



Asset Management Plan

2020-2029



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Executive Summary



1.1 Introduction

Within the City of London and County of Middlesex, the housing crisis is having a considerable effect on all sectors of society and especially the most vulnerable. The challenge is so important that Mayor Ed Holder (term 2018-2022), identified **the needs of the most vulnerable as the second-highest priority for the City's four-year Strategic Plan** (Holder, 2019). London Middlesex Community Housing (LMCH) is London's single largest provider of Rent Geared to Income (RGI) housing and is encouraged by the City's commitment to using affordable housing as a key tool for addressing the needs of the most vulnerable.



The LMCH Asset Management Plan (AMP) provides a **roadmap for the operation, maintenance, refurbishment, and replacement of LMCH's assets** while advancing the strategic goals of both LMCH and its Shareholder, the City of London. The actions, strategies, and requests derived from the AMP are founded on LMCH's mission to provide and maintain homes in a safe and supportive environment, and the associated goal of meeting the needs of the community served.

Under Ontario Regulation 588/17 Asset Management Planning for Municipal Infrastructure, the production of an AMP will become a legislative requirement for LMCH by 2023. In alignment with LMCH's values of commitment and excellence, this AMP is prepared in advanced of the legislative deadline.

1.2 Asset Inventory & Overview



Thirty-two (32) real properties representing 3,276 units throughout London and Middlesex County are what constitutes LMCH's core assets. The portfolio is a mix of single-family detached houses, row housing, and low and high-rise apartment buildings and provides **homes for approximately 5,400 people.**

In 2015 Building Condition Assessments (BCA) were completed for the majority of LMCH's core assets, producing a Facility Condition Index (FCI) for each location. As of January 2020, the average condition of the assessed portfolio was fair and the 2020 replacement value was over \$733 million.

Looking ahead to 2029, the total estimated cost to repair or replace *all* expired building components is \$452 million. However, most building component requirements (\$338 million) are limited priority and have utility beyond their useful life. The expected volume and cost of requirements is highest in 2020.

Like most Local Housing Corporations (LHCs) in Ontario, LMCH's core assets require significant capital investment over the next ten years. A 2013 survey indicated that LMCH's per unit capital funding was the lowest (\$583) of all 11 LHCs surveyed, at less than half the average (\$1207), providing insight into the current asset management challenges.



Recently, LMCH's capital needs have been more appropriately recognized and funded through the approval of the 2020-2023 Multi-Year Budget Cases #12: LMCH Infrastructure Gap and #18: LMCH Co-Investment with CMHC. This funding increase will help alleviate some but not all of the funding challenges.

In addition to core assets, LMCH also holds other Tangible Capital Assets (TCA's) like technology/communications, appliances, furniture and fixtures, and machinery and equipment. The January 2020 total replacement value of these assets is just over \$ 8 million and about 40% of TCA is currently beyond its useful life.

1.3 Level(s) of Service

Level(s) of Service (LOS) are statements and metrics used to describe the outputs and objectives LMCH intends to deliver to its Stakeholders. They are service expectation and functionality requirements and are based on LMCH's corporate mission, vision and goals. LOS connect descriptive outcomes with quantifiable metrics and enable the organization to measure and track performance. There are three different, but interconnected types of LOS:

- 1 **Corporate LOS** outlines the performance expectations of the organization.
- 2 **Community LOS** outlines the attributes of service that the public expects from the corporation.
- 3 **Asset LOS** dictates and measures asset performance and the need to maintain operations and control risks.

Specific to Core Assets, LMCH has established five **Asset LOS**:

- 1 **By 2029, the assessed portfolio's average FCI score is fair**
- 2 **100% of high priority requirements are remediated by 2029**

- 3 A portfolio average monthly Key Performance Indicators (KPI) score of 80%
- 4 75% of Work orders complete within prescribed time periods
- 5 Current total vacancy rate of 3% or less

There are several potential risks and limitations in achieving Asset LOS. These primarily relate to the provision of appropriate levels of funding, high volumes of work and limited human resource capacity.

1.4 Lifecycle Management

Lifecycle management is the process of **optimizing value in assets throughout their lifecycle while reducing risk and cost**. Lifecycle management reviews the needs of each asset in conjunction with the mission of the organization, the available resources, and current and future risks and opportunities.

There are seven **lifecycle management categories**:

- | | | | |
|---|--------------------|---|---------------------|
| 1 | Non-infrastructure | 5 | Disposal |
| 2 | Maintenance | 6 | Growth |
| 3 | Rehabilitation | 7 | Service Improvement |
| 4 | Replacement | | |

Each category requires a different approach. For example, the non-infrastructure method includes actions, policies or support services that may reduce tenant behavioral issues resulting in property damage. In contrast, rehabilitation involves altering the physical asset to extend useful life. Significant funding will be required to realize the full benefits afforded by lifecycle management activities, meaning LMCH will be unable to fully benefit from lifecycle management activities under the current funding model.



1.5 Requirement Priority & Risk Management

LMCH developed four levels of priority for requirements:

1. High

3. Low

2. Medium

4. Limited

Priority levels dictate the level of criticality for investment and allow requirements to be filtered accordingly. Within the high and medium priority groups, a risk score is calculated for each requirement.

Risk is a function of the **probability of failure** multiplied by the **consequence of failure**. Within the same priority grouping, the higher the risk score the greater the risk and consequence of failure. Risk scores may change over time as the condition of the requirement improves or declines, legislation is revised, and/or legal implications modify. For this reason, risk scores are iterative in nature and therefore require regular updating.

Risks are managed in four ways:

- 1 **Significantly avoid (replace)**
- 2 **Transfer to a third party (i.e. insurance against failure or loss)**
- 3 **Mitigate (refurbishment, repair)**
- 4 **Accept (no action)**

LMCH has developed a strategy for assessing risk to determine which response is most feasible (i.e. financially), appropriate and necessary. The strategy recognizes that even with the most aggressive response (i.e. significantly avoid) there may always be some level of residual risk that requirements hold.

LMCH is committed to continuously improving risk identification and quantification by automating the process where suitable, and performing financial analysis to determine the most appropriate risk response.

1.6 Forecasted Infrastructure Gap

An infrastructure gap is the **difference between required capital funding and planned capital funding**. LMCH's AMP identifies three types of infrastructure gaps:

Lifecycle Renewal: replacement of existing building components that have expired and/or are no longer functional

Service Improvement: enhancement to an assets capacity, system reliability, and/or quality

Growth: expands existing service to meet demands

- 1 The lifecycle renewal infrastructure cost is \$235.04 million. The calculation is based on:
 - Achieving a core asset portfolio condition of fair by 2029
 - Replacing other assets once they have served 110% of their useful life

The current planned investment is \$87.23 million, and if \$15.65 million in reserve funds are also applied increases to \$102.88 million. Therefore, by 2029, the lifecycle infrastructure gap will be \$147.80 million without reserve funds applied and \$132.15 million with reserve funds invested.

- 2 The cost of service improvement is \$29.49 million. The calculation is based on:
 - Enhanced asset capacities
 - Improved asset reliability
 - Improved asset quality and longevity

The current planned investment is \$26.58 million (largely via third party funding specific to improved efficiency and accessibility). Therefore, the service improvement infrastructure gap is \$2.91 million.

- 3 The cost of growth is \$32.10 million. The calculation is based on:
 - Converting existing unfinished basements into legal and secondary units
 - Infill and intensification on existing family sites
 - Acquisition of an existing property.

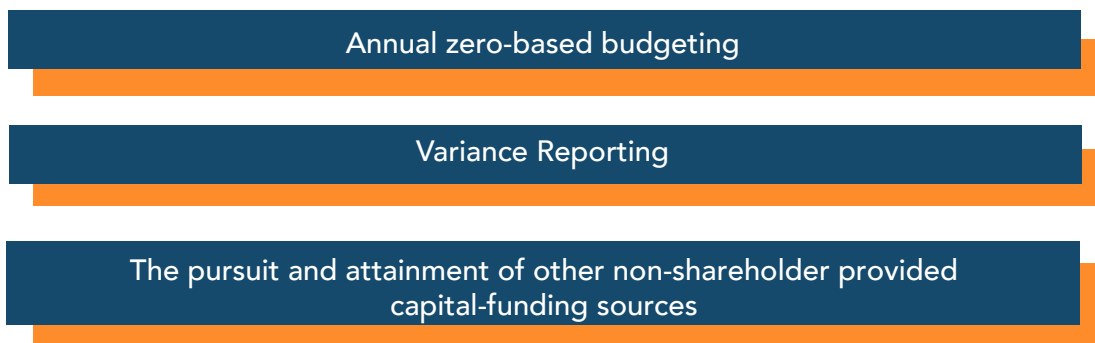
The current planned investments is \$24 million. Therefore, the growth infrastructure gap is \$8.1 million.

1.7 Financial Strategy

LMCH has two primary budgets: operational and capital.

- 1 The operational budget provides for costs associated with daily operations required to provide services to tenants and is funded primarily through rental revenue and some shareholder funding.
- 2 The capital budget funds services capital works and is funded by the shareholder or third parties.

Both budgets are managed using financial best practices, including:



The financial strategy focuses investment of committed capital to high and medium priority categories while recognizing the need for investment to low and limited priority categories. Table 1 below demonstrates the allocation of committed capital funding.

Table 1: Forecasted Allocation of Capital Funding

Priority Grouping	Original Total Requirement Cost (\$ millions)	2020-2029 Forecasted Investment (\$ millions)	Priority Group Addressed (%)	Remaining Total Requirement Cost (\$ millions)	Allocation of Committed Capital (%)
High	59.9	36.4	61	23.5	44
Medium	26.5	11.5	43	14.9	14
Low	27.6	6.7	24	20.9	8
Limited	338.3	24.7	7	313.5	30
Other	N/A	3.56	N/A	N/A	4
TOTAL	452.34	82.95	18	372.95	100

Regardless of the allocation of committed capital funding, there remains a significant lifecycle renewal infrastructure gap. There are three approaches to mitigate the infrastructure gap:

1. Modest Mitigation

2. Significant Mitigation

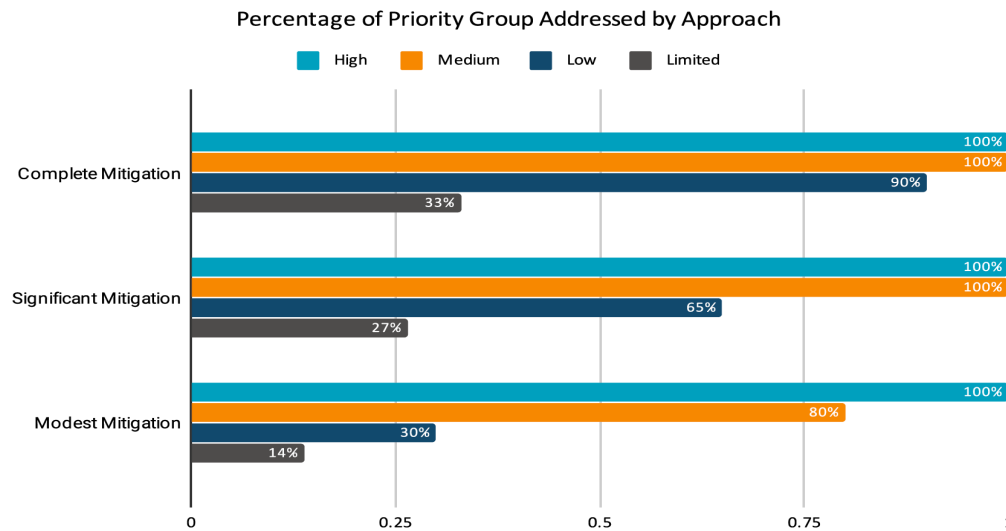
3. Complete Mitigation

The risks associated with doing nothing are severe including non-compliance with legislation resulting in forced unit closure. Modest and significant mitigation presents similar risks, but to a lesser degree. Complete mitigation reduces these risks to the greatest extent. As the level of investment under an approach increases, the rate of remediation across each priority group increases too (refer to Figure 1). Remembering that LMCH's infrastructure gap is based on achieving a condition of fair by 2029, not all priority groups will be fully remediated even when the infrastructure gap is fully funded.

Various funding sources could provide funding to address the infrastructure gap. These include the use of reserve funds allocated to LMCH, additional third party contributions

(i.e. CMHC and others), efficiency-based incentives that redirect funds saved to capital investment, and levy supported contributions.

Figure 1: Remediation of Priority Groups by Mitigation Approach



LMCH strongly recommends significant mitigation of the infrastructure gap; this represents \$115 million in additional capital investment over 15 years. Significant mitigation provides capital funding to mitigate risks carried. It is also a more affordable option than complete mitigation.

1.8 Conclusions & Recommendations

LMCH's mission is to provide and maintain homes in a safe and supportive environment. As such, the stewardship of LMCH's assets is central to this mission. The 2020-2029 AMP provides a robust overview of LMCH's assets. This includes what assets LMCH holds, how LMCH intends to utilize these assets to deliver LOS, asset lifecycle management, and asset capital requirements and risks. Using this information, the infrastructure gap is determined.

To deliver on LMCH's mission, significant mitigation of the infrastructure gap is necessary. Without this investment, LMCH and its shareholder will carry unacceptable risk, including the potential for forced unit closure. Recognizing that the implementation of the AMP

is equally important as its development, LMCH advances six (6) next steps and three (3) recommendations:

Next Steps:

1. Standardized Asset Management practices that promote prudent decisions and outcomes.
2. Transition from the existing non-automated priority group determination and risk score process to an automated process.
3. Selected capital projects based on their risk score and established priority grouping investment allocation.
4. Continue to advance capital projects with appropriate specifications, design and sufficient project management.
5. Provide tenants with support to encourage independent, healthy living (i.e. housekeeping, mental health support) and reduce property damage.
6. Review the AMP each year and fully update the AMP every five (5) years to ensure it remains relevant and compliant with Ontario Regulation 588/17 Asset Management Planning for Municipal Infrastructure.

Recommendations:

1. Ensure tenant placement policies provide a framework for successful tenancies and healthy LMCH communities. Improved tenant placement policies are expected to reduce the prevalence and severity of willful property damage.
2. Continued shareholder support for third-party capital funding programs that are suitable and valuable to LMCH.
3. By 2034, invest an additional \$115.4 million to the lifecycle renewal infrastructure gap.



LMCH believes in the value of housing, especially for vulnerable populations. However, to continue to provide housing, LMCH's assets require significant capital investment and improved tenant supports. This investment will ensure that tenants have supports to be successful and that assets remain safe and appropriately maintained.

Section 1.0 Introduction



London Middlesex Community Housing (LMCH) is pleased to present its first Asset Management Plan (AMP). The plan examines, discusses, plans for, and makes recommendations related to a 10-year plan for LMCH's assets, including a financial strategy. As much as possible, LMCH's AMP conforms to the upcoming provincial requirements under Ontario Regulation 588/17.

The AMP provides a corporate overview of LMCH, presents information on the 2020 replacement value and condition of LMCH assets, outlines the desired Levels of Service (LOS), identifies infrastructure gaps (growth, service improvement, and lifecycle renewal) and presents a financing strategy to mitigate the lifecycle renewal infrastructure gap. The AMP will assist LMCH in reaching many of its strategic goals including improving, renewing, and maintaining the homes it offers, and stating out its critical role in supporting housing stability and preventing homelessness. Additionally, the AMP will effectively guide capital investment decisions, enable tracking and reporting on LOS, and provide a framework to prioritize capital investments.

1.1: Background LMCH Information

LMCH is a municipally owned Local Housing Corporation (LHC), serving the City of London and Middlesex County. The City of London is LMCH's sole shareholder, and the County of Middlesex is an important funding contributor. LMCH devolved from the Province of Ontario in 2001 and is bound by the Housing Services Act (HSA). LMCH's portfolio currently comprises 32 properties, which contain 3,276 units and provide rent-geared-to-income (RGI)² housing for approximately 4,700 tenants. Most properties within the portfolio are located within the City of London, while some properties are located in Middlesex County (see Appendix 1 for a map of the portfolio).

In May 2017, London Middlesex Community Housing (then London Middlesex Housing Corporation) launched its council endorsed 2017-2020 Strategic Plan. Through the 2017-2020 Strategic Plan, LMCH repositioned itself as a housing provider that cares, rather than simply a landlord and property manager.

The Strategic Plan established several goals. [The most relevant goals for the AMP are:](#)

- Improve, renew and maintain the homes that we offer
- Engage, support, and empower tenants

¹ An additional six units are defined as "out of stock" as they were lost to fire. Under local accountability rules, the Housing Services Manager is responsible for maintaining 8,055 units of RGI housing in London and Middlesex County. Currently, LMCH holds 3,282 units of the total 8,055 units.

² RGI is a housing subsidy or benefit offered by the municipality to make rent affordable to households. In most cases, a household's rent is 30% of the household's total monthly gross income.



- Stake out our critical role in supporting housing stability and preventing homelessness
- Establish long-term financial growth and stability

At the same time, the Corporation articulated its new mission and vision, and introduced LMCH's mission, vision, and the "We C.A.R.E." system of values, which are:

Our Mission:

"We provide and maintain homes in a safe and supportive environment to meet the needs of the people we serve in our communities."

Our Vision:

"We envision healthy homes and communities in London and Middlesex. Leading by example, LMCH will help make a difference and positively impact lives using housing as the foundation."

The "We CARE" system of values:

WE CARE

COLLABORATION | COMMITMENT

ACCOUNTABLE | ACCESSIBLE

RESPECT | RESPONSIVE

EQUITY | EXCELLENCE

The 2017-2020 Strategic Plan identified LMCH's most significant challenges, including insufficient support for rapidly growing tenant and community needs. Other potent challenges include the unsustainability of LMCH's sole reliance on historic levels of public funding to meet escalating needs, and LMCH's resulting need to respond to new and shifting challenges by seeking alternative financing tools and revenue streams (London



Middlesex Housing Corporation, 2017). The 2017- 2020 strategic plan provides a platform for LMCH to reinvent and refocus the management of its assets, support of its tenants, and growth of the portfolio.

1.2 Social Challenges and Their Impact on Asset Management

In 2005, the Housing Division issued a directive from the City of London for LMCH to provide housing for nine out of ten applicants (known as the 9/10 rule) who have special priority, urgent or high need situations (Stevens, 2005). This directive was provided without any revisions to funding for and/or provision of tenant support services (i.e. life skills training, counselling).

As a result of the 9/10 directive, most LMCH properties have a high proportion of tenants with multiple and complex challenges such as significant personal traumas, and mental health challenges. Certainly, the 2005 changes to the waiting list priorities intended to align with the principles of Housing First³ by providing housing more expediently to those in greatest needs (Stevens, 2005). The result of the 9/10 rule is however that in most cases those housed do not have appropriate levels of support (Marshall, 2019). Under the absence of supports for the tenants housed, the intake process does not in fact align with a Housing First strategy.

Financially vulnerable or precariously housed people (without complex issues or a, special priority designation) have access to LMCH's housing on a chronological basis (a sequential, time-based queue) and are offered only 10% of the total units available.

The high concentration of tenants who require significant support, combined with minimal funding and programming available to those tenants, results in a high prevalence of significant behavioral issues. These behavioral challenges in combination with insufficient capital and operational resources compromise the safety and sense of security of all tenants, LMCH staff, and external contractors.

In addition to compromising the safety and sense of security on-site, behavioral issues often result in destruction of property. Regarding financial and asset management considerations, these behavioral issues contribute to additional costs for building security, a high rate of unit turnover, and a high cost of renovating units for turnover purposes.

³ Housing First is a recovery-oriented approach to ending homelessness, which focuses on moving people experiencing homelessness into independent and permanent housing where there are appropriate supports and services (Housing First, 2019).



Supportive services can provide tenants with critical life skills training for healthy independent living (e.g. basic cleaning skills, communication skills, and personal care) while reducing behavior issues that contribute to the prevalence and cost of building issues and repairs. For these reasons, LMCH recognizes that an important aspect of asset management is the provision of more appropriate supportive resources.

1.3 Current Operating Framework

LMCH's operates under the terms established by its [Articles of Incorporation, Shareholder Declaration, and Accountability Rules](#) as approved by the sole shareholder on June 20, 2011. Articles of Incorporation, which are a product of the Business Corporations Act, are legal documents that establish a business and define its structure as being a separate entity from the business owner. Articles of Incorporation also outline any restricted business activities. Currently, LMCH's Articles of Incorporation set the following directions:

The provision, operation, and maintenance of housing accommodation, with or without any public space, recreational facilities, commercial space or buildings appropriate thereto, in accordance with the Act

The administration of programs providing rent-geared-to-income assistance to households of low to moderate income in accordance with the Act public space, recreational facilities, commercial space or buildings appropriate thereto, in accordance with the Act

The provision, of accommodation for persons with special needs

Any matter with respect to which the corporation and the Minister, the Service Manager or any other person may enter into an agreement under the Act

The Shareholder Declaration dictates the range of accountability and operation practices, the reporting structure, and the powers of the Directors to manage or supervise the management of the organization. The Shareholder Declaration was produced with a



directive to restrict the powers of LMCH and to manage a transitional period. Currently, the purpose, objectives, and principles as outlined in the Shareholder Declaration include:

Authority of the Board to manage or supervise the management of the business and affairs of LMCH

To provide for an accountability framework of responsibility between LMCH and the Shareholder

To demonstrate LMCH's integral role to the infrastructure and overall well-being of the community, and LMCH's responsibility to carry out its business in a prudent and responsible manner, which includes fulfilling housing needs, and delivering programs and services sustainably

To meet a series of objectives which include utilization of assets for the purposes of providing community housing, and maintaining the assets in a state of good repair in order to provide quality affordable community housing

The Shareholder Declaration also outlines the activities, subject to financial resources, that LMCH may engage in, these activities include:

- Develop new affordable housing (subject to prior approval of the Shareholder and the Service Manager)
- Redevelop Existing Housing Projects (subject to prior approval of the Shareholder and the Service Manager)

The Articles of Incorporation, which outline the activities that LMCH can and cannot engage in, does not provide for the act of developing housing. LMCH's permitted activities as outlined in the Articles of Incorporation overrule the permissions, like the development of new housing, outlined in the Shareholder Declaration.

Accountability rules are local policy, that are set by the Service Manager who is responsible for carrying out (following its housing and homelessness plan) objectives and targets



relating to housing needs within their service area (in this case, the City of London and Middlesex County. The accountability rules that LMCH must abide by include:

A mandate to provide 9 out of 10 new units to tenants with complex and high needs (local rule passed in 2005)

A mandate to house households with dependents (family), senior households and households without dependents who are in need of rent-geared-to-income housing. LMCH shall not deviate from this mandate without the prior written consent of the Service Manager which consent will not be unreasonably withheld

LMCH responsibility for the maintenance of Housing Projects and ensuring that its housing projects are well managed, are maintained in a satisfactory state of repair and are fit for occupancy

Nearly ten years after approving the current operating framework, LMCH's sole shareholder, clearly identified its goal of strengthening the community through the revitalization of community housing, the use of innovative regulations, and investments to facilitate affordable housing (City of London, 2019, p. 8). In alignment with the City's goals, LMCH's 2017-2020 Strategic Plan seeks to expand its services beyond being a traditional landlord. To accomplish both LMCH and the Shareholder's respective goals, revisions to LMCH's Operating Framework (which includes the Articles of Incorporation, Shareholder Declaration, and Accountability rules) are necessary.

As noted by Pricewaterhouse Cooper in 2017, the current framework lacks the flexibility required for LMCH's strategic and operational decision (Cooper, 2018). Steve Pomeroy, an expert on housing policy and a senior research fellow at Carleton University's Center for Urban Research and Education, stated that public housing organizations, like LMCH, operate in an environment that does not allow for the creativity or innovation required to respond to the housing challenges in today's environment (Stacey, 2019). The City expressed concerns that the introduction of a new Operating Framework would change their control over LMCH. However, several independent legal reviews, completed in 2018, demonstrated that the requested changes would maintain the control that the City holds over LMCH while providing the flexibility necessary for LMCH to be more responsive to their plans (London Middlesex Community Housing, 2019, p. 3 & 5).



1.4 Linkages to Other Strategic Documents:

The City of London's 2015-2019 Strategic Plan significantly informed LMCH's 2017-2020 Strategic Plan.

Today, the City of London is governed by its 2019 — 2023 Strategic Plan, which maintains the same areas of focus as the earlier iteration: strengthening our community, growing our economy, leading in public service, and building a sustainable city; with the addition of a fifth area: creating a safe London for women and girls (City of London, 2019, p. 8).

LMCH can play a particularly important role in achieving the City's focus of strengthening our community, building a sustainable city, and creating a safe London for women and girls.

The primary goal of strengthening our community is ensuring that Londoners have access to the supports they need to be successful. The City's plan references several community housing-related expected results and strategies, including:

Expected Result	Strategy
Increase affordable and quality housing options.	<ul style="list-style-type: none">• Establish and revitalize community housing through a Regeneration Plan.• Increase supportive and specialized housing options for households experiencing chronic homelessness.• Strengthen the support for individuals and families in need of affordable housing.• Utilize innovative shelter diversion and rapid re-housing practices.
Reduce the number of individuals and families experiencing chronic homelessness or at risk of becoming homeless.	<ul style="list-style-type: none">• Create more purpose-built, sustainable, affordable housing stock in London• Implement coordinated access to mental health and addictions services and supports.• Improve emergency shelter diversion and rapid re-housing practices.

Table 2: City of London Strategic Plan- Strengthening Our Community

LMCH contributes to the expected results and is a key player in executing the strategies outlined above, which demonstrate LMCH's critical role in the achievement of the City's strategic goals.



The second strategic goal is to build a sustainable city and the first outcome is that “London’s infrastructure is built, maintained, and operated to meet the long-term needs of our community” (City of London, 2019, p. 12). Investing in LMCH assets, which comprise 40% of the City’s total social housing stock, is integral to meeting the long-term needs of the community (City of London, 2019).

LMCH also contributes to the City of London’s goal of creating a safe London for women and girls. In fact, a key strategy to achieving this goal is working with LMCH to build more accessible and safer housing options for women and girls (City of London, 2019, p. 22).

The strong alignment between the City of London’s strategic goals and the ability of LMCH to contribute to the achievement of these goals clearly indicates the importance of investing in LMCH. Asset management is an important vehicle to ensure that capital investment is prudent, timely, and appropriate for the needs of the population served.

1.5 Corporate Asset Management

What is Corporate Asset Management in General?

Corporate asset management is the systematic and coordinated activities and practices of an organization to optimally and sustainably deliver on its objectives through the cost-effective lifecycle management of assets. Long term strategic planning informs asset management decisions.

Asset management contributes to sustainable service delivery that integrates corporate and community values, priorities, and an informed understanding of the relationship between cost, risk, and levels of service. Effective asset management brings together skills (e.g. property management), expertise (e.g. building science), and information about community profiles (e.g. tenant profile) and finances to make informed decisions. Asset management is an ongoing, iterative process; the implementation and ongoing practices are as important as the actual asset management plan itself.

Asset management maximizes the effects of capital expenditure and prolongs the service life of the asset or building component (Vanier, 2000, p. 2). Proactive asset management also reduces the frequency and duration of service disruptions, improves the predictability of results, and lowers total lifecycle costs when compared with a reactive approach (Asset Management for Sustainable Service Delivery, 2015).



What is Corporate Asset Management in the Context of Community Housing?

The principles of asset management are consistent across sectors, but there are some considerations in the context of community housing that are unique and important elements of an appropriate community housing AMP. For example, community housing AMPs tend to require a higher level of flexibility and adaptability to changes in circumstances (i.e. unexpected cuts to funding, like cap and trade). Holistic solutions not traditionally associated with asset management (e.g. tenant support) may also be integral aspects of a community housing AMP. In 2014, the Ministry of Housing (MOH) published a Strategic Asset Management Framework that identified five activities central to the development of a community housing asset management plan. [These activities are:](#)

1. [Reviewing Asset Condition Information](#)
2. [Reviewing Asset-specific Financial Information](#)
3. [Defining the Best Use of Each Property](#)
4. [Defining Operating Maintenance Standards](#)
5. [Prioritizing Capital Initiatives \(Ministry of Municipal Affairs and Housing , 2014\)](#)

These areas of focus are similar to non-housing specific AMP, but also work to recognize and account for the unique realities of housing. These include a focus on outcomes that provide holistic solutions to portfolio management challenges, including capital planning, risk management and social outcomes. Social issues are an important area of focus because they contribute disproportionately to the maintenance and repair costs in community housing portfolios.

What is Ontario Regulation 588/17?

In 2000, the Province of Ontario initiated planning for asset management. Several key events like the Walkerton Inquiry (2002), PSAB requirements (2009), and the Infrastructure for Jobs and Prosperity Act (2016) culminated and led to the establishment of Ontario Regulation 588/17. Ontario Regulation 588/17 is a new municipal asset management planning regulation that was approved on December 13, 2017 and took full effect on



January 1, 2018. Under Ontario Regulation 588/17, municipalities are required to prepare a strategic asset management policy by July 1, 2019 and an asset management plan by July 1, 2021. The plan must encompass all municipal infrastructure assets, like LHCs, by July 2023 and include proposed levels of service and lifecycle management and financial strategy by July 2024 (Association of Municipalities of Ontario, 2018).

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Why is LMCH's Asset Management Plan Being Prepared Now?

LMCH's 2020 AMP is prepared significantly in advance of the Ontario Regulation 588/17 deadline for [the following reasons](#):

LMCH is dedicated to being a leader in the community housing industry and pursuant to this goal, is committed to producing an industry-leading AMP

The AMP provides important contributions to inform and support LMCH capital investment decisions

The size of the infrastructure-funding gap is so significant that a comprehensive AMP is vital to the effective management of the infrastructure gap

A comprehensive AMP provides vital credibility and information to assist and support in third party funding applications

A detailed and well-thought-out AMP is a cornerstone of evidence-based capital planning, which is vital to effectively managing a significant increase in funds and the resulting volume of capital projects



1.6 AMP General Assumptions & Limiting Conditions

While reading the AMP, readers should be aware of the following [general assumptions and limiting conditions](#):

1. LMCH is a board of the City of London, managed by a board of directors and owned by a sole shareholder, the City of London. Ultimately, the decisions and actions LMCH makes require approval by its Board of Directors and Shareholder and are subject to various legislative requirements including, but not limited to, the Residential Tenancies Act (RTA) and the Housing Services Act.
2. LMCH owns and manages 3,276 units across 32 properties located in the City of London and the County of Middlesex. Currently, six (6) of LMCH's units are "out of stock" due to catastrophic fire damage.
3. LMCH has categorized requirements (building components due for replacement) based on their level of priority, which considers the criticality, severity, tenant impact, and risk of failure of a requirement. These are estimates, and as such, they may not follow predicted patterns of failure. Please refer to section 3.3 for further detail on requirement categorization.
4. Low priority requirements may only be in that category because they affect a limited number of people, and/or because they have a low risk of failure. However, should they fail the consequences of their failure may still be extremely severe in nature.
5. Potential risk of asset failure include, but are not limited to life and health safety, significant financial loss, prosecution and reputational loss.
6. Even with sufficient funding, no AMP is able to eliminate risk of asset component failure. At best, an AMP's implementation will reduce the level of risk carried. Funding levels, appropriate building use, and robust building science information severely affect the ability to manage risk.
7. Failure to address infrastructure needs will result in increased probability of failures, which degrade quality of living, and in many cases result in larger expenditures than would not otherwise be required if proactively addressed.
8. Unless stated otherwise, asset replacement values is the total estimated amount of expenditure required to construct a replacement facility to the current building codes, design criteria, and materials. Estimates use data from RSMeans, which is North America's leading supplier of construction cost information.



9. The estimated cost of replacing requirements, the renewal cost, is based on replacing the equipment or system with items of slightly higher or equal quality. Replacement with slightly higher quality materials and/or equipment is done where current market alternatives are of better quality than existing; generally this improvement in quality and reduction in price is due to technological advancement and external cost drivers (e.g. demand drives down price).
10. Action year is the estimated date of which a building component requires replacement. This date is determined by the age of the component, and its typical useful life; the actual useful life may deviate upwards or downwards.
11. In 2015, third party inspectors were hired to complete Building Condition Assessments (BCA) on 25 LMCH properties. The comprehensive information obtained from these inspections is stored within a capital planning software program called VFA. These 25 properties constitute the "Assessed portfolio". Unless stated otherwise, all requirement costing figures presented are based on the "Assessed portfolio" only and do not account for requirement costs for LMCH's remaining seven (7) properties that have not received BCA.
12. Most LMCH properties that did not receive BCAs in 2015, are very similar in construction type, size, quality, and age to other LMCH's properties that received BCAs in 2015 and are within the "Assessed portfolio".



Section 2.0: Asset Inventory & State



LMCH's assets are categorized into two groups: "core assets", which comprise all real property (i.e. buildings and sites), and "other assets" which are comprised of all remaining Tangible Capital Assets (TCA) and include appliances, vehicles, and furniture. Provided below is a high-level overview of LMCH Asset Inventory. In subsequent sections, more detailed asset information is provided.

Table 3: LMCH Asset Overview

Asset Category	Inventory	Unit	Total 2020 Replacement Cost
Core Assets	3276	Residential Unit	\$733,746,575
Other Assets	5	Asset Sub-Categories	\$8,037,000
Total			\$741,783,575

2.1 Core Assets Inventory Overview

LMCH's core assets are comprised of 32 residential and multi-residential properties located within the City of London and Middlesex County (see Appendix 1 for a map of the properties). LMCH's portfolio contains three distinct property types: (1) detached and semi-detached houses scattered throughout the city (see Appendix 2), (2) townhouse complexes, and (3) low, medium, and high-rise apartment towers. Across the portfolio, there are 3,276 units, ranging in size from bachelor to five-bedrooms. A summary of LMCH's core asset inventory is provided in Table 4.



Table 4: Core Asset Overview

Asset Type	Asset Grouping Description	Inventory	City Ward or Municipality	Total # Units	# of Bedrooms						Age as of 2020
					Bach	1	2	3	4	5	
Real Property	Multi-Residential	632 Hale	2	146		145	1				49
		202 McNay	4	252		251	1				44
		345 Wharnccliffe	6	145		144	1				49
		349 Wharnccliffe	6	145		144	1				49
		872 William	6	70	46	24					54
		1194 Commissioners	9	126		125	1				51
		30 Baseline	11	251		250	1				48
		200 Berkshire	11	89		88	1				50
		39 Tecumseh	11	38	19	19					59
		85 Walnut	13	232		231	1				45
		241 Simcoe	13	217		216	1				45
		170 Kent	13	212		211	1				48
		304 Oxford	13	109		108	1				49
		580 Dundas	13	151	125	25	1				52
		136 Albert	13	82	59	22	1				51
		2061 Dorchester	Dorchester	16		16					41
		10 York	Newbury	10		10					42
		249 Ellen	North Middlesex	10		10					46
		157 Simpson	SW Middlesex	21		21					43
		49 Bella	Strathroy	51		49	2				41
		125 Head	Strathroy	25		25					47
		Multi-Res Total		2398	249	2134	15	0	0	0	
	Town House Complexes	Allan Rush	1	100				86	14		55
		Marconi	2	51				37	10	4	48
		Huron	4	110			67	43			50
		Boulee	4	136				100	22	14	49
		Limberlost	7	160			23	85	42	10	60
		Southdale	14	166			39	106	21		49
		370 Pond Mills	14	81				15	50	16	52
		Townhouse Total		804	0	0	129	472	159	44	
	Clustered Semi-Detached	Marconi	2	34				20	10	4	52
		Penny Lane	Strathroy	20			5	8	2	5	45
	Scattered Detached/semis	City	1,2, & 3	14				14			57
		County	Newbury	6				6			50
		Semi & Scattered Total		74	0	0	5	48	12	9	
	Real Property Total			3276	249	2134	149	520	171	53	

Each property's age, as provided in Table 3, is the building's year built less the year 2020. Figure 3 below provides the industry average useful life periods, the number of years an asset class is likely to remain in service in a cost effective manner, for each asset category. When a building's age is greater than its useful life, operations and maintenance costs will often increase. Readers should be aware however, that useful life does not include structural components of buildings, as they tend to last substantially longer. Further, investment to major component in a building (i.e. mechanical and electrical) will reduce the building's effective age. Thus, a building's actual age relative to its useful life may not accurately reflect its condition. For example, century homes that have been extensively renovated will have an actual age well in excess of the expected useful life; however, their effective age will be much lower and likely within or close to their useful life.

Core Assets: Average Age vs. Useful Life

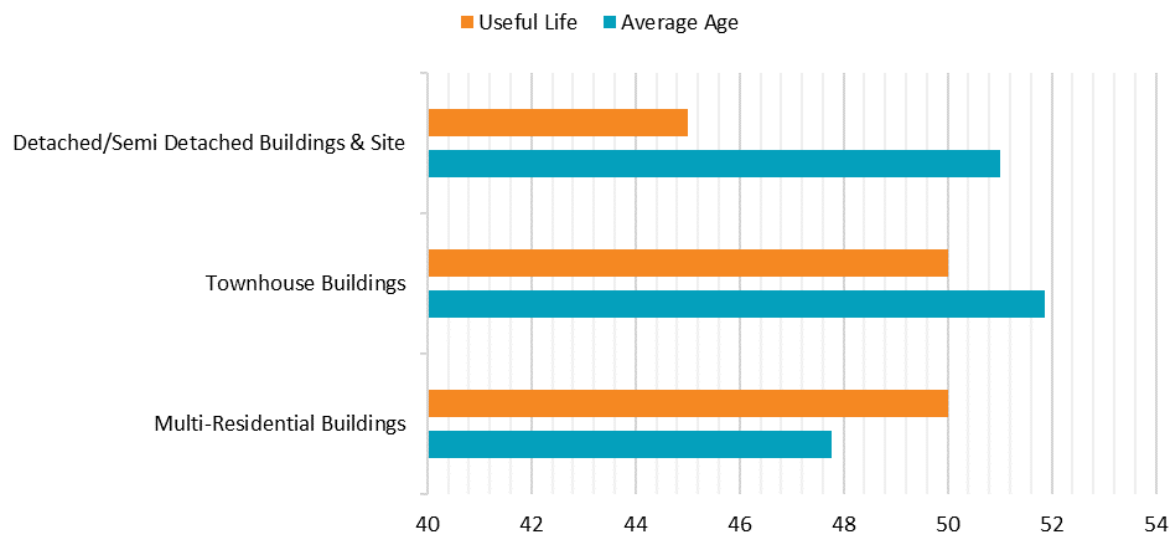


Figure 3: Core Assets Average Age vs. Useful Life Summary



2.2 Core Assets: Current State

A critical tool for understanding the current state of a real estate portfolio is up to date information about the site and building components on each property, including their date of installation, useful life span, and condition. Then, cost estimates can be developed, schedules of updates created, and the criticality of updates identified. This data assist LMCH to anticipate building needs, inform capital budgets and projects, make justified decisions, and maintain accurate building information.

To improve LMCH's asset management and better understand the state and condition of its portfolio, a third party completed Building Condition Assessment (BCA) on most of LMCH properties in 2015. On a property-by-property basis, the BCAs catalogue, all of the building components that exist, their estimated age, typical useful life, and estimated replacement date. The data collected through these BCAs is managed in a proprietary software program called VFA and is used to generate reports that contain important information including what capital investment is needed, what it is needed for, and when it is needed.

Through the data compiled using the BCA, the software program VFA generates a Facility Condition Index (FCI) score, which is an important metric for understanding the state of a property or a portfolio of properties.

FCI scores are computed by dividing the total estimated cost of building components requiring replacement in the current or next two calendar years by the assets total replacement value. All building components that require replacement are called requirements. In this report, requirement costs are for the period of 2020 and 2029 including deferments (i.e. due prior to 2020).

FCI scores typically range from zero to one. An FCI score of zero (0) indicates that the selected asset is in perfect condition and that nothing needs replacement in the current year or the next two calendar years. An FCI rating of one indicates the opposite: within the current year and the next two calendar years, every component in the building needs replacement. Therefore, the higher the FCI score, the poorer the condition of an asset. FCI scores are an effective tool to compare and benchmark a portfolio of assets that are different in their size and built form (e.g. townhouse property vs. high-rise apartment building).



LMCH categorizes FCI scores as follows:

Table 5: FCI Score Categories

FCI Score Range	Score Standard
0.00-0.05 (0%-5%)	Very Good (1)
0.06-0.20 (6%-20%)	Good (2)
0.21-0.40 (21%-40%)	Fair (3)
0.41-0.60 (41%-60%)	Poor (2)
0.61 (61%) or Greater	Very Poor (5)
N/A	Not Assessed (6) ⁴

Table 6 below outlines the 2020 total estimated replacement cost by asset grouping. For each asset grouping, costs are broken down by property (building and site), building only, and site only. Also provided is the 2020 weighted average FCI score category for the property (site and building), site, and building. In 2020, the weighted average property FCI score category of properties (buildings and sites) was poor, the building (excluding site) FCI score category was also poor and the weighted average FCI score category for sites only was very poor.

Table 6: LMCH Core Asset Inventory Breakdown

LMCH Core Assets: Inventory Breakdown						
Inventory	Total 2020 Replacement Cost	Weighted Average Property 2020 FCI Condition	Building 2020 Replacement Cost	Building 2020 Overall FCI Condition	Site 2020 Replacement Cost	Weighted Average Site 2020 FCI Score
Multi-Res Total	\$ 494,933,177	Poor	\$ 489,377,864	Poor	\$5,555,314	Very poor
Townhouse Total	\$ 222,104,799	Poor	\$ 209,836,627	Poor	\$12,268,172	Very poor
Semi & Scattered Total	\$8,921,269	Not Assessed	\$8,921,269	Not Assessed		

⁴ This category is reserved for assets where data is either not available, not updated, or cannot be considered reliable. Flagging this data allows LMCH to identify where gaps in information exists and allows the organization to develop assessment plans to improve future data reliability and accuracy.



Inventory	Total 2020 Replacement Cost	Weighted Average Property 2020 FCI Condition	Building 2020 Replacement Cost	Building 2020 Overall FCI Condition	Site 2020 Replacement Cost	Weighted Average Site 2020 FCI Score
Land: Portfolio Wide	\$7,787,329	Not Assessed		Not Assessed	\$17,823,486	76%
Portfolio Total	\$733,746,575	45%	\$ 708,135,759	44%	\$17,823,486	76%

On a property basis, the assessed portfolios FCI score category distribution is summarized in Table 6 and Figure 4 below. As Figure 4 indicates, as of January 2020 56% (representing 14 properties) of assessed LMCH properties (site and building) held FCI scores within the poor range (0.40-0.60), 40 % or 10 properties held FCI scores in the fair range (0.21-0.40) and 4% or one(1) property has an FCI score in the very poor range (0.06-0.20).

Assessed Portfolio FCI Distribution

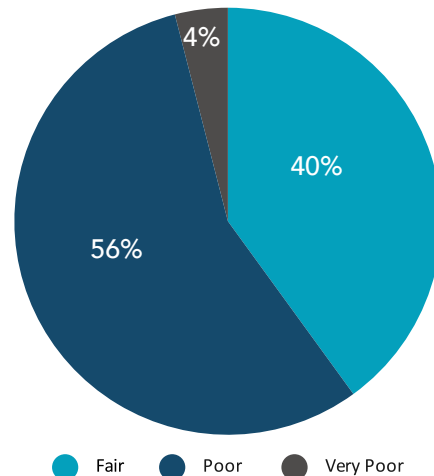


Figure 4: Assessed Portfolio FCI Distribution

Recognizing that FCI scores vary significantly when evaluated only on a site basis and a property basis, the FCI condition score category has been provided for each asset grouping for site only and for building only. The results indicate that most buildings within the assessed portfolio are in fair condition, and most sites are in poor or very poor condition.



The FCI score is a dynamic measure that changes with time, level of capital investment, and by property. Thus, the results presented here are as of year beginning 2020 and are not representative of any future or previous point in time. The FCI scores reported in the AMP are based on capital investments made as of January 1 2020 and the requirements deferred and due in 2020, 2021, and 2022. With changes in the level of capital investment provided and the capital funding needed, the FCI score will change too.

Table 6 below also provides the 2020 estimated replacement costs. Here, it is evident that the largest portion of replacement costs are associated with multi-residential buildings; the second largest portion is for town house buildings. Replacement costs associated with sites, and the semi-detached and scattered site and buildings are in relative terms, minimal.



Table 6: LMCH Core Assets Replacement Value & Condition Summary Information

LMCH Asset Summary Information										
						Number of Properties within an FCI Condition Range				
Asset Type	Asset Description	# of Units	Unit Descriptor	2020 Replacement Value	Very Good: FCI < 5%	Good: FCI: <20%	Fair: FCI < 40%	Poor: FCI <60%	Very Poor: FCI > 60%	Not assessed
Real Property	Multi-Residential Buildings	21	Count	\$ 489,377,864	0	1	15	2	0	3
	Multi-Residential Sites	21	Count	\$ 5,555,314	1	0	1	5	10	3
	Townhouse Buildings	7	Count	\$ 209,836,627	0	0	3	4	0	0
	Townhouse Site Work	7	Count	\$ 12,268,172	0	0	3	0	4	0
	Detached/Semi Detached Buildings & Site	4	Count	\$ 8,921,269	0	0	0	0	0	4
	Land	97	Acres	\$7,787,329	0	0	0	0	0	97
	Total Real Property			\$ 733,746,575	1	1	22	11	14	107

2.3 Core Assets Detailed Requirement Analysis: Overview

In addition to understanding the state of the portfolio, it is important to identify and plan for capital costs on a longer-term basis. Unless stated otherwise, all data referenced in this report is representative of the period of 2020-2029. While BCAs were completed on the majority of properties within LMCH's portfolio, a small portion of the portfolio did not receive BCAs and are not included in the VFA requirements. All costing provided by VFA is based on RS Means (Class D costing).

Building and site components are constantly depreciating due to their normal life cycle, higher than normal use, or other external or environmental factors. Accordingly, FCI scores and requirement results are not static, but are in constant flux as buildings depreciate and requirements are remediated.

With a wide variety of building requirements, there are differences in the priority of investment that may exist between one requirement and another (e.g. interior door vs. fire safety system). For this reason, LMCH considers not only the FCI score, but also what building components contribute to that score, their impact to the asset's ability to deliver service, provide for a safe environment, and safeguard against legal and reputational issues.

To better understand the priority for capital investment that a requirement carries, each property's 10-year funding requirements (2020-2029) were extracted and identified as high, medium, low, and limited priority⁵.

After removing committed or recently completed capital projects and using a data extraction period of 2020 (including deferment) to 2029, LMCH's assessed portfolio has a total requirement cost of \$452.34 million. On a priority basis, requirement costs are mostly within the limited priority category (\$338.26 million). High priority requirements are still quite significant (\$59.94 million), and while medium and low priority requirements are relatively minimal, on a cost basis they are substantial (\$26.488 and \$27.65 million respectively). Table 8 below summarizes the requirement cost breakdown.

⁵ A more detailed overview of priority groupings is provided in Section 4.



Table 8: 2020-2029 Requirements Priority Distribution

2020-2029 Requirements Summary Statistics



Total High Priority All Years	\$59,941,000
Total Medium Priority All Years	\$26,488,000
Total Low Priority All Years	\$27,652,000
Total Limited Priority All Years	\$338,261,000
Grand Total	\$452,342,000

VFA funding requirements for LMCH properties excluding some in the county and all scattered properties. All cost estimates quoted in Canadian dollars with no adjustments made for inflation.

Limited priority requirements are in acceptable condition as long as they are functional. They are relatively easy to replace (or in some cases repair), require limited coordination to do so, and have isolated, short term, and often negligible, impact on tenants. LMCH's limited priority requirements total \$338.26 million.

2.4 Historic Capital Funding

Between devolution in 2001 and 2019 fiscal year end LMCH received \$2.2 million annually in regular capital funding. Despite increased capital costs (due to a large and aging portfolio and expiring building components) no adjustments were made to the regular capital budget. LMCH was not alone as an LHC in its struggle to meet its portfolio's growing capital demands. However, unlike many LHCs, LMCH's capital funding throughout this period was significantly lower than the average LHC.

In 2013, the Housing Services Corporation (HSC) surveyed eleven LHCs in Ontario. The objective of the survey was to collect and document information about LHCs and assess the structures that evolved from the former Ontario Housing Corporation's assets. Specifically, the survey sought to "better understand the issues and challenges affecting the development, maintenance, administration and delivery of (community) housing in



Ontario.” The survey results revealed that asset management was a critical concern for all LHCs (Oliveira, 2013, p. 39). In many cases the aging stock is time-consuming and costly to repair, units are poorly maintained, turnover frequently, and the housing stock largely did not meet community needs (Oliveira, 2013, p. 33).

The results also indicated that, based on the 2012 annual capital budget for the 11 LHCs, the annual per unit budget ranged from \$583 to \$2,176. Generally, the results indicated a moderately positive correlation between the size of the LHC and the per unit capital budget, meaning that as the portfolio size increased, the per unit budget increased too. However, of all the LHCs surveyed, LMCH had the lowest annual per unit capital budget, at \$583 per unit, despite its medium portfolio size⁶. In fact, LMCH's capital budget was only half of the average LHC capital budget, at \$1,113 per unit, and in several cases, it was significantly less than LHCs with smaller portfolios. For example, Haldimand Norfolk Housing Corporation, which has a small portfolio, without complex high-rise buildings, 2012's annual per unit capital budget was \$1,207 (Oliveira, 2013, p. 36). These figures demonstrate how LMCH has been historically underfunded and how this has contributed to the declining state of its portfolio.

Recently, there has been a greater municipal recognition of the need for enhanced capital funding. In response, through the 2020-2023 Multi-Year Budget (MYB) LMCH's regular capital funding was increased from historical \$2.2 million to \$4 million in 2020, \$5.25 million in 2021, \$6.75 million in 2022 and \$8.25 million in 2023. At a minimum LMCH anticipates that capital funding beyond 2023 will be maintained at \$8.35 million annually. In addition, capital funding for \$36.97 million towards co-investment with Canada Mortgage Housing Corporation (CMHC) was also approved. This monumental funding increase has been an incredible success for LMCH and the community at large and it will assist LMCH in addressing some of its capital needs.

2.5 Other LMCH Assets

While LMCH's assets are predominately composed of real property assets (referred to as the core assets), LMCH also holds other Tangible Capital Assets (TCA).

Following Public Sector Accounting Board (PSAB), TCA's are non-financial assets having a physical substance⁷. Beginning in 2008, all public sector entities were required to practice TCA accounting. This resulted in the development of TCA inventories as defined by PSAB.

⁶ At the time of the survey, LMCH owned 3,772 units and directly managed 3,282 of those units (Oliveira, 2013, p.15) Today, LMCH owns and directly manages 3,282 units, six of which are out of stock. Therefore, LMCH's capital budget on a per in stock basis is \$671.55.

⁷ For additional details on the definition of tangible capital assets please consult PS 1000.43, PS 3150.05.



In addition to building and improvements, site improvements, and land, discussed earlier, TCA includes technology/communications, furniture and fixtures, machinery and equipment, and appliances. As per PSAB rules, historical cost is recorded for all TCA that meet capitalization thresholds. LMCH defined these thresholds as follows:

Table 9: TCA Capitalization Thresholds

Asset Category	Capitalization Threshold
Technology/ Communications	\$5,000 (pooled)
Furniture & Fixtures	\$5,000 (pooled)
Machinery & Equipment	\$5,000 (pooled)
Appliances ⁸	\$5,000 (pooled)

Assets are considered TCA when their per unit cost is at least \$1,000. This amount can also be combined with other units in the same category (i.e. multiple fixtures) to realize a pooled value of \$5,000. Except land, building and improvements, and site improvements, replacement costs are the TCA historical costs adjusted by the Canadian Price Inflation (CPI) Index annual average rate. Replacement costs are as of January 2020.

Technology/communication TCA are mostly comprised of IT resources like laptops and cellphones that are central to the daily operations of LMCH. Furniture and Fixtures includes LMCH head office furniture as well as furniture located in the lounges of LMCH buildings. Machinery and Equipment TCA includes items that are used within a building such as a waste control system for example. Appliances are primarily composed of fridges and stoves in many of LMCH's buildings. Each TCA category has a defined useful life, these are:

Table 10: TCA Defined Useful Lives

Asset Category	TCA Defined Useful Life (years)
Technology/ Communications	3
Furniture & Fixtures	25
Machinery & Equipment	10
Appliances ⁹	10

⁸ All appliance purchases are capitalized regardless of value.

⁹ All appliance purchases are capitalized regardless of value.



Useful life periods are primarily for accounting purposes, but may also serve as an indicator of an assets condition. While this is a crude measure of condition it is still a fair and reasonable way to assess condition and does not demand costly resources required for more in-depth review that in many cases cannot be justified by the cost of the asset. A positive condition figure indicates that the assets age is less than its useful life as defined above. When the condition is negative, it indicates that the asset is in use beyond its useful life. The condition descriptor and its relationship to remaining useful life ranges is as follows:

Table 11: Useful Life Condition Rating Breakdown

Condition Descriptor	Remaining Useful Life Range
Very Good (1)	60-100 %
Good (2)	40-59 %
Fair (3)	20-39 %
Poor (4)	0-19 %
Very Poor (5)	Less than 0 %

Table 12 below outlines the total estimated 2020 replacement value by asset category and for all TCA assets. This table also provides the weighted average age and percentage distribution of the total replacement value by condition for each asset category. For example, technology/ communications has a weighted average age of 4.69 years, the 2020 total replacement value is \$1,302,000; 32% of this total replacement value is in very good condition, 16% is in fair condition, 4% is in poor condition, and 48% is in very poor condition.



Table 12: TCA Replacement Value & Condition Summary

Asset Category	Weighted Average Age of Asset Category (years)	Total 2020 Replacement Value	Distribution (%) of Replacement Value By Condition				
			1	2	3	4	5
Technology/Communications	4.69	\$1,302,000	32	0	16	4	48
Furniture & Fixtures	5.79	\$249,000	44	0	53	0	3
Machinery & Equipment	9.83	\$3,995,000	40	59	1	0	0
Appliances	10.38	\$2,437,000	19	6	6	2	67
Corporate Vehicles	8	\$54,000	0	0	0	100	0
Total		\$8,037,000	32	31	6	2	28¹

¹⁰ Please note: Due to rounding, total may not add up to 100.



Section 3.0 Level(s) of Service



Level(s) of service (LOS) are statements that describe the outputs and objectives that LMCH intends to deliver to a range of stakeholders. LOS are informed by corporate values, customer expectations, regulatory and legislated requirements, internal guidelines, and policies and procedures. In many cases, LOS are implied based on past service delivery, community expectations, and infrastructure system design. Effective asset management requires formalized LOS supported through a framework of performance measures, targets, and timeframes to achieve the targets, and that the costs to deliver the documented LOS are clear.

3.1 LOS and Asset Management

LOS are designed to measure the most important goals of an organization and define needs, establish priorities and identify investment requirements. The objectives of LOS include:

- Managing risk
- Minimizing whole life costs
- Aligning with business and corporate strategy
- Optimizing asset management
- Maximizing funding

Defined LOS assist LMCH to achieve these objectives and improve the organization’s ability to gauge and understand the risks and limitations that may be encountered in pursuit of the desired LOS. Such risks and limitations may include legislation, government agendas and the availability of tenant support.

Given the impact of external factors (i.e. legislation and political decisions), LMCH’s LOS must be adaptable to modifications in its operating environment, such as changes to:

- Regulatory requirements
- Funding levels
- Customer Demands
- Operational costs
- Physical deterioration



There are three types of LOS: Corporate, Customer, and Asset; their definitions are as follows:

Corporate	Performance expectations based on LMCH's corporate values and mission.
Community	Describes the attributes (e.g. reliable) of the services the community expects from LMCH.
Asset	What the asset must do (i.e. performance metrics) to provide acceptable services and control risk to community LOS.

Figure 5: LOS Types & Definition

Corporate, community, and asset LOS are closely connected to one another. For example, LMCH's mission of providing and maintaining homes in a safe and supportive environment informs LMCH's corporate LOS. This Corporate LOS in turn informs the Community LOS to provide homes that are safe and secure for tenants. Based on the expectation of feeling safe and secure, the Asset LOS required to meet the Corporate and Community LOS is determined.

3.2 LOS Metrics

LMCH's corporate LOS is to improve, renew, and maintain the homes that it offers. This LOS is also one of LMCH's strategic goals and strongly connects to the City of London's strategic focus of strengthening our community. Branching off the Corporate LOS are three Community LOS, which describe the attributes of service that tenants experience. The three community LOS are:

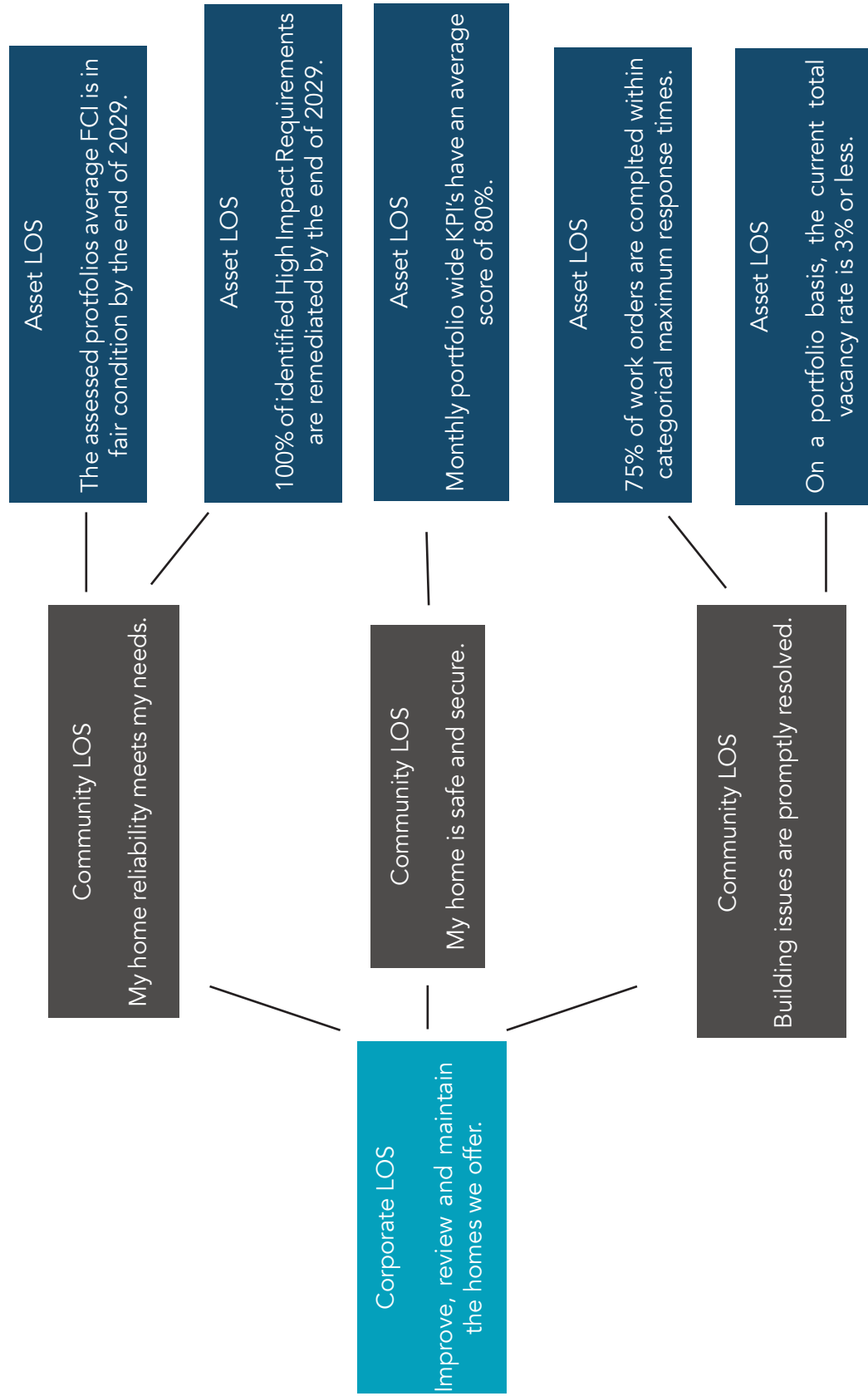
1. My home reliably meets my needs
2. My home is safe and secure
3. Building issues are promptly resolved



Community LOS describe attributes (e.g. reliable, safe and secure,) that stakeholders easily recognize and understand. Community LOS are met when the organization and the asset consistently perform to an expected level. Accordingly, Community LOS relate to five Asset LOS. Each of the Asset LOS are quantifiable measures that apply to the assets directly and asset related systems (e.g. work order management system). All of these LOS and an outline of how they relate to one another is provided below:



Figure 6: LMCH's LOS



3.3 LOS: Risk and Limitations

For each of the asset LOS identified earlier the data source and period and the risks and limitations of not achieving the outlined LOS are identified in the table below:

Table 13: FCI Score Outline

Asset LOS	Data Source & Period	Risks and Limitations
<ul style="list-style-type: none">The average assessed portfolio FCI score is within the fair range by 2029 (0.21-0.41).	<ul style="list-style-type: none">FCI scores are reported using VFA.For reporting purposes, the assessed portfolio's average FCI score is captured annually in the month of January.The assessed portfolio's FCI score in 2029 is the determinant of success.FCI Score categorization is as outlined in Section 2.2. of the AMP	<ul style="list-style-type: none">Insufficient funding levels render this LOS impossible to achieve.New Building Condition Assessments reveal that condition degradation has occurred at a faster rate than predicted and as a result FCI scores are worse than projected



Table 14: High Priority Requirements Remediation LOS Outline

Asset LOS	Data Source & Period	Risks and Limitations
<ul style="list-style-type: none"> 100% remediation of the identified high priority requirements within 10 years of the AMP. 	<ul style="list-style-type: none"> All requirements are derived from VFA and categorized into priority levels by LMCH. High priority requirements for the period of 2020-2029 have a total estimated cost of \$59.94 million. Remediation means that the requirement has been replaced and/or extensively repaired such that its useful life is reset. 	<ul style="list-style-type: none"> Significant levels of unplanned failures and breakdowns in other priority categories necessitate the funds allocated to high priority requirements are shifted to other priority categories. Insufficient levels of funding may make it impossible for LMCH to meet this LOS.¹¹

Table 15: KPI LOS Outline

Asset LOS	Data Source & Period	Risks and Limitations
<ul style="list-style-type: none"> Work Orders are completed within categorical maximum response times. 	<ul style="list-style-type: none"> Please refer to Appendix 4 to review in detail categorical maximum response times. For this LOS all reported work orders are completed by LMCH maintenance staff only. Work order statistics will be gathered, measured, and reported on an annual basis 	<ul style="list-style-type: none"> There are not enough staffing resources to complete work orders within the prescribed time period. The number of work orders created on an annual basis increases significantly. The work order management system has severe reporting challenges and the data collected is deemed unreliable. Comprehensive, and long-term solutions require more funding than is available; work orders become perpetual.

¹¹ High Priority requirements are as defined in the 2020-2029 AMP as of January 2020. This LOS commits to resolving 100% of establish high priority requirements by the end of 2029.



Table 16: Building KPI LOS

Asset LOS	Data Source & Period	Risks and Limitations
<ul style="list-style-type: none"> Monthly portfolio-wide building Key Performance Indices (KPI's) have an average portfolio score of 80% or higher. 	<ul style="list-style-type: none"> Once a month each building within the portfolio is inspected, reviewed for compliance with building condition and administration, and given a score out of 100 (see Appendix 3). Inspections are completed by LMCH staff. The portfolio average is the sum of each buildings KPI score divided by the number of properties in the portfolio. 	<ul style="list-style-type: none"> Severe and/or unexpected damage results in repeated failure and/or sustained service disruption of select components which negatively and significantly impact the KPI score for an extended period of time. Insufficient HR staffing resources available to complete monthly KPI inspection and reporting.

Table 17: Unit Turnover LOS

Asset LOS	Data Source & Period	Risks and Limitations
<ul style="list-style-type: none"> On a portfolio basis, the current total vacancy rate is 3% or less. 	<ul style="list-style-type: none"> Please refer to Appendix 5 to review vacancy rate definitions. Unit turnover data is created, stored, and retrieved from InSite, an administrative program used by LMCH. All reported unit turnovers are completed by LMCH maintenance staff only. Data analysis is completed twice annually. 	<ul style="list-style-type: none"> There are not enough LMCH staffing resources and/or units turnover too quickly to complete unit turnover within the prescribed time period. Comprehensive, and long-term solutions (i.e. tenant support) require more funding, permissions, or policy changes than are available and unit turnover becomes perpetual.



3.4 Desired LOS

Desired LOS describe the ideal performance level of each Asset LOS. In some cases, the desired LOS may be very specific and prescriptive while in others it is more general. An example of a very specific desired LOS is an exact KPI score (e.g. portfolio average of 82.5%); a more general desired LOS is to improve the average KPI score each year.

Both approaches have value when appropriately applied, but when inappropriately applied can actually be detrimental. For example, being excessively specific about a KPI score may result in premature stagnation once the desired LOS is achieved. Conversely, not being specific enough can make it difficult to measure and report on performance.

In consideration of the advantages and disadvantages of specificity and generalization, the following desired LOS performance targets were determined:

Table 18: LOS Current & Desired Performance

Asset LOS	Current LOS Performance	Desired LOS Performance Target
<ul style="list-style-type: none"> The average assessed portfolio FCI score is within the fair range by 2029 (0.21-0.41). 	<ul style="list-style-type: none"> January 2020 assessed portfolio weighted average FCI score: 0.41. 	↔
<ul style="list-style-type: none"> Remediate 100% of the identified high priority requirements within 10 years of the AMP. 	<ul style="list-style-type: none"> Information to be reported for Fiscal 2020 year-end. 	Not applicable at this point in time.
<ul style="list-style-type: none"> Monthly Portfolio wide building Key Performance Indices (KPI's) have an average portfolio score of 80% or higher. 	<ul style="list-style-type: none"> The 2018 average portfolio KPI score was 75%. 	↑
<ul style="list-style-type: none"> Work Orders (WO) are complete within categorical maximum response times. 	<ul style="list-style-type: none"> By category, 2/5 or 40% of WOs were completed within the categorical times. 	↑







Asset LOS	Current LOS Performance	Desired LOS Performance Target
<ul style="list-style-type: none"> Current Total Vacancy rate is 3% or less. 	<ul style="list-style-type: none"> As of February 2020 month end the current total vacancy rate was 4.2%. 	

Table 19: Legend

	Desired Performance level to increase from existing
	Desired Performance level to decrease from existing
	Desired Performance level is to maintain existing

These LOS were determined with a clear understanding that, after their implementation, the LOS will be evaluated, in some instances may be revised, removed, and/or new LOS created. These revisions may be for a variety of reasons, including:

- Evaluation of existing LOS indicates that the metric is no longer appropriate
- Changes to corporate goals and outcomes necessitate revisions to existing LOS
- Existing LOS can no longer be measured (e.g. impassable barriers to collection of information)
- There is significant risk posed by not measuring LOS
- There is significant opportunity posed by measuring LOS
- The LOS are no suitable at the current time but may not be fit for the future



Section 4.0: Lifecycle Management



A long-range strategy that supports the advancement of organizational goals and aligns with the mission and vision are important components of a comprehensive AMP. This section outlines the lifecycle activities of LMCH assets and provides strategies and tools to address current and forthcoming asset requirements to achieve the desired LOS. The need for portfolio growth and opportunities for mixed-income models is also discussed, highlighting other LHCs that have successfully implemented and operationalized mixed-income models.

4.1 Lifecycle Management Activities

Lifecycle management is the process of optimizing value in assets throughout their lifecycle using a series of planned actions that enable the asset to deliver the LOS while managing risk and doing so at the lowest cost. There are several different types of lifecycle activities; these are:

Table 20: Lifecycle Activity Definitions

Lifecycle Activity	Definition
Non-Infrastructure	Actions or policies that can lower costs and/or extend asset life.
Maintenance	Regularly scheduled inspections and maintenance, or more significant repair activities associated with unexpected events.
Rehabilitation	Significant treatments designed to extend the life of the asset.
Replacement	Activities that are expected to occur once an asset has reached the end of its useful life.
Disposal	Activities associated with disposing of an asset once it has reached the end of its useful life, or when it is no longer needed.



Lifecycle Activity	Definition
Service Improvement	Planned activities required to improve an asset's capacity, quality, and/or system reliability.
Growth	Planned activities required to extend services to previously unserved areas or expand services to meet growth demands.

Lifecycle management must consider the specific needs of each asset within the portfolio in conjunction with the mission of the organization, the resources available, and current and future risks and opportunities. The follow tables and sections outline each of the seven-lifecycle activities and their application to LMCH, noting strategies to obtain the desired outcome and tools to deploy the strategies.



Table 21: Non-Infrastructure Lifecycle Activities Strategies and Tools

LMCH Example	Strategies	Tools (to deploy strategies)
<ul style="list-style-type: none"> More appropriate tenant placement, and improved support services to reduce behavioral issues and consequently willful property neglect and damage. Development and adherence to an AMP so that assets are most effectively managed and capital work is prudently selected. 	<p>Mixed Income Model: Implementation of a mixed income model or demographic re-alignment by for example, mixing adults and seniors in the same building.</p> <p>Repositioning: Stabilize the tenant base through significant social intervention, supports, programming and partnerships and, in due time, positioning the asset to adopt a mixed income model.</p>	<p>Developing Community Profiles: Consider discontinuing the placement of tenants by site (e.g. adult-only sites and seniors-only sites) and instead integrating more diverse tenant profiles into sites to develop communities by reducing demographic silos (e.g. adding seniors to family sites).</p> <p>Tenant Placement & Support: Place more appropriate and increased levels of support alongside tenants with complex needs, and combine with appropriate program management. Collaborate with community partners to advance housing and whole-life stability.</p> <p>Intensifying Community Use: Increase the availability and use of onsite community space for community programs. By providing tenants with resources to improve their wellbeing, it is predicted that willful property damage and neglect will be reduced, which will decrease property costs and extend asset life.</p>



4.1.1 Mixed Income Models

Mixed income housing occurs where there is a variety of housing unit types (e.g. apartment, townhomes etc.) and/or a tenant base with a diversity of income levels. Mixed income housing provides a mechanism to reduce poverty concentration and combat residential segregation while improving financial and social sustainability. The following sections discusses how other LHC's have implemented mixed income models, and highlights the significant need for various levels of affordable housing.

4.1.2 Examples of Effective LHC Mixed-Income Models

There are several examples of highly successful mixed income buildings managed by LHCs that can serve as a reference to guide LMCH's approach to mixed income communities.

Peterborough Housing Corporation (PHC), which is the largest provider of RGI housing in the City of Peterborough and the surrounding county created a development subsidiary, *Finally a Home*, and completed their first development in 2006. To date, *Finally a Home* has been the most active developer of affordable housing in the Peterborough region. Their developments are diverse and even consist of a two-phase supportive seniors building containing 81 units across six stories. The building design includes two main floor lounges, full and private dining rooms, a commercial kitchen, and an area for care workers and scooter storage. The site will also house a daycare and a community hub for a care agency. There will be 50 supportive one and two-bedroom units with 24/7 care and three meals a day at a significantly subsidized cost. The remaining 31 units will be affordable and high-end market with services purchased. The profit for purpose driven development uses the increased cash flow from the affordable and high-end market units to offset costs for the supportive units, while providing high quality, comprehensive care and service standards for *all* residents (Peterborough Housing Corporation, 2019).

Other LHCs with mixed income communities have observed several community benefits, such as:

- More engaged communities (anecdotally, the affordable tenants become activity and association leaders within the buildings or communities).
- Enhanced pride of ownership for tenants.



- De-stigmatization can occur because once portions of tenants have chosen the building there is a sense that it is no longer a community housing project, but a reasonably priced community. Public perception can shift dramatically as a result.
- The self-esteem of existing tenants can improve as a result of the negative address perception being reduced (Housing, 2018).

In the LMCH context, employing a mixed-income strategy requires the support of the Shareholder, as the current operating framework does not permit anything other than 100% RGI tenancies.

Mixed-income models provide an affordable option for various income levels, create opportunities for movement within the housing continuum (Figure 7), and deliver an important increment in the housing continuum.



Figure 7: Housing Continuum

Providing a housing model, like mixed income, that supports tenants at a critical time in their journey through the continuum is a cornerstone of LMCH's vision to:

"Envision healthy homes and communities in London and Middlesex. Leading by example, LMHC will help make a difference and positively impact lives using housing as the foundation."

4.1.3 The Importance of LMCH's Portfolio Growth

The large and growing community housing waitlist is a clear demonstration of the significant need for more affordable housing in the City of London and County of



Middlesex. Since 2016, the local housing waitlist has increased by 70%. As of March 2019, there were approximately 4,800 people eligible and waiting for available community housing in London-Middlesex. The length of time it takes for a unit to become available depends on a range of factors, such as application date, applications status, amount of building selections, refusals, and acceptance from the housing provider. For individuals with an SPP or Urgent status, the average wait time is approximately 1-3 years and, for individuals with a non-urgent status, the average wait time is approximately 4-7 years (D. Calderwood-Smith, personal communications, May 2 2019). The demand for affordable housing is so great that, even for urgent cases, there is a shift from measuring wait times by days and months to measuring it by years.

The clear pressure on the housing stock dictates that net growth in unit count, in tandem with rehabilitation of the existing portfolio, are pressing priorities for LMCH and the broader housing community. LMCH's portfolio growth can also enable more financial sustainability, greater tenant support, improved tenant placement, and more opportunities for movement across the housing continuum.

In accordance with the growing demands for housing, and as part of its strategic development, LMCH set a goal to increase the number of homes it provides over the next 10 years. LMCH set the following goals related to the growth and rehabilitation of its portfolio:

1. To transform pathways into LMCH through informed policy and processes that create conditions to support the right person in the right place and improves housing stability.
2. To care for and engage stakeholders by working together to manage any impacts of capital projects and striving to create positive outcomes for all.
3. To create healthy homes and communities by integrating physical design, tenant diversity, and affordability into vibrant neighbourhoods to eliminate stigma.

As the cost of housing increases, the number of residents paying an unaffordable sum – defined as more than 30% of gross income – for housing costs has increased. This growth in unaffordable shelter costs results in significant cost burdens on citizens and highlights the importance of LMCH's portfolio growth. This need for affordable housing is clearly displayed by the relationship between rental costs and income levels.

For example, in 2018 the average monthly market rent for a 3-bedroom apartment in London was \$1,240. Relative to other urban markets this is an affordable rate, but with



Ontario's minimum wage of \$14/hour and London's level of unemployment, market rent is not affordable for a large segment of the population. Table 22 below outlines the unaffordability of housing for single earners or lone-parent households who represent a large segment of London's population.

Table 22: Market Rent vs. Minimum Wage Income

Average 2018 Market Monthly Rent, 3 Bed Unit, London	"Affordable" ¹² Monthly rent, 3 Bed Unit, London	Required Gross household Income for "Affordable", 3 Bed unit, London	Gross Income, Single Person, 35 hr/week, 52 wk/yr, Minimum Wage
\$1,240 (plus utilities)	95% AMR \$1,178	\$47,120 (95% AMR)	\$25,480
	70% AMR \$868	\$34,000 (70% AMR)	

These figures illustrate that even where an individual is able to work full-time their earnings are often insufficient to cover the cost of housing, both at market and "affordable" rates. The affordability challenge is especially severe in cases where an individual is unable to work.

Other personal challenges, like mental health and substance abuse, negatively affect one's ability to find, secure, and afford stable housing. Substance abuse is a widespread issue in Canada and opioids are a public health emergency. Opioids particularly affect London, a mid-sized city, which had the third and fifth highest rates of opioid overdoses in Canada in 2017 and in 2018 respectively (Canadian Institute for Health Information, 2018, p. 22). Marginalized populations on low-income also tend to suffer from homelessness and/or housing instability, (and often receive SPP status). Disproportionately, such populations experience the challenges associated with low-income: high and increasing costs for shelter, low employment rates and personal challenges. Accordingly, the Canadian Centre on Substance Abuse identifies housing as a key socioeconomic determinant of health (Canadian Centre on Substance Abuse, 2014, p. 6).

In addition to these factors, inward migration to the Southwestern, Ontario has been almost explosive in nature. Net International migration to the region fluctuated between 5, 000 and 10,000 persons annually for the period of 2001 to 2009 and then increased to 15,200 persons by 2016. Figure 8, below outlines this migration trend (Berlin, 2019).

¹² Developers are able to improve housing outcomes (e.g. higher permitted build density) by providing public benefits like affordable housing (known as "bonusing"). By leveraging bonusing, the developers can drastically increase density by committing to as little as 3% affordable content. Affordability in the context of bonused buildings can be as high as 95% of average market rent (C. Saunders, 2018, p.2)



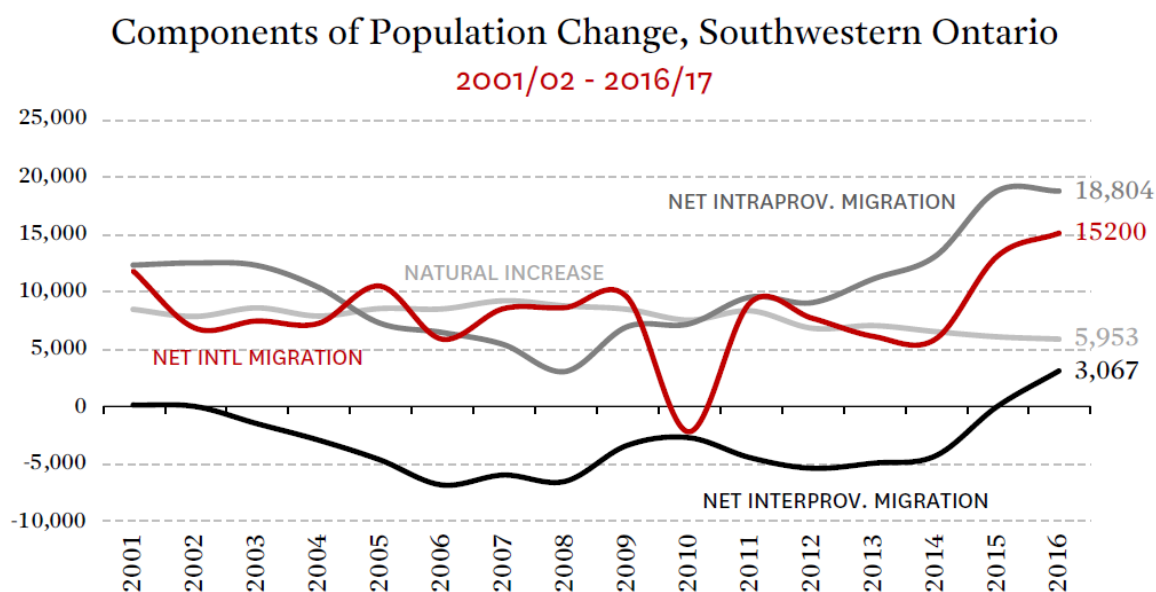


Figure 8: Population Growth, Southwestern Ontario

The reality of high market rents relative to entry-level employment income, migration trends and other social factors (i.e. mental health and drug use) are further increasing the public demand for community housing. LMCH is bearing a significant burden of the housing pressure because it manages 41% of the City's community housing units. This does not account for the fact that, unlike LMCH (at present), the majority of other community housing providers have mandated targets to house *both* market and RGI tenants, thus creating mixed-income communities.

4.2 Lifecycle Management Activities: Continued

In addition to growth, several other lifecycle activities are crucial to LMCH's operation. Strategies and tools to deploy these strategies are outlined in the following tables:



Table 23: Maintenance Strategies & Tools

LMCH Example	Strategies	Tools to deploy Strategies
<ul style="list-style-type: none"> Annual unit inspections to proactively identify and repair maintenance issues. Building KPI inspection program to identify issues. Completion of work orders. Responding to unexpected asset component failure. 	Long Term Stewardship: Complete regularly scheduled maintenance activities, respond to unexpected events and failures as required.	KPI Trend Analysis: Review results of KPI inspections and annual unit inspections to identify, assess, and respond to trends. Preventative Maintenance: As much as possible make regular investments in key building components to extend their life, and improve their performance, and reliability.

Table 24: Rehabilitation Strategies & Tools

LMCH Example	Strategies	Tools to deploy Strategies
<ul style="list-style-type: none"> Epoxy pipe lining to seal leaks, prevent further corrosion and leaching and protect against water damage. Building envelope scheme. 	Asset Life Extension: Extend the life of assets as much as possible through significant treatments. Continue these treatments only as long as they are cost effective (i.e. cost of rehabilitation is not in excess of cost of replacement). Preventative based Rehabilitation: Identify measures to reduce the rate and potential for asset deterioration and implement where cost effective. May include strategies like bathroom fans connected to light switches to reduce and prevent moisture issues.	Major Components Condition Review: Review major building component on a regular basis to ensure that rehabilitation can be deployed rather than the asset deteriorating to the point that rehabilitation is no longer an option. Project Management: Provide appropriate levels of project management to all capital projects to ensure that capital work adheres to contractual specification with all deficiencies corrected before project close out.



Table 25: Replacement Strategies & Tools

LMCH Example	Strategies	Tools to deploy Strategies
<ul style="list-style-type: none"> Replacement of major building components e.g. roofing, windows, make-up air units. 	Capital Investment Program: Where existing requirements have no remaining useful life, and/or are a high priority requirement with a high-risk score, the requirement is replaced.	<p>Risk Management: Review building requirements, identify their priority grouping and evaluate the risk they hold. Use this information to select capital projects within a constrained fiscal environment.</p> <p>Project Specification & Design: Complete thorough analysis of construction and operating costs and benefit to ensure prudent selection of project design and specifications.</p> <p>Condition Review: Review major building components before replacement to ensure that replacement is necessary and appropriate.</p>

Table 26: Disposal Strategies & Tools

LMCH Example	Strategies	Tools to deploy Strategies
<ul style="list-style-type: none"> LMCH is currently not permitted to sell its core assets. 	Asset Disposal and Investment: Where it makes more economic sense to dispose of assets, sell and use the proceeds for more suitable development. This is subject to Service Manager permission.	<p>Research & Due Diligence: Complete thorough analysis of carrying costs, housing benefit, cost of alternative housing, and cost of disposal prior to any final disposal decision.</p> <p>Salvage Value Maximization: Where cost effective and executable, salvage all remaining value from assets prior to their disposal.</p>



Table 27: Service Improvement Strategies & Tools

LMCH Example	Strategies	Tools to deploy Strategies
<ul style="list-style-type: none"> • Advance information technology services on housing sites to improve service quality and communication effectiveness. • Replace existing requirements with higher quality replacements. 	<p>Use of Technology: Implement new technology resources that improve service delivery, reduce cost of service, and/or improve quality (e.g. improved communication technology between head office and site shops for more streamlined communication and administration).</p> <p>High Need, High Benefit: Invest where the needs are highest, the benefits are the greatest, and the costs are most reasonable.</p>	<p>Cross Departmental Initiatives: Engaging the Information Technology department in discussions related to strategies for improving assets using information technology tools. This provides the asset management department with another vantage point and knowledge source to encourage innovation and service improvement.</p> <p>Staff Awareness, Training, and Collaboration: Encourage asset management staff to attend conferences, collaborate with other LHC's, and engage industry partners to learn about new and innovative building technologies, building management practices and strategies.</p> <p>Investigation: Evaluate all potential service improvements and prioritize based on alignment with corporate goals, prevalence of needs, benefits, costs, and operational impacts.</p>



Table 28: Growth Strategies & Tools

LMCH Example	Strategies	Tools to deploy Strategies
<ul style="list-style-type: none"> New unit construction to service increased demand for housing. 	<p>Acquisition of New Sites or Conversion Opportunities: Acquire already developed multi-residential properties and/or acquire already developed non-residential properties with a plan to convert to residential.</p> <p>Surplus Land Utilization: Use surplus land available on existing LMCH sites to facilitate incremental development and densification.</p>	<p>Shareholder Engagement: Continue developing a strong working relationship with the shareholder that supports and encourages pursuit and attainment of growth opportunities.</p> <p>Partnerships & Programs: Engage with partners, like CMHC, for funding opportunities, expertise, and partnerships with the objective of unit growth.</p>

4.2 Lifecycle Practices & Associated Risks

These following planned activities enable the asset to provide the desired LOS (discussed in section 5) in a sustainable way, while managing risk, at the lowest life cycle cost. The operational and/or capital budgets finance these activities, which for LMCH are as follows:

1. Non-Infrastructure Solutions
2. Maintenance Activities
3. Rehabilitation
4. Replacement
5. Disposal Activities
6. Growth
7. Service Improvement



Table 29: Lifecycle Activities, Actions & Risks

Activites	Practices or Planned Actions	Risks Associated with Planned Actions or Practices
Non-infrastructure solutions	<ul style="list-style-type: none"> • Development of LMCH's AMP. • Development and Implementation of LOS. • Permission from the shareholder to address and respond to issues differently (e.g. hold reserves, debt-finance, implement mixed income models, and revise 9/10 rule). • Increased and improved social supports to improve tenant outcomes and reduce willful damage and neglect. 	<ul style="list-style-type: none"> • Lack of realization of benefits from the activity: i.e. AMP is not adhered to, social supports do not result in the intended effect. • The shareholder does not provide requested changes; foundational issues are not fully addressed.
Maintenance Activities	<ul style="list-style-type: none"> • Continue the Building KPI regular inspection program for key asstes. • Continue annual unit inspection program to proactively identify and address maintenance and repair needs. 	<ul style="list-style-type: none"> • Inconsistent building KPI reporting due to potential for bias, improper result tracking, and/or ineffective utilization of information. • Insufficient capacity to fully execute planned maintenance activities (e.g. unit inspection) in conjunction with reactive maintenance activities (e.g. work orders).



Activites	Practices or Planned Actions	Risks Associated with Planned Actions or Practices
Rehabilitation	<ul style="list-style-type: none"> Updates that extend the life of existing assets. Updates may include roof patching, epoxy pipe lining to reduce pinhole leaks, significant repair and rehabilitation to various elevator components to extend elevator life. 	<ul style="list-style-type: none"> Project is premised on incorrect assumptions, design specifications, and/or construction and anticipated benefits (i.e. extended useful life) do not fully materialize. Cost of rehabilitation is marginally less than or equal to the cost of replacement; total overall costs of rehabilitation is in fact higher than replacement.
Replacement	<ul style="list-style-type: none"> Replacement of major building components that have served their useful life and/or are at significant risk of failure or have already failed. 	<ul style="list-style-type: none"> Design is of poor quality, equipment is not appropriately specified, project is poorly administered and/or there are significant scope changes.
Disposal Activities	<ul style="list-style-type: none"> Sell assets that are difficult, time-consuming, and costly to maintain and invest sale proceeds into new development and acquisitions. 	<ul style="list-style-type: none"> Assets sold are more operationally efficient and better suited than assets acquired.



Activites	Practices or Planned Actions	Risks Associated with Planned Actions or Practices
Growth	<ul style="list-style-type: none"> • Increase in the number of housing units LMCH has to offer. • Improve land utilization of existing properties to facilitate growth. • Modify and/or improve existing asset's design for more optimal space utilization. 	<ul style="list-style-type: none"> • Unit type and size are incorrectly estimated; demand is not effectively met and asset loses operational efficiencies (e.g. higher vacancies). • Costs are in excess of budget and projects take longer than projected.
Service Improvement Activities	<ul style="list-style-type: none"> • Advance information technology resources to gain operational efficiencies. • Building components that improve operational efficiency of building and/or aesthetic appearance. • Higher quality building components where investment is justified by needs and benefits. 	<ul style="list-style-type: none"> • Inconsistent building KPI reporting due to potential for bias, improper result tracking, and/or ineffective utilization of information. • Insufficient capacity to fully execute planned maintenance activities (e.g. unit inspection) in conjunction with reactive maintenance activities (e.g. work orders).



4.3 Asset Lifecycle Management Strategy: Current Budget

The relationship between the current funding levels and projected condition of the portfolio is an important tool for informing and justifying budgets. This understanding also provides a clear view of the implications of budget decisions, including the ability to meet the identified LOS metrics. LMCH identified LOS in section 4 of the report. As identified below in Figure 9, two of these LOS are particularly impacted by funding.

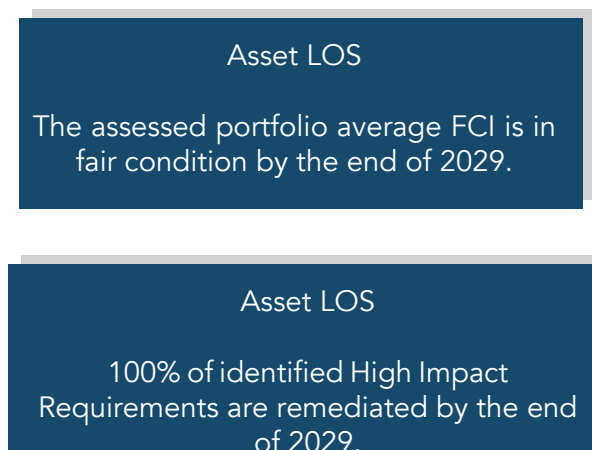


Figure 9: Asset LOS

To understand the current and forecasted relationship between funding, the assessed portfolio's average FCI score, and high priority requirements, LMCH modelled the assessed portfolio's average FCI score over a 10 year period based on the capital funding provided as a result of the approval of the 2020-2023 Business Case (#12 Infrastructure Gap). Even with the significant increase in capital funding, the analysis revealed that the assessed portfolios average FCI score will continue to decline and that the LOS metric to maintain the FCI score within the fair range (0.21-0.41) will not be met.

By 2021, the assessed portfolio's average FCI score reaches 0.48, which is a critical tipping point in the middle of the poor range. By 2025, the assessed portfolio's average FCI score is 0.57 and very poor. These results are presented in Table 30 and Figure 10 below.



Table 30: Projected FCI Score with Approved Annual Capital Budget

Year	Funding (in 000's)	Portfolio FCI
2020	4,000	0.44
2021	5,250	0.48
2022	6,750	0.47
2023	8,350	0.53
2024	8,350	0.56
2025	8,350	0.57
2026	8,350	0.57
2027	8,350	0.56
2028	8,350	0.57
2029	8,350	0.56
TOTAL	\$74,450	

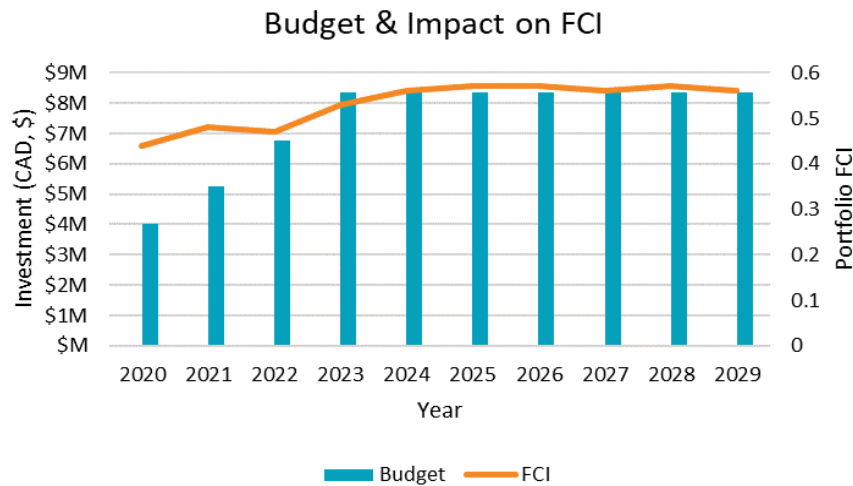


Figure 10: Assessed Portfolio's Projected Annual FCI Score

The second LOS is to remediate 100% of the high priority requirements within 10 years of the AMP. To achieve this LOS, an annual investment of approximately 10% (or \$5.94 million)



of the total high priority requirement costs (\$59,941,000) is required.

Historically, a total of \$2.2 million of regular capital funding was provided annually. This indicates that the historical total regular capital funding was about a third of the total required capital funding for high priority requirements alone. Fortunately, there have been recent changes to capital funding which will result in capital funding of \$4 million in 2020, \$5.25 million in 2021, \$7.25 million in 2022, and \$8.25 million in 2023. While this is a monumental increase, it is still substantially less than the necessary capital funding required to remediate the high priority requirements, and maintain the assessed portfolios average FCI score within the fair category by 2029.

4.4 Asset Lifecycle Management Strategy: Optimum Budget

As indicated in Table 31 and Figure 11 below, the capital budget required to prevent the decline of LMCH properties, beyond an average FCI score of 0.35 within ten years is \$22.72 million annually, or \$ 227.2 M over ten years.

Table 31: Required Capital Budget to Maintain FCI score in Fair Range by 2029

Year	Funding (in 000's)	Portfolio FCI
2020	\$22,720	0.418
2021	\$22,720	0.433
2022	\$22,720	0.405
2023	\$22,720	0.464
2024	\$22,720	0.455
2025	\$22,720	0.450
2026	\$22,720	0.425
2027	\$22,720	0.398
2028	\$22,720	0.386
2029	\$22,720	0.355
TOTAL	\$227,210	



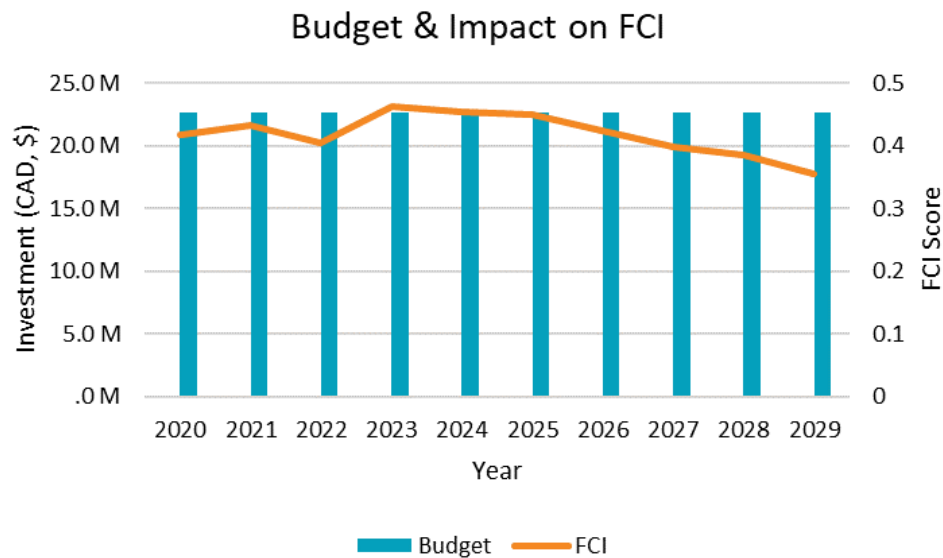


Figure 11: FCI Score Shift by Year with Requested Capital Funding

The second LOS is the full remediation of high priority requirements within the 10 years of the AMP. To achieve this LOS, a total of \$59.30 million would be required over a period of 10 years, representing on an average annual basis \$5.93 M. If the optimum budget (as outlined in table 19 above) were provided an average annual allocation of \$5.93 M for high priority requirements could be achieved, and over a 10 year period all assessed high priority requirements would be addressed.

¹³ Please Note that cost estimates have been extrapolated to represent LMCH's complete portfolio (3276 units) excluding those "out of stock".



Section 5.0: Requirement Priority & Risk Management



Earlier sections of the AMP outlined the current state of the assets, levels of service, and lifecycle management. To provide the reader with important context and background information this section of the AMP defines priority groupings and outlines how risk is calculated, and how it may influence capital project decisions.

5.1 Introduction

Inherent in the management of public funds and assets is the assumption of risk. In the context of asset management, risk is a function of the probability of failure multiplied by the consequence of failure. Risks that materialize have a wide range of consequences, including:

- **Health and safety:** Asset failure results in health and/or safety threat or impact to staff, tenants, and/or the public at large. Emergency response services (e.g. fire, ambulance) are required.
- **Regulations and Legal:** Asset failure or non-compliance resulting in penalties and/or additional expenditures (e.g. fines) related to the violation and/or resolution of the issue.
- **Reputation:** Actions that LMCH takes or fails to take impact various stakeholders (e.g. London residents, LMCH tenants, community stakeholders) and damage LMCH's reputation.
- **Social:** Failures that negatively affect the social wellbeing of tenants, their families, and the broader community.
- **Service Delivery:** Asset failure that results in disruption of service, or reduced levels of service.
- **Environmental:** Asset failure resulting in damage to the natural environment, including its species and habitats.
- **Financial:** asset failure resulting in class action lawsuits, significant and unexpected repair costs, operational inefficiencies, and/or loss in revenue.

Historically, LMCH has managed risk by identifying obvious risks and leveraging professional experience and external consultations to detect other noteworthy risks. As much as possible the organization has pro-actively managed risks—i.e. making obvious repairs, prioritizing investment to critical building components.

However, LMCH must systematically and rigorously manage its risks most effectively. This is a necessity for many reasons. Predominantly, these reasons are:



1. The old age and declining condition of the portfolio results in heightened asset risk that demands significant risk management efforts.
 2. Fiscal constraints necessitate optimized decisions, which relies on having a robust knowledge of risk.
 3. Health and safety are paramount; a comprehensive understanding and management of risk is central to the ability to safeguard public health and safety.
-

5.2 Priority Groupings

When making capital investment decisions within a constrained fiscal reality, investment prioritization is crucial. The basis of prioritization is generally a reflection of the organization's values, missions, goals, and funding realities.

Prioritization enables organizations to narrow their focus of investment in a consistent manner that works towards the realization of values, missions, and goals. LMCH's mission is to provide and maintain homes to meet the needs of tenants, with a vision for healthy homes and communities. There are seven (7) strategic goals and objectives that focus on maintaining and improving the housing stock while simultaneously improving organizational capacity, effectiveness, and sustainability.

To maintain and improve the existing housing stock to the greatest extent possible a few foundational relationships must be recognized:

1. Investment should be prioritized to building systems and components that affect critical service delivery to the largest volume of tenants. Generally, these are central building systems in high-rise buildings.
2. Investment should be made first to critical systems, such as life safety systems and HVAC systems.
3. Some building components will effectively function well beyond their anticipated useful life (e.g. interior doors) and in the event of failure result in limited consequences. As much as possible, these building components should be run to their failure.



4. Prioritizing investment enhances organizational effectiveness. For example, investing in central building systems that affect many tenants means there are less serious operational challenges because critical building systems do not fail as often and/or as catastrophically.
5. There must be a consideration for the demographics of the building and tenants' ability to utilize alternative, short-term solutions-i.e. ability to use stairs during elevator shutdown.

Recognizing these principles, LMCH's subject matter experts who hold both a strong working knowledge of the real property assets coupled with extensive industry experience reviewed 2020-2029 requirements and grouped them into the following four priority categories:

Table 32: Requirement Priority Categories

Priority	Description	Example
High Priority	Requirements are critical and central to the building's operation. They are often in large buildings and should be replaced within their useful life period rather than run to their failure.	Lone elevator in a high-rise, seniors building: This requirement meets the critical need for access throughout the building. It is within a multi-residential building that houses seniors who more frequently have mobility challenges. There may be no secondary elevator.
Medium Priority	Requirements are very important to the buildings' operation, but not critical. They are in multi-residential buildings and should be replaced when they have served their useful life, but no later.	A hot water heater in a high-rise building: Failure of a hot water heater negatively affects the buildings operation, but not in foundational ways, (i.e. tenants still have access to water).
Low Priority	The impacts of a requirements failure are generally isolated to a floor or a few units. The system provides services that are not critical to the building.	Storm sewer catch basin renewal: A limited number of tenants are impacted by the failure of this system. The system provides important



Priority	Description	Example
Low Priority	As much as possible, the requirement should be run to, or close to, their failure.	services, but they are not regularly used. Unless other external factors are causing the accelerated decline, the system should be run close to its failure.
Limited Priority	Requirements are specific to units and their failure does not affect other units. These are not central systems and generally should be replaced when they have failed.	Interior doors: Interior doors are specific to a single unit; their failure has no effect on other tenants or units. If they are functional and meet regulations, they should not be replaced.

Grouping requirements by priority levels allows meaningful categorizing of a significant amount of assorted requirement data. This assists in narrowing the focus as to where—to the extent possible—investment should be made. It still recognizes, that requirements within all priority groupings (including low and limited) will fail and require capital investment. Generally, low and limited requirements will be funded as they break; however, where there is chronic failure or unacceptable condition of specific requirements (e.g. flooring) a more focused and systematic replacement and accompanying capital investment may be required.

Having identified broad priority levels for requirements it is then valuable to drill down further and understand the level of risk that each requirement within a priority level carries.

5.3 Risk Criteria

The risk of asset failure is the probability that a component will fail multiplied by the consequences of its failure. To quantify risk, it is necessary to identify consequence and probability criteria and then to objectively quantify their associated scores.

Given this need, LMCH established criteria relating to the probability of failure and



consequence of failure. For each requirement in high and medium priority groupings, probability and consequence of failure criteria were evaluated and awarded a score between 0 and 25. Requirements within the low and limited priority grouping were not evaluated from a risk perspective.

High and medium priority requirements were evaluated for their probability of failure based on the following scale and criteria:

Table 33: Probability of Failure Score Ranges

Probability of Failure		
Probability Score Range	Frequency of Event Occurrence	Likelihood of re-occurrence
0-5	Event has not occurred	Very low
6-10	Event has occurred elsewhere or at LMCH in extreme isolation	Low
11-15	Failure can and may occur	Medium
16-20	Failure has occurred and may occur again	High

1. Probability of Failure Criteria: Risk Failure

This is the likelihood of a building component failing to function as designed. Some building components, like interior doors, may have exceeded their useful life, but despite that have a low risk of failing. Other building components, like a boiler, have a much higher risk of failure especially once their useful life has been exceeded.

High and medium priority requirements were also evaluated for their consequence of failure based on the following scale and using the below criterions:



Table 34: Consequence of Failure Score Ranges

Consequence of Failure		
Consequence Score Range	Consequence Description	Consequence Descriptor
0-5	Minimal service delivery affects, no or very minimal legal and/or regulatory issues, minimal reputational scrutiny or environmental impacts.	Minimal
6-10	Modest service delivery affects, greater propensity for legal and/or regulatory issues, some reputational and/or environmental harm.	Marginal
11-15	Direct service delivery impacts, presence of legal and/or regulatory issues, some reputational and/or environmental harm.	Serious
16-20	Direct and significant service delivery impacts, substantial legal issues and certain, serious regulatory violation, reputational and environmental harm.	Critical
20-25	Service delivery is entirely or substantially unavailable, legal issues are certain, serious regulatory violations, catastrophic reputational and/or environmental harm.	Catastrophic

2. Consequence of Failure Criteria: Criticality

Criticality is the degree to which the requirement is critical to the functionality of a building. For example, the heating and ventilation system is an incredibly important building component but a newly painted hallway, while esthetically pleasing, does not affect a building's function. Thus, a heating and ventilation system would score much higher in the criticality criterion than a painted hallway would.

3. Consequence of Failure Criteria: Severity

This considers the safety risks for building components should they fail, and the availability (or lack thereof) of backup components or alternative solutions. Fire alarms and sprinklers are building components that hold serious safety risks if they do not properly function and often they do not have a backup system. Therefore the severity of their impact, should they fail, is extremely high.



4. Consequence of Failure Criteria: Tenant Impact

Tenant impact considers how many tenants are impacted by a building component failure, and the duration and level of severity of that impact. Tenant impacts cannot be frivolous; a single tenant who is bothered by the particular off white used in the hallway does not constitute any tenant impact. However, failure of hallway lighting in a multi-residential building affects every tenant, potentially for an extensive period of time, and in significant ways (e.g. tenant's physical safety and security).

5.4 Risk Analysis

The risk of asset failure is the probability that a component will fail multiplied by the consequences of its failure. There can be significant variation in the probability of failure amongst requirements; it may be extremely high representing failure that happens often, extremely low or improbable, meaning the failure has not happened before and is unlikely to happen at all, or somewhere in-between.

Similarly, the consequence of failure may be diverse in nature (i.e. environmental, financial, social) and variable in severity. For example, the consequence of the failure of an interior door has a limited impact on the safety of tenants (social), and the delivery of critical services (e.g. mechanical and electrical) of the building (service delivery). Conversely, the failure of a central heating system, for example, affects potentially hundreds of tenants in significant ways (social), may have significant unplanned financial implications (financial), and of course compromises the function of the building (service delivery). Given the range of probability and consequences of asset failure, it becomes clear that it is not only important to understand the portfolio's requirements as a whole, but also to quantify risk.



Risk Quantification:

To quantify risk the probability of failure score is multiplied by the sum of the consequence of failure criteria scores. Here is one example:

Table 35: Risk Score Calculation Example

Requirement Risk Score Calculation Example	
Probability of Failure Score	15
Consequence of failure: Critically	25
Consequence of failure: Severity	25
Consequence of failure: Tenant Impact	25
Consequence of Failure Score Sum ¹⁴	75
Risk=Probability X Consequence	15 X 75
Risk Score	1,125

Computing each requirement's risk score provides an evaluation that is systematic, objective, and consistent. This is crucially important where capital funding is limited and capital needs are substantial.

Within each priority grouping where risk scores are computed (high and medium), a requirement may carry a risk score between 0 and 1875. Generally, high priority requirements will carry higher risk scores than medium priority requirements. Regardless of the priority grouping the higher the risk score the greater the probability of failure and the more severe the consequence of failure. The computed figure, the risk score, communicates the urgency for investment to the requirement and highlights the potential risk carried if the requirement does not receive appropriate and timely investment.

This method of risk assessment is powerful in its ability to meaningfully filter large amounts of data and objectively assess that data to provide useful information. The primary disadvantage of this method is its potential to overstate risk because the consequence of failure represents the worst-case scenario situation. Compared to other methods, this method is relatively simple and low cost.

5.4.1 Evaluating Risk: An Iterative Process

Both the probability of a requirement failing and the consequences of its failure will change

¹⁴ The use of consequence scores as the sum, average, and maximum of the three consequence criteria (criticality, severity, and tenant impact) was analyzed and it was determined that the use of consequence sum scores computes the most distinctive, informative and useful risk score distributions.



with time. For example, the probability of failure will generally increase with the age of the requirement; it may also increase from higher than normal use or other unique circumstances (e.g. growing trees lead to heightened wear and tear on the roof). The consequences of failure may also vary based on the introduction of new legislation and law, or the modification of existing. The fluctuating nature of risk indicates that the evaluation and reporting of it must be ongoing too.

5.5 Risk Responses

Understanding the risk carried by a requirement, the following responses are available:

- Avoid (significantly or completely) — Risk can be avoided in two ways:
 - Completely: disposing of the requirement that carries the risk (i.e. disposal) or discontinuing the service provided by the asset. This is generally not an option available for services provided by the public sector.
 - Significantly: Investing substantially in the requirement that carries the risk such that the risk carried is reduced to the lowest possible level. An example would be replacing a requirement like an old and poorly functioning furnace with a new, high functioning furnace. The replacement has a much lower probability of failure and therefore its risk is significantly reduced. This approach is generally expensive and can be complex to implement.
- Transfer— the risk carried by an asset or requirement is transferred to a third party (i.e. furnace rental as opposed to ownership).
- Mitigate –the risk is reduced through a variety of actions and initiatives (e.g. revised operational practices etc.). The depth of mitigation may vary significantly based on the approach and the level of risk carried by the requirement.
- Accept – the risk is accepted and carried (e.g. run to failure)¹⁵.

LMCH has a limited opportunity or desire to respond by avoiding risk through disposal or dis-continued service because it is LMCH's mission and legislative duty to provide housing at specific service levels. This leaves LMCH with four predominant risk responses: avoid significantly, transfer, mitigate, and accept. Transferring risk may be a worthwhile option where it is operationally and cost-effective to the organization without compromising the

¹⁵ It is important to recognize that risk may be a liability, but also an opportunity. For example, successfully utilizing an asset for 110% of its useful life rather than 100% generates capital cost savings.



level of service provided. Where transferring risk is not possible or advantageous to LMCH the remaining three risk responses—avoid significantly, mitigate and accept— must be evaluated.

Responding to risk by avoiding it significantly may be the determined approach where alternative responses (i.e. mitigate, accept) are not accepted due to the level of risk carried, and/or where alternative risk responses do not reduce risk levels substantially enough. Avoiding risk significantly is generally the most fiscally expensive of all approaches and tends to require a substantial investment of staff time dedicated to procurement and management of capital projects.

Mitigation is another risk response and may involve operational changes (e.g. increased maintenance) that reduce the probability of failure and/or the consequences of failure. Generally, where risk is low operational changes may be acceptable mitigations. However, where the risk is more severe, more intensive risk responses like significant avoidance may be most effective.

In other cases, particularly where the requirement is limited or low priority, accepting the risk may be the action taken. This means that the requirement will be in use as long as it is operational. Accepting risk is an important response when it can be reasonably determined that the risk carried is acceptably low.

Requirement priority groupings and risk scores are crucial tools to evaluate requirements and the risk they carry and then assess the most appropriate risk response. LMCH's risk management strategy is a multi-step process; thus far, we have discussed the first three steps:

1. Determine the appropriate priority grouping of the requirement: high, medium, low, and limited.
2. For all high and medium priority requirement determine the probability and consequence of failure, and then calculate the risk.
3. Within respective priority groupings, rank requirements by their risk score and use this information to help inform capital project decisions.

Where the best risk response is to avoid it significantly, fiscally evaluating how capital investment impacts the risk carried is another important tool for making informed and defensible capital investment decisions. Steps four (4) and beyond of the process produce important information to assist in this process:



1. Identify feasible interventions that reduce risk (e.g. operational practices, preventative maintenance, and capital investment).
2. Compare the cost of risk reduction with the level of risk reduction.
 - i. For example, Requirement A is in high priority grouping and has a risk score of 400. Risk can be eliminated if a capital project to replace the requirement is advanced. The cost of the capital project is \$100,000. Therefore the cost to reduce one unit of risk is \$250
 - ii. Requirement B is in high priority grouping and has a risk score of 500. Risk can be eliminated if a capital project to replace the requirement is advanced. The cost of the capital project is \$150,000. Therefore, the cost to reduce one unit of risk is \$300.
 - iii. Therefore requirement A has a lower unit cost of risk reduction (\$250 vs. \$300), and is, therefore, a better fiscal investment.
3. Conduct further review on requirements that have a high and medium priority grouping, a high-risk score and a low per unit of risk cost. Technical considerations in conjunction with the alignment of corporate values and project feasibility will all be important considerations. Often, at this stage, external expert opinion may be sought.
4. Given the findings of the process determine how a requirement's risk will be managed- i.e. will the risk be carried, removed through the necessary investment or asset disposal, or otherwise reduced (e.g. preventative maintenance).

LMCH has operationalized steps 1-3 above and upon completion of the AMP 2020-2029 intends to begin working towards the implementation of steps 4 to 6.

5.5.1 Residual Risk

Regardless of the rigor of an institution's risk management policies and practices there is always a level of residual risk carried. Given this reality, it becomes essential to develop corporate risk management strategies.

LMCH has a Business Continuity Plan, which provides steps for responding to emergencies such as a sustained LMCH office closure, and emergency repairs at LMCH properties. Examples of emergency repairs include the loss of essential utilities, fires and fire alarm panel problems, and toxic spills. The document provides LMCH staff with a comprehensive overview of the procedure for responding to emergencies and includes relevant internal



and external contacts. A more succinct version of the plan was also developed for use and reference while on LMCH's properties.

5.6 Risk Implementation

Identifying requirement priority and understanding risk is a crucial component of LMCH's future. Recognizing this need and the development stage of asset management that LMCH is in, the following commitments and next steps are in order:

- LMCH will continue to categorize requirements priority groupings as defined in the AMP. To improve and refine this process LMCH will work to automate and sophisticate this process so that it is more manageable (i.e. less time-intensive) and objective. At the same time, LMCH recognizes that expert opinion is crucial for effectively assigning priority groupings and therefore will require a person based review of the priority groupings following the automated assignment.
 - Similarly, risk as a function of probability and consequence of failure will be a multi-phased approach with the first analysis based on automated evaluation of criteria (i.e. size of building). To identify and correct data outliers and anomalies, LMCH staff will review and as appropriate adjust the data.
 - Following the identification of priority groupings and the computation of risk scores for requirements within high and medium priority groupings, LMCH will review the results and as much as possible invest in requirements that carry high-risk scores, especially where they are also in high priority groupings.
 - Where beneficial and appropriate LMCH will work to explore and advance risk responses by determining and analyzing the unit cost of risk reduction rates.
-

5.7 Risk Monitoring & Reporting

Both the probability of a requirement failing and the consequences of its failure will change with time. For example, the probability of failure will generally increase with the age of the requirement; it may also increase from higher than normal use or change because of other unique circumstances (e.g. growing trees lead to heightened wear and tear on the



roof). The consequences of failure may also vary based on the introduction of new legislation and law, or the modification of existing. The fluctuating nature of risk indicates that the evaluation and reporting of it must be ongoing too. Accordingly, on an annual basis, LMCH will review the risk criteria scores and adjust as necessary. Where there are changes to any of the risk criteria scores there will be associated changes with the risk scores too.

LMCH will also work to automate the population of risk criteria and the resulting risk score. Currently, the process is not automated and requires significant investments in staff time. The process is also subject to bias, however at the same time it benefits from important subject matter expert insight unrealizable by an automated scoring program.

To benefit from the efficiencies generated by automation, without compromising the important insight LMCH can offer, LMCH along with important partners like VFA will work to further develop and refine automating probability and consequence of failure criteria scores. This automation will ensure that dynamic changes (e.g. age) in the parameters feeding the criteria score are captured and reflected in the resulting scoring. LMCH will review the risk criteria scores to identify and adjust for unique building circumstances (i.e. chronic issue with a building component suggesting it will fail prematurely) that impact the probability and/or consequence of a requirement's failure.

5.8 Risk Conclusions

This chapter has provided readers with a comprehensive overview of LMCH's core assets requirement priority groups. It has also presented the criteria for the probability and consequence of failure and outlined how those criteria are used to compute a risk score. It has identified valuable strategies for evaluating risk from a cost lens and outlined several key next steps to improve the priority grouping and risk evaluation components of LMCH's Asset management practices. These tools and strategies are a valuable and foundational aspect of asset management; however, they are not absolute in their ability to predict risk and there will be instances where assets fail not as predicted or the actual risks are greater or less than the calculated risk.



Section 6.0 Forcasted Infrastructure Gap



The following section outlines LMCH's infrastructure gap, which is the difference between the level of regular funding currently received and the level of regular capital funding required to meet the defined LOS. To provide context, LMCH's historic levels of capital funding (which have contributed to the infrastructure gap), is discussed and contrasted with other LHCs capital funding.

6.1 Lifecycle Renewal Infrastructure Gap

To calculate the lifecycle renewal infrastructure gap, the total funding required to achieve an average assessed portfolio FCI score of 0.35 (as discussed in 5.4) within ten years was determined and added to the cost of renewing "other assets" after they served 110% of their useful life. This total cost was then compared to the planned funding to determine the infrastructure gap. The results of the analysis are highlighted in Table 36 below.

Table 36: Lifecycle Renewals Current & Required Funding

Activity	Planned Capital Lifecycle Funding (over 10 years)	Required 10 Year Funding	Infrastructure Gap
Lifecycle Renewal	\$87.23M	\$235.05 M	\$147.82 M
Less: Reserve Fund	\$15.65 M		\$132.15 M

Planned Capital lifecycle funding is comprised of the following four budget sources:

- LMH261820- Public Housing Major Repairs: This represents LMCH's base capital budget of \$2.2 million annually and \$22.08 million throughout the period.
- LMH261820- LMCH's Infrastructure Gap Business Case #19: This represents additional capital funding of \$52.37 million between 2020 to 2029.
- LMH2620- LMCH Co-Investment with CMHC Business Case #18: This represents capital funding towards lifecycle renewal investments under CMHC Co-Investment¹⁶. Preliminary estimates total \$8.5 million between 2020 and 2027.

¹⁶ The estimated \$8.5 million investment to lifecycle renewal under the CMHC co-investment program is provided as the best available estimate at the time of production of the AMP. This estimation is not final and is subject to further review and negotiations between LMCH, its shareholder and CMHC.



- A portion of operational funding to replace “other assets” (refer back to 2.6 for further detail) upon serving 110% of their useful life.
- Public Housing Major Upgrades Reserve Fund: A reserve fund held on behalf of LMCH, which by 2029 will provide an estimated \$15.65 million in funding available to mitigate the infrastructure gap.

The results of comparing planned capital lifecycle funding against required capital funding indicate that despite the increased funding, there is still a significant infrastructure gap. Each year, the infrastructure gap grows by \$13.65 million to \$17.93 million and by 2029, the lifecycle renewal infrastructure gap is \$147.82 million. If reserve funds of \$15.65 million are applied, the lifecycle renewal infrastructure gap is reduced to \$132.16 million. The relationship between the required investment and planned funding is outlined in Figure 12 and Table 37 below.

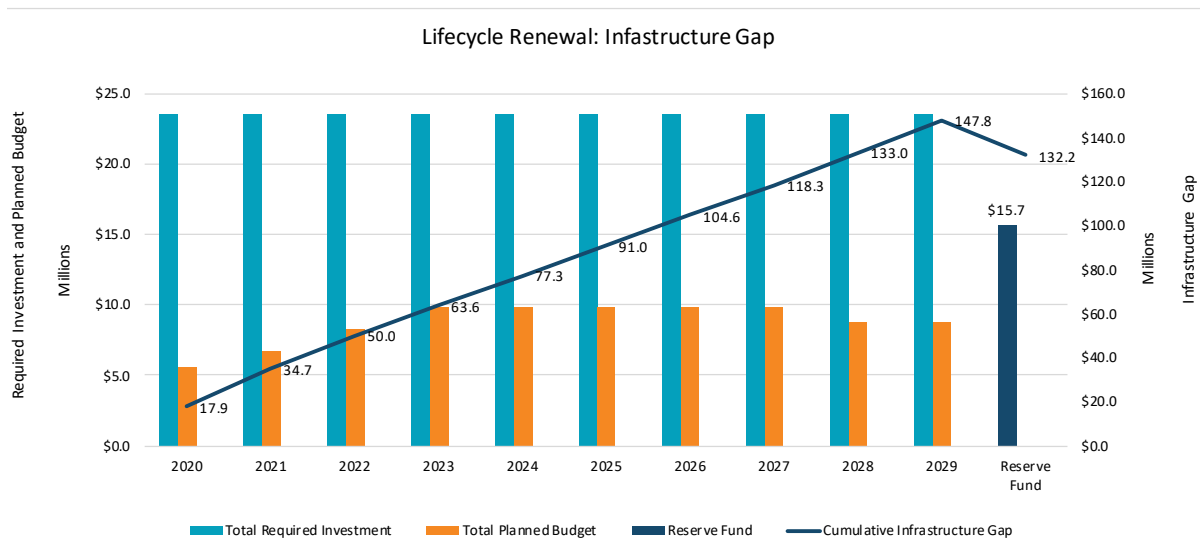


Figure 12: Lifecycle Renewal Infrastructure Gap



Table 37: Lifecycle Renewal Infrastructure Gap Detailed Cost Breakdown

Lifecycle Renewal: Infrastructure Gap (" \$ millions")											
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Required Funding	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	235.05
Planned Funding Sources											
Base Capital Budget	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	22.08
Infrastructure Gap Business Case	1.79	3.04	4.54	6.14	6.14	6.14	6.14	6.14	6.14	6.14	52.37
LMCH Co Investment with CMHC *lifecycle renewal only	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06			8.50
Operating Budget for TCA Assets	.784	.784	.784	.784	.784	.784	.784	.784	.784	.784	.784
Less: Required Service Improvements	.275	.410	.325	.350	.350	.350	.350	.350	.400	.400	3.56
Reserve Fund											15.65
Total Lifecycle Renewal Funding	5.57	6.68	8.27	9.84	9.84	9.84	9.84	9.84	8.73	8.73	102.88
Cumulative Infrastructure Gap¹⁷	17.93	34.74	49.98	63.63	77.29	90.95	104.60	118.26	133.03	147.80	132.15

¹⁷ Amounts subject to rounding.

As discussed in Section 5, in addition to lifecycle renewal, growth and service improvement activities also provide important contributions to the portfolio. They represent vital planned actions that enable the assets to provide the desired levels of service and meet community needs.

Understanding the cost of delivering such service improvement and growth activities and comparing these costs to the funding provided is central to the determination of their respective infrastructure gaps.

6.2 Service Improvement: Infrastructure Gap

As outlined in section 5.1, a service improvement occurs when there are planned activities that improve an asset's capacity, quality, and/or system reliability. A good example is replacing a kitchen's single sink with a double sink. The double sink improves the capacity of the sink to hold dishes; this is often valuable to larger households.

It is important to identify service improvements that provide impactful benefit across the organization and tenant base. To ensure that the selected service improvements accurately represent the needs of the organization, the following six-step process was utilized:

1. Identification of all LMCH 2017-2020 strategic goals that can be supported through infrastructure-based service improvements.
2. Review of all relevant third-party information and research related to impactful service-based improvements¹⁸
3. Engagement of a diversity of LMCH departmental staff (e.g. Community engagement, Tenant Services) to identify potential service improvements.
4. Review of identified potential service improvements followed by prioritization based on alignment with strategic goals, the prevalence of need, reasonableness, benefits vs. costs, and ability to execute.
5. Cost estimates and reasonable timelines developed for prioritized service improvements.
6. Service improvement infrastructure gap determined by comparing estimated costs of identified service improvements with current funding.

¹⁸ Some specific examples of relevant information and research include the 2019 LMCH Tenant Survey and a study entitled "The Psycho-Social Needs of Women in Social Housing" (Marshall, 2019).



The above process revealed that infrastructure based initiatives can positively contribute to the realization of four strategic goals:

1. **Improve, renew, and maintain the homes LMCH offers**
2. **Engage, support, and empower tenants**
3. **Grow Organizational effectiveness**
4. **Maximize IT for Informed decision making**

Engaging a diverse cross-section of LMCH staff and consulting external third party research revealed that multiple sources identified similar service improvements that can be broadly categorized into five areas. Staff and external third party sources more frequently identified specific service improvements areas over others. In order of most frequently mentioned to least, these service improvement broad categories are:

1. **Security**
2. **General Infrastructure (tied)**
3. **Health promotion (tied)**

Based on these broad category groupings, projects were evaluated for feasibility, cost, operational impacts, and benefits, with 10 asset-based service improvement projects selected. These are as follows:

Table 38: LMCH Identified Service Improvements

General Category	Specified Service Improvement
General Infrastructure	Kitchen Improvements: upper cabinets (high-rises)
	Kitchen Improvements: Double sinks (families)
I.T.	Fiber Optic Internet Infrastructure
	Printers At All County Sites
Security	Interior Security Cameras
	Security Cameras: Outdoor



General Category	Specified Service Improvement
Garbage	Garbage Corrals: Towns
	Secured Overflow Garbage Storage: High Rises
Software	Project Mgmt. Software
	Energy Cap Software

The total estimated capital cost of these projects is \$3.61 million and current funding, which includes available program rebates and incentives (e.g. fiber optic internet), is \$705,000; therefore, the cumulative infrastructure gap is \$2.91 million.

6.2.1 Third-Party Funded Service Improvements

In addition to internally identifying service improvements, there are also opportunities to access third-party funding through government programs like the National Housing Strategy (NHS). The NHS is an ambitious 10-year, \$55 billion plan that works towards the realization of the right to adequate housing. Several programs, including the Repair and Renew Co-Investment program focus on improvements to energy and accessibility, and are administered under the NHS. Currently, LMCH is in negotiations with CMHC to secure a Repair and Renew co-investment agreement. Pending successful negotiations, these investments will be a combination of service improvements and lifecycle renewal activities. At the time of writing the AMP, the total estimated investment under a CMHC's National Housing Strategy program to service improvement is \$25.875 million distributed over several years, and concluding in 2027.

While a significant portion of this funding would be provided as a forgivable loan, there will also be a non-forgivable loan portion. LMCH's shareholder has committed to funding this cost through their approval of the 2020-2023 Multi-Year Business Case #18: LMCH's Co-Investment with CMHC.



6.2.2 Total Service Improvement Infrastructure Gap

The total cost of LMCH identified and Third-Party Funding Programs that will include service improvement for the period of 2020-2029 is \$29.49 million. Over this same period, there are funding commitments of \$26.58 million and the resulting total service improvement infrastructure gap is \$2.91 million.



Figure 13: Service Improvement Infrastructure Gap

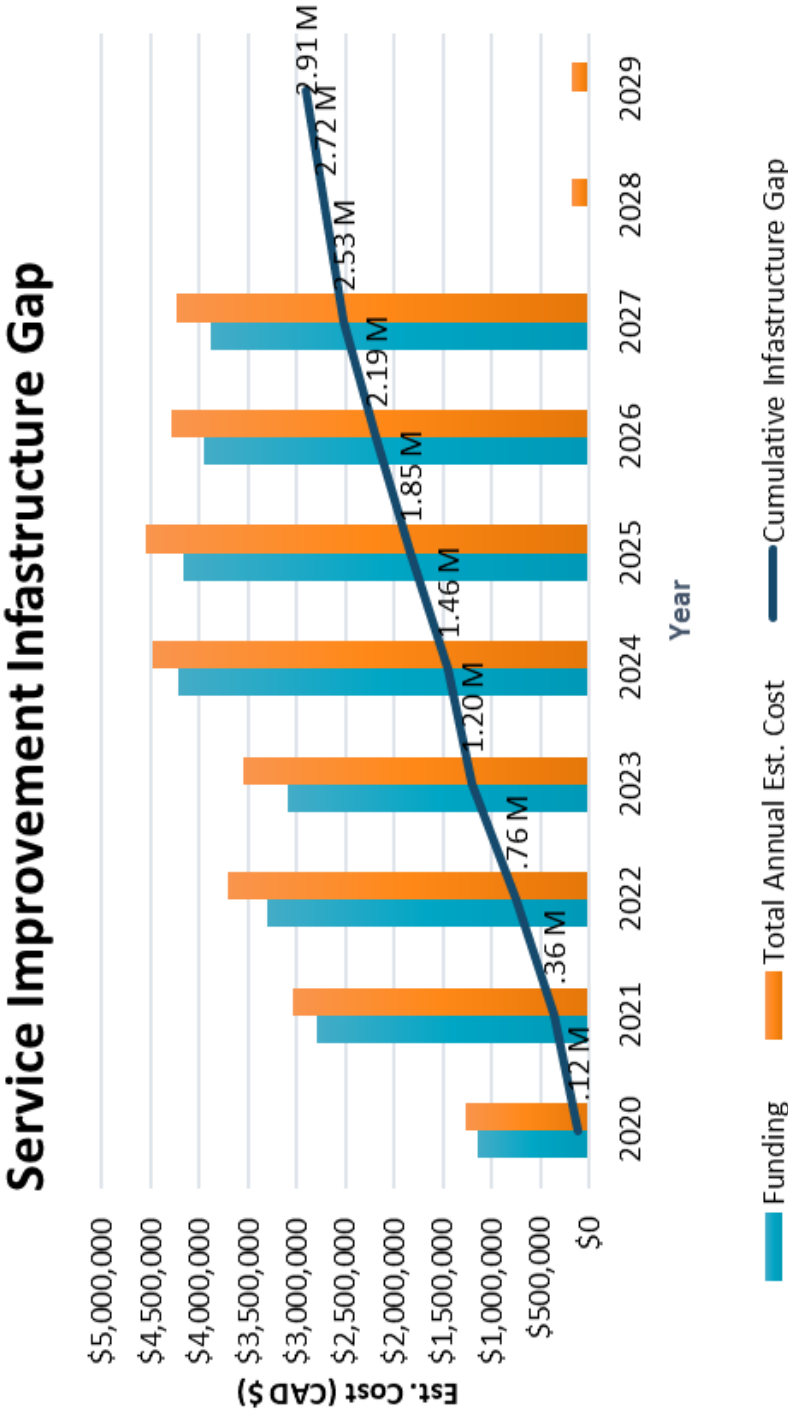


Table 39: Service Improvement Infrastructure Gap Cost Breakdown

Capital Cost: LMCH Identified	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
CMHC Repair & Renew	.44 M	2.79 M	3.31 M	3.10 M	4.22 M	4.16 M	3.95 M	3.89 M			25.88 M
Building Exterior Improvements	.0 M	.19 M	.19 M	.24 M	.10 M	.05 M	.0 M	.0 M	.0 M	.0 M	.78 M
Building Interior Improvements	.05 M	.05 M	.20 M	.20 M	.15 M	.34 M	.34 M	.34 M	.19 M	.19 M	2.08 M
IT Infrastructure Improvements	.71 M	.0 M	.0 M	.0 M	.0 M	.0 M	.0 M	.0 M	.0 M	.0 M	.71 M
Building Management Software Improvements	.06 M	.0 M	.0 M	.0 M	.0 M	.0 M	.0 M	.0 M	.0 M	.0 M	.06 M
Total Annual Cost	1.27 M	3.04 M	3.71 M	3.55 M	4.48 M	4.55 M	4.30 M	4.23 M	.19 M	.19 M	29.49 M
Available Funding											
CMHC Co Investment: BC #18	.44 M	.279 M	3.31 M	3.10 M	4.22 M	4.16 M	3.95 M	3.89 M			25.88 M
Private Sector in Kind Project Completion	.71 M	.0 M	.0 M	.0 M	.0 M	.0 M	.0 M	.0 M	.0 M	.0 M	.71 M
Total Available Funding	1.15 M	2.79 M	3.31 M	3.10 M	4.22 M	4.16 M	3.95 M	3.89 M	.0 M	.0 M	26.58 M
Annual Infrastructure Gap	.12 M	.25 M	.40 M	.44 M	.25 M	.39 M	.34 M	.34 M	.19 M	.19 M	2.91 M

6.3 Growth Infrastructure Gap

Growth is a set of planned activities required to extend services to previously unserved areas or expand services to meet growth demands. As outlined in 6.1.2, The Importance of LMCH's Portfolio Growth, there is a very high need for affordable housing in London and Middlesex County.

Unit growth demands significant resources, many of which are scarce; namely land, capital, and the resources to execute. Thus, LMCH's delivery of unit growth must consider both the demand for units and the feasibility of supplying those units. For the most part, LMCH townhouse sites are underdeveloped and present opportunities for infill development. A small portion of the portfolio provides an opportunity for the creation of ancillary basement units. Multi-residential properties in the City of London are developed to capacity. Some multi-residential properties in the County have the physical space for infill development but lack the demand (e.g. Newbury).

Given the opportunities, LMCH's Growth Infrastructure Gap for the 2020-2029 period focuses on infill development on existing townhouse sites, the conversion of existing semi-detached units, and the acquisition of property with existing units. The growth strategy will seek to fulfill the following objectives:

- Create 20 ancillary basement units in existing LMCH semi-detached housing units
- Build at least 80 units on existing LMCH family townhouse sites
- Acquire an already constructed property

The cost of completing these above projects between 2020 to 2029 is estimated at \$32.1 million¹⁹. In early 2020, LMCH alongside the Housing Development Corporation (HDC) submitted a Regeneration of Public Housing Business Case (#21). This business case sought funding to regenerate deteriorating housing stock and develop new affordable housing stock in the community. By 2023, 50 new units are to be constructed and by 2025 (as per Business Case) an additional 30 units are to be built. Therefore, by 2025-year end 80 new affordable units²⁰ are projected to be constructed. With the approval of the 2020-2023 Multi-Year budget (MYB) Business Case #21 there are funding commitments of \$24 M and the cumulative infrastructure gap is \$8.1 million.

¹⁹ The cost of acquiring an already constructed property can vary widely based on a host of factors like the size of the building and the cost of capital repairs required upon acquisition. Due to the significant level of potential cost variance, estimates assume that acquisition costs of an already constructed property will be equal to the cost of constructing 40 new units.

²⁰ 2016 Business Case # 21 identified that a 10% increase over current social housing units at each site would be a metric of success. Since there are 804 townhouses overall, this is on average an 80 unit increase overall.



Figure 14: Growth Infrastructure Gap

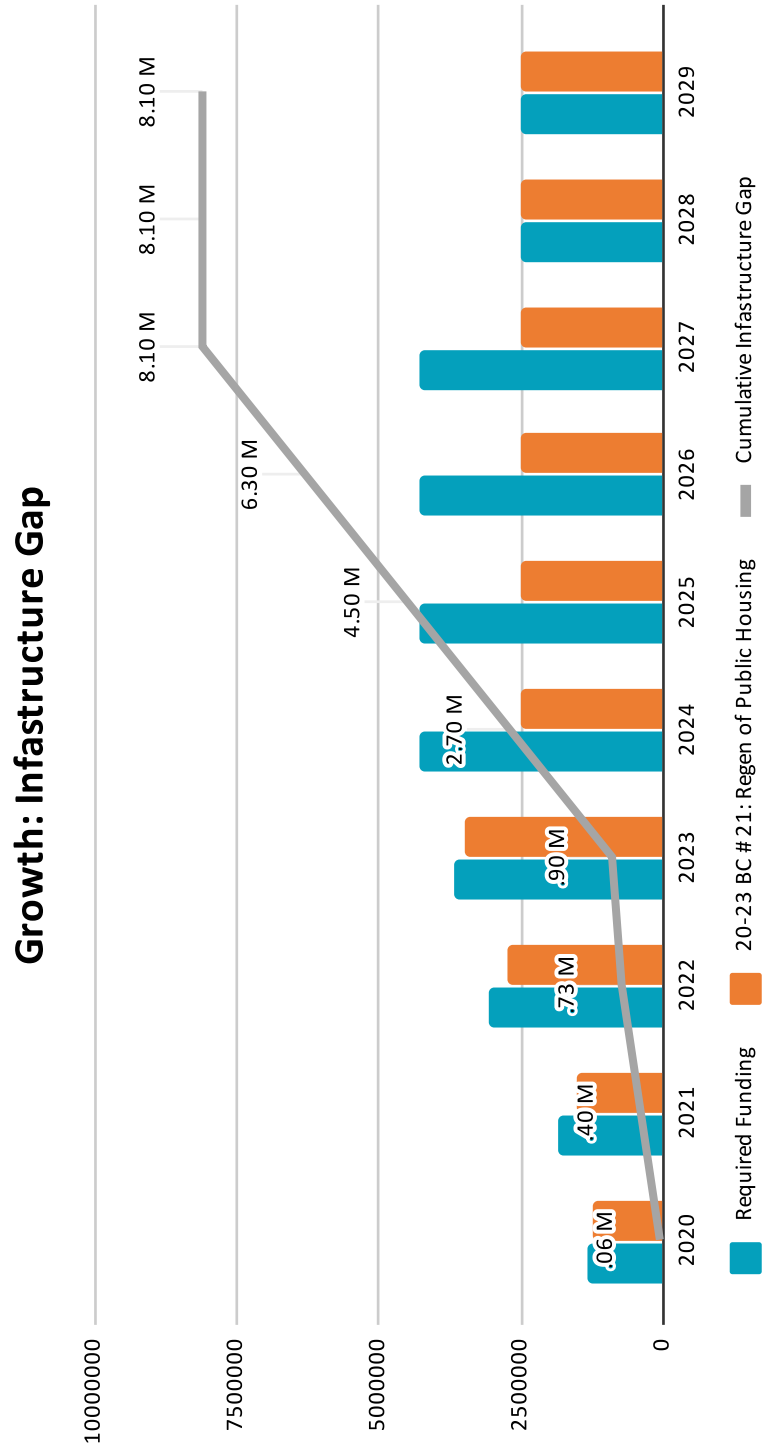


Table 40: Growth Infrastructure Gap Cost Breakdown

Growth: Infrastructure Gap											
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Required Funding	1.31 M	1.84 M	3.09 M	3.67 M	4.3 M	4.3 M	4.3 M	4.3 M	2.50 M	2.50 M	32.10 M
Total Committed Funding: BC # 21: Regen of Public Housing	1.25 M	1.50 M	2.75 M	3.50 M	2.50 M	2.50 M	2.50 M	2.50 M	2.50 M	2.50 M	24.0 M
Cumulative Infrastructure Gap	.06 M	.40 M	.73 M	.90 M	2.7 M	4.5 M	6.3 M	8.1 M	8.1 M	8.1 M	8.1M

Section 7.0 Financing Strategy



Ensuring adequate capital funding is available to maintain LMCH's assets as safe, functional homes and communities for our tenants of today and the future is of paramount importance. Despite a significant capital funding increase through the 2020-2023 Multi-Year Budget (MYB), the current capital funding commitments are not sufficient to meet established Levels of Service. This section provides an overview of LMCH revenue and expense sources as well as a brief discussion of relevant financial policies. The lifecycle renewal infrastructure gap is presented and strategies for addressing the gap are identified. This section concludes by recommending a strategy for mitigating the infrastructure gap.

7.1 Financial Overview

LMCH has two primary budgets: operating and capital.

The operating budget funds LMCH's daily operations that enable the provision of services to LMCH tenants. Expenses funded by the operating budget are used for salaries, maintenance materials and services, utilities, property (i.e. taxes, insurance, mortgage), and administration.

The capital budget funds large capital projects that extend asset lifespans and/or replace existing building components to maintain the assets in fair condition.

LMCH predominantly finances the operational and capital budgets through the following funding sources:

- Rental Revenues
- Municipal Capital Budget Funding
- Municipally provided operating subsidy
- Third-party funding sources (i.e. Provincial and Federal Funding programs)

The City of London and County of Middlesex provide municipal funding to LMCH's capital and operational budgets.



7.1.1 Operational Budget Overview

To provide context to the operating budget, 2017-2019 revenue and expense information is provided in Table 41 and Figure 15 below.

Rent charged by LMCH is determined based on a RGI approach where rent is equal to 30% of the household's gross income. For this reason, rental revenue can fluctuate from one-year to the next with changes in the economy (i.e. tenants ability to find and secure work changes with economic conditions), support programs (i.e. Ontario Disability Support Program), or life circumstances. Conversely, housing subsidy is determined through the Multi-Year Budgeting process.

Table 41: LMCH Operating Revenues '17,'18,'19' (Actuals)

LMCH Operating Revenues (Actuals)			
	2017	2018	2019
Total Rental Revenue	\$11,122,354	\$11,460,132	\$11,870,011
Total Housing Subsidy	\$9,758,730	\$10,202,215	\$10,698,018
Total Other Revenue	\$354,605	\$292,406	\$340,231
Total Operating Revenues	\$21,235,689	\$21,954,753	\$22,908,260

The operating budget expenditures relate to the following categories:

- | | |
|----------------------------------|---|
| 1. Salaries, Wages, and Benefits | 4. Property Taxes, Insurance & Mortgage |
| 2. Building Maintenance & Repair | 5. Administration |
| 3. Utilities | 6. Tenant Programs & Support |



In 2017, 2018, and 2019 the distribution of total expenses amongst these categories was as follows:

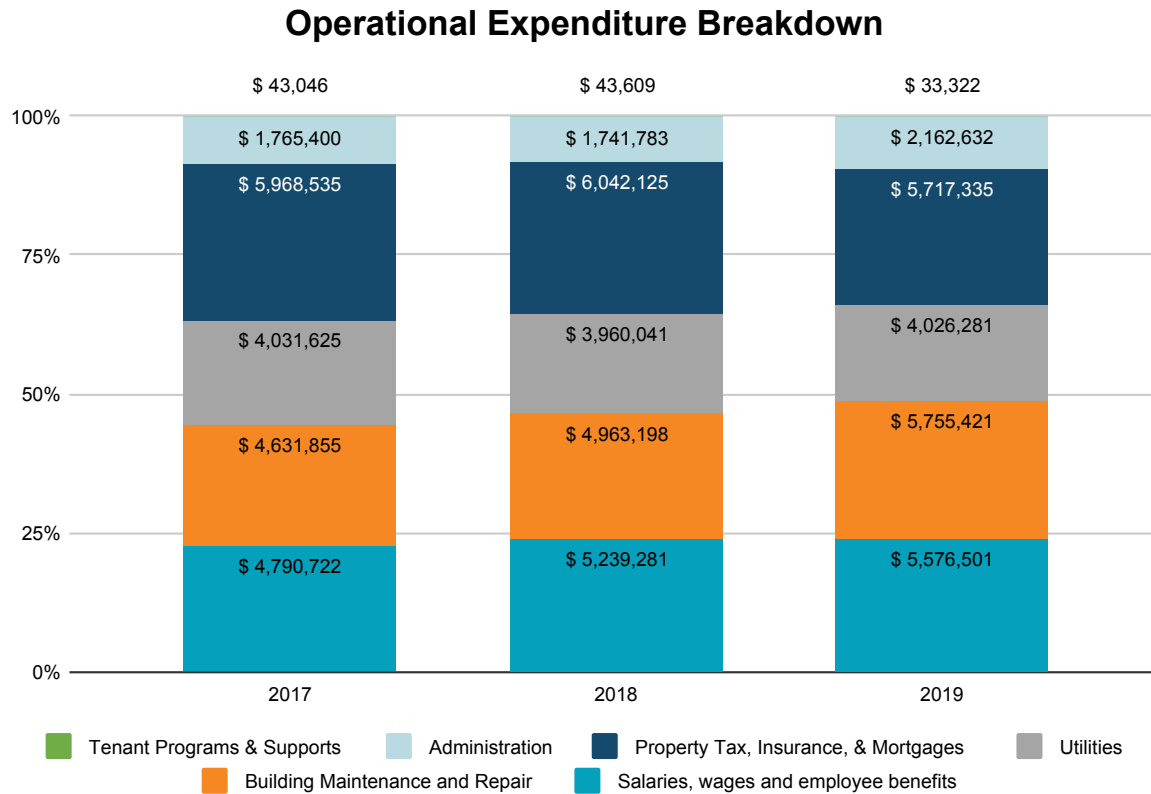


Figure 15: Operating Expenditure Category Breakdown

Operational revenues may not always equal operational expenses. When this is the case, LMCH experiences an operational surplus or deficit.

Council responded to LMCH's need for increased tenant supports and improved building security through the approval of Business Case #19. As a result, LMCH received additional operational funding of \$5.675 million for the period of 2020-2023 that will provide for an increase of 25 staff by 2023. The majority of these staff will be frontline with a focus on providing additional tenant supports and improving building security.



7.1.2 Capital Budget Overview

The capital budget provides for long-term investment in LMCH's core assets. As discussed in earlier sections, capital investment may be for lifecycle renewal, service improvement, or growth activities. LMCH's capital budget is funded primarily through shareholder contribution and where available and appropriate third party funding (i.e. Provincial and Federal Programs). Investment directly from the shareholder has historically been used for lifecycle renewal projects to rehabilitate or replace existing building components that are no longer reliable, safe, or otherwise functional.

Capital investment obtained through third-party funding such as Social Housing Apartment Improvement Program (SHAIP) has provided for service improvement projects with some lifecycle renewal. For example, in late 2019, solar walls (service improvement) and new Make-up Air units (lifecycle renewal) were installed at several multi-residential buildings. The solar walls improved the asset's capacity to heat fresh air to the building with limited use of fossil fuels, while the new makeup air replaced an existing building component that had met the end of its useful life.

Table 42 provides approved capital funding sources for the 2020-2023 period and approved in principle from 2024 through 2029. Regular capital funding by the shareholder is specific to lifecycle renewal only. Third-party funding is specifically for anticipated funding from CMHC co-investment (as per LMCH 2020-2023 MYB, Business Case 18) and represents estimated allocations to lifecycle renewal only. Tangible capital assets expenditures are funded from LMCH's operational budget but are otherwise considered a capital expenditure.



Table 42: Lifecycle Renewal Capital Funding

Lifecycle Renewal Capital Funding Budgets (\$ millions)

Funding Source	2020-2023 Cumulative	2024-2029 Cumulative	Combined Total
Regular Capital (Base Budget)	\$8.83	\$13.25	\$22.08
Infrastructure Gap (Business Case 12)	\$15.52	\$36.85	\$52.37
Third-Party Projected Funding ²¹ (Business Case 18)	\$4.25	\$4.25	\$8.50
Tangible Capital Assets ²²	\$3.13	\$4.70	\$7.84
Grand Total	\$31.73	\$59.05	\$90.79

7.1.3 LMCH Budgets: A Historical Review

When LMCH was devolved from the province in 2001, the regular capital budget was set at \$2.2 million annually and remained unchanged. In 2020, through the 2020-2023 Multi-Year Budget, the City of London and County of Middlesex responded to the needs of LMCH by committing additional funding through the approval of Business Cases 12 and 18. These cases provide \$89.34 million in capital funding for lifecycle renewal and service improvements for the period of 2020-2029. Of this total, LMCH estimates that \$57.31 million will be allocation to lifecycle renewal.

As a result of the multi-year budget capital investment the size of the infrastructure gap was reduced from \$208.68 million to \$147.8 million. While the current infrastructure gap of \$147.8 million remains significant, it is drastically less than it would have been without the significant funding increase.

²¹ Pending securitization. Quoted amounts represent estimated investment for lifecycle renewal activities only. Excludes investment service improvement.

²² Please note: this amount is currently funded from LMCH's operational budget, but is otherwise considered a capital expenditure.



Infrastructure Gap Reduction due to Increased Capital Funding

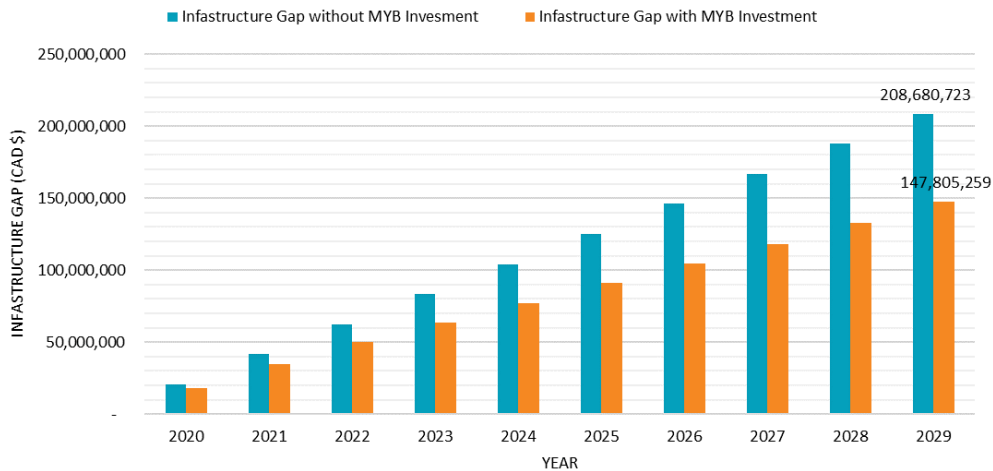


Figure 16: Infrastructure Gap Reduction due to Increased Capital Funding

7.2 Current & Forthcoming Financial Practices

LMCH is committed to strong financial stewardship and accordingly, follows several financial best practices, including:

- Zero Based Budgeting: an annual process that builds each material account from 'zero' to drive cost-efficiencies across the organization
- Departmental Variance Reporting: monthly comparison of actuals vs budgeted amounts
- Seeking and obtaining ancillary income sources (i.e. antenna rentals)
- The pursuit and attainment of other non-shareholder provided capital funding sources and rebates including federal and provincial sources such as Social Housing Apartment Improvement Program (SHAIP)
- Implementation of asset management techniques such as risk evaluation to inform capital investment decisions



LMCH is a separate entity from the City of London and County of Middlesex. However, LMCH must understand and consider its shareholder and funding contributor's financial policies when making financial decisions. Some examples are:

- City of London Capital Budget and Financing Policy
 - Outlines principles of capital investment including funding options and priorities by lifecycle activity. Specific to lifecycle renewal, the priority of funding sources are as follows: (1) non-tax rate supported (i.e. senior government funding), (2) capital levy, (3) eligible reserve funds, (4) debt financing where all other funding options are explored and exhausted.
- City of London Debt Management Policy
 - Establishes objectives for financing that is necessary to meet infrastructure and operating requirements as prescribed by the Municipal Act, 2001, c 25 (the "Act") and presents strategies for managing debt including ensuring that debt levels do not impair the financial position or credit rating of the City. Of particular application to the AMP and associated financial strategy is the Policy section, which outlines the purposes for which debt may be authorized, managing the risk of issuing debt, and minimizing debt-servicing costs.
- City of London Reserve and Reserve Fund Policy
 - Provides an overview of how reserves affect the City's credit rating and the cost of borrowing, and how they are to be managed to preserve the City's financial position while adhering to statutory requirements.

7.3 Infrastructure Gap

LMCH's lifecycle renewal infrastructure gap is the difference between the capital investment required to achieve a portfolio condition of fair by 2029 while addressing 100% of high priority requirements, and the amount of approved capital funding. This is outlined in Table 43, below.



Table 43: Lifecycle Renewal Infrastructure Gap Overview

Activity	Planned Capital Lifecycle Funding (over 10 years)	Required 10 Year Funding	Infrastructure Gap
Lifecycle Renewal	\$87.23 M ²³	\$235.04 M	\$147.8 M
Less: Reserve Fund	\$15.65 M		\$132.15 M

From 2020 through 2029, LMCH anticipates that there will be a requirement to spend approximately \$3.56 million in capital funding for legislatively or otherwise required service improvements. For example, should a tenant require a modification to make their unit more accessible LMCH is required to complete the necessary work (i.e. install a roll in shower in place of a tub). As a result, total capital investment available for lifecycle renewals for the period of 2020 to 2029 is estimated \$87.23 million²⁴.

During the same period, LMCH's capital needs are \$235.04 million and the difference, \$147.8 million, is the infrastructure gap. After applying \$15.65 million in reserve funds to the infrastructure gap, the total is \$132.15 million. It is important to note that the infrastructure gap is specific to established levels of service (LOS) and the associated lifecycle renewal requirements. The infrastructure gap does not consider growth or required service improvement activities and does not account for inflation. Figure 17 and Table 44 below provide an annual overview of the capital funding needs, the planned capital investment, and the resulting cumulative infrastructure gap.

Service Improvement and Growth Infrastructure Gaps:

Growth and service improvements establish important resources and betterments for LMCH tenants and the community. Though the service improvement and growth infrastructure gaps do exist, they are small (\$2.91 and \$8.1 million respectively) in comparison to the lifecycle renewal gap.

These gaps are relatively small largely because of funding approved through business Cases 18: LMCH Co-Investment with CMHC and 21: Regeneration of Public Housing. Business Case 18 provides funding to improve the advanced portfolios efficiency by 25% and improve the accessible unit rate to 20 %. In most cases, achieving these funding

²³ This amount excludes investment for required service improvements (\$3.56 M).

²⁴ Please This amount includes investment of \$7.84 million between 2020 and 2029 for Tangible Capital Assets (TCA). TCA are currently funded from LMCH's operating budget.



requirements is due to service improvement investments. Funding through the Regeneration of Public Housing provides investment to build additional units. These funding commitments are the primary reason for the relatively small service improvement and growth infrastructure gaps.

In keeping with LMCH’s mission to provide and maintain homes, the financial strategy of the AMP focuses exclusively on the lifecycle renewal gap.



Figure 17: LMCH Lifecycle Renewal Infrastructure Gap

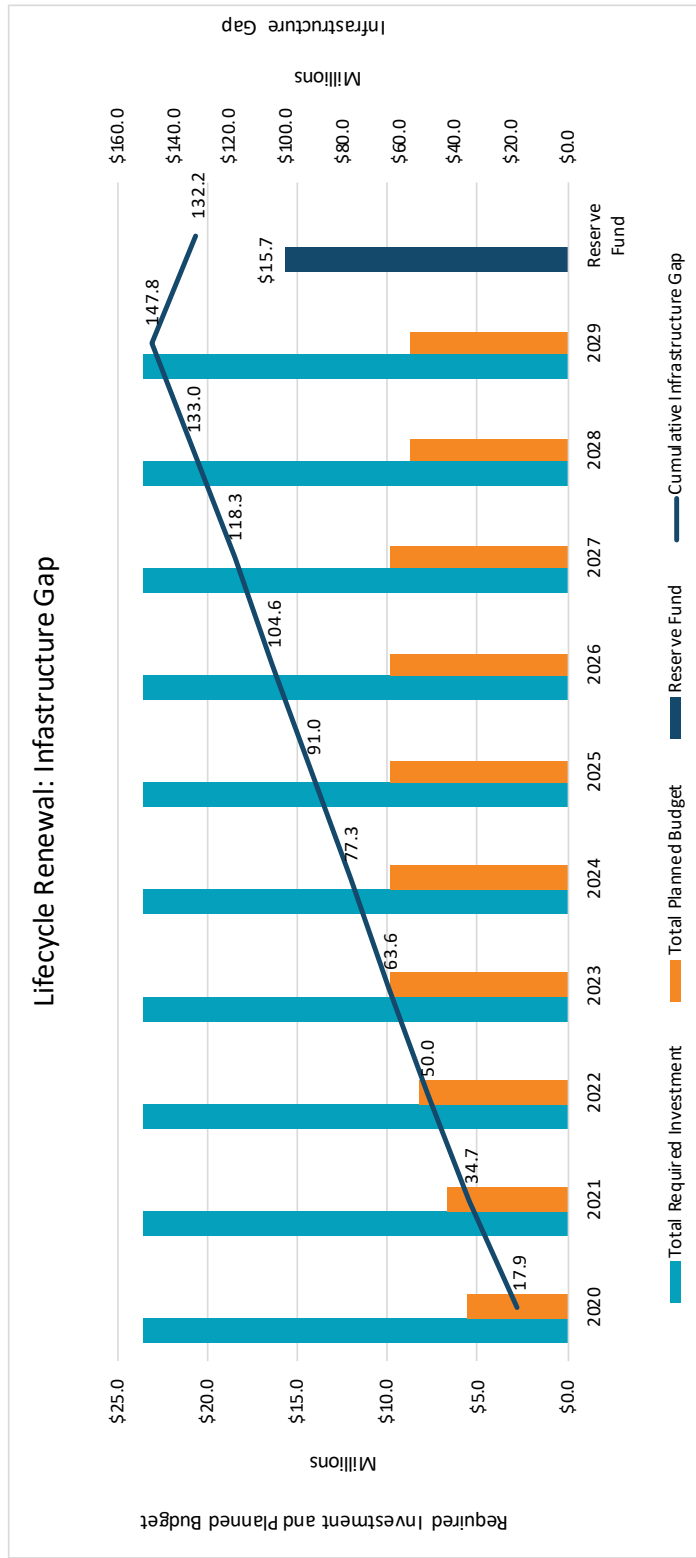


Table 44: Overview of Capital Funding Needs & Sources

Lifecycle Renewal: Infrastructure Gap (" \$ millions")											
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
Required Funding	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	23.5	235.05
Planned Funding Sources											
Base Capital Budget	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	22.08
Infrastructure Gap Business Case	1.79	3.04	4.54	6.14	6.14	6.14	6.14	6.14	6.14	6.14	52.37
LMCH Co Investment with CMHC *lifecycle renewal only	1.06	1.06	1.06	1.06	1.06	1.06	1.06				8.50
Operating Budget for TCA Assets	.784	.784	.784	.784	.784	.784	.784	.784	.784	.784	.784
Less: Required Service Improvements	.275	.410	.325	.350	.350	.350	.350	.350	.400	.400	3.56
Reserve Fund											15.65
Total Lifecycle Renewal Funding	5.57	6.68	8.27	9.84	9.84	9.84	9.84	9.84	8.73	8.73	102.88
Cumulative Infrastructure Gap ²⁶	17.93	34.74	49.98	63.63	77.29	90.95	104.60	118.26	133.03	147.80	132.15

²⁶ Amounts subject to rounding.

7.3.1 Allocation of Committed Capital Funding

The allocation of committed capital funding does not change the amount of the infrastructure gap. However, it is important to understand the intended allocation as a strategic approach to addressing the infrastructure gap.

Between 2020 and 2029, the total requirement cost of replacing every building component that expires is \$452 million— distributed into four priority categories as outlined in Table 45 below. For priority category definitions and examples, please refer to section 5.2.

Table 45: Total Requirement Cost Overview

2020-2029 Requirements Summary Statistics	
Total High Priority All Years	\$59,941,000
Total Medium Priority All Years	\$26,488,000
Total Low Priority All Years	\$27,652,000
Total Limited Priority All Years	\$338,261,000
Grand Total	\$452,342,000

VFA funding requirements for LMCH properties excluding some in the county and all scattered properites. All cost estimates quoted in Canadian dollars with no adjustments made for inflation.

If all requirements were remediated, the portfolio's FCI condition would be very good. Since, LMCH's infrastructure gap is premised on achieving a condition of fair, the total investment required is \$235.04 million. The allocation of this investment is important as it affects the risks carried. For example, allocating all of the required investment to limited priority would be a poor decision because the criticality of the requirements and their probability and consequence of failure are the lowest of all priority groups.

From 2020 to 2029, there is \$79.39 million in committed capital funding available for



lifecycle renewal. Forecasted spending results in remediation of high priority requirements to the greatest extent (61%), followed by medium (43%), low (24%), and limited (7%). Remediation is greatest for high priority requirements because of their criticality and probability and consequence of failure. Conversely, limited priority requirements are remediated the least as they are much less critical and have a lower probability and consequence of failure. This is illustrated in Figure 18 below.

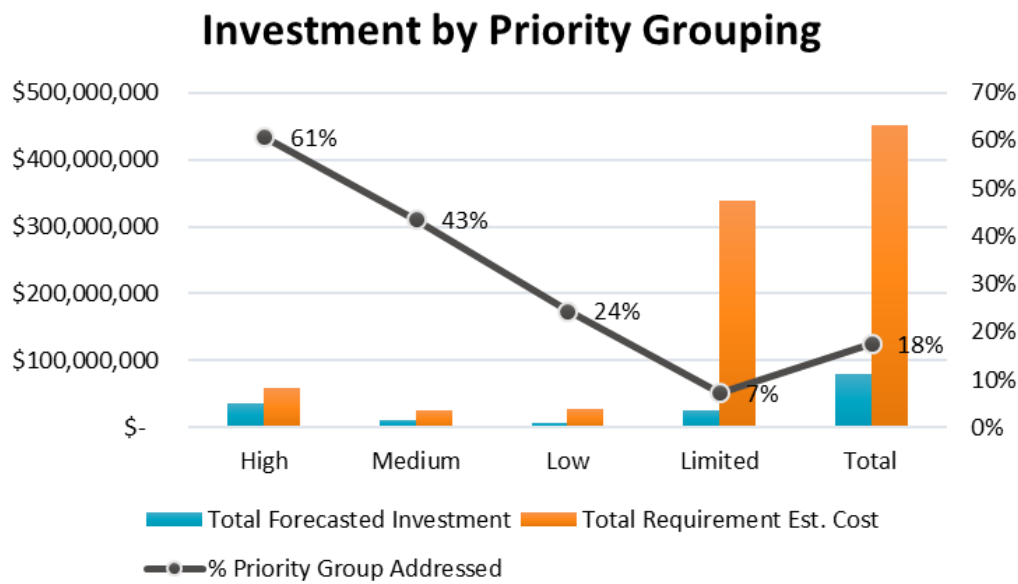


Figure 18: Total Requirement Costs vs. Forecasted Investment Allocation

While limited priority requirements hold the least risk, some investment is still necessary to preserve tenants’ dignity in their home, instill tenants’ sense of care and pride in their home, and uphold an acceptable appearance to the broader and external community. Further, without any investment to limited priority requirements, LMCH would be non-compliant with Property Standards By-Laws (City of London, 2010).

Based on the forecasted allocation of committed capital funding, each priority group has the following forecasted remaining requirement costs and allocation of committed capital funding:



Table 46: Forecasted Allocation of Committed Capital Funding

Priority Grouping	Original Total Requirement Cost (\$ millions)	2020-2029 Forecasted Investment (\$ millions)	Priority Group Addressed (%)	Remaining Total Requirement Cost (\$ millions)	Allocation of Committed Capital (%)
High	59.9	36.4	61	23.5	44
Medium	26.5	11.5	43	14.9	14
Low	27.6	6.7	24	20.9	8
Limited	338.3	24.7	7	313.5	30
Other	N/A	3.56	N/A	N/A	4
TOTAL	452.34	82.95	18	372.95	100

Since criticality for investment varies by priority group, it is helpful to identify the outstanding capital investment required by each priority category. Then, infrastructure gap investment focuses on requirements that are most critical and that have a high probability and consequence of failure. The following sections discuss various approaches to addressing the infrastructure gap and the allocation of investment by priority grouping.

7.3.2 Approaches for Addressing the Infrastructure Gap

Mitigating the growth of the infrastructure gap requires either an increased level of



investment or a reduction in the available LOS. While both are options, the risks carried vary substantially. Therefore, it is important to understand the risks associated with each approach and LMCH's tolerance to those risks. The following analysis identifies three approaches to mitigate the infrastructure gap and outlines the risks carried by adopting each approach. Given recent LMCH budget increases and existing financial pressures, each approach assumes that additional capital funding is only available from 2024 forward when the next Multi-Year Budget begins.

The risks held without any infrastructure gap mitigation are extensive and significant. They include high potential for forced unit closure, and increasingly high probability and frequency of major building component failures. For these reasons, no mitigation of the infrastructure gap is not considered.

Approach One: Modest Mitigation

An additional lifecycle renewal investment of \$57.7 million or \$9.61 million annually between 2024 and 2029 is provided and about 40% of the infrastructure gap is addressed. While the assumed risks are less than they would be without any infrastructure gap mitigation, they remain significant. Assumed risks of Modest Mitigation include:

- Inability to reach an average portfolio condition of fair by 2029
- Assets and components deteriorate quickly and fail often
- Work Order and vacancy rate LOS are difficult to achieve and are inconsistently met
- Properties are visibly run down and non-critical but frequently observed building components (i.e. floors, kitchen cabinets) are in obvious need of replacement
- Moderate to severe risk of forced unit closure due to non-compliance with various legislation
- Fewer people are housed
- Some tenants may be exposed to risk and hardship including potential injury

Approach Two: Significant Mitigation

There is an additional lifecycle renewal investment of \$115.4 million or \$19.23 million annually from 2024 to 2029, which addresses about 80% of the infrastructure gap. Assumed risks are vastly reduced from those assumed under approach one and two. However, some



risks remain which may include:

- LMCH is close but does not achieve the LOS to reach an average portfolio condition of fair by 2029
- Work order and Vacancy Rate LOS are largely met, but are inconsistent
- Limited risk of unit closure due to non-compliance with various legislation
- Limited tenant exposure to risk, hardship or potential injury, and unlikely loss of life

Approach Three: Complete Mitigation

This approach represents the full investment of \$147.8 million by 2029 or \$24.6 million annually from 2024 until 2029. This approach addresses 100% of the infrastructure gap. It carries the least risk and bestows the greatest benefits, which include:

- Ability to reach an average condition of fair for the core assets by 2029-year-end and resolve 100% of high and medium priority requirements and the vast majority of low priority requirements
- Ability to meet other LOS like work orders and target vacancy rate
- Building components are adequately maintained
- Extremely low risk of unit closure due to non-compliance, and the ability to uphold legislative requirements
- Safe and appropriate housing is provided to the greatest number of households

7.3.3 Time Period for Investment

While the infrastructure gap is specific to a 10-year period, LMCH could consider closing the gap over a 15-year period. Prolonging the period of investment may result in some of the following benefits:

- The continued advancement in building science and construction materials may yield more resilient building material and/or better performing building systems than were previously available, resulting in prolonged useful life and/or reduced replacement costs.



- Extending the period over which the gap is mitigated improves the affordability of the investment.
- Extending the investment period also improves the likelihood of successful execution from an employee and third party resourcing perspective

As discussed, there are substantial risks in holding any infrastructure gap. The consequences of risks materializing are significant including regulation and legal implications, service delivery, and financial. As the level of investment increases, the risks carried are reduced. Conversely, as the period of investment increases, the risks carried increase too.

Table 47 compares the annual cost, beginning in 2024, of each mitigation approach. As LMCH will be unable to request additional funding until the next Multi-Year Budget (MYB) in 2024, reported amounts for both 10 and 15 years are based on additional funding received beginning in 2024.

Table 47: Mitigation Approaches Over a 10 & 15 Year Period

Approach	Total Cost (\$ Millions)	Additional Annual Funding 2024-2029 (\$ Millions)	Additional Annual Funding 2024-3034 (\$ Millions)
Modest Mitigation	5.57	9.61	5.24
Significant Mitigation	115.4	19.23	10.49
Complete Mitigation	147.8	24.6	13.43

7.3.4 Analysis of Approaches

Each approach addresses different proportions of the infrastructure gap and affords varying levels of investment in high, medium, low, and limited priority groups. In all approaches, the higher the priority group, the greater the percentage addressed through investment. This reflects the criticality of time appropriate investment by priority group balanced against the need for some investment to all priority groups. Figure 19 below demonstrates how each approach addresses work by priority group.



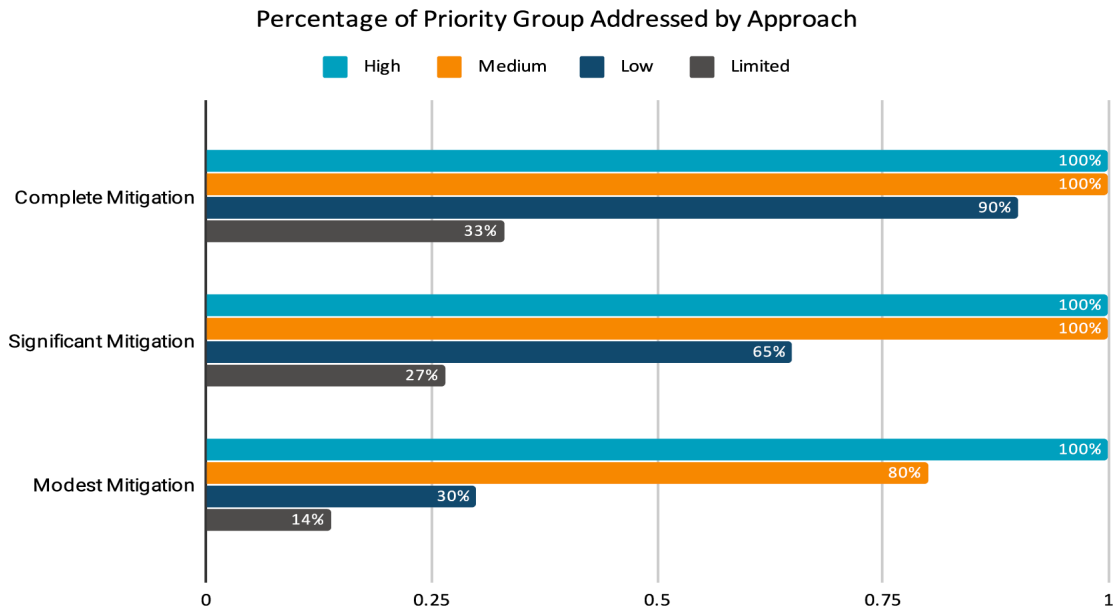


Figure 19: Percentage of Priority Group Addressed by Approach

Each approach may be mitigated over a period of 10 or 15 years. The benefit of extending the period for mitigation includes improved affordability, a greater ability to execute the work, and potential to benefit from advancement in building sciences. The detriments of extending the investment period is that requirements remain in use beyond their anticipated lifespan and therefore the probability of failure tends to increase. A prolonged investment period may be suitable where the level of investment is high enough to reduce risks to an acceptable level.

7.4 Funding Sources

LMCH together with our Shareholder will consider a variety of funding sources as listed and discussed below.



7.4.1 Reserve Funds

The City of London maintains several reserve funds, including the Public Housing Major Upgrades Reserve Fund, held on behalf of LMCH.

The reserve fund provides funding specifically for LMCH and major capital repairs and upgrades to maintain LMCH units. When considering this reserve fund, the Shareholder is responsible for maintaining minimum reserve fund balances and obtaining City Council approval for drawdowns.

As of 2020, an estimated \$15.65 million in reserve funds might be available to mitigate the infrastructure gap.

7.4.2 Additional Ancillary Income

Ancillary income is all revenue derived from assets, excluding rental income. For example, LMCH currently derives income from third party companies who have placed antenna on the rooftops of high-rise buildings. This revenue offsets operational expenses.

There may be opportunities to obtain additional or increased levels of ancillary income. Allocating this additional income to the infrastructure gap would provide a modest capital-funding source.

7.4.3 Third-Party Contributions

Third party contributions most often come from other levels of government. For example, LMCH received capital funding through the Social Housing Apartment Improvement Program (SHAIP) provincial program. Generally, eligibility for funding from upper governments requires specific project deliverables such as energy efficiency. To this end, leveraging third party programs will require LMCH to as much as possible identify existing lifecycle renewal requirements that also meet the program eligibility requirements of the portfolio.



When the program requirement is a service improvement (e.g. solar wall funded through the provincial SHAIIP) it will be necessary to first consider the impact on maintenance and operations to be sure that proceeding with the capital investment is both fiscally and operationally prudent. However, these programs are extremely beneficial and LMCH will continue to explore and pursue third-party funding opportunities as a mechanism to address the infrastructure gap.

7.4.4 Efficiency Based Incentives

Where LMCH can undertake programs or projects that result in cost efficiencies (e.g. capital projects that reduce utility consumption and cost) there may be opportunity to re-allocate operational dollars to capital funding with the necessary approvals. Any change completed within the four-year budget cycle is permanent within that budget period; therefore, it is important that operational savings are sustainable.

The approval of Business Case 18: CMHC Co-Investment, may provide a good opportunity to find operational utility savings that can be re-allocated to address the infrastructure gap.

7.4.5 Levy (Tax) Supported Contributions

As LMCH is a Board of the City of London and County of Middlesex, another source of funding could be a municipally approved increase to the amount of municipal tax revenue directed to LMCH or by levying an additional tax levy specific to LMCH. In line with the Multi-Year Budget (MYB) cycle, LMCH will assess progress in addressing the infrastructure gap over the course of 2020-2023, and may submit a business case for additional funding in the 2024-2027 MYB period.

As well, since 2018 LMCH's shareholder has provided additional, permanent assessment growth funding to the Public Housing Major Upgrades Reserve Fund. The shareholder's intention is to continue requesting permanent assessment growth funding. If successful, more reserve funds than currently estimated may be available to allocate to the infrastructure gap.



7.5 Infrastructure Gap Recommendations

LMCH is an invaluable resource to the community as it provides housing to nearly 3,300 households and houses close to 5,400 individuals. As the cost of housing continues to increase, LMCH's RGI housing remains a critical resource within the community. To protect and maintain LMCH assets while balancing the affordability of the investment, significant mitigation is required.

Modest mitigation carries unacceptable risks including health and safety, non-compliance with regulations resulting in penalties and financial fines, and financial liabilities. Operationally, risks include an inability to meet important LOS. Complete mitigation is desirable; however, LMCH recognizes the financial strain that this approach would have on its shareholder. Further, due to the unavailability of funding until 2024, a significant volume of work would be required for completion within a short time and this would be a significant resourcing challenge.

LMCH is committed to being part of our shareholder's goal to strengthen the community. Therefore, LMCH recommends significant infrastructure gap mitigation (representing \$115.4 million) made over a period of 15 years. This level of investment is more feasible to resource than completing the work over a period of 10 years. It also provides opportunity to benefit from advancements in building sciences. Further, significant mitigation is necessary to ensure that LMCH remains able to house some of our community's most vulnerable individuals and families.



Section 8.0 Conclusions & Recommendations



LMCH's **mission** is to provide and maintain **homes in a safe and supportive environment** to meet the needs of the people served in LMCH communities. The 2020 AMP is an integral step in the execution of that mission.

The 2020-2029 AMP provides a robust understanding of LMCH's assets to aid appropriate investment decisions. As assets continue to age and require substantial capital investment, these asset management understandings and practices are increasingly crucial.

LMCH's 2020-2029 Infrastructure gap is significant. Therefore, additional capital investment is needed to mitigate the gap and reduce risks is necessary. The risks and consequences of underinvestment to the infrastructure gap are severe, including the potential for forced unit closure.

The development of the AMP is just as important as its execution. For this reason, the AMP concludes with six (6) next steps and three (3) recommendations relating to data integrity, tenant policies and support services, and capital project funding, selection, and execution.

8.1 Next Steps & Recommendations

The AMP provides a considerable amount of information related to core and other assets. To maintain the portfolio in the best condition possible and realize the greatest benefits from capital investments, **continuous improvement is critical**. The following next steps and recommendations provide specific actions and updates that are integral to realizing these betterments.

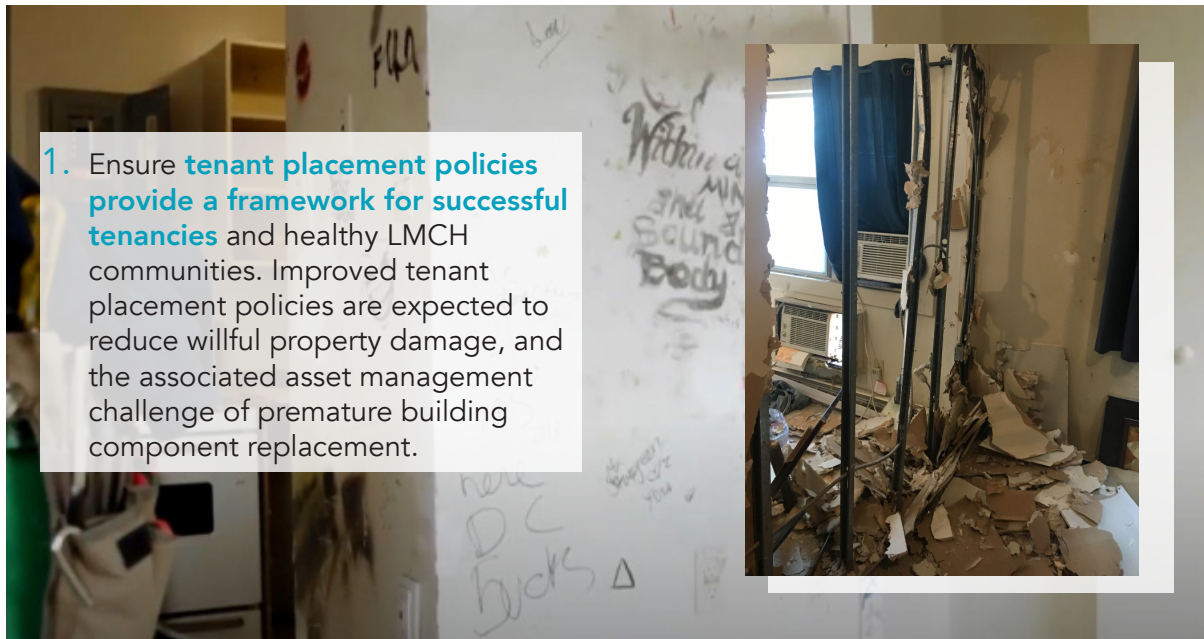


Next Steps:

1. Standardized Asset Management practices that **promote prudent decisions and outcomes**. LMCH is committed to the following actions:
 - a. Maintain data integrity by completing Building Condition Assessments (BCA) on a 5-year rolling basis for all core assets.
 - b. Regularly collect and report on asset LOS information.
 - c. Where trending failure occurs, investigate contributing factors and work to mitigate their effects.
 2. Transition from the existing non-automated priority group determination and risk score process to an automated process. As necessary, adjust results with LMCH staff's supplemental building knowledge.
 3. Selected capital projects based on their risk score and established priority grouping investment allocation.
 4. Advance capital projects with appropriate specifications, design and sufficient project management.
 - a. Capital projects designed to provide the required service at the lowest lifecycle cost (i.e. select equipment based on lifecycle costs as opposed to acquisition cost only).
 - b. Capital projects appropriately specified (i.e. capacity is not too large and not too small).
 - c. Construction complete as per project specifications and design (proper construction and installation foster assets designed useful life).
 5. Provide **tenants with support to encourage independent, healthy living** (i.e. housekeeping, mental health support) and **reduce property damage**.
 - a. Continue fostering healthy relationships with community partners and ensure that their program objectives align with LMCH values and mission, promote housing stability, and appropriate treatment of LMCH assets.
 6. Review the AMP each year and fully update the AMP every five (5) years to ensure it remains relevant and compliant with Ontario Regulation 588/17 Asset Management Planning for Municipal Infrastructure.
-



Recommendations:

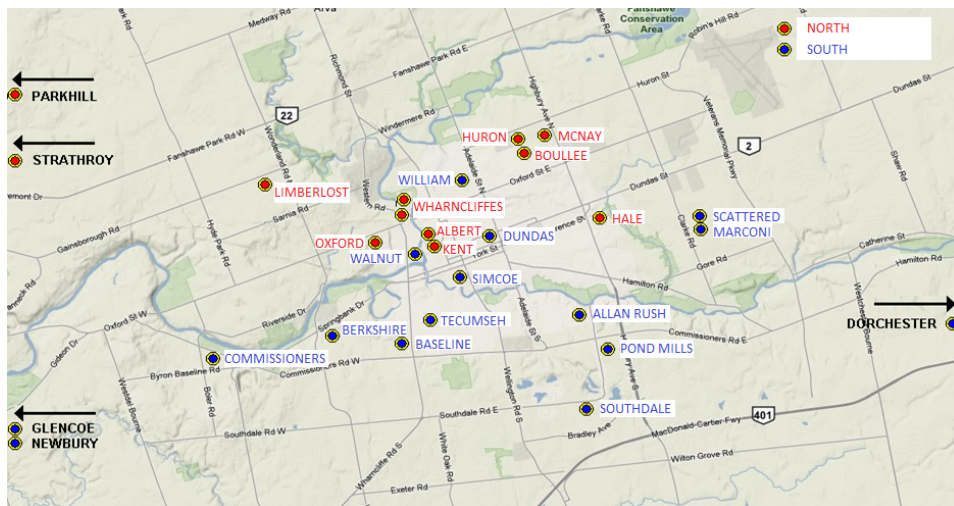


1. Ensure **tenant placement policies provide a framework for successful tenancies** and healthy LMCH communities. Improved tenant placement policies are expected to reduce willful property damage, and the associated asset management challenge of premature building component replacement.
2. **Continued shareholder support for third-party capital** funding programs that are suitable and valuable to LMCH.
 - a. Investment prioritized to lifecycle renewal high priority requirements with significant risk scores.
 - b. If funding is for service improvements, ensure that investment is fiscally and operationally prudent.
3. By 2034, **invest an additional \$115.4 million to the lifecycle renewal infrastructure gap**. As a result, substantially reduce assumed risk and continue providing critical housing services.



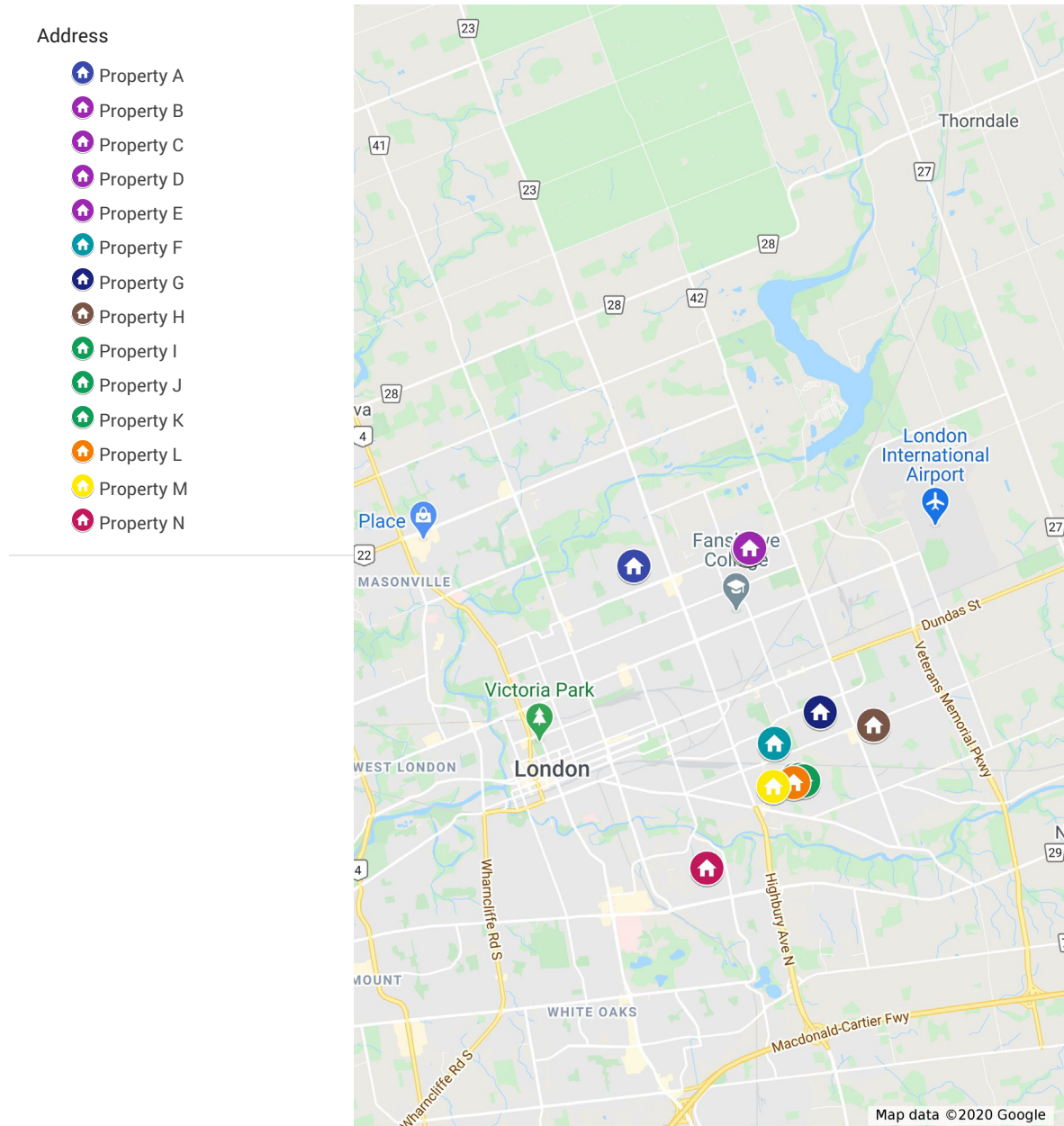
Appendices

Appendix 1: Portfolio Map



Appendix 2: A Map of the Scattered Properties

Scattered Properties



Appendix 3: Draft KPI

KPI Inspection - London Middlesex Community Housing																	
Inspector		Site Address			Date												
Area	Notes	Location	Condition	Remarks	Area	Notes	Location	Condition	Remarks								
Building Structure	No outstanding issues or recommendations				Building Structure	General (Roof, Walls, Floors, etc.)											
	No loose tiles, etc.					Roof	Roof (Pitch, Gables, etc.)										
	No loose tiles, etc.						Walls	Walls (Internal, External)									
	No loose tiles, etc.							Floors	Floors (Internal, External)								
	No loose tiles, etc.								Windows	Windows (Internal, External)							
	No loose tiles, etc.									Doors	Doors (Internal, External)						
	No loose tiles, etc.										Stairs	Stairs (Internal, External)					
	No loose tiles, etc.											Lifts	Lifts (Internal, External)				
	No loose tiles, etc.												Other	Other (Internal, External)			
	No loose tiles, etc.																
Services	No loose tiles, etc.				Services	General (Roof, Walls, Floors, etc.)											
	No loose tiles, etc.					Roof	Roof (Pitch, Gables, etc.)										
	No loose tiles, etc.						Walls	Walls (Internal, External)									
	No loose tiles, etc.							Floors	Floors (Internal, External)								
	No loose tiles, etc.								Windows	Windows (Internal, External)							
	No loose tiles, etc.									Doors	Doors (Internal, External)						
	No loose tiles, etc.										Stairs	Stairs (Internal, External)					
	No loose tiles, etc.											Lifts	Lifts (Internal, External)				
	No loose tiles, etc.												Other	Other (Internal, External)			
	No loose tiles, etc.																
Other	No loose tiles, etc.				Other	General (Roof, Walls, Floors, etc.)											
	No loose tiles, etc.					Roof	Roof (Pitch, Gables, etc.)										
	No loose tiles, etc.						Walls	Walls (Internal, External)									
	No loose tiles, etc.							Floors	Floors (Internal, External)								
	No loose tiles, etc.								Windows	Windows (Internal, External)							
	No loose tiles, etc.									Doors	Doors (Internal, External)						
	No loose tiles, etc.										Stairs	Stairs (Internal, External)					
	No loose tiles, etc.											Lifts	Lifts (Internal, External)				
	No loose tiles, etc.												Other	Other (Internal, External)			
	No loose tiles, etc.																

Inspector: [Name]

Site Address: [Address]

Date: [Date]

Total Score: 0 of 0

#DIV/0!

Appendix 4: Work Order Response Times

The following information are the proposed work order categories, and the associated description and standard response times. At the time of writing, these standards were under active development and are consequently subject to change. They are included in this report to demonstrate LMCH's active commitment to excellence, continual improvement, and customer service.

Work Order Category	Description	Maximum Response Time
After Hours Call	Any calls received after hours that were dispatched, regardless of type.	Response and site visit provided within one hour. Nature of work assessed and where appropriate order created and completed within 48 hours.
Emergency	Life or building safety issues that require immediate response. If not dealt with immediately, the issue will cause damage or deterioration to the structure of the building and/or could be harmful to tenants if not dealt with immediately. Some items may have immediate response for mitigation, while permanent repair follows at a later date.	24 hours
Non- Emergency	Issues that do not harm human life or building structure but may cause an inconvenience to the tenant(s) if not addressed within 5 days.	5 calendar days
Routine	Issues that do not harm human life or building structure and can wait to be addressed in sequence within 30 days.	30 calendar days
Unit Inspections	All work orders (excluding any identified emergency or non-emergency) created during annual unit inspections.	30 calendar days from inspection date

Appendix 5: Vacancy Rate Definitions

Total Vacancy: This includes all units within LMCH portfolio that are not occupied. It is inclusive of Non-Rentable (Units), Active Restoration (Units) and Rent Ready Stock.

Active Rental Stock: These are all units that are rent ready and available to offer. Units leave this category when they are future leased or leased (when the actual lease is signed and keys are handed to the new tenant).

Non-Rentable or in Active Restoration: This category includes all remaining units that have suffered catastrophic loss, i.e. fire, flood or other insurable damage. Construction projects such as portfolio improvements and secondary suites. Units that are in pre-pest clearance as well as any that are pest cleared and are now in active restoration. Affordable

Glossary of Terms

Housing: Residential rents that are maintained at or below 80% of Average Market Rent for at least 20 years. Affordable Housing programs were first established in 2002 and have led to the construction of about 21,800 rental units.

Asset Management: Coordinated activity of an organization to realize value from assets. Realization of value normally involves balancing costs, risk, opportunities and performance benefits (The Institute of Asset Management, 2019)

Asset Management Plan: Documented information that specifies the activities, resources and timescales required for an individual asset, or a grouping of assets, to achieve the organizations asset management objectives (The Institute of Asset Management, 2019).

Asset Management Strategy: A management system for asset management whose function is to establish the asset management policy and asset management objectives. The strategy converts objectives of the organizational strategic plan and the asset management policy into high-level, long-term action plan for the assets and/or asset system (The Institute of Asset Management, 2019)

Bonus Zoning: Under Section 37 of the Planning Act, R.S.O. 1990, Council may pass a by-law, known as a bonus zone, to authorize an increase in height and density of development beyond which is otherwise permitted by the Zoning By-law, in return for the provision of such facilities, services, or matters as are set out in the bonus zone.

Built Form: Includes all elements that make up the physical shape of the city. These include neighborhoods, streets, streetscapes, public spaces, landscapes and buildings. The built form includes things such as the physical size, height, shape, style and architectural elements of a building and its position relative to the lot and surrounding buildings.

Service Manager: Service Managers are responsible for determining a household's eligibility for rent-geared-to-income assistance and priority access to subsidized housing in their service area. Decisions are made following provincial eligibility and priority rules, and local eligibility and priority rules that are set by the Service Manager on specific matters as specified by regulation.

Community Housing: Housing owned and operated by non-profit housing corporations, housing co-operatives, and municipal governments or district social services administration boards. These providers offer subsidized or low-end-of market rents. This form of housing is sometimes referred to as social housing and affordable housing.

Facility Condition Index (FCI): FCI is calculated by dividing the sum of all past, current, and near term (2 years) site and building capital needs by the total replacement value. The FCI score is often used to compare asset conditions across a portfolio.

Housing First: A recovery-oriented approach to ending homelessness, which focuses on moving people experiencing homelessness into independent and permanent housing where there are appropriate supports and services (Housing First, 2019).

Housing Division Notice: Policies, procedures and directives established by the City of London Service Manager. Local Rules are developed to ensure consistent program delivery.

Housing Service Act (HSA): Establishes the legislative framework for the community (formerly called social housing) in Ontario. Rent-geared-to-income assistance is administered locally by 47 Service Managers (municipalities and district social services administration boards) designated under the Housing Services Act, 2011 to manage community housing programs across the province.

Levels of Service (LOS): Parameters, or combinations of parameters, which reflect social, political, environmental and economic outcomes that the organization delivers (The Institute of Asset Management, 2019).

Local Priority Rules

When selecting an applicant from the City of London and Middlesex County waiting list, offers by the Housing Providers should be made in the following order:

1. Applicant households approved under the Special Priority Policy (SPP) for applicants who are abused;
2. Applicant households deemed to be in an Urgent situation ranked according to the date the status was assigned;
3. Applicant households in the High Need category by date of application;
4. Applicant households in the rent-geared-to-income category ranked chronologically by date of application (see Placement Ratio below).

Property Assets: This refers to real estate, which is immobile and tangible, such as land and improvements, and real property, which includes all of the rights that can attach to land (i.e. restrictive covenants and easements).

Property/Land Uses: the purpose for which any land, building or structure or premises, or part or combination thereof, is arranged, designed or intended to be used.

Rent-geared-to-income: Rental units where rent charged is equal to 30% of gross income less exclusions and deductions. Household income is verified through income testing by the housing provider or Service Manager

Community housing: Developed through federal or provincial government programs from the 1950s through 1995. Over 250,000 households live in community housing. About 185,000 pay a geared-to-income rent and the rest pay moderate market rent.

Stakeholder: Person or organization that can affect, be affected by, or perceive themselves to be affected by a decision or activity (The Institute of Asset Management, 2019).

Supportive Housing: Supportive housing combines housing assistance with individualized, flexible, and voluntary support services for people with high needs related to physical or mental health, developmental disabilities or substance use (Homeless Hub, 2019).

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