Municipal Pension Plan

Annual Report 2020


Contents

MPP members on the cover (clockwise from top left):
Donna McCallum, Brenna Jonasson, Beena Paul and Gordon Smith

Planning for the future

A message from your trustees

The strength and durability of the Municipal Pension Plan is what makes us feel excited about its future. For more than 80 years, we've remained committed to providing retirement security to our members. This is our latest annual report, looking at the plan's standing as of December 31, 2020. We, the Municipal Pension Board of Trustees, welcome you to learn about the plan's financial performance and how the plan is built to last long into the future.

The strength and durability of the Municipal Pension Plan is what makes us feel excited about its future.

Plan security

Though 2020 brought many challenges, the plan remains secure. We invest in a broadly diversified portfolio and take a long-term approach to investing. The early foundation laid to prepare the plan's investment portfolio for a downturn has paid off, and the plan remains well funded. Whether members are receiving their pension or working and contributing toward their pension, the plan is in a strong financial position for all members.

Plan longevity

The past year marked the 20th year of joint trusteeship, where members and employers have shared the risks and rewards of plan sponsorship. Representatives of both plan members and plan employers share management of the pension plan. These management responsibilities include administering the plan and investing the assets of the pension fund. Together, member and employer representatives in this model have taken the plan to its solid standing today.

A long-term view

The work on our strategic plan was completed in 2020. We undertake long-range strategic planning every few years to revisit our goals and vision. This ensures we remain focused on the plan's sustainability for current and future members. Part of our work that supports a long-term view included refreshing our investment beliefs, updating our investment asset allocation, developing new investment strategies and expanding responsible investing information, including Task Force on Climate-related Financial Disclosure (TCFD) reporting. Starting with our *2019 Annual Report*, we disclose climate-related financial information. See our TCFD update in this year's report.

Improvements for members and employers

Through all our work, we keep our members and employers in mind. At our 2020 annual general meeting, about 500 attendees—our highest turnout ever—joined the first solely online event. This format increased the opportunity for participation.

We are happy to report that at the end of 2020, the plan partners came to an agreement on plan changes. Changes will improve equity for members, align benefits with how they are mainly used, maintain a strong foundation for the plan's sustainability and stay within current costs.

We also completed our review of post-retirement group benefits and made improvements to extended health care coverage. These changes are valuable to many of our retired members who participate in the plan's extended health and dental group benefits.

The board supported planning for employers by moving from an annual to a triennial calculation of employer contribution rates. This change supports our employers and helps them to more accurately plan and budget contribution rates. In future, employers' individual blended contribution rates will generally be adjusted following the plan's actuarial valuation.

In the year ahead

With a strong history and foundation, we continue to build on the plan's continual success. Good governance and long-term financial management has made us a model pension plan. We're proud of our plan and trust our members and employers are too.

The 2021 AGM will take place online on October 14, 2021.

Plan investments

Plan portfolio overview

The Municipal Pension Board of Trustees is responsible for overseeing assets of $66.5 billion for the benefit of Municipal Pension Plan members. The board's primary financial objective is to ensure the long-term sustainability of the plan, which is dependent on several factors, including generating sufficient investment returns over time.

The board oversees the management of plan assets through its investment management agent, the British Columbia Investment Management Corporation (BCI). The board's Statement of Investment Policies and Procedures outlines the investment beliefs and financial goals of the plan, and BCI is responsible for implementing the investment strategy.

Risk management is a fiduciary responsibility of the board and BCI. This includes analyzing risk and taking appropriate steps to limit exposure or capitalize on opportunities. Diversification of investments is a key principle in managing risk, and the plan invests in a broad range of assets to cushion against lower returns in any one type of asset. The board sets and reviews the plan's long-term asset mix policy with the goal of increasing the likelihood that the plan will meet its key investment objectives. Short-term volatility is monitored and in part managed through longer-term investment objectives.

Diversification of investments is a key principle in managing risk, and the plan invests in a broad range of assets to cushion against lower returns in any one type of asset.

Five-year financial summary ($ millions)
for the year ended December 31

	2020	2019	2018	2017	2016
Increase in assets					
Investment income	**$ 7,091**	$ 6,693	$ 1,210	$ 5,205	$ 2,659
Contributions					
Members	**1,131**	1,034	971	923	884
Employers	**1,293**	1,185	1,117	1,067	1,022
Transfers from other plans	**23**	18	97	11	16
Total increase in assets	**9,538**	8,930	3,395	7,206	4,581
Decrease in assets					
Benefit payments	**2,232**	2,068	1,928	1,808	1,690
Transfers to other plans	**29**	13	11	15	15
Retired member group benefits	**26**	50	51	69	105
Investment and administration costs[1,2]	**211**	143	170	127	135
Total decrease in assets	**2,498**	2,274	2,160	2,019	1,945
Increase in net assets	**7,040**	6,656	1,235	5,187	2,636
Net assets at beginning of year	**59,440**	52,784	51,549	46,362	43,726
Net assets at end of year	**$66,480**	$59,440	$52,784	$51,549	$46,362
Investment and administration costs as a percentage of net assets (%)[1]					
Investment management[1,2]	**0.39**	0.37	0.35	0.28	0.28
Benefits administation	**0.08**	0.09	0.09	0.09	0.10

1 Investment and administration costs as a percentage of net assets include external investment management costs netted against investment income of $73.6 million (2019—$75.8 million; 2018—$61.8 million; 2017—$52.4 million; 2016—$33.5million) they are not included in investment and administration costs in the financial statements.

2 Investment and administration costs as a percentage of net assets exclude external indirect investment management costs netted against investment income. This is consistent with current industry practice; including these costs using the budgeted amount would have increased investment management costs as a percentage of net assets by an estimated 29 basis points in 2020. External indirect investment management costs include limited partnership costs incurred within investments held in the private equity, infrastructure and global real estate asset classes.

Investment highlights

The year 2020 was an eventful one in many aspects, including in capital markets. The global economy experienced significant disruptions in the first quarter as the outbreak of COVID-19 spread, and then rebounded with support from unprecedented fiscal and monetary stimulus. As a result, capital markets were volatile.

Despite these extraordinary events, the plan's investment portfolio remains secure. BCI has been preparing for a market downturn for some time. As a result, when the markets fell in early 2020, the plan was in a strong financial position, with ample liquidity, and was not forced to sell assets.

Over the year, the plan's assets increased from $59.4 billion as at December 31, 2019 to $66.5 billion as at December 31, 2020. Strong long-term returns underscore the financial health and stability of the plan. Over the five-year period, ending December 31, 2020, the plan's investment portfolio performed well above its investment return objective of 6.5 per cent, returning an annualized 8.6 per cent, outperforming a benchmark of 8.2 per cent.

Assets up from $59.4 billion *as at December 31, 2019 to* $66.5 billion *as at December 31, 2020*

On a one-year basis however, the portfolio slightly underperformed its benchmark returning 11.7 per cent against a benchmark of 11.8 per cent. Underperformance was due to a weak real estate market, the hardest-hit sector during the pandemic impacted by a decrease in commercial leasing. Real estate returns were flat compared to a benchmark of 6.8 per cent over one year and 5.6 per cent against a benchmark of 6.3 per cent over five years.

The plan has always maintained a low exposure to retail—the real estate sector most impacted by physical distancing measures. In addition to avoiding weak sectors, the plan had previously increased its exposure to logistics and data centres, which benefited from the accelerated shift to e-commerce due to COVID-19. Subsequent to the period reported in this report, in the first quarter of 2021, the real estate sector saw increased activity as markets stabilized in reaction to vaccine developments.

Private equity returns have been strong, returning 23.1 per cent against a benchmark of 16.2 per cent over one year, and 16.9 per cent against a benchmark of 12.3 per cent over five years.

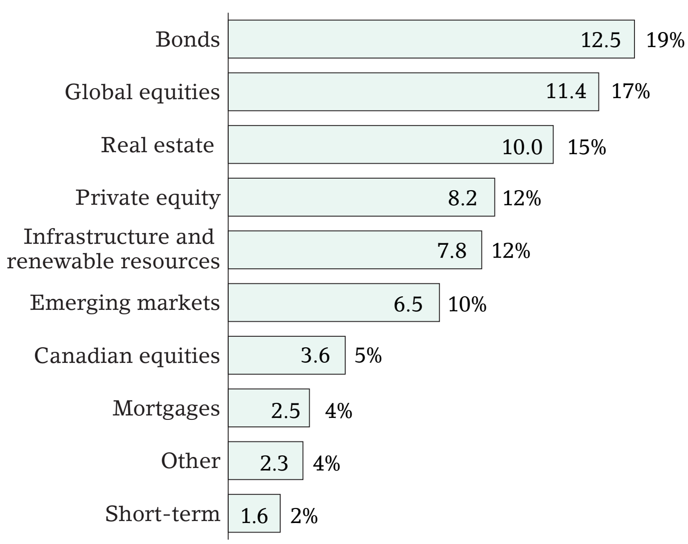
Infrastructure and renewable resources (I&RR) returned 7.9 per cent against a benchmark of 7.0 per cent over one year and 8.0 per cent against the benchmark over five years.

I&RR investments have the longest horizon within the plan's portfolio, and BCI's focus on investing with caution ensured a stable portfolio that weathered the events of 2020.

During 2020, the plan's public market investments outperformed their benchmark. Public equities returned 16.3 per cent against a 14.2 per cent benchmark over the year and 10.4 per cent against a benchmark of 10.6 per cent over five years. Fixed income returned 7.8 per cent against a 7.5 per cent benchmark over the year and 4.3 per cent against a benchmark of 3.9 per cent over five years. BCI's strategy of transitioning public equity asset management in house, away from more expensive external managers, and pursuing concentrated, high-performing strategies contributed to the outperformance. Meanwhile, the plan's fixed income portfolio benefited from favourable central bank policies.

BCI's focus on investing with caution ensured a stable portfolio that weathered the events of 2020.

Investment holdings ($ billions)
as at December 31, 2020



Investment portfolio[1]
as at December 31, 2020

	Market value ($ millions)	Asset mix (% market value)
Short-term		
Money market	$ 1,626	2.5
Bonds (1–5 years)	—	0.0
	1,626	2.5
Mortgages	2,509	3.8
Bonds		
Corporate bonds	4,364	6.6
Leveraged bonds (net)	436	0.7
Government bonds	7,731	11.6
	12,531	18.9
Private debt	2,206	3.3
Canadian equities		
Indexed	1,323	2.0
Actively managed	2,277	3.4
	3,600	5.4
Global equities		
Indexed	5,910	8.9
Actively managed	5,465	8.2
	11,375	17.1
Emerging markets		
Indexed	3,781	5.7
Actively managed	2,732	4.1
	6,513	9.8
Private equity	8,237	12.4
Real estate		
Domestic	6,045	9.1
Global	3,922	5.9
	9,967	15.0
Infrastructure and renewable resources		
Infrastructure	6,376	9.6
Renewable resources	1,421	2.1
	7,797	11.7
Cash and unsettled trades	66	0.1
Total investments	**$66,427**	**100.0**
2019 comparison	**$59,392**	

1 Asset classifications vary from the financial statements for the purpose of performance reporting on strategic investments and infrastructure

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Market value asset mix and rates of return (%)
as at December 31, 2020

	Approved range	Target asset mix market value	Actual asset mix market value	Rate of return	Performance benchmark
Short-term	0–10	2	2.5	0.0	0.9
Mortgages	0–10	5	3.8	2.8	7.0
Universe bonds	5–30	23	12.3	8.9	8.7
Corporate bonds	0–10	5	6.6	10.5	7.0
Private debt	0–10	4	3.3	3.6	1.9
Fixed income	**15–50**	**39**	**28.5**	**7.8**	**7.5**
Canadian equities	0–15	5	5.4	6.9	5.6
Global equities	10–35	17	17.1	17.2	14.2
Emerging markets	3–15	10	9.8	19.8	16.2
Private equity	3–15	10	12.4	23.1	16.2
Equity	**30–60**	**42**	**44.7**	**18.1**	**14.6**
Real estate	10–25	17	15.0	0.0	6.8
Infrastructure and renewable resources	5–16	12	11.7	7.9	7.0
Real assets	**20–40**	**29**	**26.7**	**3.0**	**6.9**
Other	**0–5**	**0**	**0.1**	**—**	**—**
Total portfolio		**110**	**100.0**	**11.7**	**11.8**
Annual rates					
2020				**11.7**	**11.8**
2019				12.5	13.2
2018				2.1	0.2
2017				11.0	9.9
2016				5.9	6.6
Five-year annualized rates					
2020				**8.6**	**8.2**
2019				8.0	7.3
Ten-year annualized rates					
2020				**9.1**	**8.0**
2019				8.9	7.7

Understanding the plan's investment portfolio

The board takes a long-term approach to investing as the plan's commitment to its members is long term in nature. The plan's long-term asset mix policy reflects an increased focus on investing in regulated utilities, renewable resources and real assets. Real assets are tangible physical investments, such as land and buildings, and are ideally suited for the long-term financial objectives of the plan. These private assets typically increase in value over time, provide income and protect against inflation, while reducing the short-term volatility associated with public markets. Many of these investments also allow for more direct asset management, which enables BCI to influence the strategic direction of these companies and create long-term value for the plan.

Investment profile

Waterlogic Holdings

Waterlogic is a leading point-of-use (POU) cooler company. It designs, assembles, distributes and services POU water systems for a diverse range of customers. These customers include factories, hospitals and offices.

Waterlogic is at the forefront of the POU market, providing a lower environmental impact and a more cost-effective alternative to bottled water. Headquartered in the United Kingdom, Waterlogic is a quality company led by a strong management team with a proven track record of delivering on its business plan.

Responsible investing

Responsible investing is an integral part of the plan's investment approach, as outlined in the investment beliefs within the plan's Statement of Investment Policies and Procedures. The board and BCI believe that assessing and managing risk over the long term is the cornerstone of responsible investing, and a fundamental way to meet the mandate to grow and protect the value of the plan's fund. Taking environmental, social and governance (ESG) matters into account enables us, as investors, to better understand the opportunities, and manage and mitigate the risks associated with long-term investments. BCI and the board believe that companies that employ robust ESG practices are better positioned to generate long-term value for investors compared to similar companies with less-favourable practices.

> *The board and BCI believe that assessing and managing risk over the long term is the cornerstone of responsible investing, and a fundamental way to meet the mandate to grow and protect the value of the plan's fund.*

ESG considerations are integrated into BCI's investment analysis, decisions and processes. As an active owner, BCI monitors ESG factors and engages with companies to raise awareness that good corporate governance is the overarching framework for effective management of opportunities and risks. BCI's influence as a shareholder is used to encourage companies to manage and report on ESG practices.

CASE STUDY: PILOT FREIGHT SERVICES

In 2016, BCI invested in Pilot Freight Services, a global third-party logistics provider and freight forwarding business. Based in Pennsylvania, Pilot serves customers through a network of over 75 locations in North America and Western Europe, and 87 international partners.

As an active owner and with board representation at Pilot, BCI asks portfolio companies to assess their business practices on an ongoing basis. Pilot has considered several ESG-related initiatives at the board level, including:

Air and water pollution

- › Exploring a carbon credit offset program
- › Working on converting forklifts from propane to electricity

Business ethics

- › Mandatory training on harassment prevention
- › Developing enhanced anti-bribery and anti-corruption training

Community engagement

- › Expanding corporate social responsibility efforts to give back locally

It is important to the board to collaborate with like-minded investors and organizations. The board and BCI are signatories to the Principles for Responsible Investment (PRI), an international network of investors coordinated by the United Nations that share the goal of incorporating ESG elements into the processes and activities of institutional investors. BCI and the board's approach to responsible investing are aligned with PRI, which provides a set of principles for institutional investors to consider as they integrate ESG factors into their own investment processes and analyses, ownership activities and interactions with long-term investors. As part of this commitment, both the board and BCI take part in an annual PRI assessment to measure their progress.

In addition, the board supports BCI in responsible investing as a member of the steering committee for the 30% Club, which advocates for companies to enhance gender diversity, and the Sustainability Accounting Standards Board, which has a mandate to promote standards of sustainability reporting.

Plan members can learn more about responsible investing activities on the BCI website at BCI.ca.

Find more information about BCI's investments at BCI.ca. Click on Investments.

Member
Jodi Campbell

Top 25 public equity holdings—worldwide

Company	% of portfolio	% of public equity	Total exposure ($ millions)
Taiwan Semiconductor Manufacturing Co. Ltd.	0.7	2.1	443
Samsung Electronics Co. Ltd.	0.6	1.8	382
Apple Inc.	0.5	1.7	358
Tencent Holdings Ltd.	0.5	1.6	336
Microsoft Corp.	0.5	1.4	306
Alibaba Group Holding Ltd.	0.4	1.4	295
Amazon.com Inc.	0.4	1.1	246
Royal Bank of Canada	0.4	1.1	235
Alphabet Inc.	0.3	1.0	209
Shopify Inc.	0.3	0.9	185
Toronto-Dominion Bank	0.3	0.8	182
Brookfield Asset Management Inc.	0.2	0.7	141
Fraport AG Frankfurt Airport Services Worldwide	0.2	0.6	137
Canadian Pacific Railway Ltd.	0.2	0.6	125
Mastercard Inc.	0.2	0.6	121
UnitedHealth Group Inc.	0.2	0.5	117
Facebook Inc.	0.2	0.5	114
Ping An Insurance Group Co. of China Ltd.	0.2	0.5	112
Canadian National Railway Co.	0.2	0.5	109
Housing Development Finance Corp. Ltd.	0.1	0.4	95
Kweichow Moutai Co. Ltd.	0.1	0.4	91
Visa Inc.	0.1	0.4	87
TC Energy Corp.	0.1	0.4	85
Tesla Inc.	0.1	0.4	83
Constellation Software Inc./Canada	0.1	0.4	83
Total top 25	7.0	21.8	4,677
Total public equity			21,488
Total portfolio			**$66,427**

Climate-related disclosures

Background

In its 2018 Special Report: *Global Warming of 1.5°C*, the United Nations (UN) Intergovernmental Panel on Climate Change (IPCC) found that warming the earth 1.5°C above pre-industrial levels would have large impacts on ecosystems, society and the economy. The report found that there would be climate change impacts in a world that has warmed by 1.5°C above pre-industrial levels. The report also found that the impacts would be more significant and acute in a world that reaches 2°C of warming. The report also found that human activities have caused approximately 1°C of warming to date, and that global warming is likely to reach 1.5°C between 2030 and 2052, unless rapid and global changes are made to the ways in which land and other resources are used, and key market systems including energy and industrial systems decarbonize and adapt to create a low carbon economy. The Paris Agreement set out a target of limiting global warming to well below 2°C, preferably to 1.5°C.[1]

The Task Force on Climate-related Financial Disclosures (TCFD) was created by the global Financial Stability Board to develop climate-related disclosures that will lead to a better understanding of the financial system's exposure to climate-related risks,[2] following the entry into force of the Paris Agreement in 2016.[3] The TCFD issued its recommendations in 2017, and the Municipal Pension Board of Trustees has been disclosing climate-related information in line with these recommendations since the 2019 annual report (published in 2020).

The efforts to limit global average temperature increase to at least 2°C or lower seeks to reduce the physical impact of climate change. These efforts will necessitate the transition to a lower-carbon economy—the emission of greenhouse gas (GHG) is the key driver of warming—presenting transition risks and investment opportunities for asset owners around the world.

The board's approach to climate-related disclosures

Although the timing and extent of the effects of climate change are uncertain, the board believes that actions to reduce GHG emissions through investor stewardship, the selection of assets and advocating for appropriate public policies directly and indirectly benefit the plan. The board is committed to understanding the issues, risks and opportunities posed by climate change to support informed investment decision making. We also

1 UNFCCC The Paris Agreement
2 TCFD Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures
3 UNFCCC The Paris Agreement – Status of ratification

believe that better access to data will improve how climate-related risks are assessed, priced and managed.

The board recognizes that climate change results in both an investment opportunity and a long-term material systemic risk to the plan. Climate change poses physical risks, as well as potential broader social and economic risks. The Statement of Investment Policies and Procedures (SIPP) articulates our approach to responsible investing and stewardship generally and climate change specifically.[4] The board delegates the management of investment risks and selection of investments to British Columbia Investment Management Corporation (BCI).

In 2018, the board updated the long-term policy asset mix intended to support the best financial interests and the overall investment risk profile of the plan. The updated long-term policy asset mix was updated in line with the recommendation stemming from an asset-liability review prepared by BCI for the board. This review included assessment of potential impact on long-term investment performance under multiple climate scenarios using a model based on Mercer's Climate Change Risk Assessment Research Package. This climate change work was developed based on the board's desire to undertake this work, and its endorsement to have BCI conduct a climate change scenario analysis. In 2021, the board is undertaking another asset-liability review, which will again assess climate scenarios.

We have a multi-pronged climate change approach both directly and through BCI that includes engagement, advocacy, education, and the management of climate change risks and opportunities.

As part of its commitment to climate action, the board is disclosing climate-related financial information for the second consecutive year, building on our inaugural disclosures based on the recommendations of the TCFD in our *2019 Annual Report.*[5]

In building on our 2019 TCFD disclosure, this disclosure lays out key updates of our actions and those of BCI as they relate to climate change.

We are starting by measuring and monitoring our investments before considering setting targets. The board expects climate-related data to evolve as more information becomes available and our reporting to evolve with it. This disclosure is one way the board reports on climate-related risks and opportunities. Other information about the plan's responsible investing approach, investment oversight and advocacy activities is available on the plan website.

4 MPP Responsible investing/Statement of Investment Policies and Procedures
5 MPP 2019 Annual Report

TCFD update for 2020

The following section is an update to the TCFD disclosure originally shared in our *2019 Annual Report.*[6]

In 2020, the board published its strategic plan (June 2020–2023), laying out strategic objectives for 2020 to 2023. The plan includes initiatives necessary to meet the board's strategic objectives, which are discussed below according to their alignment to the four thematic areas of the TCFD recommendations: governance, strategy, risk management, and metrics and targets.

This disclosure also features relevant updates relating to the integration of climate consideration into BCI's asset management processes. The board is aligned with and supports the efforts of BCI to integrate climate change considerations throughout its investment analysis and stewardship activities.

BCI collaborates with like-minded investors and organizations to raise awareness of the need for reliable and consistent disclosure. To that end, BCI, along with seven of the largest pension investment managers in Canada, called for firms in their portfolios to disclose in alignment with the TCFD recommendations, and the Sustainability Accounting Standards Board (SASB) standards.[7] The SASB standards include climate-related issues.[8]

BCI is committed to incorporating the TCFD recommendations into its reporting and disclosure practices. BCI published its Climate Action Plan,[9] and its 2020 ESG disclosure contains updated reporting in line with the TCFD recommendations. BCI is working to improve and expand measurement of its carbon footprint, which now includes all asset classes.

6 MPP 2019 Annual Report
7 BCI CEO's Statement
8 SASB Supporting the work of the TCFD
9 BCI's Climate Action Plan and Approach to the TCFD Recommendations

Governance

THE PLAN'S GOVERNANCE ON CLIMATE-RELATED RISKS AND OPPORTUNITIES

Board strategic plan

The actions and priorities of the board are driven by the strategic plan.[10] The plan's vision is of "secure and sustainable pensions for current and future beneficiaries of the plan." The plan's second strategic objective, to "enhance plan governance" is made up of one priority, to "address climate risk in the investment portfolio." The plan is striving to deliver against its strategic objectives, including its climate priority, by 2023.

To meet this climate priority, the plan has laid out key strategic initiatives. The governance objective contains one priority, made up of seven strategic initiatives, to enable the plan to address climate risk in the investment portfolio. These initiatives, detailed in the strategic plan, will be met in the three-year timeframe and enable the board to deliver against the priorities.

Governance-related initiatives

To ensure continued and improved understanding of the impacts of climate change on the financial system, the plan will maintain peer interaction for learning and collaboration regarding climate change governance and strategy. This entails continuing previously disclosed[11] trustee activities such as having a trustee representing the plan board sit on the UN Principles for Responsible Investment (PRI) Western North America advisory committee, along with the Committee on Workers' Capital.

Education

Trustees are empowered to carry out their activities through education. On climate, the board will be provided with ongoing education for trustees regarding climate change concepts and associated investment risks and opportunities. This education includes PRI Academy online courses and mandatory climate change education for all trustees.

There was a full board education day in 2020, focused on climate change. Sessions included the science of climate change, fiduciary duty and climate change, and the impact of climate change on plan investments. The board's investment committee also received education on climate science and climate change scenario analysis, and considered how the plan actuary integrates ESG factors into the duties they perform for the plan.[12]

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10 MPP Strategic Plan 2020-2023
11 PRI Responsible Investing Transparency Report
12 This includes the Inevitable Policy Response, a UN PRI scenario discussed in the subsequent section.

Review of governance documentation

To ensure that the plan addresses climate risk, the plan will review and ensure climate risk is addressed on an ongoing basis in key plan investment governance documents, including the SIPP and the Funds Investment and Management Agreement (FIMA). To accomplish this, the board is undertaking a review of the SIPP and FIMA in 2021. BCI will conduct a review of its Climate Action Plan in 2022.

Strategy

THE ACTUAL AND POTENTIAL IMPACTS OF CLIMATE-RELATED RISKS AND OPPORTUNITIES ON THE PLAN'S OPERATIONS, STRATEGY AND FINANCIAL PLANNING

Board strategic plan

Key to an effective strategy is ensuring there is an understanding of the resilience of the strategy under different climate-related scenarios.

Climate-related scenario consideration

In line with TCFD recommendations, the plan will explore investing in a manner compatible with the Paris Agreement goal of keeping global average temperature to well below 2°C above pre-industrial levels. This initiative includes multiple activities over the next three years, such as analyzing the performance of market sectors directly affected by changing climate regulations, and working with BCI on the feasibility of different Paris-aligned investment strategies. This strategic work includes the board's consideration on setting a total carbon footprint target for its fund.

BCI climate-related strategy

Climate-related engagement and advocacy

As part of the Climate Action 100+, an investor initiative to engage firms that are key to the transition to a lower carbon world in line with the goals of the Paris Agreement, BCI leads or co-leads engagement with North American companies in the oil and gas and mining sectors. Along with the Shareholder Association for Research & Education (SHARE) and three additional collaborating investors, BCI participates in group-wide meetings with the company's senior management and independent board directors.

Responding to the impact of COVID-19 in 2020, BCI developed general expectations of companies in which it invests for short-term and long-term actions.

BCI is one of the four founding members to the Sustainable Development Investments Asset Owner Platform alongside APG, AustralianSuper, and PGGM. The platform's standard artificial-intelligence-driven data enables investors to assess companies on their contribution to the UN Sustainable Development Goals (SDGs).

Climate-related scenario consideration

BCI has developed an in-house ESG risk and opportunity framework to measure the potential impact of systemic risks on the long-term performance of market and total portfolios of both BCI and its clients. The climate-change risk scenarios produce portfolio stress tests that uncover areas of risk, opportunity and climate resilience in BCI's current portfolio. The framework is also being leveraged to target and conduct detailed scenario analysis on specific assets within the portfolio.

Climate-related opportunity exposure metric

In 2020, BCI calculated its exposure to climate-related opportunities by mapping our investments to a combination of sustainable impact research metrics, including data from the Sustainable Development Investments Asset Owner Platform and other third-party datasets. These include considerations for the UN Sustainable Development Goals definition of climate-related opportunities.

As of December 31, 2020, the plan's exposure grew to $1.2 billion from $1.0 billion in 2019.

Risk management

PROCESS FOR IDENTIFYING, ASSESSING AND MANAGING CLIMATE-RELATED RISKS

Board strategic plan

Risk management-related initiatives

Investor stewardship is key to managing the impacts of climate change on the plan. One way the plan practices investor stewardship is through Climate Action 100+. To that end, the plan will continue as a Climate Action 100+ supporter signatory and encourage BCI to continue its engagements with companies as a participant signatory.

BCI climate-related risk management

BCI has begun work on two key climate change initiatives working alongside its peers and researchers that will advance its climate change risk measurement capabilities:

1. ***Physical climate change risk tool development***
   BCI has partnered with Canadian pension peers to work with a leading physical climate change risk provider to develop a fit-for-purpose physical climate change risk tool that produces financial impact assessments for their respective total portfolios.

2. ***Climate finance project***
   BCI, the University of Victoria and the Pacific Institute for Climate Solutions are partnering on a three-year research project aimed at expanding the potential of the finance and investment sector to support the transition to a climate-friendly, low-carbon economy. Together, the partners will research and co-develop decision-making tools and frameworks for integrating climate change risk evaluation and climate mitigation opportunities into investment portfolios.

Metrics and targets

THE METRICS AND TARGETS USED TO ASSESS AND MANAGE RELEVANT CLIMATE-RELATED RISKS AND OPPORTUNITIES

Portfolio carbon footprint

In 2020, BCI expanded the portfolio carbon footprinting to include private markets alongside most of fixed income and real estate, and public equities. BCI's carbon footprint now includes all asset classes.

BCI calculates the carbon footprint normalized by the market value of the portfolio, expressed in tonnes of CO_2e/$M invested.

For real estate, BCI calculates the carbon footprint of the QuadReal domestic real estate portfolio.

The plan-specific footprint calculations for 2020[13] are provided below:

› We measured our **PUBLIC EQUITIES**[14] carbon footprint as 138 tonnes of CO_2e per million invested as at December 31, 2020, compared to the benchmark[15] intensity of 146 tCO_2e/$M invested.
› We measured our **FIXED INCOME**[16] carbon footprint as 71 tonnes of CO_2e per million invested as at December 31, 2020, compared to the benchmark intensity of 70 tCO_2e/$M invested.
› We measured our **REAL ESTATE**[17] carbon footprint as 8.0 tonnes of CO_2e per million invested as at December 31, 2020.
› We measured our **PRIVATE MARKET**[18] carbon footprint as 335 tonnes of CO_2e per million invested as at December 31, 2020.

See Appendix for carbon footprint methodology.

13 2020 metrics have been derived from 2019 emissions data.

14 The public equities footprint has been calculated based on updated carbon and portfolio financial data and includes broader coverage of the portfolio compared to last year. The methodology continues to be refined and additional coverage will be added in future years.

15 The benchmark is a weighted combination of multiple indices selected to measure performance that is appropriate for the portfolio.

16 The fixed income carbon footprint includes public corporate bond exposures but excludes private debt, money market and segregated assets.

17 QuadReal emissions reflect the location-based domestic real estate emissions rather than the market-based emissions which were reported previously. Renewable energy credits and verified emission reductions were acquired in the portfolio and will be disclosed in QuadReal reporting. The international portfolio emissions are currently excluded from the footprint. Emissions data is estimated based on roughly 80 per cent data completeness. By the fourth quarter, QuadReal will publish final carbon emissions numbers with higher data completeness, quality control and external assurance.

18 Private market footprints are calculated using a combination of estimation methodologies most appropriate for the asset types and data availability. The approach is consistent with the TCFD recommendations and current industry best practices, but is limited in accuracy due to data gaps and methodology limitations. BCI is working to improve private market quantification techniques, and we expect that these results will change over time.

Plan details

A look at our membership

The Municipal Pension Plan had 220,321 active members who worked for 945 employers as of December 31, 2020. The total membership was 379,091.

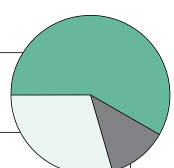
There are four types of members:

- **Active:** Currently contributing, on a leave of absence or receiving benefits from an approved long-term disability plan. There were 220,321 active plan members, an increase of 3.4 per cent from 2019.
- **Inactive:** Not currently contributing; has ended employment with a plan employer and left contributions in the plan. Inactive members may be eligible for a pension in the future, or may become eligible if they return to work for a plan employer to contribute to the plan and accrue additional service. There were 47,219 inactive plan members, a 4.2 per cent increase from 2019.
- **Retired:** Currently receiving a pension, including a survivor pension or disability benefit. There were 111,551 retired plan members, a 5.2 per cent increase from 2019.
- **Limited:** A plan member's former spouse who has the right to a portion of the plan member's pension and applies to become a limited member after a separation or divorce. These members are included in the retired total if they are receiving a pension.

The plan had
220,321
active members,
111,551
retired members, and
945
employers in 2020

Membership profile
as at December 31, 2020

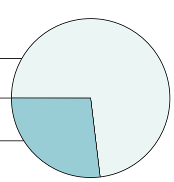
Active	220,321	58.1%
Retired	111,551	29.4%
Inactive[1]	47,219	12.5%
Total	379,091	



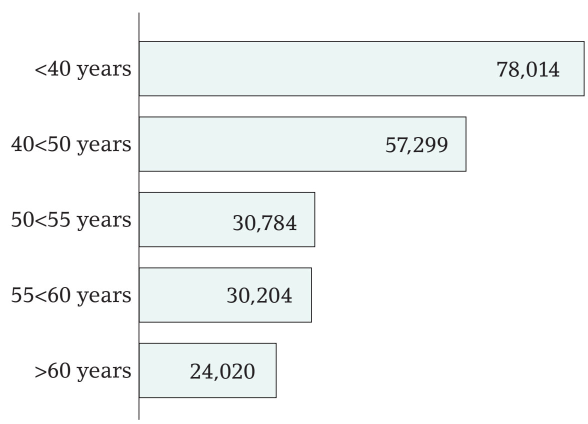
1 Members no longer employed by a plan employer but with money in the plan

Active membership by gender
as at December 31, 2020

Female	160,860	73%
Gender X	63	0%
Male	59,398	27%
Total	220,321	



Active members by age
as at December 31, 2020



Plan contributions

Plan members and employers both make contributions to fund future pension payments.

Contribution rates are set by the board based on a valuation. An independent actuary—a professional with specialized training in financial modelling, the laws of probability and risk management—performs the valuation at least every three years. This ensures there is enough money in the pension fund to pay all members' lifetime pensions.

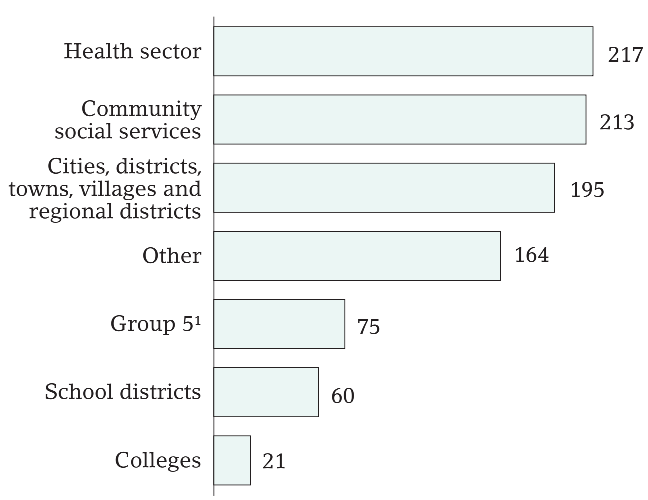
If a contribution rate increase is necessary, the Municipal Pension Plan Joint Trust Agreement requires that all contribution rate increases be split equally between members and employers.

Membership in the plan is divided into member groups, some of which have separate accrual rates or earlier retirement ages. Employers are assigned contribution rates based on the member groups they have within their employee populations.

A look at our employers

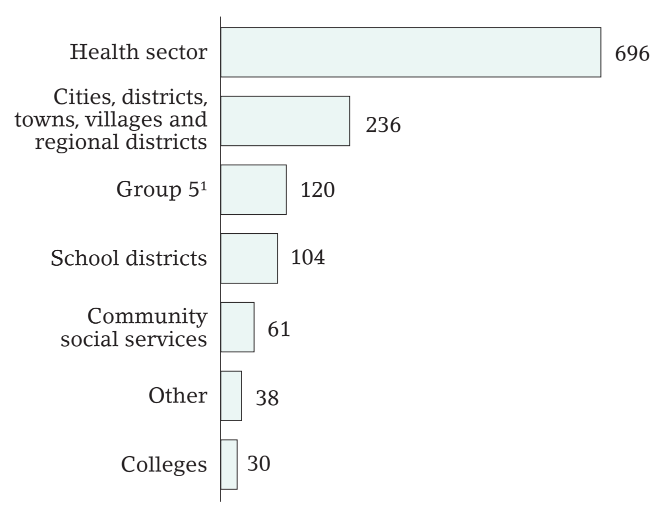
As at December 31, 2020, there were 945 plan employers.

Employers
as at December 31, 2020



1 A member group established to provide an enhanced pension for members employed as police officers and firefighters.

Total regular employer contributions, by sector
($ millions) for the year ended December 31, 2020



1 A member group established to provide an enhanced pension for members employed as police officers and firefighters.

Contribution rates

Members currently contribute 8.5 per cent of salary up to and including the year's maximum pensionable earnings (YMPE). (This includes police officers and firefighters who are *not* members of group 5.) In 2020, the YPME was $58,700. They contribute 10 per cent of salary above that amount. YMPE is set annually by the federal government and determines the maximum salary on which Canada Pension Plan contributions must be made.

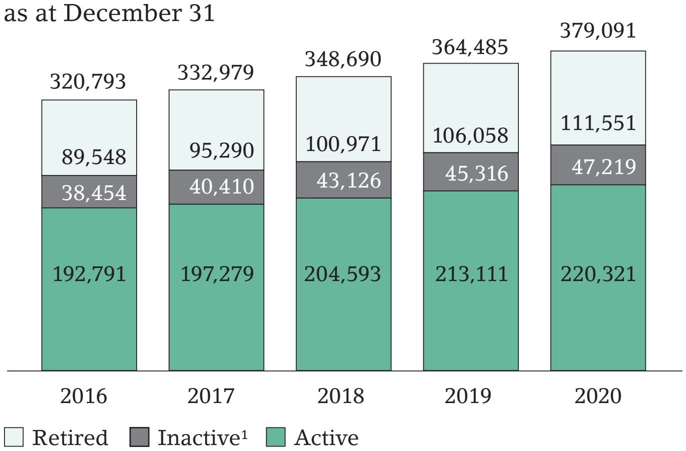
Police officers and firefighters who are members of group 5 contribute 10.44 per cent of salary up to and including YMPE, and 11.94 per cent above that amount.

The board also decided that employer contribution rates would generally change every three years following an actuarial valuation.

Member demographics

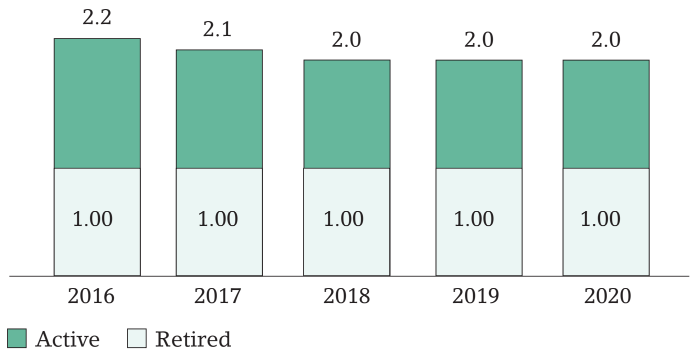
An aging membership and increased lifespans mean that the plan's retired member population is slowly growing faster than its active member population. In other words, the plan's ratio of active to retired members is slowly getting smaller. This affects the plan because the funding source for non-guaranteed group health benefits for retired members is not pre-paid; it comes from a small portion of employer contributions (the size of this portion is based on the number of active members). Therefore, a decreasing ratio of active to retired members affects the level of funding available for group benefit premium subsidies.

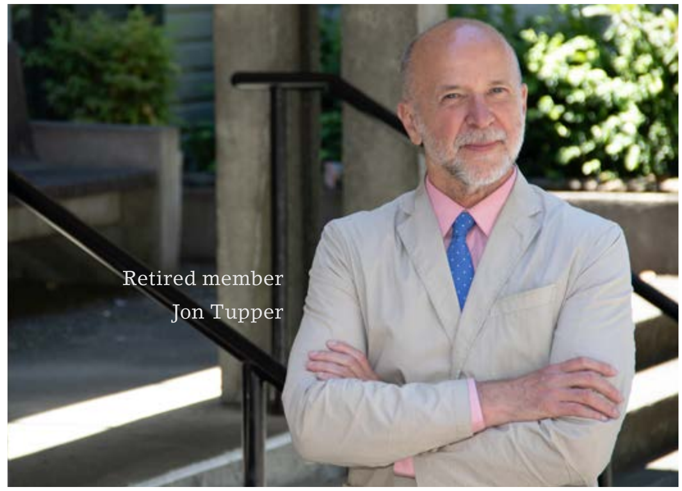
Total membership profile
as at December 31



Note: Vested members are included within the inactive member category.

Ratio of active to retired members
as at December 31





Lifetime pension

The lifetime pension is based on the years of pensionable service a member has earned in the plan and the member's highest average salary (HAS). HAS is determined by calculating the average salary the member earned over the 60 months they were paid the most as an active member (not necessarily the last 60 months worked before retirement). The lifetime pension excludes the bridge benefit and temporary annuities, if applicable. It is the board's first priority to pay out the lifetime pension. The plan also provides survivor pensions and disability benefits.

Pensions in pay

As at December 31, 2020, the average annual pension in pay was $18,380, and the median annual pension in pay was $13,017.

New pension profile
for the year ended December 31, 2020

	All new pensions by age of retirement									
Years of service	<55	55<60	60<65	≥65	Total	Average salary	Average annual pension[1]	Median annual pension[1]	Average present value of pensions	Total present value of all new pensions ($ millions)
< 10 years	29	511	656	824	2,020	$58,900	$ 6,100	$ 4,600	$ 99,000	$ 200.0
10 < 15	5	332	495	499	1,331	60,800	13,400	12,000	231,000	307.5
15 < 20	11	239	456	344	1,050	66,800	20,700	19,200	366,000	384.3
20 < 25	18	255	364	263	900	71,800	28,600	26,000	528,000	475.2
25 < 30	56	338	390	202	986	78,700	39,400	35,500	737,000	726.7
30 < 35	10	328	203	100	641	82,400	49,500	44,900	924,000	592.3
≥ 35 years		36	80	92	208	78,100	45,500	40,500	803,000	167.0
Total	129	2,039	2,644	2,324	7,136	$67,500	$22,100	$16,200	$399,000	$2,853.0
Average service	21	19	17	15	17					
Average age					62					

1 Values for average and median pensions include bridge benefits and temporary annuities.

New pensions 2016–2020
for the year ended December 31

	Regular	Post-retirement limited member	Pre-retirement limited member	Disability	Survivor	Deferred	LTD[1] to pension	Total
2020	5,371	29	68	1	85	1,074	508	7,136
2019	5,222	16	98	3	95	925	496	6,855
2018	5,370	29	86	2	78	963	508	7,036
2017	5,555	31	111	5	117	854	508	7,181
2016	4,995	30	72	2	86	744	523	6,452

1 Long-term disability.

Cost-of-living adjustments

Each year, the board considers all relevant factors to determine if a cost-of-living adjustment (COLA) will be granted.

The board monitors the plan's ability to grant future COLAs; once granted, a COLA is added to each component of the pension for as long as the member receives it. Future COLAs are not guaranteed.

A supplement to the lifetime pension, a COLA cannot exceed the annual increase in the Canadian consumer price index or the amount of money in the plan's inflation adjustment account (IAA), which is funded by employer contributions. Starting January 1, 2016, the board implemented a COLA cap, which is the maximum COLA the board can grant in a year. A cap helps maintain the long-term sustainability of funds in the IAA so they are not used up faster than they can be replaced. Every three years, the plan's independent actuary assesses the cap for the next three years and recommends the board adjust it if needed. The current COLA cap is 2.1 per cent.

Basic pensions plus cost-of-living adjustments[1] ($)

1 This is an illustration of the historical value of COLA.

Health care coverage for retirees

Retired members and beneficiaries who receive a pension have access to group coverage for extended health care. Non-subsidized group dental plans are also available. These group benefit subsidies are not funded by member contributions and are not guaranteed.

The plan's funding policy sets limits on group benefits for retired members. A small portion of employer contributions is used in two ways. One part goes into the IAA, from which COLAs are paid. The other part subsidizes extended health care premiums for current retirees based on their years of service.

Actuarial valuation results

Under the rules of BC's *Pension Benefits Standards Act* and the Joint Trust Agreement (JTA), the board must appoint an independent actuary to perform a valuation of the plan's funded position every three years. The actuary compares current assets, future contributions and investment returns against the money to be paid out in the future for pension benefits.

Once the review is complete, the actuary presents the findings to the board in a valuation report. If the plan's assets are the same as or more than its liabilities, the plan is fully funded. If there is a shortfall in assets, the plan has an unfunded liability. The board must address an unfunded liability by adjusting contribution rates for members and employers.

Completed in 2019, the 2018 valuation report determined the plan had a 105.1 per cent funding ratio—on the basis that current contributions continue as scheduled following the 2015 valuation—and a surplus of $2.87 billion. This surplus amount includes the value of the amortization components of the current contribution rates (established to pay for historical unfunded liabilities)—valued at $2.2 billion. The adjusted surplus, excluding amortization, is $663 million. The board's authority to increase or decrease contribution rates and to use the surplus is limited by specific provisions in the JTA.

In addition, the rate stabilization account, which was set up to help offset potential future contribution rate increases, has a balance of about $2.5 billion.

The board decided the 2020–2022 sustainable COLA funding limit (COLA cap) would remain at 2.1 per cent.

The results of the next valuation, as at December 31, 2021, will be announced in fall 2022.

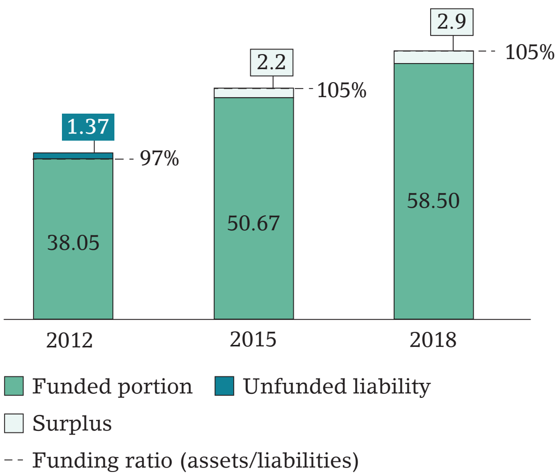
The rate stabilization account balance is about

$2.5 billion

The 2020-2022 COLA cap will remain at

2.1%

Funding of the total basic benefit liability*
($ billions) as at December 31



* Assuming the contribution rates in effect at the valuation date

Funding ratios 2012 to 2018 (%)

Year	Ratio
2018	105
2015	105
2012	97

Completed in 2019, the 2018 valuation report determined the plan had a funding ratio of

105.1%

Plan rules and policy changes

Effective January 1, 2020

Removing references to MSP in group benefits rules: **POST-RETIREMENT GROUP BENEFITS RULE AMENDMENT NO. 6** removes references to and provisions for coverage under the Medical Services Plan (MSP), following the elimination of MSP premiums.

Effective March 23, 2020

Announcing new leaves of absence under the ESA: **PLAN RULE AMENDMENT NO. 52** incorporates two new leave types—personal illness or injury and COVID-19-related—that the BC government added to the *Employment Standards Act* (ESA). Members may purchase service for these new leaves.

Effective March 25, 2020

Clarifying Pension Corporation's authority to approve backdating pension: **PLAN RULE AMENDMENT NO. 50** clarifies Pension Corporation's delegated authority to determine if a member has a good and sufficient reason for requesting a backdated pension or disability benefit.

Effective May 1, 2020

Allowing members to make continuous contributions under the ESA: **PLAN RULE AMENDMENT NO. 49** provides members with a new option for buying service for a leave of absence. Members can now make continuous contributions during an ESA-approved leave of absence.

Effective July 1, 2020

Clarifying how retroactive contributions of a new plan employer will be treated: This policy change states retroactive contributions of a new plan employer will be treated as enrolment arrears unless the completed application is submitted within 90 days after the enrolment effective date. If it is more than 90 days, the employer must pay enrolment arrears and employees have the option of making a payment for their portion.

Effective July 1, 2020

Delegating authority to Pension Corporation to approve certain new employer enrolments: **PLAN RULE AMENDMENT NO. 51** addresses the plan's exemption from the federal *Pension Benefits Standards Act* and compliance with regulator instructions on interest rates. This amendment also allows Pension Corporation to approve certain new employer enrolments.

Who we are

Your 2020 trustees

Board membership includes trustees who served during 2020; committee appointments are as of December 31, 2020.

For an up-to-date list of 2021 trustees, visit the plan website at mpp.pensionsbc.ca.

Hilary Brown, Chair
Appointed by: British Columbia Public School Employers' Association
Committees: Appeals panel (chair), governance, valuation, interplan executive forum, interplan audit
Board term: January 2012–present

Gary Yee, Vice-chair
Appointed by: Municipal Employees' Pension Committee
Committees: Appeals panel, benefits, governance, valuation, interplan executive forum
Additional board appointments: BC Pension Corporation Board of Directors
Board term: January 2014–present

Chris Armeanu
Appointed by: British Columbia Nurses' Union
Committee: Investment
Board term: January 2019–September 2020

Donisa Bernardo
Appointed by: Municipal Employees' Pension Committee
Committees: Appeals panel, benefits (chair), governance, interplan trustee education
Board term: May 2001–present

Dennis Blatchford
Appointed by: Health Sciences Association of British Columbia
Committee: Benefits
Board term: April 2001–present

Lucas Corwin
Appointed by: Province of British Columbia
Committee: Communications and advocacy
Board term: September 2008–present

Chris Finding
Appointed by: Hospital Employees' Union
Committees: Benefits, governance, investment
Board term: January 2015–present

Lyn Kocher
Appointed by: Health Employers Association of British Columbia
Committees: Governance (chair), interplan trustee education, valuation
Board term: April 2001–present

Donna Lommer
Appointed by: Health Employers Association of British Columbia
Committee: Communications and advocacy
Additional board appointment: BCI board of directors
Board term: March 2017–present

Gary MacIsaac
Appointed by: Union of British Columbia Municipalities
Committee: Benefits
Board term: January 2014–present

Bonnie Pearson
Appointed by: Member partner-retired
Committees: Benefits, valuation
Board term: October 2016–present

Patti Price
Appointed by: Canadian Union of Public Employees, British Columbia
Committees: Communications and advocacy, governance, valuation
Board term: March 2006–present

Al Richmond
Appointed by: Union of British Columbia Municipalities
Committees: Communications and advocacy, investment
Board term: January 2017–present

Nicholas Schnee
Appointed by: Plan Employer Partner (Province of British Columbia and Union of British Columbia Municipalities)
Committee: Valuation
Board term: January 2020–present

Brian Schramm
Appointed by: Council of Joint Organizations and Unions
Committees: Governance, investment committee (chair)
Board term: January 2014–present

Michelle Sordal
Appointed by: British Columbia Nurses' Union
Committees: To be determined
Board term: September 2020–present

Angie Sorrell
Appointed by: Province of British Columbia
Committee: Valuation
Board term: February 2008–present

Robert Weeks
Appointed by: British Columbia Professional Fire Fighters Association and British Columbia Police Association
Committees: Governance, valuation
Board term: January 2016–present

Alternate trustees

Ron Amos
Appointed by: British Columbia Public School Employers' Association
Committees: Benefits, investment, interplan audit
Board term: February 2014–present

Glen Brown
Appointed by: Plan Employer Partner (Province of British Columbia and Union of British Columbia Municipalities)
Committee: Valuation
Board term: January 2020–present

Lorne Burkart
Appointed by: British Columbia Nurses' Union
Committees: Benefits, interplan audit
Board term: April 2018–January 2020, April 2020–present

Talitha Dekker
Appointed by: Hospital Employees' Union
Committee: Communications and advocacy
Board term: December 2018–present

Brian Frenkel
Appointed by: Union of British Columbia Municipalities
Committee: Communications and advocacy
Board term: January 2020–present

Dean Levangie
Appointed by: Health Employers Association of BC
Committees: Appeals panel, benefits
Board term: January 2020–present

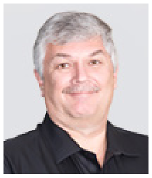
Brian Northam
Appointed by: Council of Joint Organizations and Unions
Committee: Valuation
Board term: April 2001–present

Chris Rathbone
Appointed by: Government of British Columbia
Committees: Benefits, investment
Board term: January 2020–present

Josef Rieder
Appointed by: Health Sciences Association of British Columbia
Committees: Appeals panel, investment
Board term: October 2016–present

Harpinder Sandhu
Appointed by: Canadian Union of Public Employees, British Columbia
Committee: Investment
Board term: July 2020–present

Tom Stamatakis
Appointed by: British Columbia Professional Fire Fighters Association and British Columbia Police Association
Committees: Communications and advocacy, governance
Board term: March 2018–present



Don Sutton
Appointed by: Municipal Employees' Pension Committee
Committees: Communications and advocacy (alternate chair)
Board term: January 2018–present

Richard Taylor
Appointed by: Union of British Columbia Municipalities
Committees: Governance, investment
Board term: April 2001–present

Philip Twyford
Appointed by: Province of British Columbia
Committee: BC Pension Corporation Board of Directors
Board term: June 2012–present

David Williams
Appointed by: Health Employers Association of British Columbia
Committees: Appeals panel, benefits
Board term: January 2020–present

Trustee remuneration
For the year ended December 31, 2020

Name[1]	Meetings attended/ scheduled[2]	Additional meetings attended	Total remuneration paid ($)[3]	Remuneration by payee ($)	Remuneration payee
Brown, Hilary (Chair)[4]	14/14	10	$ 25,305.00	$ 25,305.00	BC Public School Employers' Association
Yee, Gary (Vice-chair)[4]	13/14	10	26,863.83	26,863.83	CUPE BC
Amos, Ron	15/17		11,886.00	3,962.00	Board Member
				7,924.00	School District #69 Qualicum
Armeanu, Chris	5/5		3,780.00	3,213.00	BC Nurses' Union
				567.00	Board Member
Bernardo, Donisa	16/16	1	12,009.06	12,009.06	Board Member
Blatchford, Dennis	8/9		—	—	
Brown, Glen	7/7		3,591.00	3,591.00	Union of BC Municipalities
Burkart, Lorne	12/12	2	11,779.25	11,779.25	BC Nurses' Union
Corwin, Lucas	7/8		4,819.50	4,819.50	Ministry of Finance
Dekker, Talitha	7/8		5,103.00	5,103.00	Hospital Employees' Union
Finding, Chris	14/14	1	14,781.62	14,781.62	Board Member
Frenkel, Brian	6/7	1	4,422.60	4,422.60	Board Member
Kocher, Lyn	11/11		6,709.50	6,709.50	Health Employers' Association of BC
Levangie, Dean	9/10		5,367.60	321.30	Board Member
				5,046.30	Health Employers' Association of BC
Lommer, Donna	6/8		4,082.40	4,082.40	Interior Health Authority
MacIsaac, Gary	9/9		4,914.00	4,914.00	Union of BC Municipalities
Northam, Brian	8/8		6,048.00	6,048.00	Board Member
Pearson, Bonnie	12/12		6,804.00	6,804.00	Board Member
Price, Patti	14/14	1	12,568.64	5,068.00	CUPE BC
				7,500.64	Board Member
Rathbone, Chris	13/14	1	8,808.80	8,808.80	Public Sector Employers' Council Secretariat
Richmond, Al	13/13	1	13,086.50	13,086.50	Board Member
Rieder, Josef	9/10	3	7,227.50	7,227.50	Health Sciences Association of BC
Sandhu, Harpinder	6/6	2	6,790.00	5,103.00	CUPE BC
				1,687.00	Board Member
Schnee, Nicholas	6/6		4,725.00	3,780.00	Provincial Health Services Authority
				945.00	Vancouver Coastal Health
Schramm, Brian	13/13		12,631.50	12,631.50	BCGEU

Trustee remuneration continued

Name[1]	Meetings attended/ scheduled[2]	Additional meetings attended	Total remuneration paid ($)[3]	Remuneration by payee ($)	Remuneration payee
Sordal, Michelle	3/3		2,128.14	1,750.14	BC Nurses' Union
				378.00	Board Member
Sorrell, Angie	8/8		5,656.00	5,656.00	Public Sector Employers' Council Secretariat
Stamatakis, Tom	11/11	3	7,465.50	7,465.50	Vancouver Police Union
Sutton, Donald	8/8	1	6,335.28	6,335.28	Board Member
Taylor, Richard	11/13		8,774.50	8,774.50	Board Member
Twyford, Philip	2/10	1	—	—	
Weeks, Robert	9/11		1,512.00	1,512.00	BC Professional Fire Fighters' Association
Williams, David	6/10		4,471.74	4,471.74	Board Member
Total remuneration paid			$260,447.46	$260,447.46	

1 Additional information on trustees is available on pages [31-35]

2 Comparison of the number of meetings attended vs. the number of meetings scheduled. The number of meetings scheduled varies by trustee due to committee membership.

3 Total remuneration paid includes attendance at board and committee meetings, educational events, conferences, and preparation and travel time for these meetings/events.

4 Includes Board Chair annual stipend of $7,560 and Vice-chair annual stipend of $5,670.

Agents and service providers

British Columbia Investment Management Corporation (BCI)

BCI is a leading provider of investment management services to British Columbia's public sector and one of the largest asset managers in Canada. With its global outlook, BCI seeks investment opportunities that convert savings into capital that will meet clients' risk and return requirements over time. BCI offers investment options across a range of asset classes: fixed income, mortgages, public and private equity, real estate, and infrastructure and renewable resources.

BC Pension Corporation

BC Pension Corporation is one of the largest professional pension services providers in Canada. It serves over 639,000 active and retired plan members and more than 1,000 employers, and pays out more than $400 million in benefits each month ($4.8 billion a year) to more than 207,000 retirees. As the administrative agent working on behalf of the board, it provides pension administration services to the plan. These services include providing plan information to members and employers; managing contributions and member records; paying pension benefits; and providing policy, financial and communication services.

Eckler Ltd.

Eckler is a Canada-based actuarial and consulting firm specializing in financial services, pensions and benefits, and global consulting solutions. As the plan's independent actuary, Eckler conducts an actuarial valuation on the plan's funding every three years and supports the board in its decision making, as appropriate.

Hatch Law

Shawn Hatch is a legal advisor who serves as legal counsel for the plan.

KPMG LLP

KPMG provides external audit services for the plan.

Pacific Blue Cross

Pacific Blue Cross administers retired plan member access to group extended health care coverage and provides insured dental plan options.

ZLC and Cubic Health

ZLC and Cubic Health are the plan's benefit advisors.

Financial statements

BC PENSION
CORPORATION

June 23, 2021

Re: Municipal Pension Plan

Administrative Agent's Responsibility for Financial Reporting

The financial statements of the Municipal Pension Plan were prepared by the British Columbia Pension Corporation, the administrative agent for the Municipal Pension Board of Trustees in accordance with Canadian accounting standards for pension plans. The Board is responsible for approving the Plan's financial statements. The Board is assisted by the Interplan Audit Committee, which is made up of representatives from the Public Service, Municipal, Teachers' and College pension board of trustees. As part of their responsibility, the committee reviews the financial statements, and performs steps and procedures as necessary, prior to recommending them to the Board for approval.

Pension Corporation prepares the financial statements and is responsible for the integrity and fairness of the data presented, including significant accounting judgments and estimates. This responsibility includes selecting appropriate accounting policies consistent with Canadian accounting standards for pension plans. In discharging its responsibility, Pension Corporation maintains a system of internal controls designed to provide reasonable assurance that transactions are properly authorized, reliable financial records are maintained, and assets are adequately safeguarded, ensuring the fair presentation of the financial statements. Pension Corporation has assessed that the Plan will continue as a going concern, and ensured that other financial information contained in the Municipal Pension Plan *Annual Report* is consistent with these financial statements.

The Board appointed KPMG LLP as the independent auditor to the Plan. The role of the auditor is to perform an independent audit of the financial statements of the Plan in accordance with Canadian generally accepted auditing standards. The resulting audit opinion is set out in the independent auditor's report attached to these financial statements.

Trevor Fedyna, CPA, CGA, C. Dir.	**Allan Chen, CPA, CA**
Vice-president, Strategy, Insights and Chief Financial Officer	Controller, Financial Services
British Columbia Pension Corporation	British Columbia Pension Corporation

Executive Offices
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INDEPENDENT AUDITORS' REPORT

To the Members of the Municipal Pension Plan

Opinion

We have audited the financial statements of the Municipal Pension Plan (the "Plan"), which comprise:

- the statement of financial position as at December 31, 2020
- the statement of changes in net assets available for benefits for the year then ended
- the statement of changes in accrued pension obligations for the year then ended
- and notes to the financial statements, including a summary of significant accounting policies.

(hereinafter referred to as the "financial statements").

In our opinion, the accompanying financial statements present fairly, in all material respects, the financial position of the Plan as at December 31, 2020, and the changes in its net assets available for benefits and the changes in its accrued pension obligations for the year then ended in accordance with Canadian accounting standards for pension plans.

Basis for Opinion

We conducted our audit in accordance with Canadian generally accepted auditing standards. Our responsibilities under those standards are further described in the "***Auditors' Responsibilities for the Audit of the Financial Statements***" section of our auditors' report.

We are independent of the Plan in accordance with the ethical requirements that are relevant to our audit of the financial statements in Canada and we have fulfilled our other ethical responsibilities in accordance with these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

British Columbia Pension Corporation - Municipal Pension Plan
Page 2

Other Information

Management is responsible for the other information. Other information comprises the information, other than the financial statements and the auditors' report thereon, included in the annual report.

Our opinion on the financial statements does not cover the other information and we do not and will not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information identified above and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit and remain alert for indications that the other information appears to be materially misstated.

We obtained the information, other than the financial statements and the auditors' report thereon, included in the annual report as at the date of this auditors' report.

If, based on the work we have performed on this other information, we conclude that there is a material misstatement of this other information, we are required to report that fact in the auditors' report.

We have nothing to report in this regard.

Responsibilities of Management and Those Charged with Governance for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with Canadian Standards for pension plans, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Plan's ability to continue as a going concern, disclosing as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Plan or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Plan's financial reporting process.

Auditors' Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Canadian generally accepted auditing standards will always detect a material misstatement when it exists.

Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

As part of an audit in accordance with Canadian generally accepted auditing standards, we exercise professional judgment and maintain professional skepticism throughout the audit.

We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion.

  The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Plan's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Plan’s ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors’ report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors’ report. However, future events or conditions may cause the Plan to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

KPMG LLP

Chartered Professional Accountants

Vancouver, Canada
June 25, 2021

MUNICIPAL PENSION PLAN

Statement of financial position

($ millions)

Municipal Pension Plan

As at December 31	Note	2020	2019
Assets			
Investments	3a	$ **66,110**	$ 59,392
Directly held derivatives	3b	**389**	133
Contributions receivable		**93**	84
Interest receivable		**8**	-
Due from sale of investments		**-**	12
Prepaid expenses		**4**	4
Total assets		**66,604**	**59,625**
Liabilities			
Directly held derivatives	3b	**72**	28
Accounts payable and accrued expenses		**34**	18
Taxes payable		**18**	18
Payable for purchase of investments		**-**	121
Total liabilities		**124**	185
Net assets available for benefits		**$ 66,480**	**$ 59,440**
Accrued pension obligations			
Accrued basic pension obligations	4a	$ **43,631**	$ 41,047
Non-guaranteed pension obligations	4b	**10,957**	9,531
Retirement annuity account	4c	**402**	411
Accrued pension obligations		**54,990**	50,989
Surplus			
Funding surplus	5a	**2,400**	1,538
Measurement differences between funding and accounting positions	5a	**9,090**	6,913
Surplus		**11,490**	8,451
Accrued pension obligations and surplus		**$ 66,480**	**$ 59,440**

The accompanying notes are an integral part of the financial statements including:

Commitments (note 14)

Subsequent event (note 16)

Approved by the Municipal Pension Board of Trustees:

Ron Amos, CPA, CMA, Trustee
Municipal Pension Board of Trustees

Lorne Burkart, Trustee
Municipal Pension Board of Trustees

MUNICIPAL PENSION PLAN

Statement of changes in net assets available for benefits

($ millions)

For the year ended December 31	Note	Basic account	Inflation adjustment account	Retirement annuity account	Supplemental benefits account	Totals 2020	Totals 2019
Increase in assets							
Investment income	8	$ 5,970	$ 1,089	$ 32	$ -	**$ 7,091**	$ 6,693
Contributions							
Members	9	927	197	1	6	**1,131**	1,035
Employers	9	1,087	170	2	34	**1,293**	1,185
		2,014	367	3	40	**2,424**	2,220
Transfers from other plans		20	3	-	-	**23**	17
Total increase in assets		8,004	1,459	35	40	**9,538**	8,930
Decrease in assets							
Benefits	10	2,087	117	15	13	**2,232**	2,068
Transfers to other plans		16	13	-	-	**29**	13
Retired member group benefits	11	-	-	-	26	**26**	50
Investment and administration costs	12	185	25	-	1	**211**	143
Total decrease in assets		2,288	155	15	40	**2,498**	2,274
Increase in net assets before transfers		5,716	1,304	20	-	**7,040**	6,656
Account transfers	13	(93)	122	(29)	-	**-**	-
Increase in net assets		**$ 5,623**	**$ 1,426**	**$ (9)**	**$ -**	**$ 7,040**	**$ 6,656**
Net assets available for benefits		$ 49,498	$ 9,531	$ 411	$ -	**$ 59,440**	**$ 52,784**
Net assets available for benefits		**$ 55,121**	**$ 10,957**	**$ 402**	**$ -**	**$ 66,480**	**$ 59,440**

The accompanying notes are an integral part of the financial statements.

MUNICIPAL PENSION PLAN

Statement of changes in accrued pension obligations

($ millions)

For the year ended December 31	Note	2020	2019
Increase in accrued pension obligations			
Interest on accrued pension obligations		$ **2,577**	$ 2,426
Benefits accrued		**1,792**	1,634
Account transfers		**382**	391
Total increase in accrued pension obligations		**4,751**	4,451
Decrease in accrued pension obligations			
Changes in actuarial assumptions		**-**	199
Experience gains		**-**	1,034
Benefits paid		**2,167**	2,046
Total decrease in accrued pension obligations		**2,167**	3,279
Net increase in accrued pension obligations		**2,584**	1,172
Accrued basic pension obligations at beginning of year		**41,047**	39,875
Accrued basic pension obligations at end of year	4a	**43,631**	41,047
Non-guaranteed pension obligations			
Increase in non-guaranteed pension obligations	4b	**1,426**	1,234
Non-guaranteed pension obligations at beginning of year		**9,531**	8,297
Non-guaranteed pension obligations at end of year	4b	**10,957**	9,531
Retirement annuity account			
Decrease in retirement annuity account	4c	**(9)**	-
Retirement annuity account at beginning of year		**411**	411
Retirement annuity account at end of year	4c	**402**	411
Total accrued pension obligations		**$ 54,990**	**$ 50,989**

The accompanying notes are an integral part of the financial statements.

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2020

($ millions except as otherwise noted)

1. DESCRIPTION OF THE MUNICIPAL PENSION PLAN

The following description of the Municipal Pension Plan (Plan) is a summary provided for general information only. For more information, please refer to the Joint Trust Agreement (Agreement) and the Municipal Pension Plan Rules (pension plan rules).

a) General

The Plan is a jointly trusteed pension plan continued in agreement with the *Public Sector Pension Plans Act*, SBC 1999, s.44 (Act). The Act enabled the establishment of the Agreement. Joint trusteeship was established on April 5, 2001. The partners to the Agreement are the Municipal Employees' Pension Committee, as the member partner, and the Provincial Government of British Columbia and the Union of British Columbia Municipalities, as the employer partners (Partners). The Agreement describes the composition, appointment, powers, functions and duties of the Municipal Pension Board of Trustees (Board) and provides the authority for the Board to make the pension plan rules.

The Plan is registered with the Superintendent of Pensions, who administers and enforces the *Pension Benefits Standards Act* (PBSA). The PBSA governs employment pension plans registered in British Columbia that have active, inactive and retired members.

Membership in the Plan is open to all eligible employees of a municipality, school district, college, health service organization, police and fire fighters, and many other eligible employers as designated by the Board.

b) Roles and responsibilities

Partners

The Partners and appointing authorities representing the Plan members and employers are responsible for appointing 16 trustees and 16 alternate trustees. The Partners have responsibility for resolving trustee disputes and, if certain conditions are met, may direct amendments to the pension plan rules.

Board

The Board is responsible for the management of the Plan, including investment of assets and administration of the Plan. The Board may amend the pension plan rules as long as changes can be funded by the Plan's surpluses or are cost-neutral to the Plan (subject to transitional funding provisions in note 5a). Unless required to ensure compliance with regulatory enactments applicable to the Plan, only the Partners can initiate pension plan rule changes that result in contribution rate increases. The Chair and Vice-chair are appointed by the trustees.

British Columbia Pension Corporation (Pension Corporation)

Pension Corporation provides benefit administration services as an agent of the Board. The Board appoints two members to the eight-member board of directors of Pension Corporation.

British Columbia Investment Management Corporation (BCI)

BCI provides investment management services, including the valuation of investments, as an agent of the Board. The Board appoints one member to the seven-member board of directors of BCI.

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2020

($ millions except as otherwise noted)

1. **DESCRIPTION OF THE MUNICIPAL PENSION PLAN (CONTINUED)**

c) Funding

Contributions and investment earnings fund plan benefits. Contributions are made by active members and employers of the Plan. The determination of the value of the benefits and required contributions is based on triennial actuarial valuations for funding purposes.

The Board's funding policy is intended to secure the pension benefit obligation and achieve long-term stability in contribution rates for both employers and members.

d) Contributions

The following member and employer contributions apply to the majority of members, excluding a limited group with higher contribution rates required to fund the cost of their benefits.

Basic Account

Members contributed to the Basic Account 6.97% of salaries up to and including the Canada Pension Plan Year's Maximum Pensionable Earnings (YMPE) (2020: $58,700; 2019: $57,400) and 8.47% of salaries over YMPE, less amounts allocated to the Supplemental Benefits Account.

The limited group of members contributed to the Basic Account 8.49% of salaries up to and including the Canada Pension Plan YMPE and 9.99% of salaries over YMPE, less amounts allocated to the Supplemental Benefits Account.

Employers contributed to the Basic Account at varying rates, depending on the mix of employees in the group rate classifications specified by the Plan, less amounts allocated to the Supplemental Benefits Account. The Board approved on September 22, 2016, a three-year process to simplify employer contribution rates. The new simplified employer contribution rates were effective January 1, 2019.

Inflation Adjustment Account and Supplemental Benefits Account

Members and employers each contributed 1.53% (1.95% for limited group) of salaries to the Inflation Adjustment Account (IAA), less amounts allocated to the Supplemental Benefits Account.

Retirement Annuity Account

Some employers have special agreements with members by which additional contributions are made to increase members' pension benefits. These contributions are credited to the Retirement Annuity Account (RAA). Depending on benefit eligibility, the accumulated monies at retirement are used to fund the purchase of additional pension benefits or are paid out to a locked-in retirement vehicle.

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2020

($ millions except as otherwise noted)

1. DESCRIPTION OF THE MUNICIPAL PENSION PLAN (CONTINUED)

e) Pension benefits

All members are eligible for a pension benefit.

Members are eligible for unreduced pension benefits

- at age 65 (age 60 for certain groups);
- at age 60, with at least two years contributory service (age 55 for certain groups); or
- at age 55 or older, with age plus years of service totaling 90 or more (age 50 or older with age plus service totaling 80 or more for certain groups).

Other retiring members have a reduction formula applied to their pensions.

The defined basic plan benefit is integrated with the Canada Pension Plan (CPP). The Plan provides an unreduced benefit of 1.3% of pensionable earnings up to the year's maximum pensionable earnings (YMPE) and 2.0% of pensionable earnings over the YMPE, for each year of pensionable service (to a maximum of 35 years). Pensionable earnings are based on the member's highest five-year average annual salary (HAS).

The Plan also provides a bridge benefit payable to age 65 (or the date of death, if earlier). The bridge benefit is 0.7% of the lesser of YMPE or the HAS for each year of pensionable service.

Future cost-of-living adjustments are not guaranteed. These adjustments are granted at the discretion of the Board and may not exceed the annual increase in the Canada consumer price index as at the previous September 30, subject to the availability of funds in the IAA. Any cost-of-living adjustment the Board grants is applied in January. The Board annually considers relevant factors to determine if an adjustment will be granted.

f) Termination and portability benefits

Terminating members who have not yet reached the earliest retirement age may choose

- a deferred pension, or
- a transfer of the commuted value of the pension benefit (the minimum value is the member's contributions with interest) to a locked-in retirement vehicle or similar tax-sheltered plan.

Terminating members may also choose to leave their benefit on deposit in anticipation of future re-employment with a plan employer.

Where there are portability arrangements between the Plan and other pension plans, members may be able to transfer certain pension rights.

g) Other benefits

Disability and survivor benefits are also available under the Plan. A disability benefit is available to a member under age 60 (age 55 for certain groups) who has terminated employment, becomes totally and permanently disabled as defined by the Plan, has at least two years of contributory service, is not eligible to receive benefits from an approved long-term group disability plan and meets other eligibility requirements. The disability benefit is calculated using a member's years of pensionable service to the date of termination of employment, HAS and other factors. Disability benefits continue for the member's lifetime unless the member is no longer totally and permanently disabled before age 60 (age 55 for certain groups) or returns to work.

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2020

($ millions except as otherwise noted)

1. DESCRIPTION OF THE MUNICIPAL PENSION PLAN (CONTINUED)

g) Other benefits (continued)

A death benefit may be available to a surviving spouse or designated beneficiary upon the death of an active member. Depending on eligibility requirements, the benefit may be paid in the form of a survivor pension or lump-sum payment.

Supplemental benefits are funded from the Supplemental Benefits Account.

h) Tax registration

The Plan is a registered pension plan (RPP) as defined in the *Income Tax Act* (Canada) (registration number 0359158), except for any supplemental benefits, which are funded in addition to the RPP. The Plan is not subject to income tax but is subject to indirect taxes, including British Columbia provincial sales tax (PST) and Canadian federal goods and services tax (GST). The Plan receives a 33% rebate of GST paid.

2. SIGNIFICANT ACCOUNTING POLICIES

a) Basis of presentation

These financial statements are prepared on the going-concern basis in accordance with Canadian accounting standards for pension plans, Part IV of the *Chartered Professional Accountants of Canada Handbook* (CPA Canada Handbook), and present the Plan as a separate financial reporting entity, independent of the Plan's contributing employers and members, and independent of any associated retired member group benefit plans.

Accounting standards for private enterprises in Part II of the CPA Canada Handbook have been chosen for accounting policies that do not relate to the Plan's investment portfolio or accrued pension obligations.

b) Investments

Investments are stated at fair value. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

Investment purchases and sales are recorded on the trade date (the date upon which the substantial risks and rewards of ownership have been transferred).

c) Accrued pension obligations

Accrued pension obligations are determined based on an actuarial valuation prepared by an independent actuarial consulting firm. The Plan actuary is Eckler Ltd. The valuation of accrued pension obligations is based on data extrapolated to the financial statement date. The valuation uses the projected benefit method pro-rated on service that incorporates the independent actuary's estimate of various economic and demographic assumptions. These assumptions are the same as those used in the determination of the actuarial position of the Plan for funding purposes.

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2020

($ millions except as otherwise noted)

2. SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

d) Investment income

Income from investments is recorded on the accrual basis and represents pooled investment portfolio income attributable to the Plan as a unit holder and income from directly held investments. The current period change in fair value includes realized and unrealized gains and losses that are included in investment income.

Within the pools, dividends are accrued on the ex-dividend date and interest is recognized on an accrual basis. Gains and losses on derivative contracts are recognized concurrently with changes in their fair values.

e) Foreign currency translation

Assets and liabilities denominated in foreign currencies are translated into Canadian dollars at the prevailing exchange rates on the year-end date. Income and expenses are translated into Canadian dollars at the prevailing exchange rates on the dates of the transactions. The realized and unrealized gains and losses arising from these translations are included within the current period change in fair value in investment income.

f) Use of estimates

The preparation of financial statements, in conformity with Canadian accounting standards for pension plans, requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of increases and decreases in assets and liabilities during the period. Significant areas requiring the use of management estimates relate to the valuation of investments based on unobservable inputs, as further described in note 7, and the calculation of the accrued pension obligations of the Basic Account for accounting and funding purposes, as further described in notes 4 and 5. Actual results could differ materially from these estimates.

3. INVESTMENTS

a) Investments

Fair value of investment holdings		2020			2019	
	Basic account	Inflation adjustment account	Total	Basic account	Inflation adjustment account	Total
Short-term	$ 1,427	$ 263	$ 1,690	$ 1,161	$ 220	$ 1,381
Bonds	12,370	2,277	14,647	11,579	2,194	13,773
Canadian equities	3,040	560	3,600	2,725	516	3,241
Global equities	9,610	1,769	11,379	8,854	1,677	10,531
Emerging markets equities	5,501	1,012	6,513	4,989	945	5,934
Mortgages	2,088	384	2,472	1,891	358	2,249
Real estate	8,349	1,536	9,885	7,804	1,479	9,283
Private equity	6,954	1,280	8,234	5,205	986	6,191
IRR*	6,495	1,195	7,690	5,724	1,085	6,809
	$ 55,834	$ 10,276	$ 66,110	$ 49,932	$ 9,460	$ 59,392

* Infrastructure and renewable resources

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2020

($ millions except as otherwise noted)

3. INVESTMENTS (CONTINUED)

a) Investments (continued)

Plan investments consist primarily of direct ownership in units of pooled investment portfolios. Each unit gives its holder a proportionate share in the value of the net assets of the pooled investment fund. The Basic and IAA accounts are combined for investment management purposes.

One or more pooled investment portfolios exist for different types of investments, such as short-term investments; bonds; Canadian, global and emerging markets equities; mortgages; real estate; private equity; and infrastructure and renewable resources. While the purpose of each fund is to invest in a particular type of investment, at any time, given the timing of trading activities, the fund may hold a certain amount of cash, short-term investments, accrued interest income and net accounts receivable or payable from outstanding sales and purchases of investments.

Short-term investments consist of Canadian and U.S. money market securities such as treasury bills, with maturities of 15 months or less, and short-term bonds with one-year to five-year terms. Short-term investments are valued using current market yields.

Bonds consist of government bonds, investment grade and non-investment grade corporate bonds, and debentures. Bonds are valued based on current market yields and, in some cases, quoted market prices. Equities consist primarily of publicly traded shares and, are valued based on quoted market prices on the primary exchanges on which they are traded.

Mortgages consist mainly of Canadian construction, commercial and multi-family residential mortgages. The mortgages are secured by real estate and valued using current market yields. Real estate investments consist mainly of diversified Canadian and U.S. income-producing properties. Real estate investments are valued quarterly by external investment managers and, at least once every 10 to 18 months, by accredited independent appraisers to establish current market values.

Private equity consists mainly of equity investments made outside the structure of public markets. Private equity is valued annually based on audited financial statements from external investment managers using a discounted cash flow approach or net asset value method.

Infrastructure and renewable resources consist of privately owned and managed infrastructure assets, as well as timber, agriculture and other renewable assets. Infrastructure and renewable resources investments are valued annually using a discounted cash flow approach or net asset value method.

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2020

($ millions except as otherwise noted)

3. INVESTMENTS (CONTINUED)

b) Derivatives

Derivatives contracts are directly and indirectly held by the Plan. The details of these contracts are as follows:

Fair value of derivative contracts	2020		2019	
	Positive fair value	Negative fair value	Positive fair value	Negative fair value
Directly held				
Foreign currency forwards	$ 389	$ (72)	$ 133	$ (28)
	$ 389	$ (72)	$ 133	$ (28)
Indirectly held in pooled investment portfolios				
Foreign currency forwards	$ 177	$ (16)	$ 70	$ (4)
Options	25	(24)	9	(9)
Futures	-	-	6	-
Interest rate swaps	-	(35)	8	(10)
Total return swaps	455	(106)	350	(68)
	657	(181)	443	(91)
Total derivatives	$ 1,046	$ (253)	$ 576	$ (119)
Derivatives by investment asset classification				
Bonds	$ 252	$ (16)	$ 95	$ (5)
Canadian equities	9	(1)	3	(2)
Global equities	299	(100)	212	(60)
Emerging markets equities	188	(64)	158	(25)
Mortgages	38	-	18	(1)
Real estate	109	(28)	35	(20)
IRR*	151	(44)	55	(6)
Total derivatives	$ 1,046	$ (253)	$ 576	$ (119)

*Infrastructure and renewable resources

Derivative contracts consist of foreign currency forward contracts, repurchase agreements, options, futures, interest rate swaps, and total return swaps held directly by the Plan or indirectly through various pooled investment portfolios. Directly held and indirectly held derivative contracts are reflected at fair value based on expected settlement amounts at the date of the Statement of Financial Position. Directly held derivatives are disclosed on the face of the Statement of Financial Position while indirectly held derivatives are included in investments.

A foreign currency forward contract is a privately negotiated contractual obligation to exchange one currency for another at a specified price for settlement on a predetermined date in the future. Foreign currency forward contracts are directly held by the plan to manage exposure to foreign currency risk.

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2020

($ millions except as otherwise noted)

3. INVESTMENTS (CONTINUED)

b) Derivatives (continued)

Repurchase agreements (repo) are short-term agreements to sell securities in order to buy them back at a slightly higher price. The one selling the repo is effectively borrowing and the other party is lending, since the lender is credited the implicit interest in the difference in prices. Repos are used in the leveraged bond pool fund to borrow funds and create leverage.

Options are contracts that give the buyer the right, but not the obligation, to buy or sell a certain security or index at an agreed-upon price on or before a specified date. Futures contracts are exchange-traded contractual obligations to take or make delivery of an asset at a predefined price and date in the future. Options and futures are held for synthetic indexing, a modern technique used to replicate the performance of a security or index without directly purchasing or selling the underlying assets.

An interest rate swap is an agreement between two counterparties in which one stream of future interest payments is exchanged for another based on a specified principal amount. Interest rate swaps usually involve the exchange of a fixed interest rate for a floating interest rate, or vice versa, to reduce or increase exposure to fluctuations in interest rates or to obtain a marginally lower interest rate than would have been possible without the swap.

A total return swap is a swap agreement in which one party makes payments based on a set rate, either fixed or variable, while the other party makes payments based on the return of an underlying asset, including both the income it generates and any capital gains. In total return swaps, the underlying asset (referred to as the reference asset) is usually an equity index or basket of equity securities. Interest rate swaps and total return swaps are held indirectly through various pooled investment portfolios for synthetic indexing purposes.

Derivative transactions are supported with collateral to mitigate counterparty credit risk. A single net fair value amount is used to determine the value of collateral with each counterparty. Collateral approximately equal to the positive fair value of each derivative contract is provided by counterparties, and collateral approximately equal to the negative fair value of each derivative contract is delivered to counterparties. Acceptable forms of collateral are Canadian federal or provincial bonds, and U.S. federal government treasury bills and bonds.

The notional value of derivatives is the total value of a position, how much value a position controls, or an agreed-upon amount in a contract.

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2020

($ millions except as otherwise noted)

3. INVESTMENTS (CONTINUED)

b) Derivatives (continued)

Notional value of derivatives			2020	2019
Terms to maturity	**Within 1 year**	**1 to 5 years**	**Total**	**Total**
Derivatives by type of contract				
Foreign currency forwards	$ 15,029	$ -	$ 15,029	$ 11,948
Repurchase agreements	6,235	-	6,235	5,894
Options	115	-	115	474
Futures	357	-	357	229
Interest rate swaps	419	2,903	3,322	4,609
Total return swaps	11,573	738	12,311	12,946
	$ 33,728	$ 3,641	$ 37,369	$ 36,100
Derivatives by investment asset classification				
Short-term	$ 9	$ -	$ 9	$ -
Bonds	11,779	-	11,779	11,113
Canadian equities	463	4	467	1,138
Global equities	9,074	2,075	11,149	11,378
Emerging markets equities	3,245	1,562	4,807	5,299
Mortgages	1,179	-	1,179	1,088
Real estate	4,055	-	4,055	3,127
Private equity	1	-	1	4
IRR*	3,566	-	3,566	2,953
	$ 33,371	$ 3,641	$ 37,012	$ 36,100

* Infrastructure and renewable resources

4. ACTUARIAL VALUATION OF THE BASIC ACCOUNT FOR ACCOUNTING PURPOSES

a) Basic Account

In accordance with the Agreement and PBSA, an actuarial valuation is performed at least every three years. Its primary objective is to assess the financial position and adequacy of funding for the Basic Account of the Plan as described in note 5a. As part of the actuarial valuation, the Plan actuary also calculates values, for accounting purposes, of the Basic Account assets as at, and pension liabilities accrued to, the financial statement date. For this purpose, contributions and benefits for future service are not included, in contrast to their inclusion in the valuation for funding purposes as described in note 5a. Also, for accounting purposes, the full impact of investment fair value changes is reflected in the financial statements as at the financial statement date compared with the deferral and amortization of fair value gains or losses in the valuation for funding purposes. The liability for accrued basic pension obligations at the valuation date is determined using the projected benefit method pro-rated on service.

The latest full actuarial valuation for accounting purposes was prepared as at December 31, 2018, by Eckler Ltd. This valuation calculated the liability for accrued basic pension obligations for financial statement purposes to be $38,642 (2015: $33,294).

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4. ACTUARIAL VALUATION OF THE BASIC ACCOUNT FOR ACCOUNTING PURPOSES (CONTINUED)

a) Basic Account (continued)

Between valuations, an estimate of the actuarial position is required. This estimate, an extrapolation, has been made to December 31, 2020, using the following long-term actuarial assumptions:

- Annual investment return 6.25%
- Annual salary escalation rate 3.5%

The extrapolation calculated the liability for accrued basic pension obligations to be $43,631 (2019: $41,047).

In 2019 the extrapolation reflected assumption changes made during the 2018 valuation that resulted in a decrease in the 2018 accrued benefit liability of $199, primarily due to changes in mortality assumptions. Further, the 2018 valuation accrued pension benefit liabilities were $1,034 lower than anticipated by the 2018 extrapolation as a result of experience gains, primarily salary increases being lower than the actuarial assumption.

Extrapolations may not be reliable indicators of the next valuation results, nor do they necessarily reflect the overall trend of results. Between valuations, actual wage increases, investment earnings, and the incidence of retirements, withdrawals and changes in other factors may vary significantly from the long-term assumptions used in the extrapolation. In the event of a major change to the Plan, a new valuation or review of the assumptions may be required.

The next full actuarial valuation will be carried out as at December 31, 2021, and the results will be included in the December 31, 2022, financial statements.

Actuarial liabilities are also affected by changes in the assumed investment return. Based on the actuarial valuation completed as at December 31, 2018, a reduction in the investment return assumption from 6.25% to 6.00% would have increased the December 31, 2020, liability for accrued basic obligations of $43,631 by $1,310 or 3.00%. Changes to assumptions included in the actuarial valuation are interrelated, and the cumulative impact of changed assumptions may be offsetting.

b) Inflation Adjustment Account (IAA), non-guaranteed pension obligations

No unfunded liability exists for the IAA since the obligation for future cost-of-living adjustments is limited to the amount of the available assets in the account. There is no minimum level of inflation adjustment required to be paid under the pension plan rules, nor is there any plan provision to fund the IAA to any minimum level of future potential inflation adjustments (note 5b). The non-guaranteed pension obligation is therefore equal to the net assets available for benefits in the IAA $10,957 (2019: $9,531). The net increase of $1,426 (2019: $1,234) in the IAA balance consists of employee and employer contributions, investment income and net transfers reduced by payments out of the account (see note 13 for details on amounts transferred).

c) Retirement Annuity Account (RAA)

The RAA is comprised of additional contributions by employers and members under special agreements. If a member is entitled to, and chooses to, purchase additional pension benefits at retirement, monies are transferred from the RAA to the Basic Account and the IAA to fund the additional benefits. No unfunded liability exists as the obligation to purchase a pension is limited to the amount of the available assets in the account. The pension benefit for the RAA is therefore equal to the net assets available in the RAA, $402 (2019: $411).

The net assets available in the RAA decreased $9 (2019: nil) as employee and employer contributions and earnings on investments were reduced by payments out of the account.

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5. ACTUARIAL VALUATION OF THE BASIC ACCOUNT FOR FUNDING PURPOSES

a) Basic Account

The Basic Account is the account from which the defined basic benefits of the Plan are paid. In accordance with the Agreement and PBSA, an actuarial valuation of the Plan's assets and pension obligations is performed at least every three years by an independent actuary to determine an appropriate combined employer and member contribution rate to fund the Basic Account. For this purpose, the Plan's actuary values both accrued assets and accrued pension obligations to the financial statement date, and contributions and benefits for future service. The contribution requirements are calculated by the actuary using the entry-age normal cost method (entry-age method).

This method produces the long-term rate of member and employer contributions sufficient to provide benefits for the average future new entrants to the Plan. This rate may be adjusted for the amortization of any actuarial funding surplus, and this rate will be adjusted for the amortization of any unfunded actuarial liability. Contribution rate determination excludes consideration of the assets in the rate stabilization account; if contribution rate increases are considered, funds will be transferred from the rate stabilization account to keep the rate at its current level or to minimize the increase.

The Basic Account is also the account from which any cost-of-living adjustments granted to retired members are paid. Future cost-of-living adjustments are not guaranteed within the plan provisions and are granted to retired members only to the extent that sufficient assets are available from the IAA to fund those benefits (note 5b). As cost-of-living adjustments are granted, the Basic Account receives from the IAA the present value funding necessary for the cost-of-living adjustments granted. Therefore, accrued basic pension obligations for valuation purposes include the liability for all cost-of-living adjustments granted to the date of the valuation, but not for as-yet-unknown future cost-of-living adjustments.

Actuarial valuation

The latest full actuarial valuation for funding purposes was prepared as at December 31, 2018, by the independent actuary based on the entry-age method; the valuation indicated an actuarial surplus of $2,866 or $663 excluding previously scheduled amortization (2015: $2,224 of which $1,927 was transferred to the rate stabilization account). As a result of the 2018 actuarial valuation surplus, the amortization was eliminated, except for a limited group whose members continue to pay amortization of 0.23% of pay until the end of 2024. Interest is added to the rate stabilization account at the smoothed investment return rate, subject to a maximum rate stabilization account balance of $2,500.

An estimate of the actuarial position of the Plan for funding purposes has been made to December 31, 2020, using the following long-term actuarial assumptions:

- Annual investment return 6.25%
- Annual salary escalation rate 3.5%

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Notes to the financial statements for the year ended December 31, 2020

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5. ACTUARIAL VALUATION OF THE BASIC ACCOUNT FOR FUNDING PURPOSES (CONTINUED)

a) Basic Account (continued)

Actuarial valuation (continued)

This estimate, an extrapolation, produced an estimated funding surplus of $2,400 as at December 31, 2020 (2019: $1,538), as follows:

Funding extrapolation		2020		2019
Net assets available for basic pension benefits	$	**55,121**	$	49,498
Actuarial asset value adjustment		**(4,410)**		(2,450)
Smoothed assets for basic pension benefits		**50,711**		47,048
Rate stabilization account		**(2,500)**		(2,500)
Smoothed assets excluding rate stabilization account		**48,211**		44,548
Present value of future contributions (entry-age method)		**17,800**		16,271
Present value of future amortization		**7**		8
Net actuarial assets for basic pension benefits		**66,018**		60,827
Actuarial liability for accrued and future basic pension benefits		**(63,618)**		(59,289)
Entry-age method actuarial surplus	$	**2,400**	$	**1,538**

Changes in the extrapolated entry-age method funded status		2020		2019
Extrapolated entry-age method actuarial surplus, beginning of year	$	**1,538**	$	2,026
Adjustment to reflect the 2018 valuation		**-**		(1,355)
Extrapolated change in actuarial assets for basic pension benefits		**5,191**		4,496
Extrapolated change in actuarial liability for accrued and future basic pension benefits		**(4,329)**		(3,629)
Entry-age method actuarial surplus, end of year	$	**2,400**	$	**1,538**

Extrapolations may not be reliable indicators of the next valuation results, nor do they necessarily reflect the overall trend of results. Between valuations, various factors, including actual wage increases, investment earnings, and the incidence of retirements and withdrawals, may vary significantly from the long-term assumptions used in the extrapolation.

Measurement differences between funding and accounting positions

The primary components of the measurement differences between the extrapolated entry-age method funding surplus and the financial statement accounting surplus are as follows:

Measurement difference between funding and accounting positions		2020		2019
Entry-age method funding surplus	$	**2,400**	$	1,538
Actuarial asset value adjustment		**4,410**		2,450
Rate stabilization account adjustment		**2,500**		2,500
Difference in actuarial methods – present value of future contributions		**(17,800)**		(16,271)
Difference in actuarial methods – present value of future amortization		**(7)**		(8)
Difference in actuarial methods – present value of future liabilities		**19,987**		18,242
Measurement differences between funding and accounting positions		**9,090**		6,913
Surplus for financial statement purposes	$	**11,490**	$	**8,451**

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Notes to the financial statements for the year ended December 31, 2020

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5. ACTUARIAL VALUATION OF THE BASIC ACCOUNT FOR FUNDING PURPOSES (CONTINUED)

a) Basic Account (continued)

Actuarial asset value adjustment

For the purposes of determining the entry-age method surplus for funding purposes, the actuarial value of net assets available for benefits is determined on an adjusted value basis that smooths the difference between the actual investment return and the expected return based on a long-term real return rate over a five-year period.

The funding policy requires that the value of the assets be smoothed within a certain corridor. In the 2018 valuation, the corridor required that the smoothed value be no more than 108% and no less than 92% of the market value of the assets. The unconstrained smoothed value of the assets at December 31, 2020, was 91.7%, accordingly the smoothed value was adjusted to be 92.0% of the market value of the assets (2019: 95.1%).

The following schedule indicates the year the components of the actuarial asset value adjustment will be recognized in the entry-age method actuarial surplus. The amounts are based on that proportion of the total fund related to the basic account assets.

Actuarial asset value adjustment		2020		2019
Adjustment to 92% of market value	$	(168)	$	-
2020		-		805
2021		1,473		741
2022		1,040		306
2023		1,330		598
2024		735		-
Total adjustment	$	**4,410**	$	**2,450**

Rate Stabilization Account

As a result of the December 31, 2015, actuarial funding valuation, $1,927 of assets was transferred to the RSA that is held notionally within the Basic Account. Interest on the RSA is determined by applying the smoothed rate of return to the fiscal year-end balance. For 2020, the smoothed rate of return was 8.05%, but no interest was transferred from the Basic Account to the RSA as the RSA balance was at the maximum of $2,500 in 2019.

Rate stabilization account		2020		2019
Opening balance	$	2,500	$	2,485
Plus: Interest		-		15
Ending balance	$	**2,500**	$	**2,500**

Difference in actuarial methods

While the accrued pension obligations liability for financial statement purposes uses the projected benefit method pro-rated on service, the pension liability for funding purposes uses an entry-age funding method, where the present value of future normal cost contributions, basic pension benefits for future service and future amortization amounts are included in the determination of the funded status of the Plan.

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5. ACTUARIAL VALUATION OF THE BASIC ACCOUNT FOR FUNDING PURPOSES (CONTINUED)

a) Basic Account (continued)

Transitional period

The Agreement specifies a transitional period during which actuarial deficits will be amortized over 15 years, as required by the PBSA, and actuarial gains must be used to achieve the following objectives, in order of priority:

1. Eliminating any unfunded liability.
2. Simultaneously rebalancing member and employer contribution rates to the level of member contribution rates in effect at the time the Agreement was negotiated and providing specified benefit improvements.
3. Transfer funds in equal measure to a Contribution Rate Stabilization Reserve and to the IAA, to an aggregate total of $1 billion. The Contribution Rate Stabilization Reserve will be shared on an equal (50/50) basis in order to maintain or reduce future member and employer contribution rates.

If these transitional objectives are achieved, the Agreement describes the manners in which the Board can elect to apply surplus assets so as to achieve over time an equitable sharing of the benefits of the surplus assets between members and employers.

The Agreement describes that if, at any time, an actuarial valuation indicates that increased basic contribution rates are required to fully fund the Plan on a going-concern basis, the increase must be shared equally by members and employers.

b) Inflation Adjustment Account (IAA)

No unfunded liability exists for the IAA since the obligation for future cost-of-living adjustments is limited to the amount of the available assets in the account. As cost-of-living adjustments are granted to retired members, full funding for that granted cost-of-living adjustment, on a net present value basis, is transferred from the IAA to the Basic Account, from which the pensions are paid. There is no minimum level of cost-of-living adjustment required to be paid under the pension plan rules, nor is there any plan provision to fund the IAA to any minimum level of future potential cost-of-living adjustments.

The Board annually considers all relevant factors and its IAA funding policy to determine if a cost-of-living adjustment will be granted on pensions in pay and the amount of the cost-of-living adjustment, if any.

The Board established a cap for cost-of-living adjustments for retired members on January 1, 2014. As a result of the 2018 actuarial valuation, the new cap effective January 1, 2020 until January 1, 2022, has been set at 2.10% (2015: 2.10%). The cap for sustainable cost-of-living adjustments will be reviewed following each subsequent triennial actuarial valuation.

c) Retirement Annuity Account (RAA)

No unfunded liability exists for the RAA, since the obligation to purchase a pension is limited to the amount of the available assets in the account. The pension benefit for the RAA is therefore equal to the net assets available in the RAA.

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Notes to the financial statements for the year ended December 31, 2020

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6. FINANCIAL RISK MANAGEMENT

The Board approves the long-term asset mix policy for investment assets through its Statement of Investment Policies and Procedures (SIPP) and oversees the management of these assets through the Board's investment management agent, BCI. The SIPP requires diversification of investments among asset classes, sets guidelines on investment categories and limits the exposure to individual investments and counterparties.

Significant risks are regularly monitored and managed by BCI, and actions are taken when appropriate, according to the Plan's SIPP. In addition, these risks are reviewed periodically with the Board. Such risks include liquidity risk, as well as other financial risks, which comprise currency, interest rate, other price risk and credit risks.

Financial risks are disclosed on a unit-of-account basis (note 6b), which represents the legal ownership of securities held, and at the underlying securities level (note 6c), which provides additional insight to other risks that may impact the financial instruments of the Plan. Both forms of disclosure provide valuable perspectives into the financial risks that may directly or indirectly impact the financial statements and the funded status of the Plan. These two forms of risk disclosure are not additive to each other.

a) Liquidity risk

Liquidity risk is the risk of not being able to meet the Plan's cash requirements in a timely and cost-effective manner. Expenditures relate primarily to pensions, termination and refund benefits, and investment and administration costs. The Plan's approach to mitigating liquidity risk is to forecast its cash requirements over the near and long term to determine whether sufficient funds are available.

The Plan's primary source of liquidity is income generated from the Plan's investments, and employer and employee contributions. Investments are primarily held in pooled funds, and the securities held are traded in active markets and can be readily sold, and where the pooled fund units can thereby be redeemed to fund cash requirements. Accounts payable of $34 (2019: $18) and payable for purchase of investments of nil (2019: $121) are generally due within one month. Derivatives payable of $72 (2019: $28) are due within the next fiscal year.

b) Financial risks on a unit-of-account basis

Plan investments consist primarily of direct ownership in units of pooled investment portfolios. Each unit gives its holder a proportionate interest in the value of the net assets of the respective pooled investment fund. The unit-of-account for the majority of the Plan's investments is the units of the pooled investment funds.

Investments by unit-of-account		**2020**			**2019**	
Pooled investment fund units	$	**65,233**	98.7%	$	58,429	98.4%
Directly held equity		**595**	0.9%		692	1.2%
Directly held debt		**282**	0.4%		271	0.4%
Investments	$	**66,110**	**100%**	$	**59,392**	**100%**

Market risk is the risk that the fair values of an investment will fluctuate as a result of changes in market conditions, whether those changes are caused by factors specific to the individual investment or factors affecting all securities traded in the market. Market risk consists of currency risk, interest rate risk, and other price risk.

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Notes to the financial statements for the year ended December 31, 2020

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6. FINANCIAL RISK MANAGEMENT (CONTINUED)

b) Financial risks on a unit-of-account basis (continued)

Currency risk

Currency risk is the risk that the value of financial instruments denominated in currencies other than the functional currency of the fund will fluctuate due to changes in foreign exchange rates. The Plan holds primarily Canadian dollar denominated investment pooled fund units and is exposed to currency risk through holdings of small amounts of foreign currency denominated private equity, agricultural, bond and debt investments. See note 6c for currency exposure related to underlying securities.

Foreign denominated investments held as a percentage of investments

		2020			2019	
United States	$	856	1.3%	$	1,019	1.7%
Australia		128	0.2%		119	0.2%
	$	984	1.5%	$	1,138	1.9%

As at December 31, 2020, if the Canadian dollar had strengthened/weakened by 10% in relation to all foreign currencies, with all other factors remaining constant, net assets available for benefits would have decreased or increased by approximately $98 (2019: $114).

Interest rate risk

Interest rate risk is the risk that the fair value or future cash flows of plan investments will change as a result of future fluctuations in market interest rates. The majority of the Plan's investment assets are non-interest bearing and not subject to interest rate risk. See note 6c for interest rate risk related to underlying securities.

Other price risk

Other price risk is the risk that the fair value of a financial instrument will fluctuate because of changes in market prices (other than those arising from currency or interest rate risk), whether those changes are caused by factors specific to the individual financial instrument, its issuer, or factors affecting all similar financial instruments traded in the market. The Plan's investments are subject to other price risk through its public equity investments and private market investments, including equity in real estate companies, held directly and through pooled investment portfolios. This risk is managed by diversifying investments across asset classes based on criteria established in the SIPP.

As at December 31, 2020, if the pooled investment fund unit and directly held equity prices increased or decreased by 10%, with all other factors remaining constant, net assets available for benefits would have increased or decreased by approximately $6,583 (2019: $5,912).

On March 11, 2020, the COVID-19 outbreak was declared a pandemic by the World Health Organization. The situation continues and remains dynamic with various cities and countries around the world responding in different ways to address the outbreak. As a result of the COVID-19 pandemic, global financial markets have experienced significant volatility. Given the extent of the crisis, it is difficult to estimate the ultimate impact or duration of the volatility on the Plan.

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6. FINANCIAL RISK MANAGEMENT (CONTINUED)

b) Financial risks on a unit-of-account basis (continued)

Credit risk

Credit risk is the risk that the counterparty to a financial instrument will fail to discharge an obligation or commitment it has entered into, resulting in a financial loss to the Plan. The majority of the Plan's investments are held in securities that are not subject to credit risk. See note 6c for credit risk related to underlying securities.

Credit exposure exists for members' and employers' contributions receivable directly held by the Plan totalling $93 (2019: $84), for the derivatives $389 (2019: $133) and for the due from sale of investments of nil (2019: $12).

c) Financial risks of underlying securities held through pooled investment funds

Pooled investment funds exist for different types of investments, such as short-term investments; bonds; Canadian, global and international equities; mortgages; real estate; private equity; and infrastructure and renewable resources. Examining the risks of the underlying securities contained in pooled investment funds provides additional disclosure to assess the overall financial risks of the plan investments. Viewing the financial risks of underlying securities is an alternative way of disclosing financial risks from the unit-of-account basis in note 6b. These risks are not considered additive to the financial risks already disclosed in note 6b.

Market risks are reduced through asset class diversification, diversification within each asset class and credit quality requirements on investments.

Currency risk

Currency exposure also arises from foreign currency denominated investments held directly and from underlying investments held indirectly in pooled investment funds. BCI has currency exposure management programs under which it enters into economic hedges of foreign currency exposure through the use of forward foreign currency contracts.

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Notes to the financial statements for the year ended December 31, 2020

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6. FINANCIAL RISK MANAGEMENT (CONTINUED)

c) Financial risks of underlying securities held through pooled investment funds (continued)

The Plan's total direct and indirect currency exposure, the impact of economic hedging and trading activities, and its net exposure as at December 31 are as follows:

Fair value of foreign denominated investment holdings (Cdn dollar equivalent)	Total exposure	Economic hedging	Net exposure	% of total
		2020		
United States	$ **25,625**	$ **12,682**	$ **12,943**	**57%**
Asia-Pacific, excluding Japan	**4,333**	**411**	**3,922**	**17%**
Euro countries	**4,346**	**876**	**3,470**	**15%**
Other	**1,159**	**-**	**1,159**	**5%**
Other Europe	**720**	**-**	**720**	**3%**
United Kingdom	**1,307**	**859**	**448**	**2%**
Japan	**319**	**201**	**118**	**1%**
	$ **37,809**	$ **15,029**	$ **22,780**	**100%**
		2019		
United States	$ 15,697	$ 8,100	$ 7,597	49%
Asia-Pacific, excluding Japan	4,209	684	3,525	23%
Euro countries	2,963	738	2,225	14%
Other	1,772	-	1,772	11%
Other Europe	341	-	341	2%
Japan	491	362	129	1%
United Kingdom	708	699	9	0%
	$ **26,181**	$ **10,583**	$ **15,598**	**100%**

The net foreign currency exposure of its underlying investments represents 34% (2019: 26%) of the Plan's total investments.

Interest rate risk

The Plan's pooled investment funds hold interest-bearing financial instruments in short-term investments, bonds and mortgages. The risk of adverse changes in interest rates is reduced within the underlying investment pools through management of duration in exposure to fixed income securities, the use of floating rate notes and interest rate swaps, and general diversification by security type and geographic region. The Plan uses repos to create leverage for its bond strategy, and these repos are included as negative amounts in the terms to maturity table below.

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6. FINANCIAL RISK MANAGEMENT (CONTINUED)

c) Financial risks of underlying securities held through pooled investment funds (continued)

The terms to contractual maturity of interest-bearing financial instruments held directly and through pooled investment portfolios as at December 31, are as follows:

Terms to maturity of interest-bearing financial instruments

	Within 1 year	1 to 5 years	6 to 10 years	Over 10 years	Total	Effective yield to maturity
			2020			
Short-term	$ 1,670	$ 6	$ 14	$ -	$ 1,690	0.27%
Bonds	(4,568)	7,267	5,702	6,246	14,647	1.90%
Mortgages*	592	1,474	406	-	2,472	2.55%
Debt	-	-	282	-	282	5.71%
	$ (2,306)	$ 8,747	$ 6,404	$ 6,246	$ 19,091	
			2019			
Short-term	$ 1,117	$ 264	$ -	$ -	$ 1,381	1.83%
Bonds	(4,861)	6,136	6,739	5,759	13,773	2.54%
Mortgages*	810	1,132	307	-	2,249	3.45%
Debt	2	-	269	-	271	5.69%
	$ (2,932)	$ 7,532	$ 7,315	$ 5,759	$ 17,674	

* Yield based on mortgages in the fixed term mortage fund. Other mortgage funds contain variable rate mortgages.

As at December 31, 2020, if the prevailing interest rates increased or decreased by 1%, assuming a parallel shift in the yield curve with all other variables remaining constant, the fair value of interest-bearing financial instruments and net assets available for benefits would have decreased or increased by approximately $1,066 (2019: $1,022).

Other price risk

Other price risk associated with the underlying investments held in pooled investment funds is consistent with that described earlier in note 6b, which describes financial risks on a unit-of-account basis.

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Notes to the financial statements for the year ended December 31, 2020

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6. FINANCIAL RISK MANAGEMENT (CONTINUED)

c) Financial risks of underlying securities held through pooled investment funds (continued)

Credit risk

The Plan's underlying investment assets held in pooled investment funds attract credit risk. This is the risk that a loss may occur from the failure of another party to perform according to the terms of a contract.

It's also the risk of losses when issuers and debtors are downgraded by credit rating agencies, usually leading to a fall in the market value of the debtors' obligations. Credit risk is managed by establishing specific investment criteria, such as minimum credit ratings for investees and counterparties and maximum concentration limits with given counterparties.

Credit risk ratings on financial instruments (short-term investments, bonds, mortgages and debt) held directly and through pooled investment portfolios are as follows:

Credit rating of financial instruments	2020		2019	
AAA/AA	$ **4,360**	**23%**	$ 4,037	23%
A	**4,888**	**25%**	6,103	35%
BBB	**2,093**	**11%**	1,670	9%
Non-investment grade	**2,582**	**14%**	2,500	14%
	13,923	**73%**	14,310	81%
Unrated	**5,168**	**27%**	3,364	19%
	$ **19,091**	**100%**	$ **17,674**	**100%**

The ratings used are defined by Standard & Poor's rating agency. Obligations rated AAA/AA have the highest rating assigned. The lender's capacity to meet its financial commitment on the obligation is very strong. Bonds rated A, BBB or non-investment grade are weaker, with the BBB rating denoting an obligation with adequate protection parameters and a non-investment grade rating denoting major ongoing uncertainties or exposure to adverse business, financial or economic conditions that could lead to the debtor's inadequate capacity to meet its financial commitment on the obligation. Unrated financial instruments consist mainly of mortgages secured by real estate, debt and corporate bonds.

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7. FAIR VALUE OF FINANCIAL INSTRUMENTS

a) Fair value hierarchy

Fair value measurements of the investment assets and liabilities are based on inputs from one or more levels of a fair value hierarchy. Each level is based on the transparency of the inputs used to measure the fair values of assets and liabilities. The three levels of the fair value hierarchy are as follows:

Level 1

Inputs are unadjusted quoted prices in active markets for identical assets or liabilities

Level 2

Inputs other than quoted prices that are observable for the asset or liability either directly or indirectly

Level 3

Inputs that are not based on observable market data

Plan investments are carried at fair value in the financial statements. The following table details the classification of the Plan's investments based on the fair value hierarchy as at December 31:

Fair value hierarchy	Level 1	Level 2	Level 3	Total
		2020		
Pooled fund units	$ 1,690	$ 41,322	22,221	$ 65,233
Directly held equity	-	-	595	595
Directly held debt	-	-	282	282
Investments	**$ 1,690**	**$ 41,322**	**$ 23,098**	**$ 66,110**
Derivatives	**$ -**	**$ 317**	**$ -**	**$ 317**
		2019		
Pooled fund units	$ 1,112	$ 39,727	17,590	$ 58,429
Directly held equity	-	-	692	692
Directly held debt	-	-	271	271
Investments	**$ 1,112**	**$ 39,727**	**$ 18,553**	**$ 59,392**
Derivatives	**$ -**	**$ 105**	**$ -**	**$ 105**

During 2020 and 2019, there were no significant transfers of investments between levels.

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7. FAIR VALUE OF FINANCIAL INSTRUMENTS (CONTINUED)

a) Fair value hierarchy (continued)

The following table reconciles the Plan's level 3 fair value measurements:

Level 3 fair value hierarchy	Pooled fund units	Direct equity	Direct debt	Total
			2020	
Balance, beginning of year	$ 17,590	$ 692	$ 271	$ 18,553
Gains (loss) included in investment income	1,868	(24)	7	1,851
Purchases	23,968	2	4	23,974
Sales	(21,205)	(75)	-	(21,280)
Balance, end of year	$ 22,221	$ 595	$ 282	$ 23,098
Unrealized gain (loss) included in investment income	$ 1,801	$ (24)	$ 7	$ 1,784
			2019	
Balance, beginning of year	$ 14,000	$ 726	$ 125	$ 14,851
Gains (loss) included in investment income	987	(28)	(1)	958
Purchases	4,632	391	150	5,173
Sales	(2,029)	(397)	(3)	(2,429)
Balance, end of year	$ 17,590	$ 692	$ 271	$ 18,553
Unrealized gain (loss) included in investment income	$ 310	$ (28)	$ -	$ 282

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2020

($ millions except as otherwise noted)

7. FAIR VALUE OF FINANCIAL INSTRUMENTS (CONTINUED)

b) Valuation models

The objective of valuation techniques is to arrive at a fair value measurement that reflects the price that would be received to sell the asset or paid to transfer the liability in an orderly transaction between market participants at the measurement date.

BCI uses widely recognized valuation methods for determining the fair value of common and less complex financial instruments such as investments in pooled funds, where fair value is based on the underlying net asset value of the respective pooled fund as determined by the underlying fund manager. Observable prices and model inputs are usually available in the market for listed equity and debt securities, simple derivatives such as forward or future currency contracts and pooled funds.

The availability of observable market prices and model inputs reduces the need for management judgment and estimation, and reduces the uncertainty associated with the determination of fair values. The availability of observable market prices and inputs varies depending on the financial instrument and is subject to change based on specific events and general conditions in the financial markets.

For more complex financial instruments, such as direct private equity investments held by the Plan, BCI uses proprietary valuation models, which are usually developed from recognized valuation models. Some or all of the significant inputs into these models may not be observable in the market, and are derived from market prices or rates, or estimated based on assumptions. Valuation models that employ significant unobservable inputs require a higher degree of judgment and estimation in the determination of fair value. BCI's judgment and estimation are usually required for the selection of the appropriate valuation model to be used, determination of expected future cash flows of the financial instrument being valued, determination of the probability of counterparty default and prepayments, and selection of appropriate discount rates.

Fair value estimates obtained from models are adjusted for any other factors, such as liquidity risk or model uncertainties, to the extent that BCI believes that a third-party market participant would take them into account in pricing a transaction. Fair values reflect the credit risk of the instrument and include adjustments to take account of the credit risk of the Plan and the counterparties where appropriate.

c) Valuation framework

BCI has an established framework with respect to the measurement of fair values of financial instruments. Where possible, for direct private equity investments held by the Plan, external, independent valuation specialists are engaged annually to assist in the determination of fair value. In those circumstances where BCI relies on the third-party manager for the determination of fair value, BCI reviews the appropriateness of such valuations using audited financial statements of the underlying investments, where available, and other information from the underlying third-party manager or other sources.

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2020

($ millions except as otherwise noted)

7. FAIR VALUE OF FINANCIAL INSTRUMENTS (CONTINUED)

c) Valuation framework (continued)

In addition, BCI applies the following specific controls in relation to the determination of fair values:

- Verification of observable pricing inputs.
- Appraisal of domestic real estate properties once every 10 to 18 months by accredited independent appraisers
- Analysis and investigation of significant valuation movements.
- Review of unobservable inputs and valuation adjustments.

When third-party information such as broker quotes or pricing services is used to measure fair value, BCI assesses and documents the evidence obtained from the third parties to support the conclusion that such valuations are appropriate. This includes:

- Verifying that the broker or pricing service is approved by BCI for use in pricing the relevant type of financial instrument
- Understanding how the fair value has been arrived at and the extent to which it represents actual market transactions.
- Understanding how the fair value has been determined when a number of quotes for similar financial instruments have been obtained.
- Understanding how prices for similar financial instruments used to measure fair value have been adjusted to reflect the characteristics of the financial instrument subject to measurement.

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2020

($ millions except as otherwise noted)

7. FAIR VALUE OF FINANCIAL INSTRUMENTS (CONTINUED)

d) Significant unobservable inputs used in measuring fair value

The following table sets out information about significant unobservable inputs used at year-end in measuring financial instruments categorized as level 3 in the fair value hierarchy.

Significant unobservable inputs used in measuring fair value

Description	Fair value	Valuation technique	Unobservable input	Amount / range	Sensitivity to change in significant unobservable input
			2020		
					The estimated fair value would increase if:
Pooled fund units	**$ 22,221**	**Net asset value**	**Net asset value**	**$ 22,221**	**The net asset value increased**
Direct private equity	**$ 478**	**Discounted cash flows**	**Discount rate**	**7.1%**	**The discount rate decreased**
Direct private agriculture investments	**$ 117**	**Net asset value**	**Net asset value**	**$ 117**	**The net asset value increased**
Direct debt	**$ 282**	**Discounted cash flows**	**Discount rate**	**4.8%-17.0%**	**The discount rate decreased**
			2019		
					The estimated fair value would increase if:
Pooled fund units	$ 17,590	Net asset value	Net asset value	$ 17,590	The net asset value increased
Direct private equity	$ 500	Discounted cash flows	Discount rate	7.2%	The discount rate decreased
Direct private agriculture investments	$ 192	Net asset value	Net asset value	$ 192	The net asset value increased
Direct debt	$ 271	Discounted cash flows	Discount rate	4.8% -17.0%	The discount rate decreased

Net asset value

Net asset value is determined by BCI based on the fair value of assets less liabilities. Such investments are closed funds with significant restrictions on redemptions and, accordingly, BCI is unable to dispose of the pooled fund investment until the maturity or wind-up and liquidation of the respective pooled fund. In such cases, it is the Plan's policy to categorize the pooled fund investment as level 3 within the fair value hierarchy.

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2020

($ millions except as otherwise noted)

7. FAIR VALUE OF FINANCIAL INSTRUMENTS (CONTINUED)

d) Significant unobservable inputs used in measuring fair value (continued)

Discount rate

This represents the discount rate applied to the expected future cash flows of the direct private equity and direct debt investments. For the discount rates used, the underlying investment manager assesses both the risk premium and the appropriate risk-free rate based on the economic environment in which the investee entity operates. The discount rate is adjusted for such matters as liquidity differences, credit and market factors. The estimated future cash flows are then discounted using the discount rate determined. Cash flows used in the discounted cash flow model are based on projected cash flows or earnings of the respective investee entity.

e) Effects of unobservable input on fair value measurement

The use of different methodologies or assumptions could lead to different measurements of fair value. For fair value measurements in level 3, changing one or more of the assumptions used for a reasonable alternative assumption could have the following effects on net assets attributable to holders of redeemable units.

The pooled fund units, direct private agriculture investments and direct debt investments were valued based on information received from BCI, the manager of the respective investments. The fair value of these investments fluctuates in response to changes to specific assumptions for these particular investments, as determined by BCI. The favourable and unfavourable effects of reasonable alternative assumptions for the valuation of pooled fund units, direct private agriculture investments and direct debt investments have been calculated by adjusting the respective underlying net asset value by 10%.

Effects of unobservable input on level 3 fair value measurement

	2020		2019	
	Favourable	Unfavourable	Favourable	Unfavourable
Pooled fund units	$ 2,222	$ (2,222)	$ 1,759	$ (1,759)
Direct private equity	48	(48)	35	(35)
Direct private agriculture investments	12	(12)	19	(19)
Direct debt	28	(28)	27	(27)
	$ 2,310	$ (2,310)	$ 1,840	$ (1,840)

For direct private equity investments, BCI engages third-party independent valuators to estimate the fair market value. The valuators produce comprehensive reports for each applicable investment. The favourable and unfavourable effects of reasonable alternative assumptions for the valuation of direct investments have been calculated by recalibrating the model values using unobservable inputs based on the upper and lower threshold of the respective investment's range of possible estimates.

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2020

($ millions except as otherwise noted)

7. FAIR VALUE OF FINANCIAL INSTRUMENTS (CONTINUED)

f) Financial instruments not measured at fair value

The carrying value of members' contributions receivable, employers' contributions receivable, due from sale of investments, accounts payable and accrued expenses and payable for purchase of investments approximate their fair value given their short-term nature. These financial instruments are classified as level 2 in the fair value hierarchy because, while prices are available, there is no active market for these instruments.

8. INVESTMENT INCOME

	2020			2019		
	Income allocation	Change in fair value	Total	Income allocation	Change in fair value	Total
Short-term	$ 12	$ (19)	$ (7)	$ 19	$ (4)	$ 15
Bonds	413	1,250	1,663	334	498	832
Canadian equities	77	166	243	133	770	903
Global equities	185	1,372	1,557	223	1,733	1,956
Emerging markets equities	112	1,249	1,361	129	674	803
Mortgages	76	(25)	51	73	38	111
Real estate	108	(155)	(47)	598	41	639
Private equity	50	1,499	1,549	386	421	807
IRR*	100	512	612	365	(43)	322
	1,133	5,849	6,982	2,260	4,128	6,388
Directly held derivatives	-	109	109	-	305	305
	$ 1,133	$ 5,958	$ 7,091	$ 2,260	$ 4,433	$ 6,693

* Infrastructure and renewable resources

Investment income represents realized and unrealized pooled investment portfolio income attributable to the Plan, as a unit holder, and income from directly held investments. Income allocation is composed of interest, dividends and other investment payments. Change in fair value is composed of realized gains and losses on the disposal of investments and derivatives, and unrealized gains and losses on investments and derivatives held at year-end. All income earned within a pooled investment portfolio is reinvested within the portfolio. The RAA was allocated a share of basic account investment income based on the five-year annualized rate of return of the Basic Account per the pension plan rules.

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2020

($ millions except as otherwise noted)

9. CONTRIBUTIONS

	Basic account	Inflation adjustment account	Retirement annuity account	Supplemental benefits account	Total
			2020		
Members' contributions					
Regular	$ 922	$ 196	$ -	$ 6	$ 1,124
Special agreements	-	-	1	-	1
Past service purchases	5	1	-	-	6
	927	197	1	6	1,131
Employers' contributions					
Regular	1,083	169	-	8	1,260
Special agreements	-	-	2	-	2
Past service purchases	4	1	-	-	5
Retired member group benefits	-	-	-	26	26
	1,087	170	2	34	1,293
	$ 2,014	$ 367	$ 3	$ 40	$ 2,424
			2019		
Members' contributions					
Regular	$ 840	$ 179	$ -	$ 6	$ 1,025
Special agreements	-	-	2	-	2
Past service purchases	7	1	-	-	8
	847	180	2	6	1,035
Employers' contributions					
Regular	971	150	-	6	1,127
Special agreements	-	-	2	-	2
Past service purchases	5	1	-	-	6
Retired member group benefits	-	-	-	50	50
	976	151	2	56	1,185
	$ 1,823	$ 331	$ 4	$ 62	$ 2,220

Member and employer contributions are as defined under the pension plan rules. Members' past service purchases are voluntary contributions.

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2020

($ millions except as otherwise noted)

10. BENEFITS

	Basic account	Inflation adjustment account	Retirement annuity account	Supplemental benefits account	Total
			2020		
Regular pension benefits	$ 1,702	$ -	$ -	$ 12	$ 1,714
Indexing – regular pension benefits	283	-	-	1	284
Termination and refund benefits	72	99	15	-	186
Death benefit payments	29	18	-	-	47
Disability benefit	1	-	-	-	1
	$ 2,087	$ 117	$ 15	$ 13	$ 2,232
			2019		
Regular pension benefits	$ 1,604	$ -	$ -	$ 11	$ 1,615
Indexing – regular pension benefits	259	-	-	1	260
Termination and refund benefits	65	73	12	-	150
Death benefit payments	28	14	-	-	42
Disability benefit	1	-	-	-	1
	$ 1,957	$ 87	$ 12	$ 12	$ 2,068

11. SUPPLEMENTAL BENEFITS ACCOUNT

The Supplemental Benefits Account funds certain supplemental benefits; for example, pension benefits which exceed *Income Tax Act* limits for registered pension plans are paid through this account. Certain group benefit coverage has been provided for retired members through this account. The availability, type and level of retired member group benefit coverage are contingent upon the availability of funding for such benefits.

To the extent extended health benefits are funded through the Supplemental Benefits Account (2020: $26; 2019: $29), they are funded from current contributions that would otherwise be employer inflation contributions. The amount of funding that can be used for extended health benefits is limited to 0.8% of pensionable salaries. For 2020, this funding totaled 0.2% of pensionable salaries (2019: 0.3%).

To the extent medical service plan premiums were funded through the Supplemental Benefits Account (2020: nil; 2019: $21), they were funded from contributions that would otherwise be employer basic contributions.

Retired member group benefits costs (shown on the Statement of Changes in Net Assets Available for Benefits) represent group benefit costs paid by the Plan less any premiums paid by retired members.

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2020

($ millions except as otherwise noted)

12. INVESTMENT AND ADMINISTRATION COSTS

	2020	2019
Investment management	$ **159.7**	$ 94.6
Benefit administration	**47.9**	45.0
Other professional services	**1.6**	1.4
Board secretariat costs	**1.1**	1.0
Board remuneration and expenses	**0.4**	0.7
Actuarial	**0.1**	0.6
Audit	**0.1**	0.1
	$ **210.9**	$ **143.4**

BCI and Pension Corporation are related parties to the Plan. The Board appoints members to each of the respective corporate boards. Investment management and benefit administration costs are approved by the Board.

Investment management costs represent amounts charged to recover internal and external management costs incurred by BCI, except those external management fees related to investments managed by an underlying external manager, where management fees are embedded in the net assets of the respective investment. Underlying external investment management fees of $73.6 (2019: $112.1) were netted against investment income.

Benefit administration costs represent amounts charged to recover benefit administration costs incurred by Pension Corporation. These transactions are in the normal course of operations and are measured at the exchange amount of consideration established and agreed to by the related parties.

Board secretariat costs represent amounts directly incurred by the Board for costs associated with supporting the Board.

Other professional services costs include insurance and legal fees incurred directly by the Plan.

Board remuneration and expenses represent amounts for trustee compensation and direct expenses.

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2020

($ millions except as otherwise noted)

13. ACCOUNT TRANSFERS

	2020			2019		
	Basic account	Inflation adjustment account	Retirement annuity account	Basic account	Inflation adjustment account	Retirement annuity account
Cost-of-living adjustment	$ 350	$ (350)	$ -	$ 366	$ (366)	$ -
Indexing of deferred pensions	11	(11)	-	9	(9)	-
Pensions purchased from retirement annuity account	21	8	(29)	16	7	(23)
Excess investment return	(475)	475	-	(335)	335	-
	$ (93)	$ 122	$ (29)	$ 56	$ (33)	$ (23)

The IAA is a separate account that is maintained for funding current and future cost-of-living adjustments. The IAA is funded through a portion of ongoing contributions from employers and members, investment income earned and excess investment return earned in the Basic Account.

All pension payments are made from the Basic Account. Each year, if members' pension payments are adjusted for the current cost-of-living adjustment, monies are transferred from the IAA to the Basic Account to cover the present value of all future payments arising from the current cost-of-living adjustment. The Board annually considers all relevant factors and its IAA funding policy to determine if a cost-of-living adjustment will be granted on pensions in pay and the amount of the cost-of-living adjustment, if any. As at January 2020, retired members received a cost-of-living adjustment of 1.9% (2019: 2.1%) and indexing supplements were transferred.

When a deferred pension commences, the present value of the cost-of-living adjustments during the deferral period is transferred from the IAA to the Basic Account. Approximately $151 (2019: $134) of the current IAA balance is for cost-of-living adjustments already granted for deferred pensions but not yet transferred to the Basic Account.

When investment earnings in the Basic Account are in excess of the actuarial assumption regarding investment rates of return, the excess investment returns are transferred from the Basic Account to the IAA. Excess investment return is based on investment income earned on those assets in the Basic Account required for pensions currently being paid: approximately $20 billion of assets for 2020 (2019: $19 billion). The excess investment return rate is determined by taking the difference between the actual five-year annualized market rate of return (8.60%) and the rate of return used by the actuary (6.25%) in valuing the Plan's liabilities. The calculated excess investment return rate for 2020 was 2.35% (2019: 1.75%), resulting in an excess investment return amount of $475 transferred to the IAA (2019: $335).

Should the excess investment return calculation ever result in a negative balance, it will be carried forward cumulatively with interest and offset against future excess interest. The cumulative negative excess investment interest is an amount determined by applying the five-year annualized market rate of return to the fiscal year opening balance. This component of the calculation is the opportunity cost related to the opening cumulative return deficit.

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2020

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13. ACCOUNT TRANSFERS (CONTINUED)

A separate RAA is maintained to record additional contributions by employers and members under special agreements. If a member is entitled to, and chooses to, purchase additional pension benefits at retirement, monies are transferred from the RAA to the Basic Account and the IAA to fund the additional benefits.

14. COMMITMENTS

The Plan participates in private equity, international real estate, mortgage and infrastructure and renewable resource pools. As at December 31, 2020, the Plan's share of commitments for future investment contracts in these pools over the next several years is approximately $9,245 (2019: $9,431).

15. CAPITAL DISCLOSURES

Capital is defined as the funded status (surplus or deficit) of the Plan as determined by the actuary. The Plan's objective for managing capital is to ensure that the assets of the Plan are invested prudently and effectively, and with contributions adequate to meet the obligations of the Plan. Management of the Plan's funded status is achieved by adjusting member and employer contribution rates; through implementation of the SIPP, which affects the earnings of the Plan; and, in the case of the IAA, by changing the benefits paid. The Board has a funding policy that outlines the principles that provide guidance in managing this process. The investment performance of the Plan's assets is reviewed by the Board on a regular basis and compared to relevant industry benchmarks. Benefit entitlement is based on the provisions of the Agreement and the pension plan rules. Funding deficits must be funded over a period not to exceed 15 years.

An actuarial valuation must be prepared at least once every three years. The latest actuarial valuation for funding purposes was prepared as at December 31, 2018, and has three components: the Basic Account non-indexed benefits and, by considering the valuation of the entire Plan, the non-guaranteed IAA benefits and the RAA (note 1d). The next full actuarial valuation will be carried out as at December 31, 2021.

The Act and the Board's funding policy require that contribution rates comply with the going-concern requirements of PBSA.

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2020

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16. SUBSEQUENT EVENT

Subsequent to the Supreme Court of Canada decision of December 13, 2019, it was unclear whether BCI's pooled investment portfolios would be entitled to a rebate of amounts paid in lieu of goods and services tax (GST) under the Reciprocal Tax Agreement (RTA) between the British Columbia Government and Federal Government. As such, BCI's RTA liability for the years ended December 31, 2017 to 2020 was recorded with no offsetting receivable in respect of a rebate.

On March 10, 2021, the BC Ministry of Finance and the Department of Finance Canada agreed to amend schedule A of the RTA to more explicitly acknowledge BCI's pooled investment portfolios entitlement to a rebate of the amounts paid under the RTA. Furthermore, Finance Canada has confirmed that prior year GST assessments will be vacated by the Canada Revenue Agency and no further assessments will be issued against BCI for past filing periods in respect of costs recovered from the pooled investment portfolios

Therefore, the RTA liability will be reversed in April 2021. The impact on the net assets value of pooled investment portfolio units held by the Plan is estimated to be $60.

17. PRIOR YEAR COMPARATIVES

The prior year comparatives have been reclassified to conform to the current year presentation.

Appendix

Carbon footprint methodology

The metric used for all portfolios is a portfolio carbon footprint. This is a measure of the total carbon emissions of the portfolio normalized by the market value of the portfolio. The portfolio carbon footprint includes Scope 1 and 2 GHG emissions for our public equity, corporate bond holdings, and private market portfolios.

- Scope 1: all direct GHG emissions from the activities of an organisation or under their control
- Scope 2: all indirect emissions from energy purchased and used by an organization

For the government bond holdings, BCI uses countrywide emissions or estimations. Where data gaps exist or limited look-through to underlying assets is not currently possible, we employ a proxy approach using sub-industry average emission intensities to estimate emissions for parts of the portfolio.

Public markets

BCI used data provided by ISS ESG, the responsible investment arm of Institutional Shareholder Services (ISS), which provides climate data, analytics and advisory services to financial market participants. ISS ESG's comprehensive GHG emissions database includes reported emissions data and modelled estimations for non-disclosed emissions for those who report with a low trust metric (according to internal analysis). ISS ESG utilizes a sophisticated, proprietary approximation system to estimate emissions, which includes over 800 climate-relevant sector and subsector specific models.

Private markets

BCI calculated the carbon footprint of the plan's private market portfolios using three different approaches dependant on the degree of data availability for each underlying investment. The primary method used was company-specific carbon emissions data if disclosed. Where direct emissions data was not available, BCI sourced relevant company specific operating metrics and emission factors to calculate an estimated carbon footprint for assets. The third approach was to use a proxy approach where sub-industry average emissions intensities were applied to the portfolio exposure that had sub-industry classification data available. This three-step approach allowed BCI to maintain the highest degree of accuracy possible while allowing maximum portfolio coverage given the current data gaps present for this type of analysis.

BCI recognizes the limitations and uncertainties inherent in the emissions data and the carbon footprinting estimation methodologies in use today. These include the impact of unrelated market conditions such as market valuation and revenue impacts, the influence of exchange rates, incomplete reporting from issuers and fund managers, the frequency at which emissions data is updated, and BCI's point-in-time approach, which may not accurately reflect our portfolio exposure over the course of the year.

BCI is actively working to improve the accuracy and completeness of our carbon foot printing calculations which will cause the carbon footprint values to change over time due to methodology and data improvements. Year over year changes will reflect these methodology improvements as well as changes to the underlying portfolio carbon footprint. The methodology used to calculate the 2019 metrics for the public equities and fixed income carbon footprints reported in last year's disclosure were derived from 2017 emissions data and did not have the same coverage or updated financial data used in the current 2020 footprint. We are planning additional changes in future years and expect the footprint calculations to improve over time.

Scope

The following asset classes and instrument types are included in the carbon footprint metrics.

Asset class	Instrument type
Public equities	Includes all public equity positions, long-only externally managed investments and exchange traded funds (ETFs) where the ETF represents more than 20 per cent of a portfolio. Excludes ETFs that represent less than 20 per cent of a portfolio and derivative instruments.
Fixed income	Includes all corporate and government bonds and excludes segregated assets, cash, money market instruments and private debt.
Real estate	Includes the domestic real estate portfolio. Excludes the international real estate and mortgage portfolio.
Private markets	Includes the majority of direct and fund investments in infrastructure and renewable resources, and private equity. Excludes fund of funds and investments with limited data availability that made calculations impractical to estimate.

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