

# A Stronger Plan for You



Ontario Pension Board  
2017 Annual Report

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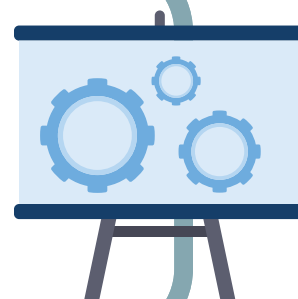
There's no one path to retirement.  
But with a plan **designed for service and built to last**, retirement security is your destination – no matter what path you take.

Every retirement journey is unique, which is why we offer tailored services and one-on-one advice to help our members meet their retirement goals.



We take careful steps to design an investment and funding strategy that will keep our Plan strong and sustainable.

OPB administers the Public Service Pension Plan, which has been providing retirement security for its members for almost 100 years.



# About OPB

OPB administers the Public Service Pension Plan, which has been providing retirement security for its members for almost 100 years.

## Who We Are

Ontario Pension Board (OPB) is the administrator of the Public Service Pension Plan (PSPP or the Plan) – a major defined benefit pension plan sponsored by the Government of Ontario. Our membership base is comprised of certain employees of the provincial government and its agencies, boards and commissions. Our commitment is to protect the long-term sustainability of the Plan, invest assets astutely and with discipline, keep contribution levels stable and affordable, and deliver exceptional service to our stakeholders.

With \$26.5 billion in assets, 43,636 members, 37,766 retired members and 5,909 former members, the PSPP is one of Canada's largest pension plans. It is also one of the country's oldest pension plans, successfully delivering the pension promise since the early 1920s.

## Who We Serve

### **OPB serves:**

- PSPP members, retired members and employers ("clients"); and
- other key stakeholders (the Plan Sponsor, bargaining agents and the citizens of Ontario).

## About Your Plan

The PSPP is a defined benefit pension plan designed to enhance the financial security of its members. Retired members receive a pension benefit based on a pre-set (defined) formula. That formula takes into account each member's earnings history and years of service with the Plan. To fund the pension promise, both members and employers make contributions to the Plan.

# Our Promise

## To use innovative solutions and strategies to:

- *protect the long-term sustainability* of the Plan;
- *invest the Plan's assets* to maximize returns within acceptable risk parameters;
- *keep contribution levels reasonably stable and affordable*; and
- *deliver superior, cost-effective service* to clients and stakeholders so that they can realize the full value of their participation in the Plan.

# Chair's Letter



**GERI MARKVOORT**  
CHAIR

Careful planning, strong execution, sound governance and outstanding people all contributed to a remarkable year for OPB.

I am pleased to report on 2017 – a remarkable year for OPB.

Years of planning and strong execution culminated in the successful launch of IMCO in 2017. IMCO's launch was a significant milestone and one we're very proud of. We believe it positions us well to deliver on the long-term sustainability of the Plan by better positioning us to be able to take advantage of opportunities that can enhance our returns.

Our investment management function was successfully transitioned to IMCO. While IMCO is now responsible for managing our assets, OPB remains responsible for setting our investment strategies and overseeing IMCO's implementation of them.

**Responsible Investing is important to our members,** and we are committed to working with IMCO to continue enhancing our Responsible Investing practices.

In his new role, CIO Ken Lusk, who has been a member of OPB's Investments team for more than 10 years, will be responsible for managing the relationship with IMCO and overseeing the execution of OPB's investment strategy. He will be providing regular reports to the Board on IMCO's performance and is also working closely with IMCO to further develop and define its Responsible Investing (RI) approach. We understand that Responsible Investing is important to our members and we are committed to working with IMCO to continue enhancing our RI practices. This past year, we have advanced our Responsible Investing practices through:

- participating in the UN-backed Principles for Responsible Investment annual questionnaire;
- signing a global investor letter urging the G7 and G20 leaders to stand by the Paris Agreement on climate change; and
- supporting 21 shareholder proposals seeking enhanced disclosure and/or action on climate change risks and opportunities at companies in our portfolio.

In addition to delivering strong investment returns, OPB strengthened key assumptions to support the sustainability of the Plan. Our CEO, Mark Fuller, speaks to this in his letter.

As Board Chair, governance oversight is a key component of my role. Last year, we continued to focus on further strengthening our governance, risk management, compliance, business continuity and resilience, records management and privacy practices.

We took steps to help us further enhance our cybersecurity practices by implementing changes in our network security protocols, ramping up our user training awareness campaigns, selecting industry-leading cybersecurity and cyber-threat intelligence suppliers and implementing a cross-functional cyber-action team. This will position OPB to take a more proactive and continuous improvement-based approach to the evolving security threat landscape.

We regularly review how we're doing against best practices and conduct periodic governance assessments. In 2017, we hired Hansell LLP, a highly reputable governance firm, to conduct an in-depth review of our Board and governance practices. Overall, the report found that we have sound governance practices and that the Board of Directors is functioning well and working very effectively with management. The report made some suggestions for improvement, and we are in the process of developing a governance improvement plan to help us continue to strengthen our governance practices.

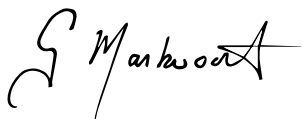
We believe that having engaged, committed, high-performing employees is critical to being able to deliver world-class client service. I'm pleased that our 2017 employee engagement survey results were very positive and indicated solid engagement and a strong commitment to OPB's mission to provide our clients with personalized advisory services.

Our 2017 employee engagement survey results were **very positive** and indicated solid engagement and a strong commitment to OPB's mission.

2017 was indeed a remarkable year. It has been a privilege to work with OPB's senior management team and the dedicated Board of Directors. I want to take the opportunity to thank Patti Croft for the leadership she provided while acting as Interim Chair. Secondly, I want to thank Sean Hanley, whose appointment ended in 2017, for his years of service and valuable contributions to the Board.

In closing, on behalf of the Board, I want to express our appreciation to the OPB team, who through their leadership, commitment and service excellence have accomplished so much in challenging times.

We are confident that the steps we took this year are helping build a stronger plan for our members.



**Geri Markvoort**  
Chair



# A Stronger Plan for You



**MARK FULLER**  
PRESIDENT & CEO

Building a stronger plan means not only maintaining its financial strength and viability, but also providing support and services that empower members, and give them more control over their retirement security.

## **Positioning for the Long Term**

In 2017, OPB implemented several strategic initiatives designed to achieve our primary goal: to maintain the financial health and affordability of the PSPP over the long term so that it delivers cost-effective retirement security for today's and tomorrow's public servants. OPB has achieved that goal over the 28 years we've been managing the PSPP. Through some very difficult conditions during that period, our management of the Plan has protected pension benefits while maintaining among the lowest contribution rates in the public sector pension plan industry. While we are proud of that track record, our focus is to position the PSPP and OPB so that 30 years from now that track record remains intact.

Three key initiatives were: the launch of the Investment Management Corporation of Ontario (IMCO); the strengthening of the Plan's funding through a modest increase in regular matching contributions; and the improvement of our funding outlook through building more caution into the assumptions we make about the future in our Plan valuations.

## Launch of IMCO

In 2017, we successfully launched IMCO, the Investment Management Corporation of Ontario; this marked the end of a five-year journey. We believe pooling our assets under IMCO's management will help us continue to protect the health of the Plan for future generations. Not only will IMCO provide the necessary scale to achieve higher risk-adjusted returns than OPB could on its own, but it also offers some immediate upside. A great example of that is IMCO's success in attracting a new, world-class Chief Risk Officer, who joined IMCO in early March 2018.



Pooling our assets under IMCO's management will help us **continue protecting the health of the Plan** for future generations.

We are working closely with IMCO, and its executive team – many of whom are familiar to OPB from their time with us – to ensure that it meets our expectations. I am very pleased that Ken Lusk, our former Head of Private Market Investments, agreed to stay on with us in the role of OPB's Chief Investment Officer. Ken is responsible for setting OPB's high-level investment strategy for implementation by IMCO. He is also responsible for overseeing IMCO's management of our assets. As I mentioned in my message last year, OPB will continue to own the PSPP assets, and set the Strategic Asset Allocation, or asset mix, which will govern how IMCO invests our assets. Our assets are fully segregated and insulated from the liabilities of other IMCO clients. Together with our Board of Directors, as well as the two OPB-appointed representatives on the IMCO Board – former Chair Vincenza Sera and former Chair of the Pensions Committee Hugh Mackenzie – I am confident the structure in place will ensure we can contribute to driving high performance at IMCO and maintain a productive working relationship with the organization.

## Contribution Rate Increase


We take a disciplined, long-term approach to managing the financial health of the Plan. As part of that approach, we regularly conduct in-depth reviews of the cost of the pensions promised by the Plan and the adequacy of the contributions to fund those pensions. As we have reported in past annual reports, the cost of pensions is rising due to our members and pensioners living longer than expected and due to the prolonged low-interest-rate environment. This means that, without an increase in contribution rates, members would be receiving more pension dollars than they are currently paying for through their contributions. This is why in 2017 we recommended that the Plan Sponsor increase contribution rates for members by 1% of pensionable salary, matched by employers. The Plan Sponsor accepted that recommendation, and the increase is being implemented in two phases of 0.50% each. Phase 1 took effect in April 2018 and phase 2 will take effect in April 2019.

## Strengthening Plan Valuations

The funded status of the PSPP at the end of 2017 is approximately 97%, up from over 96% at the end of 2016. This represents an improvement of approximately \$200 million. However, that is not the full story. Embedded in our current funded status is an increase in the present value of the cost of pensions due to lengthening lifespans and low interest rates. The increasing average lifespan of our members and pensioners is significant. Our analysis shows that a 62-year-old retiring this year is expected to collect their pension for four and a half years longer than was expected for a 62-year-old who retired in 2003. In fact, we now have more than 10 times as many pensioners over the age of 100 than we did 20 years ago even though the Plan membership has only grown by 25%.

## 2017 Investment Performance

That we were able to improve the funded status of the Plan after strengthening our Plan assumptions, which increased the expected cost of pensions, is a major accomplishment and a tribute to our very strong investment return of 10.8% during 2017.



We were able to **improve the funded status** of the Plan after strengthening our Plan assumptions – a major accomplishment.

## Outlook

As we look forward, we do see risks, particularly from the impact of continuing improvements in lifespans on the cost of pensions promised under the Plan. Earning investment returns that meet or exceed our 5.6% discount rate will require investment and investment risk management excellence as well as a willingness and ability to expand our investment strategies.

The investment volatility early in 2018 reminds us that there is risk in investing that must be well managed in the short term to produce strong long-term results. OPB has successfully navigated through volatile conditions in the past.

Collectively, the launch of IMCO, the increase in our contribution rates, the strengthening of our valuation assumptions and the strong 2017 investment performance position us well to maintain the financial health of the Plan far into the future. Going forward, we expect to continue to apply excess investment returns to further strengthening our longevity assumptions and reducing our discount rate.

## Client Service

Client service excellence is another imperative for OPB. On the client service side of the business, we had yet another busy year managing additional changes to the insured benefits program on behalf of the Plan Sponsor. We also had a record year for our team of Client Service Advisors and enhanced our client education program, which our Chief Pension Officer, Peter Shena, speaks to in his CPO message.



We **had a record year** for our team of Client Service Advisors and enhanced our client education program.

We continue to proceed with the planning for a renewal of our pension administration business processes and IT systems. In 2018, we will lay the foundation for this exciting and transformative project, which will enable us to be more responsive and adaptive to our clients' needs, while replacing key technology systems so we can continue to enhance the client experience.

I am happy to announce that in late 2017 TVO voted to join the Plan. TVO's choice to join the Plan represents yet another vote of confidence in the strength of the PSPP and in OPB as one of Canada's leading pension administrators – a milestone for which we've been recognized yet again this year by benchmarking firm CEM, moving up to fourth globally in the rankings.

A handwritten signature in black ink, appearing to read 'M. Fuller', with a stylized flourish at the end.

**Mark J. Fuller**

President & CEO

## Your Plan



**PETER SHENA**  
EVP & CHIEF PENSION OFFICER

“So many of the steps we take have the same goal – finding the best way to meet the unique needs of all of our members.

### **What did OPB do to help members make sound pension decisions and improve their understanding of their financial circumstances?**

We are committed to helping you create a strong plan for your future. To us, that requires more than just keeping the PSPP strong; it means helping you build on your overall financial and retirement planning skills and navigate key pension decisions so you can build a stronger retirement plan.

That’s why we provide access to in-house Certified Financial Planners®. This year, our Advisors met with more than 2,800 members, helping them understand how their individual pension decisions could contribute to their current and future financial plans. We believe this perspective is critical for members to have the confidence that they’re making the right decision based on their goals and unique circumstances.

We believe proactive education and communication are key to helping members build a stronger future, which is why we engage members in their retirement planning process early on. We call every new member to answer any questions they have, discuss potential buyback or transfer opportunities and ensure they know about the advisory services and online retirement planning tools we have.

In 2017, we also introduced advisory articles in both our member and retired member newsletters. We also piloted new advisory workshops that incorporate broader financial planning exercises to help members understand how their pension affects their overall financial plan. The sessions were really well received, and we'll be looking at rolling them out more broadly in 2018 and 2019. Make sure to check out our sessions in our online education calendar in e-services.

### **What progress did you make on pension modernization in 2017?**

In 2017, we officially launched our multi-year pension modernization initiative to further improve the experience for our members. One of our key goals with this initiative is to better understand our members' needs so we can deliver the planning tools and services they require.

Given that our current systems were put in place in the 1990s, we think now is the right time to retire them and look at how we can modernize our systems to keep our technology current and secure, and to better meet our clients' needs.

We recognize that this is a significant undertaking that requires careful planning and due diligence - we have a duty to get it right. That's why in 2017 we focused our efforts on establishing a solid foundation for this initiative, which included developing a clear business transformation strategy and looking at the best way to set up the program. We met with a number of our peers who've undergone transformational initiatives to discuss their experiences and approaches, and we came away with some really great insight and learnings from those discussions.

We will be **looking for opportunities** to find out what members like about our current services and tools, and what they would like to see going forward.

Over the coming year, we will be looking for opportunities to involve our members in the process to find out what they like about our current services and tools, and what they would like to see going forward. If you would like to participate in feedback sessions with us to help guide our journey, please let us know at [feedback@opb.ca](mailto:feedback@opb.ca).

### **Why are contribution rates increasing when the Plan's returns have been good over the past few years?**

At OPB, our main purpose is to protect the pension promise for current and future members. We carefully monitor the Plan's health and performance to ensure that our investment strategy is appropriate given the Plan's pension obligations, our assumptions are accurate and our contribution rates are adequate to fund the benefits going forward.

Further to this, our ongoing analysis shows that the cost of benefits is increasing primarily due to the fact that people are living longer, which is a good thing, but it means we're paying pensions for longer. When the cost of benefits goes up, the resulting increase needs to be funded by either investment returns or contribution rates. When we look at how to fund the cost of these additional benefits, we need to look not at past returns but at the returns we expect to earn in the future.

Our expectation is that investment returns over the next five to 10 years are going to be lower, which is why we've decreased our discount rate over the last two years. We believe this is a prudent step to manage the long-term health of the Plan.

As we lowered our discount rate and strengthened our longevity assumptions to better align the PSPP with our expectations for the future, we also recommended to the Plan Sponsor that it increase contribution rates to strengthen the funding of the pension promise.



Our contribution rates **remain among the lowest** of the public sector plans in Ontario and continue to provide excellent value for members and employers.

Even with this increase, our contribution rates remain among the lowest of the public sector plans in Ontario and continue to provide excellent value for members and employers. The pension promised under the Plan has been maintained.



### **Why hasn't the funded status improved much when returns have been strong?**

The Plan's funded status remains very strong at approximately 97%. Pension plans are long-term investors, which means we can't just focus on what returns are now; we have to make assumptions about what we expect the Plan to experience over the longer term. This leads us to make adjustments to assumptions when expected future economic or demographic conditions change. As explained in CEO Mark Fuller's letter, in an environment in which interest rates are expected to remain low and assets are priced high, it is prudent to lower our discount rate.

As lifespans have continued to rise, it was imperative that we increase the length of time for which pensions will be paid. Each of these prudent steps adds to the present value of the cost of benefits and so offsets the additional assets generated from our very strong 2017 investment performance. With these changes, we still improved the funded status of the Plan, remain well funded at approximately 97% and have better positioned the Plan to remain well funded into the future.

A handwritten signature in black ink, appearing to read 'Peter Shena', with a stylized, cursive script.

**Peter Shena**

EVP & Chief Pension Officer

# The Big Picture



**KEN LUSK**  
CHIEF INVESTMENT OFFICER

Through its scale and focus, IMCO opens doors to new investment opportunities, but OPB still contributes essential guidance, strategy and oversight.

## **Describe your role as OPB's new Chief Investment Officer. What are your primary responsibilities?**


With the transfer of day-to-day investment operations to IMCO, my role as CIO is quite different than when my predecessor, Jill Pepall, held the role. While OPB's assets are now under IMCO's management, OPB retains its fiduciary duties and responsibilities as the administrator of the PSPP, which means that it remains responsible for the supervision of OPB's business and investment of the Fund.

As CIO, I'm responsible for monitoring IMCO's investment performance and compliance with our strategies and policies. I'm responsible for overseeing the relationship between the two organizations, and supporting IMCO as it executes our strategy according to OPB's Strategic Asset Allocation (SAA). With support from our new Vice-President of Finance, Armand deKemp,

our job is to monitor, assess and report to the Board on IMCO's performance and investment returns. This includes IMCO's execution of our strategies and its compliance with the contractual obligations under our Investment Management Agreement and our Implementation and Support Agreement (the IMA and ISA), including financial reporting, audit and internal controls.

**In 2017, IMCO was officially launched. What will stay the same and what will change now that IMCO is managing OPB's investments?**

Now that IMCO is operational, the roles and responsibilities of OPB and IMCO have been clearly defined, with OPB continuing to own its assets and to be responsible only for PSPP pension liabilities and OPB-issued debenture. We will still control our SAA as well as other policies as defined by our agreements. This means that we set our overall investment strategy and asset mix to ensure the Plan's investments are well matched to our liabilities.




The roles and responsibilities of OPB and IMCO have been **clearly defined**, with OPB continuing to own its assets.

IMCO's role is to invest in accordance with those strategies, including overseeing our external investment managers. IMCO's responsibility is to execute the strategy by making the individual investment decisions within each of the asset classes that align to our SAA.

**What short-term and long-term benefits should OPB expect?**

As mentioned in previous annual reports, we expect to realize a number of benefits stemming from the creation of IMCO. The first of these is scale. For a \$25 billion or even \$30 billion asset manager, there's only so many investment opportunities one can have direct access to, especially in a market as competitive as today's. As part of IMCO's larger \$60 billion of assets under management, and with an expectation of growth in assets under management, IMCO provides us with economies of scale that will allow OPB, and other members of IMCO, access to more and higher-quality investments capable of generating higher incremental returns at a lower unit cost. As a larger investor, IMCO will be positioned to negotiate better deal terms and to gain access to a broader range of investment and partnership opportunities – both of which we expect to help boost our risk-adjusted net investment returns over the long term.



IMCO provides access to more and **higher-quality investments** capable of generating higher incremental returns at a lower unit cost.

Additionally, since IMCO operates on a cost-recovery basis and spreads its cost among its members, we expect to realize some cost efficiencies over the long term, especially as IMCO takes on new members. Pooling assets under IMCO also allows for further internalization of some investment functions that will reduce our external management fees. Finally, through IMCO, OPB will also benefit from: (i) the incorporation of more robust risk management systems into its investment decisions and processes; (ii) being more able to invest in advanced investment and investment finance systems; and (iii) access to greater research capabilities.

### **What were some of our key successes in 2017?**

In addition to IMCO's launch, I was very pleased with our total return of 10.8% this year, which exceeded our benchmark by 0.4%. This was a result of very good returns in global equity markets, which were buoyed by global economic growth and relatively low interest rates, which provided a favourable climate for us to invest in. Across our various asset classes, our Private Markets return was 4.5%, and our Public Markets return was 13.3%.

We also had a number of exciting transactions in 2017 that contributed to our success, including starting construction on the 16 York Street property we co-own with our long-time partner Cadillac Fairview (CF) in downtown Toronto. With its prime location, access to transit and sustainability features, we are confident that 16 York will attract prime tenants and provide us with an excellent return on our investment. We are very proud that this 800,000-square-foot office building will be built to LEED Platinum specifications and will target WELL certification, the fast-evolving, occupant-centric standard for tenant well-being, comfort and efficient operation. We also partnered with the Workplace Safety and Insurance Board (WSIB) to purchase 50% of CF's Vancouver portfolio, including the Pacific Centre, one of North America's top-performing shopping centres, and 12 best-in-class office properties in the heart of downtown Vancouver.

## What were your key investment challenges in 2017?

The competition for investments across all private markets asset classes has been steadily increasing over the years and 2017 was no exception. The immense competition for larger deals has driven down capitalization rates for real estate and investment returns from infrastructure, resulting in high prices for these assets. While private equity is experiencing some of the compression in returns, OPB's target market is not seeing the same level of competition yet, so we were still able to increase our exposure in 2017.

We also experienced some challenges with our Real Estate portfolio as a result of the Sears Canada bankruptcy, which detracted from our real estate and overall Fund returns. Preliminary plans have been developed for all locations that are affected by the store closures.

Lastly, while our bonds outperformed their benchmarks due to our shorter duration bond strategy, increasing interest rates and rising inflation expectations in the latter part of 2017 lowered the returns from bonds.

## Prior to the launch of IMCO, OPB revised its Strategic Asset Allocation (SAA). Why is the SAA so important to the long-term sustainability of the Plan?

The SAA defines what the optimal asset mix is for the PSPP so it can meet the current long-term funding and cash flow needs of the Plan. It is the most important investment decision OPB makes and is key to:

- protecting the long-term viability of the Plan; and
- having affordable benefits and contributions.

Our investment approach is carefully structured to ensure the long-term sustainability of the Plan through the alignment of our pension obligations and our assets. This is why we conduct an asset/liability (A/L) study every three to five years to determine if our assets will be able to cover our pension liabilities based on up-to-date actuarial and market data. We then assess whether changes to our actuarial data or market and economic conditions require us to adjust our SAA. We completed our last A/L study in early 2017, just before we launched IMCO, and we took that opportunity to adjust the SAA.

Our investment approach is **carefully structured to ensure the long-term sustainability** of the Plan through the alignment of our pension obligations and our assets.

As part of our revised SAA, we moved our 2017 target allocation for public markets from 73% to 71% and for private markets from 27% to 29%. This shift from public markets to less volatile private markets will continue over the next several years, toward an eventual optimal mix of 59% for public markets and 41% for private markets.

### **Why do you think investment returns could be lower going forward when plans have been earning strong returns over the past few years?**

Looking forward to the next five to 10 years, we believe it's going to be difficult to generate the same level of investment returns we've generated over the last five to 10 years. The Great Recession of 2009/2010 led to the deepest global recession since the Great Depression of the 1930s. In response, global policy-makers from China, the U.S., Europe, the U.K., Japan and Canada implemented unprecedented fiscal and monetary stimulus to help create wealth by lifting asset prices everywhere.

The success of these policies led to abnormally inflated investment returns and historically high price levels for real estate, infrastructure, private equity, credit, nominal bonds and public equities. While we can't speculate on whether the cyclical correction we're starting to see will pull prices down in the near term, the reality is that prices remain very high today. As a result, we expect future rates of return of financial assets to be lower than the levels we have seen over the past 10 years.

### **What is your 2018 investment outlook?**

Since the spring of 2016, global economic growth is the most robust it has been in the post-Global Financial Crisis period and has been the engine of corporate earnings gains, and the basis for the long-drawn-out advance in risk assets (equities and credit in particular). We believe this will peak in the first half of 2018. This is not viewed generally as negative; however, it could lead to more moderate earnings growth in 2018, which could, in turn, lead to a meaningful sell-off in risk assets.

More recently, the Bank of England joined the U.S. Federal Reserve (Fed), the Bank of China, and the Bank of Canada by tightening its policy rate for the first time in 10 years. Our tracking of global liquidity remains constructive; however, the tide of liquidity infusion by the central banks is receding. Net contributions to global liquidity remain positive overall, a function of China's additions to foreign exchange reserves and the ongoing Quantitative Easing programs of the European Central Bank and the Bank of Japan. By way of contrast, the Fed has commenced Quantitative Tightening (effectively reducing liquidity available to markets by reducing the central banks' asset holdings that were built up in response to the Global Financial Crisis).

At present, it is difficult to see the basis for a global recession in the near term. However, the policy risk of “too loose for too long” is a rising threat indicated by signals such as economies reaching full output levels, and tight labour markets in many countries. As inflation rates approach policy objectives, there is the risk that central banks will implement tightening more than the level that economic fundamentals can withstand.

A handwritten signature in black ink, appearing to read "Ken Lusk". The signature is fluid and cursive, with the first name "Ken" and last name "Lusk" clearly distinguishable.

**Ken Lusk**

Chief Investment Officer

# Client Services

Every retirement journey is unique, which is why we offer tailored services and one-on-one advice to help our members meet their retirement goals.



Our Advisors met 1-on-1 with more than **2,800 members** to help them build a stronger plan for their future.

When OPB began providing advisory services to help members understand how their pension decisions affect their larger life plans, we were pioneers in working to create value for our members by enhancing the quality of the service and advice they received.

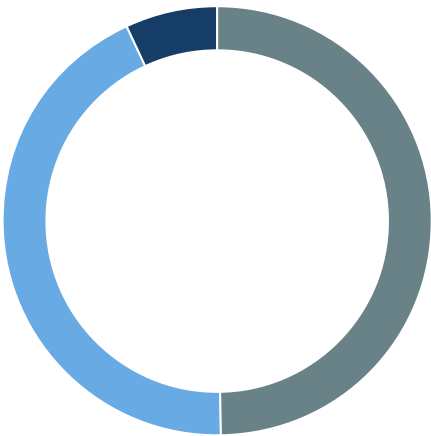
Through 2017, we built on this platform – offering targeted workshops and presentations aimed at members in different stages of their careers – and introduced advisory-focused articles in our newsletter. We also launched our pension modernization initiative, which will help us to further enhance the client experience.



Processed over **6,300 new optional insurance applications** – as part of a new program introduced by the government in 2017 – providing a valuable and cost-effective benefit to PSPP members travelling abroad in retirement.



## Membership Breakdown



Active	43,636
Retired	37,766
Former	5,909

**Answered more than 54,000 calls** – an increase of 10.6% over 2016 and 19.4% over 2015 – over 99% of them within 30 seconds.

## 2017 E-services Transactions (vs. 2016)

Beneficiary Updates  
**3,781**  
(3,567) ↑

Address Updates  
**1,776**  
(1,570) ↑

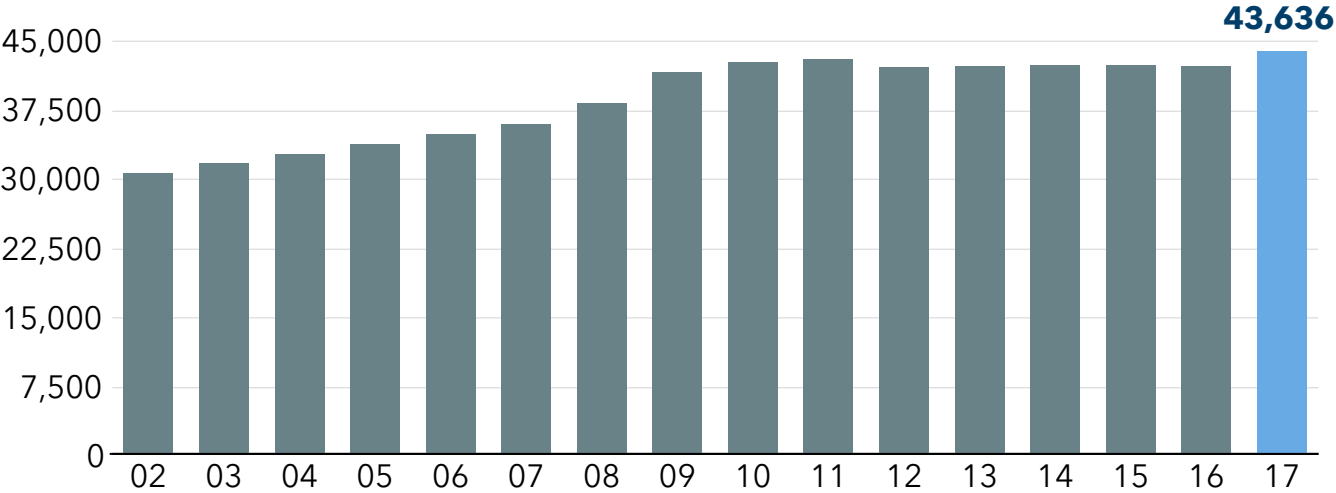
Pension Estimates  
**61,324**  
(55,678) ↑

Initiated Retirement  
**58**  
(262) ↓

Buyback Calculator  
**8,683**  
(9,094) ↓

Retirement Planner  
**16,034**  
(16,992) ↓

# Number of Active Members



Recognized by CEM as #2 in Canada and #4 out of 70 plans globally, for **delivering excellence in service** and pension administration.

**87% of our members** reported that they were **satisfied or extremely satisfied** with the service they receive from OPB.

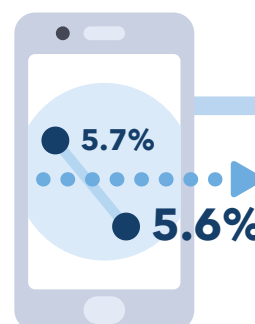


Launched a **pension modernization initiative** designed to deliver an enhanced service experience to current and future members.

# Investments and Funding

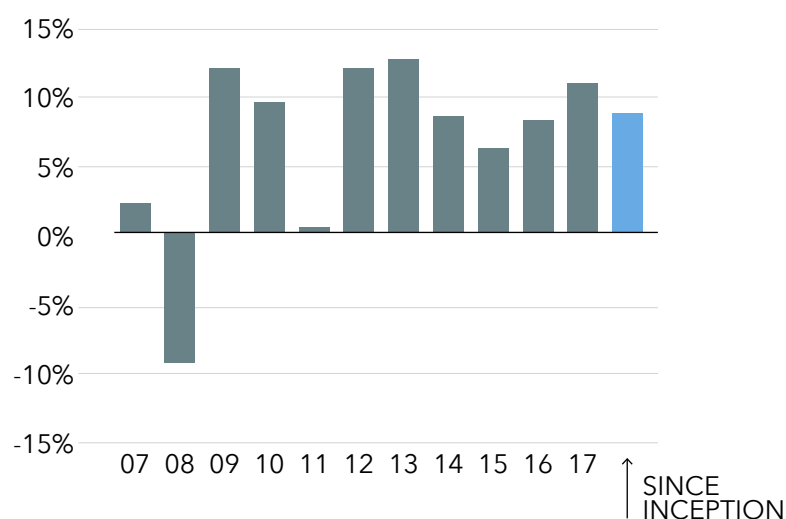
We take careful steps to design an investment and funding strategy that will keep our Plan strong and sustainable.

Continued our gradual, **strategic reduction of the discount rate** assumption – from 5.7% to 5.6% – to help ensure our Plan remains sustainable.



In 2017, our investments generated a strong return of **10.8%**, helping us maintain our funded status at approximately 97%. We've taken important steps over the past few years to help keep the Plan strong now and over the long term.

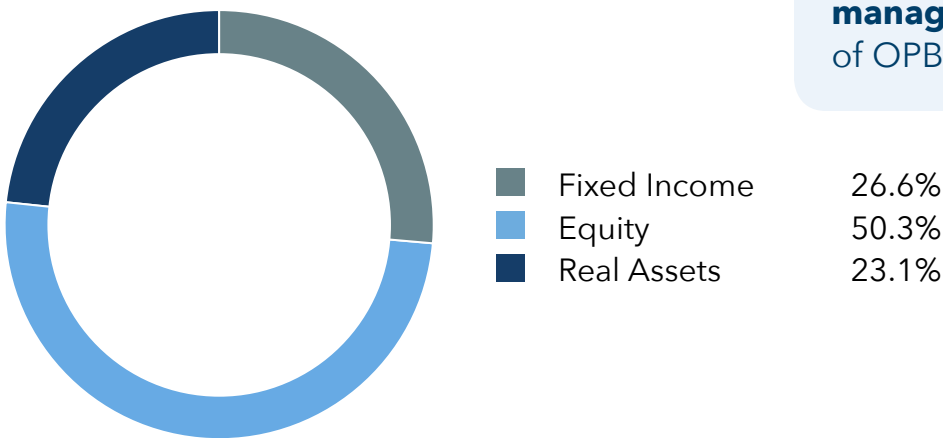
## Total Returns



**Strengthened our longevity assumptions** to better reflect the fact that our pensioners are living longer and that we're paying pensions longer.

Asset Mix

As at December 31, 2017

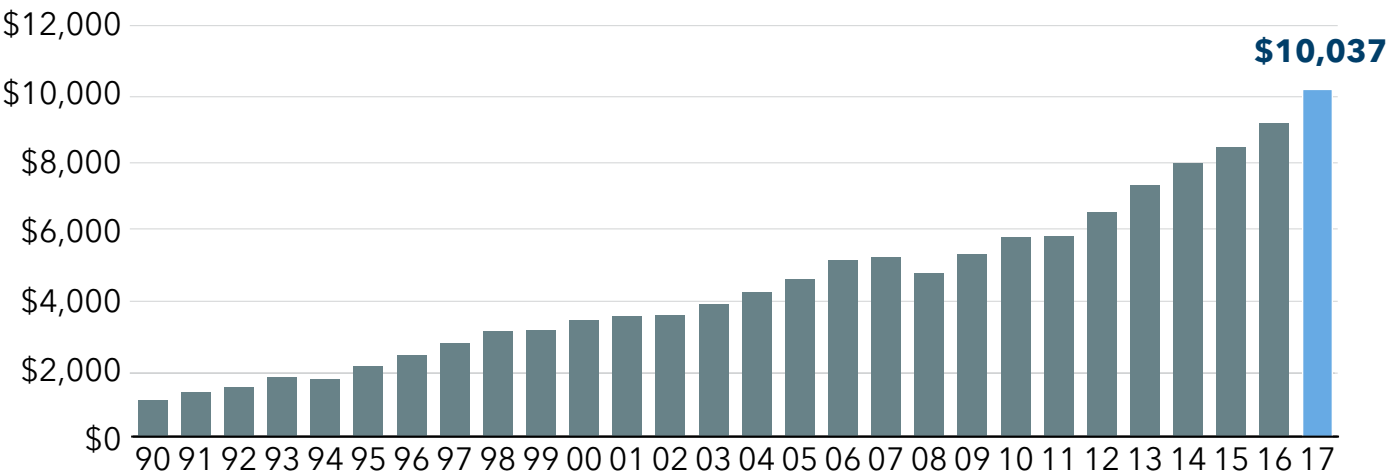


Successfully launched IMCO, creating a combined **\$60 billion investment manager** to invest on behalf of OPB’s members.

We **supported 21 shareholder proposals to enhance disclosure and/or action on climate change** risks and opportunities at companies in our portfolio.

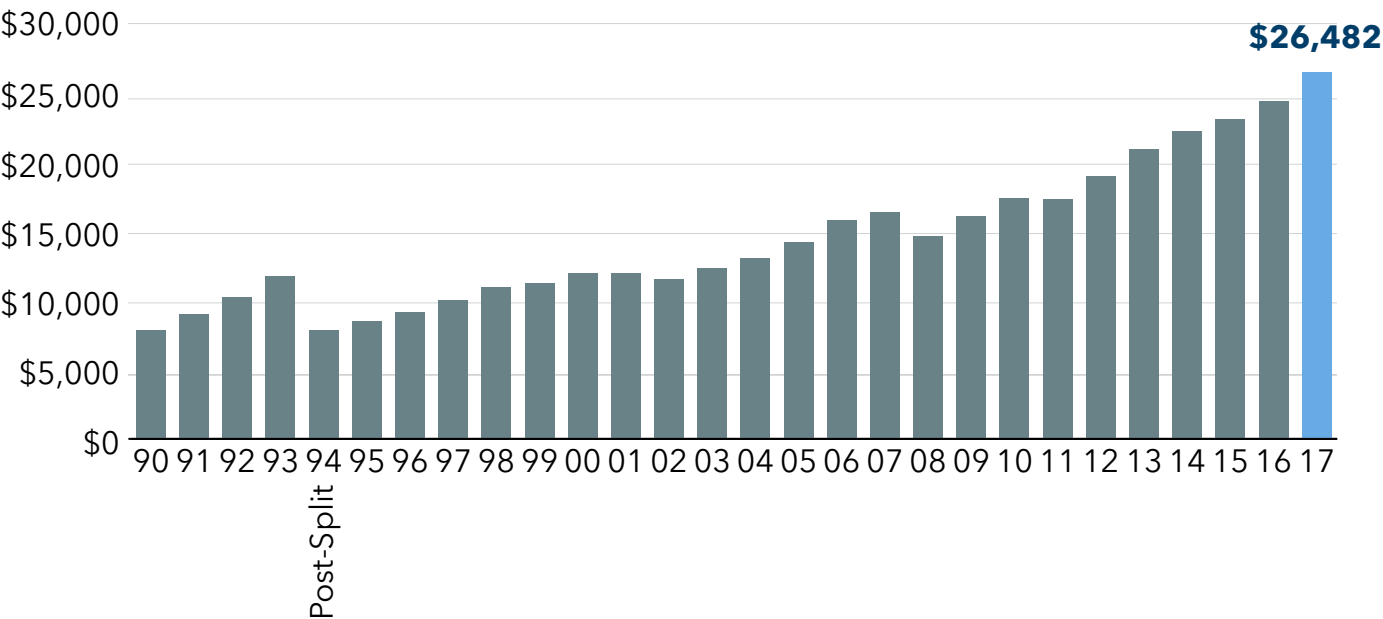
Growth of Plan Assets

Growth of \$1,000 since inception

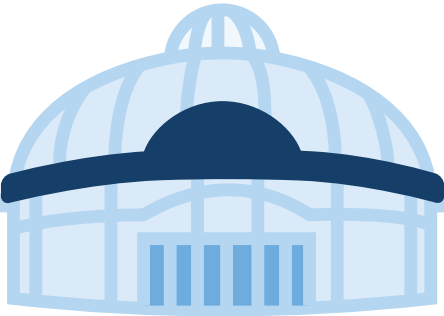


# Net Assets since Inception

(in millions of dollars)



In partnership with WSIB, **acquired 50% of Cadillac Fairview’s prime office and retail Vancouver portfolio** - approximately 4.0 million square feet of leasable space.



# Management's Discussion & Analysis

## Introduction

2017 was an important year for the Public Service Pension Plan (PSPP or the Plan) with the launch of the Investment Management Corporation of Ontario (IMCO) and our pension modernization program. Both of these initiatives will help us protect the pension promise and enhance our ability to serve our clients for years to come.

This section provides management's analysis of how the Plan performed in the past year, its financial condition and its future prospects. This MD&A supplements the information provided in the financial statements.

OPB's primary objective is to manage the Plan so that, over the long term, it continues to maintain and deliver the pension benefits as promised and remains affordable for members and employers. We are focused on providing unmatched service excellence to clients and managing the Plan design and funding status to provide pension sustainability, not just for our current members but for members well into the future. We are vigilant in managing the key risks facing the Plan, and incorporate risk management in our investment, service and growth strategies.

## Overview

At the end of 2017, the PSPP remained well funded at approximately 97% on a going-concern basis. This is a result of strong investment returns offset by increases in liabilities due to decisions to adjust discount rate and mortality assumptions to support the financial health of the Plan over the long term. It's what we mean when we say our Plan is built to last.

It was a pivotal year for OPB as IMCO successfully launched in July after many years of work with the Workplace Safety and Insurance Board (WSIB) on the Government of Ontario's broader public sector asset pooling initiative. IMCO is a not-for-profit investment management and advisory corporation that was established with \$60 billion in pooled assets under management from OPB and WSIB.

IMCO provides OPB with top-tier investment management and the scale we need to improve our access to direct investment and new partnership opportunities in private markets at lower unit costs – helping us achieve higher incremental returns over the long term than we could achieve on our own.

IMCO assumed responsibility for the day-to-day investment management of OPB's assets and the execution of OPB's investment strategies in July 2017. OPB retains decision-making authority over key strategic aspects of the investment of its assets to be managed by IMCO and will closely monitor IMCO's performance to ensure we receive the expected benefits. The arrangement is subject to the terms of an Investment Management Agreement (IMA), a Service Level Agreement (SLA) and an Implementation and Support Agreement (ISA) between OPB and IMCO, which are described on page 40 in the Investments section. OPB also has important governance rights over IMCO. OPB is a member (similar to a shareholder) of IMCO and has the right to appoint members of IMCO's Board of Directors.

As the administrator of the PSPP, and in line with our fiduciary duties, OPB continues to:

- own PSPP assets and be responsible only for PSPP liabilities;
- set its own Strategic Asset Allocation (SAA) policy, with which IMCO must comply; and
- set its Statement of Investment Principles and Beliefs (SIP&B) and Statement of Investment Policies and Procedures (SIP&P), with which IMCO must comply.

Transition of the investment and investment finance teams of OPB and WSIB to IMCO went smoothly. Approximately 42 talented investment and investment finance professionals from OPB moved over to IMCO. Jill Pepall, OPB's former Chief Investment Officer, became IMCO's first CIO; Michel Paradis, OPB's former Chief Financial Officer, is its first CFO; and Gayle Fisher, OPB's former Chief Administrative Officer, became IMCO's first head of Human Resources.

The investment program had a strong year, with a one-year return of 10.8%. However, looking forward, we anticipate average returns over the next 10 years to be lower than those in the last 10 years. This view is shared widely in the investment industry and among our peers in the defined benefit pension plan industry. With initial access to \$60 billion under management, IMCO will give us direct access to private market deals where we can achieve higher net returns for the Plan over the long term than we would be able to achieve on our own. Given our outlook for investment returns, this ability of IMCO to enhance returns and benefit from economies of scale is one of the reasons we played a lead role in the creation of IMCO.

OPB maintained excellent levels of service to our members during a demanding year. We managed through a surge in service requests and enrolments after an increase in retirements in late 2016 due to changes to insured benefits coverage. We also supported 1,300 members at the Ontario Lottery and Gaming Corporation (OLG) as they transitioned to new employers, and we helped our retired members understand the new pension statements we are now required to provide to them. Our high client satisfaction scores and the positive feedback we've received on our unique, one-on-one Advisory Services show our commitment to providing our members with services and advice tailored to their unique circumstances and to helping them make sound pension decisions.

The next stage of our evolution is the launch of OPB's pension modernization initiative. This is a multi-year program designed to enhance our service and add value to our clients' experience by updating and re-engineering our business processes, systems and tools. As a service provider, we are committed to meeting the evolving needs and expectations of our clients and stakeholders.

This section of the report discusses these and other important initiatives during 2017.

## Funding

Our strong 10.8% investment return helped improve the Plan's funded status at the end of 2017 compared to the end of 2016. The Plan remains well funded, at approximately 97%, and well positioned to continue to meet the pension promise.

The funded status of a pension plan, in simple terms, compares the value of pension assets on one side with the present value of projected future pension benefits, or pension obligations, on the other. If assets exceed liabilities, the plan is said to be in a surplus position. If liabilities exceed assets, the plan is in a shortfall position.

To keep the Plan sustainable over the long term, we have to ensure it can withstand challenges around the potential for lower investment returns going forward and continued improvements in members' lifespans. At OPB, we regularly update our demographic and economic assumptions to reflect emerging experience, and we then use that information to make recommendations on contribution rate adjustments when needed. Our strategies have materially contributed to the Plan's continued financial health.



The 2017 returns produced an investment experience gain of over \$1 billion. Consistent with our approach in recent years, we believe it is prudent to use most of this experience gain to reflect more cautious future investment expectations (by lowering the discount rate) and to reflect the increased cost of pensions due to rising lifespans. We are seeing continued improvements in member longevity, which adds to the Plan's liabilities, and for reasons outlined in this report, we believe that future investment returns are likely to be lower than they have been in recent years. In order to fulfill the pension promise for our members today and into the future, we will:

- lower our discount rate from 5.7% to 5.6%; this will add approximately \$354 million to our liability estimates;
- add approximately \$402 million to our liability estimates to reflect the fact that our members are living longer and that we're paying pensions for longer; and
- add approximately \$191 million to align with the new Actuarial Standards requirements on expected future improvements in longevity.

In conjunction with an increase in contribution rates of 1% of pensionable salary beginning in April 2018 for both members and employers, the changes to our assumptions noted above will help maintain the financial health of the Plan in the future.

In 2013 when solvency funding requirements were introduced, the Government of Ontario allowed all single-employer defined benefit plans to apply for Stage 1 solvency funding relief – which we did. Solvency funding is there to deal with situations where a pension plan is immediately wound up as a result of the plan sponsor becoming insolvent; while this is a risk for private sector pension plans, it is a highly unlikely event for the PSPP. In fact, all other major Ontario pension plans, as jointly sponsored plans, are already permanently exempt from solvency funding requirements.

In 2017, we applied for and received relief from Stage 2, the next phase of the solvency funding requirements. By granting solvency relief to the PSPP, the Plan Sponsor can now focus on the Plan's going-concern valuation when determining funding needs. The going-concern valuation assumes the Plan will continue to operate indefinitely and is used to fund the benefits promised under the PSPP.

<b>What We Did</b>	<b>Why It Matters</b>
Maintained a strong funded status at approximately 97%	The Plan is financially healthy and well positioned to continue to meet the pension promise.
Updated our discount rate and longevity assumptions to reflect future return expectations and longevity experience	Assumptions reflecting best estimates of future events enable proper planning to meet future pension obligations.
Completed an asset/liability (A/L) study	This helps ensure our Strategic Asset Allocation (SAA) is suitable to meet future pension obligations.
Filed a funding valuation with the Financial Services Commission of Ontario (FSCO)	We are required to file a valuation with FSCO at least once every three years.
Applied for and received Stage 2 funding relief	Solvency relief enables the Plan Sponsor to focus on the Plan's going-concern valuation when determining funding needs. The going-concern valuation assumes the Plan will operate indefinitely. The PSPP is approximately 97% funded on a going-concern basis.

## **Key Assumptions**

Effective pension plan management is about the careful and prudent management of investment returns and the design of the Plan over the long term. OPB adheres to a robust funding policy, which guides decisions around Plan design, funding and valuation assumptions.

### **Discount Rate**

The discount rate is a key assumption that is used in funding valuations and can influence decisions about contribution rates and benefits. It is used to calculate the present value of the future pensions expected to be paid by the Plan. For example, a pension payment that is expected to be made in 20 years is "discounted" back to today at the discount rate. This means that, for valuation purposes, the present value amount of the payment in today's dollars will grow at the discount rate. This, in turn, means that, over the long term, investment returns on the Plan's assets must equal or exceed the discount rate. Otherwise, the cost of the pension will grow faster than the value of the assets, producing a shortfall.

Setting a realistic discount rate is, therefore, a critical aspect of managing the long-term financial health of a defined benefit pension plan. The process we use to set the discount rate is rigorous and is designed to ensure that the assumption is reasonable in that it aligns with the investment returns OPB management believes can be achieved over the long term, based on the strategic asset mix targets in the Strategic Asset Allocation (SAA). This is based on robust modelling that allows for a cushion for unanticipated events (what is known in our business as a “margin” or a “provision for adverse deviation”).

We also consider the current economic environment and the outlook. Despite strong investment returns in 2017, we concluded that it is prudent to moderate our expectations for future returns, which remain uncertain. Interest rates, though moving up, remain low, and, while economic growth has been picking up, we expect it to be moderate over the next 10 years. Should growth exceed our expectations, it is likely to lead to a tightening of monetary policy on a global scale, meaning higher interest rates.

While higher interest rates are positive for retirement plans in the long term, in the short to medium term, increases in interest rates would likely result in capital assets being repriced lower. This would hurt investment returns in the short to medium term. Consequently, we foresee pressure on investment returns in both economic scenarios. Moreover, competition for private markets assets, notably quality real estate and core infrastructure, remains intense, which means acquisition prices are high, thus putting downward pressure on returns. We also foresee greater geopolitical risk factors, including uncertainty around the Brexit negotiations, the actions of North Korea, and the growing influence of populism on trade policy. We also face the uncertain impact of climate change on infrastructure, agriculture, forestry, and water resources.

Through this process, we determined that the discount rate should be further reduced from 5.7% to 5.6%. This is in addition to the reduction from 5.95% to 5.7% we made at the end of 2016. Changes to the discount rate impact the Plan’s projected liabilities (a lower discount rate means higher plan liabilities) and, by extension, impact the Plan’s funded position. A reduction in the discount rate by 1/10 of 1% (0.10%) increases the present value of the expected cost of pensions in the PSPP by approximately \$350 million.

## **Longevity**

At this point, the most important demographic factor facing the Plan is that people are living longer and collecting their pensions longer. In OPB’s case, we have strengthened the longevity assumptions used to cost the pension obligations (liabilities) of the Plan. For example, a 62-year-old member who retired in 2002 would be expected to receive their pension for 21.4 years. However, by December 2016, a member retiring at the same age would be expected to receive their pension for 25 years – an increase of 3.6 years.

We closely monitor demographic trends in our membership and may make adjustments to our funding assumptions, or recommendations for changes to Plan design, to ensure that we can continue to meet our future pension obligations, while pension benefits remain affordable for members and employers.

## Long-Term Funding Study

The projected cost of providing benefits to members is affected by many factors that will occur in the future, about which we must make assumptions. As part of our prudent management of the Plan, OPB conducts a number of comprehensive studies to evaluate the appropriateness of those assumptions and to evaluate whether the contribution rates are set at appropriate levels. One of these reports is the Long-Term Funding Study (LTFS).

In 2016, OPB initiated an LTFS to determine if the cost of providing the benefits under the Plan had increased, and whether the current economic and demographic assumptions were still appropriate. Based on the study results, we adjusted the discount rate and longevity assumptions and recommended a contribution rate increase of 1% of pensionable salary for members and employers.

In 2017, the government accepted our recommendation and approved the contribution increase, which will be phased in over two years. Phase 1 took effect in April 2018 and phase 2 takes effect in April 2019. Even with this increase, contribution rates are among the lowest of peer pension plans, and the PSPP continues to offer excellent value for our members and employers.

## Asset/Liability Study

OPB is responsible for conducting an asset/liability (A/L) study approximately every three years to see how our various asset allocations meet the goal of paying members' pensions – our liabilities – in light of long-term capital markets assumptions and the Plan's cash flow requirements.

An A/L study involves the projections of a pension plan's assets and liabilities using numerous economic and capital markets scenarios, and models several investment portfolios with varying levels of risk and return characteristics. OPB's A/L study process is designed to give OPB a full understanding of the investment strategies available to the Plan and their inherent expected benefits and risks.

OPB completed its most recent study in early 2017, prior to the commencement of IMCO's operations. The A/L study helps to ensure our Strategic Asset Allocation (SAA) is appropriate for the coming years, given projected future liability streams.

## Financial Position

OPB conducts actuarial valuations of the Plan on a regular basis. The actuarial valuation for funding purposes is used to ensure there are sufficient assets to meet the Plan's pension obligations. It is also used to determine contributions to the Plan. In determining the surplus or deficit position of the Plan for reporting on our financial statements, OPB uses the latest actuarial valuation for funding purposes and extrapolates the pension obligations to the financial statement date.

The funding valuations provide a best estimate of the Plan's accrued pension liabilities and are performed by an independent actuary appointed by OPB's Board of Directors.

Valuation Type	Purpose and Description
Funding basis	Pension plans are legally required to file a funding valuation with the regulator, FSCO, once every three years. OPB filed its 2016 valuation in December 2017. The valuation indicated that as at December 31, 2016, the Plan was just over 96% funded and had a shortfall of \$943 million. That compares to 96% funded with a shortfall of \$804 million at December 31, 2013 (the previous valuation filed with pension regulators).
Financial statements	<p>For the purposes of the financial statements, the Plan's liabilities were calculated as of December 31, 2016, the date of the last funding valuation, and extrapolated to December 31, 2017. The extrapolated numbers are based on the assumption that the Plan's 2017 experience (for factors such as salary increases, retirement ages, and termination and mortality rates) would match the Plan's actuarial assumptions.</p> <p>For financial reporting purposes, we have calculated the Plan's 2017 year-end financial position by comparing the extrapolated liability with the actual market value of assets as of December 31, 2017. Based on this, the Plan had a deficit of \$738 million.</p>

# Investments

OPB's strategic long-term approach to investing is shaped by two key objectives:

1. securing and maintaining the pension benefits promised to members; and
2. maintaining affordable contribution rates for members and participating employers.

To achieve these objectives, OPB has developed an investment approach that emphasizes capital preservation and seeks to mitigate the risk of a long-term funding shortfall, and the risk of significant volatility in the Plan's funded status. As we seek to generate strong, long-term investment returns within an acceptable risk framework, tactical asset allocation decisions can contribute to capital preservation and enhanced risk-adjusted returns, while opportunistic investments offer another way to add value. This investment approach has not changed with the launch of IMCO.

IMCO will invest and reinvest OPB's investment portfolio within OPB's investment policies (including its Statement of Investment Policies and Procedures and its Statement of Investment Principles and Beliefs), and asset class investment strategies and policies. With IMCO taking over the management of OPB's assets and those of WSIB, we will have access to a larger investment platform and improved systems, investment products and structures that enable execution of our investment approach.

During 2017, our Investments team focused on the following key areas:

1. optimizing the implementation and management of the Strategic Asset Allocation (SAA);
2. transitioning internal expertise and asset management capabilities to IMCO;
3. transitioning a broad network of key investment partners and relationships to IMCO; and
4. enhancing risk and performance reporting.

These areas are discussed in more detail on the following pages.

## Strategic Asset Allocation

Asset mix is the single most important driver of investment performance. At OPB, asset mix is broadly defined in our SAA, which sets out the Board's target allocations (weights) for each asset class.

OPB continues to be responsible for setting the SAA, and IMCO manages OPB funds according to the SAA. The SAA targets are developed with the intention of meeting the Plan's long-term funding objectives while effectively managing investment risk through diversification across several asset classes.

In 2011, OPB began a multi-year strategic transition to shift more of the Plan's assets from public to private markets investments. Private assets, such as real estate and infrastructure, help to insulate the Plan from public markets volatility, generate a larger proportion of returns from ongoing and predictable cash flow, enable greater access to company management teams, offer the potential for higher overall returns, and are also highly correlated to the Plan's inflation-based pension obligations. Private equity investment returns are generated principally from capital appreciation and typically achieve higher returns than public equities.

OPB's Board of Directors approved updated SAAs in 2014 and 2017. In 2017, the allocations to private equity and infrastructure assets were increased and a small decrease was made to the real estate allocation. In establishing the 2017 SAA, which is being phased in over several years, OPB considered liquidity requirements and the economic assumptions used in the Plan's actuarial valuation.

OPB increased the Plan's holdings in private assets to approximately 29% of the Fund at the end of 2017, up from 27% at the end of 2016.

In the ongoing search for high-quality global opportunities, we expect IMCO will continue to be thorough in its analysis of the role that new investments will play in our investment portfolio (from both a risk and return perspective) and whether they complement our existing holdings. Compared to four years ago, the Plan's Reward to Risk ratio (four-year return divided by volatility) increased by 30 percentage points (192.5% as at December 2017 versus 162.6% as at December 2013). This increase in Total Plan Reward to Risk is due to better emerging market equity and private equity returns and the lower volatility of infrastructure assets.

## SAA Asset Mix Targets

Asset Class	2017 Target Weight*	Range
Fixed Income (Cash, Long Bonds, Private Debt, Real Return Bonds)	25%	10%-45%
Equity (Canadian Equity, Global Equity, Emerging Equity, Private Equity)	42.5%	13%-70%
Real Assets (Real Estate, Infrastructure)	32.5%	20%-47%

\* The 2017 targets are to be phased in over a three-year period from 2017 to 2020.

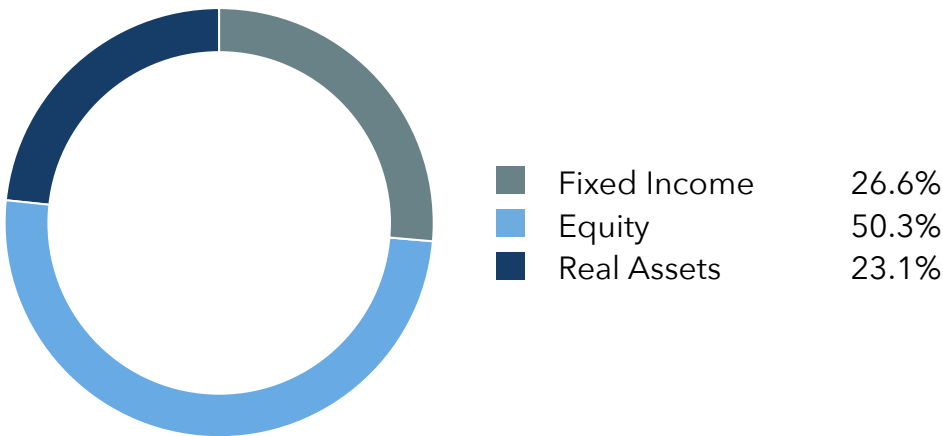
The proportion allocated to each asset class at any point in time will be determined by OPB’s assessment of economic and financial market conditions. During the transition period toward meeting the SAA target allocations, certain asset class weights may be outside the ranges set out in investment policies. OPB monitors the SAA allocations regularly and may make adjustments in case of changes in:

- the ratio of Plan assets to Plan liabilities;
- the design of the Plan’s benefits and pension eligibility requirements;
- the respective proportions of active and inactive members in the Plan;
- long-term capital market prospects;
- cash flow requirements;
- the risk tolerance of the Plan with regard to its liabilities; and
- any other factors considered relevant.

Using long-term capital market assumptions, the SAA has an expected average rate of return equal to or greater than 5.60% nominal/3.60% real (that is, after inflation) per year, net of expenses.

**Asset Mix**

As at December 31, 2017





## IMCO Transition

After years of preparation, in July 2017 the responsibility for managing OPB's assets was transferred to the newly created Investment Management Corporation of Ontario (IMCO). This independent investment management firm, established with approximately \$60 billion in assets under management from OPB and WSIB, is designed to provide public sector clients in Ontario with professional investment services, best-in-class advice around portfolio construction, efficient access to a diverse range of asset classes and superior reporting on risks and returns.

## The Roles and Responsibilities of OPB and IMCO

OPB	IMCO
Owns Plan assets and is responsible for Plan liabilities	Manages Plan assets for a fee based on cost recovery (i.e., non-profit)
Sets Strategic Asset Allocation (SAA), considering Plan funding and cash flow needs	Manages investments based on OPB's SAA investment strategies and policies and other requirements
Oversees IMCO's performance	Regularly reports to OPB under the terms of the Investment Management Agreement (IMA), the Service Level Agreement (SLA), and the Implementation and Support Agreement (ISA)

IMCO developed new investment policies in respect of the fair allocation of investment opportunities among its members, and investment approvals to ensure an equitable allocation of private asset opportunities to clients.

By pooling assets with other clients of IMCO, OPB is in a stronger position to deliver on the long-term pension promise for Plan members. IMCO offers immediate economies of scale that open the door to opportunities we otherwise wouldn't be able to access, at a relatively lower cost, which we expect will produce higher risk-adjusted returns than OPB could achieve on its own. IMCO is better positioned to attract and retain superior leadership and investment management talent; to invest in advanced risk management and measurement, investment and investment finance systems; to access a broader range of assets and partnership opportunities; and to negotiate better deal terms.

The Investment Management Agreement (IMA) governs the investment management relationship between IMCO and OPB and focuses largely on investment-related matters. The Service Level Agreement (SLA) sets out a framework for dealing with matters such as deliverables, including the content and frequency of reporting, and the expected service levels IMCO will meet.

The Implementation and Support Agreement (ISA) deals with operating and governance matters such as employee transition, shared services, IMCO governance policies, and cost allocation and cost containment principles.

In recent years, OPB focused on expanding its in-house investment management expertise in certain asset classes (known as the Internalization Program). By building internal asset management capabilities, we were better able to agilely respond to market movements and opportunities and generate incremental risk-adjusted returns in a cost-effective manner. With the transfer of OPB investment and investment finance employees to IMCO, we will continue to benefit from our past investment in these capabilities and their future internalization initiatives.

As OPB expanded its asset management capabilities in recent years, we also took on greater complexity with respect to assessing and managing risk. This required a greater focus on compliance, risk monitoring, and middle- and back-office support. OPB implemented new risk assessment and reporting initiatives in order to attribute, measure and monitor the risk associated with a particular investment. With IMCO starting operations in 2017, the professionals and systems producing these reports and analyses transitioned to IMCO. As a client, we will continue to benefit from the risk initiatives and expertise we put in place. IMCO managers will take investment risks on behalf of OPB only when they expect to be appropriately rewarded.

## Investments

What We Did	Why It Matters
Achieved an annual investment return of 10.8%	Strong overall investment returns enabled us to improve the funded status of the Plan by increasing Plan assets, which more than offset the impact of increasing Plan liabilities due to raising longevity assumptions and lowering the discount rate used in the valuation of OPB's pension liability at December 31, 2017.
Progressed with our SAA phase-in targets	We increased our target allocations to private equity and infrastructure assets, which are expected to generate the long-term returns required to fund the Plan's liabilities.
Continued to add exposure to private markets investments, as planned	Real estate and infrastructure investments help generate good returns, help insulate the Plan from public markets volatility and enable us to generate a larger proportion of returns from ongoing cash flow, versus capital appreciation. On the other hand, private equity investments generate returns principally from capital appreciation, which are typically higher than returns from public equities.
Increased our real estate holdings with the purchase of an interest in Cadillac Fairview's prime Vancouver portfolio	Quality real estate assets generate strong cash flow and stable returns, and act as a hedge against inflation.
Contributed key investment personnel and systems to IMCO and supported transition	OPB supported the transition and will continue to benefit from the investment expertise that now resides within IMCO.

## Investment Performance

Investment excellence continues to be a top priority for OPB, as well as for IMCO, which took over management of OPB assets in July 2017.

OPB management is pleased with the strong performance of the Plan in 2017.

Our overall annual return of 10.8% (excluding external investment management fees and operating expenses) exceeded the portfolio benchmark by 0.4% and helped improve our funded status to approximately 97%. The Plan's 2017 return net of all fees and operating expenses was 10.3%, which was slightly below the benchmark return.

## Rates of Return

For the period ended December 31, 2017

1-year	4-year	10-year	Since 1995
10.8%	8.3%	6.8%	8.1%

From 1995 until the end of 2017, 72% of the sources of pension funding at OPB have come from net investment income, with the remainder coming from employee and employer contributions. The investment program is crucial for ensuring future benefits are available and sustainable for Plan members.

A number of factors positively influenced our results in 2017.

The Infrastructure and Private Equity portfolios earned favourable absolute returns and, as a group, the Plan's public market managers outperformed their benchmarks, enhancing returns. Private Debt strongly outperformed relative to its benchmark.

The Tactical Asset Allocation (TAA) strategy delivered significant value in 2017, adding 1% of the Plan's excess return (value added above the total fund benchmark). The enhanced return came from several strategies, one of which was an overweight position in equities, which benefited from strong corporate earnings and rising stock prices. Another positive contributor to performance was our decision to maintain a shorter duration in the Fixed Income portfolio than the SAA benchmark duration. That helped to preserve capital as interest rates rose and bond prices declined. (Shorter duration bonds are affected by price movements to a lesser degree than longer dated bonds.)

Even though rising interest rates moderated bond returns, the Plan's bonds outperformed our benchmarks due to management's decision to maintain a shorter duration bond strategy.

Our Real Estate portfolio detracted from returns, arising from an unrealized valuation write-down in response to the Sears Canada bankruptcy (a tenant in nine directly held and four indirectly held OPB properties).

Given that pensions are accrued and paid out over decades, pension plans need to take a long-term perspective. Our investment approach therefore emphasizes capital preservation and seeks to generate stable, long-term investment returns within an acceptable risk framework by minimizing unrewarded risk, reducing total risk, focusing on fundamental research and analysis to make investment decisions and sourcing diversified investment opportunities that provide predictable cash flow.

On a four-year basis, our compounded annualized return of 8.3% has exceeded the corresponding portfolio benchmark of 7.9% by 0.4%.

We continued to implement the shift in OPB's asset mix from Public Markets to Private Markets assets, pursuant to the SAA phase-in plan, increasing private investments by \$1 billion during 2017 to 29% of the market value of the Fund at year-end.

## **Public Markets Investments**

We continued to implement the strategic shift in OPB's asset mix from Public Markets to Private Markets assets, pursuant to the SAA phase-in plan. As of December 31, 2017, public markets investments accounted for approximately 71% of OPB's net assets, compared to 73% at year-end 2016.

A significant undertaking in 2017 was the planning, analysis and research for IMCO investment pools, which are expected to be in place in early 2019.

Additionally in 2017, we:

- brought the management of OPB government bonds in-house, representing 53.9% of OPB's total fixed income assets;
- funded two Chinese Renminbi bond strategies that are invested in both Chinese government and corporate bonds to capitalize on higher potential returns with minimal incremental risks;
- reduced higher-risk credit exposure and reduced high-yield bonds;
- realized a strong gain on OPB's first non-investment grade private debt co-investment, achieving a 15.6% return; and
- initiated research into dedicated equities investing in India.

## Interest-Bearing Investments

- **Fixed Income** – The Fixed Income portfolio, including global bonds, real return bonds, and private debt (currency hedged) but excluding emerging market debt, provided a solid return of 4.1%. Year-end market value was \$7.0 billion. In comparison, fixed income earned a 4.2% return in 2016 and was valued at \$6.2 billion.
- **Private Debt** – These assets consist of investments across the capital structure, including investment-grade senior debt, non-investment grade senior debt and forms of junior capital including subordinated and mezzanine debt that are unavailable in the public market. This gives OPB the capability to invest in private credit across the risk spectrum and capitalize on market opportunities while maintaining a focus on capital preservation and current cash yield. The portfolio returned 8.5% in 2017 on a currency hedged basis, with a year-end value of \$448 million. That compares to a return of 9.0% and a year-end value of \$456 million in 2016.

## Public Equities

The purpose of public equities within the investment portfolio is primarily as a long-term return enhancement asset. Public equities are expected to generate higher returns than the benchmark return over the long term.

The Canadian equity portfolio returned 9.3% in 2017, compared to 25.6% in 2016. The year-end market value of the portfolio was \$2.8 billion, compared to \$2.8 billion at year-end 2016.

The Plan's foreign developed market equity portfolio generated a return of 18.7% in 2017 compared to 2.7% in 2016. At year-end 2017, the portfolio held a market value of \$4.8 billion, compared to \$5.0 billion at year-end 2016.

The Plan's emerging markets equity portfolio, which includes emerging market debt, returned 25.0% in 2017, compared to 6.1% in 2016. As of December 31, 2017, the portfolio's market value was \$4.3 billion, compared to \$3.8 billion at year-end 2016.

## Private Markets Investments

While demand for quality Private Markets assets remains high, OPB's reputation as a trusted and respected partner provided access to high-quality deal flow and assets that may not otherwise come to market, and we expect IMCO to maintain this positive reputation in the industry.

OPB, and now IMCO, continued the strategic shift of assets from public to private markets in 2017. The private markets strategy involves acquiring first-class real estate properties, core infrastructure assets and private equity through a combination of direct investment, fund investments and co-investments. Private Markets assets tend to be more illiquid and longer-term holdings than those in public markets. Because of the added liquidity risk, returns are typically higher than those expected from Public Markets investments.

Real assets such as real estate and infrastructure assets help partially protect the Plan from public markets volatility as a larger proportion of their returns are generated from predictable, ongoing cash flows versus capital appreciation. Private equity offers attractive risk-adjusted returns and allows improved diversification by asset type, industry and geography.

As of December 31, 2017, Private Markets investments accounted for 28.6% of OPB's net assets, up from 27.0% at year-end 2016. The market value of these investments at the end of 2017 was \$7.6 billion, up \$1.0 billion from \$6.6 billion at year-end 2016.

Overall, our Private Markets portfolio, with the exception of real estate stemming from the bankruptcy of Sears Canada, continued to generate strong returns in 2017, which we attribute to our disciplined approach to investing, our robust partnerships that bring access to top-quality investment opportunities, and our ability to negotiate the best possible investment fees.

## **Real Estate**

Real estate assets provide strong cash flow generation, more stable returns than equity market assets, and a hedge against inflation, which makes them a good match for the Plan's long-term pension liabilities.

OPB's Real Estate portfolio is presented net of financings and made up of:

- direct and indirect holdings in quality Canadian office and retail rental properties;
- direct and indirect holdings in international real estate; and
- a modest investment in participating mortgages.

Our real estate investments as of December 31, 2017 stood at 17.7% (compared to its phase-in allocation of 19.0%), down from 18.0% in 2016. The portfolio's net market value at year-end 2017 was \$4.7 billion, compared to \$4.4 billion a year earlier.

The Real Estate portfolio returned 2.4% in 2017, compared to 9.5% in 2016, on a currency hedged basis. Since 1994, when OPB made its initial investment in real estate, the portfolio has generated an average annual return of 10.1%. The return is measured net of privately issued bonds guaranteed by OPB of \$2.25 billion (par value) at the end of 2017 (\$1.5 billion (par value) as at December 31, 2016) and any property-specific mortgages. The objectives of our financing strategy are:

- improving returns on OPB's rental property portfolio;
- improving the funded status of the Plan over the longer term; and
- creating a partial hedge against a decline in the market value of the Plan's rental properties arising from higher interest rates in the future.

See the Bond Offerings section, on the next page, for details of recent issues.

In 2017, we partnered with the Workplace Safety and Insurance Board (WSIB) to acquire 50% of Cadillac Fairview's Vancouver portfolio, with each partner taking a 25% interest. The portfolio consists of approximately 4.0 million square feet of leasable space and includes CF Pacific Centre, one of North America's top-performing shopping centres, along with 12 best-in-class office properties located in downtown Vancouver.

Driven by the strong Toronto office market, OPB and partner Cadillac Fairview commenced development of a 32-storey downtown office building at 16 York Street, scheduled for completion in 2020. Toronto is experiencing near-record-low vacancy rates, and we expect continued demand for commercial office space, along with a deep pool of prospective tenants for this property.

In the U.S. market, we added an iconic midtown office tower to the Plan's Manhattan office property holdings and co-invested in five multi-residential development projects across the New York Tri-State area.

OPB's retail portfolio was significantly impacted in 2017 due to its exposure to failing department store retailer Sears Canada. Sears, a tenant in nine directly held and four indirectly held properties, filed for creditor protection in June 2017 and subsequently liquidated inventory and closed all of its stores in January 2018. IMCO has plans for all locations that are affected by the store closures. For shopping centres, such as Pickering Town Centre, we will consider redevelopment opportunities (office, commercial, residential). In other locations, we will look to either reposition or dispose of the centres, continuing our strategy of reducing our retail exposure as disruption in this sector is changing the investment characteristics that had previously fit with our overall Real Estate strategy.

As of December 31, 2017, our Canadian holdings included ownership interests in approximately 8.7 million square feet of retail space and 9.6 million square feet of office space. A list of our Canadian real estate holdings can be found on page 101.

## **Bond Offerings**

Issuing bonds allows us to enhance the return on our Real Estate portfolio in a cost-effective manner. The financing allows OPB to add high-quality assets to its Real Estate portfolio that generate cash flows greater than the amounts needed to cover the interest payments on the bonds.

In January 2017, OPB issued \$750 million (Series "F") of 10-year bonds priced with a 2.98% annual coupon in conjunction with the purchase of a 25% interest in the portfolio of properties located in Vancouver. Bond issues are rated by credit agencies, and this issue again received strong ratings from Standard & Poor's (S&P) and Dominion Bond Rating Service (DBRS), which confirmed our ratings at AA+ (S&P) and AA (high) (DBRS).

OPB or entities created by IMCO may be bond issuers in future, depending on the asset or assets being acquired.



## Infrastructure

OPB's Infrastructure portfolio consists of equity investments in assets that provide an essential service to the communities in which they operate. Our strategy focuses on core infrastructure assets that provide predictable and ongoing cash flow, stable returns during periods of equity market volatility, and some degree of inflation protection, which provides a good correlation with the Plan's inflation-linked long-term pension liabilities.

The Infrastructure portfolio has good diversification with respect to revenue source, geography and industry sector.

On a hedged basis, the Infrastructure portfolio generated a 2017 return of 4.5% compared to 9.8% in 2016. The portfolio generated \$74 million in income during the year, with a year-end value of \$1.43 billion, compared to \$1.24 billion at the end of 2016. As of December 31, 2017, OPB had remaining unfunded commitments of \$565 million to Infrastructure, up from \$506 million a year earlier.

In 2017, we increased commitments to Infrastructure by approximately \$350 million and invested in a new strategy focusing on late-stage development/greenfield projects and platform opportunities consistent with our infrastructure strategy.

Competition for high-quality infrastructure assets remains strong and prices are high. On our behalf, IMCO takes a consistent and disciplined approach in pursuing investment opportunities in this asset class and will only make investments that provide an appropriate risk/return payoff. It continues to focus on building relationships with investment partners and fund managers in order to increase access to a strong pipeline of co-investments in this competitive market. As a result, Infrastructure is slightly below its 2017 phase-in allocation (5.4% versus 6.0%), but is expected to be at or very near the target allocation by mid-2018.

The formation of IMCO in 2017 was instrumental in OPB's ability to position itself within Brookfield's (BIF III) group of investors with priority access to co-investments, and we anticipate working with Brookfield in the coming years to identify suitable co-investment opportunities.

## Private Equity

Private equity consists of equity securities not publicly traded on a stock exchange. Private equity tends to be illiquid, and returns are generated principally from capital appreciation over the mid- to long term. Because of the added liquidity risk, returns for private equity are typically higher than those expected from public equities. OPB's long-term investing horizon positions us well to earn value-added returns from this increasingly important asset class.

Our Private Equity portfolio returned 17.6% in 2017, compared to 21.8% in 2016, on a hedged basis. The portfolio had a year-end value of \$1.45 billion, compared to \$946.7 million at the end of 2016.

Strong returns from funds and co-investments continued in 2017, with \$143 million in income distributions during the year. Since inception in 2012, the Private Equity portfolio has generated a net return of 20%.

The Private Equity portfolio is ahead of its phase-in allocation, at approximately 5.5% versus the 2017 4.0% target allocation at year-end.

It was a busy year for co-investments, with approximately \$384 million deployed in five new co-investments. Our largest co-investment was in Corsair, a leader in the PC gaming hardware market, where OPB partnered with EagleTree, a mid-market buyout fund with whom we have a long-standing relationship.

2017 was also a strong year for private equity realizations, with total proceeds of \$136 million from the sale of a specialty packaging company, which generated a 49.8% net internal rate of return after being held for less than three years.

## Annual Returns and Benchmarks

OPB's total annual rate of return is measured against a composite index, which takes the weighted average of the benchmark returns for each of the different asset categories (using the target phase-in allocation of the SAA to determine the weightings). The Plan expects its total return, net of fees, to meet or exceed the composite benchmark. The Plan's 10.8% rate of return for 2017 was 0.4% above the composite benchmark return of 10.4%.

## Annual Rate of Investment Return

Asset Categories	Benchmark	2017		2016	
		Actual	Benchmark	Actual	Benchmark
Cash and Equivalents	FTSE TMX 91-Day T-Bill	0.8%	0.6%	2.6%	0.5%
Fixed Income	Custom Fixed Income Index	4.1%	3.5%	4.2%	1.4%
Canadian Equities	S&P/TSX Composite Index	9.3%	9.1%	25.6%	21.1%
Foreign Developed Equities	MSCI World (C\$)	18.7%	15.0%	2.7%	4.4%
Emerging Equities	MSCI Emerging Equity Index (C\$)	25.0%	28.3%	6.1%	7.7%
Real Estate	Custom Real Estate Benchmark	2.4%	6.7%	9.5%	5.7%
Infrastructure	Custom Infrastructure Benchmark	4.5%	5.5%	9.8%	6.9%
Private Equity	Custom Private Equity Benchmark	17.6%	17.6%	21.8%	21.7%
Total Investments	Composite Index	10.8%	10.4%	8.1%	6.6%

Note that, effective January 1, 2017, the Emerging Equities benchmark changed to MSCI Emerging Market Net of Dividend Withholding Tax. Prior to this, the benchmark was MSCI Emerging Market Gross of Dividend Withholding Tax.

Note that, effective March 1, 2017, the Real Return Bond component of the Custom Fixed Income Index changed from the FTSE/TMX RRB Index to the FTSE/TMX RRB Federal Non-Agency Index.

## Responsible Investing

We believe that Responsible Investing (RI) – effectively managing environmental, social and governance (ESG) risks – supports our ability to pay pensions over the long term. In general, our view is that supporting ESG initiatives will improve corporate disclosure practices and enable long-term investors, such as OPB, to better evaluate investment return-risk/trade-offs.

OPB has fiduciary responsibilities to act in the best interests of Plan beneficiaries and for the long-term sustainability of the Plan. Therefore, it is important that factors such as ESG are incorporated in a manner that supports, and does not take precedence over, OPB's overriding fiduciary responsibilities.

The Ontario *Pension Benefits Act* requires OPB and other pension plan administrators to establish a Statement of Investment Policies and Procedures (SIP&P) that contains information about whether ESG factors are incorporated into the Plan's investment policies and procedures and, if so, how those factors are incorporated. Our SIP&P describes how ESG factors are incorporated by IMCO, which began to manage our assets in July 2017. IMCO will report annually to OPB on the consideration of ESG factors in accordance with OPB's investment management policies and procedures as well as proxy voting results. We will work closely with IMCO to further define and advance our commitment to Responsible Investing over time.

Voting proxies at shareholder meetings enables investors to convey their views to the board of directors and management of companies. In 2016, OPB brought proxy voting in-house to increase our influence with the companies we invest in, and this function has moved over to IMCO.

In 2017, votes were cast at more than 1,000 public company meetings. We voted against the management recommendation for 9% of agenda items at shareholder meetings. This includes election of directors and advisory votes on executive compensation, among other items. We supported 21 shareholder proposals seeking enhanced disclosure and/or action on climate change risks and opportunities at companies in our portfolio.

## Responsible Investing

What We Did	Why It Matters
Voted our proxies based on the ISS Sustainability Proxy Voting Guidelines	ISS updates its proxy voting guidelines each year to take into account emerging issues and trends on ESG topics.
Supported collaborative initiatives, such as the Canadian Coalition for Good Governance; the annual CDP climate change information request sent to over 5,000 companies globally; and a global investor letter urging the G7 and G20 to stand by the Paris Agreement on climate change	Collaborative engagement leverages internal resources and encourages improved disclosure practices and performance of ESG factors across the investment portfolio.
Responded to the Principles for Responsible Investment (PRI) annual questionnaire (As of March 2018, OPB ceased to be a PRI signatory due to the transition of our investment management function to IMCO. However, IMCO will become a signatory.)	PRI is an international network of investors working to put Responsible Investing into practice and help build a more sustainable global financial system.
Began working with partner Cadillac Fairview to build a new 32-storey Toronto office tower to LEED Platinum specifications	LEED certification encourages the construction of energy- and resource-efficient buildings that are healthy to live and work in.

## Investment Risk Management

At OPB, investment risk management has been integrated into the investment decision-making process and day-to-day activities.

OPB developed a risk dashboard that provides management with the ability to attribute, monitor and manage Total Risk, Active Risk and Surplus at Risk. The model is able to report at the SAA, asset class and mandate levels and was designed so that investment risk levels can be managed within the parameters established by OPB's Investment Risk Policy. The Risk Management Dashboard also enables management to integrate Surplus at Risk analysis into the investment decision process to optimize incremental returns and mitigate the risk that returns are insufficient to meet OPB's liabilities. With the transition of our investment management function to IMCO, OPB's Risk Management Dashboard and its Investment Risk Policy were transferred to IMCO, and IMCO will continue to manage and report to OPB on the foregoing risks as they pertain to OPB's investment portfolio.

IMCO further developed its investment risk capabilities in 2017 by incorporating risk contribution analysis during periods of market stress to better assess the Plan's ability to meet its obligations should a downside event occur. It began evaluating a scalable risk analytics solution to introduce risk factor analysis into the investment decision-making framework and will continue to enhance its risk measurement and management practices in 2018.

## **Risk Oversight**

IMCO's activities with respect to OPB's investments are defined in a carefully negotiated legislative, regulatory and contractual framework that clearly lays out IMCO's duties, responsibilities and obligations and OPB's governance and investment-related rights. Under this framework, OPB sets the investment strategy and IMCO implements it.

The Investment Management Agreement (IMA) between OPB and IMCO states that IMCO will manage investment and enterprise risk in accordance with the *Pension Benefits Act's* standard of care and best practices for Canadian public sector managers. IMCO will establish an investment risk management function, and has retained a Chief Risk Officer, joining in early 2018, who will report to IMCO's CEO.

In July 2017, we appointed Ken Lusk to the newly created role of Head of Investments and, in November 2017, to the role of OPB's Chief Investment Officer. As CIO, he will oversee OPB's fiduciary responsibilities and ensure that IMCO is managing our assets and related investment risks in accordance with our investment strategies and policies.

OPB will monitor, assess and report on IMCO's performance to the OPB Board of Directors, and ongoing risk assessment will play an important part in that monitoring function.

## **Investment Outlook**

Global economic health is the most robust it has been in the post-Global Financial Crisis period. The synchronous nature of this growth has been unparalleled in recent decades. Commencing in the spring of 2016, powerful economic growth has been the engine of corporate earnings gains, and the basis for the long-drawn-out advance in risk assets (equities and credit in particular).

We believe the acceleration phase of this global economic growth will peak in the first half of 2018. This is not viewed as bad for global economic health generally, but a deceleration in growth could lead to a stalling of corporate earnings in 2018, which could increase the risk of a meaningful sell-off in risk assets, especially considering high asset valuations and changing global liquidity conditions, which remain favourable but are tightening at the margin.

More recently, the Bank of England joined the U.S. Federal Reserve (Fed), the Bank of China, and the Bank of Canada by tightening its policy rate for the first time in 10 years. Our internal tracking of global liquidity remains constructive; however, the tide of liquidity infusion by the central banks is receding. Net contributions to global liquidity remain positive overall, a function of China's additions to foreign exchange reserves and the ongoing Quantitative Easing programs of the European Central Bank and the Bank of Japan. By way of contrast, the Fed has commenced Quantitative Tightening (effectively reducing liquidity available to markets by reducing the central banks' asset holdings that were built up in response to the Global Financial Crisis).

At present, it is difficult to see the basis for a global recession in the near term. However, the policy risk of "too loose for too long" is a rising threat indicated by signals such as economies reaching full output levels, and employment approaching, or near, equilibrium levels in many countries. As inflation rates approach policy objectives, there is the risk that central banks will implement tightening at a level greater than economic fundamentals can withstand.

## Service Excellence

At OPB, we believe that delivering on the pension promise goes beyond simply paying pensions and processing transactions. It means offering the support, services and tools our roughly 87,000 members need to make sound pension decisions in the context of their broader personal goals and financial circumstances. We recognize that each member has unique needs and retirement goals. Our goal is to ensure that our members have the information they need to make sound pension decisions. Our approach looks to add value to our members' service experience, and reflects our belief in creating a model that, in addition to providing sustainable retirement security, is designed for service excellence.

OPB led the industry by introducing Advisory Services for our members in 2015, and, to our knowledge, we remain the only defined benefit pension plan in the world that offers this service.

We continued to see excellent results in our client surveys in 2017 – despite record demand for services – with the launch of a new Retired Member Statement (RMS) and the introduction of optional insurance benefits coverage provided by the Government of Ontario. We experienced a 17% increase in service transactions over 2016 and an 11% jump in call volumes, and processed close to 6,500 optional insurance upgrade applications.

Even with this increased workload, 87% of OPB clients surveyed were satisfied or extremely satisfied with the service they received. This speaks to our organization's agility in responding to changing regulatory, industry and Plan circumstances.

Externally, OPB earned a score of 90/100 from CEM, a leading pension benchmarking firm. This placed us second among our Canadian peer plans for excellence in service and pension administration, and we rose to fourth place globally (up from fifth place previously).

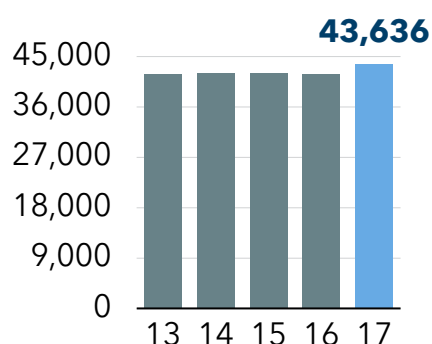
## Client Services

At OPB, we take great pride in providing world-class service to our clients, tailored to align with their unique financial and retirement circumstances. In 2017, we continued to raise the service bar by:

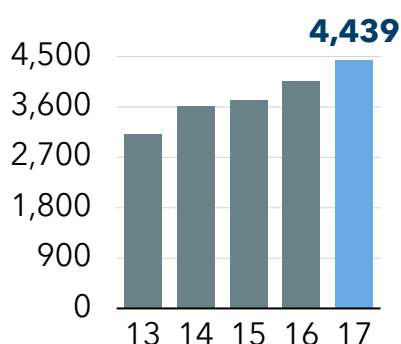
- creating a comprehensive annual Retired Member Statement that will provide our retired members with an overview of their pension entitlement along with a custom newsletter for retirees;
- helping retired members understand their options with the introduction of optional insurance upgrades and registering close to 6,500 retired members for these benefits;
- supporting 1,500 members at OLG in navigating the transition to their new employer;
- introducing advisory articles for our members; and
- launching new advisory workshops that incorporate financial literacy content and exercises to help early-, mid-, and late-career members improve their understanding of how their pension works with and impacts their broader financial plan.

What We Did	Why It Matters
Helped 2,800 members through our Advisory Services program; almost half of these interactions were about retirement planning	We help educate members on how pension benefits fit into their larger financial picture, so they can make the best financial decisions (about their pension and retirement) for themselves and their families.
Managed a 183% increase in service demand from retired members, with the launch of the new RMS and optional insurance upgrades	We are agile in responding to changing circumstances and surging work volumes without a significant increase in operating costs.
Answered 99% of client care calls within 30 seconds; managed more than 54,000 calls, an 11% increase over 2016	We are committed to maintaining world-class service to members.
Saw our strongest newsletter engagement yet, with popular advisory articles and information on retirement preparation, estate planning and relationship changes	We support improved retirement and financial literacy, so our members are better equipped to make important financial decisions.
Ranked second among our Canadian peer plans and fourth in the world by CEM Benchmarking for excellence in service and pension administration	We are recognized as a world-class service leader.

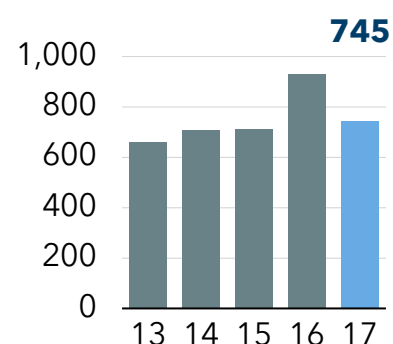
## Number of Active Members



## Enrolments



## Buybacks Completed



In response to emerging technology and evolving client needs and preferences, we continue to enhance our digital services and become more mobile-responsive and interactive across our web channels.

- E-services usage increased by 8%.
- Members took advantage of our online retirement planning tool 16,034 times in e-services.

## Advisory Services

In our third year, our team of in-house Certified Financial Planners® helped more than 2,800 clients to understand how their pension decisions fit into their broader financial and life circumstances. Client Service Advisors are designated Certified Financial Planners® (CFP®) or are accredited Registered Retirement Consultants® (RRC®) in the process of completing their CFP® designation.

Client feedback from those who have used our Advisory Services and advisory tools has been overwhelmingly positive:

- 91% report they are satisfied to extremely satisfied with the service;
- 84% indicate their advisor provided valuable insights they hadn't considered; and
- 86% indicate they received objective guidance to protect their best interest.

In 2017, we expanded our range of value-added, high-touch Advisory Services to members on LTIP and Case Management Masters, which means more members benefit from access to personalized advice about how pension benefits fit into their larger financial picture.



## Pension Modernization

In 2017, we began the next stage of our evolution by officially launching our multi-year pension modernization initiative. This is a five- to seven-year program that will enhance our clients' experience – individually and across the board – by updating and re-engineering our business processes, systems and tools to provide the services they want and need. As a service provider, we are committed to meeting the evolving needs and expectations of our clients and stakeholders.

To help members make sound pension decisions, we need to deliver the personalized advisory services and tools they need to help them navigate those decisions. We also need to ensure our technology infrastructure and systems remain current and secure.

Pension modernization will focus on implementing new systems and tools that will help us support our members in their pension and overall retirement planning. Increasingly, members expect to be able to exchange information, complete transactions and receive their communications online. As we modernize our system, we will be able to add additional transactions and advisory tools online.

Our modernization initiative is a significant undertaking that requires careful planning and due diligence – we have a duty to our clients to get it right. In 2017, we dedicated significant effort to understanding how best to set up the program and engage our clients. We met with Canadian peers to learn from their experiences with pension modernization and researched solutions and approaches currently available.

In 2018, we will continue this planning and conduct further research into tools that support our Advisory Services. We intend to expand our research to explore solutions used in the financial, insurance and technology sectors, and use our findings to inform our request for proposals (RFP) process. We expect to confirm the timing of the RFP process before the end of 2018.

## Outstanding Stakeholder Relations

OPB works closely with the Government of Ontario to ensure that its decision-makers, including Ministers, Deputy Ministers and other senior civil servants, fully understand the issues that impact the Plan. We also conduct regular and ongoing discussions with bargaining agent groups – keeping them informed about the health of the Plan and emerging trends and issues, and ensuring that they understand the value of the Plan.

We know that protecting the long-term sustainability of the Plan requires that we maintain strong relationships with the Plan Sponsor, our stakeholders and our members, and OPB remains committed to doing so.

In 2017, we:

- delivered 100 presentations, workshops and webinars to more than 2,100 Plan members across Ontario, providing them with education and information about the value of their pension, Plan provisions, and key decision points;
- presented at the Annual General Meetings (AGMs) of bargaining agents; and
- held 20 presentations and forums for employers.

We had almost 212,000 visits to OPB's public website in 2017, up 17% over the previous year. Mobile traffic throughout 2017 was steady, with approximately one in five visitors accessing opb.ca and our e-services websites via smartphone or tablet.

Use of our employer portal continues to grow after its successful launch in 2015. By the end of 2017, more than 12,500 transactions had been submitted by employers through the employer portal.

## Financial Management

OPB is committed to managing costs and offering value-added service at a cost-effective price. As an agency of the Province of Ontario, we operate in an environment of cost constraint and we judiciously manage the Plan's expenses. We've expanded our range of member services in recent years, and incurred expenses related to the establishment of IMCO, yet our overall expense ratio remains among the lowest in the industry.

We accomplish this by:

- focusing on priorities and working smart;
- automating and redeploying resources where it makes sense to do so;
- enhancing our abilities, through staffing and training, to perform more value-added services in-house rather than pay premiums in the open markets; and
- increasing our digital offerings.

Our total operating expenses for 2017 decreased by 5.6% from 2016. This decrease is primarily related to the transfer of staff from OPB to IMCO during 2017, and was moderated by some increased spending incurred in the setup of IMCO.

Our overall combined (investments and pension administration) expense ratio for 2017 was 0.52% (or 52 cents per \$100 of average net assets available for benefits). This was up slightly from 50 basis points in 2016.

## Managing Costs

At OPB, we are committed to disciplined cost management. Our goal is to ensure we spend strategically where it is in the best interests of our members and stakeholders. To properly illustrate the Plan's status and our ability to meet the pension promise, we need to compare our returns against all Plan expenses, from investment costs to pension administration. This is because the funds available to pay pensions are determined by our investment returns after all expenses have been deducted. Due to the transition of our investment management operations during 2017, these costs are now incurred in two organizations: in the investment management fees and operations of IMCO and in the operating expenses of OPB.

**Investment Fees** – OPB (and, later in 2017, IMCO on OPB's behalf) incurs investment management and custodial fees. In addition, a share of the cost of IMCO's operations is charged to OPB on a cost-recovery basis. In 2017, these two costs were 0.33% (or 33 cents per \$100 of average net assets available for benefits). These fees are deducted from total investment income. The investment fees disclosed in Note 8 to the financial statements include transaction costs. These costs are already included in our gross returns and, accordingly, are not deducted for purposes of calculating the basis point ratios of investment fees.

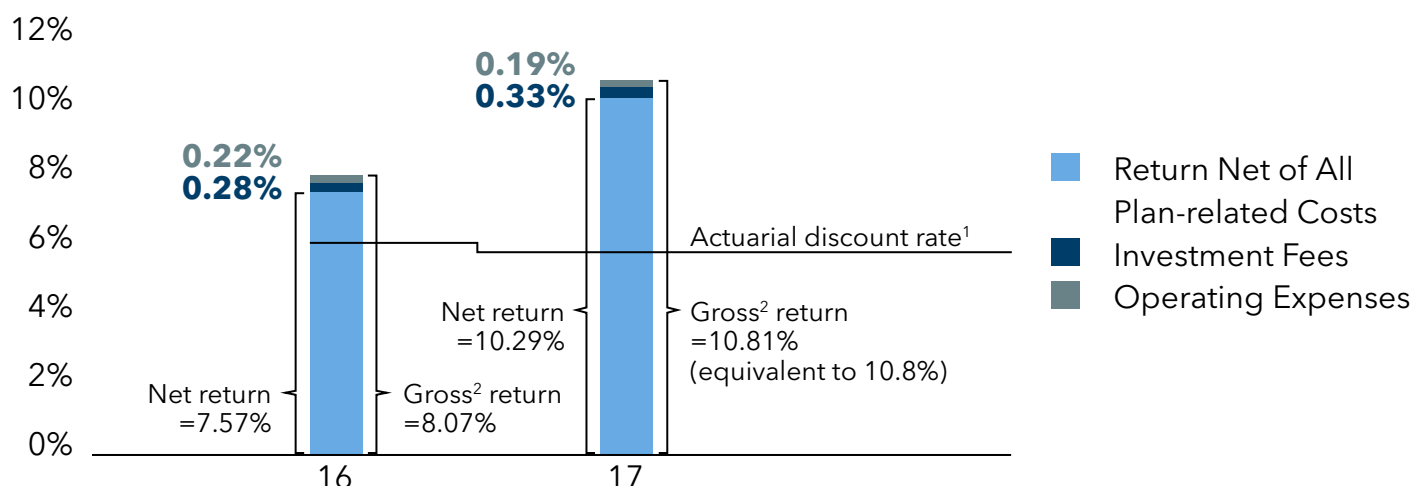
**Operating Expenses** – OPB has direct operating expenses, which are the internal costs associated with managing the pension plan, the pension administration and the oversight activities over IMCO. These costs represent 0.19% of the average net assets available for benefits for 2017.

The above two costs consolidate to a 0.52% expense ratio. We will continue to manage our costs at industry lows through strong budget management, keeping staffing costs in check compared to industry norms and focusing upon competitive procurements for essential services and technologies.

## Returns

OPB's one-year return for 2017 is 10.8%. This is a return without netting out investment fees or operating expenses. The return net of all expenses is 10.3%. The comparison of the Plan's net return against the actuarial discount rate used to value the Plan's liabilities helps us answer the question "are we generating sufficient returns to meet the Plan's obligations net of all expenses incurred in managing the Plan?" The graph on the next page shows how the Plan's net returns for 2016 and 2017 compared to the actuarial discount rate we use to value the Plan's liabilities. In other words, it shows how our net returns in 2016 and 2017 compare to, and exceed, the long-term rate of return we need to meet our pension obligations based on our valuation's assumptions.

## How the Plan's Net Return Compares to Its Discount Rate



## Contributions

Contribution rates for the PSPP are set by the *Public Service Pension Act (PSP Act)*, 1990. They remain among the lowest rates for major pension plans in Canada.

In 2017, members contributed 6.4% of their salary below the Year's Maximum Pensionable Earnings (YMPE) and 9.5% of their salary above the YMPE (\$55,300 for 2017). Employers contribute a matching amount.

Ontario Provincial Police (OPP) officers are required to contribute additional amounts to fund the 50/30 unreduced early retirement provision and the enhanced earnings component of the benefit formula (average annual earnings based on highest 36 consecutive months for officers and highest 48 consecutive months for civilians). The contribution rates for OPP officers are 9.2% of salary up to the YMPE and 12.3% of salary above the YMPE. For civilians, the contribution rates are 6.775% of salary up to the YMPE and 9.875% of salary above the YMPE. These higher contribution rates are matched by the employer.

During 2017, contributions for all OPB members and employers totalled \$804 million, up from \$765 million in 2016. This increase is attributable to modest salary changes and an increase to the sponsor's additional current service contributions.

We noted in the 2016 Annual Report that the Plan would require a contribution rate increase to respond to changes in Plan member longevity and expectations for lower investment returns in the future. To address these changes while maintaining benefit levels, the Government of Ontario accepted our recommendation in 2017 and announced an increase in contribution rates of 1% of pensionable salary for PSPP members and employers. The increase will be phased in over two years. Phase 1 of this increase took effect in April 2018.

<sup>1</sup> The actuarial discount rate assumption during 2016 was 5.95%. It was reduced to 5.7% for 2017. At the end of 2017, it was reduced to 5.6%.

<sup>2</sup> The gross return shown above is net of investment manager fees on private assets that are deducted at source. Investment fees deducted from the gross return in the graph above include fees explicitly paid to external managers.

For OPP officers in the PSPP, the increase will be partially offset by a reduction in the additional contributions for 50/30 starting in 2019. In April 2019, OPP officers will have their additional 2% contributions reduced to 1.5% to reflect the fact that the cost of the 50/30 benefit has gone down because officers are starting later and, therefore, fewer of them are able to take full advantage of the 50/30 provision. This means OPP officers will see an overall increase in contribution rates of only 0.50% of pensionable salary after the increase has been fully implemented.

Although contribution rates will rise modestly, they remain among the lowest of peer pension plans, and the PSPP continues to offer excellent value for our members and employers. The contribution rate increase will help to ensure that members' pension benefits remain affordable and sustainable over the long term.

## Pensions Paid

OPB made pension payments totalling \$1.2 billion in 2017, up from \$1.1 billion in 2016. Part of the increase is attributable to a 1.3% inflation protection adjustment (Escalation Factor) that was applied to pensions on January 1, 2017. The remainder is attributable to increases in the average pensions and the number of new retired members.

## Executive Compensation

OPB recognizes compensation as a key component in achieving its long-term strategies and organizational effectiveness. As an agency of the Government of Ontario, OPB is committed to providing excellent service and value for money to our clients and stakeholders while operating in a public sector fiscal environment.

Executive compensation is carefully overseen and approved by the Board's Human Resources Committee and follows the Province's direction on broader public sector wages. More specifically, as a designated employer, OPB is required to abide by the provisions of the *Broader Public Sector Executive Compensation Act, 2014* to ensure transparency relative to compensation decisions.

Executives receive an annual base salary that is within the salary range assigned for the corresponding classification. OPB conducts annual performance and salary reviews for executives, and the rate of salary adjustment for performance-based incentives is in line with appropriate market-based comparators, including other public sector pension plan administrators, third-party administration firms, and investment management organizations. OPB regularly participates in third-party external compensation surveys and typically trends below market average.

In 2014, a long-term incentive plan (LTIP) was introduced for key investment personnel. It used a mix of performance metrics that included total fund returns against benchmark, client service and PSPP funded status, and measured these over a four-year timeline. With the creation of IMCO and transfer of investment executives to that organization in July 2017, the LTIP has subsequently been discontinued at OPB.

The table below sets out the compensation for the CEO and the four senior executives who report directly to the CEO. The figures set out in the table include the components of compensation and the total compensation (excluding only retirement benefits) paid to the listed executives. In July 2017, three of OPB's senior executives transferred to IMCO, and hence have not been listed in the table below.

For the year ended December 31	Year	Base Salary <sup>1</sup>	Short-Term Incentive <sup>2</sup>	Taxable Benefits & Allowances <sup>3</sup>	Total
Mark Fuller, President & CEO	2017	\$ 487,135	\$ 276,819	\$ 682	\$ 764,636
	2016	\$ 473,000	\$ 258,077	\$ 699	\$ 731,776
Valerie Adamo, Chief Technology Officer	2017	\$ 323,069	\$ 152,983	\$ 497	\$ 476,549
	2016	\$ 316,758	\$ 139,057	\$ 508	\$ 456,323
Paul Edmonds, Chief Legal & Governance Officer	2017	\$ 316,685	\$ 126,168	\$ 473	\$ 443,326
	2016	\$ 316,758	\$ 129,125	\$ 513	\$ 446,396
Ken Lusk, <sup>4</sup> Chief Investment Officer	2017	\$ 42,393	n/a	n/a	\$ 42,393
Peter Shena, Executive Vice-President & Chief Pension Officer	2017	\$ 323,069	\$ 147,917	\$ 497	\$ 471,483
	2016	\$ 316,758	\$ 139,057	\$ 513	\$ 456,328

<sup>1</sup> Base salary is based upon amounts paid during the year.

<sup>2</sup> Short-term incentive earned is paid in March of the following year.

<sup>3</sup> Includes life insurance. There are no car allowances or other perquisites.

<sup>4</sup> Mr. Lusk was appointed to CIO on November 21, 2017. Amounts shown reflect compensation from that date.

The above-noted individuals are entitled to pension benefits on their base salary from both the PSPP and the Public Service Supplementary Benefits Account (the PSSBA). Having the executives as members of the same pension plans as the clients that they serve builds strong alignment.

The listed executives (except for the newly appointed Chief Investment Officer) participate in a Supplementary Executive Retirement Plan (SERP) that provides retirement benefits equal to 2% of the best five-year average annual award of short-term incentive plan (STIP) compensation for a year of service with OPB. There is no service accrued in the SERP for years other than during their employment time with OPB. The maximum inflation protection adjustment to the SERP benefit in any year is limited to 2.5%. All the other provisions of the SERP mirror the provisions of the PSPP. The SERP is an unregistered arrangement that is non-contributory and not funded.

In accordance with Government of Ontario directives, OPB executives do not receive any perquisites, such as automobile entitlements or allowances, club memberships, personal use equipment or personal services.

# Sound Risk Management

OPB's risk framework is set out in our Corporate Governance, Risk and Compliance Policy, which establishes core functions and responsibilities for managing risk.

Our approach to risk management is to assess strategic and operational risks and develop mitigations that limit downside risk exposures. In a rapidly changing environment characterized by technology disruption, geopolitical instability, cyber-threats and changing societal demands, risk management will play an increasingly important role in enabling OPB to engage in innovative strategies designed to keep our Plan strong while maximizing value for all our stakeholders.

## Enterprise Risk Management

The goal of Enterprise Risk Management (ERM) is to enable OPB to make good decisions in the face of uncertainty, evolving external information and competing demands. ERM delivers value by providing a consistent framework that helps address the strategic uncertainty we face in the pursuit of building value for our stakeholders.

While OPB tries to anticipate all material risks that it faces, unforeseen and unprecedented events will occur. The ERM program provides a framework to confidently evaluate and manage uncertainty that will naturally arise from our responsibility to administer a major defined benefit pension plan.

Managing risk is about making strategic and tactical decisions to control the risks that should be controlled and to exploit those opportunities that can be exploited. OPB values an enterprise-wide approach that involves all areas of our organization and all levels of staff.

In the near term, planned risk management initiatives will focus on continuous improvement of our governance and reporting processes. As we embark on a large technology transformation, changes in how we manage risk become critical. We fully anticipate that a transformational program such as pension modernization will introduce new challenges and opportunities. By planning early and refining how we manage risk, we can confidently advance opportunities and protect value at the enterprise level.

We continue to advance the maturity of our ERM practices.



## Operational Risk Management

We use operational risk management (ORM) to provide a practical, business objective-based approach to identifying, assessing, mitigating and continuously reporting on risk inherent in OPB's day-to-day operations. ORM focuses on how we apply management controls in areas such as compliance and conduct, business continuity, project delivery, service quality and key process delivery.

### Systems Risk

We regularly review our IT systems for operational performance and scalability to meet future requirements. We also work very closely with our managed service providers, IT advisors and independent research firms. Our risks are controlled through:

- management allocation of internal resources to monitor and manage individual technology life cycles;
- an increased focus on infrastructure and supplier service management governance; and
- development of relevant contingency plans for core applications and systems in the event that an incident occurs.

The next few years are critical as we plan for new systems and models of IT service delivery.

### Legal Risk

Occasionally, OPB is involved in legal actions arising from the ordinary course of business. All significant legal matters are reported to the Audit Committee of the Board of Directors.

### Internal Audit

We routinely conduct internal audits of key business functions and operational processes. The internal audit function reports to the Board of Directors through the Audit Committee. The annual internal audit plan is approved by the Audit Committee. In 2017, we reviewed and updated our inventory of key business processes, as well as the risks within each identified business process, and prioritized areas for review over the next several years.

### Privacy, Security and Compliance

Like most public institutions and financial services organizations, OPB faces a number of risks related to privacy, security and compliance. We continue to invest in and monitor privacy controls and conduct an enterprise-wide compliance program using a combination of policy training and ongoing review of reputational reporting and attestations. On the security front, we continue to enhance the security of our systems, people and data. We have implemented changes in our network security protocols, ramped up our user training awareness campaigns, selected industry-leading cybersecurity and cyber-threat intelligence suppliers, and implemented a cross-functional cyber-action team. We have in place a comprehensive third-party risk management program.



## Project Delivery

Large projects have the ability to introduce business and financial risks. We monitor projects using governance processes and regular reporting. This helps provide assurance that internal controls and project procedures are being followed. We also conduct project-specific risk assessments throughout a project's life cycle to identify and mitigate potential uncertainties, threats and vulnerabilities.

What We Did	Why It Matters
Acquired the services of a managed security service provider to enhance the prevention and response capabilities of OPB	Takes a more proactive and continuous improvement-based approach to the evolving security threat landscape.
Began preparations to replace our existing IT managed service delivery model with an evolved model; procurement and selection will take place in 2018	Will enable IT services to support current and future digital business processes and outcomes.
Transitioned the investment portion of OPB's Risk Management Dashboard and Investment Risk Policy to IMCO	IMCO will continue to manage and report on risks pertaining to OPB's investment portfolio, and IMCO will build its in-house risk management capabilities.
Continued in-depth planning for the replacement of our aging pension administration systems as part of the multi-year pension modernization program	Will help us to improve client and stakeholder outreach and support our progressive digital strategy, while improving data security.
Implemented a Board of Directors-approved Emerging Risk Trends Scanning Process	Routine surveillance helps us assess the business impact of threats and opportunities presented by changes in the external environment.

## Governance

A strong governance structure keeps OPB strong and is the foundation of our continued success. OPB's governance structure meets – and in many cases exceeds – industry standards and best practices. Our steadfast commitment to industry-leading governance practices ensures full accountability, effective decision making, prudent investment management, fiscal responsibility, legal compliance and smart risk-taking. In short, it ensures that we are – at all times – protecting and promoting the best interests of the Plan and its beneficiaries.

Underpinning our governance framework is a series of documents that define our organizational structure, responsibilities and governance practices. Collectively referred to as the Governance Documents, these documents include a Statement of Governance Principles, a General By-law, Statements of Mandate and Authority, and a Code of Conduct.

Our Governance Documents clearly define roles and responsibilities, draw a clear link between responsibility and accountability, set expectations for ethical behaviour and entrench conflict-of-interest guidelines. They also establish a well-defined system of checks and balances on all power and authority.

### Role of the Board

OPB's Board of Directors holds the ultimate responsibility for the Plan's stewardship. That said, the Board has delegated to management the responsibility for the day-to-day operations required to administer the Plan and manage the Fund, and approved the appointment of IMCO as OPB's sole and exclusive investment manager to manage the investment and reinvestment of the Fund and as OPB's non-exclusive investment advisor.

As part of IMCO's appointment, the Board has delegated to management (primarily to the Chief Investment Officer) the responsibility to monitor, assess and report on IMCO in respect of its investment returns and risk management, and its performance in fulfilling its duties, responsibilities and obligations under the IMA and the ISA, including with respect to financial reporting, audit and internal controls.

The Board has also chosen to delegate specific responsibilities to five committees of the Board: the Governance Committee, Investment Committee, Audit Committee, Pensions Committee and Human Resources Committee.

The Board retains overall responsibility for supervision of OPB's business affairs. For example, it:

- approves OPB's strategic plan, business plan and budget;
- ensures that management has identified and is managing risks;
- conducts performance and compensation reviews for the President & CEO;
- approves the Strategic Asset Allocation, which drives investment management asset mix decisions;
- supervises and approves all audit matters;
- ensures that management is maintaining a culture of integrity;
- conducts an annual review of OPB's Statement of Investment Policies and Procedures;
- approves any recommendations made to the Plan Sponsor regarding Plan amendments and funding; and
- monitors compliance with OPB's governance documents.

In fulfilling their duties, members of the Board are directly accountable to:

- the Plan's beneficiaries (i.e., active and retired members);
- the Financial Services Commission of Ontario (the organization that oversees registered pension plans in Ontario); and
- the Government of Ontario (the Plan Sponsor).

OPB is consistently recognized as an example of good governance within Ontario's public service. The Board is committed to maintaining a best-in-class governance model, and ensuring OPB can continue to drive innovation and build a strong future for all PSPP stakeholders.

## Looking Ahead

In 2018, we will remain focused on providing members with unsurpassed service, protecting the sustainability of the Plan and effectively managing costs. We will work to keep the PSPP strong and to achieve our goal of helping members achieve retirement security with a plan that is designed for service excellence and remain financially healthy.

The pension modernization initiative will be a priority throughout 2018. We are focusing on planning and preparation in the early stages of this program to ensure we identify and begin to address our clients' needs and our business requirements.

Our public website will also receive a relaunch in 2018, offering members access to a mobile-responsive platform and a more engaging experience that helps them find relevant information based on their life stage.

We will continue to enhance the range and quality of our Advisory Services, and elevate our engagement with members and stakeholders so we can better tailor our services to meet their needs.

We continue to work on funding management strategies that will support Plan sustainability. OPB will also continue to support the Government of Ontario's goal of consolidating smaller broader public sector pension plans. By bringing in smaller plans and growing our client base, this strategy also supports the long-term sustainability of the PSPP by increasing our membership and assets. As participants in the PSPP, these smaller plans will also have access to immediate professional investment management through IMCO. We expect to experience higher service demands as we bring on new employers and support the final groups of OLG employees whose employment will transfer to new private sector providers.

We continue to work closely with IMCO in its first full year of operation and will continue to build our oversight function, so OPB can be assured our assets are being prudently managed by the new organization. Work remains to be done in order for IMCO to become fully self-sufficient. For example, OPB is currently providing IMCO with transitional support services including technology infrastructure, payroll, facilities maintenance and financial reporting. It is expected that by mid- to late 2018, these services will be largely self-contained within IMCO. In 2018, we will continue to diligently manage our costs. When preparing our business plan and budget, we review all expenditures with a view to ensuring that any proposed increase in expenses is included only if deemed absolutely necessary. Our 2018 operating expenses are expected to decline due to the outsourcing of OPB investment operations to IMCO.

## Five-Year Review

(in millions of dollars)	2017	2016	2015	2014	2013	
<b>Opening net assets</b>	<b>\$ 24,381</b>	\$ 23,075	\$ 22,231	\$ 20,915	\$ 18,991	
Investment income	2,531	1,751	1,224	1,642	2,244	
Contributions	804	765	731	719	709	
Transfers from other plans	137	85	111	81	91	
	3,472	2,601	2,066	2,442	3,044	
Pension payments	1,175	1,099	1,038	989	959	
Terminations	148	146	137	94	121	
Operating expenses	48	50	47	43	40	
	1,371	1,295	1,222	1,126	1,120	
<b>Closing net assets</b>	<b>26,482</b>	24,381	23,075	22,231	20,915	
						Cumulative Since Inception
Annual rate of return	10.8%	8.1%	6.1%	8.4%	12.5%	8.6%

# Actuaries' Opinion to the Directors of the Ontario Pension Board

Aon Hewitt was retained by the Ontario Pension Board ("OPB") to prepare the following actuarial valuations of the Public Service Pension Plan ("PSPP"):

- An actuarial valuation prepared on a funding basis as at December 31, 2016, as described in Note 6 of these financial statements, prepared in accordance with the *Public Service Pension Act* and applicable pension legislation.
- The actuarial valuation prepared on a funding basis as at December 31, 2016 was then rolled forward to December 31, 2017 to determine the pension obligations as at December 31, 2017 for financial statement purposes.

The actuarial valuation of the PSPP prepared on a funding basis as at December 31, 2016 was based on membership data provided by OPB as at December 31, 2016.

We have prepared a valuation of the liabilities as of December 31, 2016 on the basis of the accounting methodology required by the Chartered Professional Accountants of Canada Handbook, Section 4600, as disclosed in Note 6, and extrapolated the liabilities to December 31, 2017. The valuation as at December 31, 2017 was based on assumptions that reflect OPB's best estimates of future events such as future rates of inflation, future retirement rates and future rates of return on the pension fund. The amounts are set out in the statement of changes in pension obligations.

We hereby certify that, in our opinion:

- The data provided to us by OPB as of December 31, 2016 are sufficient and reliable;
- The actuarial assumptions used are appropriate for the purposes of each valuation; emerging experience differing from the assumptions will result in gains or losses which will be revealed in future valuations; and
- The methods used are appropriate for purposes of each valuation and are consistent with the applicable regulatory requirements.

Our valuations have been prepared, and our opinions given, in accordance with accepted actuarial practice.

AON HEWITT



**Allan H. Shapira**

Fellow of the Canadian Institute of Actuaries



**Andrew Hamilton**

Fellow of the Canadian Institute of Actuaries

March 2, 2018

# Management's Responsibility for Financial Reporting

The financial statements of the Ontario Pension Board ("OPB") have been prepared by management, which is responsible for the integrity and fairness of the data presented. The accounting policies followed in the preparation of these financial statements are in accordance with Canadian accounting standards for pension plans. Of necessity, many amounts in the financial statements must be based on the best estimates and judgment of management with appropriate consideration as to materiality. Financial information presented throughout this annual report is consistent with the financial statements.

Systems of internal control and supporting procedures are maintained to provide assurance that transactions are authorized, assets are safeguarded against unauthorized use or disposition, and proper records are maintained. The system includes careful hiring and training of staff, the establishment of an organizational structure that provides for a well-defined division of responsibilities and the communication of policies and guidelines of business conduct throughout OPB.

The Board of Directors (the "Board") is ultimately responsible for the financial statements of OPB. OPB's Audit Committee assists in this responsibility by reviewing the financial statements in detail with management and the external auditors before such statements are recommended to the Board for approval. The Audit Committee meets regularly with management and the external auditors to review the scope and timing of audits, to review their findings and suggestions for improvements in internal control, and to satisfy themselves that their responsibilities and those of management have been properly discharged.



**Mark J. Fuller**  
President & CEO

March 2, 2018



**Armand de Kemp**  
Vice President, Finance

# Independent Auditors' Report to the Directors of the Ontario Pension Board

We have audited the accompanying financial statements of the Ontario Pension Board, which comprise the statement of financial position as at December 31, 2017, and the statements of changes in net assets available for benefits and changes in pension obligations for the year then ended, and a summary of significant accounting policies and other explanatory information.

## **Management's Responsibility for the Financial Statements**

Management is responsible for the preparation and fair presentation of these 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.

## **Auditors' Responsibility**

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditors consider internal control relevant to the entity's preparation and fair presentation of the financial statements 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 entity's internal control.



An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

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

## Opinion

In our opinion, the financial statements present fairly, in all material respects, the financial position of the Ontario Pension Board as at December 31, 2017, and the changes in its net assets available for benefits and changes in its pension obligations for the year then ended in accordance with Canadian accounting standards for pension plans.

The signature of Ernst & Young LLP is written in a black, cursive script.

Toronto, Canada  
March 2, 2018

Chartered Professional Accountants  
Licensed Public Accountants

# Statement of Financial Position

As at December 31  
(in thousands of dollars)

	2017	2016
<b>Assets</b>		
Investments (Note 4)	\$ 26,398,104	\$ 24,309,550
Investment-related assets (Note 4)	80,629	84,164
Contributions receivable		
Members	23,378	23,581
Employers	57,124	51,810
Capital assets (Note 5)	1,111	1,564
<b>Total assets</b>	<b>26,560,346</b>	<b>24,470,669</b>
<b>Liabilities</b>		
Investment-related liabilities (Note 4)	29,924	44,661
Accounts payable and accrued charges	47,775	43,489
Contributions payable	763	1,434
<b>Total liabilities</b>	<b>78,462</b>	<b>89,584</b>
<b>Net assets available for benefits</b>	<b>26,481,884</b>	<b>24,381,085</b>
Pension obligations (Note 6)	27,219,906	25,176,603
<b>Deficit (Note 7)</b>	<b>\$ (738,022)</b>	<b>\$ (795,518)</b>

See accompanying notes

On behalf of the Board:



**Geri Markvoort**  
Chair



**Lynne Clark**  
Chair, Audit Committee

# Statement of Changes in Net Assets Available for Benefits

For the year ended December 31  
(in thousands of dollars)

	2017	2016
<b>Increase in net assets</b>		
Net investment income (Note 8)	\$ 2,530,601	\$ 1,750,984
Contributions (Note 9)		
Members	348,145	339,393
Employers and sponsor	456,008	426,013
Transfer of service from other plans	137,509	85,441
<b>Increase in net assets</b>	<b>3,472,263</b>	<b>2,601,831</b>
<b>Decrease in net assets</b>		
Retirement pension payments	1,175,117	1,098,805
Termination and other benefits	147,889	145,810
Operating expenses (Note 10)	48,458	51,326
<b>Decrease in net assets</b>	<b>1,371,464</b>	<b>1,295,941</b>
<b>Net increase in net assets for the year</b>	<b>2,100,799</b>	<b>1,305,890</b>
<b>Net assets, at beginning of year</b>	<b>24,381,085</b>	<b>23,075,195</b>
<b>Net assets, at end of year</b>	<b>\$ 26,481,884</b>	<b>\$ 24,381,085</b>

See accompanying notes

# Statement of Changes in Pension Obligations

For the year ended December 31  
(in thousands of dollars)

	2017	2016
<b>Pension obligations, at beginning of year</b>	<b>\$ 25,176,603</b>	<b>\$ 23,509,215</b>
<b>Increase in pension obligations</b>		
Interest on pension obligations	1,421,852	1,384,322
Benefits accrued		
Service accrual	679,342	630,137
Transfer of service from other plans	137,509	85,441
Past service buybacks	42,491	42,402
Changes in actuarial assumptions (Note 6)	778,079	516,624
Experience losses	307,036	253,077
<b>Total increase</b>	<b>3,366,309</b>	<b>2,912,003</b>
<b>Decrease in pension obligations</b>		
Benefits paid	1,323,006	1,244,615
<b>Total decrease</b>	<b>1,323,006</b>	<b>1,244,615</b>
<b>Net increase in pension obligations</b>	<b>2,043,303</b>	<b>1,667,388</b>
<b>Pension obligations, at end of year</b>	<b>\$ 27,219,906</b>	<b>\$ 25,176,603</b>

*See accompanying notes*

# Notes to the Financial Statements

## Note 1: *Public Service Pension Act*

Effective January 1, 1990, the Province of Ontario (the "Province") enacted the *Public Service Pension Act* ("PSPAct"), 1990 to continue the pension plan for the employees of the Province and certain of its agencies. The terms of the Public Service Pension Plan ("PSPP" or the "Plan") are stated in Schedule 1 to the PSPAct. Ontario Pension Board ("OPB") is the administrator of the PSPP.

## Note 2: Description of PSPP

The following is a brief description of the PSPP. For more complete information, reference should be made to the PSPAct.

### a) General

The PSPP is a contributory defined benefit pension plan. Membership is mandatory for persons or classes of persons who satisfy the eligibility requirements provided in the PSPAct. Persons who are entitled, but not required, to join the Plan, including Deputy Ministers and contract employees, may elect to participate. Under the PSPP, both the members and the employers make contributions. The PSPP is registered with the Financial Services Commission of Ontario and the Canada Revenue Agency (Registration Number 0208777) as a registered pension plan not subject to income taxes.

In 2015, the *Investment Management Corporation of Ontario Act* was proclaimed by the Province, creating the Investment Management Corporation of Ontario ("IMCO"), a new investment management entity that will provide the day-to-day investment management and advisory services to participating organizations in Ontario's broader public sector with the ownership of the investment assets remaining with the participants. OPB and Workplace Safety and Insurance Board are IMCO's founding members and IMCO became fully operational in 2017, at which time IMCO assumed responsibility for OPB's day-to-day investment management functions. OPB retains responsibility for setting the Strategic Asset Allocation ("SAA") and for oversight of IMCO.

## **b) Contributions**

The PSPP is integrated with the Canada Pension Plan ("CPP"). Contribution rates are 6.4% of the salary on which contributions are made up to the Year's Maximum Pensionable Earnings ("YMPE") and 9.5% of the salary above the YMPE. Employers contribute matching amounts.

Ontario Provincial Police ("OPP") officers are required to contribute an additional 2% of salary, which is matched by the employer. These additional contributions are used to fund an unreduced early retirement provision available to OPP officers meeting a minimum 50 years of age and 30 years of service. The contribution rates for OPP officers, inclusive of the additional 2% of salary, are 9.2% of the salary on which contributions are made up to the YMPE, and 12.3% of the salary above the YMPE. The contribution rates for OPP civilians are 6.775% of the salary on which contributions are made up to the YMPE, and 9.875% of the salary above the YMPE.

Contributions from members and employers are remitted to OPB. The portion of these contributions that exceeds *Income Tax Act* (Canada) limits is transferred to the Province's Public Service Supplementary Benefits Account ("PSSBA").

## **c) Pensions**

A pension is payable at age 65 based on the number of years of credit in the PSPP multiplied by 2% of the average salary during the best consecutive 60-month period, less an offset for integration with the CPP at age 65. An unreduced pension can be received before age 65 if the member's age and years of credit total 90 ("Factor 90") or when the member reaches age 60 and has 20 or more years of credit.

OPP officers are eligible for a pension payable based on the average salary during the best 36-month period. OPP civilians are eligible for a pension payable based on the average salary during the best 48-month period. In addition, OPP officers are eligible for an unreduced pension after attaining age 50 with 30 years of credit.

## **d) Death Benefits**

Upon the death of a member or pensioner, benefits may be payable to a surviving eligible spouse, eligible children, a designated beneficiary or the member's or retired member's estate.

## **e) Disability Pensions**

Based on meeting all eligibility criteria, a disability pension may be available to members with a minimum of 10 years of credit in the PSPP. The amount of the disability pension is dependent on years of credit and average salary.

## **f) Termination Payments**

Members terminating employment before age 55 who are eligible for a deferred pension may be entitled to transfer the commuted value of the pension to a locked-in registered retirement savings arrangement, to transfer to another pension plan, or to purchase a life annuity.

### **g) Escalation of Benefits**

Current pensions and deferred pension benefits are increased for inflation based on the Consumer Price Index to a maximum of 8% in any one year. Any inflation above 8% in any one year is applied to increase the pension in subsequent years when the adjustment is less than 8%.

## **Note 3: Summary of Significant Accounting Policies**

### **Basis of Presentation**

The financial statements are prepared in accordance with Canadian accounting standards for pension plans and present the position of the PSPP as a separate entity independent of the employers and Plan members.

In accordance with Section 4600, Pension Plans, of the Chartered Professional Accountants of Canada ("CPA Canada") Handbook, Canadian 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 investment portfolio or pension obligations to the extent that those standards do not conflict with the requirements of Section 4600.

All of the entities that OPB has an ownership interest in, regardless of whether OPB can control or exercise significant influence, are considered to be investment assets and are presented on a non-consolidated basis.

### **a) 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 and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts on the statements of changes in net assets available for benefits and changes in pension obligations during the reporting period. Actual results could differ from those estimates. The most significant estimates affecting the financial statements relate to the determination of the pension obligations and the fair values of the Plan's Level 3 investments.

### **b) Investments and Related Liabilities**

Investments are stated at fair value, including accrued income. Fair value is the amount of consideration that would be agreed upon in an arm's length transaction between knowledgeable, willing parties who are under no compulsion to act.

Fair value of financial instruments is determined as follows:

- i. Short-term investments are recorded at cost, which, together with accrued interest or discount earned, approximates fair value.
- ii. Bonds and OPB Finance Trust debentures are valued at quoted market prices, where available. For those debt instruments for which quoted market prices are not available, estimated values are calculated using discounted cash flows based on current market yields and comparable securities, as appropriate.
- iii. Equities are valued at quoted market prices at closing where available. Where quoted market prices are not available, other industry pricing conventions that are used by market participants, such as ask price, are used to estimate the values.
- iv. Pooled fund values for publicly traded securities are supplied by the fund managers based upon fair value quotations.
- v. Derivative financial instruments such as foreign exchange and bond forwards, equity and fixed income futures contracts, credit default swaps and options are recorded at fair value using year-end market prices where available. For those instruments for which market prices are not available, estimated fair values are determined using appropriate valuation models based on industry-recognized methodologies.
- vi. Real estate, consisting primarily of income-producing properties, and participating mortgages are valued at estimated fair value determined by independent appraisals. The cost of properties acquired during the year may be used as an approximation of their fair value where there has been no significant change in fair value. Non-operating real estate investments such as vacant land and real estate assets under construction are carried at their latest independently appraised values, plus any additional development costs.
- vii. Private market and alternative investments, which include infrastructure, private equity, private debt and real estate funds and limited partnerships, are valued using the most recently available financial information provided by the fund managers and general partners and adjusted for any transactions during the interim period up to the reporting date of these financial statements.
- viii. Mortgages and private debt are valued using discounted future cash flows based on year-end market yields and comparable securities, as appropriate.



### **c) Revenue Recognition**

Investment transactions are recorded on trade date. Interest is recognized on an accrual basis when earned. Dividend income is recognized on the ex-dividend date. Distributions from investments in pooled funds and limited partnerships are recognized when declared by the fund managers and general partners. Since real estate is valued on a fair value basis, depreciation and amortization are not recorded. Interest on participating mortgages is accrued at the rate stated in the instrument, and any participation income is accrued based on an estimate of OPB's participation in the increased value of the properties. Transaction costs are expensed as incurred.

Net investment income also includes fair value changes. Fair value changes represent both realized and unrealized gains and losses. Realized gains or losses are recognized when OPB has transferred to the purchaser the significant risks and rewards of ownership of the investment, the purchaser has made a substantial commitment demonstrating its intent to honour its obligation, and the collection of any additional consideration is reasonably assured.

### **d) Pension Obligations**

Pension obligations are determined based on an actuarial valuation prepared by an independent firm of actuaries using an actuarial valuation report prepared for funding purposes. This valuation uses the projected benefit cost method pro-rated on service and management's best estimate of various economic and non-economic assumptions.

### **e) Contributions**

Contributions due to the PSPP at year-end are recorded as receivable. Transfers into the Plan and purchases of prior service are recorded after cash is received and the transfer or purchase transaction is completed.

### **f) Capital Assets**

Capital assets are carried at cost less accumulated depreciation. Depreciation is provided on a straight-line basis over the estimated useful lives of the capital assets as follows:

Computer equipment	3 years
Leasehold improvements	Remaining term of lease
Furniture and fixtures	10 years

### **g) Foreign Currency Translation**

Foreign currency transactions are translated into Canadian dollars at the rates of exchange prevailing at the dates of the transactions. The fair values of investments and cash balances denominated in foreign currencies are translated at the rates in effect at year-end.

## Note 4: Investments

Investments before allocating the effect of derivative contracts consist of the following:

As at December 31  
(in thousands of dollars)

	2017	2016
<b>Cash and short-term investments</b>		
Canada	\$ 694,554	\$ 1,054,549
Foreign	185,345	121,938
	<b>879,899</b>	<b>1,176,487</b>
<b>Bonds and private debt</b>		
Canada	5,739,300	5,738,077
Foreign	538,915	516,459
	<b>6,278,215</b>	<b>6,254,536</b>
<b>Equities</b>		
Canada	2,817,111	2,262,940
Foreign	8,879,873	8,053,841
	<b>11,696,984</b>	<b>10,316,781</b>
<b>Real estate</b> (net of financing, Note 4(h))	<b>4,653,996</b>	<b>4,375,431</b>
<b>Infrastructure</b>	<b>1,434,710</b>	<b>1,238,661</b>
<b>Private equity</b>	<b>1,454,300</b>	<b>947,654</b>
<b>Total investments</b>	<b>26,398,104</b>	<b>24,309,550</b>
<b>Investment-related assets</b>		
Pending trades	13,524	8,547
Derivatives receivable (Note 4(d))	67,105	75,617
<b>Total investment-related assets</b>	<b>80,629</b>	<b>84,164</b>
<b>Investment-related liabilities</b>		
Pending trades	13,988	9,568
Derivatives payable (Note 4(d))	15,936	35,093
<b>Total investment-related liabilities</b>	<b>29,924</b>	<b>44,661</b>
<b>Total net investments</b>	<b>\$ 26,448,809</b>	<b>\$ 24,349,053</b>

## a) Investment Asset Mix

The Plan's actual and target investment asset mix is summarized below as at December 31:

	2017		2016		
	Asset Allocation %		Asset Allocation %		
	Total Plan	Target	Total Plan	Target	SIP&P Range
<b>Asset categories<sup>1</sup></b>					
Fixed income	26.6%	30.0%	25.4%	31.0%	10%–45%
Equity	50.3%	45.0%	51.5%	45.5%	13%–70%
Real assets	23.1%	25.0%	23.1%	23.5%	20%–47%
<b>Total investments</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	

<sup>1</sup> The asset categories in this Asset Mix table are adjusted to reflect the market exposures after allocating derivatives positions to the asset classes to which they relate, offset by an adjustment to cash and equivalents, included in the fixed income category.

The Plan adopted an updated SAA on June 1, 2017, which is summarized in the Statement of Investment Policies and Procedures ("SIP&P") amended and approved on December 13, 2017. There were no significant changes as a result of that amendment. The transition plan is being phased in over a multi-year period. During this period, the asset mix of the Plan's investments may not fall within the SIP&P ranges. However, the ultimate goal of the Plan is to achieve the specified SIP&P ranges of each asset category by the end of the phase-in period.

For purposes of assessing the investment asset mix of the Plan for SIP&P purposes, the investment asset categories reflect the impact of derivative contracts, and investment-related receivables and liabilities. As at December 31, 2017, the asset mix of the Plan's investments was within the acceptable ranges as specified in the SIP&P effective as at the financial statements date.

## b) Financial Instruments Risk

The Plan is subject to financial risks as a result of its investing activities that could impact its cash flows, income, and assets available to meet benefit obligations. These risks include market risk (including interest rate risk, foreign currency risk and other price risk), credit risk and liquidity risk. OPB manages these risks in accordance with its SIP&P, which prescribes the asset mix policy, diversification requirements, performance expectations, limits on individual investments, valuation standards, and guidelines for the management of the Plan.

**Market Risk** – Market risk is the risk that the fair value or future cash flows of an investment will fluctuate because of changes in market factors. Market risk comprises the following:

**(i) Interest Rate Risk** – Interest rate risk refers to the effect on the fair value of the Plan's assets and liabilities due to fluctuations in market interest rates. The value of the Plan's investments is affected by changes in nominal and real interest rates. Pension liabilities are exposed to fluctuations in long-term interest rates and inflation. The Plan has established an asset mix policy that balances interest-rate-sensitive investments with other investments. OPB's fixed income investments have the most significant exposure to interest rate risk. Duration and weighting for the fixed income portfolio are actively managed. Modified duration is a measure of the sensitivity of the price of a fixed income instrument to a change in interest rates. Given the Plan's modified duration of 9 years at December 31, 2017 (2016 – 8 years), a parallel shift in the yield curve of +/-1% would result in an approximate impact of \$620 million (2016 – \$503 million) on net investments with all other variables held constant. In practice, actual results may differ materially from this sensitivity analysis. See the schedule of fixed income maturities for further information.

**(ii) Foreign Currency Risk** – Foreign currency exposure arises from the Plan holding foreign currency denominated investments and entering into contracts that provide exposure to currencies other than the Canadian dollar. Fluctuations in the value of the Canadian dollar against these foreign currencies can have an impact on the fair value of investments. In addition to passively hedging a portion of its foreign currency exposure, the Plan also has an active currency hedging strategy in place through the use of foreign exchange forward contracts, which are accounted for at fair value. The total currency exposure, the impact of foreign exchange forward contracts and the net currency exposure are as follows:

As at December 31, 2017 (in thousands of dollars)	Gross Exposure	Foreign Exchange Contracts Receivable	Foreign Exchange Contracts Payable	Net Exposure
U.S. Dollar	\$ 5,413,600	\$ 43,141	\$ (2,877,822)	\$ 2,578,919
Hong Kong Dollar	775,598	67,839	(87,399)	756,038
Chinese Yuan Renminbi	703,603	4,451	(1,399)	706,655
Indian Rupee	518,317	-	(37)	518,280
South Korean Won	446,252	139	-	446,391
Japanese Yen	167,983	249,130	(61,925)	355,188
New Taiwan Dollar	236,635	-	-	236,635
Other	2,627,698	216,110	(1,917,474)	926,334
Total foreign	10,889,686	580,810	(4,946,056)	6,524,440
Canadian Dollar	15,507,325	4,979,387	(562,343)	19,924,369
	\$ 26,397,011	\$ 5,560,197	\$ (5,508,399)	\$ 26,448,809

As at December 31, 2016 (in thousands of dollars)	Gross Exposure	Foreign Exchange Contracts Receivable	Foreign Exchange Contracts Payable	Net Exposure
U.S. Dollar	\$ 5,164,440	\$ 773,927	\$ (2,771,247)	\$ 3,167,120
Hong Kong Dollar	582,987	86,970	(104,600)	565,357
Euro	684,302	368,450	(1,457,110)	(404,358)
Indian Rupee	401,745	2,355	(58)	404,042
South Korean Won	323,312	107	(242)	323,177
Japanese Yen	197,375	226,462	(115,492)	308,345
Chinese Yuan Renminbi	303,015	-	-	303,015
Other	2,230,402	407,051	(1,079,126)	1,558,327
Total foreign	9,887,578	1,865,322	(5,527,875)	6,225,025
Canadian Dollar	14,428,841	5,424,639	(1,729,452)	18,124,028
	\$ 24,316,419	\$ 7,289,961	\$ (7,257,327)	\$ 24,349,053

The impact of a 5% absolute change in foreign exchange rates compared to the Canadian dollar, holding all other variables constant, is 5% of the net exposure of the impacted currency, as follows:

Change in Net Assets Available for Benefits as of				
	Change in Exchange Rates	<b>December 31, 2017</b> <b>(in thousands of dollars)</b>	December 31, 2016 (in thousands of dollars)	
U.S. Dollar	+/- 5%	<b>+/- \$ 128,946</b>	+/- \$	158,356
Hong Kong Dollar	+/- 5%	<b>+/- 37,802</b>	+/-	28,268
Chinese Yuan Renminbi	+/- 5%	<b>+/- 35,333</b>	+/-	15,151
Indian Rupee	+/- 5%	<b>+/- 25,914</b>	+/-	20,202
South Korean Won	+/- 5%	<b>+/- 22,320</b>	+/-	16,159
Japanese Yen	+/- 5%	<b>+/- 17,759</b>	+/-	15,417
New Taiwan Dollar	+/- 5%	<b>+/- 11,832</b>	+/-	11,608
Other	+/- 5%	<b>+/- 46,317</b>	+/-	46,091
Total		<b>+/- \$ 326,223</b>	+/- \$	311,252

**(iii) Other Price Risk** – Other price risk is the risk that the fair value of an investment will fluctuate because of changes in market prices other than those arising from foreign currency or interest rate risk, whether those changes are caused by factors specific to the individual investment or factors affecting all securities traded in the market. An absolute change in the fair value of OPB's investments that are exposed to other price risk will have a direct proportional impact on the fair value of the investments. OPB's investments in equities have the most significant exposure to other price risk. The impact of a 10% absolute change in the price of an investment, holding all other variables constant, is 10% of the net exposure of the impacted investment, as follows:

		Change in Net Assets as of		
Equities	Stock Market Benchmark	Change in Price Index	December 31, 2017 (in millions of dollars)	December 31, 2016 (in millions of dollars)
Canadian	S&P/TSX Composite Index	+/- 10%	+/- \$ 281	+/- \$ 285
Foreign	MSCI World (C\$)	+/- 10%	+/- 480	+/- 499
Emerging	MSCI Emerging Equity Index (C\$)	+/- 10%	+/- 425	+/- 376
			+/- \$ 1,186	+/- \$ 1,160

The sensitivity analysis is performed using the investment asset mix weights summarized in Note 4(a).

**Credit Risk** – The Plan is exposed to the risk of loss through over-the-counter (“OTC”) derivative transactions, arising from a default or insolvency of a counterparty. This risk is significantly mitigated by the fact that for any counterparties where the Plan transacts in OTC derivatives of greater than one year in duration, an International Swaps and Derivatives Association (“ISDA”) master agreement must be in place accompanied by a Credit Support Annex (“CSA”), which forms part of the ISDA. Under these agreements, collateral is exchanged with counterparties on a daily basis to manage the credit risk arising from any existing OTC derivative contracts with that counterparty. In addition, under the ISDA master agreement for OTC derivatives, the Plan has the right to settle obligations on a net basis in the event of default, insolvency, bankruptcy or other early termination event.

The Plan assumes credit risk exposure through bonds and private debt investments. As at December 31, 2017, the Plan's greatest credit exposure to a securities issuer is with the Government of Canada in the form of interest-bearing securities for \$1.6 billion (2016 – with the Government of Canada for \$1.4 billion). The credit ratings of the Plan's fixed income and bond investments are as follows:

Credit Rating as of December 31, 2017 (in thousands of dollars)

AAA	AA	A	BBB	BB	B	CCC	Not rated	Total
\$1,823,697	\$1,925,795	\$706,133	\$547,703	\$130,647	\$71,615	\$14,708	\$1,057,917	\$6,278,215

Credit Rating as of December 31, 2016 (in thousands of dollars)

AAA	AA	A	BBB	BB	B	CCC	Not rated	Total
\$1,812,196	\$1,852,846	\$766,512	\$639,644	\$198,928	\$94,038	\$4,135	\$886,237	\$6,254,536

The “not rated” classification in the table above is comprised of fixed income pooled fund and private debt investments as well as any bonds with no rating.

**Liquidity Risk** – Liquidity risk is the risk that the Plan has insufficient cash flows to meet its pension obligations and operating expenses as they become due. The typical cash requirements of the Plan are in the form of monthly retirement benefit payments as well as periodic termination and other benefit payments and expenses. The Plan also has financial liabilities in the form of derivatives that generally mature within one year. The cash requirements and the fulfillment of any financial liabilities are typically met through cash sources such as investment income, proceeds from the sales of investments, and member and employer contributions. The majority of the Plan’s assets are also invested in securities that are traded in active markets and can be divested on a timely basis. The largest sources of cash during the year were the member, employer and sponsor contributions. The maturities of the Plan’s fixed income and bond investments are as follows:

Fixed Income Maturities as of December 31, 2017 (in thousands of dollars)

	< 1 year	≥ 1-5 years	≥ 5-10 years	≥ 10 years	Funds	Total
\$	90,552	\$ 736,533	\$ 1,765,760	\$ 3,209,936	\$ 475,434	\$ 6,278,215

Fixed Income Maturities as of December 31, 2016 (in thousands of dollars)

	< 1 year	≥ 1-5 years	≥ 5-10 years	≥ 10 years	Funds	Total
\$	214,830	\$ 1,731,323	\$ 1,295,498	\$ 2,558,146	\$ 454,739	\$ 6,254,536

## c) Cash and Short-Term Investments

As at December 31  
(in thousands of dollars)

	2017	2016
<b>Canada</b>		
Cash	\$ 49,413	\$ 99,183
Short-term notes and treasury funds	616,516	942,205
Term deposits	27,691	12,719
Accrued interest	934	442
	<b>\$ 694,554</b>	<b>\$ 1,054,549</b>
<b>Foreign</b>		
Cash	\$ 142,518	\$ 85,308
Short-term notes and treasury funds	42,825	36,628
Accrued interest	2	2
	<b>\$ 185,345</b>	<b>\$ 121,938</b>

## **d) Derivative Contracts**

Derivative contracts are financial contracts whose values change as a result of changes in the values of an underlying asset, index, yield curve or foreign exchange rate.

OPB uses derivatives, either directly with counterparties in the OTC market or on regulated exchanges, to facilitate asset allocation, alter the overall risk-return profile of the Plan, and manage or hedge risk. The Plan utilizes the following types of derivative contracts:

### **Futures Contracts**

Futures contracts are standardized agreements that can be purchased or sold on a futures exchange market at a predetermined future date and price specified at origination of the contract, in accordance with terms specified by the regulated futures exchange, and are subject to daily cash margining. These types of derivatives are used to efficiently modify exposures without actually purchasing or selling the underlying assets.

### **Forward Contracts**

Foreign exchange forward contracts are negotiated agreements between two parties to exchange a notional amount of one currency for another at an exchange rate specified at origination of the contract, with settlement at a specified future date. Foreign exchange forward contracts are used by OPB to modify currency exposure for both passive and active hedging.

A bond forward is a contractual obligation to either buy or sell an interest-rate-sensitive financial instrument on a predetermined future date at a specified price. Bond forward contracts are used to modify OPB's exposure to interest rate risk, such as hedging a potential new debenture issue.

### **Credit Derivatives**

Credit default swaps are a type of credit derivative used to transfer credit risk of an underlying financial instrument or group of securities from one party to another. In a credit default swap, the buyer of the swap pays a regular premium to the seller in return for protection against any loss of the notional amount of the underlying securities if a credit event, such as a default, occurs.

### **Options**

Options are contractual agreements under which the buyer has the right, but not the obligation, either to buy (call option) or sell (put option) an underlying asset at a predetermined price on or before a specified future date.



The following schedule summarizes the notional amounts and fair values of the Plan's derivative contracts held on the indicated dates:

As at December 31, 2017 (in thousands of dollars)	Notional Value	Fair Value	
		Assets	Liabilities
<b>Currency derivatives</b>			
Forwards	\$ 5,566,963	\$ 67,105	\$ (15,307)
<b>Equity derivatives</b>			
Futures	388,001	-	(78)
<b>Fixed income derivatives</b>			
Futures	25,039	-	(42)
<b>Credit derivatives</b>			
Credit default swaps	4,481	-	(509)
<b>Value of derivative contracts</b>	<b>\$ 5,984,484</b>	<b>\$ 67,105</b>	<b>\$ (15,936)</b>

As at December 31, 2016 (in thousands of dollars)	Notional Value	Fair Value	
		Assets	Liabilities
<b>Currency derivatives</b>			
Forwards	\$ 7,301,648	\$ 67,625	\$ (34,991)
<b>Equity derivatives</b>			
Futures	1,278,932	7,992	-
<b>Credit derivatives</b>			
Credit default swaps	1,100	-	(102)
<b>Value of derivative contracts</b>	<b>\$ 8,581,680</b>	<b>\$ 75,617</b>	<b>\$ (35,093)</b>

The credit default swaps will mature in 2022 and all the other derivative contracts have remaining maturities of less than one year as at December 31, 2017.

## e) Securities Lending

At year-end, \$74 million (2016 - \$865 million) of OPB's securities were on loan to third parties. Pursuant to a securities lending agreement, OPB's custodian arranges the loans and OPB earns a fee. The custodian follows strict lending criteria and over-collateralizes the loans with securities that have credit ratings equal to or better than the securities loaned. OPB does not employ cash collateral in its securities lending program. Securities under lending arrangements continue to be recognized as OPB's investments as OPB retains the rewards and risks associated with these securities. At year-end, \$78 million (2016 - \$910 million) of securities were held as collateral, providing a 5.4% (2016 - 5.1%) cushion against the potential credit risk associated with these securities lending activities.

## **f) Fair Values**

Canadian accounting standards for pension plans require disclosure of a three-level hierarchy for fair value measurements based on the transparency of inputs to the valuation of an asset or liability as of the financial statement date. The three levels are defined as follows:

Level 1: Fair value is based on quoted market prices in active markets for identical assets or liabilities. Level 1 assets and liabilities generally include equity securities traded in an active exchange market.

Level 2: Fair value is based on observable inputs other than Level 1 prices, such as quoted market prices for similar (but not identical) assets or liabilities in active markets, quoted market prices for identical assets or liabilities in markets that are not active, and other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities. Level 2 assets and liabilities include debt securities with quoted prices that are traded less frequently than exchange-traded instruments and derivative contracts whose value is determined using a pricing model with inputs that are observable in the market or can be derived principally from or corroborated by observable market data. This category generally includes mutual and pooled funds; hedge funds; Government of Canada, provincial and other government bonds; Canadian corporate bonds; and certain derivative contracts.

Level 3: Fair value is based on non-observable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities. This category generally includes investments in underlying real estate properties, private equity investments and securities that have liquidity restrictions.

The following tables present the level within the fair value hierarchy for investments and derivatives, excluding pending trades.

As at December 31, 2017  
(in thousands of dollars)

	Level 1	Level 2	Level 3	Total Fair Value
<b>Financial assets</b>				
Cash and short-term investments				
Canada	\$ 49,413	\$ 645,141	\$ -	\$ 694,554
Foreign	142,517	42,828	-	185,345
Bonds and private debt				
Canada	-	5,394,919	344,381	5,739,300
Foreign	-	433,941	104,974	538,915
Equities				
Canada	2,817,111	-	-	2,817,111
Foreign	8,879,873	-	-	8,879,873
Real estate	-	-	4,653,996	4,653,996
Infrastructure	-	-	1,434,710	1,434,710
Private equity	-	-	1,454,300	1,454,300
Forwards	-	67,105	-	67,105
	\$ 11,888,914	\$ 6,583,934	\$ 7,992,361	\$ 26,465,209
<b>Financial liabilities</b>				
Forwards	\$ -	\$ 15,307	\$ -	\$ 15,307
Credit default swaps	-	509	-	509
Futures	120	-	-	120
	\$ 120	\$ 15,816	\$ -	\$ 15,936

As at December 31, 2016 (in thousands of dollars)	Level 1	Level 2	Level 3	Total Fair Value
<b>Financial assets</b>				
Cash and short-term investments				
Canada	\$ 99,183	\$ 955,366	\$ -	\$ 1,054,549
Foreign	85,308	36,630	-	121,938
Bonds and private debt				
Canada	-	5,347,555	390,522	5,738,077
Foreign	-	449,669	66,790	516,459
Equities				
Canada	2,262,940	-	-	2,262,940
Foreign	8,053,841	-	-	8,053,841
Real estate	-	-	4,375,431	4,375,431
Infrastructure	-	-	1,238,661	1,238,661
Private equity	-	-	947,654	947,654
Forwards	-	67,625	-	67,625
Futures	7,992	-	-	7,992
	\$ 10,509,264	\$ 6,856,845	\$ 7,019,058	\$ 24,385,167
<b>Financial liabilities</b>				
Forwards	\$ -	\$ (34,991)	\$ -	\$ (34,991)
Credit default swaps	-	(102)	-	(102)
	\$ -	\$ (35,093)	\$ -	\$ (35,093)

There were no significant transfers between Levels 1, 2 or 3 during the years ended December 31, 2017 and 2016.

The following tables present a reconciliation of all Level 3 assets and liabilities measured at fair value for the years ended December 31, 2017 and 2016.

(in thousands of dollars)	Fair Value as at January 1, 2017	Acquisitions	Dispositions	Issuance of Debt	Fair Value Changes	Fair Value as at December 31, 2017
<b>Financial assets</b>						
Private debt						
Canada	\$ 390,522	\$ 57,140	\$ (95,442)	\$ -	\$ (7,839)	\$ 344,381
Foreign	66,790	41,846	(3,584)	-	(78)	104,974
Real estate	4,375,431	1,325,203	(80,676)	(750,000)	(215,962)	4,653,996
Infrastructure	1,238,661	269,274	(73,957)	-	732	1,434,710
Private equity	947,654	612,082	(113,248)	-	7,812	1,454,300
	\$7,019,058	\$2,305,545	\$ (366,907)	\$ (750,000)	\$ (215,335)	\$7,992,361

(in thousands of dollars)	Fair Value as at January 1, 2016	Acquisitions	Dispositions	Issuance of Debt	Fair Value Changes	Fair Value as at December 31, 2016
<b>Financial assets</b>						
Private debt						
Canada	\$ 363,294	\$ 91,410	\$ (68,053)	\$ -	\$ 3,871	\$ 390,522
Foreign	27,072	44,069	-	-	(4,351)	66,790
Real estate	4,247,082	362,193	(103,736)	(250,000)	119,892	4,375,431
Infrastructure	1,167,558	133,159	(15,131)	-	(46,925)	1,238,661
Private equity	562,587	406,412	(107,631)	-	86,286	947,654
	\$ 6,367,593	\$ 1,037,243	\$ (294,551)	\$ (250,000)	\$ 158,773	\$ 7,019,058

## g) Commitments and Guarantees

As at December 31, 2017, OPB has unfunded commitments for certain investments of \$1,891 million (2016 – \$2,064 million).

OPB has provided a guarantee for the payment of principal and interest on \$2,250 million in debentures that were issued by OPB Finance Trust, a trust established for the benefit of OPB and its related entities. Six series of debentures have been issued as at December 31, 2017:

1. \$350 million, Series A, 30-year debentures due 2042, with a 3.89% coupon payable semi-annually.
2. \$150 million, Series B, 50-year debentures due 2062, with a 3.87% coupon payable semi-annually.
3. \$250 million, Series C, 10-year debentures due 2023, with a 2.90% coupon payable semi-annually.
4. \$500 million, Series D, 7-year debentures due 2022, with a 1.88% coupon payable semi-annually.
5. \$250 million, Series E, 10-year debentures due 2026, with a 2.95% coupon payable semi-annually.
6. \$750 million, Series F, 10-year debentures due 2027, with a 2.98% coupon payable semi-annually.

The proceeds from the issuance of the Series A, B, D, E and F debentures were loaned to a number of OPB real estate subsidiaries. In turn, these real estate companies used the proceeds to repay amounts owed to OPB and/or to acquire real estate investments.

The proceeds from the issuance of the Series C debentures were loaned to a real estate trust established for the benefit of OPB.

OPB's real estate investments are shown net of the OPB Finance Trust debentures and any other financings specifically assumed by these real estate entities.

In addition to the guarantee on the debentures, \$16 million of letters of credit are guaranteed by OPB as at December 31, 2017.

## h) Real Estate

The following table provides a breakdown of the real estate portfolio by its major components.

As at December 31  
(in thousands of dollars)

	2017	2016
<b>Assets</b>		
Real estate <sup>1</sup>	\$ 2,175,158	\$ 2,337,800
Investments <sup>2</sup>	4,814,870	3,576,786
Total assets	6,990,028	5,914,586
<b>Liabilities</b>		
Debentures <sup>3</sup>	2,334,870	1,534,660
Other liabilities, net	1,162	4,495
Total liabilities	2,336,032	1,539,155
<b>Net investment in real estate</b>	<b>\$ 4,653,996</b>	<b>\$ 4,375,431</b>

<sup>1</sup> Real estate investments that are 100% directly owned and held in single-purpose subsidiaries.

<sup>2</sup> Investments held through partially owned non-controlling co-ownerships, funds, or similar investment vehicles consist of real estate properties, any related assets and liabilities and participating mortgages. These assets and liabilities are presented on a net basis.

<sup>3</sup> The debentures represent securities issued by OPB Finance Trust and are guaranteed by OPB (see Note 4(g)).

## Note 5: Capital Assets

As at December 31, 2017  
(in thousands of dollars)

	Cost	Accumulated Depreciation	Net Book Value
Computer equipment	\$ 5,137	\$ (4,661)	\$ 476
Furniture and fixtures	1,993	(1,780)	213
Leasehold improvements	1,758	(1,336)	422
<b>Total capital assets</b>	<b>\$ 8,888</b>	<b>\$ (7,777)</b>	<b>\$ 1,111</b>

As at December 31, 2016  
(in thousands of dollars)

	Cost	Accumulated Depreciation	Net Book Value
Computer equipment	\$ 4,866	\$ (4,341)	\$ 525
Furniture and fixtures	2,491	(2,032)	459
Leasehold improvements	1,732	(1,152)	580
<b>Total capital assets</b>	<b>\$ 9,089</b>	<b>\$ (7,525)</b>	<b>\$ 1,564</b>

## Note 6: Pension Obligations

An actuarial valuation prepared for funding purposes ("funding valuation") is used as the basis for funding, Plan design decisions and the periodic determination of the Plan's pension obligations. This funding valuation is based on methods required under the *PSP Act* and the *Pension Benefits Act* (Ontario) ("*PBA*"). The *PBA* and the *Income Tax Act* (Canada) require that a funding valuation of the PSPP be completed and filed with the regulatory authorities at least every three years.

The most recent regulatory filing of a funding valuation was as at an effective date of December 31, 2016, which disclosed a funding shortfall of \$943 million on a going-concern basis. The funding valuation was prepared by Aon Hewitt. The next required funding valuation to be filed with the regulatory authorities will have an effective date no later than December 31, 2019.

For the purposes of these financial statements, Aon Hewitt used the funding valuation as at December 31, 2016 and rolled it forward in order to determine the Plan's pension obligations as at December 31, 2017. The pension obligations as at December 31, 2017 are \$27.2 billion (2016 - \$25.2 billion).

**Actuarial Assumptions** - The actuarial assumptions used in determining the value of the pension obligations reflect management's best estimate of future economic and non-economic events. The primary economic assumptions as at December 31 are:

	2017	2016
Investment return	5.6%	5.7%
Inflation	2.0%	2.0%
Real rate of return	3.6%	3.7%
Salary increases		
2017	2.0% + promotional scale	1.5% + promotional scale
2018	2.0% + promotional scale	2.0% + promotional scale
2019	2.0% + promotional scale	2.5% + promotional scale
2020	2.25% + promotional scale	3.0% + promotional scale
2021	2.5% + promotional scale	3.0% + promotional scale
2022 and thereafter	2.75% + promotional scale	3.0% + promotional scale

The non-economic assumptions include mortality, withdrawal and retirement rates. During 2017, changes in actuarial assumptions related to mortality, the real rate of return and total investment return resulted in an increase of \$778 million (2016 - \$517 million) in the Plan's pension obligations. The annual expected real rate of return has been lowered based on the long-term investment mix policy, and expected returns and volatility for each of the asset classes. Mortality tables have been updated to reflect improved longevity assumptions.

## Note 7: Deficit

In these financial statements, the amount by which net assets available for benefits is less than the pension obligations is represented by the deficit, which as at December 31, 2017 was \$738 million (2016 – \$796 million).

## Note 8: Net Investment Income

For the year ended December 31

(in thousands of dollars)	Investment Income <sup>1</sup>	Fair Value Changes	2017 Total	Investment Income <sup>1</sup>	Fair Value Changes	2016 Total
<b>Cash and short-term investments</b>						
Canada	\$ 8,294	\$ (184)	\$ 8,110	\$ 10,681	\$ 1,974	\$ 12,655
Foreign <sup>2</sup>	527	48,606	49,133	452	241,044	241,496
	8,821	48,422	57,243	11,133	243,018	254,151
<b>Bonds and private debt</b>						
Canada	213,610	6,990	220,600	234,414	(12,349)	222,065
Foreign	39,456	(21,640)	17,816	40,739	(6,230)	34,509
	253,066	(14,650)	238,416	275,153	(18,579)	256,574
<b>Equities</b>						
Canada	63,317	186,164	249,481	54,370	480,344	534,714
Foreign	179,815	1,658,018	1,837,833	171,683	173,331	345,014
	243,132	1,844,182	2,087,314	226,053	653,675	879,728
<b>Real estate</b>	<b>237,718</b>	<b>(228,159)</b>	<b>9,559</b>	<b>208,336</b>	<b>112,441</b>	<b>320,777</b>
<b>Infrastructure</b>	<b>74,381</b>	<b>3,753</b>	<b>78,134</b>	<b>50,308</b>	<b>(62,642)</b>	<b>(12,334)</b>
<b>Private equity</b>	<b>144,288</b>	<b>7,527</b>	<b>151,815</b>	<b>40,880</b>	<b>86,070</b>	<b>126,950</b>
<b>Total investment income</b>	<b>\$ 961,406</b>	<b>\$1,661,075</b>	<b>\$2,622,481</b>	<b>\$ 811,863</b>	<b>\$1,013,983</b>	<b>\$1,825,846</b>
Investment management and related fees (Note 8(b))			(91,880)			(74,862)
<b>Net investment income</b>			<b>\$2,530,601</b>			<b>\$1,750,984</b>

<sup>1</sup> Investment income includes interest on cash and short-term investments, fixed income and participating mortgages, dividend income on equities, and distributions from pooled funds and limited partnerships.

<sup>2</sup> Fair value changes on cash and short-term investments include gains (losses) on foreign exchange contracts.



## a) Interest Income

For the year ended December 31  
(in thousands of dollars)

	2017	2016
<b>Cash and short-term investments</b>		
Canada		
Cash	\$ 1,303	\$ 7,201
Short-term notes and treasury funds	6,979	3,441
Term deposits	12	39
	<b>\$ 8,294</b>	<b>\$ 10,681</b>
Foreign		
Cash	\$ 413	\$ 429
Short-term notes and treasury funds	114	23
	<b>\$ 527</b>	<b>\$ 452</b>

Earnings from pooled short-term investment funds are included with short-term notes and treasury funds.

## b) Investment Management and Related Fees

For the year ended December 31  
(in thousands of dollars)

	2017	2016
Portfolio fund management fees	\$ 61,702	\$ 60,363
IMCO management fees	14,396	-
Transaction costs	8,594	8,303
Custodial fees	6,758	5,425
Private market expenses	430	771
	<b>\$ 91,880</b>	<b>\$ 74,862</b>

Transaction costs include commissions and fees on trades. IMCO management fees represent OPB's share of the operating expenses incurred by IMCO which are charged back to its respective clients on a cost-recovery basis. Subsequent to IMCO becoming operational in 2017, the portfolio fund management fees, custodial fees, and private market expenses were paid by IMCO on behalf of OPB, and reimbursed by OPB.

## Note 9: Contributions

For the year ended December 31  
(in thousands of dollars)

	2017	2016
<b>Members</b>		
Current service required	\$ 309,752	\$ 301,627
Prior service	38,393	37,766
<b>Total contributions from members</b>	<b>348,145</b>	<b>339,393</b>
<b>Employers</b>		
Current service		
Regular contributions	309,598	301,833
PSSBA transfer	(12,863)	(14,634)
For members receiving Long Term Income Protection benefits	12,878	12,791
Prior service	4,098	4,636
	<b>313,711</b>	<b>304,626</b>
<b>Sponsor payments</b>		
Special payments	98,989	98,989
Additional current service	43,308	22,398
	<b>142,297</b>	<b>121,387</b>
<b>Total contributions from employers and sponsor</b>	<b>456,008</b>	<b>426,013</b>
<b>Total contributions</b>	<b>\$ 804,153</b>	<b>\$ 765,406</b>

The contribution requirements are set out in the *PSPAct* and summarized in Note 2(b).

Members who are receiving benefits on Long Term Income Protection have their contributions to the PSPP paid by their employers.

The Province, as sponsor of the Plan, contributed \$99 million (2016 - \$99 million) in Special Payments in 2017 towards the funding shortfall identified in the filed funding valuation as at December 31, 2016. In 2017, the Province made \$43 million (2016 - \$22 million) in additional employer current service contributions.

For 2017 and 2016, the contributions to the Plan were made in accordance with the funding requirements as specified by the most recently filed actuarial funding valuation.

There were no required contributions past due as at December 31, 2017 and 2016.

## Note 10: Operating Expenses

For the year ended December 31  
(in thousands of dollars)

	2017	2016
Staffing	\$ 25,370	\$ 29,383
IT and project management	7,786	8,792
Office premises and operations	5,709	5,992
IMCO set-up costs	5,048	2,362
Professional services	2,328	2,789
Depreciation	697	738
Staff development and support	545	337
Communications	436	440
Audit	352	364
Board remuneration	187	129
	<b>\$ 48,458</b>	<b>\$ 51,326</b>

### IMCO Set-up Costs

On July 27, 2016, IMCO entered into a funding agreement with OPB and WSIB to provide funding for IMCO's initial set-up costs incurred from the date of the funding agreement to December 31, 2017. As at June 30, 2017, the entire outstanding loan receivable balance, including accrued interest, from IMCO was settled under this agreement (2016 - \$0).

During 2017, IMCO charged \$3 million (2016 - \$1 million) to OPB, its portion of IMCO's initial set-up costs such as legal and other costs for entering into contracts with service providers. Other set-up costs related to IMCO of \$2 million (2016 - \$1 million), such as legal and consulting expenses, were also incurred by OPB during the year.

Included in the above operating expenses are:

### External Audit Services

For the year ended December 31  
(in thousands of dollars)

	2017	2016
External audit and related services provided to Ontario Pension Board	\$ 240	\$ 205
External audit and related services provided to and recorded by subsidiary operations	299	272
<b>Total fees</b>	<b>\$ 539</b>	<b>\$ 477</b>

### Actuarial Services

For the year ended December 31  
(in thousands of dollars)

	2017	2016
Actuarial services provided to Ontario Pension Board	\$ 564	\$ 457

## **Note 11: Capital Management**

The funding surpluses or deficits determined periodically through the funding valuations prepared by the independent actuary are defined as the Plan's capital. The actuary's funding valuation is used to measure the long-term health of the Plan. The last filed actuarial valuation report for funding purposes was prepared by Aon Hewitt as of December 31, 2016, which disclosed a funding shortfall of \$943 million on a going-concern basis and a deficit of \$3.7 billion on a solvency basis.

The objective of managing the Plan's capital is to ensure the Plan is funded to fully pay out the Plan's benefits. The funding valuation determines the annual minimum contribution levels to eliminate any shortfalls. The Plan's SIP&P also provides guidance with respect to the investment of the Plan's assets (see Note 4(a)) in order to assist with the management of any funding excesses or shortfalls. The Plan's rate of return expectation has been set in the SIP&P at a 3.70% real rate of return, net of fees.

## **Note 12: Comparative Financial Statements**

Certain amounts in the comparative financial statements have been reclassified to conform to the presentation of the 2017 financial statements.

# Supplementary Information

## Fixed Income Maturities

		2017		2016	
As at December 31 (in thousands of dollars)	Fair Value	Current Yield %	Fair Value	Current Yield %	
<b>Bonds</b>					
Canada					
< 1 year	\$ 86,726	1.33-9.30	\$ 166,124	1.09-7.50	
≥ 1-5 years	509,254	0.51-10.18	1,615,253	0.25-12.39	
≥ 5-10 years	1,649,959	1.10-19.61	1,113,043	0.52-14.29	
≥ 10 years	3,122,902	0.51-8.42	2,455,708	1.03-10.00	
	<u>5,368,841</u>		<u>5,350,128</u>		
Foreign					
< 1 year	3,826	2.88-8.55	48,706	2.16-8.48	
≥ 1-5 years	227,279	0.20-15.69	116,070	0.46-11.35	
≥ 5-10 years	115,801	0.19-12.55	182,455	0.32-12.02	
≥ 10 years	87,034	4.08-7.38	102,438	1.36-10.84	
	<u>433,940</u>		<u>449,669</u>		
<b>Fixed income funds</b> (with no stated maturities)	<b>475,434</b>		<b>454,739</b>		
<b>Total fixed income</b>	<b>\$ 6,278,215</b>		<b>\$ 6,254,536</b>		

# Investments Over \$200 Million

As at December 31, 2017  
(in thousands of dollars)

	Maturities	Coupon %	Fair Value <sup>1</sup>
<b>Cash and short-term investments</b>			
Government of Canada	-	-	\$ 433,681
<b>Bonds</b>			
Canada			
BlackRock Canada Universe Bond Index Class A Fund	-	-	\$ 208,607
Government of Canada	2019-2064	0.50-10.50	1,161,367
Province of Ontario	2019-2049	1.35-9.50	741,840
Province of Quebec	2019-2048	2.50-9.38	446,590
Canada Housing Trust No. 1	2019-2028	1.15-3.80	292,749
<b>Real estate, net of financing</b>			
Investment in real estate holdings, comprising OPB Realty Inc. (holding company, 100% owned), OPB (TDC) Inc. (holding company, 100% owned), OPB (Van Centre) Inc. (holding company, 100% owned), OPB Real Estate Investments 2 Limited (holding company, 100% owned), OPB (EMTC) Inc. (holding company, 100% owned), OPB (Southgate) Inc. (holding company, 100% owned), OPB Real Estate Investments (holding company, 100% owned), OPB (155 Wellington) Inc. (holding company, 100% owned), OPB (VanShore) Inc. (holding company, 100% owned), OPB (Centre 10) Inc. (holding company, 100% owned), OPB (885 WG) Inc. (holding company, 100% owned) and OPB Finance Trust (financing entity, 100% beneficial interest)			
	-	-	\$ 3,372,295
		Shares/Units	Fair Value <sup>1</sup>
<b>Infrastructure</b>			
OPB Infrastructure 2 Limited (holding company, 100% owned)		-	\$ 622,024
OPB Infrastructure 4 Limited (holding company, 100% owned)		-	222,427
OPB Infrastructure 3 Limited (holding company, 100% owned)		-	200,897
<b>Equities</b>			
Canada			
Toronto Dominion Bank		2,809	\$ 206,878
<b>Private equities</b>			
OPB Private Equity 5 Limited (holding company, 100% owned)		-	\$ 475,709
OPB Private Equity 3 Limited (holding company, 100% owned)		-	272,559

<sup>1</sup> Includes guaranteed instruments issued by subsidiaries/agencies.

# Real Estate Properties - Location and Gross Leasable Area

The following table provides gross leasable area of those real estate properties that are 100% directly owned and those owned through co-ownerships, all of which are held in single-purpose subsidiaries:

As at December 31, 2017 (in thousands of square feet)	Location	Gross Leasable Area <sup>1</sup>
<b>Retail</b>		
Pen Centre	St. Catharines	919
St. Vital Centre	Winnipeg	909
Southgate Centre	Edmonton	855
Erin Mills Town Centre	Mississauga	828
Erin Mills Town Plaza	Mississauga	122
Pickering Town Centre	Pickering	700
Woodgrove Centre	Nanaimo	748
CF Pacific Centre	Vancouver	674
Cornwall Centre	Regina	549
Halifax Shopping Centre	Halifax	523
Halifax Shopping Centre Annex	Halifax	420
Carlingwood Shopping Centre	Ottawa	520
Mumford Professional Centre	Halifax	187
		7,954
<b>Office</b>		
TD Centre	Toronto	4,487
Vancouver Office Portfolio	Vancouver	3,323
155 Wellington Street West	Toronto	1,211
Centre 10	Calgary	368
Pickering Office Tower/Durham College	Pickering	127
Halifax Office Complex	Halifax	49
		9,565
<b>Residential</b>		
Engelhart Apartments	Toronto	157
<b>Total properties</b>		<b>17,676</b>

<sup>1</sup> Area shown above reflects 100% of each property's square footage. Southgate Centre and 155 Wellington Street West are 50% owned by Ontario Pension Board through its subsidiaries OPB (Southgate) Inc. and OPB (155 Wellington) Inc. Woodgrove Centre, Cornwall Centre and Engelhart Apartments are 50% owned by Ontario Pension Board through its subsidiary OPB Real Estate Investments 2 Limited. TD Centre is 30% owned by Ontario Pension Board through its subsidiary OPB (TDC) Inc. CF Pacific Centre and the Vancouver Office Portfolio are 25% owned by Ontario Pension Board through its subsidiaries OPB (Van Centre) Inc., OPB (VanShore) Inc. and OPB (885 WG) Inc.

# Governance

OPB's commitment to good governance, combined with the guidance of OPB's Board of Directors and senior leadership team, keeps us moving in the right direction.

A strong governance structure keeps OPB strong and is the foundation of our continued success. OPB's governance structure meets – and in many cases exceeds – industry standards and best practices. Our steadfast commitment to industry-leading governance practices ensures full accountability, effective decision making, prudent investment management, fiscal responsibility, legal compliance and smart risk-taking. In short, it ensures that we are – at all times – protecting and promoting the best interests of the Plan and its beneficiaries.

Underpinning our governance framework is a series of documents that define our organizational structure, responsibilities and governance practices. Collectively referred to as the Governance Documents, these documents include a Statement of Governance Principles, a General By-law, Statements of Mandate and Authority, and a Code of Conduct.

Our Governance Documents clearly define roles and responsibilities, draw a clear link between responsibility and accountability, set expectations for ethical behaviour and entrench conflict-of-interest guidelines. They also establish a well-defined system of checks and balances on all power and authority.



## Role of the Board

OPB's Board of Directors holds the ultimate responsibility for the Plan's stewardship. That said, the Board has delegated to management the responsibility for the day-to-day operations required to administer the Plan and manage the Fund, and approved the appointment of IMCO as OPB's sole and exclusive investment manager to manage the investment and reinvestment of the Fund and as OPB's non-exclusive investment advisor.

As part of IMCO's appointment, the Board has delegated to management (primarily to the Chief Investment Officer) the responsibility to monitor, assess and report on IMCO in respect of its investment returns and risk management, and its performance in fulfilling its duties, responsibilities and obligations under the IMA and the ISA, including with respect to financial reporting, audit and internal controls.

The Board has also chosen to delegate specific responsibilities to five committees of the Board: the Governance Committee, Investment Committee, Audit Committee, Pensions Committee and Human Resources Committee.

The Board retains overall responsibility for supervision of OPB's business affairs. For example, it:

- approves OPB's strategic plan, business plan and budget;
- ensures that management has identified and is managing risks;
- conducts performance and compensation reviews for the President & CEO;
- approves the Strategic Asset Allocation, which drives investment management asset mix decisions;
- supervises and approves all audit matters;
- ensures that management is maintaining a culture of integrity;
- conducts an annual review of OPB's Statement of Investment Policies and Procedures;
- approves any recommendations made to the Plan Sponsor regarding Plan amendments and funding; and
- monitors compliance with OPB's governance documents.

In fulfilling their duties, members of the Board are directly accountable to:

- the Plan's beneficiaries (i.e., active and retired members);
- the Financial Services Commission of Ontario (the organization that oversees registered pension plans in Ontario); and
- the Government of Ontario (the Plan Sponsor).

OPB is consistently recognized as an example of good governance within Ontario's public service. The Board is committed to maintaining a best-in-class governance model, and ensuring OPB can continue to drive innovation and build a strong future for all PSPP stakeholders.

# Board of Directors

Members of OPB's Board of Directors are appointed based on their expertise, commitment, integrity and vision. Working together, they ensure the Plan's governance structure and practices reflect the highest standards.



## **Geri Markvoort (Chair)**

Geri is a retired senior human resources executive, with more than 40 years' experience in large complex organizations. She has aligned the delivery of human resources with the needs of business in various industries (e.g., Shell Canada, Quality Safety Systems, Jannock, CIBC, KPMG and KPMG Global).

Significant organizational change, global service models, total rewards delivery, effective client relationships and the evolution of the HR function have challenged and engaged her throughout her career. A passionate champion for change and strong HR leadership, Geri's board experience has included governance roles as Chair of the Board of Governors, George Brown College; Chair of the Board, Dress for Success Toronto; and board member of Lawn Summer Nights and the Cystic Fibrosis Toronto Chapter.

Appointed to the Board on January 5, 2015.

Appointed as Chair on February 2, 2017.

Current appointment ends February 1, 2020.



## **Patti Croft, ICD.D (Vice-Chair)**

Patti has over 30 years of experience as an economist, with extensive institutional investment management experience, focusing on asset allocation strategies. She has held a number of high-profile positions, including Vice-President and Chief Economist for Phillips, Hager & North Investment Management, Chief Economist for RBC Global Asset

Management, and Vice-President and Chief Economist for Sceptre Investment Counsel.

Patti is a member of the Institute of Corporate Directors.

Appointed to the Board on May 1, 2013.

Appointed as Vice-Chair on December 3, 2014.

Appointed as Acting Chair between June 2016 and February 2017.

Current appointment ends May 1, 2019.



### **Michael Briscoe**

Michael Briscoe worked for 27 years in the Ontario and municipal government as an HR professional. With a focus on labour relations, he was Chief Negotiator and Senior Manager of HR for the Simcoe County District School Board. Michael was hired by the Ontario Provincial Police Association in 2013 as its Executive Labour Advisor and as its Chief Administrative

Officer in 2015. He is also a former Strategic Issues Advisor with the Ontario Provincial Police and a Client Relationship Coordinator for the Strategic Business Unit with the Ministry of Community Safety and Correctional Services. Michael holds a Bachelor of Arts degree and is a Certified Human Resources Professional.

Appointed to the Board on August 15, 2016.

Current appointment ends August 14, 2019.



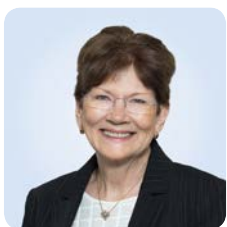
### **Dave Bulmer**

Dave Bulmer is the President of AMAPCEO - Ontario's Professional Employees and has been since 2015. He previously held the offices of Chief Financial Officer, Board Chair, Director-at-Large, Finance Committee Chair and Pension Committee Chair. His home position in the OPS is within the Emergency Health Services Branch of MOHLTC. Dave is a long-time

community activist who has volunteered his time as a coach in elite-level sports and with PFLAG and Crohn's & Colitis Canada.

Appointed to the Board on November 16, 2016.

Current appointment ends November 15, 2019.



### **Lynne Clark, ICD.D**

Lynne Clark is a recently retired senior Deloitte partner with over 35 years of public accounting experience and a former leader of the Deloitte National Financial Services Industry. She is the 2012 recipient of the Queen Elizabeth II Diamond Jubilee Medal for community service, is a former Treasurer of the Junior Achievement Foundation (Canadian Business Hall of Fame) and is

past chair of Junior Achievement of Canada. She was also a Director of The Easter Seals Society of Ontario. Lynne is a Fellow Chartered Professional Accountant of Ontario and received her ICD.D designation from the Institute of Corporate Directors. She also holds a Master's in Business Administration from the Schulich School of Business and a Bachelor of Science from the University of Toronto. She is currently a member of the audit committee and investment committee at North York General Hospital.

Appointed to the Board on June 22, 2016.

Current appointment ends June 21, 2019.



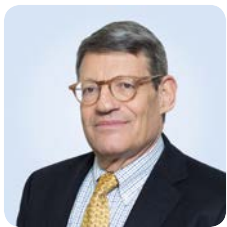
### **Kevin Costante**

Kevin Costante retired from the Ontario Public Service in 2014. Kevin spent 36 years with the Ontario and Saskatchewan public services, including the last 15 years as a Deputy Minister in the Ontario ministries of Government Services; Education; Northern Development and Mines; Cabinet Office (Policy); Training, Colleges and Universities; and Community and Social

Services. Kevin is currently an Adjunct Professor at the School of Policy Studies at Queen's University and serves on several government and not-for-profit boards.

Appointed to the Board on December 2, 2015.

Current appointment ends December 1, 2018.



### **Dr. John T. Por**

Dr. John Por is Founder and President of the Decumulation Institute. He is the former Founder and President of Cortex, a pension governance consultancy, and a National Partner with Mercer Canada. He holds a Master's degree in Engineering from Budapest Technical University (Hungary) and a PhD from the University of Veszprém (now known as the

University of Pannonia, Hungary) in Engineering Physics. Dr. Por has served as a senior advisor in the pension and investment industry for over 30 years.

Appointed to the Board on June 22, 2016.

Current appointment ends June 21, 2019.



### **Michelle Savoy, ICD.D**

Michelle is a corporate director with over 25 years' experience in the financial services industry, including investment management and capital markets. She currently serves as a Director for the Laurentian Bank of Canada (LB-T), Pizza Pizza Royalty Corp. (PZA-T) and NAV CANADA, and held numerous senior executive positions with The Capital Group of

Companies, a global investment management organization, including President of Capital Guardian Canada, until her retirement in 2011. Michelle is a member of the Institute of Corporate Directors.

Appointed to the Board on January 15, 2016.

Current appointment ends January 14, 2019.

## **Former Members of the Board**

### **Sean Hanley**

Appointment from December 2014 to December 2017.

# Directory of Key Personnel

## Officers

**Mark J. Fuller**

President & Chief Executive Officer

**Ken Lusk**

Chief Investment Officer

**Mila Babic**

Vice-President, Client Services

**Jasmine Kanga**

Vice-President, Human Resources &  
Corporate Services

**Peter Shena**

Executive Vice-President & Chief  
Pension Officer

**Valerie Adamo**

Chief Technology Officer

**Armand de Kemp**

Vice-President, Finance

**Mitra Mortazavi**

Vice-President, Pension Modernization

# Glossary

**A/L study:** An asset/liability (A/L) study is conducted to determine if our assets will be able to cover our pension liabilities based on up-to-date actuarial and market data and is used to establish a Strategic Asset Allocation (SAA) for the Plan.

**Asset class:** A group of securities that exhibit similar characteristics.

**Asset mix:** The categorization of assets within the pension plan portfolio (e.g., cash, Canadian equities, real estate, etc.). Each category is measured as a percentage of the total pension plan portfolio's fair value.

**Assumptions:** Estimates of what certain variables – such as interest rates, investment returns and mortality rates – will be in the future. Assumptions are used to estimate the future cost of pensions and the future value of pension assets.

**Benchmark:** A point of reference that is used to compare portfolio performance and risk. The S&P/TSX Composite Index and the FTSE/TMX Universe Bond Index are two benchmarks commonly used to compare Canadian equity portfolio and fixed income portfolio performance and risk. OPB's Strategic Asset Allocation (SAA) is a benchmark against which the overall Plan is assessed from a risk and return perspective.

**CEM Benchmarking Inc.:** An international pension administration benchmarking company.

**Counterparty risk:** The risk of a counterparty not fulfilling their contractual financial obligations.

**Debenture:** A long-term security normally yielding a fixed rate of interest, not secured against assets.

**Discount rate:** The expected rate of future investment return used to calculate the present value of pensions.

**Diversification benefit:** The degree of Total Risk reduction resulting from a combination of asset classes behaving differently to each other.

**FTSE TMX Universe Bond Index:** The FTSE/TMX Universe Bond Index and the S&P/TSX Composite Index are two benchmarks commonly used to compare Canadian equity portfolio and fixed income portfolio performance and risk, respectively. OPB's Strategic Asset Allocation (SAA) is a benchmark against which the overall Plan is assessed from a risk and return perspective.

**Funded status:** A measure of the amount of assets the pension plan currently holds to pay out its future pension benefits (present value of projected future pension benefits). The funded status is regarded as the “health check” of a pension plan, and is determined by undertaking a funding valuation of the pension plan.

**IMCO:** Investment Management Corporation of Ontario.

### **Implementation and Support Agreement**

**(ISA):** The ISA deals with operating and governance matters such as employee transition, shared services, IMCO governance policies, and cost allocation and cost containment principles.

**Internalization Program:** OPB initiative to selectively bring the management of some public markets assets in-house from external managers.

### **Investment Management Agreement (IMA):**

The IMA governs the investment management relationship between IMCO and OPB, and focuses largely on investment-related matters.

**IRR:** Internal rate of return is a discount rate that makes the net present value (NPV) of all cash flows from a particular project equal to zero. IRR calculations rely on the same formula as NPV does. The term internal refers to the fact that its calculation does not incorporate environmental factors (e.g., the interest rate or inflation).

**LEED:** Leadership in Energy and Environmental Design (LEED) is a program that sets standards used internationally for the design, construction and maintenance of environmentally sustainable buildings and infrastructure.

**Passive fixed income:** Passive investing is an investment strategy that aims to mimic the returns of a specific index. This type of strategy is generally low cost.

**Pension modernization:** A program we are initiating to re-engineer our business processes and review and upgrade our pension administration system to allow us to meet the evolving needs of our clients and stakeholders, and ensure our technology remains current and secure.

**PSPP:** The Public Service Pension Plan.

**Put options:** A derivatives option contract giving the owner the right, but not the obligation, to sell a specified amount of an underlying security (the security on which the derivative derives its value) at a specified price within a specified time.

**Renminbi:** General term for the currency of the People’s Republic of China (PRC). The renminbi (or yuan) is made up of 10 jiao and 100 fen and is often either abbreviated as RMB or presented with the symbol ¥. Renminbi is issued by the People’s Bank of China, which is controlled by the PRC.

**Responsible Investing (RI):** The integration of environmental, social and governance (ESG) factors into the investment decision-making process, which supports long-term investment performance.

**Reward to Risk ratio:** A measure of risk-adjusted performance used to compare the expected returns of an investment to the amount of risk undertaken to capture these returns.

**Risk-adjusted return:** A measurement used to analyze an investment's return based on how much risk is involved in producing that return. Risk-adjusted returns can be used to compare the return of a portfolio against a benchmark with a known return and risk profile.

**Strategic Asset Allocation (SAA):** A long-term strategy that involves setting target allocations of asset mix with the purpose of achieving highest returns on investment to meet current and projected future pension benefits given the Plan's risk tolerance and investment horizon.

**Total Risk:** The volatility or fluctuations of portfolio returns over a defined period of time.

**WELL certification:** WELL Building Standard™ (WELL) is a performance-based system for measuring, certifying and monitoring features of buildings that impact the health and well-being of the people who live, work and learn in them.

**WSIB:** Workplace Safety and Insurance Board, a crown agency of the Government of Ontario.

**Yield to maturity (YTM):** Total return anticipated on a bond if the bond is held until the end of its lifetime. Yield to maturity is considered a long-term bond yield, but is expressed as an annual rate.