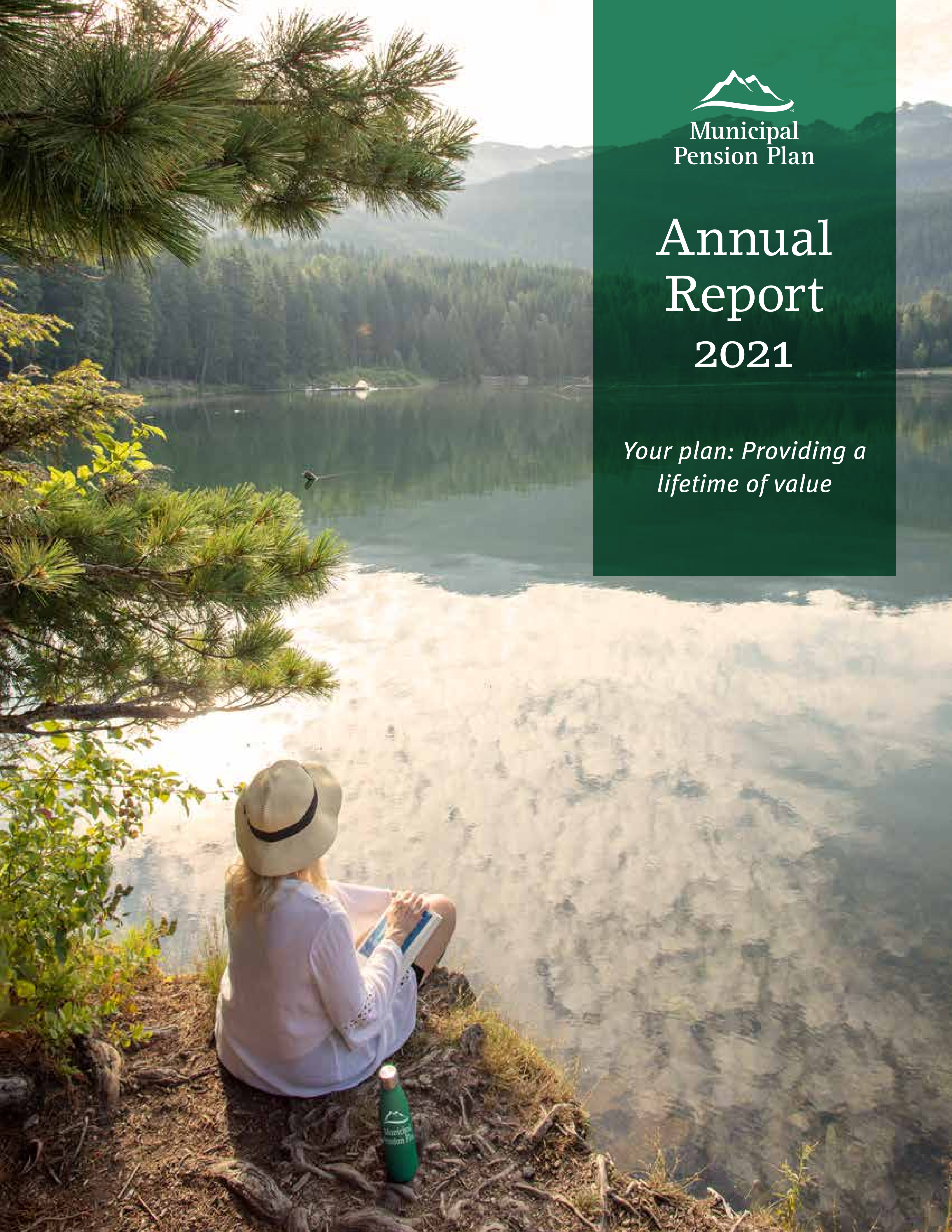


Municipal Pension Plan

Annual Report 2021

Your plan: Providing a lifetime of value

Contents

Your plan—providing a lifetime of value

A message from your trustees

Your plan's Board of Trustees' focus is on sustainable investment strategies that build long-term value for members like you. We know more than 395,000 people depend on the Municipal Pension Plan for a retirement income. Get to know your pension better by reading through this 2021 Annual Report. The content reflects the plan's standing as of December 31, 2021.

Research shows people with defined benefit pension plans are less stressed about their finances. Retirees with a defined benefit plan have more freedom to spend without worrying they might outlive their savings.

Canadian Public Pension Leadership Council, The Social Implications of Pensions, page 2

Value through strategic planning

The plan is the sixth-largest defined benefit pension plan in Canada. Our retired and active members include professionals from local government and school districts, firefighters, police officers and people working in health care. We designed our long-term goals for the plan to maximize value for this diverse membership. Our research identifies what our members value and includes younger people and those new to the plan.

We are making progress on reducing the plan's exposure to climate risks as part of our three-year strategic plan. Partnerships are helping us improve climate governance and industry standards. This is the third year we are disclosing climate-related financial information. Understanding these risks is part of our strategy to improve the plan's sustainability, safeguard its funding and do the right thing to protect our environment.

Value through design

Plan changes—the largest in 50 years—took effect on January 1, 2022. These improvements align benefits with how members use them to enhance equity. The result is a more sustainable plan that keeps with current costs. The plan partners created a retiree benefit trust as a new way to manage and fund group health benefits.

The Municipal Retiree Benefit Trust is a new way to fund extended health and dental plans. The retiree benefit trust provides more funding flexibility, making the program more sustainable.

Value through a long-term view

We oversee an investment portfolio that is carefully managed to reduce risk and protect the plan's funding. Members and employers make contributions that are invested in the plan's portfolio. About 75 per cent of the cost of a member's pension comes from returns earned on plan investments. The value of these assets is $74.2 billion (December 31, 2021).

We review the fund's asset liability mix every three years and the latest review is underway. The board takes its investing responsibilities very seriously. Members depend on the plan for retirement income. Fulfilling this obligation is our primary objective in managing the plan.

The board has a fiduciary duty to act in the interests of the beneficiaries. We complete an actuarial valuation of the plan at least every three years. The next valuation will reflect the plan's standing as at December 31, 2021. You will be able to examine the results when they are reported in fall 2022.

Value through connection

About 580 attendees—the highest number ever—joined the second online annual general meeting in 2021. Join us again this year to put your questions to the experts and learn more about your pension plan.

The plan is part of the Canadian Public Pension Leadership Council, which recently commissioned research showing public sector pension plans added $82 billion to Canada's GDP in 2019. This supported 877,100 jobs and $33 billion in wages for Canadians.

About 580 attendees—the highest number ever—joined the annual general meeting in 2021. This year's event will take place on October 13, 2022, the third time the AGM has been held online.

Retired member
Prabha Chawla

The plan offers a predictable and reliable retirement income because of careful, proactive and prudent financial management. The plan is a reliable portion of members' retirement income; the average annual pension is just over $18,000.

Plan investments

Plan portfolio overview

The Municipal Pension Board of Trustees is responsible for overseeing an investment portfolio of $74.2 billion on behalf of Municipal Pension Plan members. The board's primary objective is to ensure the pension plan is secure and stable over the long term, which depends on several factors, including whether the plan earns enough through returns on its investments.

The board oversees and monitors the performance of its investment management agent, the British Columbia Investment Management Corporation (BCI). The board sets the investment beliefs and financial goals of the plan through the Statement of Investment Policies and Procedures, and BCI is tasked with putting that investment strategy into action.

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 goal is to meet or exceed the plan's investment return assumption, which is the minimum amount the plan needs to earn through investments each year to be able to pay for its obligations, including pensions. The investment strategy is designed to achieve this objective, without taking on too much risk.

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; examples of risks considered include market trends or environmental, social and governance factors such as climate change. To manage risk effectively, the board and BCI have constructed a portfolio that is invested in multiple asset types, industry sectors and global markets. With investments across a wide range of assets, the larger portfolio is protected if one type of asset generates lower returns in any given period. Depending on the market outlook, or future anticipated risk, investment holdings will be adjusted to either protect the plan or take advantage of opportunities to add value.

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.

In recent years, the plan's long-term asset mix policy has increased focus on investing in regulated utilities, renewable resources and real assets (tangible investments, such as land and buildings). These types of private market assets have characteristics that align with the plan's long-term view on investing: they typically increase in value over time, protect against inflation and help buffer against the short-term volatility associated with public markets. Many of these investments also present opportunities for direct asset management, which enables BCI to influence the strategic direction of these companies and create long-term value for the plan.

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

	2021	2020	2019	2018	2017
Increase in assets					
Investment income	**$ 7,835**	$ 7,091	$ 6,693	$ 1,210	$ 5,205
Contributions					
Members	**1,169**	1,131	1,034	971	923
Employers	**1,342**	1,293	1,185	1,117	1,067
Transfers from other plans	**21**	23	18	97	11
Total increase in assets	**10,367**	9,538	8,930	3,395	7,206
Decrease in assets					
Benefit payments	**2,342**	2,232	2,068	1,928	1,808
Transfers to other plans	**19**	29	13	11	15
Retired member group benefits	**143**	26	50	51	69
Investment and administration costs[1,2]	**178**	211	143	170	127
Total decrease in assets	**2,682**	2,498	2,274	2,160	2,019
Increase in net assets	**7,685**	7,040	6,656	1,235	5,187
Net assets at beginning of year	**66,480**	59,440	52,784	51,549	46,362
Net assets at end of year	**$74,165**	$66,480	$59,440	$52,784	51,549
Investment and administration costs as a percentage of net assets (%)[1]					
Investment management[1,2]	**0.32**	**0.39**	0.37	0.35	0.28
Benefits administation	**0.08**	0.08	0.09	0.09	0.09

1 Investment and administration costs as a percentage of net assets include external investment management costs netted against investment income of $102.5 million (2020—$73.5 million; 2019—$112.1 million; 2018—$61.8 million; 2017—$52.4 million); 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 32 basis points in 2021. 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

In 2021, the global economy experienced a strong recovery despite continued market volatility and uncertainty as the world faced ongoing headwinds from the COVID-19 pandemic. Supply chain disruptions persisted and regional differences in vaccine availability affected the pace of the reopening of economies around the world. These were all challenges that BCI took into account when managing the plan's portfolio throughout the year.

Overall plan performance

Over the year, the plan's assets grew to $74.2 billion, a $7.7 billion increase from the prior year. Investment activities helped drive the growth in assets, delivering a one-year return of 11.5 per cent over the benchmark of 7.8 per cent and a five-year return of 9.7 per cent over the benchmark of 8.5 per cent. These returns are well above the plan's investment return objective of 6.5 per cent.

Assets increased
$7.7 billion
from the prior year, to
$74.2 billion

Public and private equities

Strong performance in public and private equities were the primary drivers of returns in the year. Public equities returned 14.1 per cent, outperforming the benchmark of 13.5 per cent. Public equities in the energy, financials and technology sectors in developed markets were the top performers in the year. In contrast, public equities in the emerging markets returned -1.0 per cent, which was still above the benchmark of -3.4 per cent, as performance in these markets was affected by slower economic reopening due to lower vaccination rates and increasing geopolitical tensions. Over five years, public equities returned 11.9 per cent against the benchmark of 11.5 per cent. BCI's careful use of active management, and continued strategy to manage more assets in-house and reduce dependence on higher-cost external managers, contributed to the outperformance against the benchmarks.

Private equities were an exceptional source of returns for the plan, earning 30.5 per cent for the year, compared to the benchmark of 19.5 per cent. As more investors seek exposure to private equity assets, competition in the market has grown and, consequently, the price of assets has increased. BCI took advantage of the current strength in the market to strategically sell assets and deliver returns to the plan.

Fixed income

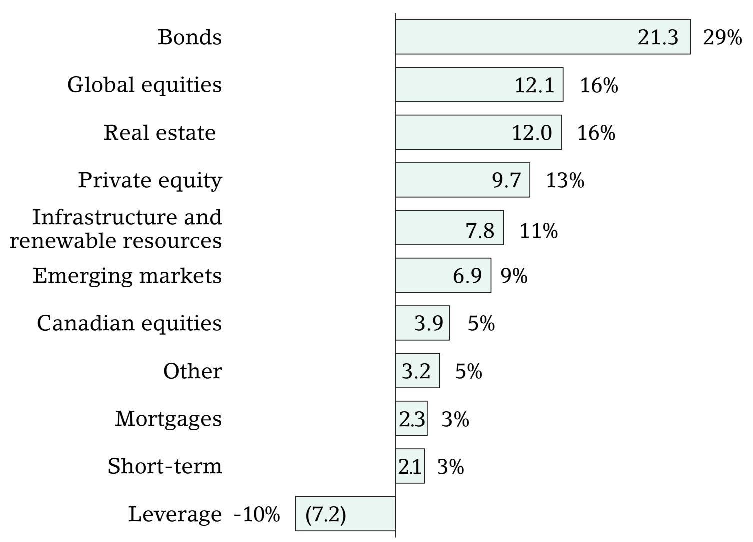
Over the year, the fixed income portfolio returned -0.2 per cent against the benchmark of -0.9 per cent. The performance of fixed income during the year was affected by rising interest rates, which resulted in a drop in the value of the fixed income securities. Over the five-year period, returns have been stronger, with the portfolio returning 3.7 per cent compared to the benchmark of 3.3 per cent.

Over the five-year period, fixed income returns have been stronger, with the portfolio returning 3.7 per cent compared to the benchmark of 3.3 per cent.

Real estate

Real estate, and particularly commercial real estate, was the hardest-hit sector early in the pandemic. But as global economies reopened, the real estate market recovered, as reflected in the plan's real estate return in the year. The real estate portfolio returned 14.5 per cent on a one-year basis, against the benchmark of 6.8 per cent. This is in part because the plan has been careful to maintain low exposure to hard-hit sectors like retail, while increasing investment in sectors like warehousing and logistics, which have experienced growing demand. On a five-year basis, the portfolio returned 7.3 per cent, exceeding the benchmark of 6.6 per cent.

Investment holdings ($ billions)
as at December 31, 2021



Investment portfolio[1]
as at December 31, 2021

	Market value ($ millions)	Asset mix (% market value)
Short-term	2,069	2.8
Mortgages	2,330	3.1
Leverage	(7,163)	(9.7)
Bonds		
Corporate bonds	4,905	6.6
Leveraged bonds	7,615	10.3
Government bonds	8,745	11.8
	21,265	28.7
Private debt	2,953	4.0
Canadian equities		
Indexed	2,138	2.9
Actively managed	1,792	2.4
	3,930	5.3
Global equities		
Indexed	3,926	5.3
Actively managed	8,149	11.0
	12,075	16.3
Emerging markets		
Indexed	3,987	5.4
Actively managed	2,903	3.9
	6,890	9.3
Private equity	9,702	13.1
Real estate	11,984	16.2
Infrastructure and renewable resources	**7,796**	10.5
Cash and unsettled trades	292	0.4
Total investments	**$74,123**	**100.0**
2020 comparison	**$66,427**	

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, 2021

	Approved range	Target asset mix market value	Actual asset mix market value	Rate of return	Performance benchmark
Short-term	0–10	2	2.8	(0.3)	0.2
Mortgages	0–10	5	3.1	4.6	(0.2)
Universe bonds	5–30	23	22.1	(2.8)	(2.5)
Corporate bonds	0–10	5	6.6	2.4	1.7
Private debt	0–10	4	4.0	7.4	3.4
Fixed income	**15–50**	**39**	**38.6**	**(0.2)**	**(0.9)**
Canadian equities	0–15	5	5.3	25.8	25.1
Global equities	10–35	17	16.3	19.2	20.6
Emerging markets	3–15	10	9.3	(1.0)	(3.4)
Private equity	3–15	10	13.1	30.5	19.5
Equity	**30–60**	**42**	**44.0**	**18.7**	**14.9**
Real estate	10–25	17	16.2	14.5	6.8
Infrastructure and renewable resources	5–16	12	10.5	12.5	7.0
Real assets	**20–40**	**29**	**26.7**	**13.7**	**6.9**
Other	**0–5**	**0**	**0.4**	**—**	**—**
Leverage	**—**	**(10)**	**(9.7)**	**0.3**	**0.3**
Total portfolio		**100**	**100.0**	**11.5**	**7.8**
Annual rates					
2021				**11.5**	**7.8**
2020				11.6	11.8
2019				12.5	13.2
2018				2.1	0.2
2017				11.0	9.9
Five-year annualized rates					
2021				**9.7**	**8.5**
2020				8.6	8.2
Ten-year annualized rates					
2021				**10.0**	**8.7**
2020				9.1	8.0

Infrastructure and renewable resources

The plan's infrastructure and renewable resources (I&RR) investments benefitted from increased demand for shipping, lumber, and grain over the last year, a trend driven by the COVID-19 pandemic. As a result, the one-year return of 12.5 per cent outperformed the benchmark of 7.0 per cent. This outperformance is viewed as one-time in nature and not expected to continue as the economic fallout from the pandemic settles. Over five years, I&RR delivered 9.3 per cent over the benchmark of 7.0 per cent. BCI's I&RR program will continue to seek renewable energy and sustainability-focused investments as the global demand for these assets increases.

Responsible investing

Responsible investing is a key part of the plan's investment approach and beliefs. Responsible investing means taking environmental, social and governance (ESG) factors into account when making investment decisions. These factors can be company-specific, like board compensation or employee safety; they can also be widespread and systemic, like climate change, water management and data security. Both the board and BCI believe that responsible investing is a core part of understanding and managing the opportunities and risks associated with long-term investments, and part of the duty of growing the plan in a sustainable way.

BCI takes material ESG factors into account in every investment decision made for the plan and monitors these factors throughout the life of an investment. Taking a multi-pronged approach, BCI:

- **Integrates** ESG factors together with traditional financial analysis into assessments of new investments or monitoring the portfolio
- **Influences** companies and policy makers to promote good ESG practices and policies
- **Invests** in ESG-related opportunities that have positive risk or return characteristics for the plan
- Uses ESG-related **insight** to adapt and improve its investment strategies to better support the plan's investment goals

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), a United Nations-supported international network of investors that share the goal of incorporating ESG elements into the processes and activities of institutional investors. As part of this commitment, both the board and BCI take part in an annual assessment of their responsible investing activities and 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.

BCI and the plan's reporting on climate change also aligns with the recommendations of the Task Force on Climate-related Financial Disclosures, as addressed in the next section of this report

To learn more about BCI's responsible investing activities on behalf of the plan, visit BCI.ca.

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

Managing investment costs

BCI operates on a cost-recovery, not-for-profit basis, meaning the plan pays fees only to cover the cost of managing the investments. Since BCI manages a large amount of assets, it has access to significant economies of scale when investing on behalf of the plan. Managing investment costs is important to the board, and BCI's fees continue to be competitive with its peers and are much lower than those charged by investment managers in the private sector.

Investment management fees are affected by the types of assets, the plan's asset mix (what is in the portfolio) and BCI's investment strategy. Some asset classes that produce higher returns are complex and more expensive to manage, which affects fees. The goal is to earn enough investment income to fulfil the plan's pension promises at reasonable cost.

Top 25 public equity holdings—worldwide

Company	% of portfolio	% of public equity	Total exposure ($ millions)
Taiwan Semiconductor Manufacturing Co. Ltd.	0.7	2.2	514
Microsoft Corp.	0.7	2.2	499
Apple Inc.	0.6	1.8	423
Samsung Electronics Co. Ltd.	0.5	1.5	345
Tencent Holdings Ltd.	0.4	1.2	284
Alphabet Inc.	0.4	1.2	275
Royal Bank of Canada	0.3	1.0	239
Amazon.com Inc.	0.3	1.0	237
Shopify Inc.	0.3	1.0	234
Toronto-Dominion Bank	0.3	1.0	223
Alibaba Group Holding Ltd.	0.2	0.8	181
UnitedHealth Group Inc.	0.2	0.7	152
Bank of Nova Scotia	0.2	0.6	140
Mastercard Inc.	0.2	0.6	139
Brookfield Asset Management Inc.	0.2	0.6	134
Tesla Inc.	0.2	0.6	127
Infosys Ltd.	0.2	0.6	126
Meta Platforms Inc.	0.2	0.5	118
SK Hynix Inc.	0.2	0.5	116
Canadian Pacific Railway Ltd.	0.2	0.5	116
NVIDIA Corp.	0.1	0.5	111
Fraport AG Frankfurt Airport Services Worldwide	0.1	0.5	105
Siemens AG	0.1	0.4	99
Housing Development Finance Corp. Ltd.	0.1	0.4	98
Iberdrola SA	0.1	0.4	97

Highlights of 2021 climate-related disclosures

The board recognizes that climate change results in both investment opportunity and long-term material systemic risk to the plan. We continue to be dedicated to action on climate change through investor stewardship, asset selection, education, public policy advocacy and the transparent disclosure of climate-related information.

This year marks the plan's third year of providing climate-related disclosures in alignment with the Task Force on Climate-related Financial Disclosures (TCFD) as the most effective standard to deliver the information investors need to assess climate risk. What follows are highlights of our 2021 reporting.

See the complete Climate-related disclosures in the appendix.

2021 highlights

Governance

We are committed to understanding the issues, risks and opportunities posed by climate change to support informed investment decision-making. The board delegates the management of investment risks, selection of investments and stewardship to its investment agent, BCI. As such, the board monitors BCI's work to address the investment opportunities and long-term material risks of climate change to the plan.

- The board reviewed its governance frameworks by conducting an analysis of its Statement of Investment Policies and Procedures and the Funds Investment and Management Agreement to ensure alignment with its investment agent, BCI, on addressing climate risks and opportunities.
- Trustees participated in full board education on net zero and Paris-aligned investing, and investment committee education on physical climate risks and net zero.

Strategy

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. In 2020, the board approved a three-year strategic plan, which prioritizes addressing climate risk in the investment portfolio by enhancing the plan's governance structure.

- The board is exploring investing in a manner compatible with the Paris Agreement goal of keeping the global average temperature to well below 2 °C above pre-industrial levels and studying the potential impacts of a sudden significant policy response.
- In 2021, the board joined 457 investors representing US$41 trillion in assets to call on all governments to increase domestic commitments to emissions reductions and to implement mandatory climate-risk disclosure requirements. In addition, the board joined other major investors to demand ambitious methane regulations in the United States.
- The board considers climate-related physical and transition risks and opportunities across short, medium and long-term horizons.

Risk management

The board receives regular reporting on climate risk from BCI to support its oversight of investment risk. BCI conducts scenario analysis to identify the main sources of risk and opportunity for the portfolio under different climate change scenarios.

- The board conducted an asset liability review, which included an assessment of the potential impact of various climate scenarios on the long-term investment performance of the plan.
- BCI analyzes data compiled by the SDI Asset Owner Platform to measure plan exposure to companies that provide products and services that contribute positively to the UN's Sustainable Development Goals related to climate change.

Metrics and targets

Establishing clear and transparent metrics and targets is an important step in assessing and managing relevant climate-related risks and opportunities.

- We measured our public equities carbon footprint as 118 tonnes of CO2e per million invested as at December 31, 2021, compared to the benchmark intensity of 113 tCO2e per million invested.
- The weighted average carbon intensity for 2021 was measured at 192 tCO2e per million revenue.
- We measured our fixed income carbon footprint as 44 tonnes of CO2e per million invested as at December 31, 2021, compared to the benchmark intensity of 71 tCO2e per million invested.
- We measured our real estate carbon footprint as 7 tonnes of CO2e per million invested as at December 31, 2021.
- We measured our private market carbon footprint as 256 tonnes of CO2e per million invested as at December 31, 2021.

The complete Climate-related disclosures can be found on page 76

Plan details

A look at our membership

The Municipal Pension Plan had 227,493 active members who worked for 959 employers as at December 31, 2021. The total membership was 397,873.

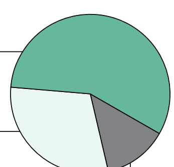
There are four types of members:

- **Active:** Currently contributing, on a leave of absence or receiving benefits from an approved long-term disability plan. There were 227,493 active plan members, an increase of 3.3 per cent from 2020.
- **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 52,332 inactive plan members, a 10.8 per cent increase from 2020.
- **Retired:** Currently receiving a pension, including a survivor pension or disability benefit. There were 118,048 retired plan members, a 5.8 per cent increase from 2020.
- **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
227,493
active members,
118,048
retired members and
959
employers in 2021

Membership profile
as at December 31, 2021

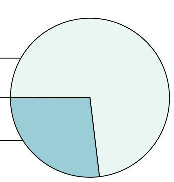
Active	227,493	57.2%
Retired	118,048	29.7%
Inactive[1]	52,332	13.1%
Total	397,873	



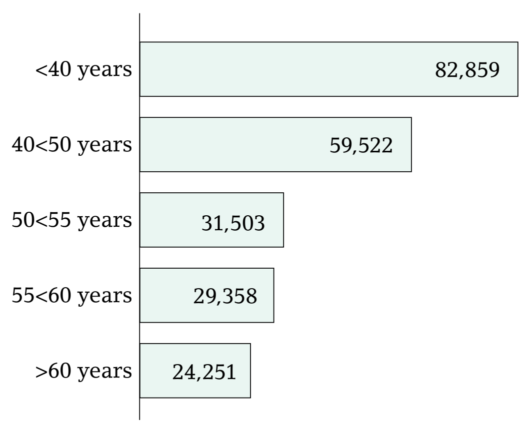
1 Members no longer employed by a plan employer but with money in the plan.

Active membership by gender
as at December 31, 2021

Female	166,006	72.0%
Gender X	157	0.1%
Male	61,330	26.9%
Total	227,493	



Active members by age
as at December 31, 2021



Plan contributions

Both plan members and employers 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.

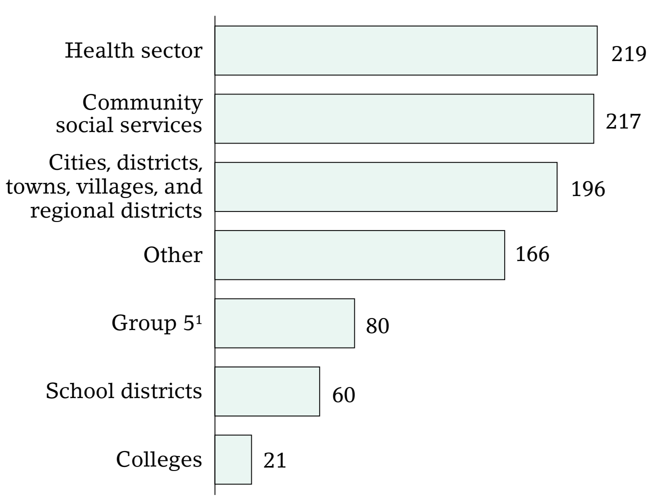
If a contribution rate increase is necessary, the Municipal Pension Plan Joint Trust Agreement requires that the increase be split equally between members and employers.

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

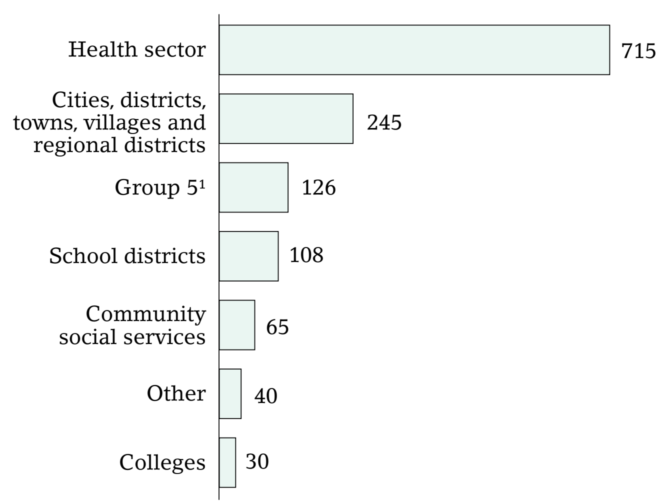
As at December 31, 2021, there were 959 plan employers.

Employers
as at December 31, 2021



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, 2021



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

Contribution rates

In 2021, most members contributed 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 2021, the YMPE was $61,600. They contributed 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 contributed 10.44 per cent of salary up to and including YMPE, and 11.94 per cent above that amount.

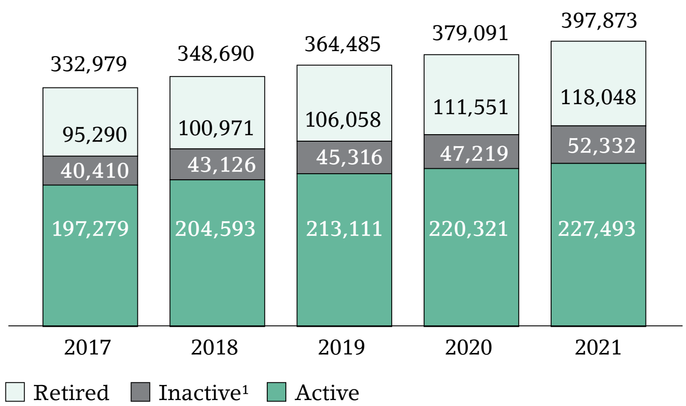
Member contribution rates changed January 1, 2022.

Member demographics

Understanding the demographics of the plan's membership is important to ensure we are meeting the needs of people at every stage of their careers and in retirement. For example, the plan's ratio of active to retired members is slowly getting smaller. This is a result of an aging membership, where the retired member population is growing faster than the plan's number of active members. The actuary takes this into consideration as part of the plan's valuation.

Active member
Adrian Nyland

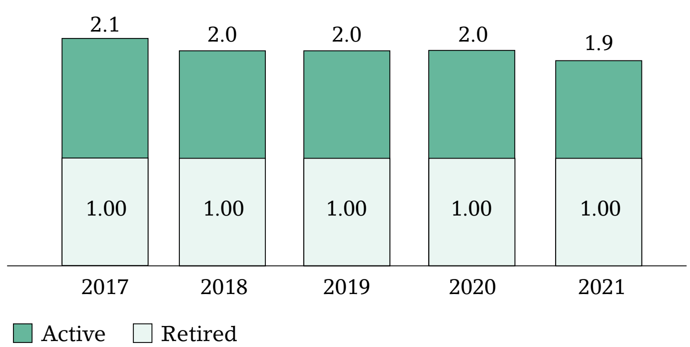
Total membership profile
as at December 31



1 Vested members are included within the inactive member category.


Active member
John Inoke

Ratio of active to retired members
as at December 31




Retired member
Vicky Digby

Lifetime pension

A member's lifetime pension is based on the years of pensionable service they have earned in the plan, and their highest average salary (HAS). HAS is generally determined by calculating the member's average salary during their highest-paid 60 months as an active plan member. This period is not necessarily the last 60 months they worked before retirement. Also note that the lifetime pension excludes the bridge benefit and temporary annuities, if those apply. The board's first priority is paying out the lifetime pension. The plan also provides survivor pensions and disability benefits.

Pensions in pay

As at December 31, 2021, the average annual pension in pay was $18,394, and the median annual pension in pay was $13,067.

New pension profile
for the year ended December 31, 2021

Years of service	All new pensions by age of retirement <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	54	575	768	714	2,111	$ 61,400	$ 6,800	$ 5,100	$108,000	$ 228.0
10 < 15	31	397	701	601	1,730	63,000	14,000	12,800	235,000	406.6
15 < 20	15	320	563	409	1,307	66,700	20,900	19,400	355,000	464.0
20 < 25	16	322	476	290	1,104	73,100	29,800	27,900	526,000	580.7
25 < 30	42	344	406	211	1,003	78,300	39,700	35,800	711,000	713.1
30 < 35	16	389	262	144	811	78,900	47,800	43,700	869,000	704.8
≥ 35 years	2	41	80	88	211	83,700	49,400	42,400	867,000	182.9
Total	**176**	**2,388**	**3,256**	**2,457**	**8,277**	**$68,500**	**$22,700**	**$17,500**	**$399,000**	**$3,280.1**
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 2017–2021
for the year ended December 31

	Regular	Post-retirement limited member	Pre-retirement limited member	Disability	Survivor	Deferred	LTD[1] to pension	Total
2021	6,461	30	89	1	111	990	595	**8,277**
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**

1 Long-term disability.

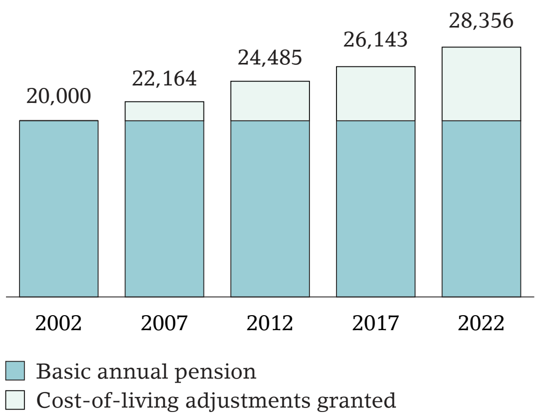
Cost-of-living adjustments

Cost-of-living adjustments (COLAs) are supplements to a member's lifetime pension to help keep pace with inflation. Every year, the board considers a variety of factors to determine if a COLA will be granted. These considerations include maintaining the long-term sustainability of plan funding as well as the ability for the plan to make future COLA increases.

The COLA is funded from the plan's inflation adjustment account (IAA), which is funded by employer and member contributions. If the board decides to grant a COLA, it will take effect in January. Adjustments cannot exceed the annual increase in the Canadian consumer price index, or the amount of money in the IAA. A COLA cap limits the amount the board can grant in a year. This helps to maintain the long-term sustainability of funds in the IAA so they are not used faster than they can be replaced. COLA cap limits are reviewed every three years as part of the valuation process.

The cap for 2020–2022 is set at 2.1 per cent.

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



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

Active member
Ravneet Dhillon

Health care coverage for retirees

Retired members and beneficiaries who receive a pension have access to subsidized premiums for 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 new Municipal Retiree Benefit Trust now funds extended health and dental plans. This trust provides more flexibility to fund retiree group benefits and makes the program more sustainable. Seed funding was provided by a $100 million one-time transfer from employer contributions as part of plan design changes. Ongoing employer contributions will accumulate and earn investment income over time, and retired members' premiums will also continue to fund the trust. These benefits are not part of the lifetime pension and are not guaranteed.

Retired member
Donna Sharpe

Municipal Retiree Benefit Trust

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 defined by specific provisions in the JTA.

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

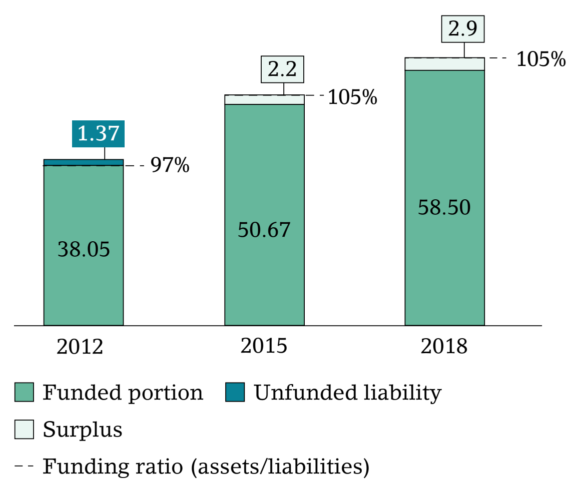
105.1%

In addition, the rate stabilization account (RSA), which was set up to help offset potential future contribution rate increases, had a balance of about $2.5 billion at the time of the valuation.

The RSA is held notionally within the basic account. As part of updates to the Joint Trust Agreement, the $2.5 billion cap on the RSA was removed effective December 31, 2021. At that time, $522 million of the 2018 surplus together with interest on this amount at the smoothed rate of return from December 31, 2018 to December 31, 2021 of $163 million was transferred to the RSA. In future, interest on the RSA balance will be added annually at the smoothed rate of return.

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

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



* Assuming the contribution rates in effect at the valuation date

Plan rules and policy changes

Changes to pension plan rules

Effective January 1, 2022, PLAN RULE AMENDMENTS NOS. 54 AND 55 were approved by the board to make the plan more equitable and sustainable.

For more information, visit the *Plan changes* section on the plan website.

Canada Labour Code leaves of absence

PLAN RULE AMENDMENT NO. 56 clarified that members who work for federally regulated employers in the plan may purchase a leave of absence that falls under the *Canada Labour Code*.

Early retirement and commuted value transfers

PLAN RULE AMENDMENT NO. 57 clarified that members who terminate employment within 90 days before (rather than after) their earliest retirement age can choose to transfer their commuted value.

New reasons for taking a COVID-19-related leave

Effective April 1, 2021, the BC government expanded the circumstances under which employees are eligible for a COVID-19-related leave. Members may purchase service for this leave.

Ability to buy periods of layoff

Members who are currently working can buy periods of layoff that began on or after January 1, 2020, as a general leave of absence.

Clarification of employer requirements

PLAN RULE AMENDMENT NO. 58 clarified the obligations of employers that participate in the plan and the board's discretion to revoke an employer's participation.

Who we are

Your 2021 trustees and alternate trustees

Board membership includes trustees who served during 2021;
committee appointments are as of December 31, 2021.

Gary Yee, Chair
Appointed by: Municipal Employees' Pension Committee
Committees: Appeals panel, governance, valuation, Interplan Executive Forum
Additional board appointments: BC Pension Corporation board of directors
Board term: January 2014–present
Alternate trustee

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

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

Dennis Blatchford
Appointed by: Health Sciences Association of British Columbia
Committee: N/A
Board term: April 2001–December 2021

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: Investment, valuation
Board term: January 2015–present

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

Donna Lommer
Appointed by: Health Employers Association of British Columbia
Committee: Communications and advocacy (alternate chair)
Additional board appointments: BCI Board of Directors
Board term: March 2017–present

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

Al Richmond
Appointed by: Union of British Columbia Municipalities
Committees: Governance, investment (alternate chair)
Board term: January 2017–present

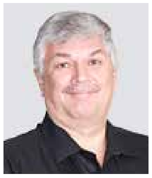
Harpinder Sandhu
Appointed by: Canadian Union of Public Employees, British Columbia
Committees: Investment (chair), governance
Board term: July 2019–present

Nicholas Schnee
Appointed by: Plan employer partner (Province of British Columbia and Union of British Columbia Municipalities)
Committee: Communications and advocacy
Board term: January 2020–present

Brian Schramm
Appointed by: Council of Joint Organizations and Unions
Committee: N/A
Board term: January 2014–May 2021

Michelle Sordal
Appointed by: British Columbia Nurses' Union
Committee: Investment
Board term: September 2020–present

Angie Sorrell
Appointed by: Province of British Columbia
Committees: Investment, valuation (alternate chair)
Board term: February 2008–present



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

Robert Weeks
Appointed by: British Columbia Professional Fire Fighters Association and British Columbia Police Association
Committees: Valuation (chair), governance
Board term: January 2016–present

Thom Yachnin
Appointed by: Council of Joint Organizations and Unions
Committee: N/A
Board term: May 2021–present

Alternate trustees

Ron Amos
Appointed by: British Columbia Public School Employers' Association
Committees: Benefits, 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 2019–present

Shireen Clark
Appointed by: Canadian Union of Public Employees
Committee: Valuation
Board term: 2021–present

Talitha Dekker
Appointed by: Hospital Employees' Union
Committees: Benefits, communications and advocacy
Board term: December 2018–present

Brian Frenkel
Appointed by: Union of British Columbia Municipalities
Committees: Benefits, communications and advocacy
Board term: January 2020–present

Terri Griffin
Appointed by: Municipal Employees' Pension Committee
Committee: Benefits
Board term: January 2021–present

Dean Levangie
Appointed by: Health Employers Association of British Columbia
Committees: Benefits, appeals panel, governance
Board term: January 2019–present

Brian Northam
Appointed by: Council of Joint Organizations and Unions
Committees: Appeals panel, valuation
Board term: April 2001–present

Chris Rathbone
Appointed by: Government of British Columbia
Committee: Investment
Board term: January 2019–present

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

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

Richard Taylor

Appointed by: Union of British Columbia Municipalities

Committees: Governance, investment

Board term: April 2001–December 2021

Philip Twyford

Appointed by: Province of British Columbia

Committee: N/A

Additional board appointments: Pension Corporation Board of Directors

Board term: June 2012–November 2021

David Williams

Appointed by: Health Employers Association of British Columbia

Committees: Appeals panel, benefits

Board term: January 2019–present

Trustee remuneration
For the year ended December 31, 2021

Name[1]	Meetings attended/ scheduled[2]	Additional meetings attended	Total remuneration paid ($)[3]	Remuneration by payee ($)	Remuneration payee
Yee, Gary (Chair)[4]	14/14	10	$ 27,288.59	$ 27,288.59	CUPE BC
Brown, Hilary (Vice-chair)[4]	14/14	9	21,749.00	21,749.00	BC Public School Employers' Association
Amos, Ron	12/13		10,636.50	3,134.00	Board member
				7,502.50	School District #69 Qualicum
Bernardo, Donisa	15/15		10,070.00	10,070.00	Board member
Blatchford, Dennis	2/7		1,558.00	570.00	Board member
				988.00	Health Sciences Association of BC
Brown, Glen	8/8		5,130.00	5,130.00	Union of BC Municipalities
Burkart, Lorne	10/11		7,592.40	1,618.80	Board member
				5,973.60	BC Nurses' Union
Clark, Shireen	5/6		3,078.00	3,078.00	CUPE BC
Corwin, Lucas	6/8		4,180.00	4,180.00	Ministry of Finance
Dekker, Talitha	8/9		4,560.00	4,560.00	Hospital Employees' Union
Finding, Chris	14/14	1	14,986.50	14,986.50	Board member
Frenkel, Brian	8/9		5,035.00	5,035.00	Board member
Griffin, Terri	6/6		5,795.00	5,795.00	Board member
Kocher, Lyn	13/14		9,310.00	760.00	Board member
				8,550.00	Health Employers' Association of BC
Levangie, Dean	10/10		4,541.00	4,541.00	Health Employers' Association of BC
Lommer, Donna	8/8		6,783.00	6,783.00	Interior Health Authority
MacIsaac, Gary	7/9	1	5,415.00	5,415.00	Union of BC Municipalities
Northam, Brian	9/9		6,745.00	6,745.00	Board member
Rathbone, Chris	10/11		7,158.50	3,168.50	Public Sector Employers' Council Secretariat
				3,990.00	Ministry of Jobs, Economic Recovery & Innovation
Richmond, Al	12/12		10,460.20	10,460.20	Board member
Rieder, Josef	10/10		8,357.00	760.00	Board member
				7,597.00	Health Sciences Association of BC
Sandhu, Harpinder	10/10			3,323.00	Board member
			9,874.50	6,551.50	CUPE BC
Schnee, Nicholas	7/8		4,940.00	4,940.00	Provincial Health Services Authority
Schramm, Brian	3/3			209.00	Board member
			4,990.60	4,781.60	BCGEU

Trustee remuneration continued

Name[1]	Meetings attended/ scheduled[2]	Additional meetings attended	Total remuneration paid ($)[3]	Remuneration by payee ($)	Remuneration payee
Sordal, Michelle	7/7			2,185.00	Board member
			4,465.00	2,280.00	BC Nurses' Union
Sorrell, Angie	10/10	1	7,220.00	7,220.00	Public Sector Employers' Council Secretariat
Stamatakis, Tom	11/11	1	8,360.00	8,360.00	Vancouver Police Union
Sutton, Donald	9/9	2	10,191.60	10,191.60	Board member
Taylor, Richard	12/12		11,187.00	11,187.00	Board member
Twyford, Philip	1/5		-	-	
Weeks, Robert	7/11	2		3,610.00	Board member
			4,940.00	1,330.00	BC Professional Fire Fighters' Association
Williams, David	3/9		-	-	
Yachnin, Thom	3/4		1,140.00	1,140.00	BCGEU
Total remuneration paid			$247,737.39	$247,737.39	

1 Additional information on trustees is available on pages 34-38.
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 $7,600 and vice-chair annual stipend of $5,700.

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 22, 2022

Re: Municipal Pension Plan

Administrative agent's responsibility for financial reporting

The financial statements of the Municipal Pension Plan were prepared by 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 boards of trustees. As part of its 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 British Columbia Pension Corporation	Controller, Financial Services British Columbia Pension Corporation

Executive Offices
Mail: PO Box 9460
Victoria, BC V8W 9V8
Phone: 250 387-8201
Fax: 250 953-0429
bcpensioncorp.ca

KPMG LLP
PO Box 10426 777 Dunsmuir Street
Vancouver BC V7Y 1K3
Canada
Telephone (604) 691-3000
Fax (604) 691-3031

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, 2021
- 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, 2021, and its changes in net assets available for benefits and its changes in 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.

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.

British Columbia Pension Corporation - Municipal Pension Plan
Page 2

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 accounting 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.

British Columbia Pension Corporation - Municipal Pension Plan
Page 3

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 22, 2022

MUNICIPAL PENSION PLAN

Statement of financial position

($ millions)

As at December 31	Note	2021	2020
Assets			
Investments	3a	$ **73,848**	$ 66,110
Cash		**330**	-
Contributions receivable		**97**	93
Directly held derivatives	3b	**86**	389
Prepaid expenses		**8**	4
Interest receivable		**3**	8
Tax rebate receivable		**1**	-
Total assets		**74,373**	**66,604**
Liabilities			
Directly held derivatives	3b	**144**	72
Accounts payable and accrued expenses		**45**	34
Taxes payable		**19**	18
Total liabilities		**208**	124
Net assets available for benefits		**$ 74,165**	**$ 66,480**
Accrued pension obligations			
Accrued basic pension obligations	4a	$ **46,051**	$ 43,631
Non-guaranteed pension obligations	4b	**13,017**	10,957
Retirement annuity account	4c	**396**	402
Accrued pension obligations		**59,464**	54,990
Surplus			
Funding surplus	5a	**4,266**	2,400
Measurement differences between funding and accounting positions	5a	**10,435**	9,090
Surplus		**14,701**	11,490
Accrued pension obligations and surplus		**$ 74,165**	**$ 66,480**

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

Commitments (note 14)

Approved by the Municipal Pension Board of Trustees:

Hilary Brown, MBA, CPA, CGA, Chair
Municipal Pension Board of Trustees

Ron Amos, CPA, CMA, 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 2021	Totals 2020
Increase in assets							
Investment income	8	$ 6,498	$ 1,311	$ 26	$ -	**$ 7,835**	$ 7,091
Contributions							
Members	9	957	204	2	6	**1,169**	1,131
Employers	9	1,127	60	2	153	**1,342**	1,293
		2,084	264	4	159	**2,511**	2,424
Transfers from other plans		18	3	-	-	**21**	23
Total increase in assets		8,600	1,578	30	159	**10,367**	9,538
Decrease in assets							
Benefits	10	2,191	122	13	16	**2,342**	2,232
Transfers to other plans		9	10	-	-	**19**	29
Retired member group benefits	11	-	-	-	143	**143**	26
Investment and administration costs	12	158	20	-	-	**178**	211
Total decrease in assets		2,358	152	13	159	**2,682**	2,498
Increase in net assets before transfers		6,242	1,426	17	-	**7,685**	7,040
Account transfers	13	(611)	634	(23)	-	-	-
Increase in net assets		**5,631**	**2,060**	**(6)**	-	**7,685**	**7,040**
Net assets available for benefits at beginning of year		55,121	10,957	402	-	**66,480**	**59,440**
Net assets available for benefits at end of year		**$ 60,752**	**$ 13,017**	**$ 396**	**$ -**	**$ 74,165**	**$ 66,480**

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	2021	2020
Increase in accrued pension obligations			
Interest on accrued pension obligations		$ **2,721**	$ 2,577
Benefits accrued		**1,847**	1,792
Account transfers		**124**	382
Total increase in accrued pension obligations		**4,692**	4,751
Decrease in accrued pension obligations			
Benefits paid		**2,272**	2,167
Total decrease in accrued pension obligations		**2,272**	2,167
Net increase in accrued pension obligations		**2,420**	2,584
Accrued basic pension obligations at beginning of year		**43,631**	41,047
Accrued basic pension obligations at end of year	4a	**46,051**	43,631
Non-guaranteed pension obligations			
Increase in non-guaranteed pension obligations	4b	**2,060**	1,426
Non-guaranteed pension obligations at beginning of year		**10,957**	9,531
Non-guaranteed pension obligations at end of year	4b	**13,017**	10,957
Retirement annuity account			
Decrease in retirement annuity account	4c	**(6)**	(9)
Retirement annuity account at beginning of year		**402**	411
Retirement annuity account at end of year	4c	**396**	402
Total accrued pension obligations		**$ 59,464**	**$ 54,990**

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, 2021

($ 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 Agreement was amended effective February 8, 2021. The amendment addressed contribution rates and future uses of actuarial surplus in the light of the revised benefits agreed to by the Partners effective January 1, 2022.

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 Chair and Vice-chair are appointed by the trustees. 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 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.

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.

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2021

($ millions except as otherwise noted)

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

b) Roles and responsibilities (continued)

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.

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

Membership in the Plan is divided into three groups, each with different contribution rates:

- Group 1—General membership, 97% of all members, comprises all members who are not police or firefighters
- Group 2—All police and firefighters who do not participate in group 5
- Group 5—Police and firefighters who, in an agreement with their employers, pay higher contributions than those in group 2 and receive a higher pension benefit

Basic Account

Group 1 and 2 members contributed to the Basic Account 6.97% of salaries up to and including the Canada Pension Plan Year's Maximum Pensionable Earnings (YMPE) (2021: $61,600 2020: $58,700) and 8.47% of salaries over YMPE, less amounts allocated to the Supplemental Benefits Account (SBA).

Group 5 members contributed to the Basic Account 8.49% of salaries up to and including the YMPE and 9.99% of salaries over YMPE, less amounts allocated to the SBA.

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 SBA. 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.

Effective January 1, 2022, a single contribution rate for the Basic Account replaced the two-tiered contribution rates for members and employers. Group 1 members will contribute 7.34% of salaries (7.14% for group 2, 9.08 % for group 5). For group 1 members, employers will contribute 7.34% of salaries (10.84% for group 2, 12.79% for group 5).

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2021

($ millions except as otherwise noted)

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

d) Contributions (continued)

Inflation Adjustment Account and Supplemental Benefits Account

Members and employers each contributed 1.53% of salaries (1.95% for group 5) to the Inflation Adjustment Account (IAA), less amounts allocated to the SBA.

Effective January 1, 2022, group 1 members will contribute 1.27% of salaries (1.78% for group 2, 2.04% for group 5). For group 1 members, employers will contribute 1.37% of salaries (0.98% for group 2, 1.28% for group 5) and employers for all groups will contribute 0.6% of salaries to the Municipal Retiree Benefit Trust.

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 (pre-2007 special agreements only) or are paid out to a locked-in retirement vehicle.

e) Pension benefits

All members are eligible for a pension benefit. In this section "pensionable earnings" means the member's highest five-year average annual salary (HAS), except for members in group 2 or group 5 that terminate employment on or after January 1, 2022, in which case it means the member's highest four-year average annual salary (and this four-year HAS applies to such members' entire service, including service prior to January 1, 2022).

For service up to December 31, 2021, members are eligible for unreduced pension benefits

- at age 65 (age 60 for groups 2 and 5);
- at age 60, with at least two years contributory service (age 55 for groups 2 and 5); 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 groups 2 and 5).

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

Also for service up to December 31, 2021, the defined basic plan benefit is integrated with the Canada Pension Plan (CPP). The Plan provides an unreduced benefit for groups 1 and 2 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). For group 5, the plan provides an unreduced benefit of 1.63% of pensionable earnings up to YMPE and 2.33% of pensionable earnings over the YMPE, for each year of pensionable service (to a maximum of 35 years).

The Plan also provides a bridge benefit for service up to December 31, 2021 payable to age 65 (or the date of death, if earlier). The bridge benefit for all groups is 0.7% of the lesser of YMPE or the HAS for each year of pensionable service (to a maximum of 35 years).

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2021

($ millions except as otherwise noted)

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

e) Pension benefits (continued)

For service on or after January 1, 2022, members will be eligible for unreduced pension benefits

- at age 65 (age 60 for groups 2 and 5);
- at age 60, with at least two years contributory service (age 55 for groups 2 and 5); or
- for groups 2 and 5 only, at age 50 or older with age plus service totaling 80 or more.

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

Also for service on or after January 1, 2022, the Plan provides a defined basic plan benefit:

- for group 1, 1.90% of pensionable earnings for each year of pensionable service,
- for group 2, 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, and
- for group 5, 2.12% of pensionable earnings for each year of pensionable service, to a maximum of 35 years.

For groups 2 and 5 members, the Plan also provides a bridge benefit for service on or after January 1, 2022, to age 65 (or the date of death, if earlier). The bridge benefit is 0.21% for group 5 and 0.7% for group 2, of the lesser of YMPE or the HAS for each year of pensionable service (to a maximum of 35 years).

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.

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2021

($ millions except as otherwise noted)

1. DESCRIPTION OF THE MUNICIPAL PENSION PLAN (CONTINUED)

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.

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 SBA.

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).

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2021

($ millions except as otherwise noted)

2. SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

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.

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.

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2021

($ millions except as otherwise noted)

3. INVESTMENTS

a) Investments

Fair value of investment holdings	2021			2020		
	Basic account	Inflation adjustment account	Total	Basic account	Inflation adjustment account	Total
Short-term	$ 1,966	$ 365	$ 2,331	$ 1,427	$ 263	$ 1,690
Bonds	20,451	3,798	24,249	17,641	3,247	20,888
Repurchase agreements	(6,041)	(1,122)	(7,163)	(5,271)	(970)	(6,241)
	14,410	2,676	17,086	12,370	2,277	14,647
Canadian equities	3,381	628	4,009	3,040	560	3,600
Global equities	10,183	1,892	12,075	9,610	1,769	11,379
Emerging markets equities	5,811	1,079	6,890	5,501	1,012	6,513
Mortgages	1,979	368	2,347	2,088	384	2,472
Real estate	10,117	1,879	11,996	8,349	1,536	9,885
Private equity	7,848	1,458	9,306	6,954	1,280	8,234
IRR*	6,585	1,223	7,808	6,495	1,195	7,690
	$ 62,280	$ 11,568	$ 73,848	$ 55,834	$ 10,276	$ 66,110

* Infrastructure and renewable resources

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, repurchase agreements, and debentures. Bonds are valued based on current market yields and, in some cases, quoted market prices. Bonds include the use of repurchase agreements to borrow money to create leverage to purchase other bonds and enhance yields through a leverage bond fund strategy.

Equities consist primarily of publicly traded shares and, are valued based on quoted market prices on the primary exchanges on which they are traded.

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2021

($ millions except as otherwise noted)

3. **INVESTMENTS**

a) Investments (continued)

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 investments are valued either quarterly or 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, 2021

($ 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	2021		2020	
	Positive fair value	Negative fair value	Positive fair value	Negative fair value
Directly held				
Foreign currency forwards	$ 86	$ (144)	$ 389	$ (72)
Indirectly held in pooled investment portfolios				
Foreign currency forwards	$ 36	$ (68)	$ 177	$ (16)
Options	3	(2)	25	(24)
Interest rate swaps	20	(9)	-	(35)
Total return swaps	175	(111)	455	(106)
	$ 320	$ (334)	$ 1,046	$ (253)

Derivatives by investment asset classification				
Bonds	$ 41	$ (87)	$ 252	$ (16)
Canadian equities	24	(22)	9	(1)
Global equities	163	(70)	299	(100)
Emerging markets equities	15	(35)	188	(64)
Mortgages	2	(19)	38	-
Real estate	43	(55)	109	(28)
IRR*	32	(46)	151	(44)
	$ 320	$ (334)	$ 1,046	$ (253)

*Infrastructure and renewable resources

Derivative contracts consist of foreign currency forward contracts, 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, 2021

($ millions except as otherwise noted)

3. INVESTMENTS (CONTINUED)

b) Derivatives (continued)

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. Gains and losses on futures contracts are settled daily. 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 and for risk control.

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, 2021

($ millions except as otherwise noted)

3. INVESTMENTS (CONTINUED)

b) Derivatives (continued)

Notional value of derivatives			2021	2020
Terms to maturity	Within 1 year	1 to 5 years	Total	Total
Derivatives by type of contract				
Directly held				
Foreign currency forwards	$ 14,963	$ -	$ 14,963	$ 15,029
Indirectly held in pooled investment portfolios				
Foreign currency forwards	$ 5,465	$ -	$ 5,465	$ -
Options	128	-	128	115
Futures	-	-	-	357
Interest rate swaps	6,023	431	6,454	3,322
Total return swaps	16,591	17	16,608	12,311
	$ 43,170	$ 448	$ 43,618	$ 31,134
Derivatives by investment asset classification				
Short-term	$ -	$ -	$ -	$ 9
Bonds	9,391	-	9,391	5,901
Canadian equities	3,960	93	4,053	467
Global equities	12,956	220	13,176	11,149
Emerging markets equities	4,778	135	4,913	4,807
Mortgages	1,266	-	1,266	1,179
Real estate	6,007	-	6,007	4,055
Private equity	-	-	-	1
IRR*	4,812	-	4,812	3,566
	$ 43,170	$ 448	$ 43,618	$ 31,134

* Infrastructure and renewable resources

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2021

($ millions except as otherwise noted)

3. INVESTMENTS (CONTINUED)

c) Repurchase agreements

The Plan has indirect exposure to repurchase agreements through its investment in the pooled investment portfolio underwritten on bond securities. Repurchase agreements are short-term agreements to sell securities in order to buy them back at a slightly higher price. The party 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. Securities sold under repurchase agreements are accounted for as collateralized borrowing because they represent the sale of securities with a simultaneous agreement to buy them back at a specified future date. The securities sold under these agreements continue to be recognized on the statements of financial position with any changes in fair value recorded as net gain (loss) on investments and included in investment income. Interest incurred on repurchase agreements is included in borrowing costs within investment-related expenses.

Repurchase agreements are carried at the amount at which the securities were initially acquired or sold, which, together with accrued interest income or expense, approximates fair value due to the short-term nature of these agreements. The pooled investment portfolio holds $7,615 in securities subject to repurchase agreements.

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).

Between valuations, an estimate of the actuarial position is required. This estimate, an extrapolation, has been made to December 31, 2021, 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 $46,051 (2020: $43,631).

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2021

($ millions except as otherwise noted)

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

a) Basic Account (continued)

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, 2021, liability for accrued basic obligations of $46,051 by $1,371 or 2.98%. 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 $13,017 (2020: $10,957). The net increase of $2,060 (2020: $1,426) 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, $396 (2020: $402).

The net assets available in the RAA decreased $6 (2020: $9) as employee and employer contributions and earnings on investments were reduced by payments out of the account.

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 (RSA); if contribution rate increases are considered, funds will be transferred from the RSA to keep the rate at its current level or to minimize the increase.

In 2021, as allowed by the Agreement, a Group Contribution Rate Rebalancing Account (GCRRA) was created that is held notionally within the Basic Account. In future valuations, the actuary will calculate adjustments to contribution rates required to ensure that each group is paying a contribution rate that correctly reflects the cost of the benefits for each group. Contribution rate determination will exclude consideration of the assets in the GCRRA. The GCRRA will be used to mitigate the impact of contribution rate increases to group 2 and group 5 arising as a result of the need to rebalance contributions rates between the groups in the plan.

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 RSA). After taking into account the plan changes arising from the Partners and Signatories Agreement dated December 7, 2020, and the February 8, 2021 amendment to the Agreement, the December 31, 2018 surplus was $774 and the previously scheduled amortization requirements were eliminated. A new amortization of 0.50% of pay for group 2 and 0.68% of pay for group 5 arising from the plan benefit changes was established effective January 1, 2022 and is due until the end of 2036.

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Notes to the financial statements for the year ended December 31, 2021

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

a) Basic Account (continued)

Interest is added to the RSA at the smoothed investment return rate, subject to a maximum RSA balance of $2,500 until December 30, 2021. Effective December 31, 2021 the RSA maximum is removed. The Agreement required the allocation of portions of the revised 2018 surplus to the RSA and the GCRRA.

An estimate of the actuarial position of the Plan for funding purposes has been made to December 31, 2021, using the following long-term actuarial assumptions:

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

This estimate, an extrapolation, produced an estimated funding surplus of $4,266 as at December 31, 2021 (2020: $2,400), as follows:

Funding extrapolation	2021	2020
Net assets available for basic pension benefits	$ 60,752	$ 55,121
Actuarial asset value adjustment	(4,507)	(4,410)
Smoothed assets for basic pension benefits	56,245	50,711
Rate stabilization account	(2,500)	(2,500)
Additional RSA from 2018 valuation surplus	(685)	-
GCRRA	(42)	-
Smoothed assets excluding rate stabilization account and GCRRA	53,018	48,211
Present value of future contributions (entry-age method)	19,803	17,800
Present value of future amortization	72	7
Net actuarial assets for basic pension benefits	72,893	66,018
Actuarial liability for accrued and future basic pension benefits	(68,627)	(63,618)
Entry-age method actuarial surplus	**$ 4,266**	**$ 2,400**

Changes in the extrapolated entry-age method funded status	2021	2020
Extrapolated entry-age method actuarial surplus, beginning of year	$ 2,400	$ 1,538
Extrapolated change in actuarial assets for basic pension benefits	6,875	5,191
Extrapolated change in actuarial liability for accrued and future basic pension benefits	(5,009)	(4,329)
Entry-age method actuarial surplus, end of year	**$ 4,266**	**$ 2,400**

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.

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Notes to the financial statements for the year ended December 31, 2021

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

a) Basic Account (continued)

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	2021	2020
Entry-age method funding surplus	$ **4,266**	$ 2,400
Actuarial asset value adjustment	**4,507**	4,410
Rate stabilization account adjustment	**2,500**	2,500
Additional RSA from 2018 surplus	**685**	-
GCRRA	**42**	-
Difference in actuarial methods – present value of future contributions	**(19,803)**	(17,800)
Difference in actuarial methods – present value of future amortization	**(72)**	(7)
Difference in actuarial methods – present value of future liabilities	**22,576**	19,987
Measurement differences between funding and accounting positions	**10,435**	9,090
Surplus for financial statement purposes	$ **14,701**	$ **11,490**

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, 2021, was 92.6% (2020: unconstrained at 91.7% and adjusted to 92%).

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Notes to the financial statements for the year ended December 31, 2021

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

a) Basic Account (continued)

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	2021	2020
Adjustment to 92% of market value	$ -	$ (168)
2021	-	1,473
2022	**1,387**	1,040
2023	**1,674**	1,330
2024	**1,086**	735
2025	**360**	-
Total adjustment	**$ 4,507**	**$ 4,410**

Rate Stabilization Account

The RSA is held notionally within the Basic Account. As per the Agreement, the $2,500 cap on the RSA was removed effective December 31, 2021, and $522 of the 2018 surplus together with interest on this amount at the smoothed rate of return from December 31, 2018 to December 31, 2021 of $163 was transferred to the RSA. In future, interest on the RSA balance will be added annually at the smoothed rate of return.

Rate stabilization account	2021	2020
Opening balance	$ **2,500**	$ 2,500
2018 valuation surplus transfer	**522**	-
Interest	**163**	-
Ending balance	**$ 3,185**	**$ 2,500**

Group Contribution Rate Rebalancing Account

Effective February 8, 2021, as a result of the amendment to the Agreement, $32 in assets was transferred to the GCRRA that is held notionally within the Basic Account together with interest of $10 from Dec 31, 2018 to December 31, 2021 at the smoothed rate of return. In future, interest on the GCRRA will be determined by applying the smoothed rate of return to the fiscal year-end balance.

Group contribution rate rebalancing account	2021	2020
2018 valuation surplus transfer	$ **32**	$ -
Interest	**10**	-
Ending balance	**$ 42**	**$ -**

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2021

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

a) Basic Account (continued)

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.

Funding provisions

The Agreement specifies that actuarial deficits will be amortized over 15 years, and actuarial gains must be used to achieve the following objectives, in order of priority:

1. Eliminating any unfunded liability.
2. Ensuring the plan is funded at the entry-age normal cost.
3. Transferring any remaining surplus on an equal (50/50) basis to the IAA and RSA until such time as the Board considers the IAA to be sufficient to provide full indexing and the RSA to have reached a targeted funding level. If either account is fully funded the surplus will be transferred to the other account until that account is also fully funded. The RSA will be drawn down if required to keep the Basic contribution rate unchanged.

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.

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Notes to the financial statements for the year ended December 31, 2021

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

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.

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 $45 (2020: $34) are generally due within one month. Derivatives payable of $144 (2020: $72) are due within the next fiscal year.

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2021

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6. FINANCIAL RISK MANAGEMENT (CONTINUED)

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		2021	%		2020	%
Pooled investment fund units	$	**73,842**	**100.0**	$	65,233	98.7
Directly held equity		**-**	**0.0**		595	0.9
Directly held debt		**6**	**0.0**		282	0.4
Investments	$	**73,848**	**100.0**	$	**66,110**	**100.0**

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.

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 debt investments (2020: 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

		2021	%		2020	%
United States	$	**442**	**0.6**	$	856	1.3
Australia		**3**	**0.0**		128	0.2
	$	**445**	**0.6**	$	**984**	**1.5**

As at December 31, 2021, if the Canadian dollar had strengthened or 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 $45 (2020: $98).

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.

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2021

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6. FINANCIAL RISK MANAGEMENT (CONTINUED)

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

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 risk 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, 2021, 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 $7,384 (2020: $6,583).

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.

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 totaling $97 (2020: $93), for the derivatives $86 (2020: $389) and interest receivable $3 (2020: $8).

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, 2021

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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 currency exposure, the impact of economic hedging activities, and its net notional 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
			2021	
United States	$ 29,974	$ 17,017	$ 12,957	55%
Euro countries	4,718	1,010	3,708	16%
Asia-Pacific, excluding Japan	4,613	910	3,703	17%
Other	1,496	1	1,495	7%
United Kingdom	2,023	1,388	635	2%
Other Europe	597	-	597	3%
Japan	145	102	43	0%
	$ 43,566	$ 20,428	$ 23,138	100%
			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%
Japan	1,307	859	448	2%
United Kingdom	319	201	118	1%
	$ 37,809	$ 15,029	$ 22,780	100%

The net foreign currency exposure of its underlying investments represents 31% (2020: 34%) 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 participates in a leveraged bond strategy using repurchase agreements that is included in the terms to maturity table below.

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Notes to the financial statements for the year ended December 31, 2021

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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
			2021			
Short-term	$ 2,331	$ -	$ -	$ -	$ 2,331	0.27%
Bonds	2,376	6,676	7,637	7,449	24,138	2.13%
Repurchase agreements	(7,163)	-	-	-	(7,163)	0.21%
Mortgages*	469	1,505	373	-	2,347	3.92%
Debt	-	-	6	-	6	4.80%
	$ (1,987)	$ 8,181	$ 8,016	$ 7,449	$ 21,659	
			2020			
Short-term	$ 1,670	$ 6	$ 14	$ -	$ 1,690	0.27%
Bonds	1,672	7,267	5,702	6,246	20,887	1.90%
Repurchase agreements	(6,240)	-	-	-	(6,240)	0.31%
Mortgages*	592	1,474	406	-	2,472	2.55%
Debt	-	-	282	-	282	5.71%
	$ (2,306)	$ 8,747	$ 6,404	$ 6,246	$ 19,091	

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

As at December 31, 2021, 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 $1,739 (2020: $1,066).

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, 2021

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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	2021		2020	
AAA/AA	$ 7,430	34%	$ 4,360	23%
A	4,076	19%	4,888	25%
BBB	2,233	10%	2,093	11%
Non-investment grade	2,590	12%	2,582	14%
	16,329	75%	13,923	73%
Unrated	5,330	25%	5,168	27%
	$ 21,659	100%	$ 19,091	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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Notes to the financial statements for the year ended December 31, 2021

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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 that 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
		2021		
Pooled fund units	$ 2,332	$ 44,131	$ 27,379	$ 73,842
Direct equity	-	-	-	-
Direct debt	-	-	6	6
Investments	**$ 2,332**	**$ 44,131**	**$ 27,385**	**$ 73,848**
Derivatives	**$ -**	**$ (58)**	**$ -**	**$ (58)**
		2020		
Pooled fund units	$ 1,690	$ 41,322	$ 22,221	$ 65,233
Direct equity	-	-	595	595
Direct debt	-	-	282	282
Investments	**$ 1,690**	**$ 41,322**	**$ 23,098**	**$ 66,110**
Derivatives	**$ -**	**$ 317**	**$ -**	**$ 317**

During 2021 and 2020, there were no significant transfers of investments between levels.

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Notes to the financial statements for the year ended December 31, 2021

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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
		2021		
Balance, beginning of year	$ 22,221	$ 595	$ 282	$ 23,098
Gains (losses) included in investment income	2,975	11	(1)	2,985
Purchases	13,834	343	-	14,177
Sales	(11,651)	(949)	(275)	(12,875)
Balance, end of year	$ 27,379	$ -	$ 6	$ 27,385
Unrealized (loss) gain in investment income	$ 683	$ (235)	$ (3)	$ 445
		2020		
Balance, beginning of year	$ 17,590	$ 692	$ 271	$ 18,553
Gains (losses) 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 (loss) gain in investment income	$ 1,801	$ (24)	$ 7	$ 1,784

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Notes to the financial statements for the year ended December 31, 2021

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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.

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7. FAIR VALUE OF FINANCIAL INSTRUMENTS (CONTINUED)

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.

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, 2021

($ 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
			2021		
					The estimated fair value would increase if:
Pooled fund units	**$ 27,379**	**Net asset value**	**Net asset value**	**$ 27,379**	**The net asset value increased**
Direct debt	**$ 6**	**Discounted cash flow**	**Discount rate**	**4.8%**	**The discount rate decreased**
			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 flow	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 flow	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.

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Notes to the financial statements for the year ended December 31, 2021

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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

	2021		2020	
	Favourable	Unfavourable	Favourable	Unfavourable
Pooled fund units	$ **2,738**	$ **(2,738)**	$ 2,222	$ (2,222)
Direct private equity	**-**	**-**	48	(48)
Direct private agriculture investments	**-**	**-**	12	(12)
Direct debt	**1**	**(1)**	28	(28)
	$ **2,739**	$ **(2,739)**	$ **2,310**	$ **(2,310)**

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.

f) Financial instruments not measured at fair value

The carrying value of members’ contributions receivable, employers’ contributions receivable, 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.

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2021

($ millions except as otherwise noted)

8. INVESTMENT INCOME

	2021			2020		
	Income allocation	Change in fair value	Total	Income allocation	Change in fair value	Total
Short-term	$ 4	$ (16)	$ (12)	$ 12	$ (19)	$ (7)
Bonds	**509**	**(604)**	**(95)**	413	1,250	1,663
Canadian equities	**99**	**788**	**887**	77	166	243
Global equities	**194**	**1,901**	**2,095**	185	1,372	1,557
Emerging markets equities	**169**	**(198)**	**(29)**	112	1,249	1,361
Mortgages	**64**	**44**	**108**	76	(25)	51
Real estate	**245**	**1,254**	**1,499**	108	(155)	(47)
Private equity	**1,568**	**796**	**2,364**	50	1,499	1,549
IRR*	**963**	**(143)**	**820**	100	512	612
	3,815	**3,822**	**7,637**	1,133	5,849	6,982
Directly held derivatives	-	**198**	**198**	-	109	109
	$ 3,815	**$ 4,020**	**$ 7,835**	**$ 1,133**	**$ 5,958**	**$ 7,091**

* 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, 2021

($ millions except as otherwise noted)

9. CONTRIBUTIONS

	Basic account	Inflation adjustment account	Retirement annuity account	Supplemental benefits account	Total
			2021		
Members' contributions					
Regular	$ 948	$ 202	$ -	$ 6	$ 1,156
Special agreements	-	-	2	-	2
Past service purchases	9	2	-	-	11
	957	204	2	6	1,169
Employers' contributions					
Regular	1,119	58	-	10	1,187
Special agreements	-	-	2	-	2
Past service purchases	8	2	-	-	10
Retired member group benefits	-	-	-	143	143
	1,127	60	2	153	1,342
	$ 2,084	$ 264	$ 4	$ 159	$ 2,511
			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

Member and employer contributions are 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, 2021

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10. BENEFITS

	Basic account	Inflation adjustment account	Retirement annuity account	Supplemental benefits account	Total
			2021		
Regular pension benefits	$ 1,813	$ -	$ -	$ 13	$ 1,826
Indexing – regular pension benefits	281	-	-	2	283
Termination and refund benefits	63	99	13	1	176
Death benefit payments	33	23	-	-	56
Disability benefit	1	-	-	-	1
	$ 2,191	$ 122	$ 13	$ 16	$ 2,342
			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

11. SUPPLEMENTAL BENEFITS ACCOUNT

The SBA 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 SBA (2021: $43; 2020: $26), 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 2021, this funding totaled 0.3% of pensionable salaries (2020: 0.2%).

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.

Effective January 1, 2022, retirement health coverage will be provided through the Municipal Retiree Benefit Trust (MRBT). The MRBT is an independent benefits trust managed by a board of eight trustees appointed by the Partners. The MRBT is funded from contributions that would otherwise be employer inflation contributions and is equal to 0.6% of pensionable salaries. In fiscal 2021, as per the Agreement, $100 of employer contributions that would otherwise have been IAA contributions was transferred to MRBT for future health benefit payments and is included in retirement benefit costs.

MUNICIPAL PENSION PLAN

Notes to the financial statements for the year ended December 31, 2021

($ millions except as otherwise noted)

12. INVESTMENT AND ADMINISTRATION COSTS

	2021	2020
Investment management	$ 120.8	$ 159.7
Benefit administration	54.0	47.9
Other professional services	1.6	1.6
Board secretariat costs	1.3	1.1
Board remuneration and expenses	0.3	0.4
Actuarial	0.1	0.1
Audit	0.1	0.1
	$ 178.2	$ 210.9

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 $102.5 (2020: $73.6) 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, 2021

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13. ACCOUNT TRANSFERS

	2021			2020		
	Basic account	Inflation adjustment account	Retirement annuity account	Basic account	Inflation adjustment account	Retirement annuity account
Cost-of-living adjustment	$ 98	$ (98)	$ -	$ 350	$ (350)	$ -
Indexing of deferred pensions	10	(10)	-	11	(11)	-
Pensions purchased from retirement annuity account	16	7	(23)	21	8	(29)
Excess investment return	(735)	735	-	(475)	475	-
	$ (611)	$ 634	$ (23)	$ (93)	$ 122	$ (29)

The IAA is a separate account 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.

Cost-of-living adjusted 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 2021, retired members received a cost-of-living adjustment of 0.5% (2020: 1.9%) 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 $153 (2020: $151) 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 $21 billion of assets for 2021 (2020: $20 billion). The excess investment return rate is determined by taking the difference between the actual five-year annualized market rate of return (9.70%) and the rate of return used by the actuary (6.25%) in valuing the Plan's liabilities. The calculated excess investment return rate for 2021 was 3.45% (2020: 2.35%), resulting in an excess investment return amount of $735 transferred to the IAA (2020: $475).

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, 2021

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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, 2021, the Plan's share of commitments for future investment contracts in these pools over the next several years is approximately $10,993 (2020: $9,245).

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, with the results included in the December 31, 2022 financial statements.

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

16. PRIOR YEAR COMPARATIVES

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

Appendix: Climate-related disclosures

Across the globe, focus on climate change increased in 2021. The landmark report from the Intergovernmental Panel on Climate Change[1] and agreements[2] following the annual United Nations Climate Change Conference (COP26) served to highlight the need for accelerated action to limit warming to close to 1.5 °C.

The board recognizes that climate change results in both investment opportunity and long-term material systemic risk to the plan. Investors are exposed to the risks and opportunities associated with climate change, including the physical risks of a changing climate and the transition risks associated with moving to a low-carbon economy. The board continues to be dedicated to action on climate change through investor stewardship, asset selection, education, public policy advocacy and the transparent disclosure of climate-related information. This year marks the plan's third year of providing climate-related disclosures in alignment with the Task Force on Climate-related Financial Disclosures (TCFD). This disclosure shares key updates on our actions and those of BCI on climate change.

About the TCFD:

The TCFD was formed by the global Financial Stability Board of the G20 to develop a consistent and comparable climate-related disclosure framework. The framework is structured around four disclosure areas: governance, strategy, risk management, and metrics and targets. This provides a common format for organizations across all sectors to report how climate-related risks and opportunities are evaluated, managed and integrated in planning and decision making.

TCFD framework:

1 ipcc.ch/2021/08/09/ar6-wg1-20210809-pr/

2 gfanzero.com/press/amount-of-finance-committed-to-achieving-1-5c-now-at-scale-needed-to-deliver-the-transition/

The board's approach to climate-related disclosures

The management of climate-related risks and opportunities is a strategic priority for the board. As part of this strategic priority, the board is exploring the potential to invest in a manner that is compatible with the Paris Agreement. The board's consideration of climate risks and opportunities also informs its oversight of BCI's efforts to integrate climate change considerations throughout its investment analysis and stewardship activities, many of which are highlighted in this disclosure.

The board believes that better access to climate-related data improves how climate-related risks are assessed, priced and managed. Accordingly, the board continues to support climate-related disclosures and, specifically, the recommendations of the TCFD. Our TCFD-aligned 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. Additional information on BCI's approach can be found in its *ESG Annual Report* and TCFD disclosure.

Governance

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

TCFD recommendation:

Describe the board's oversight of climate-related risks and opportunities.

Structure of the board

Under the authority of the Joint Trust Agreement, the plan is governed by a board of trustees that includes member and employer appointees. The board is responsible for administering the pension plan and managing the pension fund, including the investment of assets. The board delegates day-to-day investment management and stewardship to BCI. In turn, BCI invests in a manner consistent with the board's policies.

The investment committee monitors the plan's investments and BCI's investment management and stewardship services on behalf of the plan, including oversight of climate-related risks and opportunities.

Climate-related investment beliefs

A set of investment beliefs define how the board seeks to create investment value and help to make practical decisions about diversification, asset allocation, performance objectives and investment activities. These beliefs are included in the board's Statement of Investment Policies and Procedures (SIPP). Specific to climate change, the board believes that climate change is an investment opportunity and a long-term material systemic risk to the plan. Although the timing and extent of the effects of climate change are uncertain, actions to reduce greenhouse gas emissions through investor stewardship, the selection of assets and advocating for appropriate public policies directly and indirectly benefit the plan.

Board strategic plan

In 2020, the board published its strategic plan for 2020–2023, laying out strategic objectives and initiatives.[3] The plan's vision is *"secure and sustainable pensions for current and future beneficiaries of the plan."* The strategic plan prioritizes addressing climate risk in the investment portfolio. This priority supports the strategic objective of enhancing the plan's governance which is focused on ensuring the fund remains resilient when faced with the systemic and unparalleled risks and opportunities posed by climate change. The board is working to deliver on its strategic objectives, including its climate priority, by 2023.

3 MPP Strategic Plan 2020-2023

The plan has created seven strategic initiatives to meet the climate priority. These initiatives are designed to address climate risk within the investment portfolio and through the larger strategic objective of enhancing plan governance. The implementation across the portfolio's management and operations is on track.

Governance-related initiatives

To ensure continued and improved understanding of the impacts of climate change on the financial system, the plan facilitates peer interaction for learning and collaboration on climate change governance and strategy. In addition to participating in events organized by the UN Principles for Responsible Investment (PRI), this entails continuing trustee activities such as plan board representation on the PRI Western North America advisory committee, which a plan trustee currently co-chairs, and having two trustees participate in the Committee on Workers' Capital (CWC). In addition, BCI participates in Climate Action 100+ (CA100+), the largest investor-led engagement initiative on climate change, of which the board is a supporting signatory.

Review of governance documentation

In 2021, the board reviewed its governance frameworks by conducting an analysis of its SIPP and the Funds Investment and Management Agreement. The review focused on assessing the appropriate alignment between these key investment governance documents with the board's strategic priority to address climate risk. The review did not result in changes to either document.

Agent oversight

In addition to monitoring the fund's performance, the board also monitors BCI's progress on implementing its Climate Action Plan. At the board's request, BCI reports regularly to the board on investment risk management, proxy voting, policy advocacy and shareholder engagement.

Trustee education

Trustees are empowered to carry out their responsibilities through education. The board's ongoing education for trustees includes climate change concepts and associated investment risks and opportunities.

In 2021, the board held a number of climate-related education sessions. These included full board education on net-zero and Paris-aligned investing, and investment committee education on physical climate risks and net zero. The education sessions on net-zero covered implications and targets, case studies on implementing net zero targets, an overview of questions trustees should be asking as fiduciaries, an overview of COP26 outcomes and information on the Inevitable Policy Response Forecast Policy Scenario.

Education is also available to trustees through the PRI Academy, which provides online courses and climate change education for all trustees. The courses provide practical, applied training in responsible investment and key ESG concepts. Outcomes from the courses support trustees in developing and implementing a responsible investment strategy that matches overall objectives.

Strategy

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

The board believes that actions to reduce greenhouse gas emissions through investor stewardship, the selection of assets and advocating for appropriate public policies directly and indirectly benefit the plan.

As noted earlier, the board is exploring investing in a manner compatible with the Paris Agreement. The board's consideration of climate risks also informs its asset allocation decisions, guides its strategic policy advocacy efforts and supports its oversight of BCI's performance. That oversight includes monitoring BCI's progress on its Climate Action Plan, which BCI created in 2018 with the board's encouragement. The Climate Action Plan sets out how BCI will identify and manage climate-related opportunities and risks across all aspects of its investment activity.

The board considers climate-related physical and transition risks and opportunities across short, medium and long-term horizons, as outlined in the table below. Physical risks and opportunities are those that arise from the changes in weather and climate that impact the economy. Transition risks and opportunities are those that arise from the transition to a low-carbon economy.

TCFD recommendation:

Describe the climate-related opportunities and risks over the short, medium and long term.

	Transition Risks and Opportunities	Physical Risks
Short term	Policy and legal risks continue to increase across jurisdictions as governments increase climate policy ambition without clear signals on regulatory certainty for companies and investors. The board's policy advocacy in the short term will continue to promote regulatory and policy ambition and certainty. Short-term opportunities are emerging for investments in products and services that enable a low-carbon transition, supported by commitments from companies and government to invest in low-carbon infrastructure. Companies and sectors that enable emissions reductions through energy efficiency, renewable energy, and sustainable business practices will likely benefit in the short term.	In the short term, physical risks to the plan's investments are expected to materialize in isolated incidents across the portfolio. These short-term physical risks are actively evaluated and considered across all investments. Due diligence is conducted where material physical risks are identified. Mitigation measures are included where appropriate, such as purchasing adequate insurance and creating climate change adaptation plans.
Medium term	Transitions risks are expected to continue to present opportunities and risks for long-term investors in the medium term. In some industries, transition impacts are expected to be severe and may impact demand for carbon-intensive products and may also strand assets that are not able to be repurposed to operate with low emissions. Opportunity exists in the medium term to enable the transition through investments in regulated electric transmission, distribution and integrated utilities, which will become a key enabler of low-carbon electricity grids and energy transitions in many regions globally.	Physical risks from climate change increase in likelihood and severity under all climate change scenarios and have the potential to impact real assets and supply chains. To manage this risk, BCI uses specialized physical risk tools and data to evaluate how damages associated with the increasing severity and likelihood of physical risks could impact asset values across all time frames.
Long term	Over the long-term, an orderly transition to a low-carbon economy that is aligned with a net-zero (1.5 °C) scenario will ultimately benefit the plan. The board's strategic advocacy will continue to focus on support for public policies and regulations that enable an orderly and predictable transition. In addition, the board will continue to support BCI's use of influence as a large institutional investor to help avoid the negative long-term economic outcomes that may result from climate change, which is important in meeting long-term return objectives. With support from the board, BCI will continue to focus on integrating climate change risk assessments into investment reviews and portfolio monitoring with the objective of managing risk and identifying opportunities.	In the long term, significant uncertainty exists around warming outcomes, which are highly dependent on the success of climate ambitions. A high warming outcome is expected to result in negative impacts across the portfolio as physical impacts negatively impact asset valuations. Investment opportunities may emerge in regions that were previously inoperable, such as more northern regions.

TCFD recommendation:

Describe the impact of climate-related opportunities and risks on operations, strategy, and financial planning.

Climate-related scenario consideration

In line with TCFD recommendations, the board's exploration of investing in a manner compatible with the Paris Agreement includes analyzing the performance of market sectors directly and indirectly affected by changing climate and working with BCI on the feasibility of different Paris-aligned investment strategies.

Under the board's direction, BCI manages climate-related investment impacts by integrating climate-related considerations into the investment decision-making process for the plan's portfolio. BCI uses its in-house ESG Risk and Opportunity Framework to measure the potential impact of systemic climate risks and opportunities on the long-term performance of the plan's total portfolio. Climate change scenario analysis helps identify the main sources of risk and opportunity for the portfolio under different scenarios. Over time, this process allows BCI to determine specific risk factors and measure the concentration of risk in each area of the portfolio. BCI also uses the insights to inform asset allocation decisions to ensure portfolio resilience under different asset mixes, as well as in individual investment decisions.

Climate-related engagement and advocacy

The plan continues to advocate for public policies and regulations that support emissions reductions and long-term sustainable investment returns. In 2021, the board joined 457 investors representing US$41 trillion in assets to call on all governments to increase domestic commitments to emissions reductions and to implement mandatory climate-risk disclosure requirements.[4] In addition, the plan joined other major investors to demand ambitious methane regulations in the United States.[5]

4 2021 Global Investor Statement to Governments on the Climate Crisis (https://theinvestoragenda.org/wp-content/uploads/2021/05/IN-CONFIDENCE_EMBARGOED_2021-Global-Investor-Statement-to-Governments-on-the-Climate-Crisis-1.pdf)

5 Major investors demand ambitious methane regulations in the U.S. (https://www.ceres.org/news-center/press-releases/major-investors-demand-ambitious-methane-regulations)

Consistent with the board's strategic priorities, BCI also continued to advance its climate action priorities in 2021 through engagement with like-minded investors and organizations, advocacy efforts and continuous improvement of its own approach. BCI's activities included:

- Signing the Canadian the Canadian Investor Statement on Climate Change.[6] The statement recognizes the risks of climate change and calls on investee companies to establish robust climate governance, outline net-zero transition plans and report on progress in alignment with the TCFD recommendations.[7]
- Leading, co-leading and supporting engagements with North American companies in the oil and gas and mining industries through CA100+. As part of this initiative, BCI participates in meetings with company senior management and independent board directors. Under the CA100+ initiative, 52 per cent of the 167 focus companies now have net-zero targets by 2050 or before, 87 per cent have board-level oversight on climate change, and 72 per cent disclose climate risks that align with the TCFD recommendations.[8] In addition to working with CA100+, BCI also directly engages with companies on climate-related risks. For more information on public market engagement activities, please see BCI's 2021 TCFD report.

Standardizing climate-related investment data

Having access to accurate and comparable sustainability-related data is essential to implementing a viable climate strategy. The UN Sustainable Development Goals (SDGs) are increasingly relevant to BCI's investment strategies, asset allocation, investment decisions and active ownership on behalf of the plan. However, standardized and quality data on company contributions to the SDGs has been lacking. To fill this gap, BCI founded the Sustainable Development Investments Asset Owner Platform (SDI AOP) alongside global peers, APG, AustralianSuper and PGGM. The SDI AOP platform creates artificial-intelligence-driven sustainability data, which provides investors with a standardized way to assess companies on their contribution to the UN SDGs.

6 Canadian investors representing $5.5 trillion send an unprecedented call for increased climate accountability in the corporate sector (https://www.bci.ca/canadian-investors-representing/)

7 Ibid.

8 Climate Action 100+, 2021 Year in Review

Climate Action Plan

With the board’s encouragement, BCI created its Climate Action Plan to identify and manage the climate-related opportunities and risks across all aspects of its investment activity. The plan comprises four parts:

- Manage risks
- Integrate
- Seek opportunities
- Engage and advocate

These four parts outline how climate-related risks and opportunities are factored into each asset class and investment strategy consistently while adapting the specific approach to the asset class context. BCI is currently updating this plan to reflect changes to its organizational strategy to best serve clients’ long-term financial interests. The revised Climate Action Plan is planned to be released in late 2022.

Risk management

PROCESS FOR IDENTIFYING, ASSESSING AND MANAGING CLIMATE-RELATED RISKS

TCFD recommendation:

Describe the process for identifying and assessing climate-related risks.

Oversight of climate-related risk

As part of the board's oversight of BCI's investment risk activities, the board receives regular reporting on climate risk from BCI. These reports are used to inform board policies and the guidance given to BCI.

In 2021, the board conducted an asset liability review, following up on its previous review in 2018. The review included an assessment of the potential impact of various climate scenarios on the long-term investment performance of the plan. The systemic impacts of climate change were modelled using BCI's ESG risk and opportunity framework, which interprets climate change scenarios from the International Energy Agency and the Network for Greening the Financial System to assess the relative financial impacts of climate change on future expected returns. Based on the modelling conducted, the plan's asset mix became more resilient to climate change risk between 2018 and 2021 as a result of asset mix changes made following the 2018 review.

BCI climate-related risk management

Scenario analysis and risk measurement

In alignment with TCFD recommendations, BCI uses climate change scenario analysis to identify how climate-related risks and opportunities may impact portfolio performance. The results of this analysis are used for detailed assessments and to prioritize existing and new investments. Climate risks are assessed during due diligence and throughout the investment life cycle. This ensures climate change is an ongoing consideration in investment decisions, asset management and stewardship activities. BCI provides the board with models showing potential impacts to the portfolio under several climate change scenarios. Descriptions of the scenarios employed for this modelling can be found in BCI's TCFD report.

Work has also continued on a variety of key climate change initiatives where BCI is working alongside its peers and researchers to continue the advancement of climate change risk measurement capabilities:

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

is using this tool to measure the potential impacts of physical climate risks on new and existing investments.

2. ***Climate finance project***
BCI, the University of Victoria and the Pacific Institute for Climate Solutions launched a three-year research project to develop decision-making tools and frameworks for integrating climate change risk evaluation and climate mitigation opportunities into investment portfolios. This work builds on BCI's existing climate scenario analysis and valuation framework, and will incorporate the best available academic and applied research to improve portfolio resilience to climate change while supporting the transition to a low-carbon economy. Data produced from this study will assist asset owners and managers, as well as the larger investment community, academics and policymakers with climate-risk integration.

TCFD recommendation:

Describe the organization's process for managing climate-related risks.

Actions to mitigate climate-related risks

Under the board's direction, BCI integrates climate-related considerations into investment decisions. BCI targets low-carbon investments and engages companies in the portfolio on topics including climate performance and reporting. BCI uses the following approaches and tools to identify, assess and manage climate-related risks:

- ESG company reviews and due diligence, which includes analysis of emissions and climate-change integration into business strategy, including decarbonization commitments and energy-efficiency policies
- Data compiled by the SDI Asset Owner Platform (SDI AOP) to measure plan exposure to companies providing products and services that contribute positively to SDGs related to climate change
- Climate change scenario analysis to help prioritize areas of the portfolio that require further analysis or management
- Asset-specific sensitivity analysis for active investments in industries highly susceptible to climate change policy changes
- Physical climate-risk assessment to quantify the physical risks of climate change on direct physical assets
- Proxy voting rights and active engagement to influence companies in climate-related disclosure and performance
- Actively seeking low-carbon investment opportunities, including investment in sustainable bonds, in which BCI expects to reach a cumulative $5 billion of investment by 2025

Metrics and targets

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

TCFD recommendation:

Disclose the level of greenhouse gas (GHG) emissions and related risks.

Portfolio carbon footprint

BCI calculates the carbon footprint adjusted by the enterprise value of the portfolio, expressed in tonnes of CO2e per million invested. For real estate, BCI calculates the carbon footprint of the QuadReal domestic real estate portfolio.

The plan-specific footprint calculations for 2021[9] are provided below:

- › We measured our public equities[10] carbon footprint as 118 tonnes of CO2e per million invested as at December 31, 2021, compared to the benchmark[11] intensity of 113 tCO2e per million invested.
  - The weighted average carbon intensity (WACI) for 2021 was measured at 192 tCO2e per million revenue.
- › We measured our fixed income[12] carbon footprint as 44 tonnes of CO2e per million invested as at December 31, 2021, compared to the benchmark intensity of 71 tCO2e per million invested.
- › We measured our real estate[9] carbon footprint as 7 tonnes of CO2e per million invested as at December 31, 2021.
- › We measured our private market[10] carbon footprint as 256 tonnes of CO2e per million invested as at December 31, 2021.

See the carbon footprint methodology section for details on how the plan's carbon footprint is calculated.

BCI continues to update the methodology for calculating the plan's portfolio carbon footprint to reflect changes in best practice and emerging guidance and standards for reporting portfolio carbon footprints for financial institutions.

9 2021 metrics have been derived from 2020 emissions data.
10 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.
11 The benchmark is a weighted combination of multiple indices selected to measure performance that is appropriate for the portfolio.
12 The fixed income carbon footprint includes public corporate bond exposures but excludes private debt, money market and segregated assets.

TCFD recommendation:

Describe the metrics used to assess climate-related opportunities and risks in line with strategy and risk management process.

The climate-related metrics currently measured and monitored are:

- Relative impact of climate scenarios on total expected returns
- Total portfolio investment carbon footprint
- Weighted average carbon intensity (WACI) for public equities
- Capital invested in climate-related opportunities

The board considers the following climate change signposts:

- Coverage of carbon emissions with pricing and regulation
- Global energy supply and demand mix
- Cost of energy from various sources (coal, natural gas, wind, solar, etc.) across global markets
- Commercialization rates of disruptive technologies
- Nationally determined contribution alignment with Paris goals

Climate-related opportunity exposure metric

BCI calculates the plan's exposure to climate-related opportunities by mapping investments to SDG 7 and 13, using data from the SDI AOP. It also includes exposure to green bonds in the fixed income portfolio. This measurement captures the specific revenues that a company generates, which can be identified as contributing to the climate-related SDGs and uses the SDI AOP company classification system to categorize every position across the fund. The methodology was updated in 2021 to exclusively rely on the SDI AOP data rather than other sustainability metrics. This provides more consistency in this measurement and did have an impact on the value change reported this year relative to previous years.

As of December 31, 2021, the plan's exposure decreased slightly to $1.1 billion from $1.2 billion in 2020. The climate related exposure decreased due to methodology changes noted above, as well as valuation changes and some decreased exposure to renewable energy in externally managed funds.

Carbon footprint methodology

BCI calculates the carbon footprint of the plan's portfolio annually. BCI's carbon footprint methodology continues to evolve and new standards and guidance from the TCFD and the Partnership for Carbon Accounting Financials (PCAF) is reviewed and incorporated into carbon footprinting calculations each year where possible. The methodology applied this year is largely consistent with previous year calculations. As BCI continues to track developments in best practices for calculating the portfolio carbon footprint across all asset classes, it anticipates its methodology will evolve in future years.

Carbon footprint is the metric used to designate total carbon emissions for all portfolios. The metric is normalized by the market value of the portfolio. 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 Scope 2 GHG emissions for public equity, corporate bond holdings, and private market portfolios.

Scope 1: All direct emissions from the activities of an organization or under its control

Scope 2: All the indirect emissions from energy purchased and used by an organization

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 provides carbon and climate data on a universe of more than 25,000 companies and more than 80,000 securities across asset classes. ISS ESG's comprehensive database of GHG emissions include both reported emissions data and modelled estimations for non-disclosed emissions, or those who report with a low trust metric, according to internal analysis. ISS ESG uses a sophisticated, proprietary approximation system to estimate emissions, which includes over 800 climate-relevant sector and subsector-specific models.

For the public equities portfolio, BCI has also calculated the weighted average carbon intensity (WACI), which measures the portfolio exposure to carbon-intensive holdings. WACI is one of the metrics recommended within the TCFD framework.

For the government bond holdings, ISS ESG sovereign climate data is used to calculate the carbon footprint of these holdings. Production emissions and government emissions are used as inputs to the calculation.

Private markets

The carbon footprint for BCI's private market portfolios were improved this year to include additional directly disclosed company data and estimates of company emissions. A data hierarchy was established to consistently conduct emissions estimations across the private market portfolio. The estimation approach for each investment was determined based on the data availability for each underlying investment. The current estimation data hierarchy methodology is as follows:

- Company-reported emissions
- Estimate emissions based on company specific emission factors
- Estimated emission factors based on Global Industry Classification Standard (GICS) sub-industry revenue-based intensities
- Estimated emission factors based on GICS sub-industry market cap-weighted intensities

These approaches allowed for greater coverage across the private market portfolios than previous years, but where data was not available to apply these estimation methodologies, investments were excluded from the calculation.

BCI recognizes the limitations and uncertainties that are inherent in the emissions data and the carbon footprinting estimation methodologies in use today. This includes 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 portfolio exposure over the course of the year.

Scope

The following are the asset classes and instrument types that are included in the plan's portfolio carbon footprint metrics as at December 31, 2021.

Public equities

Included: All public equity positions, externally managed investments, and exchange traded funds (ETFs) where the ETF represents more than 20 per cent of a portfolio.

Excluded: ETFs that represent less than 20 per cent of a portfolio and derivatives

Fixed income

Included: All corporate and government bonds

Excluded: New plan assets that have not been fully integrated into BCI pool funds, cash, money market instruments and private debt

Real estate

Included: Domestic real estate portfolio

Excluded: International real estate and Mortgages portfolio

Private assets

Included: Majority of direct and fund investments in infrastructure and renewable resources and private equity

Excluded: Newly added investments that did not have sufficient financial data available at the time of calculations and investments with limited data availability that made calculations impractical to estimate

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