



TO: GENERAL COMMITTEE

SUBJECT: TRANSIT ASSET MANAGEMENT PLAN AND FINANCIAL STRATEGY

WARD: ALL

PREPARED BY AND KEY CONTACT: T. TURNER, CPA, CGA
SUPERVISOR OF BUSINESS SERVICES, EXT. 5187

SUBMITTED BY: B. FORSYTH, DIRECTOR OF TRANSIT AND PARKING STRATEGY

GENERAL MANAGER APPROVAL: R. JAMES-REID, EXECUTIVE DIRECTOR – ACCESS BARRIE

CHIEF ADMINISTRATIVE OFFICER APPROVAL: M. PROWSE, CHIEF ADMINISTRATIVE OFFICER

RECOMMENDED MOTION

1. That the Transit Asset Management Plan and Financial Strategy attached as Appendix “A” to Staff Report TPS003-19 be approved in principle as the guiding document up to 2041 with the capital and service level requests being approved through the annual Business Plan.

PURPOSE & BACKGROUND

2. On December 3, 2015 the Ontario Legislature passed Bill 73 which outlines two notable changes for transit in the Development Charges Act, 1997. The first being transit is no longer subject to a 10% mandatory reduction for eligible development charges; and second that transit’s 10 year level of service baseline is forward looking and not based on the previous 10 year timeframe as true for the remainder of City services. A Council approved Asset Management Plan and financial strategy would be required to support the submission into the Development Charges Background Study and ultimately the update to the Development Charges By-law.
3. In addition, in January 2018 the Province of Ontario released O. Reg 588/17 ‘Asset Management Planning for Municipal Infrastructure’ that articulates specific content required in asset management plans and prescribes at a high level the following:
 - a) Ontario municipalities are required to prepare and adopt a strategic Asset Management Policy by 1 July 2019;
 - b) AMP Phase 1: Ontario municipalities must have an Asset Management Plan for all core municipal infrastructures by July 1, 2021. The AMP needs to include inventory of assets, current level of service measured by standard metrics and cost to maintain current level of service;
 - c) AMP Phase 2: Include all other municipal infrastructure assets to the AMP prepared as part of Phase 1 by July 1, 2023;
 - d) AMP Phase 3: In addition, by July 1, 2024 AMP must include the levels of service that the municipality proposes to provide including a forecast of the proposed performance of each asset category, lifecycle management and financial strategy for a ten year period;

4. In consideration of these significant changes it became apparent that Barrie Transit required a robust Asset Management Plan and financial strategy that will support the submissions into the Development Charges Background Study, meet all required legislation, and assist in future capital and service level planning.

ANALYSIS

5. The Transit Asset Management Plan and financial strategy document as attached in **Appendix A** will form a critical strategic document for the Transit and Parking Strategy department that aligns with the City's modal share targets as outlined in the Transportation Master Plan including a modal share target of 7% for transit. The Transit Asset Management plan will help inform future annual Business Plans, applications for Federal and Provincial infrastructure funding, and 10 year Capital Plans.
6. In the fall of 2018 the Transit and Parking Strategy department issued invitational RFP TRANS-003 and awarded the contract to Dillon Consulting Limited in partnership with Watson and Associates Economists Ltd. and AMCL consultants to assist in developing a robust asset management plan and financing strategy that will achieve the aforementioned goals.
7. The Asset Management Plan has been developed around the following fundamental components to meet the legislative requirements under the Development Charges Act and O. Reg 588/17.

<p>State of Local Infrastructure</p>	<ul style="list-style-type: none"> • <i>Types of assets and their quantity or extent</i> • <i>Financial accounting valuation and replacement cost for all assets</i> • <i>Asset age distribution and asset age as a proportion of expected useful life for all assets</i> • <i>Asset condition based on standard engineering practices for all assets</i>
<p>Proposed Service Levels</p>	<ul style="list-style-type: none"> • <i>Proposed level of service through timeframes and performance measures</i> • <i>Any external trends or issues that may affect LOS</i> • <i>Current performance relative to the targets set out</i>
<p>Asset Management Strategy</p>	<ul style="list-style-type: none"> • <i>Sets out planned actions that will enable the assets to provide the proposed LOS in a sustainable way, while managing risk at the lowest life cycle cost</i> • <i>Based on an assessment of potential options to achieve the proposed LOS (life cycle costs, all other direct and indirect costs and risks)</i> • <i>Contains a summary of, in relation to achieving the proposed LOS (non-infrastructure solutions, maintenance activities, renewal and rehab activities, disposal activities and expansion activities)</i> • <i>Procurement measures intended to achieve the proposed LOS</i> • <i>An overview of the risks associated with the strategy and any actions that will be taken in response to those risks</i>

Financial Strategy	<ul style="list-style-type: none"> • <i>Yearly expenditure forecasts that are proposed to achieved the proposed LOS (non-infrastructure solutions, maintenance activities, renewal and rehab activities, disposal activities and expansion activities)</i> • <i>Actual expenditures from previous two year, if available</i> • <i>Breakdown of yearly revenues by source</i> • <i>Key assumptions and alternative scenarios where appropriate</i> • <i>Impact of any funding shortfall and how it will be managed</i>
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8. As part of the Transit Asset Management Plan development several workshops were conducted with Barrie Transit staff and other internal stakeholders across the corporation to gain input on and various perspectives on future proposed service levels including climate change impacts and affordability, as well as applying a risk assessment to the current assets to generate a forward looking desired level of service. These workshops and engagement activities included the following.
- a) Levels of Service Workshop (2)
 - b) Risk Management Strategy Workshop
 - c) Internal Stakeholder Survey
 - d) Financial Strategy Workshop
 - e) Overview and Summary of Transit Asset Management Plan for the Executive Management Team

Transit Asset Management Plan and Financial Strategy

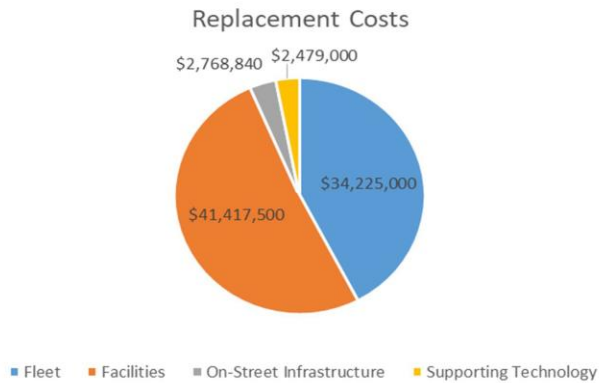
9. Highlights of the Transit Asset Management Plan and financial strategy include the following:

Section 2 – State of Local Infrastructure

10. This section summarizes the assets of Barrie Transit and groups them into four categories; fleet; facilities; on-street infrastructure; and supporting technology. Assets are listed by type, quantities, age, anticipated useful life, accounting valuation, and replacement cost.
11. The condition rating of each group identifies the following.

Grouping	Condition Rating
Fleet	Good
Garage	Very Good
Terminal	Fair
On-street	Good
Supporting Technology	Good

12. The replacement cost for the Barrie Transit infrastructure is \$78 million (in 2019 dollars), with nearly half the investment related to facilities and over \$30 million in fleet assets as outlined in the below graph.



13. Detailed asset listings, summaries of age and useful life distributions, and condition ratings can be found in section 2 of the Transit Asset Management Plan.

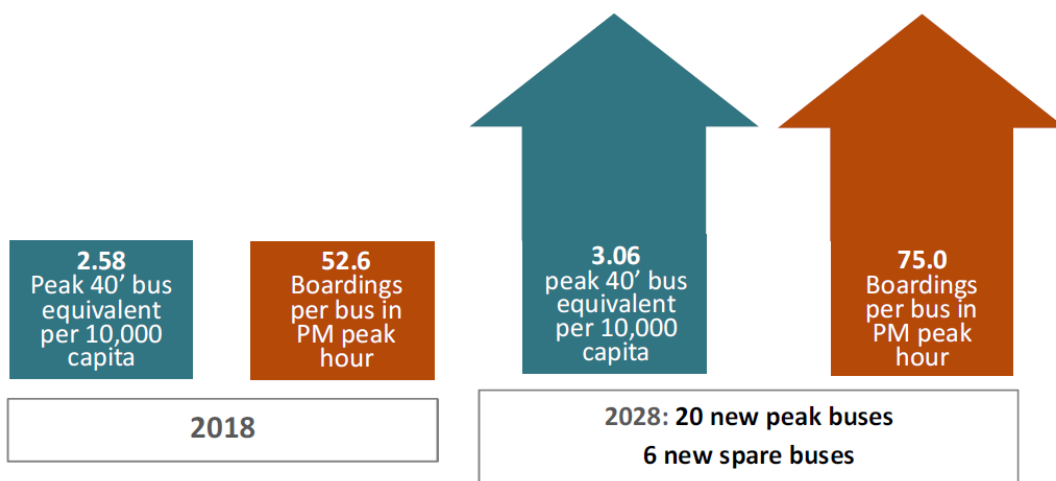
Section 3 – Proposed Levels of Service

14. The technical appendix developed for the Transit Development Charges provides a strong foundation for the future transit fleet required from 2019 – 2041 based on the modal share targets within the Active Transportation Master Plan. These fleet projections are presented in the below tables.

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Average Barrie Transit Daily Ridership	12,308	13,366	14,516	15,764	17,120	18,593	20,192	21,929	23,815	25,863
Peak Buses	37	37	41	42	45	48	49	51	54	57
Spare Buses	11	11	12	13	14	14	15	15	16	17
Spare Ratio	29.7%	29.7%	29.2%	31.0%	31.1%	29.2%	30.6%	27.5%	29.6%	29.8%
Conventional Buses Total	48	48	53	55	59	62	64	66	70	74
Peak buses	2.56	2.47	2.64	2.55	2.47	2.51	2.66	2.80	2.89	2.96

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
per 10,000 capita										
P.M. peak period boardings per revenue vehicle hour	57.0	61.0	60.0	64.0	69.0	71.0	71.0	71.0	72.0	73.0
Annual Specialized Trips	54,017	56,286	58,592	61,075	63,521	65,949	68,455	71,017	73,620	76,231
Specialized Peak	12	12	13	14	14	15	16	17	17	18
Specialized Spare	3	3	3	3	4	4	4	4	5	5
Specialized Total	15	15	16	17	18	19	20	21	22	23
Spare Ratio	25.0%	25.0%	23.1%	21.4%	28.6%	26.7%	25.0%	23.5%	29.4%	27.8%

15. The technical appendix also identifies the approach to meet the desired modal share target of 7% for transit by 2041 and the required transit ridership totals. This translates to the following anticipated peak buses per capita and boardings per hour required between 2018 and 2028.



16. The Levels of Service section of the Transit Asset Management Plan also outlays the expected levels of service from today (2018 base year) until 2028, 2031, and 2041 through an examination of both community levels of service and technical levels of service. The section utilizes current

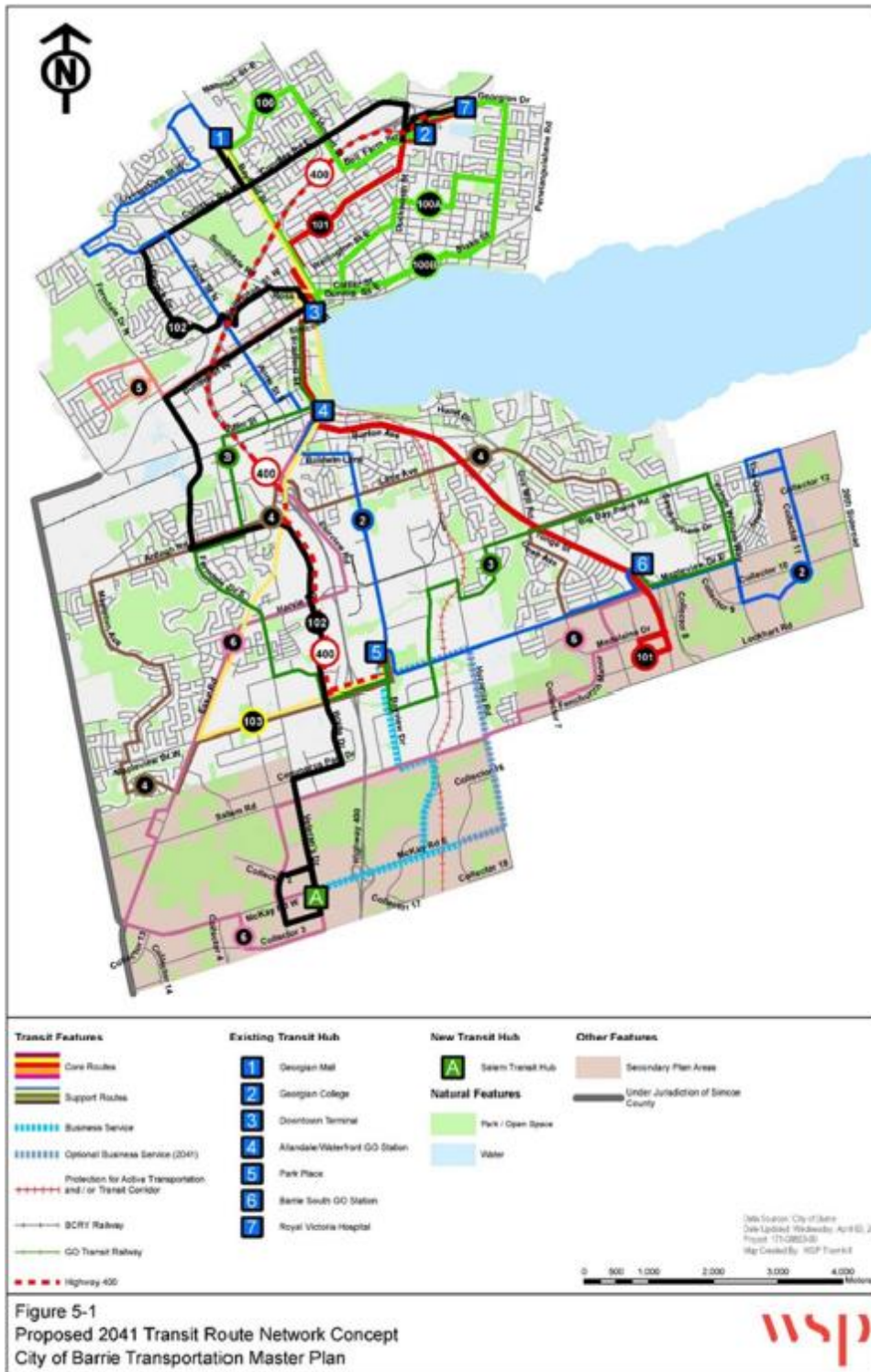
performance plans, additional operational metrics, current service levels and performance, and projected targets to demonstrate the proposed level of service for Barrie Transit. A summary of key performance indicators are presented below.

Key Performance Indicators (KPI)	Current Performance	Proposed Future Target		
	2018	2028	2031	2041
Transit Revenue to Cost Ratio	35%	41%	44%	52%
On Time Performance	85%	88%	90%	90%
% of Bus Stops that are Accessible	54%	75%	100%	100%
Barrie Transit Modal Share	2.8%	3.6%	4.2%	6.8%
Annual Ridership	3.3M	7.8M	9.9M	22.7M
Average Transit Daily Ridership	11,333	25,863	33,127	75,600
Conventional Fleet	48	74	87	144

17. In addition, feedback has been captured through a recent customer survey in November 2018 and results have been reviewed to ensure the planned path forward is aligned with customer expectations. Overall, the 355 respondents to the survey indicated a 76% level of satisfaction with Barrie Transit’s current service level, with 24% dissatisfied. When asked to rank the top three service areas that are most important, availability, timing, accessibility and information were selected as the most important. The most important service areas were very similar to the 2017 survey.
18. For the four most important areas to transit users, satisfaction levels ranged from 46% to 69%, an overall improvement from 2017. See the below table for level of satisfaction for the top four areas important to customers.

Ranking	Description	Satisfied or Very Satisfied (2017 survey)	Satisfied or Very Satisfied (2018 survey)
#1 – Availability	Frequency of service and hours of operation	40%	46%
#2 – Timing	Travel time, staying on schedule, etc.	45%	60%
#3 – Accessibility	Ease of getting on/off the bus, bus stops etc.	64%	69%
#4 – Information	Maps, timetables, information on delays etc.	60%	68%

19. Finally, a draft future transit vision map has been created in a collaborative approach with City staff and the consultant on the Transportation Master Plan that outlines future core and supporting routes to achieve the plan of a 7% transit modal share by 2041.



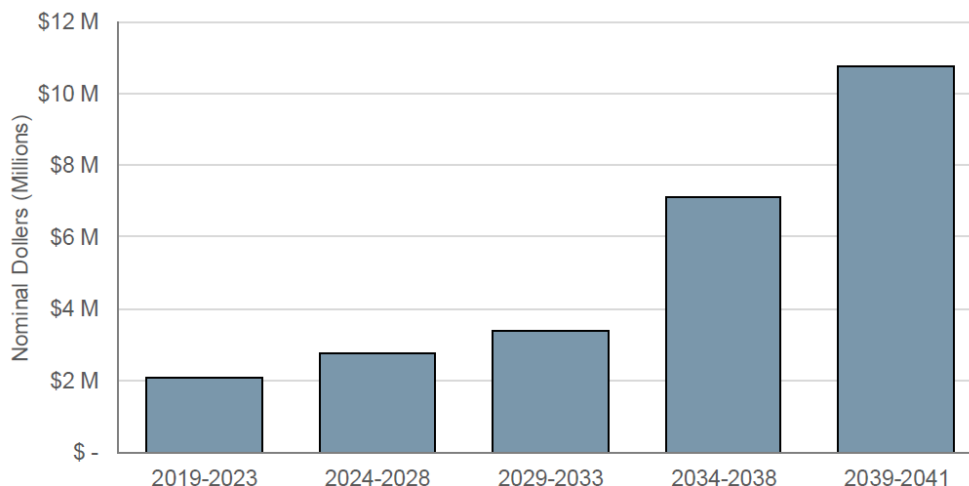
20. Additional level of service parameters for community and technical levels of service, current performance, and results of both external and internal stakeholder surveys can be found within section 3 of the Transit Asset Management Plan.

Section 4 – Asset Management Strategy

21. The asset management strategy section provides a framework for optimizing the assets of Barrie Transit to deliver the highest level of service to the community while minimizing risk and planning for future sustainability.
22. The section analyses our approach of providing transit service through our 20 year contract including the 55 service measures identified for establishing expectations of the service delivery. The asset management strategy also identifies areas for consideration that include the following:
 - a) A strategy to balance out the purchases of fleet vehicles to meet the specific threshold requirements which trigger increases within the contract, for instance:
 - i) Extend the lifecycle of conventional fleet by two additional year from 12-years to up to 14 years and similarly for specialized fleet;
 - ii) Consider the opportunity of rehabilitation for conventional fleet to extend useful life from 12 years to up to 17 years; and
 - iii) Where possible, delay replacement of vehicles in years when significant capital is required for facilities.
 - b) A strategy for the transition of the contract at 20 years, including service delivery options to be considered for Council approval at that time.
23. In addition the following lifecycle strategy options for Barrie Transit fleet renewal were considered:
 - a) Extending Maintenance Tier 2: As the maintenance schedule in the contract has been established in tiers (i.e. groups of fleet assets), options were looked at to delay the addition of fleet assets that moved into the pricing for the next tier of assets, which extended the pricing of the previous (and less expensive) tier for maintenance costs.
 - b) Repurpose the fleet used for the Essa Service to extend Tier 2, which extended the effectiveness of the previous tier by one year.
 - c) Garage Expansion: Reducing the capital requirements in the year of the garage expansion by delaying the purchase of replacement buses to the following year.
 - d) Considered the impact of the rental for GO bus storage in the garage on the timing for the garage expansion.
 - e) Annual Cost: Extending the useful life of fleet by one or two years to help even out the total annual purchased (replacement + growth) fleet, for both conventional and specialized fleet.
24. Finally, as part of the internal workshop and stakeholder survey several risks were identified that could prevent Barrie Transit from achieving target levels of service and should be considered as part of the future decision making process. A full listing of these risks can be found in section 4.6 of the Transit Asset Management Plan.
25. Additional life cycle strategies, future opportunities, climate change impacts, and strategic approaches to levels of service and risk management can be found in section 4 of the Transit Asset Management Plan.

Section 5 – Financial Strategy

26. Within the Transit Asset Management Plan a detailed Financial Strategy has been developed that incorporate the following.
- a) Annual expenditure forecasts broken down by:
 - i) Renewal, rehabilitation, and replacement activities by asset type; and
 - ii) Expansion activities.
 - b) A breakdown of annual funding/revenue by source;
 - c) Identification of any funding shortfalls, if applicable; and
 - d) All key assumptions documented.
27. Capital forecasts within the financial strategy estimate an average of \$6.0 million (inflated dollars) will be spent annually on the replacement of buses over the next 23 years and \$4.6 million will be spent to acquire new buses.
28. The plan also identifies potential key capital investments in our facilities including the Allandale Hub; the build of a downtown mini-hub; an expansion to the City's Transit Garage in 2026; and the construction of a future Transit Garage in 2032.
29. Additional projections have been made for lifecycle costs to operate Transit Services, on-street infrastructure requirements, and technology improvements.
30. The financial strategy also outlines and projects future funding sources including provincial and federal funding (ICIP), funding for growth through development charges, and required funding through the City's Tax Capital Reserve for capital works as well as increased funding from fare revenue, gas tax, and impacts on the tax levy.
31. The following represents the anticipated draws from the Tax Capital Reserve which is growing consistently with the planned additional contributions through the dedicated Infrastructure Levy.



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32. The financial strategy outlines the average annual increase in the transit share of the City's tax levy at 4.0% (5.2% in 2020 and declining to 3.6% in 2041) would be required with growth in the tax assessment base reducing the impact on a single household. This equates to a typical household in Barrie paying approximately \$207 per year in 2018 to \$288 in 2041 towards the cost of the transit system.
 33. As a result of the projected ridership increases, the reliance on taxation to support the Transit operating budget would decline over the forecast period. In 2019, taxation is projected to cover approximately 59% of the Transit operating budget, declining to 42% by 2041.
 34. The complete financial strategy and associated assumptions can be found in Section 5 of the Transit Asset Management Plan as attached.

ENVIRONMENTAL MATTERS

35. There are no environmental matters related to the recommendation.

ALTERNATIVES

36. The following alternatives are available for consideration by General Committee:

Alternative #1 General Committee could choose not to adopt the Transit Asset Management Plan in principle.

This alternative is not recommended as it would limit the City's ability to defend the capital assets required to meet the proposed modal share targets to 2041 within the Development Charges Background Study.

FINANCIAL

37. Funding associated with future growth in assets required and levels of service will be presented and approved through the annual Business Plan and 10 Year Capital Plans.

LINKAGE TO 2018-2022 STRATEGIC PLAN

38. The recommendation(s) included in this Staff Report support the following goals identified in the 2018-2022 Strategic Plan:
 - Fostering a Safe and Healthy City
 - Building Strong Neighbourhoods
 - Improving the Ability to Get Around Barrie
39. The adoption of the Transit Asset Management Plan and Financing Strategy will form a key guiding strategic plan to ensure the department can meet future service demands of residents as the City expands, grows, and changes.

APPENDIX "A"
TRANSIT ASSET MANAGEMENT PLAN AND FINANCIAL STRATEGY



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- B Capital Plan 2019 to 2041
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1.0 Introduction

The purpose of the Transit Asset Management Plan is to document the current state of local infrastructure and develop a plan that achieves the proposed levels of service over the next 10-year period (2019 to 2028) and to consider the planning timeframe to 2041. Specifically, the Transit Asset Management Plan:

- Establishes the state of local infrastructure;
- Sets out the proposed level of service;
- Determines an asset management strategy to provide the proposed level of service in a sustainable way; and
- Develops a financial strategy that supports the strategy.

The asset management plan complies with the requirements established in the Development Charges Act, 1997, O. Reg. 82/98 and aligns with the new asset management regulation O. Reg. 588/17.

The main reference documents for preparation of this asset management included:

- Transportation Master Plan (2019)
- Transit Development Charges, Technical Appendix (April 2019)
- Corporate Asset Management Framework (2010)
- Climate Change Adaptation Strategy (2017)
- Report for Asset Inventory, Facility Condition Assessments & Capital Planning for the Transit Terminal (January 2017)

1.1 Contract Operations

Barrie Transit operations are conducted within a 20 year contract with MVT Canadian Bus Inc. (2015 to 2035) for the operation of the Barrie Transit Service and maintenance of transit vehicles and transit garage facility. Specifications of the contract include:

- Level of service requirements;
- Operating and maintenance costs; and
- Payment responsibilities including deductions for failure to achieve specified performance targets.

There are 55 performance metrics in the contract that establish the expectations of service delivery from the contractor and form the basis of the current and future levels of service.



2.0 State of Local Infrastructure

This section on the state of local infrastructure sets out:

- The types of assets and their quantity or extent;
- The financial accounting valuation and replacement cost valuation for all assets;
- The asset age distribution and asset age as a proportion of expected useful life for all assets; and
- The asset condition based on standard engineering practices for all assets.

Barrie Transit owns assets that generally fall into four categories: fleet, facilities, on-street infrastructure and supporting technology. Although the fleet relies on the condition of other City assets such as roads to deliver its services, the asset management plan for roads is considered in a separate asset management plan for transportation.

The replacement cost for the Barrie Transit infrastructure is \$81.68 million (in 2019 dollars), with nearly half the investment related to facilities and over \$35 million in fleet assets. See **Figure 1**.

Replacement Costs for Barrie Transit Assets

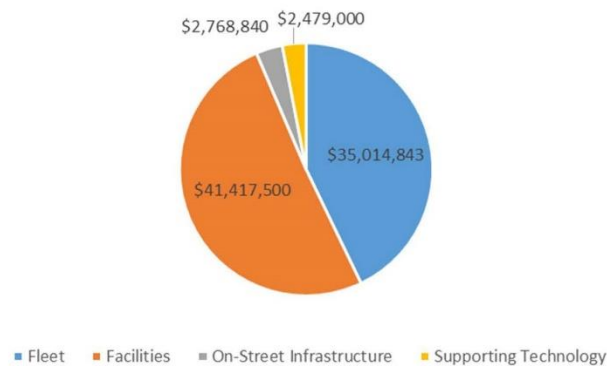


Figure 1: Replacement Costs for Barrie Transit Infrastructure

2.1 Asset Hierarchy

The asset hierarchy that will be used for the Transit Asset Management Plan is presented in **Table 1**.

Table 1: Asset Hierarchy

Asset Category	Sub-Category
Fleet	Transit - Conventional
	Transit - Specialized
	Utility Fleet
Facilities	Transit Garage
	Transit Terminal
On-Street Infrastructure	Bus Stops / Bus Pads
	Shelters
	Signmount Structures
	Benches
Supporting Technology	Communication and Radio Systems
	Fare and Data Collection Equipment/Systems
	Information Technology Hardware/Software

The majority of the assets are considered point assets; however, the facilities are considered complex assets. Complex assets are classified as assets which have various components. The facility components that will be included in the asset management plan are highlighted in **Table 2**.

Table 2: Asset Hierarchy for Facilities

Asset Category	Level 1	Level 2
Facilities	1. Site	1.1 Decommissioning 1.2 Hardscape 1.3 Landscape 1.4 Site Furnishings 1.5 Site Electrical 1.6 Site Services
	2. Structure	2.1 Footings and Foundations 2.2 Structure Steel
	3. Building Envelope	3.1 Air Vapour Barrier and Waterproofing 3.2 Exterior Cladding 3.3 Windows and Doors 3.4 Roofing
	4. Occupied Space	4.1 Interior Doors, Glass and Glazing 4.2 Partitions 4.3 Millwork 4.4 Painting and Finishes 4.5 Flooring 4.6 Furnishings

Asset Category	Level 1	Level 2
	5. Building Services	5.1 Electrical 5.2 Mechanical 5.3 HVAC 5.4 Building Automation and Controls 5.5 Security 5.6 Voice and Data Communication and Audio Visual 5.7 Refrigeration and Specialized Equipment

2.2 Asset Inventory

The inventory includes assets that are owned by the City of Barrie and used by Barrie Transit to deliver transit services. The operation and maintenance of the transit system is provided by a contractor on a 20-year contract (2015 to 2035). Assets owned by the contractor that are utilized to provide transit service, such as supervisor vehicles and tools, are not included in the asset inventory. Maintenance of contractor owned assets is included within the contract. Additionally, there are assets that are used by Barrie Transit and owned by the City of Barrie, such as roads. Those assets are included in other City of Barrie asset management plans.

The asset management plan will identify assets not owned by Barrie Transit that are necessary to deliver the service but will not include the replacement cost in the plan.

The following section presents the inventory of assets, the accounting valuation and the current estimated replacement cost for Barrie Transit's assets. The accounting valuation is defined as the net book value of Barrie Transit's assets. The net book value was calculated using the following equation:

$$\text{Net Book Value} = (\text{initial cost of the asset}) - (\text{accumulated amortization of the asset})$$

The replacement cost of each asset was determined using 2019 costs. These costs were either a unit rate for the asset or cost information for each type of asset.

2.2.1 Useful Life

The expected useful life of an asset is used to estimate the replacement schedule for each asset. A summary of the expected useful life of each asset can be found in **Table 3**. These values were determined through consultation with Barrie Transit and the Barrie Transit Business Plan (2018 to 2023). As defined in the contract, Barrie Transit currently considers a two year discretionary extension for their fleet assets, specifically for the conventional and

specialized transit vehicles. The discretionary period allows Barrie Transit time to allocate the associated cost for replacing or rehabilitating an asset.

Table 3: Expected Useful Life

Asset Category	Sub-Category	Useful Life (years)
Fleet	Transit- Conventional	12
	Transit- Specialized (Cut-away)	7
	Transit- Specialized (Mini Van)	5
	Utility Fleet (Small)	7
	Utility Fleet (Large)	12
Facilities	Transit Garage	50
	Transit Terminal	50
On-Street Infrastructure	Shelters	25
	Signmount Structures	10
	Benches	10
	Concrete Pads	60
Supporting Technology	Communication and Radio Systems	12
	Fare and Data Collection Equipment/Systems	15
	Information Technology Hardware/Software	12

2.2.2 Fleet

The following section summarizes the asset inventory and current replacement cost for the fleet assets. A breakdown of the inventory, age and replacement cost for each fleet asset can be found in **Appendix A**.

2.2.2.1 Transit – Conventional

Barrie Transit owns and maintains a fleet of 48 conventional buses. There are two types of conventional buses included in the fleet assets:

- 40 foot long buses; and
- 30 foot long buses.

All of the conventional buses included in the fleet assets are fully accessible low-floor vehicles and have diesel propulsion. A summary of the conventional fleet inventory is presented in **Table 4**.

The capital cost estimated by Barrie Transit for purchasing conventional buses is \$650,000 which includes IT components. This value was used to estimate the expected replacement cost for the conventional fleet vehicles. These values are presented in **Table 4**.

Table 4: Inventory of Conventional Fleet

Make	Model	Quantity	Year in Service	Age	Accounting Valuation	Replacement Cost
New Flyer	D40LF	4 ¹	2004	14	\$0	\$2,600,000
New Flyer	D40LF	2	2007	11	\$66,000	\$1,300,000
New Flyer	D40LF	1	2008	10	\$71,259	\$650,000
New Flyer	D40LF	4	2009	9	\$427,187	\$2,600,000
New Flyer	Xcelsior	6	2012	6	\$1,340,159	\$3,900,000
Eldorado	30 ft	2	2012	6	\$421,725	\$1,300,000
New Flyer	Xcelsior	4	2013	5	\$983,091	\$2,600,000
New Flyer	Xcelsior	4	2014	4	\$1,224,062	\$2,600,000
Nova	LFS	4	2015	3	\$1,359,559	\$2,600,000
Nova	LFS	4	2016	2	\$1,746,859	\$2,600,000
Nova	LFS	13	2017	1	\$6,092,746	\$8,450,000
Total		48			\$13,732,646	\$31,200,000

¹ Buses were refurbished in 2017 and have a useful life of 17 years.

There are four conventional buses that were refurbished in 2017. The expected useful life of these buses has been extended by an additional 5 years to a total of 17 years.

2.2.2.2 Transit – Specialized

There are a total of 15 specialized transit vehicles in the fleet assets. The specialized fleet vehicles are used for mobility bus operations. A summary of the specialized transit vehicles and their replacement cost can be found in **Table 5**. The 2018 costs that Barrie Transit used for their specialized transit vehicles was \$185,000. This value was used to estimate the replacement cost of these assets.

Table 5: Inventory of Specialized Fleet

Make	Model	Quantity	Year in Service	Age	Accounting Valuation	Replacement Cost
Ford	E450	1	2010	8	\$37,956	\$185,000
Chevrolet	4500	1	2012	6	\$79,969	\$185,000
Chevrolet	4500	2	2013	5	\$182,591	\$370,000
GMC	3500	1	2013	5	\$25,537	\$185,000
MOBI	MV1	6	2015	3	\$234,562	\$1,110,000
Chevrolet	4500	1	2016	2	\$116,279	\$185,000
Chevrolet	4500	1	2017	1	\$153,686	\$185,000
Chevrolet	4500	2	2018	0	N/A	\$370,000
Total		15			\$830,581	\$2,775,000

2.2.2.3 **Utility Fleet**

Barrie Transit owns two “non-revenue” vehicles in support of daily operations. The inventory is composed of two compact wheel loaders for bus stop and facility snow clearing. The contractor also has utility fleet to support the operation of the transit system such as supervisor vehicles; these vehicles are not included in the asset inventory.

The 2018 costs used as a replacement cost for the utility fleet vehicles is \$125,000. This is the estimated cost to replace the two loaders that Barrie Transit owns. The costs were based on prices listed online. The age and estimated replacement cost is highlighted in **Table 6**.

Table 6: Inventory of Utility Fleet

Make	Quantity	Year in Service	Age	Accounting Valuation	Replacement Cost
CAT	2	2015	3	N/A	\$250,000
Total	2				\$250,000

2.2.2.4 **Age Distribution**

A summary of the age distribution for the fleet assets is highlighted in **Figure 2**. The stacked bar graph identifies the number of vehicles in each age category (years), with conventional, specialized and utility fleet shown in different colours.

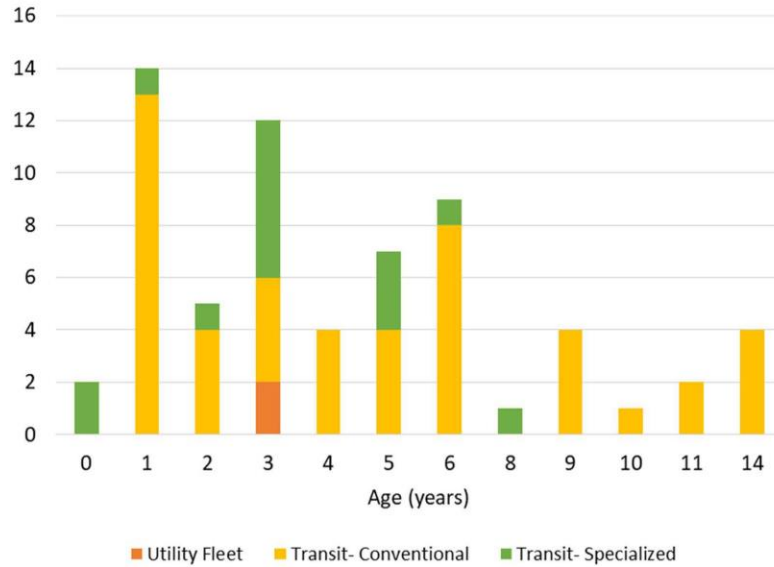


Figure 2: Age Distribution of Fleet Assets

The age of the fleet assets is presented in Figure 3 showing age as a percentage of expected useful life utilized. The fleet assets that have surpassed their expected useful life (greater than 100%) or are nearing the end of their useful life are scheduled to be replaced in 2019.



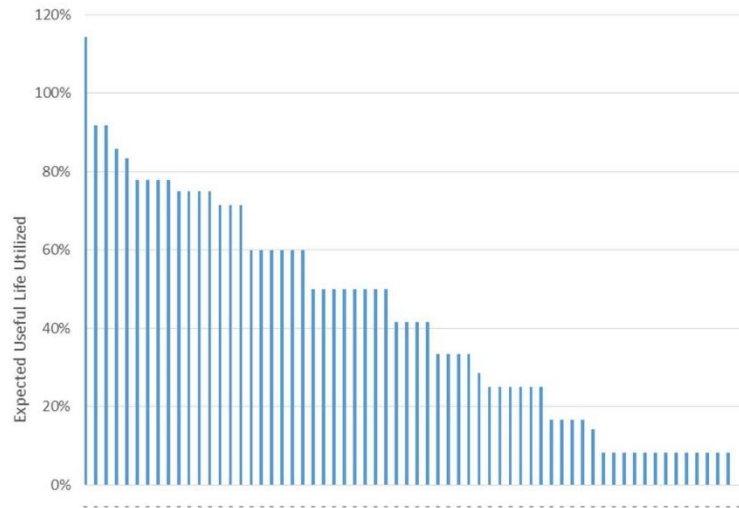


Figure 3: Age of Fleet Assets with respect to Expected Useful Life

The percentage of the fleet assets that are expected to be replaced in the next 10 years is shown in **Figure 4**.

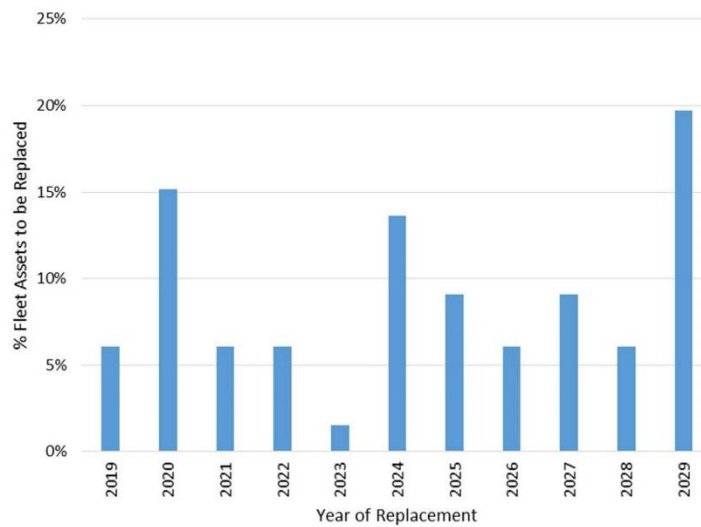


Figure 4: Percentage of Fleet Assets at the end of their Useful Lives

2.2.3 Facilities

2.2.3.1 Transit Garage

The Barrie Transit garage and administrative headquarters is located at 133 Welham Road in Barrie. This facility was built in 2015 and has capacity for 85 conventional buses. The contractor is obliged under the contract to keep this facility in good condition over a 20 year period. As per the operating contract, \$100,000 per year is put in reserve to fund future significant capital facility improvements for the transit garage. This facility has the following key areas:

- Fleet storage;
- Fleet maintenance;
- Fleet servicing;
- Operations facilities; and
- Administration area.

The bus maintenance area includes repair bays and detail bays, a stockroom, shop tools and major equipment, such as hoists required to maintain the fleet. The bus servicing area includes service lanes and other major equipment such as fuel tanks, fuel dispensers and bus washing equipment. A summary of the components and estimated replacement cost for the transit garage are presented in **Table 7**. The estimated replacement costs were determined using the initial cost of the facility from 2015.

Table 7: Inventory of Transit Garage Components

Asset Description	Expected Useful Life ¹	Year in Service	Age	Accounting Valuation	Replacement Cost
Building - Structure	50	2015	4	\$3,764,995	\$4,205,600
Building - Envelope	50	2015	4	\$3,016,548	\$3,369,500
Building - Site Works	25	2015	4	\$2,513,297	\$3,769,900
Building - Electrical	25	2015	4	\$2,412,818	\$2,878,900
Building - Roof	20	2015	4	\$2,123,724	\$2,534,000
Building - HVAC	30	2015	4	\$2,004,904	\$2,631,400
Building - Mechanical	20	2015	4	\$1,612,235	\$2,116,100
Building - Finishes	20	2015	4	\$614,636	\$887,400
Lubrication System	20	2015	4	\$563,683	\$696,300
Transit Systems (Access,	15	2015	4	\$373,533	\$490,300

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Asset Description	Expected Useful Life ¹	Year in Service	Age	Accounting Valuation	Replacement Cost
CCTV, Intercom)					
Controls and Instrumentation	25	2015	4	\$363,479	\$477,100
Diesel Fuel Storage	20	2015	4	\$321,042	\$396,600
Bus Washer	20	2015	4	\$257,989	\$318,700
Lifting Equipment	10	2015	4	\$232,008	\$304,500
Air Compressor	20	2015	4	\$231,249	\$285,700
Emergency Diesel Generator	25	2015	4	\$223,722	\$261,000
Voice and Data	15	2015	4	\$170,526	\$198,900
Bus Vacuum System	20	2015	4	\$137,341	\$169,700
Security System	15	2015	4	\$119,097	\$156,300
Building - Specialties	15	2015	4	\$73,591	\$193,200
Signage	10	2015	4	\$72,503	\$108,800
Loading Dock Equipment	10	2015	4	\$36,735	\$55,100
Pressure Washer	10	2015	4	\$29,001	\$43,500
TOTAL				\$21,268,656	\$26,548,5000

2.2.3.2 Transit Terminal

Barrie Transit owns and maintains one terminal, located at 24 Maple Avenue in Barrie. The terminal is classified as a complex asset. The asset inventory and replacement cost for each component can be found in **Table 8**.

The Downtown Terminal was built in 1993. There have been new additions of components and upgrades completed on the facility since the original construction of the terminal. The replacement costs were determined using the initial cost of the facility from 1993 and any renewal cost.

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As noted on page 43 in the *Report for Asset Inventory, Facility Condition Assessments & Capital Planning for the Transit Terminal* (January 2017), the current replacement value of the facility using the gross fixed asset of 22,228 square feet is \$5,247,668. This amount is lower than the method of adding the replacement value of the components as shown in **Table 8** as \$7,243,206.

A report has gone to Council with a concept to repurpose the building to a downtown Farmer's Market and to relocate the terminal to Allandale GO station. The timing is subject to approved funding (ICIP) and the design/construction phase of 2 to 3 years. It is projected that the operating cost would be similar in the new facility. The new facility would be fully utilized by Barrie Transit, unlike the current terminal which has shared usage.

Barrie Transit pays for their share of maintenance for the terminal (28%), which is city owned. The maintenance of the terminal is carried out by the City's Facility Services department.

Table 8: Inventory of Transit Terminal Components

Asset Description	Expected Useful Life ¹	Year in Service	Age	Accounting Valuation	Replacement Cost
Structure	50	1993	25	\$1,204,766	\$3,734,800
Specialized Equipment	25	1993	25	\$0	\$1,493,900
HVAC, mechanical	30	1993	25	\$0	\$1,120,400
Site works	25	1993	25	\$0	\$522,900
Roof	20	2014	4	\$175,681	\$235,000
Site Works - Landscaping	25	2008	10	\$39,894	\$78,500
Exterior Furnishings	20	2008	10	\$21,757	\$51,300
Floor Scrubber	10	2008	10	\$0	\$6,900
TOTAL				\$1,442,098	\$7,243,700

2.2.3.3 Age Distribution

The age of the facilities' assets with respect to their expected useful life is presented in **Figure 5**. There are three components within the facilities that are nearing the end of their useful life as they have reached 100%.

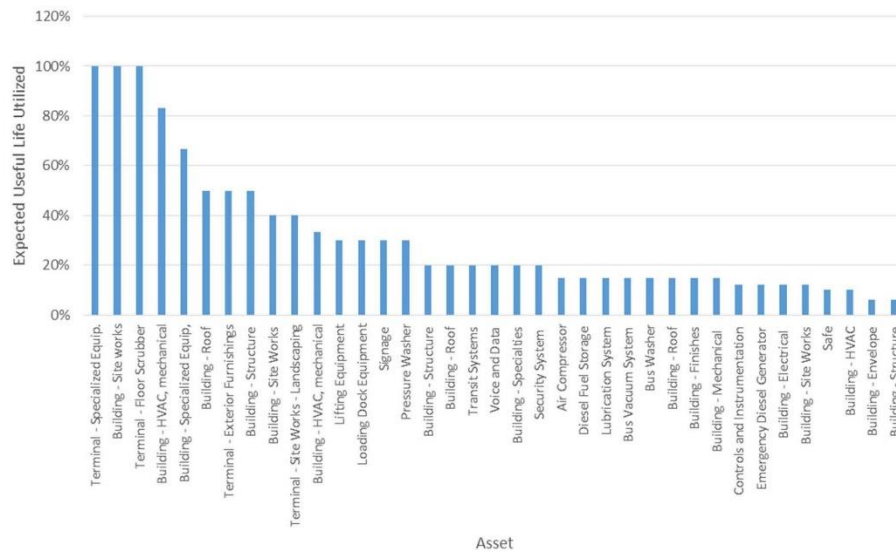


Figure 5: Age of Assets with Respect to % Expected Useful Life (Facilities)

The percentage of the facility assets that are expected to be replaced in the next 10 years for facilities assets are presented in **Figure 6**.

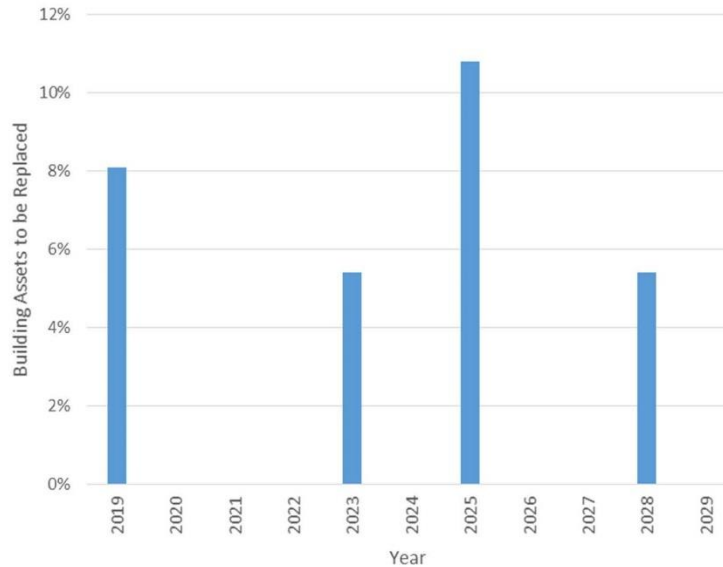


Figure 6: Percentage of Facilities Assets at the End of their Useful Lives (10 yrs)

Based on the values shown in **Figure 6**, there is a total of 30% of Barrie Transit’s facility assets that are estimated to be replaced in the next 10 years.

2.2.4 On-Street Infrastructure

Barrie Transit has a variety of on-street infrastructure that supports bus service and the overall transit system. Barrie Transit owns 100% of bus pads and stops, 50% shelters and 2% benches. The remainder of shelters and benches are owned by an advertising company’s. The entire on-street infrastructure is included in the asset inventory since Barrie Transit would have to take over the infrastructure if the advertising company no longer owned and maintained shelters.

There are a total of 739 active bus stops in the Barrie Transit system. These bus stops consist of bus shelters; sign mount structures, benches and concrete pads. The infrastructure at each bus stop varies. There are a total of 135 shelters within the transit system. Barrie Transit owns 77 shelters, while the remainder are owned by an advertising company.

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There are three sizes of shelters included in the inventory:

- Small (4 ft x 8 ft);
- Medium (4 ft x 10 ft); and
- Large (4 ft x 12 ft).

The accounting valuation of on-street infrastructure is \$160,460, which includes transit shelters, bus pads, benches and other on-street infrastructure. The individual asset types are not separated out in the financial reports but are treated as annual pooled transit shelters.

An inventory and replacement cost for the on-street infrastructure is highlighted in **Table 9**. A break down inventory of the shelters can be found in **Appendix A**.

Table 9: On-Street Infrastructure Inventory

Asset	Unit Cost	Quantity	Replacement Cost	
Shelters	Small (4ft x 8 ft)	\$6,000	10	\$60,000
	Medium (4ft x 10 ft)	\$7,000	93	\$651,000
	Large (4ft x 12 ft)	\$8,000	32	\$256,000
Sign mount Structures	\$500	739	\$369,500	
Benches	\$700	170	\$119,000	
Concrete Pads	\$120/m ³	7,900 m ³	\$948,000	
Total			\$2,403,500	



2.2.4.1 Age Distribution

A summary of the age distribution of the bus shelter assets is highlighted in **Figure 7**. The figure only illustrates the shelters that have known installation years.

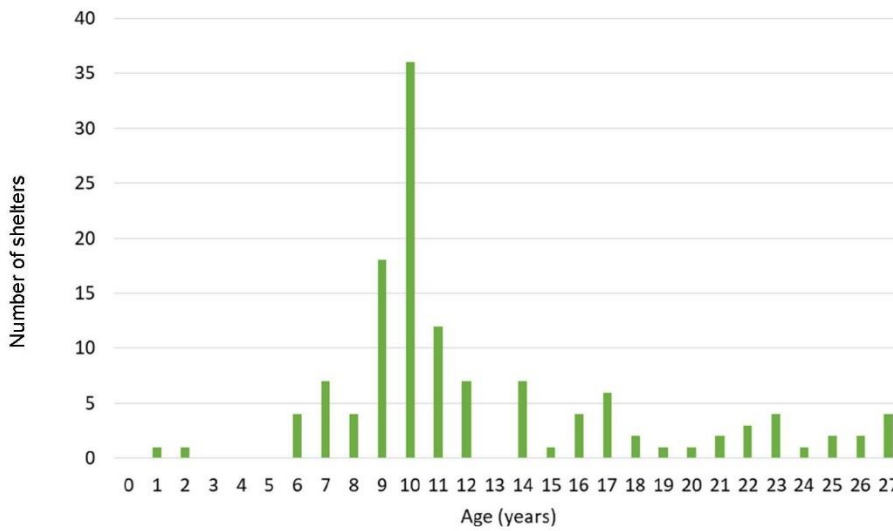


Figure 7: Age Distribution of Shelter Assets

The age as a proportion of expected useful life for the shelters is presented in **Figure 8**. There are some assets that have surpassed their useful life therefore are 100% or greater.



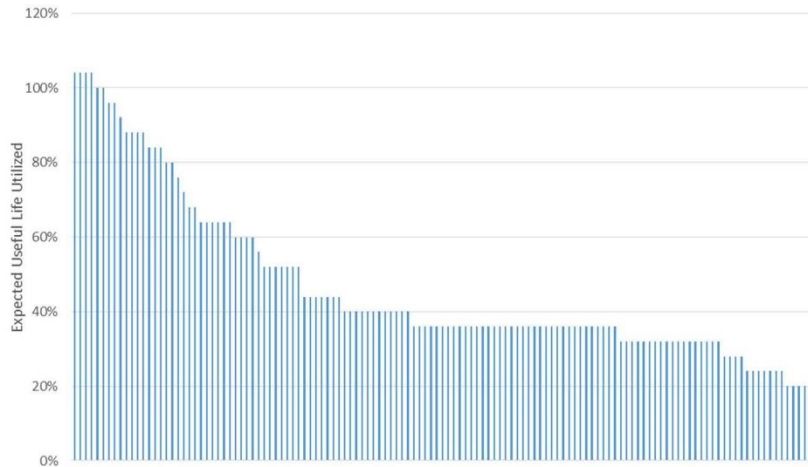


Figure 8: Age of Shelter Assets with respect to Expected Useful

The percentage of the assets that are at the end of their useful lives in the next 10 years is presented in **Figure 9**. There is a total of 25% of the shelters that are expected to be replaced in the next 10 years.

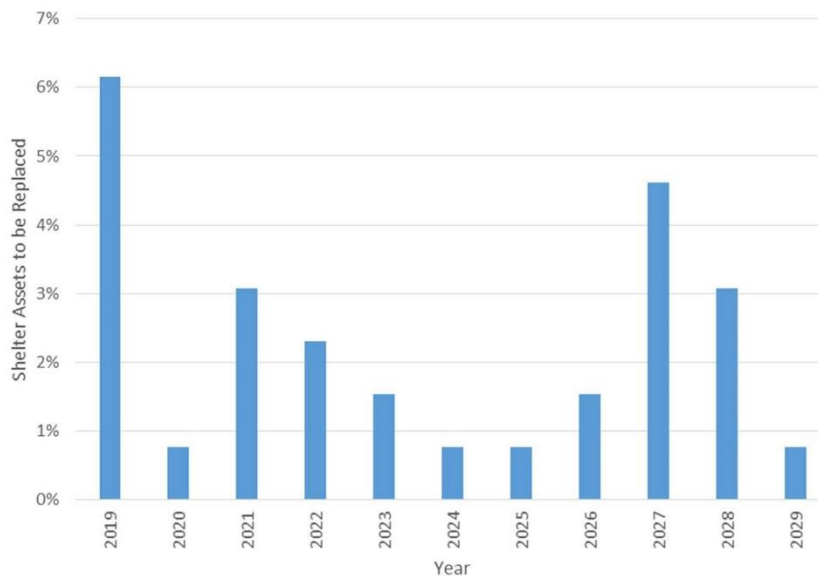


Figure 9: Percentage of Shelter Assets at the end of their useful lives (2019 to 2029)

2.2.5 Supporting Technology

A summary of the supporting technology assets are listed in **Table 10**, along with the expected replacement cost. Supporting technology generally has a shorter life span before required replacement (or upgrades).

The replacement costs were estimated using the original cost of the asset. However, the capital costs of these supporting technology assets are small relative to the capital costs of the fleet and buildings.

Table 10: Inventory of Supporting Technology

Asset Name	Asset Description	Expected Useful Life	Year in Service	Age	Accounting Valuation	Replacement Cost
Pooled Fare Collection System - 2016	Collection System	15	2016	2	\$748,474	\$975,000
Transit Bus Counter - Software	Transit Counter System	15	2016	2	\$209,041	\$305,000
Transit Bus Counter - Computer Hardware	Transit Counter System	15	2016	2	\$586,280	\$765,000
Pooled Fare Collection System - 2017	Collection System	15	2017	1	\$91,310	\$104,000
					\$1,635,105	\$2,149,000

2.2.5.1 Age Distribution

The age as a proportion of expected useful life for the supporting technology assets is highlighted in **Figure 10**. There are currently assets that have surpassed their expected useful life.

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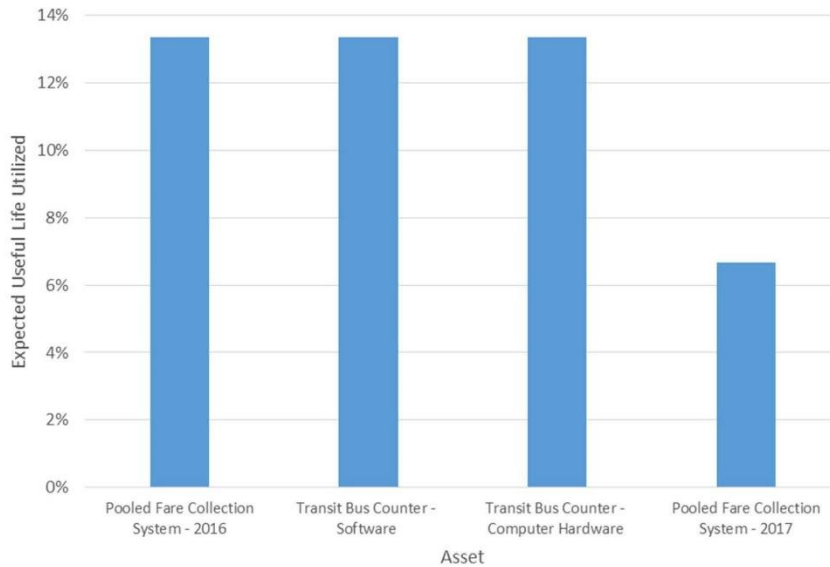


Figure 10: Age of Supporting Technology Assets with respect to Expected Useful Life

2.2.6 Replacement Cost Summary

The expected replacement cost for Barrie Transit’s assets in 2019 is \$81.68 million dollars. The net book value of Barrie Transit asset in 2019 is \$38.40 million dollars. This value was determined using the Barrie Transit’s PSAB reporting spreadsheet. A summary of the replacement cost and net book value is presented in **Table 11**.

Table 11: Current Valuation of Assets

Asset Category	Accounting Valuation	Replacement Cost
Fleet	\$13,890,381	\$35,014,843
Facilities	\$22,715,517	\$41,417,500
On-Street Infrastructure	\$160,460	\$2,768,500
Supporting Technology	\$1,635,105	\$2,479,000
Total	\$38,401,463	\$81,680,183

2.3 Condition of Assets

The condition of an asset is a key element on making decisions for a replacement schedule. As expected useful life can be an indicator for a replacement year, it does not represent the current state of the asset, i.e., the condition.

As shown in **Table 12**, a condition rating scale can be used for the condition assessment. The rating scale follows the five point scale developed for the Canadian Infrastructure Report Card (The Canadian Infrastructure Report Card, 2014). A grade of 1 signifies new infrastructure in Very Good condition, while a grade of 5 signifies Very Poor or failing infrastructure.

Table 12: Condition Rating Scale

Grade	Condition	Description
1	Very Good	Like new, physically sound
2	Good	Minor superficial deterioration
3	Fair	Showing deterioration and wear
4	Poor	Major portion of the asset is deficient, functions but has major problems
5	Very Poor	Physically unsound, unreliable and unreliable

A listing of asset inventory and the condition of assets can be found in **Appendix A**.

2.3.1 Fleet Condition

The odometer readings for the buses are included in the asset inventory and will be used to determine the condition of the fleet assets. The maintenance records for the buses can be used to determine the condition. As there has not been a detailed condition assessment on fleet, all fleet vehicles were noted as Good condition, i.e., within useful life and meeting performance expectations.

2.3.2 Facilities Condition

The condition of the transit garage is Very Good (built in 2015) and the transit terminal is Fair.

For the transit terminal, the **Report for Asset Inventory, Facility Condition Assessments & Capital Planning (2017)** for the transit terminal was reviewed. The report calculated the Facility Condition Index (FCI) of 28.3% which is considered Poor but the report goes on to say that the building is considered to be in a “fair conditional state with problematic issues stemming from the installation issues and detailing as well as end of service life on larger capital components.”

2.3.3 On-Street Infrastructure Condition - Shelters

The on-street infrastructure is generally in good condition. At this time only 54% of bus stops are determined to meet the requirements for accessibility.

A detailed condition assessment has only been completed on the bus stop shelters and a summary of the results are highlighted in **Figure 11**.

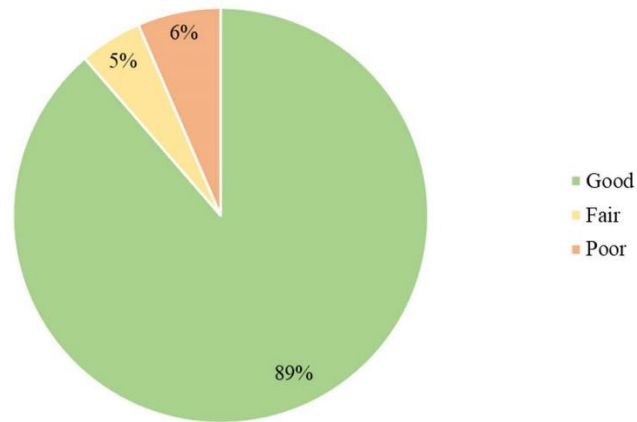


Figure 11: Summary of Shelter Condition

2.3.4 Supporting Technology

The condition of the supporting technology is reported as Good condition, i.e., within useful life and meeting performance expectations.

3.0 Levels of Service

This section on Levels of Service (LOS) incorporates both the requirements for the Development Charges Act (O.Reg. 82/98) for proposed level of service as well as the new regulation for asset management plans (O.Reg. 588/17). Beginning with strategic alignment and definitions of levels of service, the section presents the current levels of service for the parameters of availability and quality, the current performance of the transit system and presents the proposed levels of service for each of the next 10-years, and the end targets for the planning horizon to 2041.

Specifically, this section sets out the proposed level of service and:

- Defines the proposed level of service through timeframes and performance measures;
- Discusses any external trends or issues that may affect the proposed level of service or the municipality's ability to meet it; and
- Shows current performance relative to the targets set out.

3.1 Strategic Alignment

The services delivered by Barrie Transit are aligned with the strategic priorities of Council. Strategic alignment is an important element of asset management. In an internal stakeholder survey, participants rated the alignment of Barrie Transit against each of the strategic priorities as follows:

- Grow economy (3.5 out of 5.0)
- Safe and healthy city (3.7 out of 5.0)
- Building strong neighbourhoods (3.7 out of 5.0)
- Offering innovation/citizen driven services (3.6 out of 5.0)
- Improving ability to get around (4.6 out of 5.0)

Barrie Transit also aligns with the City's marketing tag line which is "Well Played. Well Connected" (3.4 out of 5.0).

Line of sight is a concept introduced in PAS 55 and alignment in ISO 55000, which establishes that asset management is connected throughout the organization, from tasks delivered in operations through the asset management plan to the strategic policy and the strategic priorities of the organization.

3.2 Levels of Service Defined

Levels of service (LOS) are defined in ISO 55000:2014 as:

- The parameters or combination of parameters that reflect the social, political, environmental and economic outcomes that the organization delivers. The parameters can include safety, customer satisfaction, quality, quantity, capacity, reliability, responsiveness, environmental acceptability, cost and availability.

As required by O.Reg. 588/17, the current levels of service are based on data from, at most, the two calendar years prior and determined in accordance with:

- **Community Levels of Service** – customer-focused, a qualitative description of scope and quality, which may include maps and images; and
- **Technical Levels of Service** – using technical metrics that relate to the service provided by the assets.

For the Barrie Transit system, the two most relevant parameters are **Availability** of the service (which includes capacity) and **Quality** of the service delivered (which includes reliability, responsiveness and customer satisfaction).

See **Table 13** (Availability) and **Table 14** (Quality) for descriptions of what can be measured for each parameter, along with the levels of service for both Community LOS and Technical LOS.

Table 13: Level of Service Parameters for Transit System (Availability)

Service Measure	Description	Community LOS	Technical LOS
Hours of Service	When is the service available?	<ul style="list-style-type: none"> • Hours of operation 	<ul style="list-style-type: none"> • Express • Core • Supporting
Service Coverage	Where is the service available?	<ul style="list-style-type: none"> • Map of routes • Location of stops 	<ul style="list-style-type: none"> • Coverage vs frequency • Walkable distances to stop
Frequency of Service	How often is the service available?	<ul style="list-style-type: none"> • Schedule of service 	Headways <ul style="list-style-type: none"> • Express • Core • Supporting
Specialized Transit	How is the service made available?	Availability – by request	

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Service Measure	Description	Community LOS	Technical LOS
Capacity	How many riders does each vehicle accommodate?	<ul style="list-style-type: none"> Number of denied trips (no capacity) 	Maximum capacity (seated and standing) <ul style="list-style-type: none"> Conventional bus Specialized bus

Table 14: Level of Service Parameters for Transit System (Quality)

Service Measure	Description	Community LOS	Technical LOS
Passenger Loads	How crowded are the buses?	<ul style="list-style-type: none"> Seat availability Standing capacity Crowding 	<ul style="list-style-type: none"> Boardings per service hour
Reliability	On Time Performance (OTP)	<ul style="list-style-type: none"> Schedule adherence No show bus Vehicle breakdown On route disruption 	<ul style="list-style-type: none"> OTP Missed Trips Dwell Time Vehicle availability (spare ratio)
Responsiveness	How quickly responding to bus break downs?	<ul style="list-style-type: none"> Wait time for replacement bus or next regular scheduled bus 	<ul style="list-style-type: none"> Number of spare buses in fleet Time to respond
Customer Satisfaction	<ul style="list-style-type: none"> Overall satisfaction Comfort/Cleanliness of buses Comfort/Cleanliness of bus stops 	<ul style="list-style-type: none"> Comfort and cleanliness (bus, bus stops) Photos of condition of supporting infrastructure (condition 1 very good to 5 very poor) 	Condition of supporting infrastructure
Trip Time on Bus	How long does it take to travel from point A to point B (compared to car travel time)?	Perceived trip time by users	Percentage of users satisfied with trip time
Accessibility	<ul style="list-style-type: none"> Buses Stops Terminals 	<ul style="list-style-type: none"> Paved surfaces and sidewalk connectivity % bus stops that are accessible 	<ul style="list-style-type: none"> % bus stops that are accessible Meet City's Accessibility Plan (meet AODA)

3.3 Barrie Transit Performance

Performance indicators provide a quantifiable measure of efficiency, quality and/or effectiveness, as shown in **Figure 12**. The key performance indicators (KPI) for Barrie Transit as presented in the Performance Plan for 2019 are as follows:

- Transit Revenue to Cost Ratio;
- Annual Ridership;
- On Time Performance; and
- % of bus stops that meet accessibility requirements.

In addition to these four KPIs, daily transit ridership is an important metric which is used to analyze the following:

- Average service utilization;
- Average Barrie Transit daily ridership; and
- Average riders per service hour.



Figure 12: Key Performance Indicator

The current performance of Barrie Transit is presented in **Table 15**. The current performance has been determined in accordance with the performance measures established by the municipality and based on data from at most two calendar years prior.

Table 15: Current Performance of Barrie Transit (2017 and 2018 actuals)

Key Performance Indicators (KPI)	Current Performance	
	2017 Actual	2018 Actual
Transit Revenue to Cost Ratio	33.4%	35.2%
Annual Ridership	2.71M	3.30M
On Time Performance (OTP)	82.0%	85.0%
% of bus stops that meet accessibility requirements	50.0%	54.0%
Average total transit daily ridership	9,925	12,258
Average Barrie Transit daily ridership	9,000	11,333
Total daily person trips	424,633	442,073

3.4 Current Levels of Service

Although O. Reg. 588/17 sets out the qualitative descriptions and technical metrics required for core municipal infrastructure assets, the direction for other assets (such as transit) is for the municipality to establish the metrics.

As presented in **Figure 13**, levels of services are to be described in two ways according to the regulation (O. Reg. 588/17):

- **Community (Customer) Levels of Service** – a qualitative description of the services received by the customer; and
- **Technical Levels of Service** – the technical metrics of services delivered based on what the asset is capable of providing to the organization.



Figure 13: Community and Technical LOS

3.4.1 Community Levels of Service

The Community LOS describes the services received by the customer. Unlike other asset categories at the City, the customer of the transit system is well defined - each pays a fare to ride the bus. In considering the levels of service delivered by the transit system, Barrie Transit should look beyond the service delivered by the assets (e.g. buses) and consider the experience of the customer from start to finish. The various components of the customer's journey include:

- **Trip Preparation:** information, education, ease of access to information, reliability of information and accuracy;
- **Trip to the Bus Stop:** walkability, accessibility, safety and security, cleanliness;
- **At the Bus Stop:** quality of stop infrastructure (pad, shelter, lighting, safety), information access;
- **On the Bus:** comfort, cleanliness, safety and security, time of travel, timeliness and reliability, ease of payment and integration with other systems/operators; and
- **At the Bus Terminal:** service from staff on tickets/schedules/routes, cleanliness.

3.4.2 Technical Levels of Service

The Technical LOS is the quantitative measure of service, usually referring to the LOS that the asset is capable of delivering. For a transit system, the capability of each asset provides more value when considered at the system level.

For example, a conventional bus has capacity for 60 riders (39 seated and 21 standing). But the bus has to be scheduled and in circulation to be delivering service to the community.

Part of the technical levels of service is to consider both the individual asset capability and how the assets are scheduled to be utilized as part of a system of service delivery.

The technical levels of service generally fall into the following categories:

- Coverage vs Frequency (Distances to stops vs Headways (route type))
- Reliability (OTP, Missed trips, Dwell Time)
- Efficiency (Spare ratio, Ridership (per hour))
- State of supporting infrastructure (Complaints, Survey (customer), Driver reports)
- Operational (Vehicle reliability)

The Barrie Transit Business Plan (2018 – 2023) presents service standards for core routes, supporting routes and express routes as well as service standards linked to customer interface. In defining the technical LOS for Barrie Transit, the Business Plan and the 55 performance metrics defined in the contract are referenced.

3.4.3 Availability of Service

3.4.3.1 Hours of Service

Customer LOS

The hours of service operation are from 4:20am to 1:30am.

Technical LOS

Express Route: operate at all times when they meet the performance standard of 30 boardings per hour or 70% RC ratio.

Core Weekday Service: start no later than 6:00am and last trip of each route should depart from Downtown Terminal at or after 10:30pm.

Core Saturday Service: start no later than 7:00am and final trips depart no earlier than 10:30pm.

Core Sunday and Holiday Service: operate from 9:00am to 10:00pm.

Supporting Routes: *should* operate, at a minimum, during “peak hours”, such as 6:00am to 9:00am and from 3:00pm to 6:00pm. Additional service should be provided where routes meet the basic performance standard of 8-10 boardings per hour or 20% RC ratio.

Supporting Saturday and Sunday Service: should provide service during shopping hours.

3.4.3.2 **Service Coverage**

Customer LOS

Barrie Transit delivers transit service to the community through ten bus routes throughout the City of Barrie. The routes are described as express, core or supporting, as such:

- **Express:** Route 100
- **Core:** Routes 1, 6 and 8
- **Supporting:** Routes 2, 3, 4, 5, 7 and 11

See **Table 16** for description of each route and the boardings per service hour for 2017 and 2018.

Table 16: Description of Routes and Boardings per Service Hour

Route	Description of Service	Boardings per Service Hour	
		(Oct 2017)	(Oct 2018)
100	Express Service: College, Hospital Downtown -Express, bypasses other stops -Services student -Quicker, more direct	n/a	36
1	Core Service: North and south economic development - Bayfield Mall - Retail, Employment - Secondary Campus - Downtown - GO transit (intermodal) - Residential - Rec Centre - High School	20	27

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Route	Description of Service	Boardings per Service Hour	
		(Oct 2017)	(Oct 2018)
	- Industrial/ commercial		
2	Supporting Service: West side of HWY - Residential - Park Place HUB (south)	13	14
3	Supporting Service: Hospital - College - Connect to GO - Residential	17	27
4	Supporting Service: East Bayfield (Northern Corridor) - Community Center	14	14
5	Supporting Service: East to west connection that services residential and seniors.	18	19
6	Core Service: Connect west side of city to (NE= 100 Express)	22	33
7	Supporting Service: - South end commercial - SW residential - Rec Centre - GO train	14	20
8	Core Service: - Downtown - Student Residences - Covers whole city - Both GO train stations - Major - All the HUBs - Whole City	19	27
11	Supporting Service: Residential - South end industrial/ commercial - High school - Rec Center	2	6

The transit map can be viewed in a printed copy with the schedule or on the website at: barrie.ca/transit. The website also includes a real-time bus map which can be viewed at myridebarrie.ca. This site provides current capacity information for each bus on an active route. See **Figure 14** for a map of the current routes for Barrie Transit.

In addition, Barrie Transit operates a service from Barrie to Essa Township (Route 90). The description of the Essa Service includes: County Road 90 from Allandale Waterfront GO station.

Technical LOS

Core routes should provide their coverage areas with service to at least two “hubs” such as the Downtown Transit Terminal, Allandale Waterfront GO Station, Georgian College, Park Place and the Barrie South GO Station. Core routes provide direct to and from service to “hubs” on intensification corridors wherever possible.

Service coverage for supporting routes should include at least 90% of all non-industrial land uses within a 400m walking distance.

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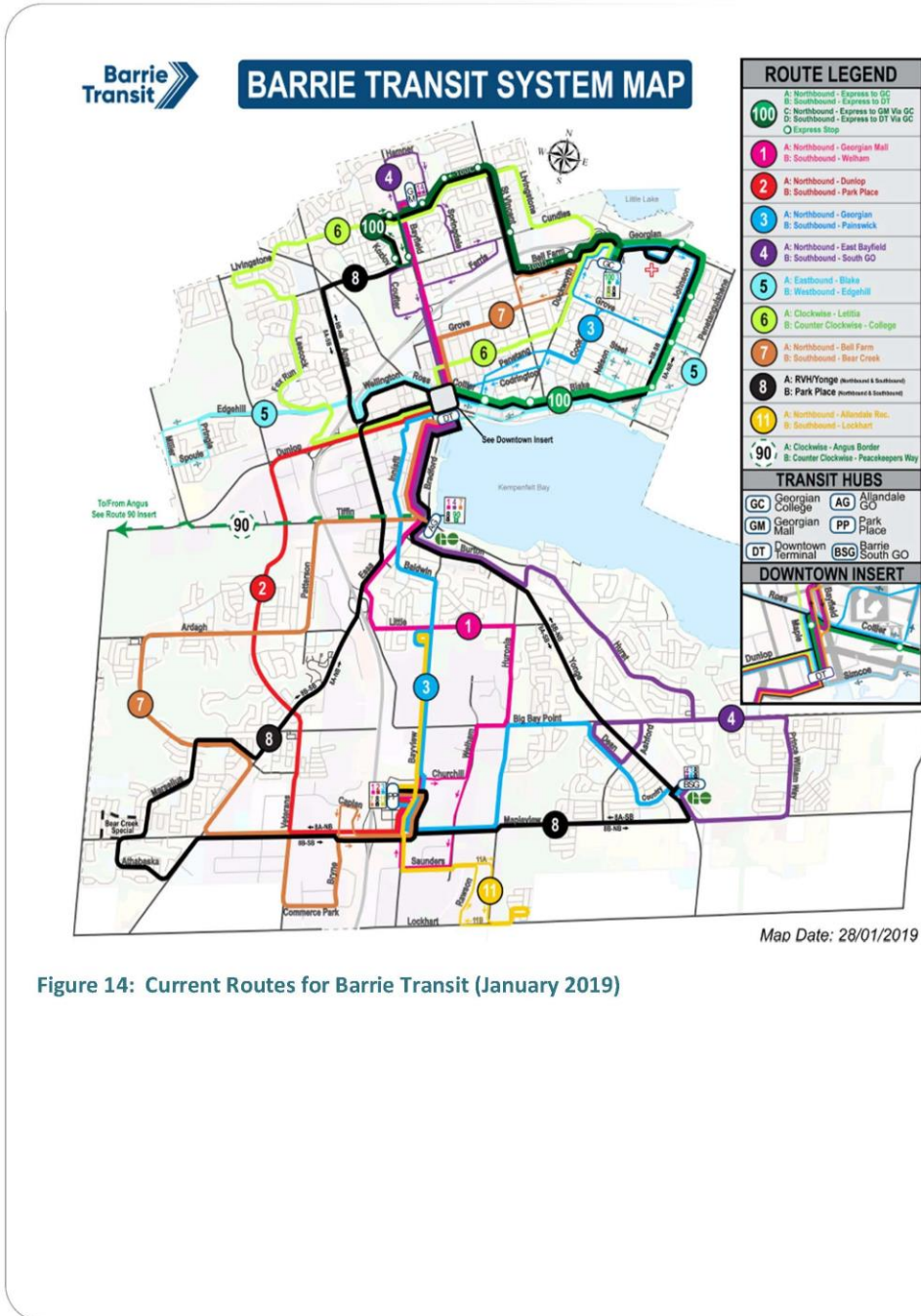


Figure 14: Current Routes for Barrie Transit (January 2019)

3.4.3.3 Frequency of Service

Customer & Technical LOS

Route	Type	Peak Hours	Midday	Evenings	Saturdays	Sundays
1	Core	30 mins	30 mins	45 mins	30 mins	45 mins
2	Supporting	30 mins	30 mins	60 mins	30 mins	60 mins
3	Supporting	30 mins	30 mins	60 mins	30 mins	60 mins
4	Supporting	30 mins	35 mins	65 mins	35 mins	65 mins
5	Supporting	30 mins	30 mins	60 mins	30 mins	60 mins
6	Core	30 mins	30 mins	60 mins	30 mins	60 mins
7	Supporting	30 mins	30 mins	60 mins	30 mins	60 mins
8	Core	30 mins	30 mins	60 mins	30 mins	60 mins
11	Supporting	40 mins	38 mins	N/A	40 mins	N/A
100	Express	60 mins	40 mins	75 mins	N/A	N/A

3.4.3.4 Specialized Transit

Specialized transit is a subscription based service that is available in the community. The hours of operation are the same as for conventional service (i.e. 4:20am to 1:30am). Service is delivered by call-in request.

3.4.3.5 Capacity

Conventional: A 40 ft conventional bus has capacity for 60 riders (39 seated and 21 standing).
Specialized transit: Capacity of specialized transit services varies by request (typical vehicle has capacity for 4 wheelchairs with 9 seats).

3.4.4 Quality

Barrie Transit launched a customer survey in November 2018 and the results of the survey provide feedback from the customer’s perspective on quality of the service.

Overall, the 355 respondents to the survey indicated a 76% level of satisfaction with Barrie Transit’s current service level, with 24% dissatisfied. When asked to rank the top three service areas that are most important, availability, timing, accessibility and information were selected as the most important. The most important service areas were very similar to the 2017 survey. See **Figure 15**.

Top Areas Important to Transit Users (pick 3)

Sorted most important to least from 2018 data

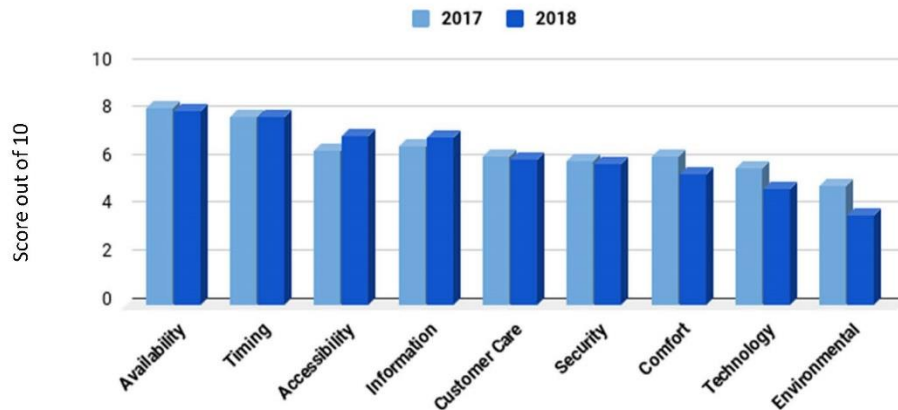


Figure 15: Top Areas Important to Transit Users

For the four most important areas to transit users, satisfaction levels ranged from 46% to 69%, slightly improved from 2017. See **Table 17** for level of satisfaction for the top four areas important to customers. It is noted that a significant number of responses in the survey were “neutral” (19 to 25%), which means the dissatisfied and very dissatisfied responses were low (12 to 28%).

Table 17: Satisfaction for Top Areas Important to Customers

Ranking	Description	Satisfied or Very Satisfied (2017 survey)	Satisfied or Very Satisfied (2018 survey)
#1 – Availability	Frequency of service and hours of operation	40%	46%
#2 – Timing	Travel time, staying on schedule, etc.	45%	60%
#3 – Accessibility	Ease of getting on/off the bus, bus stops etc.	64%	69%
#4 – Information	Maps, timetables, information on delays etc.	60%	68%

3.4.4.1 **Passenger Loads**

Customer LOS

It is important that there is capacity for passengers to board the bus. For higher LOS, buses should not be crowded and seats should be available.

Technical LOS

The level of service in 2018 was 2.40 peak 40 foot equivalent bus per 10,000 capita, with a productivity of 27.0 boardings per 40 foot equivalent bus in the AM peak hour.

3.4.4.2 **Reliability**

Customer LOS

Reliability metrics include: schedule adherence, and minimizing no-show buses, vehicle breakdowns and route disruptions.

Technical LOS

On Time Performance (OTP) in 2018 was 85% with the technical measure of OTP as between 3 minutes early and 5 minutes late compared to the schedule.

3.4.4.3 **Responsiveness**

Responsiveness is how quickly the operator responds to bus breakdowns. The technical metric that supports responsiveness is the number of spare buses in the fleet. In 2018 the number of spare buses was 11, with a spare ratio of 29.7%. The target for responding to a bus breakdown is to dispatch bus within 15 minutes.

3.4.4.4 **Customer Satisfaction**

Cleanliness of buses is defined in the cleaning specification in the contract with the operator. The operator is required to ensure that:

- The overall appearance of the Vehicles is tidy and uncluttered;
- There are no unpleasant or distasteful odours;
- Housekeeping does not interfere with the Services; and
- All measures are taken to ensure the health and safety of the facility occupants.

3.4.4.5 **Trip Time on Bus**

Express routes deliver reduced trip time on bus. Improving frequency of service will have the perceived value of also improving trip time on the bus. A technical metric shall be 60% of users are satisfied with the trip time.

3.4.4.6 **Accessibility**

Customer LOS metrics include paved surfaces and sidewalk connectivity. In 2018 all buses were accessible and only 54% of bus stops met the AODA requirement.

3.5 **Proposed Levels of Service**

There are two separate considerations for proposed levels of service:

- Changes in current levels of service to serve existing community; and
- Changes in service to serve expanded community.

Levels of service, or service standards, cannot expect to continually increase, as affordability for delivering the service is an essential consideration. Even if funding was not a concern, it might not be prudent to set a goal for increasing levels of service. It is more important to match service with the needs of the community and manage their expectations of the service.

O.Reg. 588/17 (section 6. (1) 1) requires that the levels of service that the municipal proposes to provide for each of the 10 years following the year of the current levels of service in the asset management plan. Proposed levels of service are required to include a qualitative description (community LOS) and technical metrics (technical LOS).

In addition, the regulation requires an explanation of why the proposed levels of service are appropriate for the municipality based on an assessment of:

- The options for the proposed levels of service and the risks associated with those options to the long term sustainability of the municipality;
- How the proposed levels of service differ from the current levels of service;
- Whether the proposed levels of service are achievable; and
- The municipality's ability to afford the proposed levels of service.

Further, the proposed performance for each year of the 10-year period is to be determined in accordance with the performance measures established by the municipality, such as those that would measure operating efficiency.

3.5.1 **Proposed Performance**

As the planning period for the transit asset management plan aligns with the Transportation Master Plan, the end of the planning period has been set as 2041 for consistency. **Table 18** indicates the key performance indicators (KPI) with current performance (2018) and future targets for 2028 (end of the 10-year period), 2031 and 2041.

The significant increase in the ridership of the system (from 3.3 million to 22.68 million) reflects the goals established in the Transportation Master Plan, i.e. to achieve a 7.0% total transit mode share by 2041. In 2018 the total transit mode share was 2.8%. In addition, the growth reflects the expansion of services into new developments (annexed lands).

Table 18: Key Performance Indicators Proposed for 2028, 2031 and 2041

Key Performance Indicators (KPI)	Current Performance	Proposed Future Target		
	2018	2028	2031	2041
Transit Revenue to Cost Ratio	35.2%	41%	44%	52%
Annual Ridership Conventional	3.3M	7.76M	9.94M	22.68M
On Time Performance	85.0%	87.5%	90.0%	90.0%
% of bus stops that are accessible	54.0%	75.0%	100.0%	100.0%
Average Barrie Transit daily ridership	11,333	25,863	33,127	75,600
Barrie Transit Mode Share	2.8%	3.6%	4.2%	6.8%

The increase in area served as well as increase in mode share is more significant in the latter 10 years (i.e. beyond the 10-year period to be reported annually in this asset management plan).

3.5.2 Proposed Levels of Service

Growth and increased active transportation by the community are drivers for the proposed levels of service. Over the 10-year period, transit mode share and therefore, ridership, growth is expected to exceed population growth. **Figure 16** demonstrates how, over the 10-year period, there will be an increase of peak buses per capita, as well as boardings per bus. This indicates improved service availability and a corresponding ridership increase. The boardings per bus in PM peak hour increasing from 52.6 to 75.0. Also, the proposed service includes an increase in the peak bus equivalent per 10,000 capita from 2.58 to 3.06.

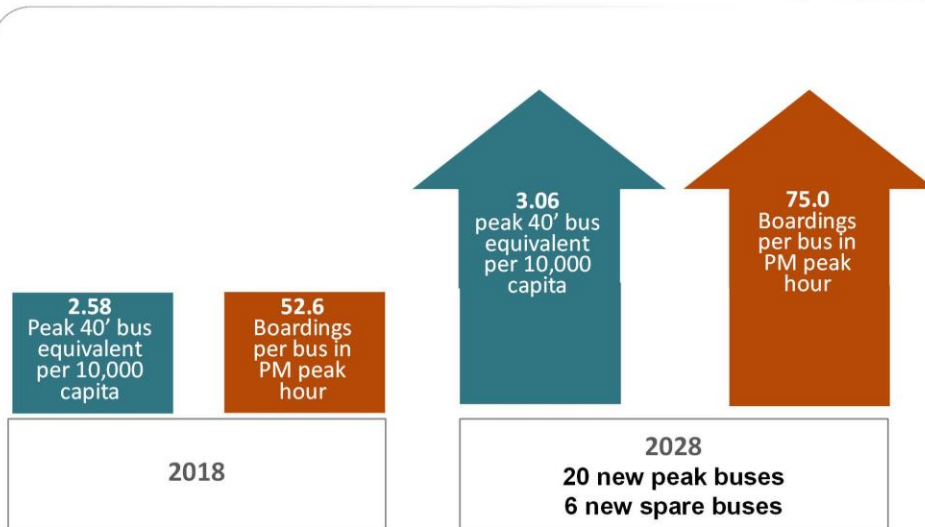
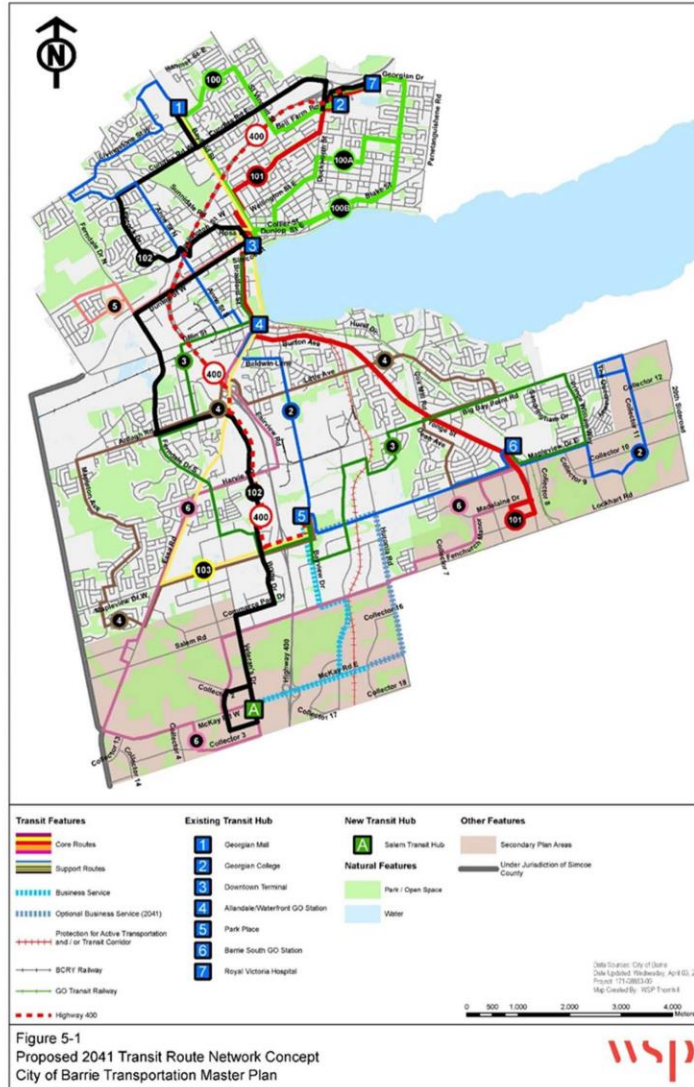


Figure 16: Proposed Level of Service Increase for 10-Year Period

The service coverage is proposed to expand to serve future development in the secondary plan area. See Figure 17 with the proposed routes in the Transportation Master Plan for 2041.





Source: WSP Canada

Figure 17: Potential Future Transit Vision (2041)

3.0 Levels of Service 40

In determining the proposed levels of service for Barrie Transit, the customer satisfaction surveys for 2017 and 2018 provided good information on current performance. Further, a survey of internal stakeholders including Capital Asset Management, Facilities, Planning and Finance was launched to gain input on direction for proposed levels of service. **Table 19 (Availability) and Table 20 (Quality)** present the current LOS, the results of the internal survey, the change in LOS and proposed LOS for the 10-year period (2019 to 2028).

From the internal survey, 100% of respondents felt that from their professional experience that it is preferable to walk an extra five minutes to a bus stop that has more frequent service and takes them less time to get to their destination, compared to waiting longer at a bus stop that is closer to their house but has less frequent service and takes longer to get to their destination.

Table 19: Current and Proposed LOS for 10-Year Period (Availability)

Service Measure	Current Level of Service		Internal Survey	Proposed Level of Service for 10-year Period (2019 to 2028)
	Community	Technical		
Hours of Service	4:20am to 1:30am		80% Stay the Same	➡ Same as Current LOS
Service Coverage	Map of current bus routes including express		67% Stay 22% increase	⬆ Expand service to secondary plan area
Frequency of Service	30 min frequency during peak; 60 minute during off-peak (as shown on current bus schedule)		22% stay 78% increase	⬆ Increase frequency during peak at 20min and off-peak at 30 min
Specialized Transit	Availability (same hours as conventional transit)		77% stay	➡ Same as Current LOS

Table 20: Current and Proposed LOS for 10-Year Period (Quality)

Service Measure	Current Level of Service		Internal Survey	Proposed Level of Service for 10-year Period (2019 to 2028)	
	Community	Technical			
Passenger Loads	Buses operate with available capacity.	27.0 boardings per 40 foot equivalent bus in the AM peak hour	-	↑	Increase passenger loads to improve cost effectiveness of service and justify improving frequency of service.
Reliability	On Time Performance (OTP) at 85%	OTP is considered as +3min/-5min from schedule	20% stay 80% increase	↑	Increase OTP to 90%
Responsiveness	How quickly respond to bus breakdown	Spare ratio is 29.7%	-	→	Same as Current LOS (maintain spare ratio around 30%, within 15 minute to dispatch bus)
Customer Satisfaction	Comfort and cleanliness of buses and bus stops • bus – 61% satisfied or very satisfied • bus stops – 55% satisfied or very satisfied	As defined in Element 9.15 in Schedule 12	33% stay 67% increase	↑	Increase customer satisfaction to 70%
Trip Time on Bus	Trip time on bus (60% satisfied or very satisfied)	increase in frequency will improve satisfaction	67% increase	↑	Increase to 70% satisfaction
Accessibility	54% bus stops are accessible	Replace concrete pads with AODA standard pad	90% increase	↑	100% accessible bus stops

Table 21 details the improvements to availability and quality LOS elements over the 10-year period. Bus numbers and boardings reflect availability while spare ratios reflect quality LOS elements. Overall, Barrie Transit is expected to see significant growth in ridership, with greater boardings and additional buses to cater for the increased demand. For more information on the proposed levels of service for each year (2019 to 2028) based on growth projections in the Transportation Master Plan and the DC Study, see **Table 21**. In addition to the Transportation Master Plan, the Technical Appendix to the Transit Development Charges report was referenced to provide the projections for fleet requirements from 2019 to 2041.

As the Barrie Transit fleet grows, so will the need for supporting on-street infrastructure, expanded facilities and additional technology. See Appendix B for the capital plan for fleet (new for growth and replacements), facilities, facilities capital improvements (lifecycle), on-street infrastructure and technology.

Upgrades and expansions to the facilities include:

- new Allandale Hub Terminal (to replace the current terminal), projected for 2021;
- convert existing terminal to a downtown mini hub, projected for 2021;
- Transit Garage Expansion projected for 2026; and
- New Garage projected for 2032.

For more information about the asset management strategy, see **Section 4.0**. For more information about the financial strategy, see **Section 5.0**.



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Table 21: Proposed Levels of Service for 10-Year Period (Growth Driven)

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Average Barrie Transit Daily Ridership	12,308	13,366	14,516	15,764	17,120	18,593	20,192	21,929	23,815	25,863
Peak Buses	37	37	41	42	45	48	49	51	54	57
Spare Buses	11	11	12	13	14	14	15	15	16	17
Spare Ratio	29.7%	29.7%	29.2%	31.0%	31.1%	29.2%	30.6%	27.5%	29.6%	29.8%
Conventional Buses Total	48	48	53	55	59	62	64	66	70	74
Peak buses per 10,000 capita	2.56	2.47	2.64	2.55	2.47	2.51	2.66	2.80	2.89	2.96
P.M. peak period boardings per revenue vehicle hour	57.0	61.0	60.0	64.0	69.0	71.0	71.0	71.0	72.0	73.0
Specialized Fleet										
Annual Specialized Trips	54,017	56,286	58,592	61,075	63,521	65,949	68,455	71,017	73,620	76,231
Specialized Peak	12	12	13	14	14	15	16	17	17	18
Specialized Spare	3	3	3	3	4	4	4	4	5	5
Specialized Total	15	15	16	17	18	19	20	21	22	23
Spare Ratio	25.0%	25.0%	23.1%	21.4%	28.6%	26.7%	25.0%	23.5%	29.4%	27.8%

4.0 Asset Management Strategy

This section of the asset management plan will address the strategy to provide the proposed level of service in a sustainable way, while managing risk, at the lowest lifecycle cost. This section will assess potential options to achieve the proposed level of service which compares lifecycle costs, all other relevant direct and indirect costs and benefits and the risks associated with the potential options. This strategy contains a summary of lifecycle management strategies broadly grouped into the following key categories:

- non-infrastructure solutions;
- maintenance activities;
- renewal and rehabilitation activities;
- replacement activities;
- disposal activities; and
- expansion activities.

Further, the strategy discusses the procurement measures that are intended to achieve the proposed level of service, and includes an overview of the risks associated with the strategy and any actions that will be taken in response to those risks.

See **Figure 18** for the requirements in the Development Charges Act, O. Reg. 82/98, as amended subsection 8(3).

An asset management strategy that,

- sets out planned actions that will enable the assets to provide the proposed level of service in a sustainable way, while managing risk, at the lowest life cycle cost,
- is based on an assessment of potential options to achieve the proposed level of service, which assessment compares,
 - A. life cycle costs,
 - B. all other relevant direct and indirect costs and benefits, and
 - C. the risks associated with the potential options,
- contains a summary of, in relation to achieving the proposed level of service,
 - A. non-infrastructure solutions,
 - B. maintenance activities,
 - C. renewal and rehabilitation activities,
 - D. replacement activities,
 - E. disposal activities, and
 - F. expansion activities,
- discusses the procurement measures that are intended to achieve the proposed level of service, and
- includes an overview of the risks associated with the strategy and any actions that will be taken in response to those risks.

Excerpt from O. Reg. 82/98 as amended subsection 8(3)

Figure 18: Scope of Asset Management Strategy

4.1 Strategy Aligned with Policy

An asset management policy describes a forward-looking commitment to good asset management practice, intended to optimize investment across the entire asset portfolio to maximize its value. A Strategic Asset Management Policy is a documented commitment to achieving and maintaining a State of Good Repair for all capital assets and identifies the principles for asset management. State of Good Repair can be defined as “the condition in which a capital asset is able to operate at a full level of performance.”

From the City of Barrie's Draft Asset Management Policy (going to Council June 3, 2019), the Policy Statement and Purpose/Application is as follows:

Policy Statement:

The City's vision for asset management planning is to ensure community sustainability and a high quality of life through effective and innovative management of the City's capital assets. The ultimate goal of asset management is to deliver services at the desired level while minimizing costs and maintaining an acceptable level of risk.

Purpose/Application:

The purpose of an asset management policy is to formalize the City's direction, functions, practices and responsibilities associated with the management of all assets used to support delivery of the City's services. This includes:

- To outline the organizational context including the importance of employing asset management principles to the management of City assets to support the corporate vision and goals.
- To set the broad framework for undertaking asset management in a structured and coordinated way across the City to deliver services.
- To communicate and ensure a common understanding of key responsibilities and review processes for asset management.

4.2 Approach and Terminology

This document sets out Barrie Transit's Asset Management Strategy. These strategies combine to outline the long-term management approach for Barrie Transit's assets and guide development of the Barrie Transit Asset Management program. These strategies comprise specific practices to be undertaken that will improve or enhance asset capability and achieve the specific objectives of the Strategic Asset Management Policy. These practices will enable good, or where proven cost effective, best asset management practices.

4.2.1 Strategy Terminology

The following terms are used in this Strategy:

- **Asset Management System** - Set of interrelated or interacting elements of Barrie Transit, that establishes asset management policies and objectives, and the processes needed to achieve those objectives. An asset management system is not simply an information system; it also includes the organization structure, roles, responsibilities, business processes, plans, operation, etc.

- **Capital Maintenance** - Relates to the capital funded activities required to maintain the current LOS to the community and/or other stakeholders
- **Enhanced Levels of Service** - Relates to an identifiable, measurable and permanent change in the overall level of service to existing customers above the standard previously provided.
- **Levels of Service** – Describe the outputs or objectives Barrie Transit currently delivers and includes measures at the Corporate, Community (Customer) and Asset levels of the organization.
- **Proposed Levels of Service** - Describe the outputs or objectives Barrie Transit proposes to deliver and includes measures at the Corporate, Community (Customer) and Asset levels of the organization.

Figure 19 summarizes the structure of an Asset Management Program.

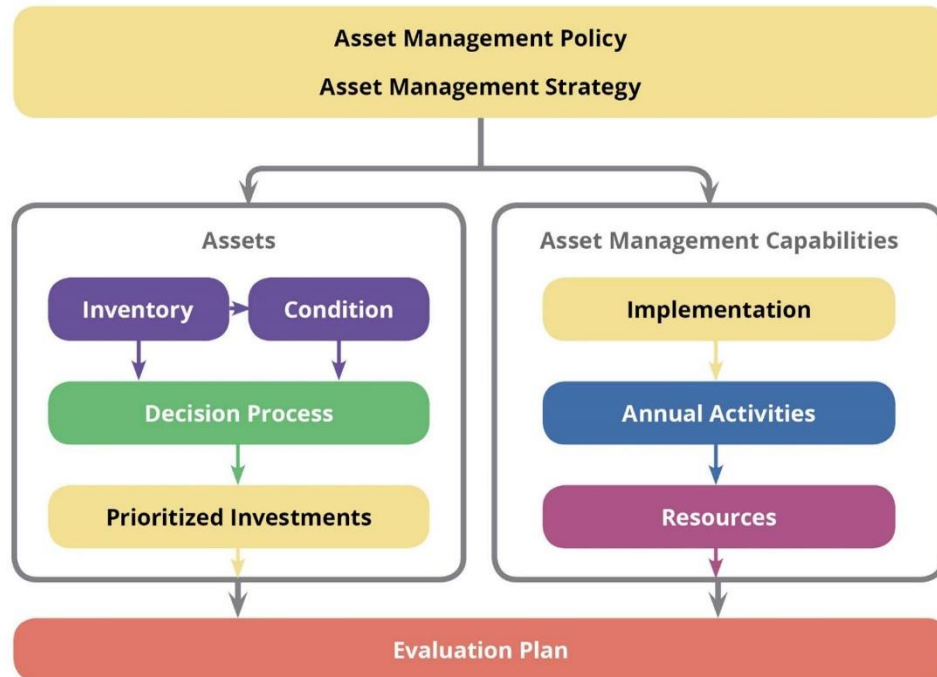


Figure 19: Structure of an Asset Management Program

4.0 Asset Management Strategy 48

Barrie Transit is developing an overall Asset Management Strategy (AM Strategy) to identify and improve asset management for its full suite of assets, both within its operations and management contract and within the organization itself, through the next 17 years of its current contract, and onward to 2041. Asset management strategies and plans drive efficient resource allocation and work planning which results in performance improvement, while reducing costs and risks.

Clear responsibilities ensure plans are delivered. Good practice asset management internationally has always been based on the central plank of an Asset Management Plan for an asset management system. From 2004, with the publication of BSI PAS-55, and then ISO 55000 in 2014, organizations have been able to exploit a standardized good practice framework for implementing an aligned asset management system.

Typically, organizations have started with a focus on asset information: particularly the inventory of all their assets and assessing asset condition. This information supports clearer planning, because now the organization knows what assets it has and what state they are in. But the aim is not just a clear plan to cover all the assets, but a prioritized and optimized plan based on understanding the risks to its objectives and using this to make the best use of limited resources.

This Asset Management Strategy sets out the strategic direction Barrie Transit is taking in managing their transit assets. The Asset management Strategy:

- describes how the Asset Management Policy is converted into asset management objectives;
- focuses on how Barrie Transit will successfully achieve our core function as a provider of public transit to the community;
- supports the delivery of value to customers, while maintaining sustainable delivery of services; and
- drives Barrie Transit’s continuous improvement program.

The AM Strategy is developed to support, align and interface with the organizational Mission, Vision and Goals. It is important that the strategic plan is embedded into “business as usual arrangements”. A key way to achieve this is to (a) integrate strategic goals and initiatives into business unit operational plans and (b) secure a full understanding of the interactions between existing / new initiatives and the strategic initiatives.

Success in this area will be supported where delivery against the strategic goals, values and initiatives are regularly monitored and assessed through the establishment of metrics that will help to drive behaviours within the business units. Ultimately this will help to move Barrie Transit forward toward effective delivery against the goals set out in the Asset Management Strategy as well as the overarching mission and vision. Metrics agreed to support the strategic goals need to be sufficiently challenging to institute change in order to move the organization closer to the aspirations set out in the mission and vision. These overarching metrics will be complimented by metrics for each of the strategic initiatives which will monitor progress in terms of delivery of the outcomes anticipated under each of the strategic initiatives.

4.3 Planned Actions to Provide Proposed Levels of Service in Sustainable Way

In early 2019, the City of Barrie completed the Transportation Master Plan (TMP) which established targets for increasing the daily Barrie Transit mode share in 2041 to 6.8% from the current 2.8%.

The current strategy for Barrie Transit is to substantially grow the level of service provided by Barrie Transit to meet the population growth, the targets for active transportation and desired customer levels of service for the community. This strategy must also account for several additional items:

- the levels of service to be provided within the 20-year contract with the operator, including 55 service measures identified for establishing expectations of the service delivery.
- a strategy to balance out the purchases of fleet vehicles to meet the specific threshold requirements which trigger increases within the contract, for instance:
 - extend the lifecycle of conventional fleet by two additional year from 12-years to up to 14 years and similarly for specialized fleet;
 - consider the opportunity of rehabilitation for conventional fleet to extend useful life from 12 years to up to 17 years; and
 - where possible, delay replacement of vehicles in years when significant capital is required for facilities.
- a strategy for renegotiation of the current contract beyond the fleet size of 85 buses.
- a strategy for the transition of the contract at 20 years, including service delivery options to be considered for Council approval at that time.

4.4 Strategy for Lifecycle Management

Municipal assets are procured by the municipality to meet the future needs of the community. Often those responsible for delivering the service will identify the need for new assets. After a need has been identified, the asset will be acquired or constructed. The asset then is operated and maintained on an ongoing basis, until asset renewal or rehabilitation would be required to extend the useful life. As the asset nears the end of its life, a plan is established to replace, decommission or upgrade the asset to meet the future needs. These activities collectively represent the asset's lifecycle. In asset management, the focus is on considering the full lifecycle approach when identifying the need and monitoring the lifecycle activities throughout its useful life. An asset lifecycle management strategy is the set of planned actions throughout the asset's full lifecycle that will enable the assets to provide desired levels of service in a sustainable way, while managing risk, at the lowest lifecycle cost.

The main lifecycle strategy options that were looked at for fleet renewal for Barrie Transit included:

- **Extending Maintenance Tier 2:** As the maintenance schedule in the contract has been established in tiers (i.e. groups of fleet assets), options were looked at to delay the addition of fleet assets that moved into the pricing for the next tier of assets, which extended the pricing of the previous (and less expensive) tier for maintenance costs.
- **Repurpose Fleet:** Repurpose the fleet used for the Essa Service to extend Tier 2, which extended the effectiveness of the previous tier by one year.
- **Garage Expansion:** Reducing the capital requirements in the year of the garage expansion by delaying the purchase of replacement buses to the following year.
- Considered the impact of the rental for GO bus storage in the garage on the timing for the garage expansion.
- **Annual Cost:** Extending the useful life of fleet by one or two years to help even out the total annual purchased (replacement + growth) fleet, for both conventional and specialized fleet.

As specified in the Building Together Guide, the lifecycle management strategies can be broadly grouped into the following key categories:

- **Non-infrastructure solutions:** Actions or policies that can lower costs or extend asset life (e.g., better integrated infrastructure planning and land use planning, demand management, insurance, process optimization, managed failures).

- **Maintenance activities:** Including regularly scheduled inspection and maintenance, or more significant repair and activities associated with unexpected events.
- **Renewal/rehabilitation activities:** Significant repairs designed to extend the life of the asset. For example, the lining of iron watermain can defer the need for replacement.
- **Replacement activities:** Activities that are expected to occur once an asset has reached the end of its useful life and renewal/ rehabilitation is no longer an option.
- **Disposal activities:** the 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.
- **Expansion activities:** planned activities required to extend services to previously un-serviced areas – or to expand services to meet growth demands.

See **Table 22** for current and planned lifecycle management strategies for Barrie Transit.

Table 22: Lifecycle Management Strategies

Categories	Current Activity	Future Opportunities
Non-infrastructure solutions	<ul style="list-style-type: none"> • Transit business plan (2018 to 2023) • Transportation master plan • 55 performance measures 	<ul style="list-style-type: none"> • Bus stop streamlining study (including shelters) • Operational Review Studies • Transit Master Plan • Asset Management Plan update
Maintenance activities	<ul style="list-style-type: none"> • Well defined maintenance program in place with 55 performance measures 	<ul style="list-style-type: none"> • No additional maintenance metrics
Renewal and rehabilitation activities	<ul style="list-style-type: none"> • Renewal/rehabilitation is considered to extend useful life from 12 years to 17 years. 	<ul style="list-style-type: none"> • Consider heated shelters, “next bus” displays at shelters
Replacement activities	<ul style="list-style-type: none"> • Replacement is completed based on schedule for conventional fleet of 12 years (or extended to 14 years) – industry standard is 12 year replacement of conventional fleet. 	<ul style="list-style-type: none"> • Review lifecycle economic analysis (could include rehabilitation to extend useful life) • Monitor reliability of alternative fuel vehicles and consider when building new garage (when business case would justify).

Categories	Current Activity	Future Opportunities
Disposal activities	<ul style="list-style-type: none"> Vehicles are sold 	<ul style="list-style-type: none"> Consider repurposing facilities or selling them
Expansion activities	<ul style="list-style-type: none"> Additional vehicles are purchased as suggested in the transit master plan, or based on identified needs. Incorporation of the recommendations for expansion as per the 2019 Development Charges study. 	<ul style="list-style-type: none"> Facility and space needs reviewed, design and construction based on schedule already developed.

4.5 Strategy for Levels of Service

Defining levels of service is a foundational element in building an Asset Management Program. A cohesive suite of level of service measures, set at the appropriate levels within the organization, can ensure an integrated approach from the corporate performance vision, down to day-to-day asset management decision making.

Adequately defined levels of service are critical in the further development of key asset management system elements; Asset Management Plans; business case evaluations; capital investment prioritization and planning; resource allocation including budgets, etc. A key objective of asset management is to optimize the balance between the competing objectives of levels of service, risk and cost with the aim of meeting customer service levels at the lowest lifecycle costs. This will include better understanding customer expectations, as well as considering these expectations while taking into account the affordability of services. It is therefore important to define and quantify the levels of service (LOS) within each Service Area, as these become the driver for the identification of asset needs and the basis for investment decisions.

The purpose of a Level of Service Strategy is to ensure that:

- Defined and documented corporate, customer and technical/asset levels of service (Qualitative Measures and targets) are established;
- Council endorsed corporate and customer target levels of service are established;
- Responsibilities, processes and systems are agreed and in place for timely reporting of level of service metrics;
- Current level of service performance is agreed (Quantitative measures); and

- Investment and operational decisions are evaluated against their impact on customers, the community, and the environment through monitoring and review.

Assets exist for the purpose of supporting the delivery of Barrie Transit services to its customers, both internal and external. A key objective of Asset Management is to optimize the balance between the competing objectives of Levels of Service, risk and cost with the aim of meeting customer service levels at the lowest lifecycle costs. This will include better understanding customer expectations as well as considering these expectations while taking into account the affordability of services. It is therefore important to define and quantify the levels of service (LOS) within each Service Area, as these become the driver for the identification of asset needs and the basis for investment decisions.

See Level of Service chapter for more information about current and proposed levels of service.

4.5.1 Strategic Approach to Proposed Levels of Service

Defining LOS is a foundational element in building an Asset Management Program. A cohesive suite of LOS measures, set at the appropriate levels within the organization, can ensure an integrated approach from the corporate performance vision, down to day-to-day asset management decision making.

Adequately defined LOS are therefore critical in the further development of key asset management system elements including:

- Asset Management Plans (AMP) ;
- Risk Management policies and associated tools;
- Business Case Evaluations;
- Capital Investment Prioritization and Planning tools;
- Resource allocation including budgets and organizational adjustments (e.g., staffing levels to meet LOS); and
- The definition of long-term Capital Maintenance funding requirements.

Performance against the agreed LOS should initially be tracked and reported internally. This initial tracking exercise will allow assessment of the efficacy and accuracy of the processes associated with data collection, and whether the selected measures are the appropriate ones to accurately measure performance of the assets and services offered by each of the Service Areas. With intelligent definition of the LOS, the reasons for achievement or non-achievement of desired performance can then be explored and addressed. Over time a detailed understanding

of what is required to achieve any given LOS in terms of capital expenditure (CAPEX), operating expenditure (OPEX), and changes to working practices can be developed.

Once a full understanding of LOS and its contributory factors is achieved then future amendments to the LOS can be explored objectively. Initially the aim is to understand what the current LOS is for each of the measures. At present, without a fully documented suite of LOS measures, there may be a difference in understanding across each of the Service Areas and for the customers, with regard to what the actual performance is, and often this results in a higher expectation of the service than is actually being delivered. This is the distinction between actual (or current) LOS and target (or future) LOS. Without obtaining agreement on the current LOS performance, it becomes difficult to justify any funding for LOS improvements. Once the measures have been defined, customers can then be engaged in the LOS process where any improvements to LOS or potential reductions to the current LOS can be demonstrably linked to known cost increments. Similarly, decision-makers including Council and Regulators can be educated on the true costs to changes of LOS.

It can be difficult to determine the correct level of expenditure on capital maintenance – the capital expenditure required to maintain the current level of service to the community and/or other stakeholders. Too much investment is likely to result in assets being replaced unnecessarily, leading to higher prices and little benefit for customers. Too little investment is likely to mean a gradual decline in the assets' performance with an associated impact on customer service.

A service delivery approach involves agreeing on and then monitoring a set of defined asset and customer service performance (the 55 metrics identified in the existing management contract) assumed that the level of capital maintenance spend is of the right order. However, if the indicators show a decline in performance, this indicates that there has been too little investment in capital maintenance.

The service delivery approach therefore involves identifying levels of service and then costing how much is required to maintain this level of service. This provides a basis for assessing the benefits/costs associated with enhancing specific areas of service. A service delivery approach has proven to be a robust approach to the management of the asset base and enables both the justification and prioritization of capital expenditure, considering the capability of a system of assets with regard to delivery of an established level of service to customers and the environment, now and into the future.

Service delivery is deemed to be stable when the assessment of trends in a defined set of service and asset performance indicators demonstrates that service is in line with the established level of service and, by inference, is likely to remain so into the future. The established level of service is determined from a specific sub-set of service indicators that reflect the degree of compliance with statutory regulations, environmental and company standards and customer preferences.

Asset performance indicators, measured at the system level, are drawn from a specific sub-set of measures that inform current and future levels of service. Stable service delivery normally requires that asset performance is in line with the established level of asset performance.

Ultimately the LOS measures or service delivery indicators can therefore be used to monitor the effectiveness of Barrie Transit's asset management program from year to year, and to support the development of longer-term strategic plans for asset management.

In addition, a comprehensive suite of Level of Service measures can also be used, over a period of time, to give an indication of the overall performance of Barrie Transit, especially with regard to sustainability performance.

4.5.2 Assessment of Potential Options

Refer to chapter on Level of Service.

Once the LOS framework is in place and populated, there will be a better understanding of the current LOS provided by the Service Area. The next steps will be to:

1. Analyze and Cost Out Options

This will include:

- The development and use of risk models that incorporate the LOS measures in the consequence descriptors enabling the optimal level of expenditure associated with maintaining current services levels to be defined.
- Defining the costs associated with increasing service levels, or the savings achievable through allowing service to decline.
- Assessing multiple options to achieving an agreed LOS, using both asset and non-asset solutions.
- Providing the basis for assessing a range of scenarios e.g. provision of an average LOS across Barrie Transit vs. minimum score for any community or setting a higher than minimum rating for high profile facilities etc.

2. Engage Customer Consultation

Having informed discussions with customers, Council and Stakeholders with regard to:

- Identifying areas of concern.
- Understanding how satisfied customers are with current service levels.
- Undertaking surveys on customer's willingness to pay for enhanced services or making service trade-offs between current LOS.

3. Set Targets

Based on the combined outcomes of the Analysis and Costing of Options and the Customer Consultation, the Service Areas can then:

- Set appropriate LOS targets to ensure financial affordability of the infrastructure.
- Cascade targets down through the LOS framework to the Asset LOS, as shown in **Figure 20**.

Levels of Service and Risk



- Levels of Service are the service performance targets
- Risk is defined as the “effect of uncertainty on our objectives”
- Asset risk is about **any risks to achieving our Levels of Service** (along with achieving budgets, safety and compliance)
- Priorities are defined by the size of the gaps between target LOS and current and future risks

Figure 20: Levels of Service and Risk Flow Chart

4.6 Strategy for Risk Management

Risk in asset management is about identifying the potential barriers to achieving the levels of service. Although risk often focuses on the performance of the infrastructure itself, it is important to consider how the system operates for a transit system.

Potential barriers that could prevent Barrie Transit from achieving target levels of services are:

1. Poor Contractor Performance (90%)
2. Changing Priorities of Government (less support for transit) (70%)
3. Lack of Sustainable Funding for Transit (70%)
4. Poor Reputation of Barrie Transit (60%)
5. Labour Disruption (50%)
6. Safety on Bus (50%)
7. Traffic Congestion (40%)
8. Changing Demographics / Changing Needs (30%)
9. Loss of Key Staff (10%)
10. Technology Needs Do Not Meet Customer Expectations (0%)

The percentage scores indicate the response from the internal survey of the top five areas that could impact Barrie Transit from reaching its service goals.

In this Risk Management process, Barrie Transit shall:

- Develop transit-based risk management processes and policies which align to the enterprise risk management policy
- Apply proven risk management practices in our decision-making process.
- Understand the criticality of the individual components of the asset base.
- Utilize objective, repeatable methodologies, based on robust quantification and understanding of probability and impact allowing us to understand the risk of each asset and adjust our interventions accordingly.
- Align strategic, tactical and operational risks and risk registers and develop risk mitigation strategies.
- Produce robust forecasts of the changes in the risk profile of our asset base over time, enabling us to determine the optimum level of capital and operational investments needed to sustain the assets.

Barrie Transit should develop a consistent risk management approach and framework for use across the organization, while recognising the need for the risk management framework to be appropriate to the individual asset bases and nature of the businesses within each of the asset category.

The purpose of this risk management framework should be to ensure that:

- All significant risks are identified, including failure to deliver established levels of service;
- Identified risks are understood both in terms of how likely a specified risk may occur and the type and magnitude of its consequence;
- Strategies for mitigating prioritized risks are developed;
- Progress on the management of risk is monitored and reported; and
- Risk is a prime consideration in the determination of management priorities.

Risks arising from the activities, services, and products associated with the management of assets will be prioritized for treatment and maintained in a detailed risk register for each Barrie Transit asset class, which records potential risks and mitigation responses. These risk registers will include details of the risk profile, including risk description, current risk score, date of risk assessment, risk owner, mitigating action and dates for completion along with the target/residual risk. The risk register should be reviewed, monitored and reported to senior management within Barrie Transit regularly. All risk registers will be of the same format, to enable roll up at the organization level.

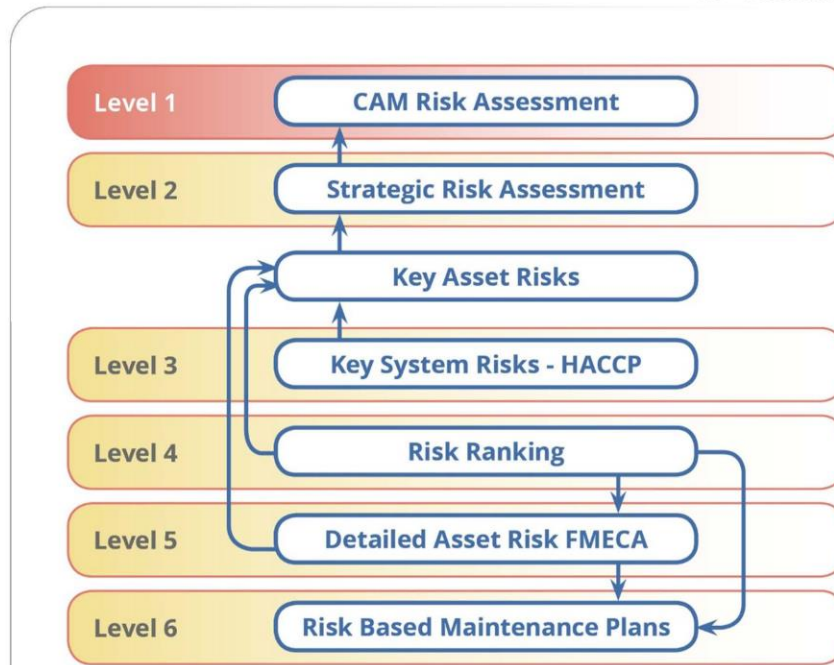


Figure 21: Hierarchy of Risk-Based Approaches

For Barrie Transit, a staged risk assessment should be used, which escalates as appropriate the assessment process through basic, intermediate and advanced risk assessments. For example:

- a. **Basic Risk Assessment** – This could use a 4 x 4 likelihood/consequence matrix to rank likelihood and consequence of failure. This method would usually be an assessment of the likelihood of failure based on condition or age and identification of the worst-case consequence. This method provides a good first pass assessment and provides a high-level overview of the risk profile. However, it has the disadvantage that large numbers of assets can be given a similar risk score, as there are only nine or twenty-five positions on the risk matrix, which then often requires further prioritization. In addition, the risk assessment tends to be overly conservative with risks being overstated due to focusing on the worst-case consequence.
- b. **Intermediate Risk Assessment** – Using a broader likelihood/consequence matrix to more robustly rank risk, both in terms of likelihood and consequence of failure and using a range of indicators to determine the likelihood of failure and using the total summation of all consequences in the risk equation. This method is more time consuming, as the assignment of likelihood and consequence scores requires more data,

discussion and decision-making due to the broader range of descriptors. The benefit though is much more granularity with regard to the assignment of individual risk scores and a more realistic handling of consequences.

This approach usually also includes the assignment of weightings to the individual likelihood and consequence categories. As with a wider range of categories it is likely that the individual business impact areas will be of varying levels of importance to the Barrie Transit. Weighting scores can be arrived at either through a discussion-based workshop approach or by using techniques such as a pairwise comparison, in which each category is matched head-to-head (one-on-one) with each of the other categories in order to arrive at an overall ranking of categories.

- c. **Advanced Risk Assessment** – This approach is also based on the product of the likelihood of failure and the sum of the impacts and considers the impacts in terms of the estimated economic costs of a full range of the consequences of failure on both the organization and the wider community. Using this method, it is likely that each asset will have a unique impact cost assigned to it and therefore this greatly aids the prioritization of candidate schemes for OPEX or CAPEX programs of intervention. Also, since the cost and likelihood of the risk materializing has been calculated, the cost of any intervention options can be assessed against the risk cost. In this way this methodology can also be used to justify plans and expenditures, as opposed to just the prioritization of the output from the two former methods. Whilst this approach does, potentially, enable a true cost benefit approach – assessing the cost of a mitigating action against the cost of the risk materialising, it is very data intensive and does require the accurate costing of all Triple Bottom Line consequences, which is especially difficult to do for societal costs.

In all three approaches the term “consequence” refers to the actual, physical result of the asset failing, whereas the “impact” is the value that is put on those consequences by Barrie Transit. Each level is more complex, requires more data and is therefore more expensive to undertake than the previous one. Therefore, at each progressive level the assessment process is usually applied to fewer assets – only those that are critical to operation. Ultimately the aim should be to complete advanced risk assessments for all the assets, where the true business impact of asset failure can be fully understood and managed accordingly.

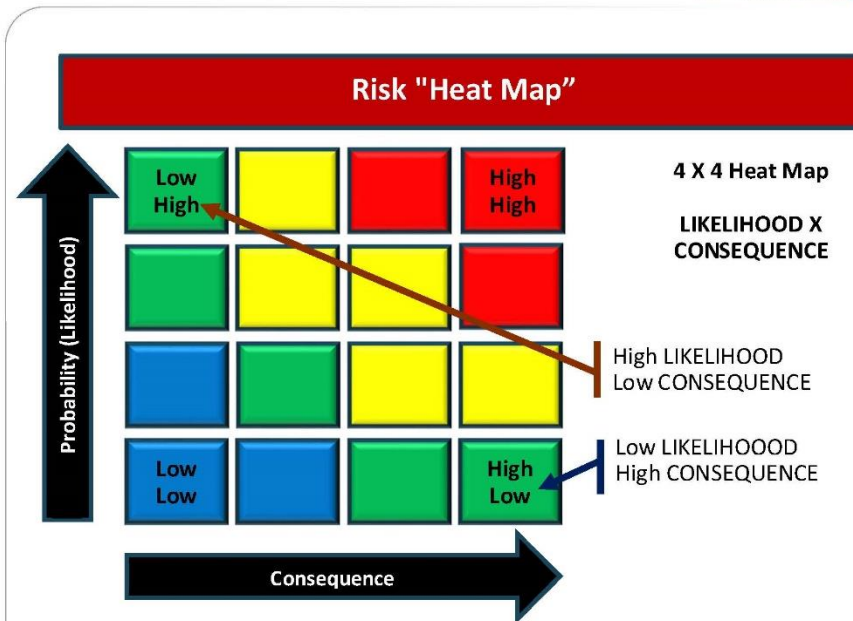


Figure 22: Evaluation of Risk Heat Map

Using the colour code in the risk heat map, Reds should be managed, Yellow should be an absolute minimum and Green and Blue are most preferred.

4.6.1 Recommended Approach

Currently the approach to risk assessment and risk management varies across the City, with several departments already utilizing risk-based approaches in the management of their assets. The proposed transit-wide risk-based approach will therefore, where relevant, make the best use of current practices.

4.6.1.1 Risk Assessment Approach

In summary, the proposed approach asks the following questions:

- What does the state of each of the core elements within an asset tell us about the likelihood of some failure of that element?
- In the event of a failure, what is the likelihood of any of the pre-defined consequences occurring? This is represented by a consequence profile. The consequence profile deals with how severe the impact on Barrie Transit could be, e.g., there may be agreement on the likelihood of failure of an asset, however it is more difficult to agree on the impact

which can range from negligible to severe, such as fatalities. The use of a consequence profile allows for the fact that the consequence could be severe but also acknowledges that it could be unlikely and therefore provides a more realistic assessment of consequences.

- Are there any special factors that would inflate the impacts of a failure? (e.g. locational issues).

Step 1: Establish Context – Many asset failures are not related to asset condition; they arise from the operational environment or maintenance practices. Establishing the propensity towards failure therefore requires workshop participants to assess a number of “Likelihood Indicators”, including condition, but also looking at the maintenance and operational regime, etc. for the key elements of the asset. These indicators are rated against factual statements about the asset which represent a continuous scale from Very Good to Very Poor.

Step 2: Identify Risks –This involves setting out the consequence profile in the event of a failure for each relevant Level of Service that the asset provides. The consequence of failure typically considers the “triple bottom line” and for a given asset failure typical consequence categories to be used could include the following:

- **Regulatory, Compliance and Essential Safety:** Failures that result in damage awards or require defense efforts, legislative offences, officer and/or director charges, non-compliance orders, essential safety of staff, workers, customers etc. Failures of assets that result in a threat to life to both staff and public, negative impacts to fire protection, emergency responsiveness and traffic, to critical customers such as hospitals, and resulting from spills.
- **Availability:** Failure in having availability of asset on time affects service delivery, service disruption, functional impedance, operational or energy inefficiencies or maintenance inefficiencies, and could be due to under design or new requirements. It could also mean lack of planning, lack of spares and scheduling of transit buses during breakdowns which will affect service delivery.
- **Capacity:** Failures in having enough capacity in our assets can affect levels of service. An overcrowded bus or bus shelter will affect the customer perception on the Transit. An excess capacity in an asset can lead to faster deterioration of the asset reducing its useful life.
- **Customer Satisfaction:** Failure to satisfy the customer will affect the reputation of the city in the long run. This can lead to costly litigations, unnecessary risk costs and affecting service disruptions and delivery.

- **Financial Sustainability:** Failures that result in class actions lawsuits, budget fluctuations, regulatory fines, high repair costs, and loss of revenue. Failures due to findings like fraud, mismanagement of funds and public resources can affect the reputation and public perception.
- **Environmental Consequences:** Failure of assets resulting in negative impacts to endangered or other species or habitat, to heritage resources, weather events like flooding, ice storms etc., archaeological sites, water courses, aquifers etc.
- **Resiliency:** Failure of assets can result in negative impacts to the city's heritage resources and extreme weather events and climate change can bring flooding, ice storms etc. that can damage archaeological sites, water courses, aquifers etc. bringing service disruptions. It is important that city develops resilience during such times by having proper disaster management plans.

Steps 1 and 2 work with a group exercise that includes brainstorming of risks by individuals, combining of risks by the group, developing risk descriptions, and reaching a working consensus on which risks will be included in further analysis and prioritization. The risks must be clearly defined so each member of the Barrie Transit has the same understanding of the risk and the risk can be communicated to other stakeholders.

Step 3: Analyze Risks – The analysis and prioritization of risks is an iterative process, in which risks are initially prioritized by each asset owned by Barrie Transit, and then a combined risk register is reprioritized. Initial prioritization is objectively done by Barrie Transit staff, who are most familiar with the specific assets. Each risk is assigned an overall risk score (Risk Score = consequence score x likelihood score) which is product of consequence score and likelihood scores. Barrie Transit records the risk score in their risk register and sorts the list in order of descending score. There is also a need to decide if the asset has any further Strategic Importance Factors (SIF), if applicable, which would exacerbate the consequences of failure. These SIF are generally special features associated with the location or function of the asset and are typically given an additional weighting which elevates the overall risk score. **Figure 22** shows the risk analysis developed by the Barrie Transit team for city-owned shelters.

Step 4: Evaluate Risks – The Likelihood Indicators, Consequence Profiles and SIF are then combined to generate an overall risk score for each element, both within the individual asset and the asset classes as a whole. Since a consistent risk framework is being adopted across all Barrie Transit assets, the risk scores produced by the approach will enable a comparison of risk scores either within a specific asset class or across all Barrie Transit assets. This supports

decision making by comparing the magnitude of the risks identified in the preceding two steps with its risk tolerance.

Step 5: Treat Risks – This decision-making step applied the “five Ts”: to Treat, Tolerate, Terminate, and Transfer or Take advantage of the risk. The risk mitigation methodology developed for Barrie Transit should describe in detail how to treat risks.

Risk Mitigation Methodology

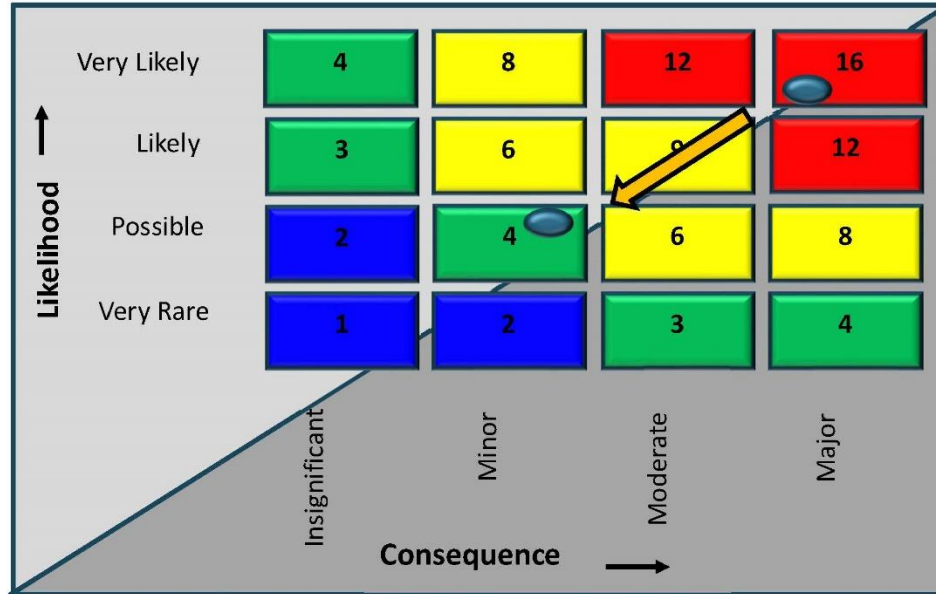
Following completion of a risk assessment, there are several options to be considered for managing the risk (i.e., treat, tolerate, terminate, transfer or take advantage).

Risks can be addressed through the replacement, rehabilitation or upgrade of assets, and/or by the ongoing monitoring of risk and the development of contingency plans to minimize the consequence of a risk event.

There are two approaches for dealing with those risks in the higher risk categories:

1. Rank the projects/assets in order of decreasing risk and then fund projects that address the highest risks (i.e., when working within an available funding limit, start at the highest risk project and work down the list until funds are exhausted), as shown in **Figure 23** below.
2. Following the development of solutions to address the risks, the schemes can be ranked by **biggest risk reduction per dollar**. Then, those schemes that will give the largest overall movement in risk for a set funding allocation can be addressed as opposed to spending the available funding just mitigating the highest risks.

Figure 23: Risk Mitigation Approaches



In terms of appropriate governance, a mix of the two approaches should be adopted
Barrie Transit should therefore:

- Rank schemes in order of decreasing risk and decide what is the trigger level for a "must-manage red or yellow" (MMRY).
- Then, rank by biggest risk reduction per dollar and look at the position of the above MMRY.
- If any MMRY fall below the funding cut-off line, then look at the cost/risk reduction or risk index and either decide if this should be promoted anyway, or look at alternative, possibly shorter-term solutions to manage this risk at less cost.

Neither approach should be used in isolation. A degree of technical judgment will be required to arrive at the optimum mix of schemes. In some cases, a single strategy such as change in policy may act to mitigate multiple risks, such as implementation of a more robust data governance policy by the organisation. When reviewing the Barrie Transit risk registers, the organisation should look for opportunities to mitigate multiple risks with a single strategy. This is done by looking for similar mitigation strategies proposed by multiple Barrie Transit asset classes.

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It is unlikely that all assets will move to the “green/blue” risk zone and therefore in selecting the preferred intervention option, it will need to be acknowledged that certain solutions will result in a higher level of residual risk, i.e. the risk level that will still exist after the mitigation action has been carried out. Barrie Transit will therefore need to understand the level of residual risk following delivery of planned projects or changed operating practices and put in place measures to manage the residual risk, such as increased surveillance, or enhanced maintenance regimes. This is especially the case if lower than expected funding levels are received as a result of the business planning process.

During the Risk workshop, Barrie Transit staff agreed upon the key risks for their transit as follows in highlighted Table with the agreed upon overall risk score. It is recommended that in the future each of the levels of consequences needs to be aligned and tailored with the enterprise-city-wide risk framework and model for calibration purposes.

Table 23: Output from Overall Risks and Magnitude with Respective Risk Ranking

HAZARD	LIKELIHOOD (Frequency)	CONSEQUENCE Magnitude of value & reputation	RISK Ranking	CONSEQUENCE Impact Areas	Possible MITIGATION or Prevention (Actions in response to hazard)
Perceived Harassment at Workplace	High 4	Mod (Social media) 3	12	-Human Resources -Public Safety -Social -Economic	HR policies Hotline Quick response
Power outage affecting ops at transit system	Snow; Low 1 Missed service: High 4	High 4 Mod 3	4 12	-Public Relations -Economic -Social	Generator or back-up power at facility to keep critical assets in service (radios, SCADA, etc.)
Passenger slipping in shelter due to ice	Mod 3	Mod 3	9	-Public Safety -Public Relations -Environment/ climate change	Anti-slip surfaces at shelters and bus stops Signage Cameras/CCTV
Serious injury in bus collision	Low 1	High 4	4	-Public Safety -Public Relations -Economic	Camera/CCTV Driver training, certification

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HAZARD	LIKELIHOOD (Frequency)	CONSEQUENCE Magnitude of value & reputation	RISK Ranking	CONSEQUENCE Impact Areas	Possible MITIGATION or Prevention (Actions in response to hazard)
Vandalism at facility	Mod 3	Low 1	3	-Public Safety -Economic -Human Resources -Social	Cameras/CCTV Tag resistant surface (Paint resistant)
Theft at facility	Low 1	Low 1	1	-Economic -Public Relations -Public Safety	Cameras/CCTV Security system with alarm response

4.6.2 Climate Change Impacts to Service

In the City of Barrie’s **Climate Change Adaptation Strategy, 2017**, goal 6 addresses minimizing disruption to community services. Specifically, action 6.2 is to mandate the use of snow tires on all City vehicles during winter months. This action was identified as a priority 3. Closely connected to transit’s ability to get around during winter months is the treatment of roads with anti-icing/de-icing liquids where practical to reduce sodium chloride usage and engage in continuous research on best practices for winter control (action 6.3) which is a high priority.

In the staff workshop, the following impacts to service related to climate were noted:

- The bigger hills in the community have been known to be icy and to experience slowdowns due to traffic accidents upstream of the bus.
- It is noted that salt on roads causes the vehicles to corrode and sun degrades the stickers on the outside of the buses.
- Additional impacts of climate change include increased use of air conditioning on buses during hot weather and the impact to customers waiting outside without access to shade or shelters. Flooding is also a concern in low lying roads.
- It was also noted that there has been increasing unpredictability of snow in November and June which is outside the City’s scheduled snow removal contracts.
- Intense snow volumes have been known to slow down routes during and after winter storms. There is a challenge in many locations when clearing snow from bus stops to find someplace to put the snow.

4.7 Asset Investment Strategies

The following strategies are employed by Barrie Transit:

- a) Preservation First; and
- b) Beyond Preservation.

The organisation has the business cases modelled on these strategies that could help in the evaluation process.

4.7.1 Preservation First

This is an investment strategy that prioritizes activities that maximize the service life of an asset over expansion or enhancement. For example, the strategy of managing the road network through rehabilitation and resurfacing through surface treatments is a low-cost preservation treatment. This strategy prioritizes managing conditions across the system by keeping assets in a low-cost preservation cycle and applying future year savings to more deteriorated assets to bring them into a state of good repair using high cost treatments.

4.7.2 Beyond Preservation

This is a strategy for addressing assets that have deteriorated beyond a state in which they can be preserved and or no longer meet City's goals of economic development, resiliency and sustainability.

4.8 Procurement Strategies

Procurement strategies are an important contribution to achieve proposed levels of service. As noted in the Lifecycle Management strategy, identification of the asset needs early in the planning cycle and considering lifecycle approach results in better outcomes.

The following procurement strategies relate specifically to Barrie Transit:

- Long lead time for purchasing buses and maintenance equipment (part of capital strategy). Delivery schedule is about 12 months for conventional fleet and 6 to 8 months for specialized vehicles.
- Buses are ordered prewired which accelerates getting the new vehicles into rotation. It can take one to two months from delivery to service rotation.
- An existing strategy includes a purchasing agreement with Metrolinx (to benefit from larger purchasing power).

- Preferred approach is to purchase some new buses every year for consistent cashflow (and renewal cycle).
- Lifecycle approach of facilities and consideration of when to expand and/or build new.

4.9 **Monitoring and Review**

Barrie Transit will need to identify how the risks are likely to change over time, which will largely be dependent on where the assets are in their lifecycle. Risks will therefore need to be reviewed as a minimum on a fixed-time interval, typically every two years, or as a result of either external factors or an unforeseen event occurring.

Details of the approach to assessing and managing asset risks and the timeframes for review should be held in the Asset Management Plan for each of the Barrie Transit asset classes.

Currently Barrie Transit tracks levels of service annually through the budget and business plan process. The Barrie Transit Asset Management program will enable a more robust information base for strategic and long-term planning as well as provide tracking tools such as the State of Infrastructure report using the LOS framework. Performance against the Corporate and Customer LOS measures will be tracked, as a minimum on an annual basis. Many of the Asset LOS measures will likely be tracked on a more frequent basis. Together the LOS targets are linked through the framework to support the corporate strategy.

Review of the established LOS targets should be on a longer-term basis tied to any updates of the corporate strategic objectives, or on demand which could be triggered by better asset data or a significant asset failure impacting on LOS performance.

5.0 Financing Strategy

5.1 Scope and Process

This financing strategy outlines the suggested financial approach to funding the recommended asset management strategies outlined in preceding sections of this plan, while utilizing the City's existing budget structure. This section of the asset management plan includes:

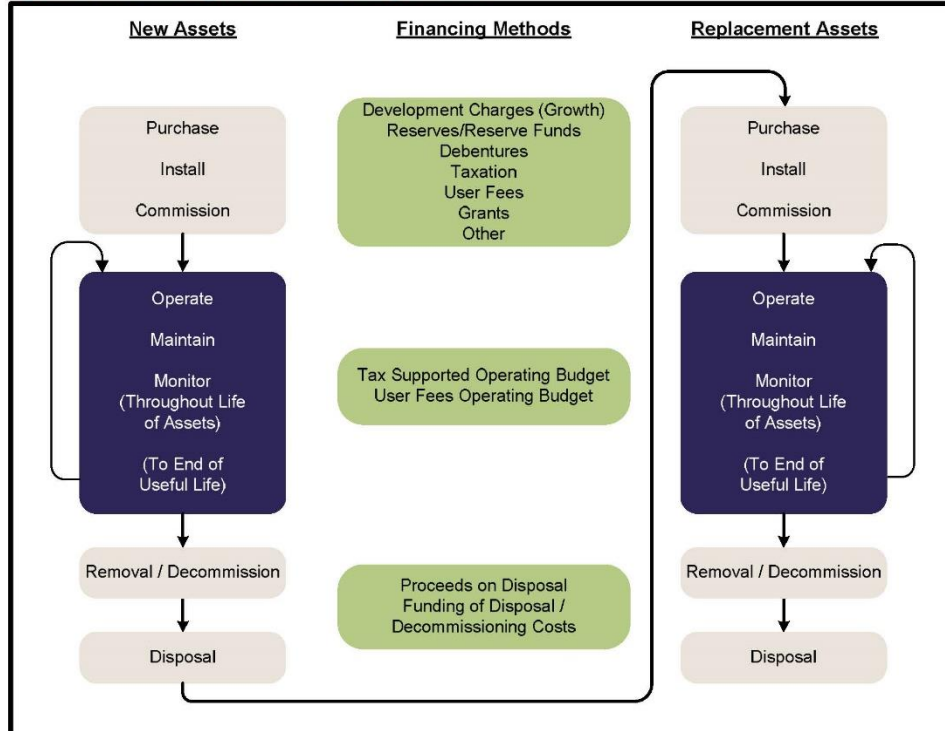
- Annual expenditure forecasts broken down by:
 - Renewal, rehabilitation, and replacement activities by asset type; and
 - Expansion activities.
- A breakdown of annual funding/revenue by source;
- Identification of any funding shortfalls, if applicable; and
- All key assumptions documented.

The financing strategy forecast (including both expenditure and revenue sources) was prepared, consistent with the City's budget structure, so that it can be used in conjunction with the annual budget process.

Various financing options, including reserve funds, debt, and grants were considered and discussed with City staff during the process. **Figure 24** provides a visual representation of how various financing methods can be used for both initial asset purchases as well as asset renewals/replacements.

For the recommended asset management strategy, a detailed twenty-three (23) year plan was generated. The plan identifies specific renewal and rehabilitation, replacement, and expansion activities required for the forecast period as described in preceding sections of this plan.

Figure 24: Financing Methods of Lifecycle Costs



5.2 Capital Budget

5.2.1 Capital Expenditures

Table C1 in Appendix C shows the capital expenditure forecast over the 2019-2041 forecast period. This expenditure forecast is based on the lifecycle activities identified in preceding sections of this plan in addition to growth-related capital expenditures. The expenditure forecast includes a capital inflation factor of 3.5% annually, which aligns closely with the historical 20-year annual average rate of inflation as witnessed in Statistics Canada’s Building Construction Price Index¹.

¹ Statistics Canada. Table 18-10-0135-01 Building construction price indexes, by type of building. Toronto series, Non-residential buildings [2362], Q1-1998 to Q1-2018.

Fleet

The capital forecast estimates that an average of approximately \$6.04 million (inflated dollars) will be spent annually on replacement buses over the next 23 years. Additionally, due to anticipated expansion of the City's transit system, an annual average of approximately \$4.60 million will be spent to acquire new buses. Lastly, the addition of support vehicles results in average annual expenditures of approximately \$44,000.

Facilities

Facility costs detailed in the capital forecast include development of the Allandale Hub to replace the City's existing Downtown Terminal at a cost of approximately \$9.70 million and the costs associated with converting the existing Downtown Terminal into a Downtown Mini-Hub (\$300,000), both occurring in 2022. Additionally, an expansion to the City's current Transit Garage in 2026 of approximately \$16.53 million and the construction of an additional Transit Garage in 2032 of \$43.63 million are included.

Furthermore, the lifecycle costs for maintaining existing and proposed Transit facilities have been included. Currently, the City's service contract for Transit includes annual provisions for the lifecycle costs of the existing Transit Garage, and therefore these costs have been included in the operating budget. A provision for future lifecycle costs arising from the planned Transit Garage expansion and additional Transit Garage, have been included in the capital forecast. Lastly, the lifecycle costs of the existing Downtown Terminal have been pro-rated to only include Transit's share of these costs, based on the portion of floor area occupied by Transit at this facility (approximately 28%). In total, the lifecycle costs of these facilities average approximately \$130,000 annually over the forecast period.

On-Street Infrastructure and Technology

Capital costs associated with acquisition of new and the rehabilitation/replacement of existing on-street infrastructure and technology assets have been included in the forecast. The costs of these capital projects average approximately \$342,000 annually over the forecast period.

5.2.2 Capital Funding

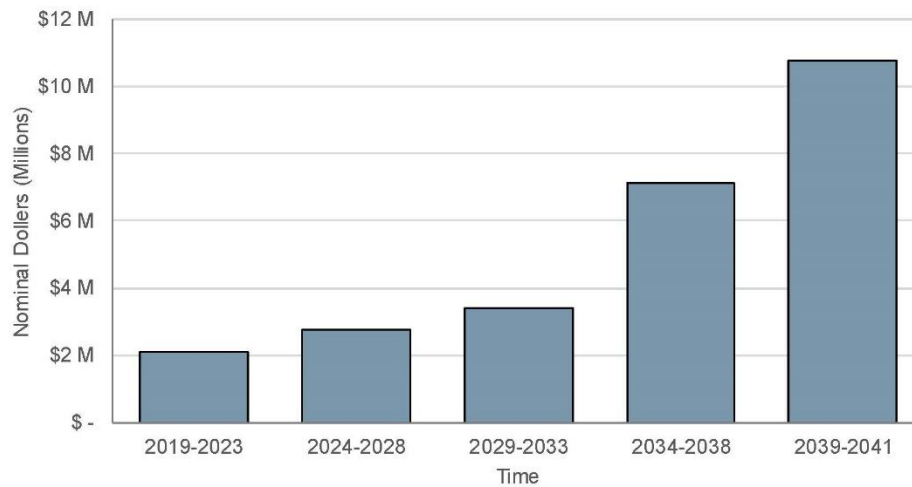
Table C1 in Appendix C details the sources of funding that are projected to be available to fund the capital forecast. This funding forecast was based on the funding sources identified through discussions with City staff.

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The costs required to sustain established level of service targets are being recovered through several methods:

- Investing in Canada Infrastructure Program: Public Transit Stream (ICIP) federal and provincial grant funding has been identified for years in which this funding is known to be available (2020-2027). The total amount of funding the City is eligible to receive has been apportioned to eligible projects over this time period. Currently, only the Allandale Hub New Terminal project has received endorsement in principle from Council to apply for ICIP funding, but in order to remain sustainable, this financing strategy has assumed that all available ICIP funds will be utilized. For the remainder of the forecast period (2028-2041) it has been assumed that a similar federal/provincial program of funding for public transit assets will be available. The amount of provincial/federal funding available in these years have been set to the annual average available from the 2020-2027 time period, or \$5.37 million annually.
- The portion of newly acquired or constructed assets that are growth-related are projected to be funded by development charges. This financing strategy has not contemplated a cash flow analysis of the development charges reserve funds. It has been assumed that sufficient money will be available in the City's DC Reserve Funds to pay for these growth-related projects as they arise. It is noted that there may be cash flow issues that the City will need to understand and manage as a result of post period deductions that need to be recognized in the DC calculations.
- The City will be dependent upon maintaining healthy capital reserves/reserve funds (namely the Tax Capital Reserve) in order to provide the remainder of the required funding over the forecast period. This will require the City to proactively increase amounts being transferred to this capital reserve during the annual budget process, which is currently achieved through annual increases to the tax levy through the Dedicated Infrastructure Renewal Fund. **Figure 25** presents the forecasted annual funding provided by the Tax Capital Reserve, averaged over 5-year segments. The average annual funding provided by the Tax Capital Reserve increases over the forecast period, from approximately \$2.01 million annually for the first five years, to \$10.78 million annually from 2039 to 2041.

Figure 25: Average Annual Funding Provided by Tax capital Reserve (5-yr Averages)



5.3 Operating Budget

Table C3 in Appendix C details the operating costs of the City’s transit service, and the recommended strategy to finance these operations, and is presented in inflated dollars.

5.3.1 Operating Expenditures

The majority of transit-related costs are attributable to the City’s transit service contract. Contract costs are directly influenced by the amount of buses in service and therefore the City’s operating budget is heavily affected by expansionary infrastructure projected in the capital budget.

In addition to fixed costs, the City’s transit service contract also includes variable costs that fluctuate with respect to a number of factors (e.g. service hours, etc.). For the purpose of developing projections, the variable contract costs were estimated based on the number of buses in service. It has been assumed that the base contract will increase at an annual rate of 2.0%, with additional variable costs arising from increased transit service. The contract includes provisions to increase the fixed cost component as the total number of buses exceeds certain thresholds. Currently, the contract specifies two tiers, whereupon a set amount of additional

costs would be incurred. However, as the second tier ends at a total of 85 buses, further increases to costs have been estimated to linearly grow based on the number of buses.

Additionally, fuel costs have been assumed to increase at 2.0% annually in addition to increased overall fuel consumption arising from expansion of the transit service. Furthermore, the City currently operates Route 90 to service the Township of Essa, whose costs are financed through the fares collected on this route, provincial gas tax funds, and contributions from the Township of Essa. It has been assumed that by 2020 this service will be provided by the Simcoe County LINK transit service.

Included in the operating costs are those paid through internal transfers for the maintenance of the Downtown Terminal. It has been assumed that these costs will increase in relation to utilized gross floor area once the Downtown Terminal operations is relocated to the Allandale Transit Hub in 2022.

In addition to the transit service contract and fuel costs, other operating costs have been inflated at 2.0% annually.

5.3.2 Operating Funding

Several funding sources for the recovery of the operating costs have been included in this financing strategy, including:

- Advertising revenues from buses, benches, and shelters have been forecasted, where the revenues generated from benches and shelters have been assumed to remain constant. However, the revenues related to bus advertising have been increased in relation to the growth of the City's conventional bus fleet.
- Contributions from the Township of Essa and fares collected on the City's Route 90. However, as mentioned in **Section 4.3.1**, it has been assumed that the City's bus route servicing the Township of Essa will be provided by the County of Simcoe, which is reflected by the removal of this revenue source in 2020.
- Gas tax funding has been shown as a stable and long-term funding source. Annual funding estimates are provided in the City's Municipal Funding Agreement for 2019-2023. The funding in subsequent years has been assumed to grow with the forecasted population as detailed in the City's 2019 Development Charges Background Study.
- InterCity sales commissions, which are funds received from regional transit operators with connections to the City's transit, have been forecasted to remain at current levels.

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- Miscellaneous operating revenues have been forecasted to grow at 2.0% annually.
- Fare/Pass revenues have been assumed to grow with increases in transit ridership of roughly 8.0% annually, as forecasted in the City's 2019 Development Charges Background Study. Furthermore, through discussions with City staff, annual increases of 2.0% have been assumed to reflect anticipated annual fare adjustments.
 - Included in these figures are revenues collected from the City's U-Pass agreement with Georgian College, which has been assumed to continue throughout the forecast period. Through discussions with City staff, the revenues have been forecasted to grow at a rate of 2.0% annually to reflect anticipated fare increases. The number of U-Pass holders has been projected to increase in relation to the City's population growth.
- Tax funding has been included to partially support the Transit operating budget.
- A Transit Operating Contingency Reserve has been shown for the purposes of smoothing out fluctuations in the tax funding requirements. Contributions to and from this reserve have been forecasted such that a more stable annual increase in the tax funding requirements is observed, while ensuring that no surplus funds remain by the end of the forecast period. **Table C2 in Appendix C** presents a schedule of the Tax Operating Contingency Reserve.

5.4 **Impacts**

5.4.1 **Funding Shortfall**

The financing strategy presented in this chapter would result in the City's Transit system being fully funded over the forecast period. However, if identified grants, development charges, reserve transfers, and/or user fees (i.e. fares) are not received at expected amounts then shortfalls may present themselves. In such an event, the difference could be made up through increases to the tax levy over-and-above those presented hereafter, increases to fares beyond the nominal 2% annual inflation adjustment, or through potential alternate funding sources (expanded upon below).

5.4.2 **Other Potential Funding Sources**

While grants, development charges, reserves, user fees, and the tax levy have been projected to fully fund the lifecycle management strategy, other sources of funding could be utilized to lessen the tax levy burden, specifically:

- Debt – Utilizing debt financing can help provide relief for years in which capital expenditures spike to higher than average levels. However, any debt issued must be reviewed to ensure that the City's debt limits are not surpassed.

5.4.3 Tax Levy Impact

In order to fund the recommended asset lifecycle activities over the forecast period using the City's own available funding sources (i.e. using taxation, Gas Tax funding, tax capital reserve, ICIP funding, user fees, etc.), an average annual increase in the transit share of the City's tax levy of approximately 4.3% (5.2% in 2020 and declining to 3.6% in 2041) would be required.

However, based on the expected population and employment growth over the forecast period, additional assessment growth would be generated which would reduce the tax levy impacts identified above.

It is noteworthy that as a result of projected ridership increases, the reliance on taxation to support the Transit operating budget would decline over the forecast period. In 2019, taxation is projected to cover approximately 59% of the Transit operating budget, declining to 42% by 2041.

The capital forecast underlying this asset management plan has identified funding obligations from the City's Tax Capital Reserve. The amount of funding provided to Transit from the Tax Capital Reserve fluctuates from year to year, but by 2041 is expected to reach \$12.36 million. It has been assumed that the Tax Capital Reserve would have sufficient balances over the forecast period to fund the transfers to Transit as identified. If this were not the case, then the City may need to increase the tax levy apportioned to Transit at higher levels than the increases identified above.



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Appendix A
State of Local Infrastructure Inventory Tables

City of Barrie
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Table A1: Detailed List of Fleet Assets

Asset ID	VIN Number	Unit Number	Make	Model	Plate Number	Odometer Reading	Sub-Category	Vehicle Type	Year In Service	Expected Useful Life (Barrie Transit)	Age	Replacement Year	Replacement Cost (2019 \$)	Net Book Value (PSAB)	Condition Rating
VV-W-COB0000388-1	2FYD8FV11BC040119	1101	New Flyer	Xcelsior	247 8BJ	40,224	Transit-Conventional	Whole Asset	2012	12	6	2024	\$650,000	\$226,177	Good
VV-W-COB0000389-1	2FYD8FV18BC040120	1102	New Flyer	Xcelsior	243 6BJ	118,514	Transit-Conventional	Whole Asset	2012	12	6	2024	\$650,000	\$223,309	Good
VV-W-COB0000390-1	2FYD8FV1XBC040121	1103	New Flyer	Xcelsior	243 8BJ	61,708	Transit-Conventional	Whole Asset	2012	12	6	2024	\$650,000	\$223,360	Good
VV-W-COB0000393-1	2FYD8FV1OCC040582	1201	New Flyer	Xcelsior	3221BK	65,283	Transit-Conventional	Whole Asset	2012	12	6	2024	\$650,000	\$222,438	Good
VV-W-COB0000394-1	2FYD8FV12CC040583	1202	New Flyer	Xcelsior	243 9BJ	54,977	Transit-Conventional	Whole Asset	2012	12	6	2024	\$650,000	\$222,438	Good
VV-W-COB0000395-1	2FYD8FV14CC040584	1203	New Flyer	Xcelsior	3220BK	153,101	Transit-Conventional	Whole Asset	2012	12	6	2024	\$650,000	\$222,438	Good
VV-W-COB0000391-1	1N9MNA67DC084041	1204	Eldorado	30 ft.	3219BK	42,311	Transit-Conventional	Whole Asset	2012	12	6	2024	\$650,000	\$210,862	Good
VV-W-COB0000392-1	1N9MNA69DC084042	1205	Eldorado	30 ft.	5224BK	240,017	Transit-Conventional	Whole Asset	2012	12	6	2024	\$650,000	\$210,862	Good
VV-W-COB0000486	2FYD8FV16CC041462	1301	New Flyer	Xcelsior	321 5BK	167,195	Transit-Conventional	Whole Asset	2013	12	5	2025	\$650,000	\$241,788	Good
VV-W-COB0000487	2FYD8FV14CC041461	1302	New Flyer	Xcelsior	3216BK	167,386	Transit-Conventional	Whole Asset	2013	12	5	2025	\$650,000	\$241,788	Good
VV-W-COB0000484	2FYD8FV19CC042069	1303	New Flyer	Xcelsior	353 6BJ	71,494	Transit-Conventional	Whole Asset	2013	12	5	2025	\$650,000	\$249,757	Good
VV-W-COB0000485	2FYD8FV15CC042070	1304	New Flyer	Xcelsior	353 5BJ	118,661	Transit-Conventional	Whole Asset	2013	12	5	2025	\$650,000	\$249,757	Good
VV-W-COB0000497-1	2FYD8FV13EC044984	1401	New Flyer	Xcelsior	3217BK	164,872	Transit-Conventional	Whole Asset	2014	12	4	2026	\$650,000	\$306,015	Good
VV-W-COB0000500-1	2FYD8FV15EC044985	1402	New Flyer	Xcelsior	3218BK	197,521	Transit-Conventional	Whole Asset	2014	12	4	2026	\$650,000	\$306,015	Good
VV-W-COB0000499-1	2FYD8FV17EC044986	1403	New Flyer	Xcelsior	278 1BK	176,183	Transit-Conventional	Whole Asset	2014	12	4	2026	\$650,000	\$306,015	Good
VV-W-COB0000498-1	2FYD8FV19EC044987	1404	New Flyer	Xcelsior	2780BK	172,036	Transit-Conventional	Whole Asset	2014	12	4	2026	\$650,000	\$306,015	Good
VV-W-COB0000525-1	2NXYL82JF3001691	1501	Nova	LFS	3225BK	200,329	Transit-Conventional	Whole Asset	2015	12	3	2027	\$650,000	\$339,890	Good
VV-W-COB0000522-1	2NXYL82J1F3001692	1502	Nova	LFS	322 2BK	196,359	Transit-Conventional	Whole Asset	2015	12	3	2027	\$650,000	\$339,890	Good
VV-W-COB0000523-1	2NXYL82J4F3001718	1503	Nova	LFS	278 6BK	79,763	Transit-Conventional	Whole Asset	2015	12	3	2027	\$650,000	\$339,890	Good
VV-W-COB0000524-1	2NXYL82J6F3001719	1504	Nova	LFS	322 3BK	179,874	Transit-Conventional	Whole Asset	2015	12	3	2027	\$650,000	\$339,890	Good
VV-W-COB0000533-1	4RKYL82J7G9775408	1601	Nova	LFS	523 3BK	111,512	Transit-Conventional	Whole Asset	2016	12	2	2028	\$650,000	\$436,715	Good
VV-W-COB0000534-1	4RKYL82J7G9775409	1602	Nova	LFS	523 2BK	115,703	Transit-Conventional	Whole Asset	2016	12	2	2028	\$650,000	\$436,715	Good
VV-W-COB0000531-1	4RKYL82J7G9775411	1603	Nova	LFS	523 1BK	183,105	Transit-Conventional	Whole Asset	2016	12	2	2028	\$650,000	\$436,715	Good
VV-W-COB0000532-1	4RKYL82J9G9775412	1604	Nova	LFS	253 0BK	164,701	Transit-Conventional	Whole Asset	2016	12	2	2028	\$650,000	\$436,715	Good
VV-W-COB0000569	4RKYL82J0H9775817	1701	Nova	LFS	158 3BK	128,884	Transit-Conventional	Whole Asset	2017	12	1	2029	\$650,000	\$476,280	Good

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Asset ID	VIN Number	Unit Number	Make	Model	Plate Number	Odometer Reading	Sub-Category	Vehicle Type	Year In Service	Expected Useful Life (Barrie Transit)	Age	Replacement Year	Replacement Cost (2019 \$)	Net Book Value (PSAB)	Condition Rating
VV-W-COB0000570	4RKYL82J2H9775818	1702	Nova	LFS	158 48k	130,769	Transit- Conventional	Whole Asset	2017	12	1	2029	\$650,000	\$476,280	Good
VV-W-COB0000571	4RKYL82J4H9775819	1703	Nova	LFS	158 78K	133,401	Transit- Conventional	Whole Asset	2017	12	1	2029	\$650,000	\$476,280	Good
VV-W-COB0000572	4RKYL82J0H9775820	1704	Nova	LFS	158 28K	149,087	Transit- Conventional	Whole Asset	2017	12	1	2029	\$650,000	\$476,280	Good
VV-W-COB0000573	4RKYL82J2H9775821	1705	Nova	LFS	158 68K	124,482	Transit- Conventional	Whole Asset	2017	12	1	2029	\$650,000	\$476,280	Good
VV-W-COB0000574	2NVYL82J7H13750855	1706	Nova	LFS	524 68K	98,033	Transit- Conventional	Whole Asset	2017	12	1	2029	\$650,000	\$463,695	Good
VV-W-COB0000575	2NVYL82J9H3750856	1707	Nova	LFS	2789BK	102,956	Transit- Conventional	Whole Asset	2017	12	1	2029	\$650,000	\$463,695	Good
VV-W-COB0000576	2NVYL82J0H3750857	1708	Nova	LFS	4193BK	88,601	Transit- Conventional	Whole Asset	2017	12	1	2029	\$650,000	\$463,695	Good
VV-W-COB0000577	2NVYL82J2H3750858	1709	Nova	LFS	4194BK	85,208	Transit- Conventional	Whole Asset	2017	12	1	2029	\$650,000	\$463,695	Good
VV-W-COB0000578	2NVYL82J4H3750859	1710	Nova	LFS	4195BK	89,900	Transit- Conventional	Whole Asset	2017	12	1	2029	\$650,000	\$464,142	Good
VV-W-COB0000579	2NVYL82J0H3750860	1711	Nova	LFS	4197BK	93,075	Transit- Conventional	Whole Asset	2017	12	1	2029	\$650,000	\$464,142	Good
VV-W-COB0000580	2NVYL82J2H3750861	1712	Nova	LFS	4198BK	93,089	Transit- Conventional	Whole Asset	2017	12	1	2029	\$650,000	\$464,142	Good
VV-W-COB0000581	2NVYL82J4H3750862	1713	Nova	LFS	4196BK	81,237	Transit- Conventional	Whole Asset	2017	12	1	2029	\$650,000	\$464,142	Good
VV-W-COB0000363-1	2FYD4FV149E036379	60109	New Flyer	D40LF	278 28K	356,110	Transit- Conventional	Whole Asset	2009	12	9	2021	\$650,000	\$110,735	Good
VV-W-COB0000177-1	2FYD2LV074U026374	66804	New Flyer	D40LF	193 38K	65,322	Transit- Conventional	Whole Asset-Refurb	2004	18	14	2022	\$650,000	\$0	Good
VV-W-COB0000365-1	2FYD4FV199E036376	67004	New Flyer	D40LF	4207BK	205,217	Transit- Conventional	Whole Asset-Refurb	2004	18	14	2022	\$650,000	\$0	Good
VV-W-COB0000183-1	2FYD2LV024U026380	67404	New Flyer	D40LF	193 48K	62,604	Transit- Conventional	Whole Asset-Refurb	2004	18	14	2022	\$650,000	\$0	Good
VV-W-COB0000185-1	2FYD2LV064U026382	67604	New Flyer	D40LF	193 28K	86,881	Transit- Conventional	Whole Asset-Refurb	2004	18	14	2022	\$650,000	\$0	Good
VV-W-COB0000252-1	2FYD4FV167B032607	69207	New Flyer	D40LF	277 38K	73,966	Transit- Conventional	Whole Asset	2007	12	11	2019	\$650,000	\$33,000	Good
VV-W-COB0000254-1	2FYD4FV187B032608	69307	New Flyer	D40LF	277 78K	127,503	Transit- Conventional	Whole Asset	2007	12	11	2019	\$650,000	\$33,000	Good
VV-W-COB0000314-1	2FYD4FV138B033778	69508	New Flyer	D40LF	522 98K	897,920	Transit- Conventional	Whole Asset	2008	12	10	2020	\$650,000	\$71,259	Good
VV-W-COB0000179-1	2FYD2LV004U026376	69709	New Flyer	D40LF	353 78J	320,934	Transit- Conventional	Whole Asset	2009	12	9	2021	\$650,000	\$94,983	Good
VV-W-COB0000366-1	2FYD4FV109E036377	69809	New Flyer	D40LF	353 18J	55,703	Transit- Conventional	Whole Asset	2009	12	9	2021	\$650,000	\$110,735	Good



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Asset ID	VIN Number	Unit Number	Make	Model	Plate Number	Odometer Reading	Sub-Category	Vehicle Type	Year In Service	Expected Useful Life (Barrie Transit)	Age	Replacement Year	Replacement Cost (2019 \$)	Net Book Value (PSAB)	Condition Rating
VV-W-COB0000364-1	2FYD4FV129E036378	69909	New Flyer	D40LF	523 68K	122,406	Transit- Conventional	Whole Asset	2009	12	9	2021	\$650,000	\$110,735	Good
VV-W-COB0000368-1	1GB86G5B1L18160688	1104	CHEV	4500		216,122	Transit- Specialized	Cut-Away	2012	7	6	2019	\$185,000	\$79,969	Good
VV-W-COB0000488	1GD675B13D1112894	1350	GMC	3500		168,108	Transit- Specialized	Cut-Away	2013	7	5	2020	\$185,000	\$25,537	Good
VV-W-COB0000482	1GB86G5B1D1183129	1351	CHEV	4500		197,050	Transit- Specialized	Cut-Away	2013	7	5	2020	\$185,000	\$91,296	Good
VV-W-COB0000483	1GB86G5B1D1183816	1352	CHEV	4500		186,376	Transit- Specialized	Cut-Away	2013	7	5	2020	\$185,000	\$91,296	Good
VV-W-COB0000523-1	57WMD1A62EM101440	1510	MOBI	MV1			Transit- Specialized	Mini Van	2015	5	3	2020	\$185,000	\$36,707	Good
VV-W-COB0000526-1	57WMD1A68EM100261	1513	MOBI	MV1			Transit- Specialized	Mini Van	2015	5	3	2020	\$185,000	\$36,707	Good
VV-W-COB0000527-1	57WMD1A66EM101442	1514	MOBI	MV1			Transit- Specialized	Mini Van	2015	5	3	2020	\$185,000	\$31,110	Good
VV-W-COB0000528-1	57WMD1A66EM101441	1515	MOBI	MV1			Transit- Specialized	Mini Van	2015	5	3	2020	\$185,000	\$31,110	Good
VV-W-COB0000529-1	57WMD1A66EM100663	1516	MOBI	MV1			Transit- Specialized	Mini Van	2015	5	3	2020	\$185,000	\$31,110	Good
VV-W-COB0000530-1	57WMD1A66EM100257	1517	MOBI	MV1			Transit- Specialized	Mini Van	2015	5	3	2020	\$185,000	\$31,110	Good
VV-W-COB0000522-1	1GB86G5B1E1177248	1610	CHEV	4500		108,826	Transit- Specialized	Cut-Away	2016	7	2	2023	\$185,000	\$116,279	Good
VV-W-COB0000582	1GB86G5B1L186147	1720	Chev	4500		84,580	Transit- Specialized	Cut-Away	2017	7	1	2024	\$185,000	\$153,686	Good
	1HA6GUBG0H009802	1830	CHEV	4500			Transit- Specialized	Cut-Away	2018	7	0	2025	\$185,000		
	1HA6GUBG1H009842	1831	CHEV	4500			Transit- Specialized	Cut-Away	2018	7	0	2025	\$185,000		
VV-W-COB0000357-1	1FDFE4FP7A4A18010	600010	FORD	E450		279,372	Transit- Specialized	Cut-Away	2010	7	8	2019	\$185,000	\$37,956	Good
			Loader				Utility Fleet	Large	2015	12	3	2027	\$125,000		Good
			Loader				Utility Fleet	Large	2015	12	3	2027	\$125,000		Good





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Table A2: Detailed List of Other Assets

Asset ID	Asset Category	Asset Sub-Categor	Year In Service	Cost Type	Expected Useful Life (Barrie Transit)	Age	Replacement Year	Replacement Cost (2019 \$)	Net Book Value (PSAB)	Condition Rating
BF-C-CO80000432-1	Transit Garage	Building - Structure	2015	Original	50	4	2065	\$4,205,600	\$3,764,995	Good
BF-C-CO80000431-1	Transit Garage	Building - Site Works	2015	Original	25	4	2040	\$3,769,900	\$2,513,297	Good
BF-C-CO80000430-1	Transit Garage	Building - Envelope	2015	Original	50	4	2065	\$3,369,500	\$3,016,548	Good
BF-C-CO80000435-1	Transit Garage	Building - Electrical	2015	Original	25	4	2040	\$2,878,900	\$2,412,818	Good
BF-C-CO80000439-1	Transit Garage	Building - HVAC	2015	Original	30	4	2045	\$2,631,400	\$2,004,904	Good
BF-C-CO80000433-1	Transit Garage	Building - Roof	2015	Original	20	4	2035	\$2,534,000	\$2,123,724	Good
BF-C-CO80000436-1	Transit Garage	Building - Mechanical	2015	Original	20	4	2035	\$2,116,100	\$1,612,235	Good
BF-C-CO80000437-1	Transit Garage	Building - Finishes	2015	Original	20	4	2035	\$887,400	\$614,636	Good
ME-W-CO80000583-1	Transit Garage	Lubrication System	2015	Original	20	4	2035	\$696,300	\$563,683	Good
ME-W-CO80000586-1	Transit Garage	Transit Systems (Access, CCTV, Intercom)	2015	Original	15	4	2030	\$490,300	\$373,533	Good
ME-W-CO80000575-1	Transit Garage	Controls and Instrumentation	2015	Original	25	4	2040	\$477,100	\$363,479	Good
ME-W-CO80000582-1	Transit Garage	Diesel Fuel Storage	2015	Original	20	4	2035	\$396,600	\$321,042	Good
ME-W-CO80000579-1	Transit Garage	Bus Washer	2015	Original	20	4	2035	\$318,700	\$257,989	Good
ME-W-CO80000577-1	Transit Garage	Lifting Equipment	2015	Original	10	4	2025	\$304,500	\$232,008	Good
ME-W-CO80000578-1	Transit Garage	Air Compressor	2015	Original	20	4	2035	\$285,700	\$231,249	Good
ME-W-CO80000588-1	Transit Garage	Emergency Diesel Generator	2015	Original	25	4	2040	\$261,000	\$223,722	Good
ME-W-CO80000587-1	Transit Garage	Voice and Data	2015	Original	15	4	2030	\$198,900	\$170,526	Good
BF-C-CO80000434-1	Transit Garage	Building - Specialties	2015	Original	15	4	2030	\$193,200	\$73,591	Good
ME-W-CO80000584-1	Transit Garage	Bus Vacuum System	2015	Original	20	4	2035	\$169,700	\$137,341	Good
ME-W-CO80000585-1	Transit Garage	Security System	2015	Original	15	4	2030	\$156,300	\$119,097	Good
ME-W-CO80000581-1	Transit Garage	Signage	2015	Original	10	4	2025	\$108,800	\$72,503	Good
ME-W-CO80000576-1	Transit Garage	Loading Dock Equipment	2015	Original	10	4	2025	\$55,100	\$36,735	Good
ME-W-CO80000580-1	Transit Garage	Pressure Washer	2015	Original	10	4	2025	\$43,500	\$29,001	Good
BF-C-CO80000041-1	Transit Terminal	Building - Structure	1993	Original	50	26	2043	\$3,734,800	\$1,204,766	Good
BF-C-CO80000042-1	Transit Terminal	Building - Specialized Equipment	1993	Original	25	25	2019	\$1,493,900	\$0	Good



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Asset ID	Asset Category	Asset Sub-Categor	Year In Service	Cost Type	Expected Useful Life (Barrie Transit)	Age	Replacement Year	Replacement Cost (2019 \$)	Net Book Value (PSAB)	Condition Rating
BF-C-CO80000044-1	Transit Terminal	Building - HVAC, mechanical	1993	Original	30	26	2023	\$1,120,400	\$0	Good
BF-C-CO80000045-1	Transit Terminal	Building - Site works	1993	Original	25	26	2019	\$522,900	\$0	Good
BF-C-CO80000043-2	Transit Terminal	Building - Roof	2014	Replacement	20	5	2034	\$235,000	\$175,681	Good
LI-C-CO80000310-1	Transit Terminal	Site Works - Landscaping	2008	Original	25	11	2033	\$78,500	\$39,894	Good
FF-C-CO80000008-1	Transit Terminal	Exterior Furnishings	2008	Original	20	11	2028	\$51,300	\$21,757	Good
ME-C-CO80000301-1	Transit Terminal	Floor Scrubber	2008	Original	10	11	2019	\$6,900	\$0	Good
ME-W-CO80000615-1	Transit Terminal	Safe	2016	Original	20	3	2036	\$5,500	\$4,762	Good



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Table A3: Detailed List of On-Street Instructure (Shelters)

Stop #	Ownership	Stop Name	Shelters	Shelter Type	Service Year	Shelter Size	Shelters Expected Useful Life (Barrie Transit)	Age (Shelters)	Replacement Year Shelters	Concrete Pad Area (m2)	Type Signmount Structure	Signmount Expected Useful Life (Barrie Transit)	Replacement Cost (2019 \$)	Condition Rating
2	City	Allandale Recreation Centre	Shelter	COB	1994	Large	25	24	2019	16	STRUCTURE	10	\$10,420	Poor
11	City	Caroline Street	Shelter	COB	1992	Large	25	26	2019	7	U FLANGÉ POST	10	\$7,340	Fair
23	City	Shelly Lane	Shelter	Pat AD	2002	Small	25	16	2027	15.75	U FLANGE POST	10	\$9,390	Good
34	City	Ardagh at Ferndale	Shelter	COB	2005	Small	25	13	2030	21	STRUCTURE	10	\$10,720	Good
35	City	Ardagh at Ferndale	Shelter	COB	2008	Small	25	10	2033	11.75	STRUCTURE	10	\$8,910	Good
46	City	Athabaska at Essa	Shelter	COB	2008	S-Medium	25	10	2033	10	U FLANGE POST	10	\$8,700	Good
54	City	Brooks Street	Shelter	COB	2002	Large	25	16	2027	8	STRUCTURE	10	\$8,460	Good
69	City	Heather Street	Shelter	COB	2012	Medium	25	6	2037	27	STRUCTURE	10	\$11,440	Good
77	City	Georgian Mall Sears Entrance	Shelter	COB	2001	Medium	25	17	2026		U FLANGE POST	10	\$7,500	Good
128	City	17 Blake Street	Shelter	Pat AD	2008	S-Medium	25	10	2033	30	POLE	10	\$12,800	Good
129	City	South Winds Terrace	Shelter	Pat AD	2002	Small	25	16	2027		POLE	10	\$7,500	Good
140	City	St. Vincent Street	Shelter	COB	2007	S-Medium	25	11	2032	12	STRUCTURE	10	\$8,940	Good
183	City	St. Vincent Street	Shelter	COB	1996	Medium	25	22	2021	40	POLE	10	\$12,300	Fair
190	City	Collier at Mulcaster	Shelter	COB	2004	Medium	25	14	2029		STRUCTURE	10	\$7,500	Good
202	City	49 Coulter Street	Shelter	Pat AD	1992	Small	25	26	2019	200	POLE	10	\$32,200	Poor
235	City	Kozlov Street	Shelter	COB	2005	Small	25	13	2030	24	STRUCTURE	10	\$10,380	Good
251	City	Rose Street	Shelter	COB	1997	Medium	25	21	2022	18	STRUCTURE	10	\$9,660	Good
281	City	Engel Crescent	Shelter	COB	1998	Medium	25	20	2023	16	STRUCTURE	10	\$9,420	Poor
292	City	Ecole Romeo Dallaire	Shelter	COB	2011	Medium	25	7	2036	12	POLE	10	\$8,940	Good
307	City	Essa / Loggers Run (NEW)	Shelter		2019	Small	25	0	2044					
314	City	Georgian Drive	Shelter		2017	Medium	25	1	2042					
316	City	129 Ferris Lane	Shelter	Pat Non-AD	1996	Small	25	22	2021	10	U FLANGE POST	10	\$8,700	Good
318	City	Collete Crescent	Shelter	COB	2003	Small	25	15	2028	21	STRUCTURE	10	\$10,020	Good
330	City	Georgian College	Shelter	COB	2013	Large	25	5	2038		U FLANGE POST	10	\$7,500	Good

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Stop #	Ownership	Stop Name	Shelters	Shelter Type	Service Year	Shelter Size	Shelters Expected Useful Life (Barrie Transit)	Age (Shelters)	Replacement Year Shelters	Concrete Pad Area (m2)	Type Signmount Structure	Signmount Expected Useful Life (Barrie Transit)	Replacement Cost (2019 \$)	Condition Rating
338	City	Cook Street	Shelter	COB	2012	Large	25	6	2037	7.5	STRUCTURE	10	\$8,400	Good
377	City	Hurst at Little	Shelter	COB	2000	S-Medium	25	18	2025	18	STRUCTURE	10	\$9,660	Good
398	City	Victoria Street	Shelter	COB	1993	Medium	25	25	2019	15	STRUCTURE	10	\$10,000	Poor
399	City	Blake at Johnson	Shelter	COB	2001	Medium	25	17	2026	36	POLE	10	\$11,820	Good
400	City	Blake at Johnson	Shelter	COB	2018	Medium	25	0	2043	3	POLE	10	\$7,860	Good
401	City	Cheltenham Road	Shelter	COB	2008	Medium	25	10	2033	22.5	STRUCTURE	10	\$10,900	Good
402	City	Cheltenham Road	Shelter	COB	2007	Medium	25	11	2032	27	STRUCTURE	10	\$10,740	Good
403	City	Dunsmore Lane	Shelter	COB	2008	Medium	25	11	2032	16	STRUCTURE	10	\$9,420	Good
404	City	Johnson / Dunsmore	Shelter		2008	Medium	25	11	2032					
408	City	Johnson at Grove	Shelter	COB	2007	S-Medium	25	11	2032	14	STRUCTURE	10	\$9,180	Good
410	City	Hickling Trail	Shelter	COB	2007	Medium	25	11	2032	31.5	U FLANGE POST	10	\$11,280	Good
411	City	Johnson / Hickling Trail (NEW)	Shelter		2018		25	0	2043					
415	City	Kozlov at Cundles	Shelter	COB	2012	Small	25	6	2037	27	STRUCTURE	10	\$10,740	Good
429	City	Chieftain Crescent	Shelter	COB	1997	Small	25	21	2022	75	STRUCTURE	10	\$16,500	Poor
443	City	Livingstone Street East (NEW)			2018	Small	25	0	2043					
447	City	East Bayfield Community Centre	Shelter	COB	2003	Large	25	15	2028	15	STRUCTURE	10	\$11,000	Good
460	City	Ford Street	Shelter	COB		Medium	25			36	STRUCTURE	10	\$12,520	Good
470	City	Livingstone at Sunnidale	Shelter	COB	2005	Medium	25	13	2030	20	STRUCTURE	10	\$9,900	Good
472	City	Lougheed at Mapleview	Shelter	COB	2008	Small	25	10	2033	12.75	POLE	10	\$9,030	Good
473	City	Lougheed at Mapleview	Shelter	COB	2008	Medium	25	10	2033	17.5	STRUCTURE	10	\$10,300	Good
487	City	Holly Community Centre	Shelter	COB	2008	Medium	25	10	2033	35	U FLANGE POST	10	\$13,400	Good
488	City	Holly Community Centre	Shelter	COB	2008	Medium	25	10	2033	3	POLE	10	\$9,560	Good
494	City	Mapleton at Essa	Shelter	COB	1996	Medium	25	22	Refurb 2013	25	STRUCTURE	10	\$10,500	Good
495	City	Mapleton at Essa	Shelter	COB	2008	Small	25	10	2033	2	POLE	10	\$7,740	Good
542	City	Churchland Drive	Shelter	COB	2005	Medium	25	13	2030	10	STRUCTURE	10	\$8,700	Fair

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Stop #	Ownership	Stop Name	Shelters	Shelter Type	Service Year	Shelter Size	Shelters Expected Useful Life (Barrie Transit)	Age (Shelters)	Replacement Year Shelters	Concrete Pad Area (m2)	Type Signmount Structure	Signmount Expected Useful Life (Barrie Transit)	Replacement Cost (2019 \$)	Condition Rating
545	City	Downing Crescent	Shelter	COB	2012	Medium	25	6	2037	10	STRUCTURE	10	\$8,700	Fair
547	City	Marcellus at Mapleton	Shelter	COB	1996	Medium	25	22	2021	14	STRUCTURE	10	\$9,180	Fair
548	City	Marsellus or Bear Creek	Shelter	COB	1992	Medium	25	26	Refurb 2013	40	POLE	10	\$12,300	Fair
550	City	Mapleview or Bear Creek	Shelter	COB	1992	Medium	25	26	Refurb 2013	40	U FLANGE POST	10	\$13,300	Good
567	City	Nelson at Napier	Shelter	COB	1998	Medium	25	20	2023	4.5	STRUCTURE	10	\$8,040	Good
573	City	Alvo Street	Shelter	COB	1992	Large	25	26	2018	12.5	U FLANGE POST	10	\$10,000	Fair
607	City	Victory Village	Shelter	COB	2003	Large	25	15	2028	12	STRUCTURE	10	\$9,940	Good
623	City	Deerpark Drive	Shelter	COB	2002	Medium	25	16	2027	16	U FLANGE POST	10	\$9,420	Good
627	City	Sproule at Kraus	Shelter	Pat Non-AD	2008	Medium	25	10	2033	40	POLE	10	\$12,300	Good
636	City	Rose Street	Shelter	COB	1995	Medium	25	23	2020	8.5	STRUCTURE	10	\$8,520	Fair
660	City	Caplan Avenue	Shelter	COB	2007	Small	25	11	2032	50	STRUCTURE	10	\$14,200	Good
661	City	Caplan Avenue	Shelter	COB	2007	Small	25	11	2032	20	U FLANGE POST	10	\$10,600	Good
694	City	Wellington at Saint Vincent	Shelter	COB	1997	Medium	25	21	2022	8.75	U FLANGE POST	10	\$8,550	Good
695	City	Barrie Medical Arts	Shelter	COB	1993	Small	25	25	2018	6	U FLANGE POST	10	\$8,920	Poor
704	City	Yonge at Big Bay Point	Shelter	COB	2012	Medium	25	6	2037	22	U FLANGE POST	10	\$10,840	Good
706	City	Mill Creek	Shelter	COB	2007	Medium	25	11	2032	4.5	POLE	10	\$8,040	Good
708	City	Cox Mill Road	Shelter	COB	2005	Medium	25	13	2030	24	STRUCTURE	10	\$10,380	Good
709	City	D'Ambrosio Drive	Shelter	COB	2003	Medium	25	15	2028	4.5	STRUCTURE	10	\$8,740	Good
710	City	D'Ambrosio Drive	Shelter	COB	2008	Small	25	10	2033	16	STRUCTURE	10	\$9,420	Good
719	City	Barrington Residence	Shelter	COB	1999	Medium	25	19	2024	12	U FLANGE POST	10	\$8,940	Good
741	City	Huronina Medical Clinic	Shelter	COB	2013	Large	25	5	2038	40	U FLANGE POST	10	\$13,300	Good
748	City	Bayview Drive	Shelter	COB	1994	Medium	25	24	2019	25	U FLANGE POST	10	\$10,500	Poor
752	City	Huronina Medical Clinic	Shelter	COB	2013	Large	25	5	2038	45	U FLANGE POST	10	\$13,900	Good
762	City	Madelaine Drive	Shelter	COB	2005	Medium	25	13	2030	30	U FLANGE POST	10	\$11,100	Good
763	City	94 Dean Avenue	Shelter	COB	2002	Medium	25	16	2027	30	U FLANGE POST	10	\$11,100	Good

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Stop #	Ownership	Stop Name	Shelters	Shelter Type	Service Year	Shelter Size	Shelters Expected Useful Life (Barrie Transit)	Age (Shelters)	Replacement Year Shelters	Concrete Pad Area (m2)	Type Signmount Structure	Signmount Expected Useful Life (Barrie Transit)	Replacement Cost (2019 \$)	Condition Rating
764	City	Painiswick Library	Shelter	COB	2002	Medium	25	16	2027	30	U FLANGE POST	10	\$12,100	Good
959	City	Blake at Johnson	Shelter	COB	2013	Large	25	5	2038	30	U FLANGE POST	10	\$12,100	Good
969	City	Barrie Primary Care Campus	Shelter	COB	2017	Medium	25	1	2042	30	U FLANGE POST	10	\$12,800	Good
18	Other	Edgehill Drive	Shelter	Pat AD	2009	Small	25	9	2034	6	POLE	10	\$8,920	Good
58	Other	Bayfield Mall	Shelter	Pat AD	2010	Medium	25	8	2035	15	STRUCTURE	10	\$9,300	Poor
60	Other	Kozlov Centre	Shelter	Pat AD	2010	Large	25	8	2035	30	STRUCTURE	10	\$11,800	Good
61	Other	Bayfield at Cundles	Shelter	Pat AD	2010	Medium	25	8	2035		STRUCTURE	10	\$8,200	Poor
66	Other	Glenwood Drive	Shelter	Pat AD	2009	Small	25	9	2034	11.75	POLE	10	\$8,910	Good
67	Other	Grove Street	Shelter	Pat AD	2009	Small	25	9	2034	150	STRUCTURE	10	\$25,500	Good
70	Other	Springwater plaza	Shelter	Pat AD	2009	Small	25	9	2034	30	STRUCTURE	10	\$11,800	Good
71	Other	Bayfield at Livingstone	Shelter	Pat AD	2011	Medium	25	7	2036	100	STRUCTURE	10	\$20,200	Good
72	Other	Bayfield at Livingstone	Shelter	Pat AD	2010	Large	25	8	2035		STRUCTURE	10	\$8,200	Good
78	Other	Georgian Mall	Shelter	Pat AD	2009	Small	25	9	2034		STRUCTURE	10	\$8,200	Good
108	Other	125 Bell Farm	Shelter	COB	2009	Small	25	9	2034	22.5	U FLANGE POST	10	\$10,200	Good
121	Other	Royal Park Side Drive	Shelter	Pat AD	2009	Small	25	9	2034	40	STRUCTURE	10	\$12,300	Good
122	Other	Sandringham Drive	Shelter	Pat AD	2009	Small	25	9	2034	2	STRUCTURE	10	\$8,440	Good
131	Other	Collier Street	Shelter	Pat AD	2009	S-Medium	25	9	2034	13.5	POLE	10	\$9,820	Good
136	Other	Parkview Center	Shelter	Pat AD	2009	S-Medium	25	9	2034	17	U FLANGE POST	10	\$9,540	Good
165	Other	Burton at Bayview	Shelter	Pat AD	2008	S-Medium	25	9	2034	8	STRUCTURE	10	\$8,460	Poor
175	Other	34 Cedar Point	Shelter	Pat AD	2010	Small	25	8	2035	12	STRUCTURE	10	\$8,940	Good
176	Other	35 Cedar Point	Shelter	Pat AD	2010	Small	25	8	2035	100	POLE	10	\$21,200	Good
179	Other	Cedar Point at Dunlop West	Shelter	Pat AD	2009	Small	25	9	2034	12	U FLANGE POST	10	\$7,940	Good
238	Other	Coleman Health Care Centre	Shelter	Pat AD	2009	Small	25	9	2034	12.75	STRUCTURE	10	\$9,030	Good
255	Other	Duckworth at Grove	Shelter	COB	2009	Medium	25	9	2034	7.5	STRUCTURE	10	\$8,400	Good
290	Other	Roberta Place	Shelter	Pat AD	2011	Small	25	7	2036	40	U FLANGE POST	10	\$13,300	Good

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Stop #	Ownership	Stop Name	Shelters	Shelter Type	Service Year	Shelter Size	Shelters Expected Useful Life (Barrie Transit)	Age (Shelters)	Replacement Year Shelters	Concrete Pad Area (m2)	Type Signmount Structure	Signmount Expected Useful Life (Barrie Transit)	Replacement Cost (2019 \$)	Condition Rating
291	Other		Shelter		2009	Medium	25	9	2034					Good
295	Other	Beacon Road	Shelter	Pat AD	2009	Small	25	9	2034	37.5	STRUCTURE	10	\$12,700	Good
296	Other	Bryne Drive	Shelter	Pat AD	2009	Small	25	9	2034	32	STRUCTURE	10	\$11,340	Good
312	Other	Essa at Veteran's	Shelter	Pat AD	2009	Medium	25	9	2034	27	STRUCTURE	10	\$11,440	Good
313	Other	Essa at Veteran's	Shelter	Pat AD	2009	Small	25	9	2034	40	U FLANGE POST	10	\$13,000	Good
353	Other	Grove at St. Vincent	Shelter	Pat AD	2009	S-Medium	25	9	2034	3	STRUCTURE	10	\$7,860	Good
419	Other	Lampman plaza	Shelter	Pat AD	2009	Small	25	9	2034	10	STRUCTURE	10	\$8,700	Good
444	Other	Margaret Drive	Shelter	Pat AD	2009	Small	25	9	2034	4.5	STRUCTURE	10	\$8,040	Good
453	Other	Wal-Mart Plaza (NEW)												
454	Other	Wal-Mart Plaza	Shelter	COB	2009	Medium	25	9	2034	36	STRUCTURE	10	\$12,520	Good
485	Other	Maple at Ross	Shelter	Pat AD	2009	Small	25	9	2034	6	POLE	10	\$8,920	Good
486	Other	Maple / Ross (NEW)												
524	Other	Barrie View Drive	Shelter	Pat AD	2009	Small	25	9	2034	40	POLE	10	\$13,000	Good
525	Other	Barrie View Drive	Shelter	Pat AD	2009	Medium	25	9	2034	40	STRUCTURE	10	\$13,000	Good
527	Other	Canadian Tire Plaza	Shelter	Pat AD	2009	S-Medium	25	9	2034	8	STRUCTURE	10	\$8,460	Good
528	Other	Bryne Drive	Shelter	Pat AD	2010	S-Medium	25	8	2035	16	STRUCTURE	10	\$9,420	Good
529	Other	Bryne Drive	Shelter	Pat AD	2009	S-Medium	25	9	2034	8	STRUCTURE	10	\$8,460	Good
530	Other	Holyholmfarm Road	Shelter	Pat AD	2012	Medium	25	6	2037	8	STRUCTURE	10	\$8,460	Good
534	Other	Reid Drive	Shelter	COB	2009	S-Medium	25	9	2034	22.5	STRUCTURE	10	\$10,900	Good
536	Other	120 Mapleview Drive West	Shelter	Pat AD	2010	S-Medium	25	8	2035		STRUCTURE	10	\$8,200	Good
538	Other	Maplview at Veteran's	Shelter	Pat AD	2010	S-Medium	25	8	2035	21	STRUCTURE	10	\$10,720	Good
559	Other	Mulcaster at Collier	Shelter	Pat AD	2009	Small	25	9	2034		POLE	10	\$7,500	Good
628	Other	Saint Vincent at Cundles	Shelter	Pat AD	2009	Small	25	9	2034	8.25	STRUCTURE	10	\$9,190	Good
696	Other	Barrie Medical Arts	Shelter	COB	2009	S-Medium	25	9	2034	6	POLE	10	\$8,220	Good
699	Other	Wellington Plaza	Shelter	Pat AD	2009	Medium	25	9	2034	18.5	STRUCTURE	10	\$10,420	Good

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Stop #	Ownership	Stop Name	Shelters	Shelter Type	Service Year	Shelter Size	Shelters Expected Useful Life (Barrie Transit)	Age (Shelters)	Replacement Year Shelters	Concrete Pad Area (m2)	Type Signmount Structure	Signmount Expected Useful Life (Barrie Transit)	Replacement Cost (2019 \$)	Condition Rating
705	Other	Yonge at Big Bay Point	Shelter	Pat AD	2010	Medium	25	8	2035	18	STRUCTURE	10	\$10,360	Good
715	Other	Yonge at Huronia	Shelter	Pat AD	2009	Medium	25	9	2034	24	STRUCTURE	10	\$10,380	Good
716	Other	Yonge at Huronia	Shelter	Pat AD	2009	Small	25	9	2034	8	STRUCTURE	10	\$8,460	Good
717	Other	Yonge at Little	Shelter	Pat AD	2009	Medium	25	9	2034	6	POLE	10	\$7,220	Good
724	Other	Big Bay Plaza	Shelter	Pat AD	2010	Medium	25	8	2035	18	U FLANGE POST	10	\$10,360	Good
728	Other	Tollendal Mill Road	Shelter	Pat Non-AD	2011	Large	25	7	2036	12	STRUCTURE	10	\$8,940	Good
732	Other	Allandale Waterfront Station	Shelter		2012	Large	25	6	2037		U FLANGE POST	10	\$8,500	Good
853	Other	Essa Road	Shelter	COB	2009	S-Medium	25	9	2034	12.25	POLE	10	\$8,970	Fair
6	Other-1	Anne at Dunlop	Shelter	Pat Non-AD	2010	Small	25	8	2035	21	U FLANGE POST	10	\$9,020	Good
8	Other-1	Brock Street	Shelter	Pat Non-AD	2010	Small	25	8	2035	24	STRUCTURE	10	\$9,380	Good
49	Other-1	Rundie Crescent	Shelter	Pat AD	2010	Medium	25	8	2035	7.5	STRUCTURE	10	\$8,400	Good
142	Other-1	Vancouver Street	Shelter	Pat AD	2010	S-Medium	25	8	2035	4.5	STRUCTURE	10	\$8,040	Good
373	Other-1	Golden Meadow Road	Shelter	Pat Non-AD	2010	Medium	25	8	2035	24	STRUCTURE	10	\$10,380	Good
608	Other-1	Victory Village	Shelter	COB	2010	Medium	25	8	2035	8	STRUCTURE	10	\$8,460	Good
689	Other-1	Oak Street	Shelter	COB	2010	Large	25	8	2035	6	STRUCTURE	10	\$8,220	Good

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Table A3: Detailed List of Supporting Infrastructure

Asset ID	Asset Name	Asset Description	Sub-Category	Year In Service	Expected Useful Life (Barrie Transit)	Age	Replacement Year	Replacement Cost (2019 \$)	Net Book Value (PSAB)	Condition Rating
ME-P-COB0000367-1	Pooled Fare Collection System - 2016	Collection System	Fare and Data Collection Equipment/Systems	2016	15	2	2032	\$975,000	\$748,474	Good
CS-W-COB0000014-1	Transit Bus Counter - Software	Transit Counter System	Fare and Data Collection Equipment/Systems	2016	15	2	2032	\$305,000	\$209,041	Good
CF-W-COB0000067-1	Transit Bus Counter - Computer Hardware	Transit Counter System	Fare and Data Collection Equipment/Systems	2016	15	2	2032	\$765,000	\$586,280	Good
MF-P-COB0000367-2	Pooled Fare Collection System - 2017	Collection System	Fare and Data Collection Equipment/Systems	2017	15	1	2033	\$104,000	\$91,310	Good

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Appendix B
Capital Plan 2019 to 2041



B-2

Table B1: Capital Plan for Current Fleet Replacement (2019 to 2041)
Includes Facilities, On-Street Infrastructure and Technology

Assumptions

1. Conventional Fleet replacement every 12 years, except four refurbished buses (2004 purchase) which have useful life of 17 years.
2. Specialized Fleet replacement are replaced after initial expected useful life then replaced with "cut-aways" which is every 7 years.
3. Lifecycle approach looked at extending useful life to even out purchases (+1 or + 2 years) for both conventional and specialized fleet.
4. Growth projections based on Transportation Master Plan and DC Study.
5. Costs from Barrie Transit (formulated from industry research) for Technology, On-Street Infrastructure and Terminal facility.
6. Cost for bus shelters from Barrie Transit and the total divided annually. Same for bus pods.

Unit Rate	
Conventional	\$650,000
Specialized	\$185,000

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Fleet										
New Growth Fleet (Conv + Spec)	0	0	6	3	5	4	4	3	4	5
Conventional Fleet NEW	0	0	5	2	4	3	2	2	4	4
Specialized Fleet NEW	0	0	1	1	1	1	2	1	0	1
Cost - Conv NEW	\$ -	\$ -	\$ 3,250,000	\$ 1,300,000	\$ 2,600,000	\$ 1,950,000	\$ 1,300,000	\$ 1,300,000	\$ 2,600,000	\$ 2,600,000
Cost Specialized NEW	\$ -	\$ -	\$ 185,000	\$ 185,000	\$ 185,000	\$ 185,000	\$ 370,000	\$ 185,000	\$ -	\$ 185,000
Supervisor/Vehicles	\$ -	\$ -	\$ 20,000	\$ -	\$ -	\$ -	\$ 30,000	\$ -	\$ 45,000	\$ -
Fleet Maintenance Vehicles										\$ 50,000
Bus Stop Maintenance Loaders					\$ 200,000					
Total Growth Cost (NEW)	\$ -	\$ -	\$ 3,455,000	\$ 1,485,000	\$ 2,985,000	\$ 2,135,000	\$ 1,700,000	\$ 1,485,000	\$ 2,645,000	\$ 2,835,000
Replacement Fleet (Conv + Spec)	6	3	2	8	4	5	7	5	8	9
Conventional	2	1	0	5	3	4	5	2	4	6
Specialized Fleet	4	2	2	3	1	1	2	3	4	3
Total Replacement Cost	\$ 2,040,000	\$ 1,020,000	\$ 370,000	\$ 3,805,000	\$ 2,135,000	\$ 2,785,000	\$ 3,620,000	\$ 1,855,000	\$ 3,340,000	\$ 4,455,000
Total Fleet	\$ 2,040,000	\$ 1,020,000	\$ 3,825,000	\$ 5,290,000	\$ 5,120,000	\$ 4,920,000	\$ 5,320,000	\$ 3,340,000	\$ 5,985,000	\$ 7,290,000
Facilities										
Transit Garage Expansion (86 to 122 bays)								\$ 12,990,000		
Allandale Hub New Terminal				\$ 8,750,000						
New Transit Garage (Bays 123 to 208)										
Downtown Mini-Hub				\$ 270,723						
Facilities - Capital Improvements (Lifecycle)										
Transit Garage (85 bays)	\$ 35,000	\$ 10,000	\$ -	\$ 10,000	\$ 10,000	\$ 547,500	\$ -	\$ 20,000	\$ -	\$ -
Transit Garage Expansion (86 to 122 bays)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Downtown Terminal	\$ 443,000	\$ 83,400	\$ 66,600	\$ 476,200	\$ 25,000					
Allandale Hub New Terminal					\$ -	\$ -	\$ -	\$ -	\$ 35,000	\$ -
New Transit Garage (Bays 123 to 208)										

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	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	TOTAL
Fleet														
New Growth Fleet (Conv + Spec)	5	5	5	5	5	6	6	7	7	7	3	9	8	112
Conventional Fleet NEW	4	4	5	4	5	5	6	6	7	6	3	8	7	96
Specialized Fleet NEW	1	1	0	1	0	1	0	1	0	1	0	1	1	16
Cost - Conv NEW	\$ 2,600,000	\$ 2,600,000	\$ 3,250,000	\$ 2,600,000	\$ 3,250,000	\$ 3,250,000	\$ 3,900,000	\$ 3,900,000	\$ 4,550,000	\$ 3,900,000	\$ 1,950,000	\$ 5,200,000	\$ 4,550,000	\$ 62,400,000
Cost Specialized NEW	\$ 185,000	\$ 185,000	\$ -	\$ 185,000	\$ -	\$ 185,000	\$ -	\$ 185,000	\$ -	\$ 185,000	\$ -	\$ 185,000	\$ 185,000	\$ 2,960,000
Supervisor/Vehicles	\$ 20,000	\$ -	\$ 30,000	\$ 20,000	\$ -	\$ 20,000	\$ -	\$ 30,000	\$ 45,000	\$ 20,000	\$ -	\$ 30,000	\$ 20,000	\$ 330,000
Fleet Maintenance Vehicles														\$ 50,000
Bus Stop Maintenance Loaders														\$ 200,000
Total Growth Cost (NEW)	\$ 2,805,000	\$ 2,785,000	\$ 3,330,000	\$ 2,805,000	\$ 3,250,000	\$ 3,455,000	\$ 3,900,000	\$ 4,115,000	\$ 4,595,000	\$ 4,105,000	\$ 1,950,000	\$ 5,415,000	\$ 4,805,000	\$ 66,040,000
Replacement Fleet (Conv + Spec)	9	8	7	4	9	9	11	10	13	6	13	13	13	182
Conventional	6	6	5	2	3	6	7	7	9	5	8	7	9	112
Specialized Fleet	3	2	2	2	6	3	4	3	4	1	5	6	4	70
Total Replacement Cost	\$ 4,455,000	\$ 4,270,000	\$ 3,620,000	\$ 1,670,000	\$ 3,060,000	\$ 4,455,000	\$ 5,220,000	\$ 5,105,000	\$ 6,590,000	\$ 3,435,000	\$ 6,125,000	\$ 5,660,000	\$ 6,550,000	\$ 85,750,000
Total Fleet	\$ 7,260,000	\$ 7,055,000	\$ 6,950,000	\$ 4,475,000	\$ 6,310,000	\$ 7,910,000	\$ 9,190,000	\$ 9,220,000	\$ 11,185,000	\$ 7,540,000	\$ 8,075,000	\$ 11,075,000	\$ 11,355,000	\$ 151,790,000
Facilities														\$ 49,910,723
Transit Garage Expansion (86 to 122 bays)														\$ 12,990,000
Allandale Hub New Terminal														\$ 8,750,000
New Transit Garage (Bays 123 to 208)				\$ 27,900,000										\$ 27,900,000
Downtown Mini-Hub														\$ 270,723
Facilities - Capital Improvements (Lifecycle)														
Transit Garage (85 bays)	\$ 640,000	\$ 10,000	\$ -	\$ 10,000	\$ -	\$ 522,500	\$ 25,000	\$ -	\$ -	\$ 20,000	\$ 35,000	\$ -	\$ 60,000	\$ 1,955,000
Transit Garage Expansion (86 to 122 bays)	\$ -	\$ 25,400	\$ 7,500	\$ -	\$ 10,000	\$ 7,500	\$ 352,200	\$ -	\$ 15,000	\$ -	\$ -	\$ 427,700	\$ 7,500	\$ 852,800
Downtown Terminal														\$ 1,094,200
Allandale Hub New Terminal	\$ 20,000	\$ -	\$ -	\$ 175,000	\$ -	\$ -	\$ -	\$ -	\$ 300,000	\$ -	\$ -	\$ -	\$ -	\$ 530,000
New Transit Garage (Bays 123 to 208)					\$ -	\$ -	\$ 8,000	\$ 9,000	\$ 30,600	\$ 8,000	\$ -	\$ 9,000	\$ 8,000	\$ 72,600

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	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
On-Street Infrastructure										
Next Bus Outdoor Display				\$ 128,000						
Heated Bus Shelter				\$ 400,000	\$ 400,000	\$ 400,000				
Bike Racks					\$ 6,760	\$ 6,760	\$ 6,760	\$ 6,760	\$ 6,760	
New Bus Stop Signs			\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000			
Bus Shelters	\$ 26,100	\$ 26,100	\$ 26,100	\$ 26,100	\$ 26,100	\$ 26,100	\$ 26,100	\$ 26,100	\$ 26,100	\$ 26,100
Bus Pads	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100
Total On-Street Infrastructure	\$ 92,200	\$ 92,200	\$ 107,200	\$ 635,200	\$ 513,960	\$ 513,960	\$ 113,960	\$ 98,960	\$ 98,960	\$ 92,200
Technology										
Transit On-Demand (specialized software, tablets)		\$ 100,000		\$ 15,000						
Scheduling Software			\$ 300,000							
Dynamic Bus Bays									\$ 130,000	
Alternative Payment Solution			\$ 500,000							
Studies	\$ 250,000				\$ 250,000		\$ 250,000			\$ 250,000
Transit Signal Priority Bus/Intersection/Central Control			\$ 252,200	\$ 252,200	\$ 252,200	\$ 252,200	\$ 252,200			
Total Technology	\$ -	\$ 350,000	\$ 1,052,200	\$ 267,200	\$ 502,200	\$ 252,200	\$ 502,200	\$ -	\$ 130,000	\$ 250,000
TOTAL	\$ 2,610,200	\$ 1,555,600	\$ 5,051,000	\$ 15,699,323	\$ 6,171,160	\$ 6,233,660	\$ 5,936,160	\$ 16,448,960	\$ 6,248,960	\$ 7,632,200

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	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	TOTAL	
On-Street Infrastructure																								\$ 3,557,400	
Next Bus Outdoor Display																									\$ 128,000
Heated Bus Shelter																									\$ 1,200,000
Bike Racks																									\$ 33,800
New Bus Stop Signs																									\$ 75,000
Bus Shelters	\$ 26,100	\$ 26,100	\$ 26,100	\$ 26,100	\$ 26,100	\$ 26,100	\$ 26,100	\$ 26,100	\$ 26,100	\$ 26,100	\$ 26,100	\$ 26,100	\$ 26,100	\$ 26,100	\$ 26,100	\$ 26,100	\$ 26,100	\$ 26,100	\$ 26,100	\$ 26,100	\$ 26,100	\$ 26,100	\$ 26,100	\$ 26,100	\$ 600,300
Bus Pads	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100	\$ 66,100	\$ 1,520,300
Total On-Street Infrastructure	\$ 92,200	\$ 92,200	\$ 92,200	\$ 92,200	\$ 92,200	\$ 92,200	\$ 92,200	\$ 92,200	\$ 92,200	\$ 92,200	\$ 92,200	\$ 92,200	\$ 92,200	\$ 92,200	\$ 92,200	\$ 92,200	\$ 92,200	\$ 92,200	\$ 92,200	\$ 92,200	\$ 92,200	\$ 92,200	\$ 92,200	\$ 92,200	\$ 3,557,400
Technology																								\$ 10,112,000	
Transit On-Demand (specialized software, tablets)																									\$ 115,000
Scheduling Software																									\$ 300,000
Dynamic Bus Bays																									\$ 130,000
Alternative Payment Solution			\$ 500,000																						\$ 1,000,000
Studies	\$ 250,000				\$ 250,000		\$ 250,000				\$ 250,000									\$ 250,000		\$ 250,000			\$ 2,250,000
Transit Signal Priority Bus/Intersection/Central Control																									\$ 1,261,000
Total Technology	\$ -	\$ 250,000	\$ 500,000	\$ -	\$ 250,000	\$ -	\$ 250,000	\$ -	\$ -	\$ 250,000	\$ -	\$ -	\$ 250,000	\$ -	\$ -	\$ 250,000	\$ -	\$ -	\$ 250,000	\$ -	\$ 250,000	\$ -	\$ -	\$ -	\$ 5,056,000
TOTAL	\$ 8,012,200	\$ 7,432,600	\$ 7,549,700	\$ 32,652,200	\$ 6,662,200	\$ 8,532,200	\$ 9,917,400	\$ 9,321,200	\$ 11,622,800	\$ 7,910,200	\$ 8,202,200	\$ 11,853,900	\$ 11,562,700	\$ 214,816,723											

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Appendix C
Financial Strategy

City of Barrie
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Table C1: Capital Budget Forecast (Inflated \$) (2019 - 2041)

Description	Budget				Forecast					
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Capital Expenditures										
Fleet										
Replacement and Rehabilitation										
Conventional Fleet	1,300,000	672,750	-	3,603,333	2,237,670	3,087,984	3,895,080	1,653,963	3,423,703	5,315,300
Specialized Fleet	740,000	382,950	396,353	615,338	212,292	219,722	454,824	706,115	974,439	756,408
Growth										
Conventional Fleet	-	-	3,481,481	1,441,333	2,983,560	2,315,988	1,998,032	1,653,963	3,423,703	3,543,533
Specialized Fleet	-	-	199,177	205,113	-	219,722	454,824	235,372	-	252,136
Supervisor Vehicles	-	-	21,425	-	-	-	36,878	-	59,256	-
Fleet Maintenance Vehicles	-	-	-	-	-	-	-	-	-	68,145
Bus Stop Maintenance Loaders	-	-	-	-	228,505	-	-	-	-	-
Sub-total Fleet	2,040,000	1,055,700	4,097,436	5,865,117	5,663,027	5,843,416	6,539,638	4,249,413	7,881,101	9,935,622
Facilities										
Allandale Hub New Terminal	-	-	-	9,701,281	-	-	-	-	-	-
Transit Garage Expansion (86 to 122 bays)	-	-	-	-	-	-	-	16,526,908	-	-
New Transit Garage (Bays 123 to 208)	-	-	-	-	-	-	-	-	-	-
Downtown Mini-Hub	-	-	-	300,155	-	-	-	-	-	-
Lifecycle Costs										
Downtown Terminal (Transit Share)	124,040	24,169	19,976	147,832	8,033	-	-	-	-	-
Allandale Hub New Terminal	-	-	-	-	-	-	-	-	46,088	-
Transit Garage (85 bays) ¹	-	-	-	-	-	-	-	-	-	-
Transit Garage Expansion (86 to 122 bays)	-	-	-	-	-	-	-	-	-	-
New Transit Garage (Bays 123 to 208)	-	-	-	-	-	-	-	-	-	-
Sub-total Facilities	124,040	24,169	19,976	10,149,268	8,033	-	-	16,526,908	46,088	-
On-Street Infrastructure										
Next Bus Outdoor Display	-	-	-	141,916	-	-	-	-	-	-
Heated Bus Shelter	-	-	-	443,487	459,009	475,075	-	-	-	-
Bike Racks	-	-	-	-	7,757	8,029	8,310	8,801	8,902	-
New Bus Stop Signs	-	-	16,068	18,631	17,213	17,815	18,439	-	-	-
Bus Shelters	26,100	27,014	27,959	28,938	29,950	30,999	32,064	33,206	34,369	35,572
Bus Pads	66,100	66,414	70,920	73,286	75,851	78,508	81,254	84,099	87,041	90,065
Sub-total On-Street Infrastructure	92,200	95,423	114,835	704,258	569,780	610,424	140,687	125,905	130,312	125,660
Technology										
Transit On-Demand (Specialized Software, Tablets)	-	103,500	-	16,631	-	-	-	-	-	-
Dynamic Bus Bays	-	-	-	-	-	-	-	-	171,185	-
Alternative Payment Solution	-	-	535,613	-	-	-	-	-	-	-
Transit Signal Priority Bus/Intersection/Central Control	-	-	270,183	279,618	289,405	299,534	310,018	-	-	-
Sub-total Technology	-	103,500	805,776	296,250	289,405	299,534	310,018	-	171,185	-
Total Expenditures	2,256,240	1,278,797	5,038,023	17,014,893	6,550,245	6,753,374	6,889,743	20,902,226	8,228,686	10,061,182
Capital Financing										
Debtenture Requirements	-	-	-	-	-	-	-	-	-	-
Federal/Provincial Grant - ICIIP	-	774,180	2,969,076	11,415,359	3,984,583	4,285,172	4,768,691	14,715,845	-	5,366,800
Transfer from Operating	-	-	-	-	-	-	-	-	-	-
Transfer from Reserve Fund - DC	-	-	853,254	889,445	726,998	673,116	600,490	4,437,175	2,962,557	1,525,360
Transfer from Reserve - Tax Capital	2,256,240	504,617	1,195,694	4,710,089	1,838,666	1,895,086	1,720,562	1,749,206	5,266,129	3,169,222
Total Capital Financing	2,256,240	1,278,797	5,038,023	17,014,893	6,550,245	6,753,374	6,889,743	20,902,226	8,228,686	10,061,182
Total Capital Expenses less Financing	-	-	-	-	-	-	-	-	-	-

¹Lifecycle costs for the existing transit garage are included in the City's service contract and therefore included in the operating budget.





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Description	Budget			Forecast									
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Capital Expenditures													
Fleet													
Replacement and Rehabilitation													
Conventional Fleet	5,501,336	5,693,892	4,910,973	2,033,143	3,166,454	6,533,860	7,889,636	8,165,774	10,896,312	6,248,129	10,346,002	9,370,413	12,469,343
Specialized Fleet	782,682	540,189	559,085	578,684	1,798,751	929,819	1,283,150	996,045	1,374,542	355,863	1,840,555	2,285,868	1,577,319
Growth													
Conventional Fleet	3,667,557	3,795,921	4,910,973	4,066,286	5,260,757	5,444,684	6,762,546	6,999,235	8,451,578	7,487,755	3,880,098	10,709,044	9,698,378
Specialized Fleet	260,961	270,084	-	289,332	-	309,940	-	332,015	-	355,663	-	380,959	394,330
Supervision Vehicles	28,212	-	45,332	31,279	-	33,507	-	53,840	83,587	38,450	-	61,763	42,630
Fleet Maintenance Vehicles	-	-	75,553	-	-	-	-	-	-	-	-	-	106,578
Bus Stop Maintenance Loaders	-	-	-	-	-	-	-	-	-	-	-	-	-
Sub-total Fleet	10,240,847	10,300,086	10,501,926	6,998,704	10,213,962	13,252,010	15,935,332	16,546,909	20,776,017	14,495,660	16,067,546	22,808,204	24,288,576
Facilities													
Allandale Hub New Terminal	-	-	-	-	-	-	-	-	-	-	-	-	-
Transit Garage Expansion (86 to 122 bays)	-	-	-	-	-	-	-	-	-	-	-	-	-
New Transit Garage (Bays 123 to 208)	-	-	-	43,634,374	-	-	-	-	-	-	-	-	-
Downtown Mini-Hub	-	-	-	-	-	-	-	-	-	-	-	-	-
Lifecycle Costs													
Downtown Terminal (Transit Share)	-	-	-	-	-	-	-	-	-	-	-	-	-
Allandale Hub New Terminal	28,212	-	-	273,692	-	-	-	-	557,247	-	-	-	-
Transit Garage (85 bays)	-	-	-	-	-	-	-	-	-	-	-	-	-
Transit Garage Expansion (86 to 122 bays)	-	37,083	11,333	-	16,187	12,595	610,710	-	27,862	-	-	880,819	15,886
New Transit Garage (Bays 123 to 208)	-	-	-	-	-	-	13,872	16,152	56,639	15,380	-	18,535	17,052
Sub-total Facilities	28,212	37,083	11,333	43,908,066	16,187	12,595	624,582	16,152	641,948	15,380	-	899,354	33,038
On-Street Infrastructure													
Next Bus Outdoor Display	-	-	-	-	-	-	-	-	-	-	-	-	-
Heated Bus Shelter	-	-	-	-	-	-	-	-	-	-	-	-	-
Bike Racks	-	-	-	-	-	-	-	-	-	-	-	-	-
New Bus Stop Signs	-	-	-	-	-	-	-	-	-	-	-	-	-
Bus Shelters	36,817	38,105	39,439	40,819	42,248	43,727	45,257	46,841	48,480	50,177	51,933	53,751	55,632
Bus Pads	93,241	96,504	99,882	103,377	106,996	110,741	114,616	118,628	122,780	127,077	131,525	136,128	140,893
Sub-total On-Street Infrastructure	130,058	134,609	139,321	144,196	149,244	154,466	159,873	165,469	171,260	177,264	183,458	189,878	196,528
Technology													
Transit On-Demand (Specialized Software, Tablets)	-	-	-	-	-	-	-	-	-	-	-	-	-
Dynamic Bus Bays	-	-	-	-	-	-	-	-	-	-	-	-	-
Alternative Payment Solution	-	-	755,534	-	-	-	-	-	-	-	-	-	-
Transit Signal Priority Bus/Intersection/Central Control	-	-	-	-	-	-	-	-	-	-	-	-	-
Sub-total Technology	-	-	755,534	-	-	-	-	-	-	-	-	-	-
Total Expenditures	10,399,217	10,471,773	11,408,114	51,050,968	10,379,393	13,419,043	16,719,787	16,728,530	21,569,225	14,688,294	16,251,003	23,697,437	24,516,139
Capital Financing													
Debt/Lease Requirements	-	-	-	-	-	-	-	-	-	-	-	-	-
Federal/Provincial Grant - ICIP	5,366,600	5,366,600	5,366,600	5,366,600	5,366,600	5,366,600	5,366,600	5,366,600	5,366,600	5,366,600	5,366,600	5,366,600	5,366,600
Transfer from Operating	-	-	-	-	-	-	-	-	-	-	-	-	-
Transfer from Reserve Fund - DC	1,608,397	1,650,851	2,121,017	42,336,535	2,117,168	2,931,401	3,803,363	4,246,735	5,391,772	4,224,912	2,191,342	7,245,896	6,787,360
Transfer from Reserve - Tax Capital	3,424,220	3,434,327	3,920,457	3,345,831	2,895,025	5,121,042	7,549,824	7,115,197	10,830,853	5,098,782	8,693,061	11,284,941	12,394,179
Total Capital Financing	10,399,217	10,471,773	11,408,114	51,050,966	10,379,393	13,419,043	16,719,787	16,728,530	21,569,225	14,688,294	16,251,003	23,697,437	24,516,138
Total Capital Expenses less Financing	-	-	-	-	-	-	-	-	-	-	-	-	-

*Lifecycle costs for the existing transit garage are included in the City's service contract, and therefore included in the operating budget.



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Table C2: Reserves and Reserve Fund Continuity Schedules (2019-2041)

Transit Operating Contingency Reserve	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Opening Balance	-	-	1,074,421	1,384,308	1,410,349	1,591,619	1,992,588	1,868,130	2,138,528	2,710,484	2,985,126
Transfer from Operating	-	1,074,421	309,887	26,041	161,270	400,969	-	270,398	571,956	274,642	211,889
Transfer to Operating	-	-	-	-	-	-	124,458	-	-	-	-
Interest	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	-	1,074,421	1,384,308	1,410,349	1,591,619	1,992,588	1,868,130	2,138,528	2,710,484	2,985,126	3,197,015

Transit Operating Contingency Reserve	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Opening Balance	3,197,015	3,411,854	3,603,037	3,720,513	3,810,525	3,699,790	3,385,509	2,698,377	1,644,591	392,861	446,419	260,030
Transfer from Operating	214,839	191,183	117,476	90,012	-	-	-	-	-	53,558	-	-
Transfer to Operating	-	-	-	-	110,735	314,281	687,132	1,053,786	1,251,730	-	186,389	260,030
Interest	-	-	-	-	-	-	-	-	-	-	-	-
Closing Balance	3,411,854	3,603,037	3,720,513	3,810,525	3,699,790	3,385,509	2,698,377	1,644,591	392,861	446,419	260,030	-





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Table C3: Operating Budget Forecast (Inflated \$) (2019-2041)

Description	Budget		Forecast								
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	
Operating Expenditures											
Contracted Services	16,975,173	17,009,000	17,349,000	17,896,000	18,050,000	18,411,000	18,779,000	19,155,000	19,538,000	19,929,000	
Contracted Services - Increases from Expanded Service	-	-	1,700,000	2,143,000	2,939,000	3,595,000	5,067,000	5,882,000	6,819,000	8,347,000	
Fuel	2,605,067	2,602,000	2,654,000	2,967,000	3,132,000	3,410,000	3,643,000	3,829,000	4,020,000	4,333,000	
Internal Facility Charge	174,965	178,000	182,000	182,000	182,000	182,000	182,000	182,000	182,000	182,000	
Salaries and Benefits	1,340,846	1,368,000	1,395,000	1,423,000	1,451,000	1,480,000	1,510,000	1,540,000	1,571,000	1,602,000	
Utilities	294,235	300,000	306,000	312,000	318,000	324,000	330,000	337,000	344,000	351,000	
Miscellaneous	436,507	445,000	454,000	463,000	472,000	481,000	491,000	501,000	511,000	521,000	
Existing Debt Payments (Non-DC)	-	-	-	-	-	-	-	-	-	-	
New Debt Payments	-	-	-	-	-	-	-	-	-	-	
Transfer to/(from) Reserve - Transit Operating Contingency	-	1,074,421	309,887	26,041	181,270	400,969	(124,458)	270,398	571,956	274,642	
Total Expenditures	21,826,792	22,975,421	24,349,887	25,693,041	27,219,270	28,791,969	30,399,542	32,232,398	34,106,956	36,104,642	
Operating Revenues											
General Revenues											
Advertising	300,000	313,000	322,000	335,000	347,000	356,000	373,000	386,000	395,000	412,000	
Contribution from Essa	197,848	-	-	-	-	-	-	-	-	-	
Gas Tax	2,090,000	2,284,000	2,388,000	2,388,000	2,492,000	2,564,000	2,638,000	2,714,000	2,793,000	2,874,000	
InterCity Sales Commissions	162,300	162,000	162,000	162,000	162,000	162,000	162,000	162,000	162,000	162,000	
Miscellaneous	80,991	83,000	84,000	86,000	88,000	89,000	90,000	93,000	95,000	97,000	
Sub-Total General Revenues	2,831,139	2,842,000	2,956,000	2,971,000	3,089,000	3,171,000	3,198,000	3,355,000	3,445,000	3,545,000	
Fare/Pass Revenues	6,024,390	6,495,000	7,069,000	7,694,000	8,381,000	9,132,000	9,954,000	10,852,000	11,839,000	12,919,000	
Total Operating Revenues	8,855,529	9,337,000	10,025,000	10,665,000	11,470,000	12,303,000	13,152,000	14,207,000	15,284,000	16,464,000	
Total Tax Funding Required	12,971,263	13,639,421	14,324,887	15,028,041	16,749,270	16,488,969	17,247,542	18,025,398	18,822,956	19,640,642	
% Tax Funding Increase Required		5.2%	5.0%	4.9%	4.8%	4.7%	4.6%	4.5%	4.4%	4.3%	

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Description	Budget		Forecast										
	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Operating Expenditures													
Contracted Services	20,327,000	20,734,000	21,148,000	21,572,000	22,003,000	22,443,000	22,892,000	23,350,000	23,817,000	24,293,000	24,779,000	25,274,000	25,789,000
Contracted Services - Increases from Expanded Service	9,745,000	11,291,000	12,997,000	14,663,000	16,498,000	18,505,000	20,990,000	23,495,000	25,298,000	28,089,000	30,712,000	34,389,000	37,940,000
Fuel	4,658,000	4,694,000	5,342,000	5,765,000	6,138,000	6,590,000	7,057,000	7,608,000	8,179,000	8,841,000	9,463,000	9,864,000	10,696,000
Internal Facility Charge	762,000	777,000	793,000	809,000	825,000	842,000	859,000	876,000	894,000	912,000	930,000	949,000	968,000
Salaries and Benefits	1,834,000	1,887,000	1,700,000	1,734,000	1,769,000	1,804,000	1,840,000	1,877,000	1,915,000	1,953,000	1,992,000	2,032,000	2,073,000
Utilities	356,000	395,000	372,000	379,000	387,000	395,000	403,000	411,000	419,000	427,000	436,000	445,000	454,000
Miscellaneous	531,000	542,000	553,000	564,000	575,000	587,000	599,000	611,000	623,000	635,000	648,000	661,000	674,000
Existing Debt Payments (Non-DC)	-	-	-	-	-	-	-	-	-	-	-	-	-
New Debt Payments	-	-	-	-	-	-	-	-	-	-	-	-	-
Transfer to/(from) Reserve - Transit Operating Contingency	211,889	214,839	191,183	117,476	90,012	(110,735)	(314,281)	(687,132)	(1,053,789)	(1,251,730)	53,558	(186,389)	(280,030)
Total Expenditures	38,226,889	40,584,839	43,057,183	45,603,476	48,285,012	51,155,265	54,235,719	57,540,868	61,061,214	64,889,270	69,003,558	73,427,611	78,194,970
Operating Revenues													
General Revenues													
Advertising	429,000	447,000	468,000	485,000	507,000	529,000	559,000	593,000	628,000	658,000	697,000	740,000	783,000
Contribution from Essa	-	-	-	-	-	-	-	-	-	-	-	-	-
Gas Tax	2,857,000	3,042,000	3,129,000	3,188,000	3,248,000	3,309,000	3,371,000	3,434,000	3,499,000	3,565,000	3,632,000	3,700,000	3,766,000
InterCity Sales Commissions	162,000	162,000	162,000	162,000	162,000	162,000	162,000	162,000	162,000	162,000	162,000	162,000	162,000
Miscellaneous	96,000	101,000	103,000	105,000	107,000	109,000	111,000	113,000	116,000	118,000	120,000	123,000	125,000
Sub-Total General Revenues	3,844,000	3,752,000	3,862,000	3,840,000	4,024,000	4,109,000	4,203,000	4,302,000	4,405,000	4,503,000	4,611,000	4,725,000	4,839,000
Fare/Pass Revenues	14,101,000	15,397,000	16,818,000	18,347,000	20,023,000	21,854,000	23,863,000	26,098,000	28,590,000	31,199,000	34,131,000	37,590,000	40,886,000
Total Operating Revenues	17,746,000	19,149,000	20,680,000	22,287,000	24,047,000	26,973,000	30,409,000	34,400,000	38,742,000	43,702,000	49,406,000	56,740,000	64,725,000
Total Tax Funding Required	20,478,889	21,435,839	22,417,183	23,316,476	24,238,012	25,182,265	26,149,719	27,140,868	28,166,214	29,166,270	30,261,558	31,382,611	32,469,970
% Tax Funding Increase Required	4.3%	4.7%	4.6%	4.0%	4.0%	3.9%	3.8%	3.8%	3.7%	3.7%	3.6%	3.6%	3.6%

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