Ontario Pension Board

Business Plan
2017-2019

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OPB Overview

Ontario Pension Board (OPB) is the administrator of the Public Service Pension Plan (the **Plan**) and manages the investment of almost $24 billion of assets (the **Fund**) that fund the benefits under the Plan. This Business Plan speaks to the three-year period from January 1, 2017 to December 31, 2019; however, the primary focus is on 2017.

Mandate

OPB was created in 1990, by enactment of the *Public Service Pension Act*, to administer both the Plan and the Fund. Subject to the provisions of the Plan, OPB may administer other pension plans or funds or insured benefits plans. Currently, OPB has established fee-for-service agreements to administer several other plans on behalf of the Government of Ontario and, to date, all of these fee-for-service agreements are structured on a cost recovery basis, not as a profit-generating activity.

OPB is governed by its Board of Directors. The Chair of OPB's Board is accountable to the President of the Treasury Board for the performance of OPB in fulfilling its mandate.

OPB Mission and Vision: Advise & Protect

Our mission is to:

- deliver the pension promise;
- support the long-term sustainability of the Plan;
- invest the Plan's assets to maximize returns within acceptable risk parameters;
- keep contribution rates and benefits reasonably stable and affordable; and
- deliver superior cost-effective service to all Plan stakeholders.

OPB has developed its Advise & Protect vision to fulfill its mandate and mission. The key components of the **Advise & Protect** vision are: (1) providing advisory services to stakeholders based on OPB's unique knowledge, perspective, and understanding of the Plan to ensure clients and stakeholders make informed decisions with respect to their pensions and the Plan as a whole, and (2) protecting the Plan to ensure it can meet the pension promise for today's and tomorrow's Plan members and retired members.

Strategic Direction

OPB has established the following three key strategic objectives to enable it to fulfill its mission and vision in the current environment:

- To be a trusted advisor to Plan stakeholders and a credible thought leader on public policy, to support sound decision-making that promotes the long term sustainability of the Plan and pension coverage and adequacy for all Canadians.
- To achieve excellence in the fully-integrated management of all Plan funding variables (investment returns, contribution levels, and benefit structure) so as to ensure (1) that accrued benefits are delivered as promised; (2) the long-term affordability of the Plan; (3) the continuance in the Plan of a benefit package structured to build lifetime income adequacy for members; and (4) intergenerational equity.

- To administer the Plan and serve its stakeholders such that every stakeholder realizes, to the extent possible, full value from their participation in the Plan so that we earn their continued support for the Plan.

Operationally, our objectives are achieved by aligning all organizational, departmental and individual initiatives and goals to four Foundations (State of the Art Governance; Strategic and Responsible Financial Management; Better, Faster, Smarter Systems and Processes; and High Performing People) and four Strategies (Disciplined and Astute Investing; Unmatched Client Service Excellence; Outstanding Stakeholder Relations; and Educate and Advocate). A high level description of these Foundations and Strategies is provided in Appendix III.

OPB is confident that its Foundations and Strategies, as well as the initiatives outlined in this Business Plan, are appropriate to manage the Plan, to support the Government in its efforts to improve the Province's finances and to manage the impacts and seize the opportunities presented by the current environment.

Key Performance Indicators

OPB has adopted a number of key performance indicators (**KPIs**) to measure the success of our vision and strategies as well our success in executing them. The KPIs represent the outcomes relating to the Plan that are most important to the Plan stakeholders. The KPIs, our performance to date against them and our target performance as at the end of 2017 are set forth in the table in Appendix IIA, "Metrics and Key Performance Indicators".

Business Plan Summary

2017 Specific Environmental Factors

On both the Investments and Pension Administration side, there are specific environmental factors affecting OPB in 2017 (a summary of the key long-term environmental factors facing OPB is provided in the Environmental Scan on page 13 of this document). On the Investments side, we expect that the Asset Pooling operations of the Investment Management Corporation of Ontario (**IMCO**) will commence in the first half of 2017. This is a major project that will continue to absorb a substantial portion of the time and attention of the Senior Executive Team as well as a number of members of the Investments Team and other management personnel.

On the Pension Administration side, service demands are expected to continue increasing due to a variety of factors. First, while the current surge in pension commencements due to the insured benefit changes will abate in early 2017, we expect service demands to be higher than normal in 2017 as employers replace departing employees which will drive increased enrolments and past service purchases and transfers from other pension plans. We also expect that Ontario Lottery and Gaming Corporation's (OLG) modernization will create increased service demand for those members moving over to new private sector providers. Additionally, ongoing legislative changes such as the requirement to comply with the requirements under the Accessibility for Ontarians with Disabilities Act (**AODA**) and the introduction of annual pension statements for retired members continue to pressure our IT and Pension Administration resources. Given the increased complexity and breadth of services provided by OPB, we have had to fill internal vacancies that we previously deferred. This was necessary to ensure we are able to meet day-to-day service demands as well as the additional pressures imposed by the business initiatives required to comply with new government directives and legislation changes. Finally, our **Pension Modernization Initiative** will require significant involvement from our pension subject matter experts and IT resources. As we transform our systems to compete in an increasingly digitized environment we must ensure we have the proper technology in place to mitigate increased cyber security risks, which has an upfront cost and will also add to the ongoing annual operating costs of the Plan.

Required Modernization of Pension Administration IT Systems Commencing in 2017

As noted in last year's Business Plan, the long-delayed investments required on the Pension Administration side will now commence in 2017. In addition to the cyber security measures we are implementing (estimated at $500 thousand for initial costs and up to $360 thousand per annum thereafter), we are planning to invest over $1 million to extend the life of our current legacy pension information technology systems by another three to five years. This will provide us with the time we need to undertake the multi-year project to modernize these applications. These core pension applications which were created in 1995 and last updated in 2001 are approaching end-of-life in terms of support as they can no longer co-exist with other key current technologies (such as current versions of Microsoft Windows or Web browsers). In addition, legislative changes (such as annual pension statements for retired members and AODA compliance) and updates to our employer portal require investments of almost $375 thousand. The Pension Modernization Initiative will be a significant multi-year project that must start in 2017, due to the increasing risk of systems breakdowns, incompatibility with newer required applications, and to further improve data security and processing efficiency for our client services. We expect that by the end of 2017, Management will be able to more accurately assess the total overall approach to and investment for Pension Modernization Initiative as well as how long full implementation will take.

Expense Management

Alignment with the Government's Fiscal Objectives

As an agency of the Province of Ontario, Management respects that OPB is operating in an environment of cost constraint and ensures that it judiciously manages the Plan's expenses. OPB's expense ratio continues to be among the lowest in the industry. It is important to note that OPB's expenses are paid from the Plan's assets not from the Consolidated Revenue Fund and therefore are not reported as part of Government expenses. Despite a small deterioration in 2015, over the last several years the Plan's funded status has improved, primarily driven by our ability to generate net investment returns that improve the overall funded ratio of the Plan. This success has reduced Government cash contributions to the Plan.

While OPB's total expense ratio (including all Investments and Pension Administration expenses) has been stable over the last five years at approximately 0.50% to 0.55% of average assets, expenses in absolute dollar terms have been rising. The increase in investment operating expenses is primarily a result of two factors. First, increased external investment fees are a natural result of growth in assets (this is actually a positive result as the appreciation in asset values improves the funded status of the Plan). During the five years to the end of 2015, the assets of the Plan increased by 33% from $17.4 billion to more than $23 billion (despite paying out an average of approximately $250 million more in pensions each year than it receives in contributions), and as of the date of this Business Plan, the assets have risen to approximately $24 billion. Second, OPB's investment operating expenses have increased as the Plan's asset mix has shifted to a greater percentage in **Private Markets Investments**, in line with the 2014 Strategic Asset Allocation (**2014 SAA**). This shift is expected to generate better long-term investment returns and improve the funded status of the Plan by diversifying investments away from volatile public equities and shorter-duration, low-yielding bonds, into more inflation-sensitive real assets (Real Estate and Infrastructure) and Private Equity. While it does increase operating expenses, internal management of Private Markets Investments is more cost-efficient than external management[1] where costs are generally netted in the returns. OPB has started evaluating and selectively internalizing components of the public market portfolio to enhance returns, better manage risks, and reduce costs over the long term.

OPB respects the Government of Ontario's ongoing objective to restrain expense growth. In preparing this Business Plan and Budget, Management continues to review all expenditures with a view to ensuring that any proposed increase in expenses only be included in the Business Plan if deemed absolutely necessary. Management defines initiatives as necessary if they meet the following criteria:

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[1] An article by Cost Effectiveness Management Inc. published in the Rotman Journal of Pension Management found that the incremental returns generated from Private Markets Investments were entirely lost to fees if the investments were managed externally through funds.

- expected to generate a return on investment that is greater than the incremental expense;
- required to comply with legislation or Government directives;
- required to align OPB's activities with current Government policies (e.g. procurement and records management); or
- required to manage key risks (e.g. cyber security threats or end-of-life IT systems).

The Business Plan and Budget submitted by Management and approved by its Board of Directors provides for an increase of 4.2% over forecast 2016 expenses. This is driven by increasing operating expenses. In the Investments area, we must invest in people (front-, middle- and back-office personnel) to continue enhancing our internal asset management capabilities as we internalize more asset management activities and shift more assets to private markets (increase of approximately $2.8M).

Within the Pension Administration area, expense increases are primarily due to required investments to address end-of-life issues with our existing legacy applications, to mitigate cyber security risks, and to address certain new legislative changes that require other IT enhancements (total expenses in excess of $1.9 million).

An additional $724 thousand has also been budgeted for the IMCO asset pooling initiative. Although the budgeted IMCO set-up costs are not part of the operating expenses, they are included in overall total expenses.

Status of the Plan

The long-term sustainability and affordability of the Plan continues to be our top priority. The financial status of the Plan is strong. As at December 31, 2015, the Plan is approximately 97% funded, essentially the same as at the end of 2014. OPB has eased the Government's pension expense for the Plan by earning strong investment returns over the past several years (6.1% in 2015, 8.4% in 2014; 12.5% in 2013; and 11.9% in 2012) which have improved the funded status during that period by $1.6 billion. The initiatives planned for the next several years are directed at continuing to generate returns that consistently exceed the long-term rate of return assumed in the actuarial valuation.

OPB initiated a Long-Term Funding Study during 2013 which was completed in 2014. Such studies are generally performed every three to five years. These studies are used by OPB to make recommendations to the Plan Sponsor regarding any changes in contributions or benefits we believe are necessary to maintain a long-term 50/50 current service cost sharing between employers and employees and to ensure the sustainability and affordability of the Plan.

Based on the results of the study, OPB did not recommend any changes to contribution rates or benefits. However, the study identified a number of factors that could impact the cost of the benefits going forward. Accordingly, OPB determined that it should conduct another Long-Term Funding Study in 2016, earlier than the normal five-year interval, in order to more properly assess the potential overall impact of the factors noted above. The results of the Long-Term Funding Study will be known at the end of 2016 or early 2017 at which point we will have a better sense of required next steps.

Investment Strategy and Business Plan Initiatives for 2017-2019

In the Investments area, our focus continues to be: optimizing the management of the 2014 Strategic Asset Allocation (SAA) and conducting a triennial Asset/Liability study; building our in-house expertise and asset management capabilities; enhancing our portfolio reporting; and providing implementation and advisory support to the Asset Pooling initiative.

The 2014 Asset/Liability Study **(A/L Study)** revised OPB's SAA to target a further shift of assets from public markets to private markets. A five-year transition plan, with annual incremental targets during the transition period, was recommended to and approved by the Board. The 2014 SAA is achieving its objectives -- improving portfolio diversification and generating incremental returns with lower volatility than the previous SAA. In late 2016, prior to moving investment asset management to IMCO, we will initiate and manage a new Asset/Liability Study to re-examine the validity of our assumptions given factors that may have changed (i.e., member demographics, market volatility and returns). Once the study is complete, we will adjust (if necessary) the current SAA phased-in implementation plan to meet any new targets. In general, we expect that it will confirm the shift in assets from public to private markets.

In 2017, the Investments team will continue to leverage our in-house expertise following the success of OPB's Tactical Asset Allocation strategy (**TAA**) and the Asset Management Internalization Program we started in 2015 (**Internalization Program**). Management will evaluate and selectively in-source components of the public market portfolio based on in-depth cost/benefit analyses and required process controls. For example, in 2017, we expect to internalize the fixed income portfolio and fully internalize the money market mandate. Although our operating costs will increase slightly during the initial phase of internalizing the fixed income portfolio as we establish the necessary internal expertise (i.e. people and systems), we project that over the longer term OPB will generate savings of more than $2 million per annum once the entire fixed income portfolio is internally managed. Implementing and supporting further internal asset management will allow us to agilely respond to market movements and opportunities and generate incremental risk-adjusted returns on a cost-effective basis. OPB will continue to investigate and launch additional internal mandates that provide value-added portfolio management, while lowering costs over the longer term and providing greater control and transparency.

It remains increasingly important to the success of our Internalization Program that OPB advance and strengthen our investment reporting capabilities. OPB has made significant improvements to integrating timely and actionable internal investment reporting into the investment decision process. We will continue to develop our in-house risk monitoring and measurement as well as our attribution reporting. Other objectives for 2017 include updating systems to support the private market deal management and reporting process, and continuing to enhance portfolio and risk reporting.

Pension Administration Strategy and Business Plan Initiatives 2017-2019

In Pension Administration, our key focus in 2017 will be to start to modernize our aging pension administration systems. This is a multi-year initiative. We started to map out our high level systems and applications needs during 2016 to ensure that what we implement fully supports OPB's Advisory Vision and strategic direction. During 2017, we will finalize our business needs review so we can provide IT with information they need to determine the solutions required to move this initiative forward.

There are a number of components to the Pension Modernization Initiative. For example, ensuring we have the most up-to-date cyber security technology in place to protect our clients' data and our systems, continuing to introduce more online service transactions and implementing a digital strategy to help us move our advisory services forward.

To support the Pension Modernization Initiative, we will identify which business processes we need to reengineer and prioritize the order in which they need to be completed. Reengineering our business processes will streamline our practices and lead to service efficiencies and further improve our cost effectiveness.

During 2016, we managed through higher service demands from retiring members. In the first half of 2017 we expect that we will continue to experience higher service demands – this time stemming from new member enrolments which will result in higher past service purchase and transfer requests. Service demands are expected to remain high since new enrolments are expected to partially offset the higher number of retirements we experienced during 2016. We will also experience higher service demands as phase two of OLG modernization is implemented. We expect that OPB will need to set up 1500 to 3000 divested deferred records for OLG employees who will be transferring their employment to the new private sector providers.

Corporate Strategy and Business Plan Initiatives 2017-2019

OPB is a significant financial institution and has fiduciary duties and a duty of care to more than 80,000 members and retired members. OPB is accountable to the Government of Ontario as the Plan Sponsor and has legal obligations to a number of regulatory bodies, such as the Financial Services Commission of Ontario and Canada Revenue Agency. OPB is also required to comply with many of the Government of Ontario corporate directives. As such, OPB is committed to the highest standards of business practice in matters of governance, risk management, compliance, business continuity and resilience, records management, and privacy. Over the past several years OPB has made great strides in strengthening its practices in each of these areas, which has led to increased expenses for compliance and risk management. For example, in 2016, we developed an Operational Risk Assessment program to further enhance OPB's ability to monitor and manage risk. As part of our commitment to continually strengthen and evolve our risk and compliance practices, a few areas were identified where we must focus our resources between 2017-2019:

- **procurement process** – work has commenced in an effort to automate, streamline and improve the efficiency of the overall procurement function and ensuring compliance with government policies and directives on procurement activities;
- **records management** – work has begun within key areas of OPB to update appropriate retention and create electronic records. Work will continue through 2017 to introduce better systems and processes to comply with the government policies and directives on records management (with the exclusion of Pension Administration records which will be considered separately as part of the overall Pension Administration systems review);
- **security and cyber security** – investments are required to strengthen security and keep pace with the expanding nature of threats in a modern technology-based world. An information security officer position was added in 2016. In addition (as noted in other

sections within this Business Plan), we expect to invest $500 thousand for cyber security software which will, after the initial year, result in additional annual operating costs of $360 thousand per annum.

Outputs from these initiatives will support our activities to comply with Ontario's new Open Data Directive.

Budget and Projection 2017-2019

As explained in further detail in the Financial Budget and Staffing – 2017 section of this Business Plan, OPB's total expenses budget for 2017 of $131.1 million compares to forecast expenses of $125.8 million for 2016, represents a 4.2% increase. As has been the practice in OPB's recent budgets, the 2017 budget assumes that public market assets and, therefore, public market investment management fees, will not significantly increase relative to the asset levels at the end of June 2016. If public market assets actually appreciate significantly, investment management fees will be higher than the 2017 projected investment fees. In that case, although external investment management fees will be higher, the incremental return will far exceed those additional expenses. As noted earlier, OPB requires ongoing investments in people, processes and technology to ensure that the Plan's assets continue to be managed to deliver superior risk-adjusted returns over the long term; that we continue to provide quality service to our clients and stakeholders; and that we continue to implement immediately required improvements with respect to cyber security, and enhanced functionality to maintain the pension systems in preparation for the larger investments required to fully modernize legacy pension applications.

Expenses – Investments

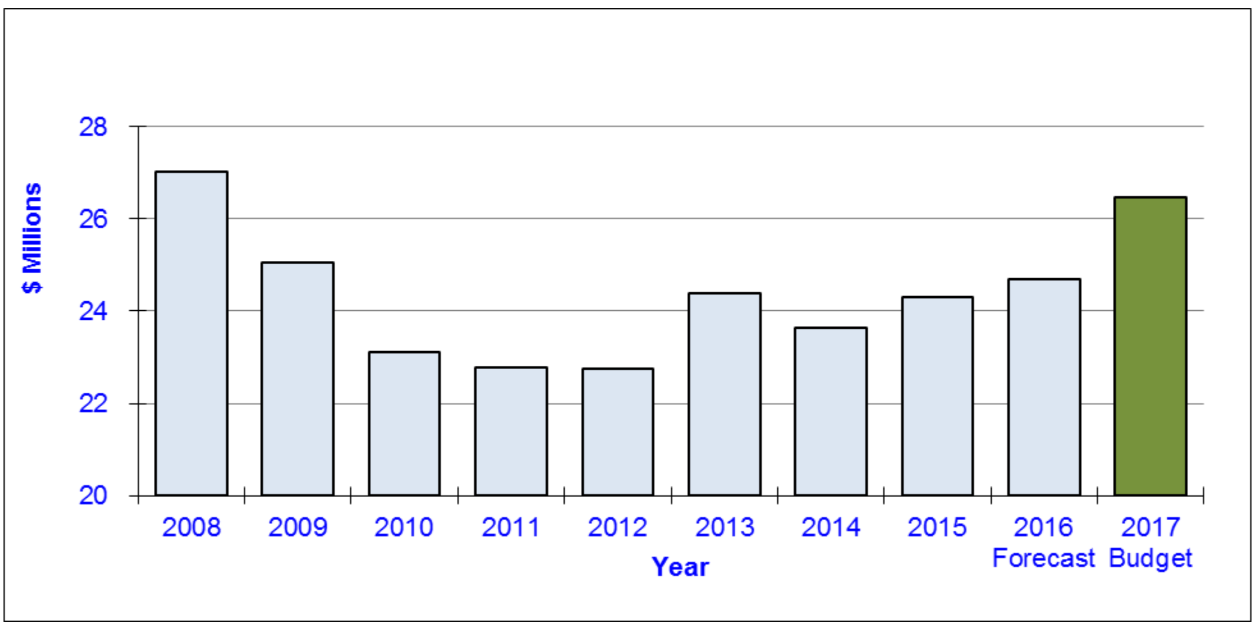
OPB's investment expense ratio for 2015 remained at a low level (0.44% or 44 cents per 100 dollars of assets under management – this includes both operating expenses and external investment fees) and we expect this trend to continue into the future even with increased absolute expenses. The shift toward more Private Markets Investments results in additional costs, as these assets are more expensive to acquire and manage than public market equities and fixed income. However, the additional returns from these assets are expected to significantly exceed the additional expenses and generate positive incremental returns over the longer term. Certain required hires that had been previously deferred were completed during 2016 which increases baseline expenses. In 2017, OPB needs to continue to grow the Investments team to optimize the 2014 SAA and associated strategies in order to continue to generate better risk-adjusted returns and incremental value for the Plan, the Sponsor, and members over the long term, particularly in this low-growth, low-rate environment.

One of OPB's strategies to maintain a low expense ratio is to pursue economies of scale. For example, we have successfully simulated scale by partnering with larger institutional investors and other private sector investment partners, which we will continue to pursue. A key tactic in the pursuit of economies of scale has been to advocate for, and drive forward, Asset Pooling for the investment management of broader public sector asset portfolios in Ontario. OPB Management is very pleased that the Government's legislation to enact IMCO has now been proclaimed and we will be devoting significant efforts to make Asset Pooling a reality and prepare for an operational launch in the first half of 2017. OPB has budgeted $724 thousand to support this initiative in 2017. If additional costs are required, Management is committed to funding this important initiative and will explain any overage.

Operating Expenses – Pension Administration

For Pension Administration, OPB's 2015 expense ratio continued to run at 11 cents per 100 dollars of assets under management (0.11%) which is competitive with its peers of similar size. Our cost per member at $308 compares to a Canadian peer average of $239. Although our cost per member is higher than larger peers (the average membership in the Canadian peer group is 3 times the Plan membership), it is very competitive with peers of our size in terms of membership. Since 2008, OPB has decreased the cost per member despite increased service demands and considerable additional compliance requirements imposed on the Plan by legislation and through the Government's corporate directives. The following chart shows actual Pension Operating Expenses from 2008 to 2015, plus the 2016 forecast and budget for 2017. Our expenses are trending upward as we invest in our Pension Administration systems to address end of life issues in preparation for further investment in the Pension Modernization Initiative. We also need to spend on technology in 2017 to build out our infrastructure to meet the emerging technology, people and legislative challenges. This spend includes investments in people resources to manage the significant increase in service demands driven in part by higher than normal retirements and enrolments, and our technology to ensure effective cyber security measures, updating our pension applications, reengineering our business processes and implementing a digital strategy to improve the client experience in addition to meeting requirements imposed through pension standards legislation and the Province's own corporate directives. These infrastructure investments will ensure that OPB is in compliance with legislative requirements as well as ensuring the integrity of our systems and security of our members' information. In 2017, significant investments are required in these areas that we estimate will cost $1.9 million.

Pension Operating Expenses – 2008 to 2017



Risk

Management has designed and implemented two principal risk management programs to capture the operational, strategic and financial risks encountered by OPB:

- the Enterprise Risk Management Program (the **ERM Program**); and
- the Investment Risk Management Program (the **IRM Program**)

Together, these programs are called the Governance, Risk and Compliance Program (the **GRC Program**). The primary purpose of the GRC Program is to apply a targeted management system to identify, assess, monitor and mitigate the universe of risks faced by OPB over time.

A key focus of the ERM Program is the risk that OPB is unable to achieve its strategic objectives because cost constraints prevent its ability to invest sufficiently in people, processes and technology. A key focus of the IRM Program is the risk that OPB generates insufficient returns to meet Plan obligations over the long-term.

Enterprise Risk: As noted throughout this Business Plan, OPB continues to invest in both Pension Administration and Investments to ensure OPB maintains industry-leading practices in a cost effective manner and with regard to stakeholder expectations. Ongoing investment is needed in OPB's risk mitigation activities related to:

- governance, particularly with respect to ensuring that OPB maintains an effective internal control framework as its activities become more complex;
- compliance with legislation, regulations and Government directives;
- cyber security, particularly concerning the protection of personally identifiable information and responses to new and emerging cyber threats;
- sustaining a highly reliable business continuity management program;
- increased service demands from members, retired members and employers, particularly as a result of the Government's announced changes to retiree insured benefits;
- upgrades to IT applications and infrastructure to ensure continued efficiency in pension operations; and
- people, processes and technology required to evolve our front-, middle- and back-office investment operations to support the 2014 SAA and internalize components of OPB's public markets investment activities.

Investment Risk: Management mitigates Investment Risk in several ways:

- OPB formally reviews its SAA every three years so that Management and the Board of Directors can consider the Plan's asset mix relative to its pension obligations. As noted earlier, an Asset/Liability Study was last completed in 2014, resulting in the Board of Directors approving the 2014 SAA. The 2014 SAA's phase-in allocation targets to mid-2019 continue to target a shift of assets from public to private markets assets. A new A/L Study will be conducted in late 2016 to re-assess the SAA in light of updated liability information from the 2014 study and new financial market forecasts to ensure the chosen asset mix is effectively designed to exceed the actuarial discount rate;

- OPB's performance measurement and attribution platform was enhanced in 2016 to support the increased portfolio reporting and monitoring required with increased internal asset management. This includes the requirement for "look-through" reporting of notional derivative positions;
- OPB has developed a Risk Dashboard providing 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 level and was designed so that investment risk levels can be managed within the parameters established by OPB's Investment Risk Policy. The Risk 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 our liabilities;
- Management has developed an in-house long-term pacing application to manage the timing of new private market investments and the roll-off of existing investments to ensure alignment with the 2014 SAA transition plan; and
- OPB continues to build in-house expertise and asset management capabilities.

The costs budgeted for 2017 are necessary so that OPB can continue to judiciously allocate its cost-constrained resources to support these key risk mitigation activities.

Environmental Scan

The environment for administrators of large public sector defined benefit pension plans continues to be complex and challenging. Environmental factors present opportunities, risks and impacts for the Plan. Whether and how effectively OPB responds to these factors can significantly impact Plan stakeholders. Accordingly, properly identifying and assessing these factors is necessary to successfully fulfill our mission. There are many aspects of the current environment that are placing significant and unavoidable pressure on OPB's operating expenses and resources. Despite this, OPB remains committed to the Government's expectation of expense management and we believe that the budget outlined in this Business Plan is highly respectful of that expectation considering these unavoidable, external pressures.

A summary of the top environmental factors is provided below:

Investment Environment: Recent economic and geopolitical factors have created one of the most challenging investment climates since the global financial crisis eight years ago. This investment environment can be characterized by several key themes:

- Global economic and monetary conditions continue to support a low growth environment suggestive of continued low interest rate levels over the medium term.
- Record low volatility in financial markets has been interspersed with only brief periods of higher volatility as investors contemplate global central bank policy and the ongoing availability of liquidity. A return to a more normal volatility regime might imply a repricing of risk premium for risk assets.
- Valuations of global risk assets may generally be defined as rich particularly in the context of negative earnings growth, low volatility, and low interest rates.
- Global developed world politics have entered a new regime characterized by the rejection of status quo. Monetary policy in the post global financial crisis period has

further broadened the disparity in wealth in the developed world, polarizing Main Street from Wall Street. The British referendum may well have set the tone for upcoming elections for other developed countries. In Europe (Italy, Germany and France) and the US, the rise of populism can mean real change for which the outcome and consequences to financial assets is very uncertain.

Province of Ontario Fiscal Situation: Controlling human resource costs, including pension expense, in the public sector is seen as one of the key paths to fiscal health in Ontario. Measures taken or being considered by the Government of Ontario to address the Province's budget deficit and debt level could impact the Plan and OPB in various ways. Initiatives such as changes to retiree insured benefits, changes to the long-term income protection program and its interplay with the Plan, and the OLG modernization have created significant human resource demands on OPB. Asset Pooling is another Government policy initiative that will increase the efficiency and effectiveness of the investment of public sector assets. In assisting with the implementation of Asset Pooling, OPB may incur expenses not currently budgeted.

Private Sector vs. Public Sector Pension Coverage: The already low and declining level of private sector pension coverage has led to attacks on public sector defined benefit pension plans because it has created the perception of unfairness. It has led the Government of Ontario to advocate for building private sector pension coverage and adequacy preferably through employer-sponsored plans but also through the establishment of/support for an expanded Canada Pension Plan.

Demographics: There are several demographic pressures facing the Plan. The most important of these is the fact that people are living longer and therefore collecting their pension longer. This increases the costs of pensions and creates funding pressures. In OPB's case, this has been largely addressed by strengthening the mortality assumption used to fund the Plan. OPB will continue to monitor this and other trends (such as modernizing the Ontario Public Service and Broader Public Sector which would reduce the Plan's active membership) to determine if plan design and other funding changes are required in response to these trends. During 2016, the number of members who elected to retire was much higher than OPB has experienced in the past, however, this may be offset by a spike in enrolments in 2017.

Rising mandatory governance, risk and compliance standards: OPB continues to be vigilant and responsive to constantly evolving cyber security threats. As these threats become increasingly sophisticated increased vigilance is essential to effectively mitigate this risk. Additionally, there are a number of government directives and legislative requirements that OPB must comply with including Ontario's new Open Data Directive, anti-spam legislation and accessibility for persons with disabilities legislation (AODA). This creates resource and cost pressures and impedes our progress on strategic initiatives, as we must dedicate limited human and financial resources to comply with these obligations.

Rising service expectations: Our members, retired members, employers and other stakeholders expect faster and more sophisticated service. Our clients want more personalized advisory services to help them navigate key pension decisions during their membership, and increasingly they expect to be able to exchange information, complete transactions and receive their communications online. Our current IT infrastructure and systems are not capable of meeting these service demands and expectations, which is another reason why our Pension Modernization Initiative is so important.

Financial Budget and Staffing - 2017

(All numbers in the tables are expressed in $thousands unless otherwise stated)

Budget Overview

The 2017 Budget separately details the key operating expenses for the Plan's two main lines of business, Pension Administration and Investments, as well as on a consolidated basis.

As noted throughout this document, the Business Plan calls for continued hiring in the Investments area as we transition more assets to meet the 2014 SAA targets and internalize more activities. The Senior Executive Team supports the view that development must continue in order for OPB to maintain its strong investment results, thus improving the likelihood that the funded position of the Plan continues to improve. The increased expense levels are even more necessary in the current low-rate market environment, and to support the move to a larger more complex asset pooling environment – i.e. the formation and operational start-up of IMCO.

Increased expenses in the Pension Administration area are primarily focused on investment in technology to upgrade our cyber security and to extend the life of existing aged systems and other systems enhancements driven by legislative and benefit entitlement changes. In addition, as the complexity of operating the Plan increases, as service demands increase, and as subject matter experts are loaned to the technology projects, previously vacant positions have had to be filled in 2016 and we've had to hire some additional contract support. Those increased costs carry into 2017. However, some of these human resource costs will not continue past 2017.

Consolidated Expenses

Consolidated Expenses (in thousands of dollars)	2017 Budget	2016 Forecast	Increase/ (Decrease)	Change %
Investment Management Fees	76,300	75,800	500	0.7%
Operating Expenses	53,643	48,800	4,843	9.9%
Capital Expenditures	420	254	166	65.2%
IMCO Set-up costs	724	950	(226)	(23.8%)
Total	131,087	125,804	5,282	4.2%

The 2017 consolidated budget for Investment Management Fees, Operating Expenses, Capital Expenditures and IMCO setup costs is $131.1 million, an increase of 4.2% over the 2016 Forecast. Investment management fees are planned to increase modestly by $0.5 million primarily due to the increase in transaction costs, while total Operating Expenses are planned to increase by $4.8 million.

Although the continued shift of assets from publicly traded bonds and equities to Private Markets Investments as OPB implements the 2014 SAA reduces external investment management fees, the increase in the value of the remaining publicly traded assets is contributing to the modest overall increase in investment management fees. If publicly traded assets (which are, for the most part, externally managed) increase significantly in value during 2017, then investment management fees will be higher than projected.

On the Operating Expense side, OPB has planned $27.3 million for Investments operating expenses and $26.4 million for Pension Administration operating expenses. The budgeted increase of $4.8 million in consolidated operating expenses is attributable to $3.2 million in higher investment operations expenses and $1.7 million increase in pension operations expenses over 2016.

The increase in expenses for the Investments area is primarily due to the continued expansion of the Plan's in-house investment capabilities. Leveraging previous success, Management plans to further build its internal asset management capabilities in order to continue generating the incremental returns required to improve the Plan's funded status. Total investment expenses (including both investment operating expenses and investment management fees) are budgeted to be $103.6 million versus $99.9 million in the 2016 forecast, representing a 3.7% increase primarily due to the increase in operating expenses.

The proclamation of the IMCO Act in July 2016 formally established IMCO, allowing the implementation of the Asset Pooling initiative to move forward. OPB is partially funding the establishment of this organization. In 2017, Management has set aside $724 thousand related to IMCO setup costs to cover costs for relocation, as well as other advisory legal and consulting costs. This compares to the $950 thousand we are now forecasting for IMCO setup costs in 2016. These budgeted costs are included as part of the overall expenses, however, they are not considered part of OPB's 2017 operating expenses for the purpose of comparing year-over-year changes.

Contingencies and Risk

Management has identified the following factors that may adversely impact the costs as set out in the 2017 Budget:

1. Increased external investment management fees, resulting from greater assets under management due to positive investment returns;
2. Costs related to implementing any new or modified legislation or to government workforce amendments that have not already been considered as part of the 2017 Budget;
3. Costs associated with unexpected events or litigation; or
4. Higher than anticipated costs related to the Asset Pooling initiative. Management has budgeted $724 thousand (as noted above), however, actual implementation costs could be higher.

To mitigate the above-noted risks, the Senior Executive Team regularly meets to consider the impact of unplanned events on planned projects and the budget. Where possible, priorities are adjusted to ensure that the overall budget impact is minimized.

Investment Management Fees Projections[2]

Investment Fees Projections (in thousands of dollars)	2017 Budget	2016 Forecast	Increase/ (Decrease)	Change %
Investment Management Fees- External Managers	58,000	60,000	(2,000)	(3.3%)
Custodial Fees	5,300	5,200	100	1.9%
Transaction & Private Market Costs	13,000	10,600	2,400	22.6%
Total Investment Fees	76,300	75,800	500	0.7%

Investment management fees paid to external managers are projected to decrease due to the impact of moving more of the Plan's asset mix towards private assets. The custodial fees are projected to increase slightly by 1.9% due to changes in asset mix composition. Transaction and private market costs are projected to increase in 2017 compared to 2016 primarily because of the higher transaction volumes anticipated as a result of the continued shift of public market assets to private market assets.

Note: As is customary (i.e. industry practice) for Private Markets Investments, fees paid on private market funds such as limited partnerships are generally deducted directly from the distributions or proceeds of any sales and are netted against the fund returns.

[2] Given that Investment Management Fees and a large part of the Custodial Fees are driven by the underlying appreciation/depreciation of the assets based on market movements which cannot be budgeted, we have indicated that the fees are "Projections" rather than a "Budget".

Operating Expenses

The tables on the following pages present the consolidated view of the 2017 and 2016 operating expenses for OPB, followed by the breakdown between the Pension Administration (Pensions) and Investments businesses.

Consolidated Operating Expenses[3] (in thousands of dollars)	2017 Budget	2016 Forecast	Increase/ (Decrease)	Change%
Staffing Costs	31,706	28,984	2,722	9.4%
Office Operations	6,488	6,033	455	7.5%
Technology	10,814	9,320	1,494	16.0%
Professional Services	2,637	2,471	166	6.7%
Depreciation	801	898	(97)	(10.8%)
Communication, Board Remuneration & Audit	1,196	1,094	102	9.3%
Total	53,643	48,800	4,843	9.9%

Operating Expenses for Pensions & Investments (in thousands of dollars)	2017 Pension Budget	2017 Invest. Budget	Total 2017 Budget	2016 Pension Forecast	2016 Invest. Forecast	Total 2016 Forecast	Pensions Change %	Invest. Change %
Staffing Costs	14,212	17,494	31,706	13,772	15,212	28,984	3.2%	15.0%
Office Operations	3,349	3,139	6,488	3,197	2,836	6,033	4.8%	10.7%
Technology	7,007	3,807	10,814	5,868	3,452	9,320	19.4%	10.3%
Professional Services	646	1,991	2,637	723	1,749	2,471	-10.6%	13.8%
Depreciation	462	340	801	527	371	898	-12.3%	-8.5%
Communication, Board Remuneration & Audit	688	509	1,196	615	479	1,094	11.8%	6.1%
Total	26,364	27,279	53,643	24,701	24,099	48,800	6.7%	13.2%

[3] Excludes any IMCO set-up costs.

Overall operating expenses are expected to increase by 9.9% over the 2016 Forecast. The Pensions area expenses are expected to increase by 6.7% in 2017, primarily due to higher Technology expenses. Investments area operating expenditures are expected to grow by 13.2% over the 2016 forecast, mainly due to grow-in of staff hired in 2016 to continue to improve the capability of front-, middle- and back-office areas to adequately support the increase in internal asset management activities (both public and private), including more complex hedging activities.

Budget Highlights

The larger contributors to budgeted expenses are analyzed below. Each section also details the impact of these costs on the Pensions and Investments business areas.

1. Staffing Costs

Operating Expenses for Staffing Costs (in thousands of dollars)	2017 Pension Budget	2017 Invest. Budget	Total 2017 Budget	2016 Pension Forecast	2016 Invest. Forecast	Total 2016 Forecast	Pensions Change %	Invest. Change %
Total	14,212	17,494	31,706	13,772	15,212	28,984	3.2%	15.0%
Staff Complement end of Year	156	49	205	156	46	202	0	3%

Investments' complement represents staff for the front-, middle-, and back-office teams.

Staffing costs represents approximately 60% of total operating costs. The salaries budget includes both salaried and temporary staff, as well as accruals for incentives, severance, vacation pay and pensions.

In accordance with the collective agreement reached in 2014, there are no scheduled salary range adjustments for bargaining unit staff in 2017. We have budgeted for stepped merit increases for bargaining unit members that are eligible as they reach certain milestone anniversary dates. Merit increases are also budgeted for Investments and eligible non-bargaining unit employees.

Staffing costs for the Investments area are expected to increase by $2.3 million primarily due to the grow-in of positions hired in 2016, as well as new hires to support the increase in internal asset management activities. Staffing costs for the Pensions area are expected to increase by $0.4 million primarily due to the grow-in of positions hired in 2016, which include both the filling of vacancies previously deferred and the need for new positions, such as an Information Security Officer and a Solutions Architect as cyber security threats become more complex and to support the enhancements required to the existing legacy pension administration applications as we prepare for the multi-year Pension Modernization Initiative that will require further investments in technology in future years.

2. Office Operations

Operating Expenses for Office Premises & Operations (in thousands of dollars)	2017 Pension Budget	2017 Invest. Budget	Total 2017 Budget	2016 Pension Forecast	2016 Invest. Forecast	Total 2016 Forecast	Pensions Change %	Invest. Change %
Total	3,349	3,139	6,488	3,197	2,836	6,033	4.8%	10.7%

The office operations budget includes the office rental cost and general business support costs. Rent and related charges such as realty taxes and utilities represent a significant portion of the budget. Overall, budgeted office rental costs are increasing by less than 2%. Cyber Insurance of $80 thousand is a newly added cost to protect the Plan against potential financial losses due to cyber-crime, loss of data etc. The cost of subscriptions, travel, accommodation, meals, etc. related to attending conferences, participating in registered seminars and presenting to stakeholders throughout the province is also included in office operations. While these costs are budgeted to increase relative to 2016 Forecast, Management has processes in place to ensure the planned expenses comply with the Government's Travel, Meal and Hospitality Expenses Directive.

3. Technology

Operating Expenses for Technology (in thousands of dollars)	2017 Pension Budget	2017 Invest. Budget	Total 2017 Budget	2016 Pension Forecast	2016 Invest. Forecast	Total 2016 Forecast	Pensions Change %	Invest. Change %
Total	7,007	3,807	10,814	5,868	3,452	9,320	19.4%	10.3%

The Technology budget consists of both oversight and maintenance of the current Pension Administration and Investments systems, investment data, application licenses and project costs to implement new initiatives. The overall IT budget is budgeted to increase by 16.0% ($1.5 million) over the 2016 Forecast. The increase is primarily due to the investments that have to be made, particularly on the Pension Administration side to implement enhancements and upgrades required to ensure that the aged legacy technology applications can continue to serve our clients, protect confidential data against cyber security threats and comply with new legislative requirements. In addition, on the Investments side, as further asset management activities are brought in-house, and as the analytical and risk management capabilities are enhanced to deal with the increased complexity, we are budgeting for an increase in investment data and service costs of $464 thousand and a modest increase in base IT operating costs of $100 thousand.

2017 Initiatives

Expenses for initiatives are generally one-time or project-based costs that support a specific objective or initiative identified as furthering the progress towards fulfilling OPB's various key goals and objectives. The costs of these initiatives, which may include costs from multiple expense categories, are listed below. Certain details related to these initiatives have been described throughout this Business Plan. The expenses are the incremental external costs of the initiatives. The internal costs (such as salaries and related benefits of internal staff), while considered in the planning and execution of the projects, are not included as part of the initiatives budget on the following page.

2017 Initiatives (in thousands of dollars)

#	**Project Name**	**$000s**
1	Prism life extension/risk mitigation	750
2	Automated Testing – part of risk mitigation	250
3	Pension Modernization Initiative[4]	-
4	Advanced threat protection and detection services	250
5	Email monitoring and detection	250
6	Annual Pension Statement - legislative changes	125
7	Public web platform refresh	200
8	Employer portal refresh assessment and enhancements	50
9	Internationalization of Investment management	100
10	Private Markets	50
	Total Initiatives (excluding IMCO set-up costs)	2,025
	Asset Pooling IMCO is expected to commence operations in the first half of 2017. OPB is partially funding the expenses associated with IMCO's establishment. For 2017, OPB has budgeted $724 thousand for this initiative which, as noted earlier, has been segregated from OPB's regular operational expenses. It is important to note that actual costs to operationalize IMCO may be higher than the amount budgeted; however, Management is committed to completing this project and will explain any budget overage that may occur. Management is devoting significant time and effort to successfully implementing asset pooling.	
11	IMCO set-up costs	724

[4] While there are no external resource costs planned for this initiative in 2017, we have included it as work on this initiative may occur in 2017 should the Prism life extension and Automated testing initiatives prove to be less resource intensive than planned. In that event, we would accelerate our preparation for the significant spend to modernize our systems over the next few years.

Appendix I – Defined Terms

In this Business Plan:

Asset Pooling means the asset pooling initiative contemplated by the *Investment Management Corporation of Ontario Act, 2015*.

Budget means the budget contained in this Business Plan.

Business Plan means this Ontario Pension Board Business Plan 2017-2019.

Management means, collectively, employees of OPB holding the position of or senior to manager.

Investments mean all activities relating to the investment and management of the Plan's assets, including front-, middle- and back- office resources.

Plan Sponsor means the Province of Ontario in its capacity as sponsor of the Plan.

Pension Administration means all activities relating to the management and administration of the Plan.

CEM means CEM Benchmarking Inc., an independent benchmarking company.

bps means basis points, a measure equal to one one-hundredth of a percentage point

The following additional terms are explained in the body of the Business Plan on the pages indicated:

Defined Term	**Page number**
2014 SAA	6
AODA	5
Advise & Protect	3
A/L Study	8
ERM Program	12
Fund	3
GRC Program	12
IMCO	5
Internalization Program	8
IRM Program	12
KPIs	4
Pension Modernization Initiative	5
Plan	3
Private Markets Investments	6
TAA	8

Appendix IIa – Metrics and Key Performance Indicators

Category	Objective	Long-term Objective	Current Performance	2017 Objective
Investments	Return vs. Discount Rate	Exceed Discount Rate (5.95%) over rolling 4 year period by 50 bps	Outperforming as at June 30, 2016 3.22% above Discount Rate	6.45% or higher over a rolling 4 year period
	Return vs. SAA Benchmark	Exceed SAA Benchmark over rolling 4 year period by 50 bps	Outperforming as at June 30, 2016 1.21% above Benchmark	Exceed benchmark by 50 bps over a rolling 4 year period
Pension Services	Client Satisfaction Score	8.5/10 or higher	Outperforming (8.6/10)	8.6 or higher
	CEM Service Score	85/100 or higher	Outperforming (89 for 2015 CEM Survey)	87 or higher
	CEM Peer Ranking	4th or higher	Outperforming (2nd in 2015 per CEM Survey)	4th or higher
Expense Management (cost per Assets Under Management)	Consolidated	70 bps or lower	Outperforming (55 bps in 2015, expect 54 bps for 2016)	60 bps or lower
	Investments	60 bps or lower	Outperforming (44 bps[5] in 2015, expect 43 bps for 2016)	48 bps or lower
	Pensions	12 bps or lower	Outperforming (11 bps in 2015, expect 11 bps for 2016)	12 bps or lower
PSPP Sustained	Going Concern Funded Ratio	100% by 2020	Underperforming (97% at Dec.31, 2015)	98% or better
	Contribution Rates	9% or lower blended rate on average salary for non-OPP members (currently $85,000)	Met (Current blended rate is 7.64%)	9% or lower[6]
	Benefit Levels	Current benefits maintained	Met	Current benefits maintained

[5] This ratio is based upon a simple average of the assets under management.

[6] It is recognized that this metric is not completely within the control of OPB since the Plan Sponsor can make decisions that impact this KPI. Nevertheless, Management strives to attain the noted objective.

Appendix IIb: Key Goals / Objectives for 2017

Description of Key Goals / Objectives	Metric / Measurement
Optimize the implementation of the SAA	Complete the A/L Study Meet interim SAA benchmark targets
Continue to build on in-house expertise and asset management capabilities	Evaluate 1-2 public asset classes/mandates and selectively insource if appropriate
Continue to enhance portfolio reporting	Review and define the increased demand for new reports in line with the increased complexity of the Fund
Continue to enhance internal control structure to accommodate new asset management activities	No "major" audit issues arising from any internal audits All moderate (and lower level) audit issues are addressed within stated timelines
Establish IMCO functional organization structure	IMCO operational in the first half of 2017
Develop a multi-year pension administration strategy and associated information technology plan/strategy	Strategies/Plans presented to, and approved by, OPB Board of Directors
Deliver agreed projects as noted in the 2017 Initiatives section on **Page 21**	Deliver implementation of solutions per agreed project charters
Meet or exceed core Application & Infrastructure service levels while improving IT compliance and productivity	Meet standards set in Service Level Agreements
Manage cyber security threats	Develop new security/cyber security strategy Train employees on cyber threats Ongoing assessment of risk via ERM process
Attraction and retention of staff, especially those positions defined as critical to the organization	Voluntary turnover < 10% for full year Vacancy rate < 5%, measured quarterly
Continue to manage internal operating expenses[7] judiciously	Budget variance for year within + / - 5%

[7] Operating expenses exclude investment management fees.

Appendix III: Foundations and Strategies

To implement OPB's strategic vision, all organizational, departmental and individual objectives align with one or more of the following Foundations and Strategies.

State of the Art Governance – our approach to governance is to ensure that structures and processes are in place to provide appropriate oversight with respect to the strategy of the organization and management of its key risks.

Strategic and Responsible Financial Management – this is a fundamental fiduciary responsibility, and essential for maintaining the trust of our stakeholders. We must demonstrate value for money as we invest in programs that improve service to clients and stakeholders, build out support for investment activity, meet legislative requirements, and improve the efficiency, reliability and security of our networks.

Better, Faster, Smarter Systems and Processes – OPB is committed to continuous improvement and looks for opportunities to automate and streamline routine pension administration transactions and certain investment related activities in order to ensure efficiency and to enable the delivery of advisory services at reasonable cost.

High Performing People – we believe strong leaders facilitate a culture of high performing teams, and that each individual employee contributes to the organization's success. We view programs and initiatives aimed at developing and retaining our internal talent as a crucial investment.

Disciplined and Astute Investing – to achieve Plan objectives, OPB has developed a strategic approach with an emphasis on capital preservation. We seek to generate strong, stable, long-term investment returns within acceptable risk parameters.

Unmatched Client Service Excellence – OPB is committed to providing outstanding service to our clients. This means delivering the pension promise with proactive, knowledgeable, timely and accurate service and support.

Outstanding Stakeholder Relations – we believe our role is one of a trusted advisor. This means providing stakeholders with balanced recommendations that reflect our fiduciary duty, our commitment to the long-term sustainability of the Plan, and the Government of Ontario's need for cost constraint.

Educate and Advocate – OPB has a significant role to play in contributing to public discourse, and policy making on the topic of pension coverage and retirement income adequacy, not just for the benefit of members of the Plan, but for the benefit of all Canadians.

Appendix IV: 3 Year Projected Expenditures 2017 – 2019

Currently, OPB's operating expenses comprise Pension Administration and Investments management. The commencement of operations for IMCO is expected to occur during 2017. As the exact timing of the transition is not certain, for the purposes of this projection, we have assumed that regular investment operations will be considered operating expenses throughout 2017. When IMCO's operations do commence, OPB's portion of IMCO's operating costs will be considered as an additional management fee to OPB. In the projection below, we have shown this impact in years 2018 and 2019 as a reduction in the operating expenses of OPB, and a corresponding increase in the investment management fees that would be charged by IMCO to recover its operating costs from its clients, including OPB.

Projected Expenditures (in thousands of dollars)	2017[1]	2018[2,8]	2019[2,8]
Investment Fees			
Investment Management Fees – Public[3]	58,000	58,000	58,000
Custodial fees[3]	5,300	5,300	5,300
Transaction costs	12,000	12,000	12,000
Private Market Costs[4]	1,000	1,020	1,040
IMCO Operating Costs[7]	-	27,825	28,380
Total Investment Fees (A)	76,300	104,145	104,720
Operating Expenses[6]			
Staffing costs[5]	31,706	14,320	14,606
Office Operations	6,488	3,416	3,484
Technology[8]	10,814	7,148	7,291
Professional Services	2,637	659	672
Depreciation	801	471	480
Communication, Board Remuneration and Audit	1,196	693	706
Total Operating Expense (B)	53,643	26,706	27,240
Total Capital Expenditure (C)	420	244	250
IMCO Support (D)	724	-	-
Total Expenditure (A + B + C + D)	131,087	131,095	132,210

Notes and Assumptions for 3 Year Projected Expenditures 2017-2019:

1. The 2017 Projection is the 2017 Budget.
2. For 2018 and 2019, an overall 2% increase is assumed for each category, except as noted below.
3. Investment management and custodial fees are projected to remain flat in 2018-19.
4. Private market costs (consulting and broken deals) are projected to grow by 2%
5. Staffing costs – 2% salary increase is provided for in each of 2018 and 2019, and grow-in of positions for Investments business.
6. CPI increase of 2% provided for other operating expenses.
7. IMCO operating costs - OPB's share of IMCO's costs.
8. In 2018 and 2019, no additional costs have been projected for pension modernization. The costs associated with this initiative are yet to be determined as we are in the planning stages of the needs review.

Appendix V: Organizational Chart – Management Level