***$59.7***	***$62.6***	***$67.1***	***$72.0***	***$76.5***	***$81.1***
Wastewater Rate	$66.2	$65.0	$70.6	$74.5	$79.4	$84.8	$90.4	$93.8
Non-Wastewater Rate Revenues[5]	$5.9	$6.4	$4.9	$4.6	$4.7	$4.9	$5.0	$5.2
Wastewater Budget	***$72.1***	***$71.4***	***$75.5***	***$79.1***	***$84.2***	***$89.6***	***$95.5***	***$99.0***
Total City of London Revenues	**$870.7**	**$867.6**	**$864.7**	**$893.7**	**$1,012.2**	**$1,046.4**	**$1,082.6**	**$1,114.7**

*Projected values from the 2013 submitted budget

Historically the City of London's annual operating budgets fluctuated between $860 and $900 Million (Table 6-1). From 2010 to 2013, the operating budgets have remained relatively stable. Table 6-2 outlines the current and projected operating budget increases for all three primary City budgets.

TABLE 6-2 CURRENT AND PROJECTED OPERATING BUDGET INCREASES

Budget	2013 Operating Budget Increases	Projected Operating Budget Average Annual Increase (2014 – 2017)
General (Tax Supported)	2.9%	5.2%
Water Rate Supported	4.9%	6.7%
Wastewater Rate Supported	4.8%	5.8%

Figure 6-1 reflects the source and use of funding by operating budget.

[3] Non-Property Tax Revenues include revenues like user fees, grants, subsidies, etc.

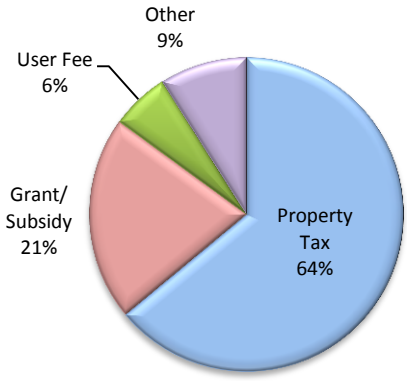
[4] Non-Water Rate Revenues include revenues like grants, subsidies, etc.

[5] Non-Wastewater Rate Revenues include revenues like grants, subsidies, etc.

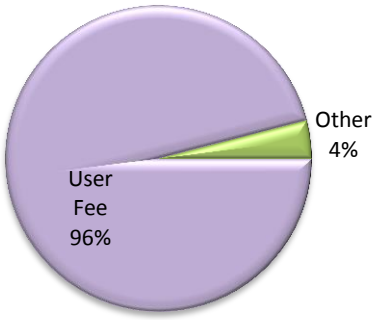
FIGURE 6-1 OPERATING BUDGETS – SOURCE AND USE[6]

SOURCE OF 2013 OPERATING REVENUES

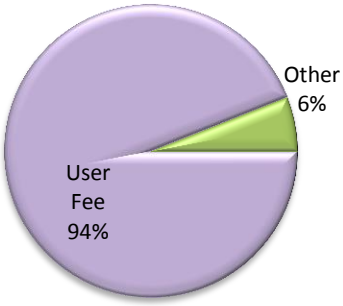
Property Tax Supported Operating Budget
2013 - $752.1 Million



Water Rate Supported Operating Budget
2013 - $62.6 Million

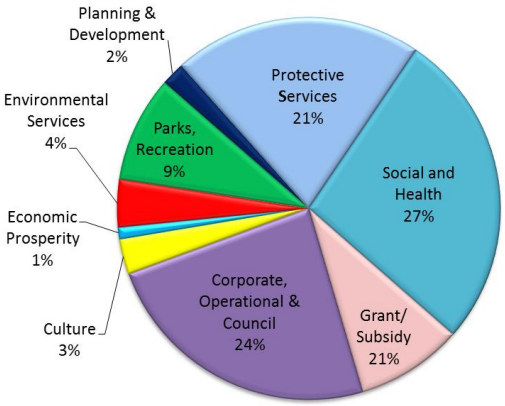


Wastewater Rate Supported Operating Budget
2013 - $79.1 Million

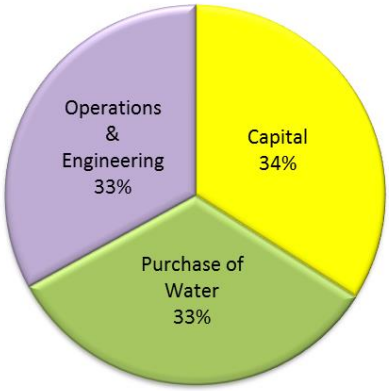


USE OF 2013 OPERATING DOLLARS:

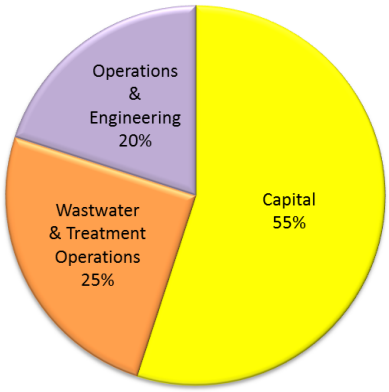
Property Tax Supported Operating Budget
2013 - $752.1 Million



Water Rate Supported Operating Budget
2013 - $62.6 Million



Wastewater Rate Supported Operating Budget
2013 - $79.1 Million



The above Figure 6-1 depicts the overall City of London budget which includes appropriations to Boards and Agencies beyond the scope of this Corporate Asset Management Plan.

6.2.1.1 London's Financial Planning in Context

London shares common infrastructure needs with other municipalities across Ontario. This section of the financial chapter compares London's financial results with other municipalities in order to help understand not only what needs to be addressed going forward but also to help guide the reasonableness of financial expectations.

[6] These graphics include information on the City's Boards and Agencies.

Recent funding approaches for London have been in pursuit of economic restraint. After two straight years of 0% property tax rate increases, City Council approved a 1.2% rate increase in 2013. Table 6-3 compares London to other Ontario municipalities over the past few years.

TABLE 6-3 PROPERTY TAX INCREASES

Municipality	2010	2011	2012	3 Year Average
Toronto	2.9%	0.0%	2.5%	1.8%
Ottawa	3.8%	2.4%	2.4%	2.9%
Chatham – Kent	1.4%	1.4%	2.3%	1.7%
Hamilton	2.0%	0.8%	0.9%	1.2%
Sudbury	2.5%	3.5%	2.8%	2.9%
Windsor	0.0%	0.0%	0.0%	0.0%
AVERAGE	2.1%	1.3%	1.8%	1.75%
London	1.86%	0.0%	0.0%	0.6%
Consumer Price Index Based on change as of October	2.4%	2.9%	1.2%	2.1%

* Tax levy increases based on information identified on respective websites.

London's three year average tax levy increase ranks behind Windsor as the lowest among the comparable municipalities and is 1.5% lower than the three year Consumer Price Index average.

For the past twelve years, BMA Management Consulting Inc. has completed a municipal comparative study on behalf of participating Ontario municipalities including London. The results of the *BMA Consulting Municipal Survey 2013* indicate London's property tax (Table 6-4) and water/wastewater (Table 6-5) rates are slightly below average as a percentage of household income.

TABLE 6-4 BMA 2013 STUDY - PROPERTY TAXES AND WATER/WASTEWATER COSTS AS % OF INCOME

	London	Survey Average	Southwest Average
Property Taxes as a % of Household Income	3.3%	3.7%	3.4%
Water/Sewer + Taxes as a % of Household Income	4.1%	4.6%	4.4%

During the 2013 Water and Wastewater budget approval processes a new funding model (Rate Structure Review) was approved recommending rate increases of:

TABLE 6-5 WATER & WASTEWATER RECOMMENDED RATE INCREASES

Water Budget		Wastewater Budget	
Rate Increase	**Period**	**Rate Increase**	**Period**
8%	2013 – 2015	7%	2013 – 2016
7%	2016	4%	2017
6.75%	2017		

Both recommendations predicted a return to the rate of inflation in 2018 and thereafter. In 2013, the City of London's water and sewer user costs were below the survey average according to the BMA Consulting *Municipal Survey 2013* (Table 6-6).

TABLE 6-6 BMA 2013 STUDY - 2013 COMPARISON OF WATER AND SEWER USER COSTS

Water/Sewer	London	Survey Average
Residential – 200m^3	$ 687	$ 841
Commercial – 10,000m^3	$ 20,062	$ 27,772
Industrial – 30,000m^3	$ 56,394	$ 80,985
Industrial – 100,000m^3	$ 175,548	$ 263,403
Industrial – 500,000m^3	$ 801,680	$ 1,293,169

These results imply London is a less expensive place to reside with respect to water and sewer than many others in Ontario.

6.2.2 Capital Funding & Expenditures

Table 6-7 outlines the historic and projected capital spending at the City of London. Capital spending fluctuates between $185 Million and $215 Million annually. This trend is expected to continue for the foreseeable future.

TABLE 6-7 TOTAL CAPITAL EXPENDITURE - 10 YEAR FORECAST ($ MILLIONS)

	2012	2013	<----------Projected---------->								
Value in $ Millions	**Actual**	**Approved**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Total (Tax Supported) Capital Expenditure	$115.8	$101.0	$112.9	$124.2	$128.5	$109.9	$109.3	$102.3	$108.5	$98.8	$103.5
Total Water Rate Supported Capital Expenditure	$17.6	$26.7	$30.4	$33.1	$27.7	$37.7	$29.8	$31.3	$30.0	$33.0	$36.3
Total Wastewater Rate Supported Capital Expenditure	$52.2	$54.4	$49.3	$44.3	$55.7	$55.6	$52.3	$37.2	$57.2	$61.1	$78.2
TOTAL	**$185.5**	**$182.1**	**$192.6**	**$201.6**	**$211.9**	**$203.2**	**$191.4**	**$170.8**	**$195.7**	**$192.9**	**$218.0**

Sources of funding for capital projects include:

Internal Sources

- **Debt** – Build now; pay later (lowest impact on short-term tax rates – highest overall cost and long-term impact on tax rate). Debentures are a term often used interchangeably with the term Bond; these are instruments of debt through which companies, municipalities, etc. can acquire funding. In the City of London debentures are the primary debt instrument.
- **Reserves and Reserve Funds** – Save now and build when needed – lowest overall cost
- **Capital Levy** – Build now, pay now (pay-as-you-go) (highest impact on short-term tax and utility rates

External Sources

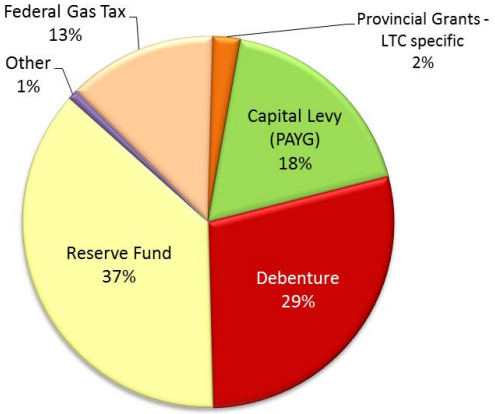
- **Outside Sources** – Provincial and Federal grants, donations, partnerships, development charges (restricted to specific formulae for growth projects), user fees. These types of funding have a lower degree of certainty i.e. user fees – volume driven, donations - voluntary, Provincial gas tax - ridership driven.

Reserves and reserve funds are identified above as the lowest overall cost because the money being saved in them earns interest. For example, a capital project costing $1.00 could cost the City $1.03 using debt financing because interest needs to be repaid; $1.00 using current year money from the capital levy; or $0.96 using saved money that was earning interest in a reserve fund.

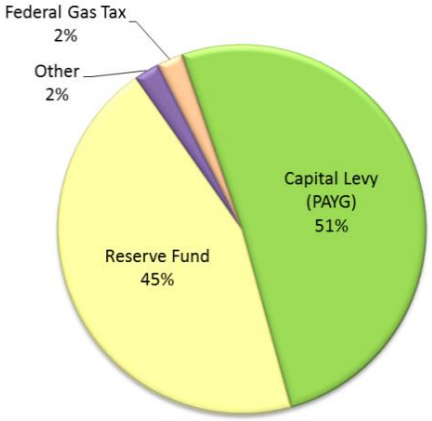
Figure 6-2 describes the capital funding sources that used in the City's three primary budgets.

FIGURE 6-2 SOURCES OF 2013 CAPITAL FUNDING

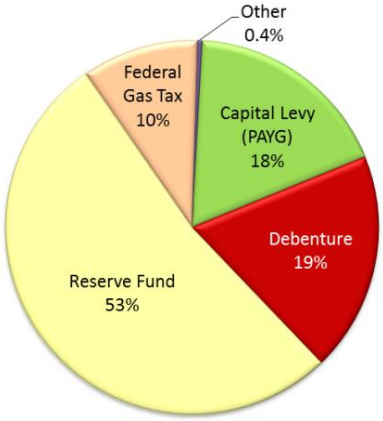
Property Tax Supported Capital Budget
2013 - $101.0 Million



Water Rate Supported Capital Budget
2013 - $26.7 Million



Wastewater Rate Supported Capital Budget
2013 - $54.4 Million



The City of London relies primarily on current year property taxes/utility rates (capital levy or pay-as-you-go), debt, and reserve funds to finance its capital budgets. The City has a self-imposed average annual debt cap on the General (Property Tax Supported) capital budget of $26 Million for the 2013 – 2022 period. Managing debt is a key element fostering a solid financial position that is reflected in its high credit rating which benefits the City through access to low interest rate financing.

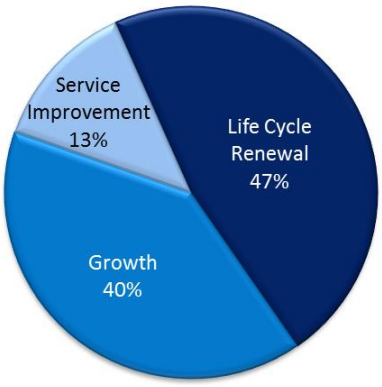
The City of London divides its capital projects into three different groups (Lifecycle, Growth, and Service Improvement) based on need as and detailed in Figure 6-3:

- Lifecycle Renewal - This is the investment that sustains existing infrastructure.
- Growth - This is the investment that enables expansion.
- Service Improvement - This is the investment that enhances current or provides new services.

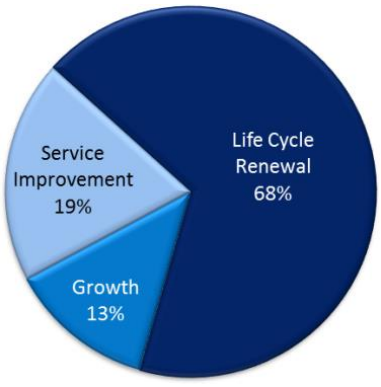
Figure 6-3 reflects the 2013 capital funding sorted by use for each of the City's primary budgets.

FIGURE 6-3 USES OF 2013 CAPITAL DOLLARS

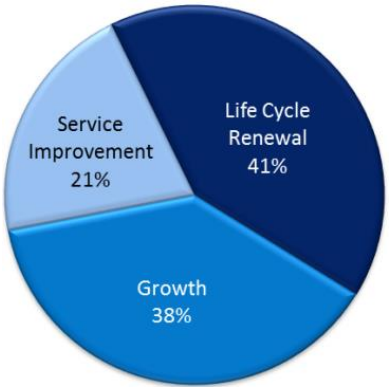
Property Tax Supported Capital Budget
2013 - $101.0 Million



Water Rate Supported Capital Budget
2013 - $26.7 Million



Wastewater Rate Supported Capital Budget
2013 - $54.4 Million



Life cycle renewal comprises the majority of expenditures across the three City capital budgets. Figure 6-2 and Figure 6-3 above depict the overall City of London capital budget which includes Boards and Agencies.

6.2.2.1 Capital Budget Historic and Forecasted Trends

The City of London considers every available funding source in order to meet its infrastructure needs.

The general tax supported budget forecasts are illustrated by Figure 6-4. Funding of the general budget relies on capital levy, debt and reserve fund financing. Current forecasts indicate an increased commitment to pay-as-you-go financing with a decreasing reliance on debt over the same period. The primary use of these funds is forecasted to focus on life cycle renewal with lesser but consistent investment seen in growth initiatives. The least investments are planned for service improvements indicative of an economy of restraint.

The Water (rate supported) capital budget (Figure 6-5) relies heavily on the current year capital levy resulting from utility rates. Current forecasts reaffirm the commitment to pay-as-you-go financing including a heavy reliance on reserve funds. The Water service area at the City currently carries minimal debt and does not project significant debt issuance until 2017. Projected expenditures within the Water capital budget will continue to focus on life cycle renewal activities.

The Wastewater budget forecasts (Figure 6-6) relies on the capital levy from utility rates and reserve fund financing. Reliance on pay-as-you-go financing is forecasted to increase over the next four years while reliance on debt financing is expected to remain constant. The focus remains on life cycle renewal and growth activities. Investment in service improvement activities is expected to decline slightly over the short term before stabilizing.

Figure 6-4, Figure 6-5 and Figure 6-6 confirm the City's commitment to pay-as-you-go financing including the use of reserve funds to finance its capital programs. The results also reflect a stronger focus on life cycle renewal and growth versus service improvements. These figures depict the overall City of London budgets which include appropriations to Boards and Agencies which do not fall within the scope of this Corporate Asset Management Plan.

FIGURE 6-4 PROPERTY TAX SUPPORTED CAPITAL FUNDING AND EXPENDITURES

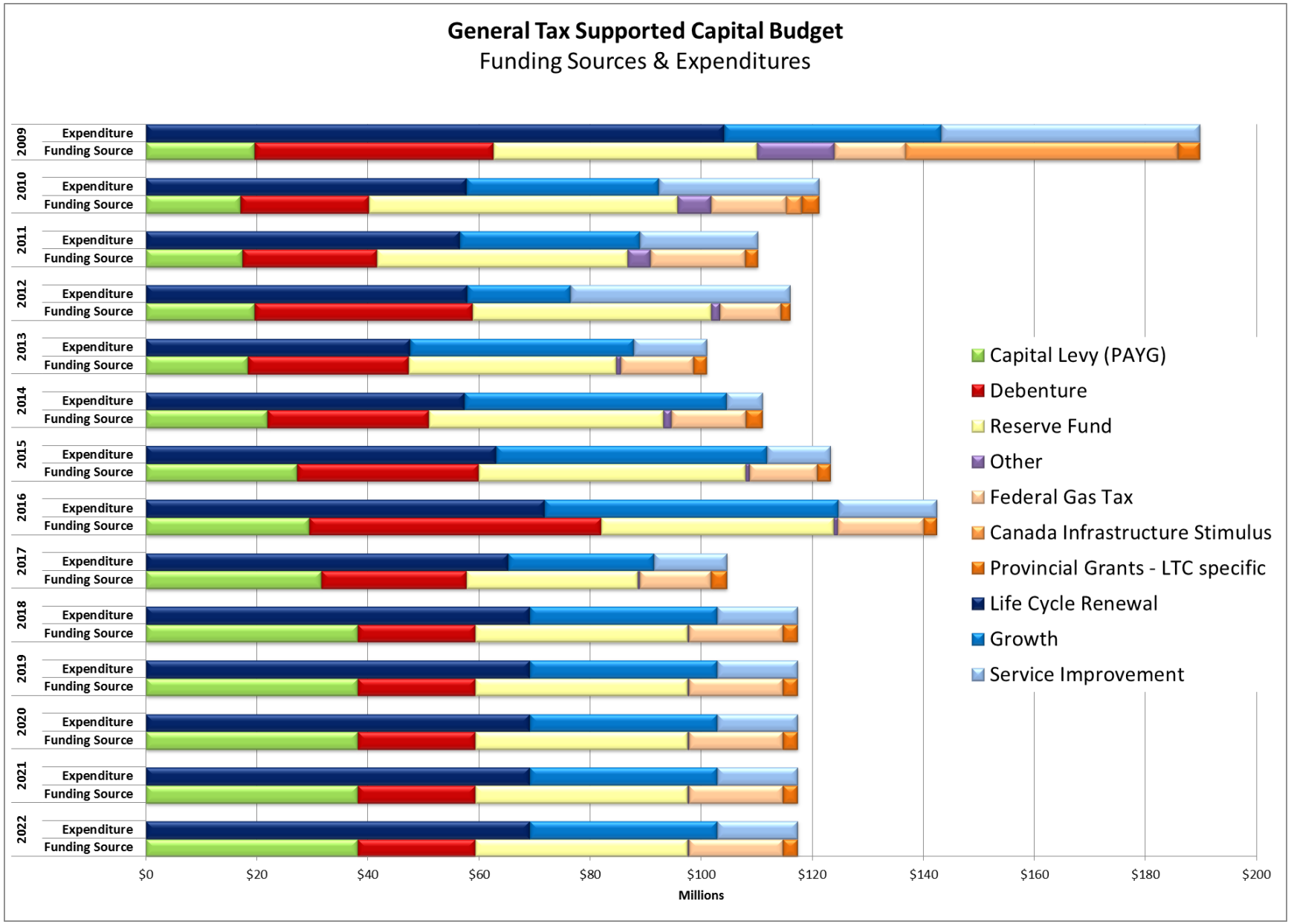


FIGURE 6-5 WATER RATE SUPPORTED CAPITAL FUNDING AND EXPENDITURES

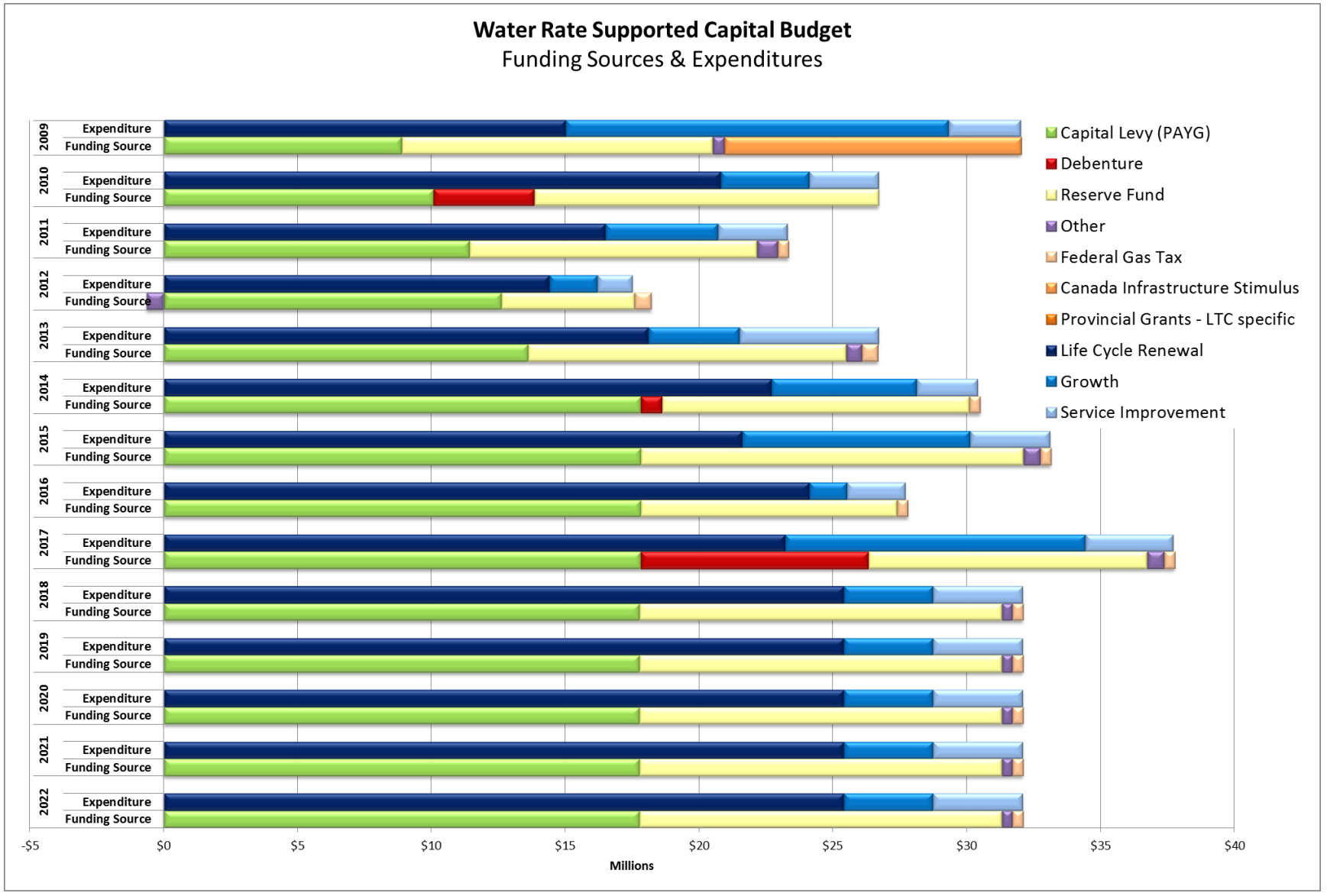
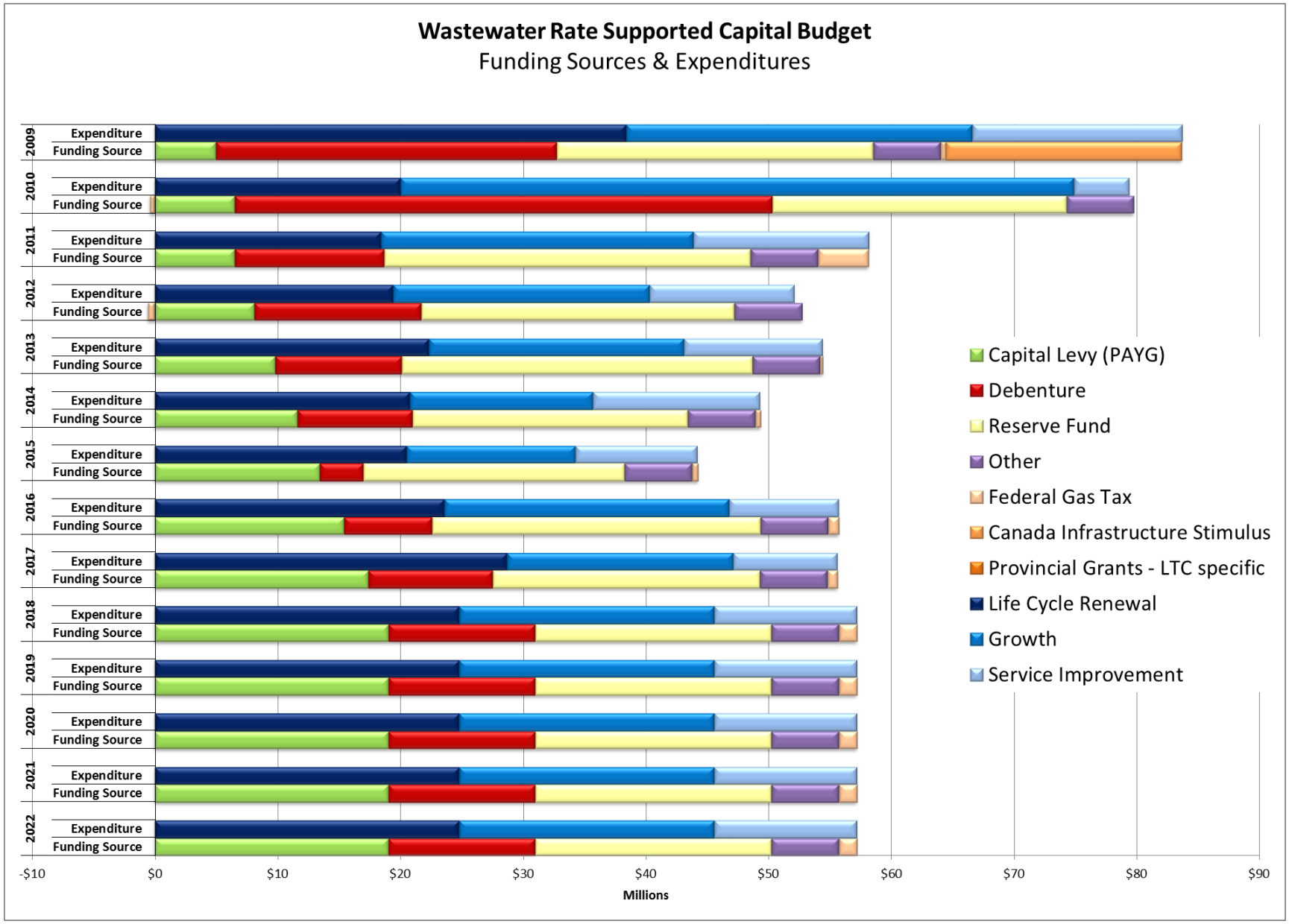


FIGURE 6-6 WASTEWATER RATE SUPPORTED CAPITAL FUNDING AND EXPENDITURES



6.2.3 Reserve & Reserve Funds

A critical funding strategy for the City of London involves the use of reserves and reserve funds as funding sources. The reserves and reserve fund balances presented in this section include reserves that are used to address any specific or general interest and not just infrastructure. For example, the City Services Reserve Fund is sourced from development charges and used only for growth projects. Also some of these funds are used by Boards and Agencies.

The reserves and reserve funds stabilize the City's funding requirements preventing spikes in rates when significant expenditures are needed for infrastructure renewal at given points in time. Reserves are also available should unanticipated emergencies arise. Table 6-8 through Table 6-10 below show the projected balances of the City's reserves and reserve funds at December 31, 2012 as well as their projected balances over the coming years.

TABLE 6-8 CITY OF LONDON RESERVE PROJECTIONS - GENERAL (PROPERTY TAX BUDGET)

000's	Projected Balance 31-Dec-12	<----------Projected Balance---------->				
		2013	2014	2015	2016	2017-2021
Obligatory	58,257	23,024	19,998	14,332	12,993	18,072
Capital Asset Renewal and Replacement	72,498	55,023	48,301	53,321	60,999	104,775
Capital Asset Growth	12,332	8,994	12,079	8,802	10,479	22,801
Specific Projects and New Initiatives	43,029	36,574	39,557	42,149	46,744	80,486

TABLE 6-9 CITY OF LONDON RESERVE PROJECTIONS - WATER (RATE BUDGET)

000's	Projected Balance 31-Dec-12	<----------Projected Balance---------->					
		2013	2014	2015	2016	2017	2018 -2022
New Capital Water	$8,524	$6,356	$4,069	$5,375	$7,513	$11,327	$12,639
Industrial Oversizing Water	$4,207	$4,241	$4,678	$1,065	$1,504	$1,425	$2,202
City Services - Water Levies	$6,730	$6,390	$4,973	$3,654	$4,321	$4,942	$1,847
Lead Service Replacement Program	$113	$124	$136	$148	$160	$172	$213
Efficiency, Effectiveness and Economy	$388	$388	$388	$388	$388	$388	$388

TABLE 6-10 CITY OF LONDON RESERVE PROJECTIONS - WASTEWATER (RATE BUDGET)

000's	Projected Balance 31-Dec-12	<----------Projected Balance---------->					
		2013	2014	2015	2016	2017	2018 -2022
Sewage Works	$6,336	$6,664	$6,334	$7,925	$10,672	$11,551	$11,193
Industrial Oversizing Sewer	$5,745	$6,820	$7,286	$7,271	$5,491	$5,885	$4,284
Sewage Treatment Plant Capacity	$3,262	$3,428	$4,553	$5,701	$6,871	$8,065	$5,852
City Services Sanitary Sewer Levies	$5,492	$2,683	$5,882	$9,039	$3,986	$1,400	$1,565
City Services Major SWM Levies	$2,786	$3,898	$4,523	$3,116	$3,346	$3,866	$840
Wastewater Rate Stabilization	$1,709	$1,709	$1,709	$1,709	$1,709	$1,709	$1,709

Efficiency, Effectiveness and Economy	$871	$871	$871	$871	$871	$871	$871
Sump Pump, Sewage Ejector and Storm PDC Program	$516	$526	$537	$548	$559	$570	$629
Disconnection of Sewer Cross-Connection Loan Program	$103	$105	$107	$109	$111	$113	$123

6.2.3.1 London's Reserve Funding in Context

Despite the importance of reserve funds, the City of London contributions although increasing, remain below average compared to other Ontario municipalities. Table 6-11 and Table 6-12 show London's results from the 2013 BMA study. A 'tax discretionary reserve' is a reserve fund funded from property taxes which differs from an obligatory reserve that is funded via development charges. An 'own source revenue' is money that is generated within the municipality through taxes, user fees, etc. and does not include development charges, grants or loans from upper tier governments.

TABLE 6-11 TAX DISCRETIONARY RESERVES (LESS WATER, WASTEWATER) AS % OF TAXATION

Municipality	2008	2009	2010	2011	2012
London	**45%**	**49%**	**51%**	**53%**	**56%**
Average	81%	74%	64%	65%	68%
Median	67%	66%	61%	60%	62%

TABLE 6-12 TAX DISCRETIONARY RESERVES AS % OF OWN SOURCE REVENUES

Municipality	2010	2011	2012
London	**38%**	**37%**	**41%**
Average	45%	44%	47%
Median	43%	40%	45%

Through the execution of the City's Strategic Financial Plan, the City has managed to increase its reserve and reserve fund levels, which has reduced the need for debt to fund its capital program all while maintaining reasonable property tax levels in comparison to other Ontario municipalities. These balances are crucial in assisting the City with liquidity, funding its capital program, and ensuring intergenerational equity.

6.2.3.2 Consequences of Underfunded Reserve Balances

The potential consequences of inadequate reserve levels include:

1. Increased Cost of Short Term Borrowing

Lack of available reserve funds may require the City to seek short term financing from external sources at an increased cost to the municipality.

2. Loss of London's Aaa Credit Rating

Moody's has outlined that improving reserve funds levels assist the City of London in achieving its credit rating. A drop in this rating would increase the overall cost of borrowing levels resulting in a direct impact to the operating budgets.

3. Reduction in Capital Plan

Reserve funds balances assist the City to finance its capital programs. Depleting or reducing contributions to reserves would negatively impact the ability of the City's capital plan to accommodate capital needs. This could result in changes to service levels or more costly financing options such as capital levy or debenture sources.

4. Improper Intergenerational Equity (Pay Now or Pay Later)

Failing to set aside funds now to pay for known future costs (unfunded liabilities, capital asset replacement), places the burden to pay on future generations that may not benefit from the investment (matching consumption with cost).

5. Address Unplanned Expenditures

Reserve funds can be used as appropriate to address unexpected emergencies that arise from time to time as well as smooth out spikes in annual expenditures.

6.2.4 Corporate Debt Overview

At yearend 2012, the total debt issued by the City stood at $347.4 Million. During 2013 the City both issued and retired debt resulting in a net increase of $5.2 Million bringing the total debt issued by the City up to $352.5 Million. The remaining debt that has been authorized but not used (issued) by the corporation is estimated to be $233.3 Million. Over the next 10 years the City plans on reducing the total amount of debt issued.

Excerpt from Moody's Investors Service Credit Analysis Report, October 10, 2012

> "*London's debt management practices have traditionally been prudent and conservative, which supports its high credit rating. The City's debt burden, measured by the ratio of net debt as a percentage of total revenues, declined in recent years to 30.2% in 2010, from 54.8% in 2004. The progressive reduction in the city's debt burden reflects tighter controls on debt issuance through a self-imposed debt cap limiting the amount of debt issued for capital projects, as well as increased reliance on pay-as-you-go financing*"

A summary of the City of London's debt is presented in Table 6-13. Major assumptions used in the debt level projection include:

• Debt is capped on average at $26 million annually for the 10-year capital plan. The debt cap will be reviewed annually.

• Water and Wastewater debt levels are based on assumptions/parameters used in developing its 20-year plan.

TABLE 6-13 CITY OF LONDON DEBT LEVEL OVERVIEW ($MILLIONS)

Debt Levels by Ratepayer	Dec 31, 2012 *(A)*	Issued 2013 *(B)*	To Be Retired 2013	Dec 31, 2013	Authorized 2013	Total Potential
General Property Taxes	195.6	34.7	27.6	202.7	92.2	294.9
Wastewater	85.9	2.1	8.9	79.1	36.1	115.2
Water	1.9	1.0	0.2	2.7	0.5	3.2
Reserve Funds Supported	30.9	3.3	4.2	30.0	20.9	50.9
Subtotal	**314.3**	**41.1**	**40.9**	**314.5**	**149.7**	**464.2**
Joint Water Boards - City's Share	9.4	1.3	1.0	9.7	27.3	37.0
City Services Reserve Funds	23.8	7.4	2.8	28.4	56.3	84.7
Total	**347.4**	**49.8**	**44.7**	**352.5**	**233.3**	**585.8**

Table 6-14 outlines the forecasted debt levels of the City of London.

TABLE 6-14 2014 DEBT LEVEL BUDGET WITH FORECAST TO 2023 ($MILLIONS)

Debt Issued by Ratepayer	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
General Property Taxes	202.7	224.1	210.5	205.9	206.5	202.5	197.3	192.8	176.0	149.0	123.3
Wastewater	79.1	102.0	91.7	81.3	70.6	60.4	49.9	39.3	28.9	21.6	15.1
Water	2.7	2.9	2.6	2.2	1.9	1.5	1.2	0.8	0.4	0.2	0.1
Rate Supported Reserve Funds	30	40.6	41.2	37.9	32.3	27.6	21.5	15.3	11.4	8.6	5.3
Subtotal	**314.5**	**369.6**	**346.0**	**327.3**	**311.3**	**292.0**	**269.9**	**248.2**	**216.7**	**179.4**	**143.8**
Joint Water Boards	9.7	25.5	23.0	30.8	27.7	24.5	21.7	18.7	15.7	12.5	10.0
City Services Reserve Funds	28.4	38.7	54.5	48.3	57.7	101.4	103.3	106.1	99.6	100.7	126.0
Total Debt Level	**352.5**	**433.8**	**423.5**	**406.4**	**396.7**	**417.9**	**394.9**	**373.0**	**332.0**	**292.6**	**279.8**

I. Annual Repayment Limit

There are rules surrounding the ability of a municipality to use debt as a tool to finance its capital plans. The Annual Repayment Limit for debt is a calculation regulated by the province's Ministry of Municipal Affairs and Housing (MMAH). For 2013, the Ministry's revised calculations estimate the annual repayment (principal and interest) limit for London to be $109.7 million (2013 budgeted repayment is $63.4 million), which translates to an available total debt level of approximately $907.3 million compared to the actual total of $585.8 million. The limit is based on limiting total debt repayments to twenty-five percent of a previous years 'own source' revenues and is used to provide a measure of financial constraint and sustainability. Use of the entire amount available would jeopardize the City's Aaa credit rating and put upward pressure on the property tax levy and/or user rates.

II. Debt Servicing Costs

Use of debt as a tool costs money in the form of debt servicing charges (i.e. interest payments). Projected debt servicing costs (tax-supported, water, wastewater, reserve funds, non-rate supported) total $63.4 Million in 2013 and are anticipated to increase to $79.9 Million in 2023 with fluctuations along the way. These interest payments are lost money that could otherwise be invested in infrastructure; hence the City's desire to reduce debt. The total annual debt servicing costs are illustrated in Table 6-15. The general property tax ratepayers will pay $39.9 million in debt servicing costs in 2013, which includes $2.5 million (one-time) of assessment growth revenue allocated to debt servicing costs to reduce the authorized but unissued debt. The City does have access to and uses less expensive debt financing available through other level of government programs such as Canada Mortgage and Housing Corporation, etc., than are available to average person.

Major assumptions used in the debt servicing costs are consistent with the assumptions used to project debt levels.

TABLE 6-15 2014 DEBT SERVICE COSTS WITH FORECAST TO 2023 ($MILLIONS)

Debt Servicing Costs by Ratepayer	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
General Property Taxes	39.9	42.0	42.8	44.4	46.0	47.6	49.1	50.8	51.5	48.3	44.2
Wastewater	13.3	13.7	13.6	13.4	13.3	12.6	12.4	12.2	11.6	8.3	7.2
Water	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.2	0.2
Rate Supported Reserve Funds	5.1	4.8	6.1	6.8	7.0	7.0	7.2	7.2	4.5	4.5	3.7
Subtotal	**58.6**	**60.9**	**62.9**	**65.0**	**66.7**	**67.6**	**69.1**	**70.6**	**68.0**	**61.3**	**55.3**
Joint Water Boards	1.2	1.4	3.6	3.6	4.4	4.4	4.0	4.0	4.0	4.0	3.1
City Services Reserve Funds	3.6	4.3	5.9	8.4	8.3	9.7	16.6	18.3	20.4	20.1	21.5
Total Debt Servicing Costs	**63.4**	**66.6**	**72.4**	**77.0**	**79.4**	**81.7**	**89.7**	**92.9**	**92.4**	**85.4**	**79.9**

The projected regular debt repayments over ten years are calculated using interest rates ranging from 4.30% in 2014 and rising to 6.0% in 2017 through 2023, which are derived using forecasts published by the "Big Five Canadian Banks".

6.2.4.1 London's Debt in Context

Relative to the other Ontario municipalities that participated in the 2013 BMA Consulting Study; the City of London shows an improving debt position (Table 6-16). Tax Debt Interest as a % Of Own Source Revenues declined below the study average in 2011 and remained there in 2012.

TABLE 6-16 TAX DEBT INTEREST AS % OF OWN SOURCE REVENUE

Municipality	2009	2010	2011	2012
London	**1.8%**	**1.8%**	**1.1%**	**1.4%**
Average	1.4%	1.6%	1.5%	1.6%
Median	1.1%	1.3%	1.3%	1.3%

It is very difficult to compare municipalities since one must also take into consideration the state of the infrastructure, the services that have to be provided (many Cities within regional governments provide fewer services than a single tier municipality such as London) and overall capital spending. However, through implementation of the City's Strategic Financial Plan it appears the City of London's debt position is improving compared to others.

6.3 Current and Planned Financial Strategies

6.3.1 Overview

This financing strategy section discusses City financing with the focus on infrastructure funding. In keeping with the City's current *Fiscal Responsibility: "Investing wisely to continue building our community, while maintaining a solid financial position"* the City will continue to practice prudent and responsible financial management principles including:

- Promote affordable and competitive property taxes
- Reduce debt levels and costs
- Promote pay-as-you-go financing
- Contain costs
- Ensure adequacy of reserves and reserve funds
- Invest strategically
- Adopt proven asset management techniques

This Plan is not an update of the City's Council endorsed 2005 Strategic Financial Plan which covers all City interests including those falling outside infrastructure requirements e.g. human resources. It is important that the City take all of its needs including infrastructure into consideration when preparing budgets and not use this Plan in isolation of other important considerations. However, the financial management of infrastructure is one of the key elements of the City's financial planning.

The City utilizes the following strategies to address infrastructure funding and its shortfalls:

- Capital Levy (Pay-as-you-go) Financing
- Debt Management
- Reserves and Reserve Funds

- Tangible Capital Assets
- Grants and Subsidies
- Development Charges
- Public Private Partnerships (P3), and
- Corporate Asset Management program

6.3.2 Capital Levy (Pay-as-you-go) Financing

The Council endorsed 2005 Strategic Financial Plan included a commitment to the use of more pay-as-you-go financing to fund the City's capital programs. In this approach, current revenues including property taxes and utility rates collected from residents are used to finance tax-supported programs.

Rate supported budgets which are separate from property tax supported budgets, are already strongly rooted in pay-as-you-go practices. Since the 2005 Strategic Financial Plan was implemented, the City has demonstrated increasing trends and commitment towards the pay-as–you-go financing model.

The early years of the 2005 Strategic Financial Plan were heavily weighted on "catch-up" or accelerated programs to bring the City's infrastructure back up to standard (such as roads and facilities renewal). In the latter parts of the plan, the amount of debt authorized would be reduced and the amount of pay-as-you-go funding is intended to increase to a level capable of supporting the on-going renewal of municipal assets and infrastructure.

The benefits of reducing authorized debt and moving to pay-as-you-go approach to finance life cycle renewal projects include:

- Reduced costs to the tax payer, related to debt servicing costs;
- Increased intergenerational equity — those who benefit from the asset are those who pay for it (matching planned expenses with revenues);
- Increased debt capacity within the debt cap for increased investment growth and new initiative projects that benefit future tax payers

Table 6-17 reflects the impact of the 2005 Corporate Strategic Financial Plan on the City's sources of funding to date.

TABLE 6-17 FUNDING MIX FOR LIFE CYCLE RENEWAL PROJECTS

Source of Funding	Target Funding Source	2006 Funding Source	2013 Funding Source	How are we doing?
Capital Levy (Pay-As-You-Go)	75%	11%	36%	25% improvement since 2006, work still required
Reserve Fund	20%	21%	17%	Position temporarily lower in 2013 due to project mix
Debt	0%	35%	17%	18% improvement since 2006, significant work still needed
Other non-tax supported	5%	33%	30%	This component includes Federal Gas Tax which was not a confirmed funding source when the target was established

Table 6-18 outlines the targeted, current and projected future funding mixes for life cycle renewal projects at the City. As the City continues to implement the principles of the Strategic Financial Plan the increased use of pay-as-you-go financing is evident. Since these targets were developed, initiatives such as the federal gas tax program are providing increased funding to municipalities. In London, this funding falls within the 'other' category noted in Table 6-18 which will ultimately result in lower target percentages required in the capital levy and reserve fund categories.

TABLE 6-18 FINANCING PROJECTIONS FOR LIFECYCLE RENEWAL PROJECTS

Source of Funding	Target Funding Source	2012 Funding Source	2013 Funding Source	2017 Funding Source	2022 Funding Source	How are we doing?
Capital Levy (Pay-As-You-Go)	75%	32%	36%	45%	54%	Position improving with plan (more PAYG)
Reserve Fund	20%	29%	17%	22%	25%	Position temporarily lower in 2013 due to project mix but aligning closer to target in future
Debt	0%	19%	17%	13%	3%	Position improving with plan (less debt authorized)
Other non-tax supported	5%	21%	30%	20%	18%	Other non-tax supported includes Federal Gas Tax which was confirmed as consistent funding in March 2013 so an increased reliance is justified

The pay-as-you-go strategy may result in an undue burden being placed on present taxpayers to finance some future need from which they may not fully benefit. It may also prevent the City from doing things that really need to be done because the projects are too costly to be carried out using only annual contributions to capital and reserve funds.

The pay-as-you-go financial strategy remains the preferred approach for capital financing for annual programs.

6.3.3 Debt Management

The City of London's debt picture has improved significantly since the 2005 Council endorsed Strategic Financial Plan was put in place. In order to manage the City's debt, the City has undertaken to:

- Apply year end savings and 50% of unallocated assessment growth funding to cancel authorized but unissued debt.
- Increase pay-as-you-go financing to finance life cycle renewal projects in lieu of debenture financing.
- Maintain liquidity of investments to temporarily finance capital projects, putting the City in a beneficial position to take advantage of favourable market conditions for debenture issuances.

Provincially the Ministry of Municipal Affairs and Housing imposes an annual debt repayment limit of 25% of 'own source' revenues as a measure of financial constraint and sustainability. The City of London strives to maintain its debt levels at targets below the provincial limit to minimize the impact of debt servicing charges on its operating budget. It should also be noted that Provincial legislation allows the use of debt only for capital expenditures.

The City of London plans to fund the life cycle renewal of its infrastructure on a pay-as-you-go basis without the use of significant amounts of debt (Table 6-18). As outlined within the Debt Management Strategy section of the City's 2005 Strategic Financial Plan, the following recommendations regarding debt were endorsed by Council:

1. Adopt various ratios to ensure that debt spending does not exceed certain tolerances.
2. Mitigate the short-term use of debt by considering the following measures:
   - Review existing approved capital budgets and cancel projects to eliminate authorized but unissued debt requirements, which will reduce the debt service need projected for the next five years.
   - Dispose of existing assets and use proceeds to reduce debt.
   - Dedicate 50% of future surpluses (if any) to debt elimination.
3. Charge carrying costs of debt to capital projects.

Continuing to implement the principles of the 2005 Strategic Financial Plan will support the commitment to strong debt management by the City of London.

6.3.4 Reserves and Reserve Funds

Having a healthy reserve and reserve fund balance ensures the long term financial stability of the City by enabling it to meet its day to day working capital needs, finance its capital plan, manage spikes in taxes and utility rates,

and helps maintain its Aaa credit rating. It also helps the City when facing the prospects of a growing infrastructure gap, a concern shared by other municipalities in Canada.

The process of planning to save funds today for future spending will lessen the impact on debt levels and lower the impacts on the tax and rate payer. The financial strategy for individual assets will vary depending on the asset's expected useful life. Applying reserves and reserve funds is consistent with the intergenerational equity principle. Reserves and reserve funds play a critical role in long-term financial planning. The benefits of having reserves and reserve funds available for infrastructure planning include:

- the ability to stabilize tax rates when dealing with variable and sometimes uncontrollable factors,
- financing one-time or short-term investments,
- accumulating the funding for significant future infrastructure investments,
- managing the use of debt, and
- normalizing infrastructure funding requirements

London still lags behind many of its municipal peers with respect to reserve and reserve fund savings. Reserves and reserve funds are an important tool to achieve funding stability and address the future investment needs of the City's assets.

6.3.5 Tangible Capital Assets

Like all municipalities, the City of London is required to report out on its tangible capital assets (TCA) per Public Sector Accounting Board (PSAB) standard 3150. Although this reporting function is not used for asset management directly, the requirement has been in place since 2009 and tends to drive the information collection capabilities of the City at the corporate level. The current data management processes have not been optimized and a TCA project is underway to improve them. The City has embarked on a process to review and enhance the current capital data collection processes. The improved reporting will enhance the capital project management process including budget development, project monitoring, inventory identification, and project accounting maintenance which in turn will help decision making. Through this work, the City will adopt processes that use corporate systems more efficiently, particularly J.D. Edwards, the financial engine; thereby reducing risk by moving away from spreadsheet based project financial tracking.

6.3.6 Grants and Transfer Funding

Grants and Transfers from the Provincial and Federal government are financial sources sometimes used to fund capital projects at the City. Ongoing funding agreements include Federal Gas Tax transfers. However, many grants are a result of stimulus or other one-time funding events that may be difficult to forecast. Grants are only included in the budget forecasts when confirmed and there is a good degree of certainty. The City will continue to pursue grants and transfer funding where possible.

This Corporate Asset Management Plan is the latest prerequisite moving forward for many funding applications to upper tier governments.

6.3.7 Development Charges

Development Charges (DC) are collected by the City from developers under the City's Development Charges Bylaw. Development Charges are used to finance the development (growth) share of the capital programs and are stored in designated DC reserve funds, primarily the City Services Reserve Fund, until they are needed to pay for growth-related infrastructure as prescribed in the Bylaw. These funds will continue to be used in the prescribed manner to fund growth related projects at the City. Projections relating to DC revenues are based on results of the regularly updated Development Charges Study, its ongoing recommendation of rates and the anticipated infrastructure requirement to facilitate growth of the City.

6.3.8 Public Private Partnerships (P3)

Public Private Partnerships is a capital project delivery method whereby a public entity, such as the City, partners with a private entity for the purpose of delivering public infrastructure. The federal government offers grants in support of these shared initiatives. Typically this involves the participation of a design build team, a maintenance firm, and a lending firm in partnership with the City. The City has entered this kind of relationship routinely where applicable, such as for the construction of the Budweiser Gardens. Typically the profit needs of the private sector partners are intended to be achieved through user fees while the City benefits from shifting the risk of operating and maintaining these investments to the private sector. The City considers the P3 approach as projects arise and makes decisions based on the individual merit of the proposals.

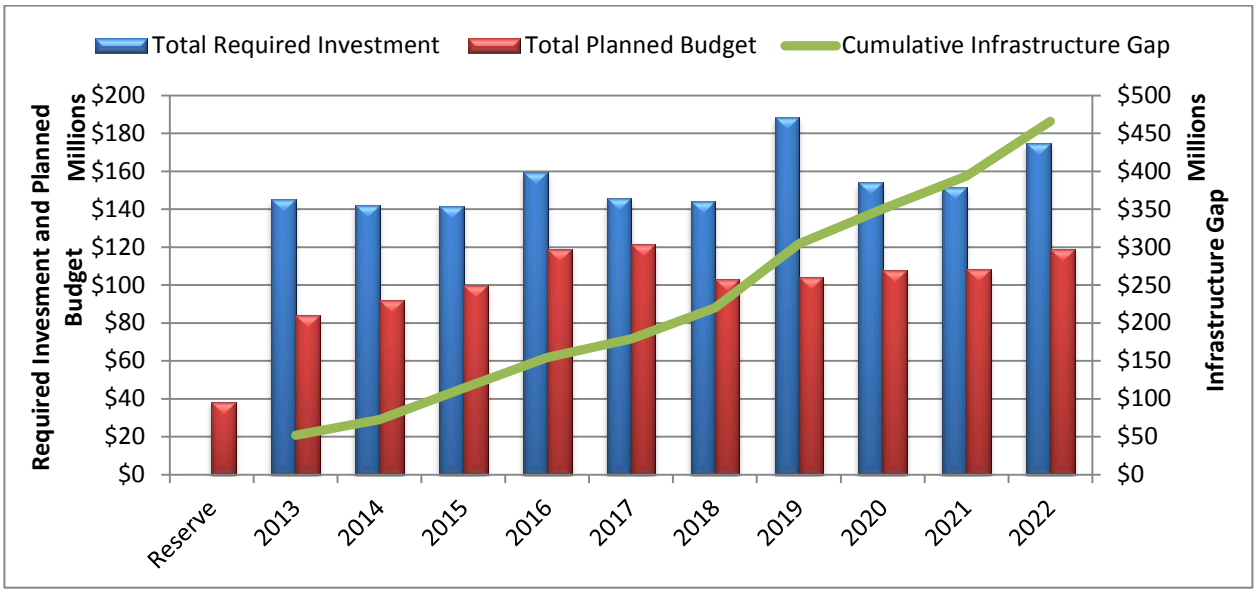
6.3.9 Corporate Asset Management Program

The City of London embarked on the development of the Corporate Asset Management Program in 2011. This document is one of the deliverables of that program. The Program addresses standardized asset management practices including risk, level of service and optimized decision-making. Further details of the Corporate Asset Management Program were previously discussed in Chapter 5.

6.4 Infrastructure Gap

The City of London has identified the infrastructure gap as the difference between the investment needs of infrastructure (based on age and condition) and the forecasted capital budget expenditures considering life cycle reserve fund balances, contributions and withdrawals based on what is known today. In other words, what we plan to spend versus what the assets need. The estimate is based on year end 2012 data and projected over the next ten years. This analysis is documented in the companion document to this Plan titled 'State of Infrastructure Report 2013'. Over the next decade the City of London projects spending in excess of $1 Billion to address the life cycle needs of its core assets. This level of investment will result in an infrastructure investment gap of roughly **$466.1 Million** over the same 10 year period (Figure 6-7). The analysis reveals that the current infrastructure gap is approximately **$52.1 Million.** The analysis does not consider expenditures required to address growth, service improvements or inflation. The analysis does not consider boards and agencies.

FIGURE 6-7 CITY OF LONDON INFRASTRUCTURE GAP



The chart above displays the following information:

- The Total Required Investment bars (blue bars – left axis) are the investments required to maintain the existing assets in serviceable condition.
- The Total Planned Budget bars (red bars – left axis) are the amount of investment the City currently forecasts spending on Life Cycle Renewal on its infrastructure. This amount is determined via one of two methods:
  - Where the service area identified their capital budget as funded solely from Reserve/Reserve Fund drawdowns, the Reserve balance at the end of 2012 plus their annual projected Reserve contributions for 2013 to 2022 are used.
  - Where the service areas life cycle capital budget is funded from multiple sources, the service area's life cycle capital budget projections for 2013 to 2022 are used[7].
- The Cumulative Infrastructure Gap (green line – right axis) is the sum total of the differences between the Total Required Investment and the Total Planned Budget (blue bar minus red bar). The current infrastructure gap represents the amount of investment today that would be required to address the risk represented by assets nearing the end of their estimated useful lives. These needs do not include allowances for growth, inflation or service improvements. Based on current funding plans the infrastructure gap is projected to grow steadily over the next decade.

The major contributors to the increasing infrastructure gap are insufficient investments planned for Roads and Structures, Corporate Facilities, Parks, Water, Traffic and Wastewater-Sanitary service areas. Table 6-19 provides a detailed breakdown of the contributors to both the current and projected infrastructure gaps by City service area.

[7] As the life cycle capital budget line item projections include funds sourced via Reserve/Reserve Fund drawdowns, inclusion of a Reserve/Reserve Fund balance in this method would result in double counting the funds available for investment and artificially reduced the projected Infrastructure Investment Gap.

TABLE 6-19 CURRENT AND FUTURE INFRASTRUCTURE GAP

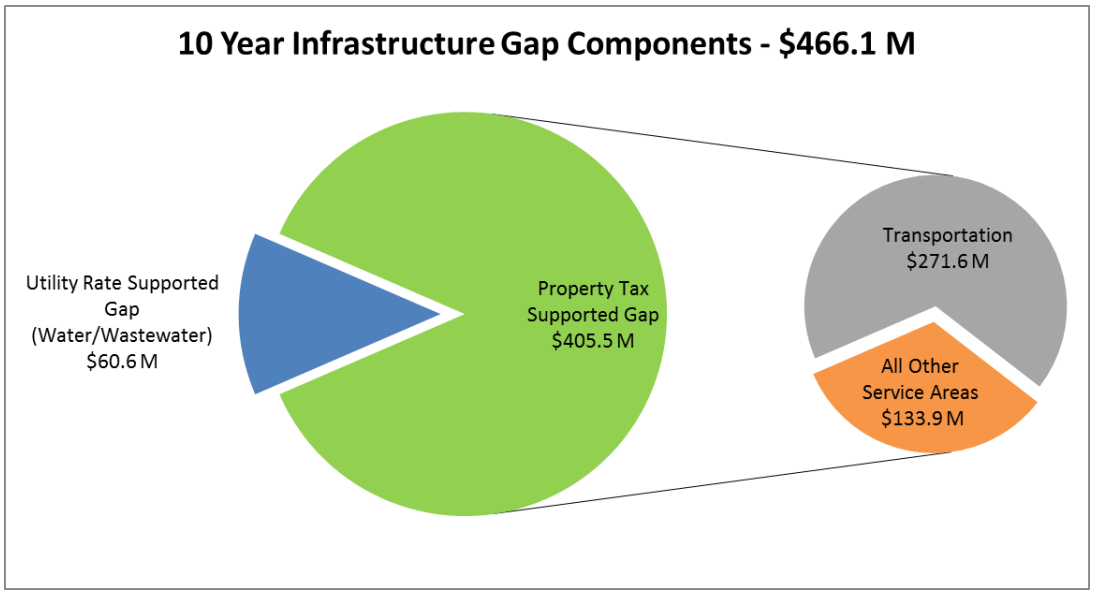
Program Area	Service Area	Replacement Value ($000's)	Infrastructure Gap	
			Current ($000's)	In 10 Years ($000's)
Water, Wastewater Services	Water	$2,734,373	$1,941	$37,800
	Wastewater - Sanitary	$2,043,409	$0	$21,802
	Stormwater	$1,993,151	$0	$973
Transportation Services	Roads & Structures	$1,832,115	$26,705	$236,165
	Traffic	$214,937	$6,856	$35,474
	Parking	$5,694	$0	$0
Environmental Services	Solid Waste	$64,237	$0	$5,142
Parks, Recreation & Neighbourhood Services	Recreation	$246,832	$0	$7,314
	Parks	$141,358	$4,990	$43,763
	Urban Forestry	$513,300	$637	$9,070
Protective Services	Fire	$66,156	$0	$0
Social and Health Services	Long Term Care	$45,593	$0	$2,562
Corporate, Operational & Council Services	Corporate Facilities	$149,532	$9,589	$55,199
	Culture Facilities	$31,471	$0	$0
	Fleet	$44,994	$0	$0
	Information Technology	$46,100	$1,342	$10,867
	Land	$751,890	$0	$0
Total		**$10,925,142**	**$52,060**	**$466,131**

The concern over an infrastructure gap is not so much that it exists. In fact, maintaining a controlled "gap" is likely indicative of prudent financial management. A balance must exist between the amount of preventative and reactive measures used to address infrastructure concerns and how much risk of asset failure is tolerable. At the time of this writing, in Canada, there is no standard or guidance to evaluate what is, or is not, an acceptable municipal infrastructure gap. In London's situation a $52.1 Million infrastructure gap compared to a $10.9 Billion asset base could be considered well managed. The City of London is widely regarded for its water quality, recreation facilities, inter-connected network of parks, etc. Not to be overlooked the City of London has also received an Aaa credit rating for 37 consecutive years; an illustration of its prudent financial management practices. The concern with the analysis presented in this report is that the current infrastructure gap is projected to significantly increase over the next 10 years; indicating that planned investment in asset life cycle initiatives does not sufficiently address the needs of our infrastructure. Asset failures can be expected to increase along with a corresponding drop in the levels of satisfaction with services. This plan is intended to ensure actions are in place to manage the infrastructure to provide acceptable levels of service. This is a complex activity without any single solution. However, collectively the actions of the City are expected to address the growing gap. The simplest model is to target elimination of the gap as the starting point.

6.5 Strategies for Addressing Infrastructure Funding Shortfalls

The State of Infrastructure Report 2013 identified a projected 10 year infrastructure gap of $466.1 million. As illustrated in Figure 6-8 this gap can be broken down into distinct components.

FIGURE 6-8 INFRASTRUCTURE GAP COMPONENTS



$60.6 million of this infrastructure gap is attributed to the Water and Wastewater services. Their rate budgets are based on strategic 20 year system plans. These living documents continue to form the basis for the annual Water and Wastewater operating and capital budgets by providing a path to long-term financial sustainability and compliance with legislative requirements associated with the City's drinking water, wastewater and treatment systems. Sustainability of the infrastructure is included in these plans. Council continues to endorse these plans in each annual budget through approval of rate, capital and operating forecasts. Current and future Council commitment is imperative to the state of this critical infrastructure.

The remaining $405.5 million infrastructure gap is attributed to services areas whose budget is determined via property taxes. The most significant portion of the property tax supported infrastructure gap, 67%, ($271.6 M) is attributed to Transportation. Transportation and Finance are currently developing a long range financial plan that identifies and recommends strategies that will address Transportation priorities including service improvements like bus rapid transit.

The City has not yet turned its attention to the remaining 33% of the infrastructure gap, $133.9 M, (orange section) recently identified in the State of Infrastructure Report 2013. This remaining gap impacts Solid Waste, Recreation, Parks, Forestry, Long Term Care, Corporate Facilities and Information Technology services.

Services excluded from the above are not expected to experience an infrastructure gap over the next ten years. Boards and Agencies have not been analyzed for their infrastructure gap.

The City has always known there was an infrastructure gap but the State of Infrastructure Report 2013 provided a level of detailed information that will help direct where the City needs to focus its efforts.

The City of London uses a number of financial planning vehicles beginning with the 2005 Strategic Financial Plan which describes the City's financial approach at a high level and supports the annual budgets which generally project to a ten year window. The high level plans are supported by a myriad of specific plans including business plans and cases.

The Water Service Area has developed a 20 Year Water Financial Plan that confirms a commitment to full cost recovery, financial stability and closing the water infrastructure gap (not necessarily in the ten year period), while achieving sustainability of the system. The plan addresses the effects of declining consumption, increased wholesale water costs, inflation, non-revenue water loss and the addition of new revenues sources. This is

intended to ensure that future generations and businesses are not faced with a water system that is failing, unreliable and expensive to maintain. The 20 Year Water Financial Plan includes allowances for growth and inflation.

The Wastewater Service Area has developed a 20 Year Sewer System Plan that is coincident with the principles of the 20 Year Water Financial Plan. The Wastewater Plan uses the effects of reduced water consumption generating less flow and the future projected rate increases to address infrastructure that requires significant renewal. This 20 Year Sewer System Plan works within the constraints of the debt servicing ratio gradually increasing pay-as-you-go funding for life cycle replacement, while slowly growing the reserve funds.

Through implementation of these Plans, the Water and Wastewater service areas forecast reaching financial and rate stability by 2018.

The Transportation Service Area was recently granted Council approval and direction to develop a Transportation financial plan. Work on this new plan has begun and is intended to address their portion of the infrastructure gap while aligning with the Corporate Asset Management program. This plan will go beyond the infrastructure gap to address growth, inflation and the move towards implementing bus rapid transit as identified by the Smart Moves 2030 Transportation Master Plan.

6.5.1 Options for Infrastructure Gap Reduction

Mitigating the infrastructure gap and its projected growth requires either an increase in investment in infrastructure renewal or a reduction in the services the City provides. The reduction of service has never been a desirable position to promote and for the most expensive and critical infrastructure like roads and utilities, is not a viable option. This analysis explores the impacts of increasing investments in infrastructure while acknowledging that choosing to reduce service may also be available to manage affordability. The City has funding options. The avenues that will produce the most significant, but perhaps least desirable impact are increases to utility rates and property taxes. However funding sources to address infrastructure needs are not limited to these sources. Through increased user fees, transfers from upper tier governments, etc. the City can also source some of the required funding. This section discusses options that could be used to manage or eliminate the growing infrastructure gap.

The baseline assumptions for this options analysis include:

1. Sources of revenue other than taxation and utilities include transfer funding, user fees and debt.
2. The City of London's infrastructure gap is projected to be $466.1 million by 2022 if current spending plans remain unchanged. The growing gap is a concern and will be addressed.
3. Growth of the infrastructure gap in the Water and Wastewater utilities is expected to be addressed satisfactorily via their 20 year financial plans currently in place. They must be adhered to if this Plan is to be successful. This water/wastewater strategy addresses $60.6 million of the projected infrastructure gap leaving $405.5 million remaining to be addressed.
4. Any new funds generated to address the gap will be used exclusively to address the infrastructure gap. The impacts on operational budgets will also need to be considered for financial planning purposes. For example, budget increases to cover the rise in fuel prices, are not considered herein. Any infrastructure gap funding will not be used for other City needs.
5. The recommended actions to mitigate the gap will be introduced in the 2015 budget approval process as a starting point. Initially the mitigation of the gap will be planned to be completed by 2022 in alignment with the current understanding of the gap. Over time, the assessments will be refined and updated to manage the growth of the gap. This strategy assumes that the increased risk in the short term is acceptable. In the interim, should unplanned revenues become available it would be prudent to apply them towards mitigating the infrastructure gap.
6. The starting set point for the model is to eliminate the property tax supported infrastructure gap of $405.5 million by the year 2022. It is acknowledged that parameters will change over time and that only through continual monitoring and adjustments will the growth of the gap be controlled at a level that prevents negative impacts to service delivery.

Elimination of the growing gap requires a source of funding. It is well understood that transfer funding can be substantial but is not guaranteed. Some transfer funding like the gas tax is already spoken for in the budget process and does not provide a likely source for gap funding. User fees are not a significant source historically. Debt adds to the ultimate financial burden and is already well managed by the City. There is risk associated with depending on any of these three sources being available. Therefore, the analysis presented varies the amount of funding available from these other sources and focuses primarily on acquiring the necessary funding through property tax increases. This Pan will likely impact the property tax rate. Four scenarios are presented that reflect increasing availability of other funds and the impact on the property tax rate required to eliminate the infrastructure gap. These include:

- 100% funding from a tax increase (at the City's discretion)

- 90% funding from a tax increase; 10% funding from other sources (plausible),
- 80% funding from a tax increase; 20% funding from other sources (possible), and
- 66% funding from a tax increase; 33% funding from other sources, (unlikely)

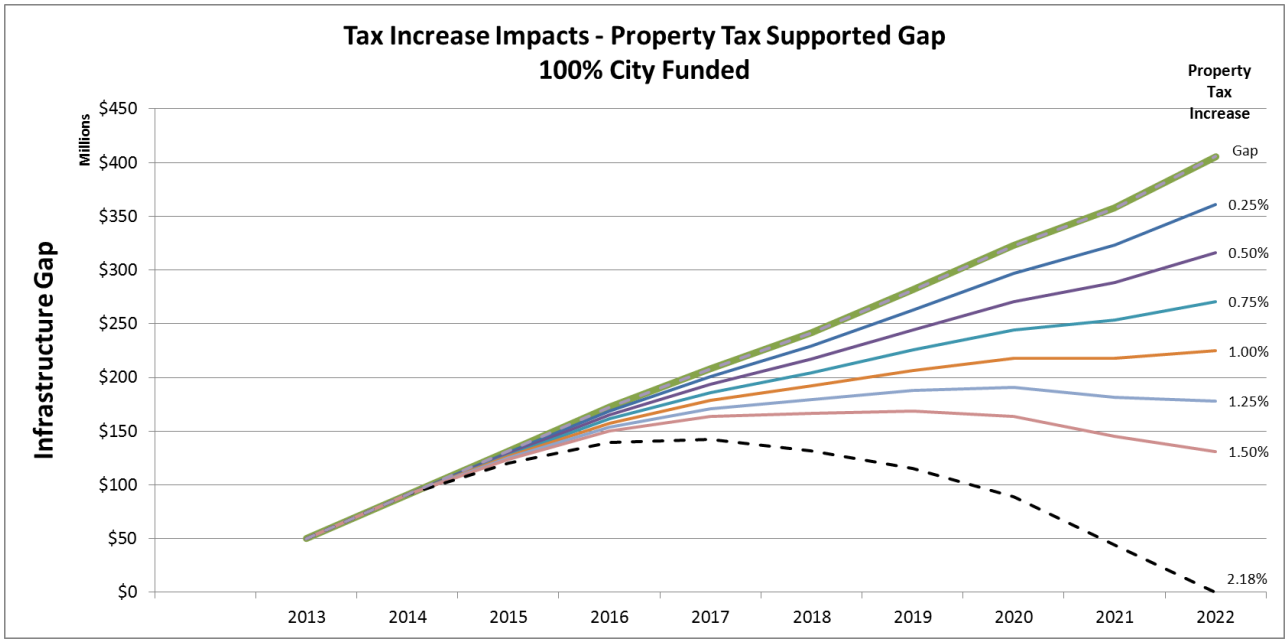
The results are shown in the graphics below. The graphics reflect the tax increases under each scenario that would completely eliminate the property tax supported portion of the infrastructure gap (Figure 6-8). Each graphic also illustrates the impact various property tax increases would have in mitigating the gap.

It should be noted that in this model the risk of the City not acquiring funding from other sources is addressed through the use of debt to cover these amounts. The analysis is presented separately for each option. This treatment reflects the City's goal to reduce the amount of debt used to fund life cycle renewal projects to 0% (Table 6-17); preserving its use to fund growth and service improvement projects. It should be understood that if the other funding sources portion for the gap did not materialize, this strategy would present a potential risk to the taxpayer in the form of debt servicing costs.

6.5.1.1 City Funds 100% of the Property Tax Supported Infrastructure Gap – No Funding is Received from Other Sources

If the City were to address the remaining infrastructure gap of $405.5 million without assistance from any other funding sources, it could be achieved through average annual property tax increases of 2.18% each year for eight straight years (2015-2022). The impacts of this increase as well as the impacts of more moderate annual increases, for illustrative purposes, are shown in Figure 6-9. Implementing a lower property tax increase is an option available to the City but would extend the time period required to eliminate the infrastructure gap and result in increased risk of asset failures over the long term. Following elimination of the infrastructure gap, the Corporate Asset Management program will help identify the infrastructure requirements so that future City budgets will address the required investment and determine the appropriate tax levy.

FIGURE 6-9 PROPERTY TAX IMPACT - 100% CITY FUNDED GAP OPTION

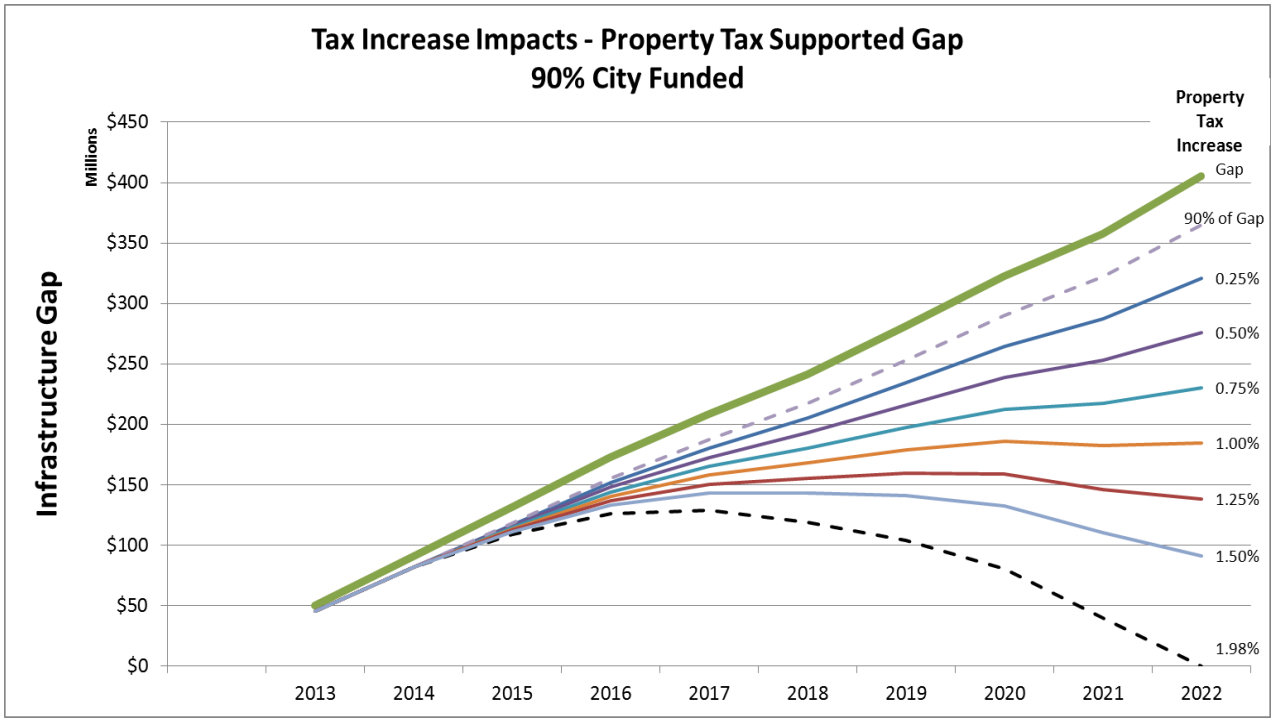


This amount is additional to other burdens faced by the City's ratepayers to address the Water and Wastewater gap as well as inflation, growth and service improvements. This option assumes there will be no additional funding coming from user fees and transfer funding but optimistically assumes current projected transfer funding, like the gas tax, from other levels of government continues.

6.5.1.2 City Funds 90% of the Property Tax Supported Infrastructure Gap – 10% of Funding is Received from Other Sources (transfers, user fees, etc.) - Plausible

If the City were to receive additional funding beyond what is currently received to help address 10% of the property tax supported infrastructure gap via transfers from upper tier governments, etc., eliminating the remaining gap could be achieved through average annual property tax increases of 1.98% each year for eight straight years (2015-2022). The impacts of this increase as well as the impacts of more moderate annual increases, for illustrative purposes, are shown in Figure 6-10.

FIGURE 6-10 PROPERTY TAX IMPACT - 90% CITY FUNDED GAP OPTION



It is assumed that the City is willing to accept the risk of potentially not receiving 10% ($40.6 million) of the necessary funding ($405.5m) from sources other than property taxes. This is a relatively high risk if left to address in the future as it represents 8.5% of the City's total 2013 property tax revenue. If the City were required to fund this amount through the issuance of debt it would result in an additional average annual tax increase of 0.5% (Table 6-20) to cover that 10% of the infrastructure gap as well as $6.9 million in debt servicing (interest) costs associated with this type of funding, therefore the required average tax levy increase would be 2.47% (1.98+0.49).

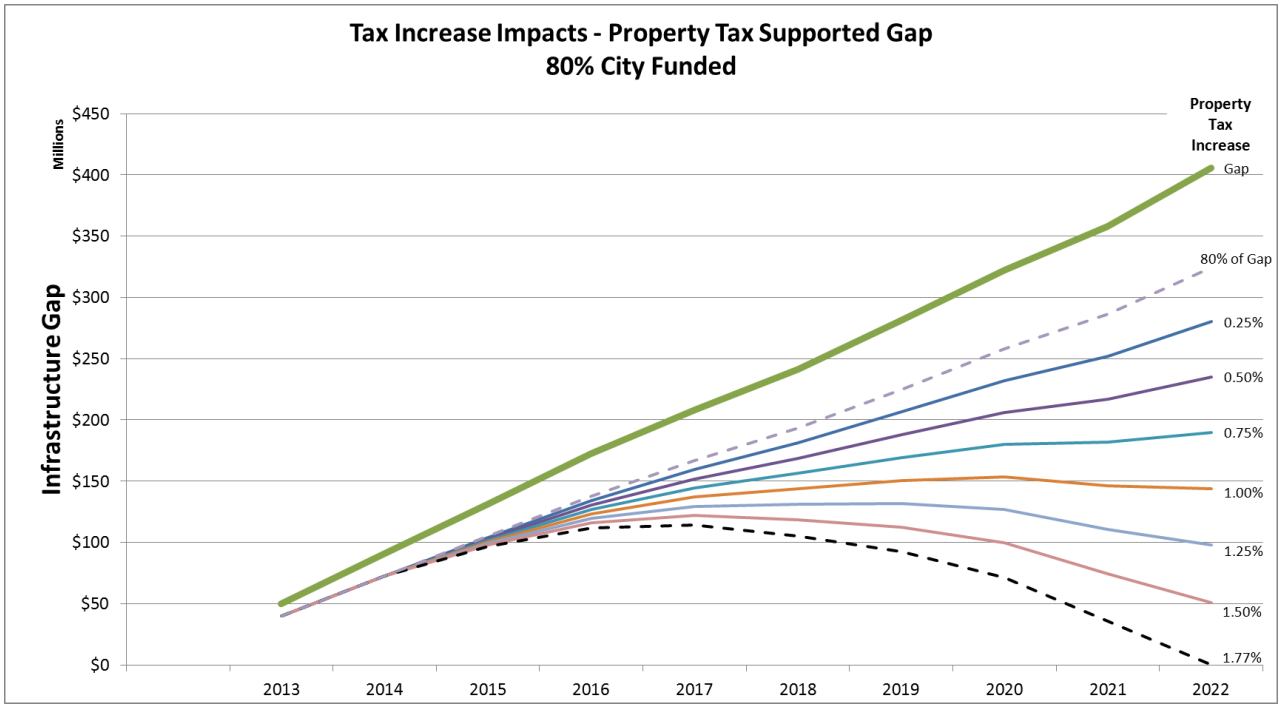
TABLE 6-20 DEBT IMPACT - 90% CITY FUNDED GAP OPTION

Avg. Annual Tax Increase	New Debt Total	Annual Debt 2015-2022	Total Interest (Assumes 3%, 10 yr. Debentures)	Year Debt is Paid Off
0.49%	$40,555,574	$5,069,447	$6,987,931	2031

6.5.1.3 City Funds 80% of the Property Tax Supported Infrastructure Gap – 20% of Funding is Received from Other Sources (transfers, user fees, etc.)- Possible

If the City were to receive additional funding beyond what is currently received to help address 20% of the property tax supported infrastructure gap via transfers from upper tier governments, etc., eliminating the remaining gap could be achieved through average annual property tax increases of 1.77% each year for eight straight years (2015-2022). The impacts of this increase as well as the impacts of more moderate annual increases, for illustrative purposes, are shown in Figure 6-11.

FIGURE 6-11 PROPERTY TAX IMPACT - 80% CITY FUNDED GAP OPTION



It is assumed that the City is willing to accept the risk of potentially not receiving 20% ($81.1 million) of the necessary funding ($405.5m) from sources other than property taxes. This is a relatively high risk if left to address in the future as it represents 16.9% of the City's total 2013 property tax revenue. If the City were required to fund this amount through the issuance of debt it would result in an additional average annual tax increase of 1% (Table 6-21) to cover that 20% of the infrastructure gap as well as $13.98 million in debt servicing (interest) costs associated with this type of funding.

TABLE 6-21 DEBT IMPACT - 80% CITY FUNDED GAP OPTION

Avg. Annual Tax Increase	New Debt Total	Annual Debt 2015-2022	Total Interest (Assumes 3%, 10 yr. Debentures)	Year Debt is Paid Off
0.99%	$81,111,149	$10,138,894	$13,975,862	2031

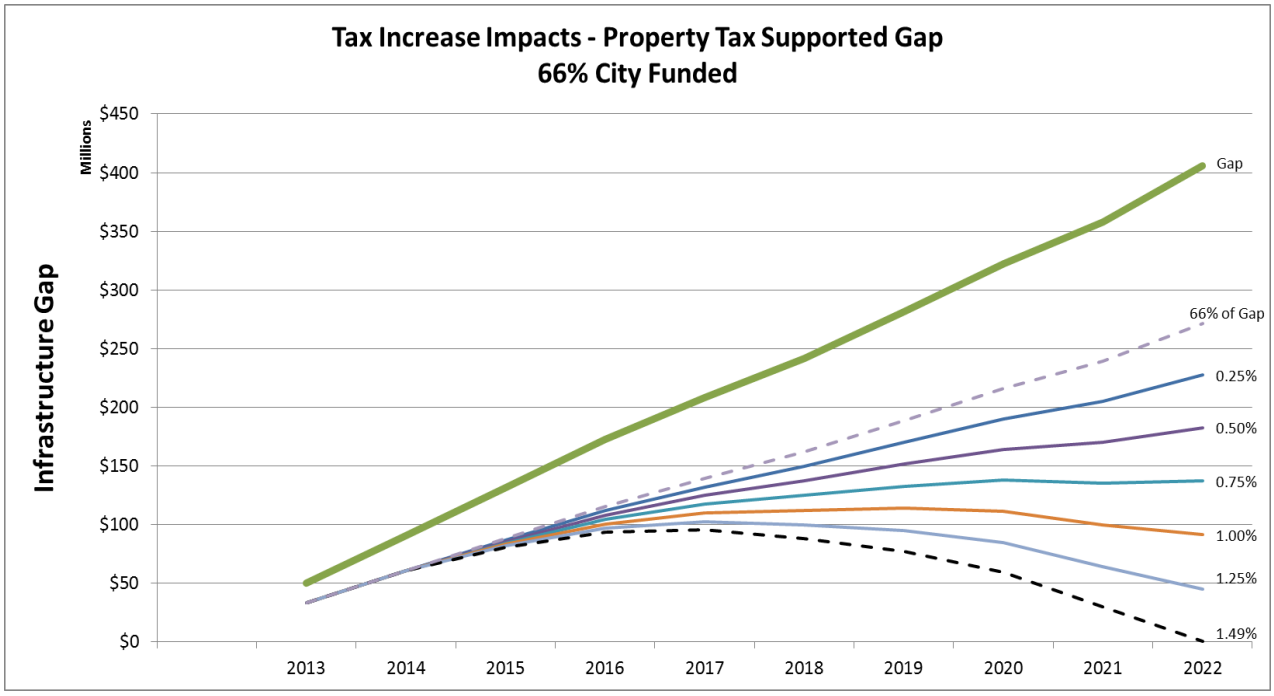
However it is not unreasonable to expect transfer funding at this level between now and 2022. The City has received substantial amounts near this level in the form of stimulus funding in the past, noting that the apparent current direction from the upper tier governments is to fund smaller communities and northern communities excluding larger municipalities like London. Funds transferred by Gas Tax are already rolled into the existing budgets and are not available to mitigate the gap. If gas tax amounts increase this could help mitigate the infrastructure gap.

Another way to look at this option is to consider that the infrastructure gap total at the end of 2012 was $52.1 M. Although not satisfactory to all, the City was generally functional at this value of gap. The 20%/80% option presents a similar scenario if money was not forthcoming from other sources.

6.5.1.4 City Funds 66% of the Property Tax Supported Infrastructure Gap – 33% of Funding is Received from Other Sources (transfers, user fees, etc.) - Unlikely

If the City were to receive additional funding beyond what is currently received to help address 33% of the property tax supported infrastructure gap via transfers from upper tier governments, etc., eliminating the remaining gap could be achieved through average annual property tax increases of 1.49% each year for eight straight years (2015-2022). The impacts of this increase as well as the impacts of more moderate annual increases, for illustrative purposes, are shown in Figure 6-12.

FIGURE 6-12 PROPERTY TAX IMPACT - 66% CITY FUNDED GAP OPTION



It is assumed that the City is willing to accept the risk of potentially not receiving 33% ($133.8 million) of the necessary funding ($405.5m) from sources other than property taxes. This is a relatively high risk if left to address in the future; it represents 27.9% of the City's total 2013 property tax revenue. If the City were required to fund this amount through the issuance of debt it would result in an additional average annual tax increase of 1.7% (Table 6-22) to cover that 33% of the infrastructure gap as well as $23.1 million in debt servicing (interest) costs associated with this type of funding.

TABLE 6-22 DEBT IMPACT - 66% CITY FUNDED GAP OPTION

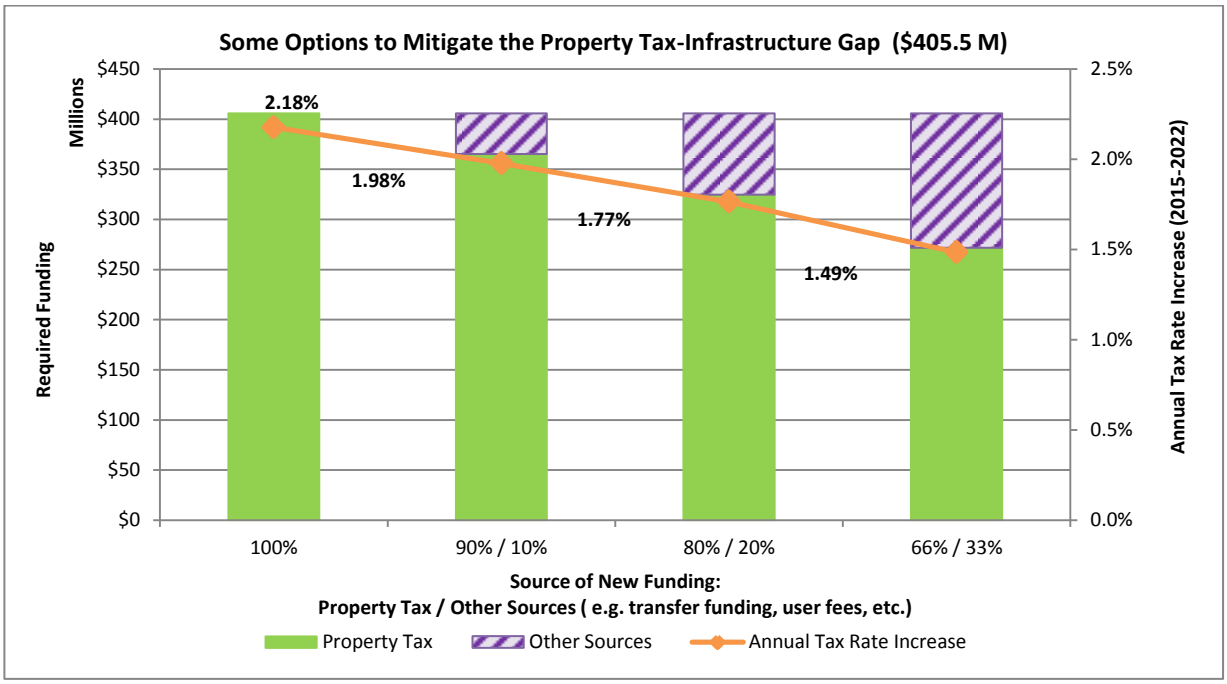
Avg. Annual Tax Increase	New Debt Total	Annual Debt 2015-2022	Total Interest (Assumes 3%, 10 yr. Debentures)	Year Debt is Paid Off
1.66%	$133,833,395	$16,729,174	$23,060,172	2031

Historically special transfers like stimulus programs have not resulted in transfer funding at this level for the City of London. It is optimistic to expect upper tier governments to transfer $133.8 million worth of new stimulus type funding to London by 2022.

6.5.1.5 Options Analysis Summary

Figure 6-13 summarizes the options illustrating the relationship between receiving additional funding sources and the tax increase needed to eliminate the infrastructure gap by 2022.

FIGURE 6-13 OPTIONS SUMMARY - TAX SUPPORTED GAP



Once an option has been selected, a format must be decided so that the money is invested where and when it is most needed. Ideally placing the tax revenue that is dedicated to mitigating the gap in a reserve fund would allow the service areas to plan the work for when it is most needed. The money should be allotted proportional to the individual service area gap thus preventing it from use for other purposes. A project should only be undertaken when enough savings have accrued to fund the expenditure. This helps allow time for the asset management program to mature so that the funds can be expended in the most effective and efficient manner but does increase the risk that service levels will be impacted negatively.

6.5.2 Recommended Strategy for Addressing Infrastructure Funding Shortfalls

Financial plans exist for Water and Wastewater services that should provide for their infrastructure gap in the long term. This Plan relies on those plans being followed. No further action is needed for water/wastewater beyond monitoring and revisions should their success be limited in any way.

The City should set up a gap mitigating reserve fund to address the gap for Transportation, Solid Waste, Recreation, Parks, Forestry, Long Term Care, Corporate Facilities and Information Technology services. Several options have been explored as described earlier. The funding will likely need to be generated through a property tax increase. The 80%/20% option appears to be the preferred option at least to start the process of mitigating the gap. It comes with an associated risk of debt financing costs or an increased risk of reduced services. The potential shortfall may be tolerable. It is recommended that the City start on the path to build a gap mitigation reserve fund as part of the 2015 budget process, and update the plans with each annual budget process moving forward. As a starting point the City should consider accepting the risk (i.e. the impact of debt financing) that 20% of the funding will become available from transfer funding and user fees. The 80% remaining should be funded through a property tax increase at 1.77% annually for eight years with the amounts revisited each year during the budget update and modified when warranted.

As the reserve grows so will the corporate asset management program enabling the most efficient use of the reserves to sustain the infrastructure needed to deliver the services.

6.6 Financial Summary

This is the first corporate asset management plan for the City of London. This chapter is intended to cover the financial basics and meet the Ministry of Infrastructure guideline through describing London's financial strategies. However the Plan is only one of the important steps at the start of a long road to more efficient and effective asset management planned by implementing the corporate asset management program. The plan is also only a management tool with regard to assets. The corporation has many more responsibilities and it is recognized that this is only a piece of the gigantic puzzle.

As witnessed by the forecasted growth of the City's infrastructure gap, despite a strong financial position, prudent and conservative financial management techniques, the existing capital investment plans are not sustainable at current levels. This plan illustrates options for addressing the infrastructure gap and recommends a strategy to address the gap based on current service levels. The Plan will likely impact the property tax rate.

The City remains not only supportive of its current funding strategies but continues to further improve its practices. As the City's Corporate Asset Management Program proceeds, better information will become available regarding London's infrastructure and its needs. This heightened understanding will aid decision-makers by helping prioritize investments during the short and long term which culminates in the annual/multi-year budget processes.

This approach will be tested every year to monitor the effects of any implemented recommendations and ensure growth of the infrastructure gap does not exceed current expectations. This will permit the City to reassess the assumptions used in this analysis and make allotments for improved asset data via the Corporate Asset Management program.

Corporate Asset Management Plan Conclusions and Recommendations

7.1 Conclusions

This Corporate Asset Management Plan is a strategic document that states how London's assets are to be managed over the period of the next ten years and beyond. The Plan describes the characteristics and condition of infrastructure assets based on the State of Infrastructure Report 2013. The Plan describes the approach the City uses and plans to implement regarding levels of service as the City moves from the management philosophy of maintaining the assets to sustaining the delivery the services using the assets. The Plan includes the actions intended to ensure the assets are providing the expected level of service, and describes the financing strategies needed to implement the planned actions. Following this Plan will likely impact the property tax rate.

The scope of the plan includes the core service areas of the City of London including Transportation, Parks & Recreation, Water, Wastewater-Sanitary, Wastewater- Stormwater, Solid Waste, Fleet, Facilities, Fire, Long Term Care, Information Technology, Corporate and Culture Facilities. This first Plan does not include assets under the ownership and control of Boards and Agencies, such as Social Housing, Police, Transit, Libraries and Regional Water.

This Corporate Asset management plan will help ensure that investments are made to minimize future repair and rehabilitation costs and maintain City of London assets. The City is moving toward standardization and consistency in asset management across its core service areas. In the future the practices evolving from the Plan can be extended to the Boards and Agencies. Ultimately, the implementation of the Corporate Asset Management Program will satisfy provincial expectations and allow the City to make the right investments in infrastructure for the right amount at the right time.

This Plan offers a viable approach to address future asset management needs in the City of London.

7.2 Recommendations

This report is the first collective asset management plan for the City of London. This Plan will help us to manage the Corporation of the City of London's $10.9 billion infrastructure portfolio now and into the future thereby sustaining service delivery for our citizens. The Plan is a living document that is intended to meet provincial requirements and improve over time. The recommendations of the Plan are as follows:

1. Continue to aggressively pursue the Corporate Asset Management Program in order to standardize quality asset management practices across the corporation that focus on service delivery through the consideration of levels of service, risk management and life cycle management of the City's assets. This includes correcting information weaknesses, acquiring the tools needed to enable asset management and improving the quality of asset information in order to facilitate decision-making.
2. Continue to merge the new asset management program with the existing practices in order to take maximum advantage of the history of effective past practices in the City of London.
3. Continue to align the Plan with the Corporate Strategic Results/Goals.
4. Review the existing levels of service and develop a level of service registry to help define the needs of the asset base.
5. Review the results of the Corporate Asset Management Plan annually and fully update the Plan every five years to ensure its continuing suitability, adequacy, and effectiveness.
6. Continue to foster pay-as-you-go practices including the use of reserves and reserve funds to prepare for future needs.

7. Rely on existing 20 year plans and their updates as a means to manage infrastructure gaps in the water, and wastewater services.
8. Start building a reserve fund to be used exclusively for addressing the infrastructure gap. Plan for the new funding need as part of the 2015 property tax rate setting process and update the amount annually thereafter. Plan to initially eliminate the gap by 2022, a term matching the current understanding of the State of the Infrastructure Report 2013.
   As the CAM program evolves, the accuracy of required rate increases will improve. However a delay in building a reserve fund will only aggravate the gap, placing the City's infrastructure at risk and resulting in negative impacts on service delivery.
9. Continue to monitor the changing gap with the objective of meeting the needs for service delivery.
10. In the long term, extend the corporate asset management practices to the Boards & Agencies of the City as appropriate.

London
CANADA

Who can answer my questions about the Corporate Asset Management Plan?

Please call 519-661-2500 ext. 5442 Corporate Asset Management Office between 8:30 a.m. and 4:30 p.m., Monday to Friday or visit www.london.ca

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