THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Revenue

COMMISSIONER'S OFFICE

State Office Building
333 Willoughby Avenue, 11th Floor
PO Box 110400
Juneau, Alaska 99811-0400
Main: 907.465.2300
Fax: 907.465.2389

October 14, 2016

Senator Pete Kelly, Co-Chair, Senate Finance Committee
Senator Anna MacKinnon, Co-Chair, Senate Finance Committee
Representative Mark Neuman, Co-Chair, House Finance Committee
Representative Steve Thompson, Co-Chair, House Finance Committee
Alaska State Capitol
Juneau, AK 99801-1182

Dear Finance Committee Co-Chairs:

This letter is written in response to the intent language of HB 256 which directs the Department of Revenue, in consultation with the Alaska Permanent Fund Corporation (APFC), to evaluate and report to the Finance Committees on the potential consolidation of investment management responsibilities by October 15, 2016. KPMG was retained to assist in the evaluation of the benefits and potential risks of three merger scenarios, including simply transferring the Constitutional Budget Reserve Fund ("CBRF") to APFC and we have attached their findings to this letter.

The KPMG report outlines potential annual savings of up to $13.1 million by consolidating the two organizations under the Treasury Division and up to $9.7 million by consolidating under the APFC. However, after reviewing the findings we are not persuaded that the savings from consolidation are sufficient to outweigh the benefits of maintaining the two organizations based on the following observations:

Potential savings will result in a greater budget request from the general fund
The savings identified would reduce total costs but would have the effect of shifting costs to the funds managed at the Treasury, as the Treasury currently functions at a lower cost base (See Executive findings on page 5). This could in turn lead to greater funding from the general fund of up to $9.6 million.

Potential savings are relatively small in relation to the risk to returns
KPMG has noted in their report that even a modest impact on underlying returns could negate the cost savings of a merger under any scenario. While the cost savings are large in real dollar terms, they are a fraction of the annual returns and losses that the Permanent Fund and the PERS and TRS Trust Funds see each year. For example, the Permanent Fund's 1 percent return for FY16 produced $400 million in net income. The unique approach and specializations

of the two main pensions and the APFC funds have resulted in different annual gross returns, providing diversity of outcomes in the short-term. However, over time, the funds have been able to achieve similar results of between 8.79% and 9.17% over the last 32 years. Consolidation, as assessed in the report, could impact future returns as well as the net of costs performance of the individual funds being managed. Further, it is uncertain where the cost savings and liquidity costs would manifest as a result of the inherent tension between retirement trust fund return requirements and APFC expectations.

The largest target of potential savings is in conflict with the current direction of both organizations

The largest line item of savings, of $4.4-$7.7 million, focuses on reducing staff which conflicts with the Administration's support of both organizations' move to increase the in-house management of investments. In the last couple of years, investment and support staff have been added to the budgets of the Treasury and the APFC in order to capitalize on the experience and talent of staff locally to manage additional assets internally. While total personal services costs have increased, overall costs to the funds have already started to decrease as a result of these efforts. This will not only reduce total costs without cost shifting between funds, but it will also maintain economic value within Alaska as less money is paid to external managers located outside of Alaska.

The APFC was specifically separated from the Department of Revenue to prevent political pressure

When the Legislature created the APFC in 1980, its purpose was, according to the Free Conference Committee report, to move the Fund from the Department of Revenue to a public corporation where it would be protected from political influence. Although the Treasury manages funds, including the retirement trusts and the general fund, it was agreed that "the Permanent Fund, with its fundamentally different goals and large size, should not be in the hands of the same people whose primary duty is managing money for day-to-day use by the state." While the Legislature may wish to reverse its decision, it is important to remember the original intent of separating the two investment agencies.

Merging the APFC and the Treasury could impact the Permanent Fund's standing in the global investment community

The Fund's status as a sovereign wealth fund has allowed the Corporation to access relationships with similar funds around the world, access which is granted in part due to the APFC's perceived status as being separate from the interests of state government and the APFC Board's investment approach, which differs from that of public pension funds and better aligns with other sovereign wealth funds. The loss of these opportunities for knowledge sharing and joint investment that would likely occur if the APFC were no longer seen as separate from the Department of Revenue and could impact future earnings of the Fund.

Consolidation would diminish the diversity gained

When the APFC was separated from the Department of Revenue, the fiduciaries and staff built organizations around the differing directives and objectives of the funds under management. What resulted was unique specializations and the development of efficient, yet different operations for each organization. Efficiencies, such as pooled investment management at the Treasury and specializations, such as the APFC's direct Real estate investments have allowed each organization to achieve different risk/return metrics for the funds managed.

KPMG's assessment identified that the two organizations, although they may look similar at a high level, are indeed diversified against each other. In fact, even the 11 external investment managers the funds have in common have different mandates. Diversity through exposure to different investment experiences, leads to potential opportunities that would otherwise not be available as well as a larger collective knowledge base from which to grow.

Significant governing policies and legal requirements would need to be altered to effect consolidation

Although the assessment assumes that there would be no changes to the structure or function of the oversight boards of the organizations, to the extent that assets are commingled for investment purposes, there will be issues with the coordination of manager selection and asset class definitions among the three fiduciaries. Also not addressed is the legal ability to commingle assets of certain funds with other funds.

Loss of institutional knowledge

KPMG's assessment contemplates the reduction of long-term staff as well as the consolidation to one common custodian. This could lead to the loss of institutional knowledge and availability of historical custodial data, both valuable yet intangible aspects of operations.

The Administration considered the legislative intent as an opportunity in the current fiscal situation to review practices and determine whether potential synergies and savings exist between the Treasury and APFC. KPMG's review and assessment, although identifying cost savings through consolidation, was an analysis as of a single point in time. It did not consider the important issues outlined above or the current transition each organization is undertaking to reduce overall costs and improve net returns through internal investment management.

Having served as past and present fiduciaries of state funds, PERS and TRS Trust Funds and the Permanent Fund, we believe, particularly in this time of fiscal transition where investment income is the major source of State revenue, that the Treasury and APFC should remain as autonomous entities and work with their fiduciaries to determine how best to achieve appropriate overall net returns for the funds managed according to the risk appetite and cash needs of the funds. The other fiduciaries of the funds have already voiced opinions, through resolution or in board records supporting the benefits of remaining independent, along with a move toward internal investment management as a preferred method to reducing overall costs.

Although we do not believe the consolidation of the Treasury and APFC is prudent at this time, we find the work of KPMG to be validating and useful. The analysis identified that both organizations perform in different yet efficient manners, provided insight into the unique processes of each organization that may be able to be leveraged, and highlighted a number of areas that can be explored to achieve further efficiencies. The two agencies have already shared investment support resources and are committed to continuing to find ways share resources where appropriate and identify efficiencies and specializations to improve net returns of the funds under management.

We would be glad to discuss any questions you might have.

Sincerely,

Randall Hoffbeck	Angela M Rodell
Commissioner	CEO
Alaska Department of Revenue	Alaska Permanent Fund Corporation

Cc: The Honorable Bill Walker, Governor

Darwin Peterson, Legislative Director

Members, Alaska Permanent Fund Corporation Board of Trustees

Members, Alaska Retirement Management Board

KPMG

State of Alaska Funds Merger Analysis

FINAL REPORT - October 11, 2016

Contents

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Executive Summary

Executive Summary

Background

The Alaska State Legislature issued a directive to evaluate whether management responsibility over assets currently managed by the Alaska Department of Revenue Treasury Division ("Treasury") should be transferred to the Alaska Permanent Fund Corporation ("APFC").

In response to the directive, APFC management engaged KPMG LLP ("KPMG") to perform an assessment over the potential full or partial merger of some or all of the asset management responsibilities of the Treasury and the APFC. The assessment was focused on three options: 1) transfer all investment funds from APFC to Treasury, 2) transfer all investment funds from Treasury to APFC, and 3) transfer the Constitutional Budget Reserve Fund ("CBRF") to APFC.

The assessment excluded the following:

a) an assessment of or viewpoint about any underlying public policy matters regarding APFC or any Treasury funds

b) design of future state operating model

c) evaluating the achievability of financial forecasts using operational synergies identified in this report

d) recommendations regarding adoption of any business model or implementation strategy

e) the risk-return and historical performance of each fund

Guiding Principles

We adhered to the following guiding principles in performing this assessment:

— There would be no changes to the structure and function of the oversight boards of either organization including definition of strategy, asset guideline methodology, etc.

— The target state should include all existing internal capabilities and be scalable for growth

NOTE: The reference to "Treasury" throughout this report includes the Alaska Retirement Management Board (ARMB) funds, State funds, Mental HealthTrust Reserve fund and Exxon Valdez Oils Spill (EVOS) funds

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Executive Summary (contd.)

Findings

Our assessment is based on the materials and documentation provided to us by APFC and Treasury, and additional insights and details gathered through interviews of key stakeholders from both divisions at their offices in Juneau, Alaska.

The table below outlines the summary of our findings from the assessment.

	Option #1 APFC transfer to Treasury	**Option #2** All Treasury Funds transfer to APFC	**Option #3** CBRF transfer to APFC
Potential Annual Cost Savings	**$ 11.1 to $ 13.1 M**	**$ 7.5 - $ 9.7 M**	**-**
Investment Cost (One Time)	**$ 500 – 700 K**	**$ 650 – 1,000 K**	**$ 200 – 450 K**
Pay Back Period	**< 3 months**	**< 3 months**	**NA**

- Options 1 and 2 have potential for cost savings. The cost savings are approximately zero to 1.4 basis points of the $96.3 billion assets under management (AUM) of the combined organizations (APFC and Treasury). These savings need to assessed against impacts on the investment returns of underlying assets as even a modest impact can negate effect of these cost savings. We recommend you further assess the risks below before executing any of the options:
  - a) impact of new process required to reconcile requirements of both boards on the investment performance
  - b) potential increase in the operational risk due to custodian consolidation
  - c) potential reduction in APFC's deal sourcing and credibility with international partners (in option #1)
  - d) potential information loss during migration of investment data from one custodian platform to another
  - e) potential increase of manual workarounds / processes
- Option #1, transferring APFC to Treasury, has the maximum cost savings and minimum investment cost due to the Treasury's lower cost base and existing infrastructure to support plan accounting
- Option #3, transferring CBRF to APFC, has no cost savings as both organizations require the current infrastructure and resources to support their respective assets under management
- **Additional savings from insourcing**: 90% of the annual combined cost of both organizations are allocated to external investment managers. Many Public funds have considered reducing investment management costs by insourcing assets under management. According to a State Street Bank's survey from August 2014, 81% of pension funds globally were considering increasing the proportion of the portfolio managed in-house. This may be a consideration for APFC and Treasury for potential additional cost savings, which are not included in the table above

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Merger Analysis

Executive Summary (contd.)

Cost Savings Summary

Total Cost ($ 301.6 M)

	Cost Savings			Cost Savings Drivers	Investment Cost of Merger Options
	Option #1	Option #2	Option #3		
Overhead ($ 2.8 M)	$ 0.7 - 0.8 M	$ 0.8 M	-	• Proportionate to headcount	Build out and moving cost Op# 1 $ 0 – 400 K Op# 2 $ 0 – 300 K Op# 3 None
Custody ($ 2.6 M)	$ 1.2 M	$ 1.2 – 1.5 M	-	• Custodian platform consolidation	None
Market Data / Application Cost ($ 4.2 M)	$2.4 M	$ 1.1 M	-	• Redundancy of order / trade management, analytics and accounting systems • Rationalization of market data cost	Front Office and Back Office integration cost Op# 1 $ 100 – 300 K Op# 2 $ 350 – 700 K Op# 3 $ 200 – 450 K
Consultancy Cost ($ 4.4 M)	$ 0.1 M	$ 0.04 M	-	• Rationalization of IT consultancy cost	None
Personal Services Cost ($ 16.4 M)	$ 6.7 – 7.7 M	$ 4.4 – 5.3 M	-	• Rationalization at management level • Economies of scale in public equities and fixed income portfolio management and in investment support functions	None
Investment Advisors Fee ($ 271.3 M)	$ 0 – 0.9 M	$ 0 – 0.9 M	-	• Volume discounts from common investment managers	None
POTENTIAL COST SAVINGS	$ 11.1 – 13.1 M	$ 7.5 – 9.7 M	$ -		

Note: "Total" may not be equal to the sum of individual categories due to rounding

Disclaimer – This report is based on analysis done on the information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report states the pros and cons of funds merger within the scenarios in the scope of this work. It does not recommend whether it prudent to move ahead with the merge.

Executive Summary (contd.)

Potential Next Steps

This assessment focused on the potential cost savings of a merger. Before one of the merger options is considered, the following are important next steps for assessing and mitigating potential merger risks:

- Performance analysis:
  - APFC and Treasury's internal investment teams
  - External investment managers
- APFC and Treasury's operating model evaluation and recommendation of the optimal operating model for the combined organization
- APFC and Treasury's infrastructure evaluation and recommendation of the optimal infrastructure for the combined organization

Disclaimer – This report is based on analysis done on the information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report states the pros and cons of funds merger within the scenarios in the scope of this work. It does not recommend whether it prudent to move ahead with the merge.

Merger Option #1:

Transfer all investment funds from APFC to Treasury

Merger Option #1: Transfer all investment funds from APFC to Treasury

Summary

In this option, we evaluated potential cost savings, investments needed and risks of moving the responsibilities of managing all funds currently under APFC to the Treasury. We reviewed the material and documentation provided to us by APFC and Treasury, visited their offices in Juneau, Alaska, and interviewed key stakeholders to verify the data provided. Our findings are outlined below.

Potential Annual Cost Savings	Investments (One Time)	Payback Period
$ 11.1 to $ 13.1 M	$ 500 – 700 K	< 3 months

This option has the maximum cost savings due to Treasury's lower cost base. Primary cost saving drivers are:

— Role rationalization at the management level
— Economies of scale in managing public markets assets (public equities and fixed income), investment support, and corporate services functions
— Potential volume discounts from common managers
— Consolidation of custodian banks
— Rationalization of market data and applications cost

The objective of evaluating this option is to identify potential cost savings, investments needed and risks of moving the responsibilities of managing all funds currently under APFC to the Treasury.

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Merger Option #1: Transfer all investment funds from APFC to Treasury

Summary (contd…)

As part of this assessment, we observed that 90% of the annual combined cost of both organizations are allocated to external investment managers. However potential savings from insourcing of some of these externally managed assets are not accounted for in the cost savings. Additional savings may be achieved by:

- Retaining additional public equity investment professionals (2 - 3 full time equivalents (FTE)) to preserve capacity to increase public equity assets managed internally. The current projected headcount for Treasury does not account for this capacity
- Rationalization of external managers across both organizations. This will require an assessment of each external managers' mandate and historical performance to quantify cost savings

The cost savings represents approximately 1.2 to 1.4 basis points of $ 96.3 B AUM under the combined organizations. These savings need to assessed against impacts on the investment returns of underlying assets as even a modest impact can negate effect of these cost savings. We recommend you further assess the risks below

- Impact of new process required to reconcile requirements of both boards on investment performance
- Potential reduction in APFC's deal sourcing and credibility with international partners
- Potential increase in operational risks due to custodian consolidation
- Potential information loss during migration of APFC investment data from the BNY Mellon custodian platform to State Street's custodian platform
- Potential increase of manual workarounds / processes

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Merger Option #1: Transfer all investment funds from APFC to Treasury

Potential Cost Savings

Category	FY 16 Estimated Expense ($ '000)			Potential Cost Savings ($ '000)		Comment / Assumptions
	APFC	Treasury	Total	Low	High	
Total Assets Under Management	**54,026,178**	**42,323,750[4]**	**96,349,928**	**NA**	**NA**	
Investment Management Cost	**193,479**	**95,886**	**289,365**	**5,712**	**7,345**	
Personal Services Costs (FY17 Budgeted)	6,025	4,057	10,082	**3,399**	**4,092**	• Rationalization at management layer. • Addition of 2 APFC credit analysts to the Treasury's FY17 planned capacity for public assets team. This will enable Treasury to absorb APFC public markets' assets without changing investment strategy • Real Assets and Alternatives teams should be combined to maintain complementary internal investment capabilities of both organizations.
Investment Management Fees[1]	182,356	89,005	271,361	**-**	**940**	• Combined placements with common external manager; saving via volume discount by reaching higher tiered fees and potential contract renegotiation.
Market Data and Application Cost	2,509	1,562	4,071	**2,313**	**2,313**	• Redundancy of order / trade management, analytics and accounting systems. • Rationalization of applications / market data sources.
Investment Consultancy Fees	2,589	1,262	3,851	**-**	**-**	
Investment Support Cost	**2,946**	**2,832**	**5,778**	**2,572**	**2,582**	
Personal Services Costs (FY17 Budgeted)	1,669	1,365	3,034	**1,295**	**1,305**	• Rationalization of the management layer. CFO position may be added for future scalability. • Finance and accounting team can absorb additional workload within FY17 planned capacity. • Trade operations team may need to add 1 FTE for increased trade volume.
Custody Fees	1,166	1,463	2,629	**1,166**	**1,166**	• Custodian consolidation.
Market Data and Application Cost	111	4	115	**111**	**111**	• Treasury continues with current back office and middle office process.
Corporate / Shared Services Cost	**4,110**	**2,391**	**6,501**	**2,858**	**3,213**	
Personal Services Costs (FY17 Budgeted)	2,452	809	3,261	**2,005**	**2,270**	• Rationalization of the management layer.
Inter and Intra Department Charges[2]	680	852	1,532	**360**	**442**	• APFC and Treasury staff co-located. • HR and Legal cost allocation will increase due to increase in headcount and alternative assets.
Other Professional Services	257	269	526	**124**	**124**	
Other Expenses[3]	721	461	1,182	**352**	**361**	• Phone, supplies and training cost will decrease proportionately with staffing level.
Total Cost	**200,535**	**101,109**	**301,644**	**11,125**	**13,124**	

(1) Savings in investment management fees may take longer to be realized. Any savings in alternatives space may take 5 – 6 years
(2) APFC FY17 Budgeted building lease cost included
(3) Includes supply, equipment, training and other expenses
(4) Includes Participants Directed Plan's Assets

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Merger Option #1: Transfer all investment funds from APFC to Treasury

Additional Considerations

I. Additional Cost Savings

A. External Manager Rationalization: Rationalization of external managers across similar asset classes and mandates between both organizations could result in additional cost savings. However, it requires assessing each external managers' mandate and their historical performance to evaluate potential rationalization opportunities. The table below shows summary of assets under external management and associated FY16 Estimated investment management cost :

Asset Class	Markets	AUM ($ '000) as on 6/30/16			Number of External Managers				FY16 Estimated Investment Management Fees ($'000)		
		APFC	Treasury	Total	APFC	Treasury	Common	Combined	Treasury	APFC	Total
Fixed Income	Domestic Fixed Income	1,237,438	1,226,036	2,463,474	4	8	-	12	3,316	2,923	6,240
	International & Emerging Markets Fixed Income	912,282	519,105	1,431,387	2	2	-	4	2,612	2,787	5,399
Fixed Income TOTAL		**2,149,719**	**1,745,141**	**3,894,861**	**6**	**10**	**-**	**16**	**5,929**	**5,710**	**11,639**
Equity	Domestic Equity	5,059,360	7,819,729	12,879,089	14	16	2	28	13,939	16,164	30,103
	World Ex. US Equity	5,408,326	5,577,806	10,986,132	9	11	-	20	16,319	13,528	29,847
	Global Equity	5,713,877	-	5,713,877	4	-	-	4	-	13,226	13,226
	Emerging Market Equity	3,388,701	659,271	4,047,972	9	2	-	11	-	13,919	13,919
	REITS	499,052	-	499,052	1	-	-	1	-	2,232	2,232
Equity TOTAL		**20,069,317**	**14,056,806**	**34,126,123**	**37**	**30**	**2**	**65**	**30,258**	**59,068**	**89,327**
Alternatives	Hedge Funds	5,624,296	1,515,517	7,139,813	10	6	2	14	15,683	50,135	65,818
	Private Equity / Credit	6,711,250	1,907,885	8,619,135	37	13	4	46	11,012	30,130	41,142
Alternatives TOTAL		**12,335,546**	**3,423,402**	**15,758,948**	**47**	**19**	**6**	**60**	**26,695**	**80,264**	**106,960**
Real Assets	Real Estate	5,988,835	1,462,661	7,451,496	8	14	2	20	10,842	17,511	28,353
	Infrastructure	1,714,269	525,080	2,239,349	9	4	1	12	3,510	19,802	23,312
	Others (Farmland, Timberland & MLP)	58,446	1,670,248	1,728,694	1	5	-	6	11,771	-	11,771
Real Assets TOTAL		**7,761,550**	**3,657,989**	**11,419,539**	**18**	**23**	**3**	**38**	**26,123**	**37,313**	**63,436**
External Managers TOTAL		**42,316,133**	**22,883,338**	**65,199,471**	**108**	**81**	**11**	**178**	**89,005**	**182,356**	**271,361**

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Merger Option #1: Transfer all investment funds from APFC to Treasury

Additional Consideration (contd…)

B. **Insourcing of Public Equity Assets**: Both Treasury and APFC use external managers for managing approximately 90% of their public equity assets. Managing assets through external managers may be less cost effective than managing internally. Treasury may realize more savings by retaining all (4 APFC and 5 Treasury) public equity investment professionals and using additional capacity to drive internal management of public equities.

Asset Class	AUM ($ '000) as on 6/30/16			FY16 Estimated Investment Management Cost(1) ($'000)			FY16 Estimated Investment Management Cost(1) (in BPS of respective AUM)		
	Internal	External	Total	Internal	External	Total	Internal	External	Total
Fixed Income	19,155,286	3,894,861	23,050,147	2,387	11,639	14,026	1.2	29.9	6.1
Equity	3,757,433	34,126,123	37,883,556	1,801	89,327	91,128	4.8	26.2	24.1

(1) Internal cost includes FY16 personal services cost of portfolio management staff

An assessment of the **internal support infrastructure (resources, tools, and systems) should be considered** prior to insourcing externally managed assets.

II. Merger Execution Requirements

Treasury will need to invest in following to realize the estimated cost benefits:

- Migrate APFC assets onto the State Street custodian platform from BONY Mellon custodian platform
- Develop a process to reconcile requirements of both the boards to efficiently deploy APFC assets across Treasury's investment pools and integrate APFC assets on Treasury's infrastructure**. (Investment Cost: $100,000 - $300,000)**
- Co-locate all staff in one location. **(Investment Cost: $400,000)**
- Renegotiate contracts with external managers
- Inform external asset managers of the merger and ensure fees are calculated using combined assets to benefit from volume discounts within existing contracts

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Merger Option #1: Transfer all investment funds from APFC to Treasury

Merger Risk

The following risks identified should be reviewed:

- Impact of new process required to reconcile requirements of both boards on the investment performance
- Potential reduction in APFC's deal sourcing and credibility with international partners
- Potential increase in operational risk due to custodian consolidation
- Potential information loss during migration of APFC investment data from the BNY Mellon custodian platform to State Street's custodian platform
- Potential increase of manual workarounds / processes

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

KPMG

Merger Option #2:

Transfer all investment funds from Treasury to APFC

Merger Option #2: Transfer all investment funds from Treasury to APFC

Summary

In this option, we evaluated potential cost savings, investments needed and risks of moving the responsibilities of managing all funds under Treasury management to APFC. We reviewed the material and documentation provided to us by APFC and Treasury, visited their offices in Juneau, Alaska, and interviewed key stakeholders to verify the data provided. Our findings are outlined below.

Potential Annual Cost Savings	Investments (One Time)	Payback Period
$ 7.5 to $ 9.7 M	$ 650 – 1,000 K	< 3 months

This option has a lower cost savings than option #1. Primary cost saving drivers are:

- Role rationalization at the management layer
- Economies of scale in managing public markets assets (public equities and fixed income), investment support and corporate services functions
- Potential volume discounts from common managers
- Consolidation of custodian banks
- Rationalization of market data and application cost

The objective of evaluating this option is identify potential cost savings, investments needed and risks of moving the responsibilities of managing all funds under Treasury management to APFC.

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Merger Option #2: Transfer all investment funds from Treasury to APFC

Summary (contd…)

As part of this assessment, we observed that 90% of the annual cost of both organizations are allocated to external investment managers. However potential savings from insourcing of some of these externally managed assets are not accounted for in the cost savings. Additional savings may be achieved by:

- Retaining additional public equity investment professionals (2 - 3 full time equivalents (FTE)) to preserve capacity to increase public equity assets managed internally. The current projected headcount for APFC does not account for this capacity
- Rationalization of external managers across both organizations. This will require an assessment of each external managers' mandate and their historical performance to quantify cost savings

The cost savings represents approximately 0.8 to 1.0 basis points of $ 96.3 B AUM under the combined organizations. These savings need to assessed against impacts on the investment returns of underlying assets as even a modest impact can negate effect of these cost savings. We recommend you further assess the risks below

- Impact of new process required to reconcile requirements of both boards on the investment performance
- Potential increase in operational risks due to custodian consolidation
- Potential information loss during migration of investment data from one custodian platform to another
- Potential increase of manual workaround / processes

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Merger Option #2: Transfer all investment funds from Treasury to APFC

Potential Cost Savings

Category	FY 16 Estimated Expense ($ '000)			Potential Cost Savings ($ '000)		Comment / Assumptions
	APFC	Treasury	Total	Low	High	
Total Assets	**54,026,178**	**42,323,750[4]**	**96,349,928**	**NA**	**NA**	
Investment Management Cost	**193,479**	**95,886**	**289,365**	**3,813**	**5,446**	

Personal Services Costs (FY17 Budgeted)	6,025	4,057	10,082	2,676	3,369	• Rationalization at management layer.
						• Treasury public markets assets can be absorbed in APFC's FY17 planned capacity. However,
						  • 1 additional FTE is needed in Public Equities team to manage Treasury's internal assets.
						  • 1 additional FTE in Fixed Income team needed to manage cash needs of new accounts.
						• Real Assets and Alternatives teams should be combined to maintain complementary internal investment capabilities of both organizations.

Investment Management Fees[1]	182,356	89,005	271,361	-	940	• Combined placements with common external manager; saving via volume discount by reaching higher tiered fees and potential contract renegotiation.
Market Data and Application Cost	2,509	1,562	4,071	1,137	1,137	• Redundancy of order / trade management, analytics and accounting systems. • Rationalization of applications / market data sources.
Investment Consultancy Fees	2,589	1,262	3,851	-	-	• Board and investments strategy will continue "as is"; advisory fees will continue along similar lines
Investment Support Cost	**2,946**	**2,832**	**5,778**	**2,223**	**2,524**	
Personal Services Costs (FY17 Budgeted)	1,669	1,365	3,034	1,047	1,057	• Rationalization of the management layer. • APFC adds Treasury's compliance staff to help with portfolio compliance, thus helping the accounting team absorb the increased workload.
Custody Fees	1,166	1,463	2,629	1,172	1,463	• Custodian consolidation.
Market Data and Application Cost	111	4	115	4	4	• APFC will continue their back office and middle office process.
Corporate / Shared Services Cost	**4,110**	**2,391**	**6,501**	**1,391**	**1,757**	
Personal Services Costs (FY17 Budgeted)	2,452	809	3,261	634	899	• Rationalization of the management layer.
Inter and Intra Department Charges[2]	680	852	1,532	600	600	• APFC and Treasury staff co-located. • Mail and HR allocations will decrease proportionate to headcount.
Other Professional Services	257	269	526	40	40	• Corporate level general, legal and actuarial level services will continue at pre-merger level.
Other Expenses[3]	721	461	1,182	219	228	• Phone, supplies and training cost will decrease proportionately with staffing level. • Both organization will continue their level of pre-merger subscription.
Total Cost	**200,535**	**101,109**	**301,644**	**7,529**	**9,737**	

(1) *Savings in investment management fees may take longer to be realized. Any savings in alternatives space may take 5 – 6 years*
(2) *APFC FY17 Budgeted building lease cost included*
(3) *Includes supply, equipment, training and other expenses*
(4) *Includes Participants Directed Plan's Assets*

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Merger Option #2: Transfer all investment funds from Treasury to APFC

Additional Consideration

I. Additional Cost Savings

A. **External Manager Rationalization**: Rationalization of external managers across similar asset classes and mandates between both organizations could result in additional cost savings. However, it requires assessing each external managers' mandate and their historical performance to evaluate potential rationalization opportunities. The table below shows summary of assets under external manager's management and associated FY16 Estimated investment management cost:

Asset Class	Markets	AUM ($ '000) as on 6/30/16			Number of External Managers				FY16 Estimated Investment Management Fees ($'000)		
		APFC	Treasury	Total	APFC	Treasury	Common	Combined	Treasury	APFC	Total
Fixed Income	Domestic Fixed Income	1,237,438	1,226,036	2,463,474	4	8	-	12	3,316	2,923	6,240
	International & Emerging Markets Fixed Income	912,282	519,105	1,431,387	2	2	-	4	2,612	2,787	5,399
Fixed Income TOTAL		**2,149,719**	**1,745,141**	**3,894,861**	**6**	**10**	**-**	**16**	**5,929**	**5,710**	**11,639**
Equity	Domestic Equity	5,059,360	7,819,729	12,879,089	14	16	2	28	13,939	16,164	30,103
	World Ex. US Equity	5,408,326	5,577,806	10,986,132	9	11	-	20	16,319	13,528	29,847
	Global Equity	5,713,877	-	5,713,877	4	-	-	4	-	13,226	13,226
	Emerging Market Equity	3,388,701	659,271	4,047,972	9	2	-	11	-	13,919	13,919
	REITS	499,052	-	499,052	1	-	-	1	-	2,232	2,232
Equity TOTAL		**20,069,317**	**14,056,806**	**34,126,123**	**37**	**30**	**2**	**65**	**30,258**	**59,068**	**89,327**
Alternatives	Hedge Funds	5,624,296	1,515,517	7,139,813	10	6	2	14	15,683	50,135	65,818
	Private Equity / Credit	6,711,250	1,907,885	8,619,135	37	13	4	46	11,012	30,130	41,142
Alternatives TOTAL		**12,335,546**	**3,423,402**	**15,758,948**	**47**	**19**	**6**	**60**	**26,695**	**80,264**	**106,960**
Real Assets	Real Estate	5,988,835	1,462,661	7,451,496	8	14	2	20	10,842	17,511	28,353
	Infrastructure	1,714,269	525,080	2,239,349	9	4	1	12	3,510	19,802	23,312
	Others (Farmland, Timberland & MLP)	58,446	1,670,248	1,728,694	1	5	-	6	11,771	-	11,771
Real Assets TOTAL		**7,761,550**	**3,657,989**	**11,419,539**	**18**	**23**	**3**	**38**	**26,123**	**37,313**	**63,436**
External Managers TOTAL		**42,316,133**	**22,883,338**	**65,199,471**	**108**	**81**	**11**	**178**	**89,005**	**182,356**	**271,361**

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Merger Option #2: Transfer all investment funds from Treasury to APFC

Additional Consideration (contd…)

B. **Insourcing of Public Equity Assets** : Both Treasury and APFC use external managers for managing approximately 90% of their public equity assets. Managing assets through external managers may be less cost effective than managing internally. APFC may realize more savings by retaining all (4 APFC and 5 Treasury) public equity investment professionals and using additional capacity to drive internal management of public equities.

Asset Class	AUM ($ '000 as on 6/30/16)			FY16 Estimated Investment Management Cost(1) ($'000)			FY16 Estimated Investment Management Cost(1) (in BPS of respective AUM)		
	Internal	External	Total	Internal	External	Total	Internal	External	Total
Fixed Income	19,155,286	3,894,861	23,050,147	2,387	11,639	14,026	1.2	29.9	6.1
Equity	3,757,433	34,126,123	37,883,556	1,801	89,327	91,128	4.8	26.2	24.1

(1) Internal cost includes FY16 personal services cost of portfolio management staff

An assessment of the **internal support infrastructure (resources, tools, and systems) should be considered** prior to insourcing externally managed assets.

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Merger Option #2: Transfer all investment funds from Treasury to APFC

Additional Consideration (contd…)

II. Merger Execution Requirements

APFC will need to invest in following to realize the estimated cost benefits:

- Migrate investment data from two custodian platforms to one
- Develop the following: **(Investment Cost: $350,000 - $700,000)**
  - A process to reconcile requirement of both boards to efficiently deploy State's and ARMB's assets across its investment pools and to efficiently integrate these assets on APFC infrastructure
  - A fund allocation methodology and infrastructure to facilitate asset allocations for different funds (as currently being facilitated by Treasury via plan accounting)
- Co-locate all asset management professionals into one location **(Investment Cost: $300,000)**
- Renegotiate contracts with external managers
- Inform external asset managers of the merger and ensure fees are calculated using combined assets (to benefit from volume discounts within existing contracts)
- Review employment contracts with Treasury's union employees

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Merger Option #2: Transfer all investment funds from Treasury to APFC

Merger Risk

The following risks identified should be reviewed:

- Impact of new process required to reconcile requirements of both boards on the investment performance
- Potential increase in operational risks due to custodian consolidation
- Potential information loss during migration of investments data from one custodian platform to the other custodian
- Potential increase of manual workaround / processes

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Merger Option #3:

Transfer Constitutional Budget Reserve Fund to APFC

Merger Option #3: Transfer CBRF to APFC

Summary

In this option, we evaluated potential cost savings, investments needed and risks of moving the responsibilities of managing the CBRF under Treasury management to the APFC. We reviewed the material and documentation provided to us by APFC and Treasury, visited their offices in Juneau, Alaska, and interviewed key stakeholders to verify the data provided. Our findings are outlined below.

Potential Annual Cost Savings	Investments (One Time)	Payback Period
No Saving	$ 200 – 450 K	NA

This option has no cost savings as both Treasury and APFC will need to continue at their current capacity to support assets under management.

The following risks identified should be reviewed:

- Impact of new process required to reconcile CBRF and APFC requirements on the APFC investment performance
- Potential information loss during migration of CBRF investments data from one custodian platform to other

The objective of evaluating this option is to identify potential cost savings, investments needed and risks of moving the responsibilities of managing the CBRF under Treasury management to the APFC.

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Merger Option #3: Transfer CBRF to APFC

Potential Cost Savings

Category	FY 16 Estimated Expense ($ '000)			Potential Cost Savings ($ '000)		Comment / Assumptions
	APFC	Treasury	Total	Low	High	
Total Assets	**54,026,178**	**42,323,750[4]**	**96,349,928**	**NA**	**NA**	
Investment Management Cost	**193,479**	**95,886**	**289,365**	**-**	**-**	
Personal Services Costs (FY17 Budgeted)	6,025	4,057	10,082	-	-	• APFC absorbs CBRF assets within its FY17 planned capacity. • Treasury needs its planned FY17 capacity to manage remaining assets.
Investment Management Fees[1]	182,356	89,005	271,361	-	-	• Most of CBRF assets are managed internally. Both organization will continue to incur the same external management costs.
Market Data and Application Cost	2,509	1,562	4,071	-	-	• Both organizations will continue with their existing infrastructure.
Investment Consultancy Fees	2,589	1,262	3,851	-	-	• Board and investments strategy will continue "as is"; advisory fees would continue along similar lines
Investment Support Cost	**2,946**	**2,832**	**5,778**	**-**	**-**	
Personal Services Costs (FY17 Budgeted)	1,669	1,365	3,034	-	-	• Both organizations will continue to operate at same capacity
Custody Fees	1,166	1,463	2,629	-	-	
Market Data and Application Cost	111	4	115	-	-	• Both organizations will continue using their data services
Corporate / Shared Services Cost	**4,110**	**2,391**	**6,501**	**-**	**-**	
Personal Services Costs (FY17 Budgeted)	2,452	809	3,261	-	-	• Both organizations will continue to operate at same capacity
Inter and Intra Department Charges[2]	680	852	1,532	-	-	• Both organizations will continue to operate at same capacity
Other Professional Services	257	269	526	-	-	• Both organizations will continue to operate at same capacity
Other Expenses[3]	721	461	1,182	-	-	• Both organizations will continue to operate at same capacity
Total Expenses	**200,535**	**101,109**	**301,644**	**-**	**-**	

(1) Savings in investment management fees may take longer to be realized. Any savings in alternatives space may take 5 – 6 years
(2) APFC FY17 Budgeted building lease cost included
(3) Includes supply, equipment, training and other expenses
(4) Includes Participants Directed Plan's Assets

Merger Option #3: Transfer CBRF to APFC

Additional Consideration

I. Merger Execution Requirements

APFC will need to invest in the following to manage CBRF assets:

- Migrate CBRF assets to the BNY Mellon custodian platform from State Street's custodian platform
- Develop the following: **(Investment Cost: $200,000 - $450,000)**
  - A process to reconcile requirement of CBRF to that of APFC for efficiently deploying CBRF assets across its investment pools and to efficiently integrate these assets on its infrastructure
  - A fund allocation methodology and infrastructure to facilitate asset allocations for different funds (as currently being facilitated by Treasury via plan accounting)

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Merger Option #3: Move Constitutional Budget Reserve Fund to APFC

Merger Risk

The following risks identified should be reviewed:

- Impact of new process required to reconcile CBRF and APFC requirements on the APFC investment performance
- Potential information loss during migration of CBRF investments data from one custodian platform to other

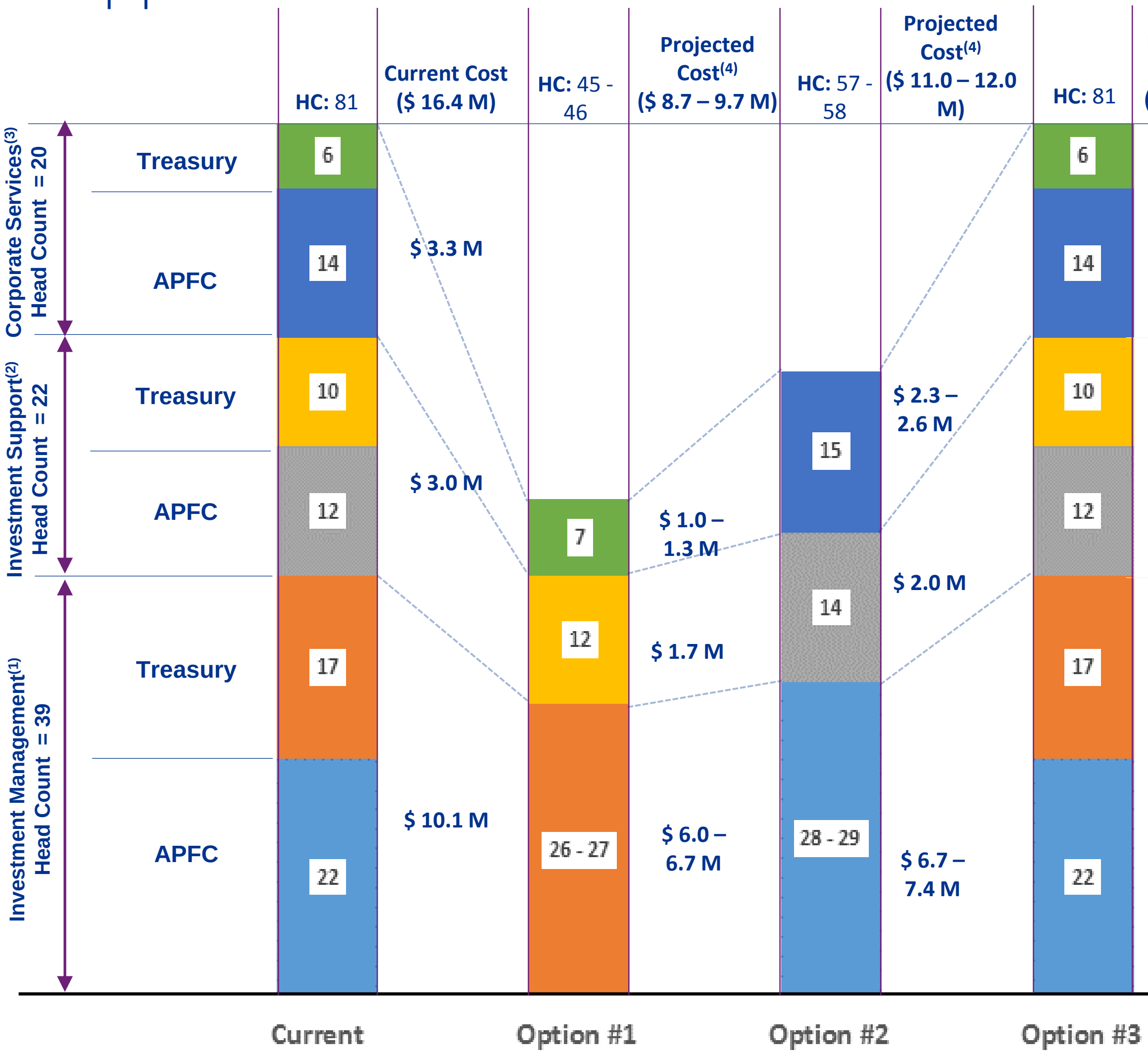
Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Appendices

Potential Cost Saving Detail

Potential Cost Saving Details

Appendix 1.1 - Personal Services Cost



Cost Savings Drivers	Savings ($ M)	Report Area
• Rationalization at management layer	$ 0 - 2.3 M	Cost Savings
• Roles rationalization • Economies of scale in finance & accounting function	$ 0 - 1.3 M	Cost Savings
• Rationalization at Management layer • Economies of scale in public markets investments (Equities and Fixed income)	$ 0 - 4.1 M	Cost Savings
TOTAL SAVINGS	$ 0 - 7.7 M	

(1) *Portfolio management and Portfolio risks functions*
(2) *Finance & accounting, Trade operations and Compliance functions*
(3) *Senior management, Communication, HR, Legal and administration*
(4) *The range of projected cost is reflective of variance in the management compensation at Treasury and APFC*

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Appendix 1.2 - Personal Services Cost

Category	FY17 Budgeted Expense ($ '000)			Potential Cost Savings($ '000)					
	APFC	Treasury	Total	APFC → Treasury		Treasury → APFC		CBRF → APFC	
				Low	High	Low	High	Low	High
Investment Management Cost	**6,025**	**4,057**	**10,082**	**3,399**	**4,092**	**2,676**	**3,369**	**-**	**-**
Public Equity	1,206	1,573	2,779	1,178	1,206	1,035	1,063	-	-
Fixed Income	1,817	1,102	2,919	1,357	1,385	808	835	-	-
Real Assets & Alternatives	3,002	1,382	4,384	864	1,502	833	1,471	-	-
Investment Support Cost	**1,669**	**1,365**	**3,034**	**1,295**	**1,305**	**1,047**	**1,057**	**-**	**-**
Investment Operations	347	163	510	231	231	163	163	-	-
Finance & Accounting	1,322	894	2,216	1,064	1,074	884	894	-	-
Compliance	-	308	308	-	-	-	-	-	-
Corporate / Shared Services Cost	**2,452**	**809**	**3,261**	**2,005**	**2,270**	**634**	**899**	**-**	**-**
Management	406	227	633	227	406	227	406	-	-
Administration	582	285	867	496	582	285	371	-	-
Human Resources	243	-	243	243	243	-	-	-	-
Communication	182	175	357	-	-	-	-	-	-
Technology Services	755	122	877	755	755	122	122	-	-
Legal	284	-	284	284	284	-	-	-	-
TOTAL	**10,146**	**6,231**	**16,377**	**6,699**	**7,668**	**4,357**	**5,325**	**-**	**-**

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Potential Cost Saving Details

Appendix 1.3 - Headcount Projections

Group	Sub-Group	Role	Total FTE – Current			Total Cost - Projected					
						APFC → Treasury		Treasury → APFC		CBRF → APFC	
			APFC	Treasury	Total	Low	High	Low	High	Low	High
Portfolio Management	Management	CIO	1.0	1.0	2.0	1.0	1.0	1.0	1.0	2.0	2.0
		Deputy CIO	-	1.0	1.0	1.0	1.0	-	-	1.0	1.0
	Public Equity	Investment Professional	4.0	5.0	9.0	5.0	5.0	5.0	5.0	9.0	9.0
	Public Equity - DC	Investment Professional	-	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	Fixed Income	Investment Professional	5.0	3.0	8.0	5.0	5.0	6.0	6.0	8.0	8.0
	Real Assets & Alternative	Investment Professional	10.0	5.0	15.0	12.0	13.0	12.0	13.0	15.0	15.0
	Risk Management	Investment Professional	2.0	-	2.0	-	-	2.0	2.0	2.0	2.0
Investment Operations	Trade Operation	Operation Analyst	2.0	1.0	3.0	2.0	2.0	2.0	2.0	3.0	3.0
	Investment Administration	Investment Administration Specialist	1.0	-	1.0	-	-	1.0	1.0	1.0	1.0
Finance & Accounting	Management	CFO	1.0	-	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Portfolio Accounting	Comptroller	1.0	1.0	2.0	1.0	1.0	1.0	1.0	2.0	2.0
		Accountant	7.0	5.0	12.0	5.0	5.0	7.0	7.0	12.0	12.0
		Accounting Technicians	-	1.0	1.0	1.0	1.0	-	-	1.0	1.0
Compliance	Portfolio Compliance	Compliance Officer	-	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Corporate Services	Management	CEO / Director	1.0	1.0	2.0	1.0	1.0	1.0	1.0	2.0	2.0
		Director of Operation	1.0	1.0	2.0	1.0	1.0	1.0	1.0	2.0	2.0
		Human Resource Manager	1.0	-	1.0	-	-	1.0	1.0	1.0	1.0
		Communication Manager	1.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	Administrative Support	Administrative Assistant	1.0	1.0	2.0	1.0	1.0	1.0	1.0	2.0	2.0
		Procurement Specialist	2.0	1.0	3.0	1.0	1.0	2.0	2.0	3.0	3.0
		HR Analyst	1.0	-	1.0	-	-	1.0	1.0	1.0	1.0
Legal	Management	Legal Counsel	1.0	-	1.0	-	-	1.0	1.0	1.0	1.0
Information Technology	Management	IT Director	1.0	-	1.0	-	-	1.0	1.0	1.0	1.0
	Technology Support	Business Systems Analyst	-	1.0	1.0	1.0	1.0	-	-	1.0	1.0
		IT Specialist	4.0	-	4.0	-	-	4.0	40	4.0	4.0
TOTAL			**48.0**	**33.0**	**81.0**	**45.0**	**46.0**	**57.0**	**58.0**	**81.0**	**81.0**

Note: Above table shows dedicated asset management headcount for Treasury and APFC. Treasury taps in State's pool for Operations, HR and Technology support and gets cost allocations for these support. Treasury's asset management headcount (shown in above table) may be lower than effective FTE supporting assets under its management.

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Potential Cost Saving Details

Appendix 2.1 - Investment Management Fees

Total AUM Under External Management = $ 65. 5 B

	External AUM: $ 65.5 B	Current Cost: $ 271.3 M	External AUM: $ 65.5 B	Projected Cost[1] ($ 270.4 – 271.3 M)	External AUM: $ 65.5 B	Projected Cost[1] ($ 270.4 – 271.3 M)	External AUM: $ 65.5 B	Projected Cost[1] $ 271.3 M	Cost Savings Drivers	Savings ($ M)	Report Area
Common Managers	9.3	$ 37.2 M	9.3	$ 36.3 – 37.2 M	9.3	$ 36.3 – 37.2 M	9.3	$ 37.2 M	Volume discount	**$ 0 - 0.9 M**	Cost Savings
Other Managers / Mandate	56.2	$ 234.1 M	56.2	$ 234.1 M	56.2	$ 234.1 M	56.2	$ 234.1 M	• External managers rationalization • Additional assets brought under in-house management	**Not Quantified** Cannot be quantified. Needs managers' mandate and performance analysis	Additional Consideration
	Current		Option #1		Option #2		Option #3		**TOTAL SAVINGS**	**$ 0 - 0.9 M**	

(1) Assuming AUM and Performance remains same as FY16

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Appendix 2.2 - Investment Management Fees

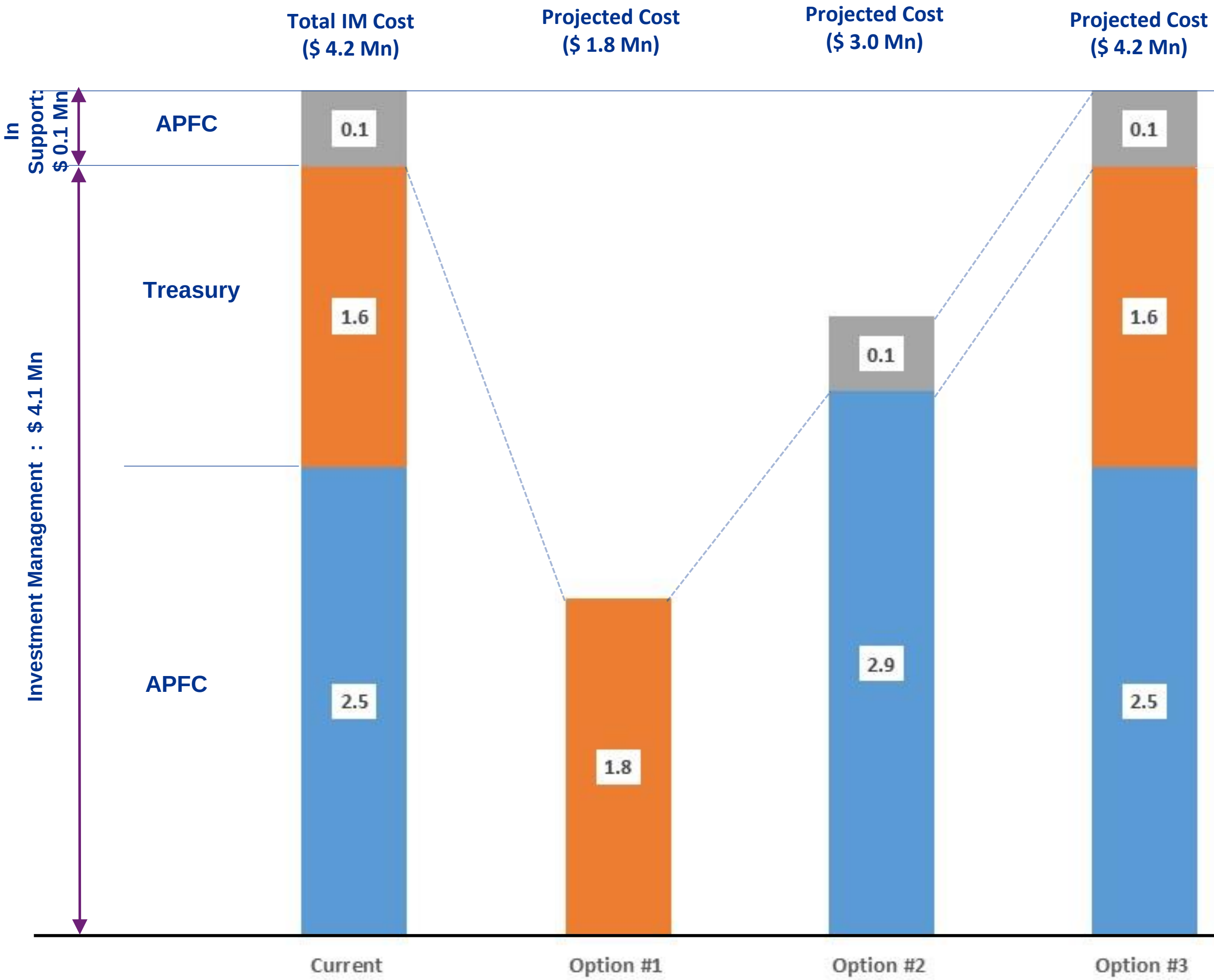
Potential savings resulting from combined placements at common managers with same mandate

Asset Class	AUM as on 6/30/16 ($ '000)			Potential Cost Savings($ '000)					
	APFC	Treasury	Total	APFC → Treasury		Treasury → APFC		CBRF → APFC	
				Low	High	Low	High	Low	High
Equity	**956,204**	**430,076**	**1,386,280**	**-**	**174**	**-**	**174**	**-**	**-**
Domestic Large Cap Equity	769,733	346,752	1,116,485	-	105	-	105	-	-
Domestic Small Cap Equity	186,471	83,324	269,795	-	69	-	69	-	-
Real Assets & Alternatives	**5,906,601**	**2,029,629**	**7,936,230**	**-**	**766**	**-**	**766**	**-**	**-**
Hedge Fund	1,128,480	584,900	1,713,380	-	253	-	253	-	-
Private Equity / Credit	3,160,876	896,377	4,057,253	-	320	-	320	-	-
Real Estate	1,474,365	438,467	1,912,832	-	115	-	115	-	-
Public Infrastructure	142,880	109,885	252,765	-	78	-	78	-	-
TOTAL	**6,862,805**	**2,459,705**	**9,322,510**	**-**	**940**	**-**	**940**	**-**	**-**

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Potential Cost Saving Details

Appendix 3.1 - Market Data and Application Cost



Cost Savings Drivers	Savings ($ Mn)	Report Area
• Platform redundancy	**$ 0 – 0.1 Mn**	Cost Savings
• OMS / EMS and Risk analytics platform redundancy • Eliminates duplicates costs on market data side	**$ 0 – 2.3 Mn**	Cost Savings

TOTAL SAVINGS → **$ 0 - 2.4 MN**

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Appendix 3.2 - Market Data and Application Cost

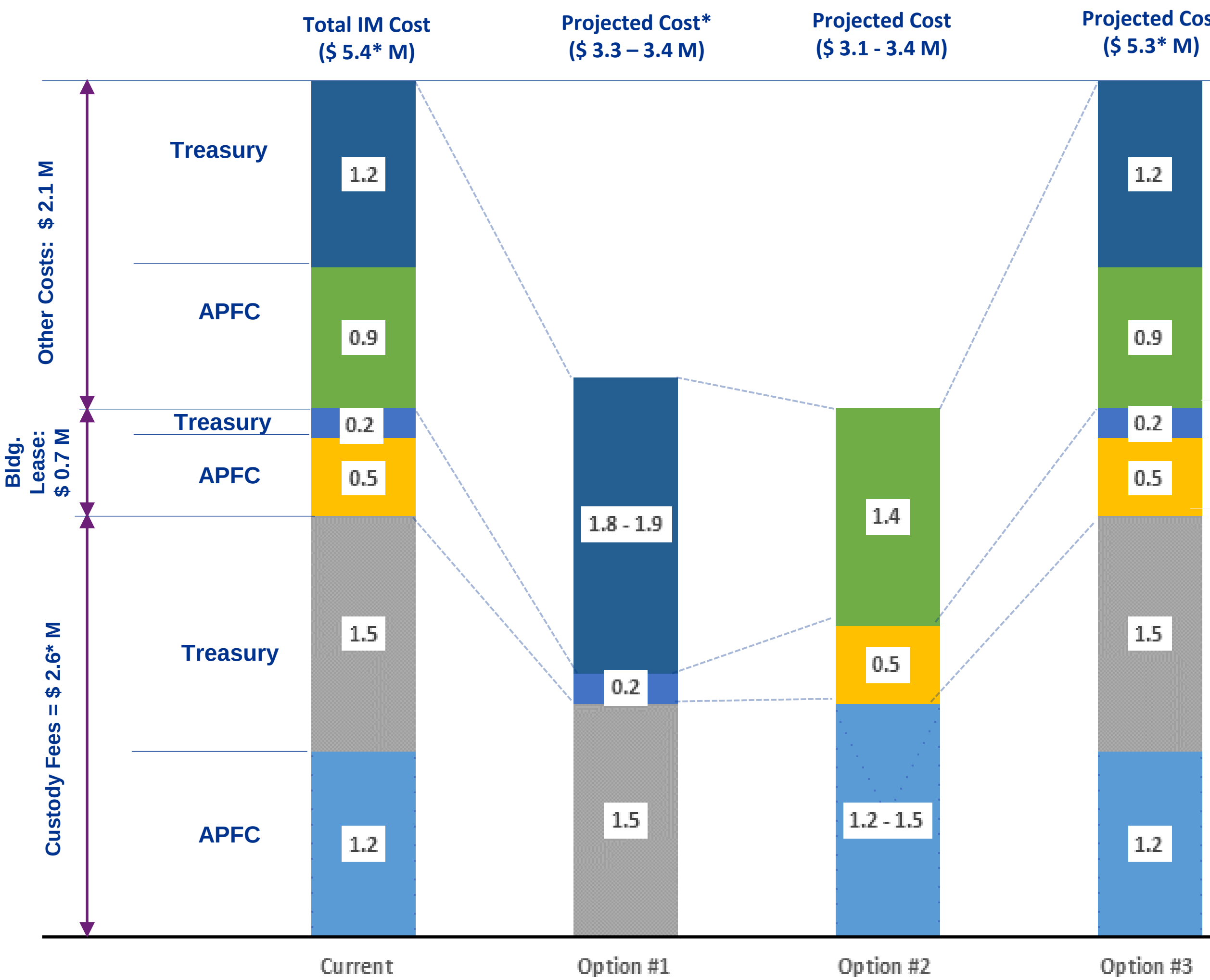
Category	FY 16 Estimated Expense ($ '000)			Projected Cost ($ '000)					
	APFC	Treasury	Total	APFC → Treasury		Treasury → APFC		CBRF → APFC	
				Low	High	Low	High	Low	High
Investment Management Cost	**2,509**	**1,562**	**4,071**	**1,758**	**1,758**	**2,934**	**2,934**	**4,071**	**4,071**
Aladdin Feeds	89	-	89	-	-	89	89	89	89
Barclays – Point	155	35	190	35	35	155	155	190	190
Barclays - Index Data	35	-	35	35	35	35	35	35	35
BCA Research	70	-	70	-	-	70	70	70	70
BlackRock	695	-	695	-	-	695	695	695	695
Bloomberg – Terminal	373	552	925	552	552	373	373	925	925
Bloomberg - Data License	69	25	95	25	25	69	69	95	95
Bloomberg - SAPI	21	-	21	-	-	21	21	21	21
Charles River Development	188	-	188	-	-	188	188	188	188
Credit Sights	31	18	49	31	31	31	31	49	49
DotNetNuke (DNN)	-	3	3	3	3	3	3	3	3
eVestment	33	-	33	-	-	33	33	33	33
Factset	-	345	345	345	345	345	345	345	345
Fitch	51	-	51	-	-	51	51	51	51
Frank Russell Investments	1	1	2	1	1	1	1	2	2
FTSE International	-	18	18	18	18	18	18	18	18
Institutional Investor Proxy Service for REIT Portfolio	-	14	14	14	14	14	14	14	14
Intex	241	-	241	-	-	241	241	241	241
Money Media	-	3	3	3	3	3	3	3	3
Moody's	106	118	224	118	118	118	118	224	224
NASDAQ	8	-	8	8	8	8	8	8	8
Pitchbook	16	-	16	16	16	16	16	16	16
Preqin	11	-	11	11	11	11	11	11	11
RDQ Economics	-	3	3	3	3	3	3	3	3
S&P	168	183	351	183	183	183	183	351	351
Trade Web	35	32	68	32	32	35	35	68	68
Trepp	4	-	4	4	4	4	4	4	4
Yardi	72	-	72	72	72	72	72	72	72
Yieldbook	38	160	198	198	198	-	-	198	198
Zacks Investments Research	-	51	51	51	51	51	51	51	51
Investment Support Cost	**111**	**4**	**115**	**4**	**4**	**111**	**111**	**115**	**115**
New York Stock Exchange	6	4	9	4	4	6	6	6	6
QED	64	-	64	-	-	64	64	64	64
Sungard	35	-	35	-	-	35	35	35	35
Westlaw	7	-	7	-	-	7	7	7	7
TOTAL	**2,620**	**1,566**	**4,186**	**1,762**	**1,762**	**3,045**	**3,045**	**4,186**	**4,186**

Note: "Total" may not be equal to the sum of individual categories due to rounding

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Potential Cost Saving Details

Appendix 4.1 - Custody and Overhead Costs



Cost Savings Drivers	Savings ($ M)	Report Area
• Proportionate to headcount	$ 0 – 0.6 M	Cost Savings
• Staff co-location	$ 0 – 0.5* M	Cost Savings
• Economies of scale	$ 0 – 1.5 M	Cost Savings
TOTAL SAVINGS	$ 0 - 2.3 M	

** Maximum savings for building lease cost is in Option #1 while in all other cost categories Option #2 has maximum savings; Total is not equal to sum of individual due to rounding*

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Potential Cost Saving Details

Appendix 4.2 - Custody and Overhead Costs

Category	FY16 Estimated Expense ($ ‘000)			Potential Cost Savings($ ‘000)					
	APFC	Treasury	Total	APFC → Treasury		Treasury → APFC		CBRF → APFC	
				Low	High	Low	High	Low	High
Custody Expense	**1,166**	**1,463**	**2,629**	**1,166**	**1,166**	**1,172**	**1,463**	**-**	**-**
Board Expenses	**71**	**149**	**220**	**-**	**-**	**-**	**-**	**-**	**-**
Inter and Intra Departmental Charges	**680**	**852**	**1,532**	**360**	**442**	**600**	**600**	**-**	**-**
Building lease (FY17 Budgeted for APFC)	516	143	659	516	516	143	143	-	-
Others	164	709	873	(156)	(74)	457	457	-	-
Staff Travel, Subscription, Training & Other Expenses	**650**	**311**	**961**	**352**	**361**	**219**	**228**	**-**	**-**
TOTAL	**2,567**	**2,775**	**5,342**	**1,878**	**1,969**	**1,991**	**2,281**	**-**	**-**

Note: “Total” may not be equal to the sum of individual categories due to rounding

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Appendix 5.1 - Consultancy Fees (Investment Consultancy and Other Professional Services)

Category	FY16 Estimated Expense ($ '000)			Potential Cost Savings($ '000)					
	APFC	Treasury	Total	APFC → Treasury		Treasury → APFC		CBRF → APFC	
				Low	High	Low	High	Low	High
Investment Management Cost	**2,589**	**1,262**	**3,851**	**-**	**-**	**-**	**-**	**-**	**-**
Performance Consultant	545	508	1,053	-	-	-	-	-	-
Investment Advisory / Fiduciary Advice	2,044	754	2,798	-	-	-	-	-	-
Corporate / Shared Services Cost	**257**	**269**	**526**	**124**	**124**	**40**	**40**	**-**	**-**
Actuary	-	112	112	-	-	-	-	-	-
Financial Audit	133	117	250	-	-	-	-	-	-
IT	124	40	164	124	124	40	40	-	-
TOTAL	**2,846**	**1,531**	**4,377**	**124**	**124**	**40**	**40**	**-**	**-**

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Appendix 6.1 - Investments Assumptions

I. Co-location Cost

Particulars	APFC → Treasury	Treasury → APFC	CBRF → APFC
No. of Staff to be Moved	13	10	-
Moving Cost per Person	$ 500	$ 500	$ 500
Build - Out cost per sq. foot	$ 233	$ 233	$ 233
Sq. – feet per person	120	120	120
Total Build out and Moving Cost	**$400,000**	**$300,000**	**-**

II. Process and Infrastructure Integration Cost

Particulars	APFC → Treasury	Treasury → APFC	CBRF → APFC
Front Office			
Complexity	Medium	High	Medium
Efforts (Hours)	320 – 920	920 – 1920	320 – 920
Cost per hour	$ 250	$ 250	$ 250
Back office Integration Complexity	Low	High	High
Back Office			
Complexity	Low	High	High
Efforts (Hours)	0 – 320	920 – 1920	920 – 1920
Cost per hour	$ 100	$ 100	$ 100
Integration Cost	**$100,000 - $300,000**	**$350,000 - $700,000**	**$200,000 - $450,000**

Source: Alaska Management and KPMG

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Investment Management Cost Analysis

Appendix 7.1 – Investment Management Cost as BPS of Total AUM

I. Investment Management Cost as BPS of Total AUM

Particulars	APFC	Treasury[(1)]	Combined
AUM ($'000 as on 6/30)	54,026,178	37,141,829	91,168,007
Person Services Cost (Internal)	1.6	1.6	1.6
External Management Fees	33.8	24.0	29.8
Public Equities	25.8	20.1	23.6
Fixed Income & Cash	5.2	3.9	4.5
Real Assets & Alternatives	58.5	74.6	62.7

II. Asset Composition

Asset Class	APFC	Treasury	Combined
Public Equities	42%	40%	42%
Fixed Income & Cash	21%	41%	28%
Real Assets & Alternatives	37%	19%	30%

(1) Excludes Participants Directed Plan Assets and Associated Costs

Source: Management information

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Appendix 7.2 - Cost Comparisons with other Public Funds

Name	Asset Composition (as on latest annual report)			Total AUM[1] ($ B)	% Under Internal Management (approximate)	Investment Management Fees (In BPS of total AUM)	Investment Management Cost[2][3] (In BPS of total AUM)
	Public Equity	Fixed Income & Cash	Real Assets & Alternatives				
California State Teachers Fund	54%	19%	27%	191	72%	8	13
New York State Teachers Retirement Fund	58%	23%	19%	110	58%	21	25
Florida State Board Fund	61%	20%	19%	180	53%	27	28
Ohio State Teachers Fund	53%	22%	25%	76	75%	24	29
New York State Common Retirement Fund	51%	29%	20%	185	62%	33	38
Wisconsin Investment Board	47%	30%	23%	89	58%	NA	40
California Public Employee Retirement Funds	51%	19%	30%	309	69%	34	42
Washington State Board Fund	37%	24%	39%	103	31%	32	42
North Carolina State Retirement Board	47%	30%	23%	91	0%	50	57
State of Alaska (Treasury and APFC combined)	**42%**	**28%**	**30%**	**91**[4]	**25%**	**30**	**31**
Treasury	**40%**	**41%**	**19%**	**37**	**32%**	**24**	**26**
APFC	**42%**	**21%**	**37%**	**54**	**20%**	**34**	**35**

- Cost of managing state of Alaska funds is in line with those at other Public funds.
- The proportion of internally managed assets at Treasury and APFC are lower than that at other Public funds.

(1) Based on latest available annual report
(2) Investment management cost includes external management fees and personal services costs
(3) Personal services costs represents one of the following in the order given below depending on data availability
- *Investments staff cost*
- *All administrative staff cost*
- *All investment expenses*

(4) Excludes Participants Directed Plan's Assets

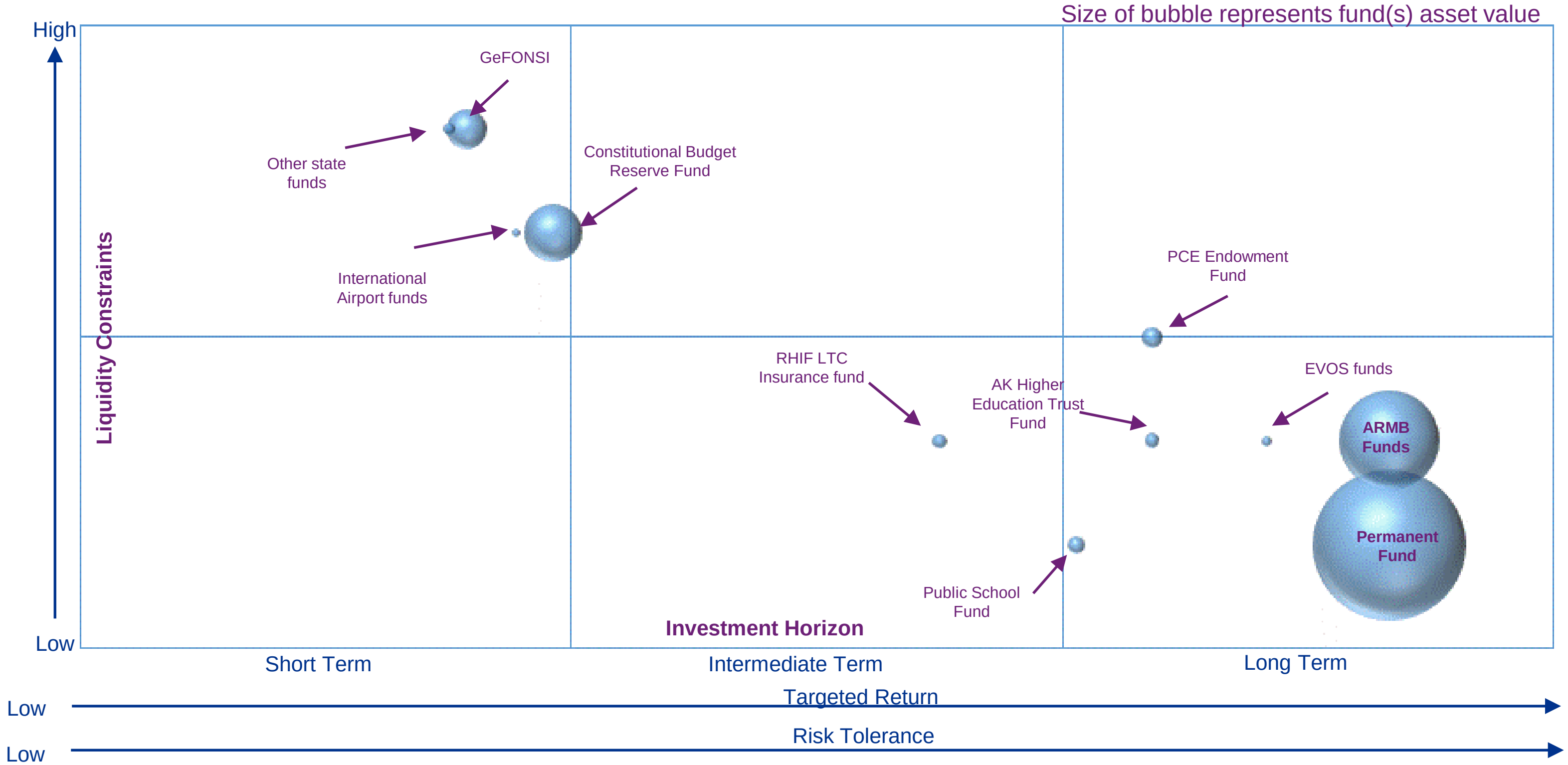
Source: Latest available annual reports

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

KPMG

Investment Funds' Details

Appendix 8.1 - Funds' Characteristics



	Permanent Fund	ARMB Funds	CBRF	GeFONSI	PCE Endowment	Public School Fund	International Airport Funds	RHIF LTC Insurance	EVOS Funds	Higher Education Trust Fund	Other State Funds(1)
6/30 AUM ($ Bn)	54.0	23.1(3)	7.3	3.5	1.0	0.6	0.1	0.4	0.2	0.4	0.5
Time Horizon	Long	Long	Intermediate	Short – Intermediate	Long	Long	Short – Intermediate	Long	Long	Long	Short
FY17E Return	7.25%(2)	8.0%	2.89%	2.36%	6.55%	6.08%	2.66%	5.25%	7.25%(2)	6.55%	2.25%
Liquidity Constraints	• Operating expenses • Dividend	• Operating expense • Pension net cash outflow	• Operating expense • Government budget shortfalls	• Operating expense • Government expenses • Participating trust expenses	• Operating expense • Power cost equalization and rural electric capitalization fund's project	• Operating expense • Payments to support state's education program	• Operating expense • Interest and principal payments • Airport operations & maintenance	• Operating expense • Medical needs of active and retired employees	• Operating expense • Restoration projects	• Operating expense • Performance scholarship • Education grants	• Operating expense • States' expenditures • Interest and principal payments • Participating agencies' expenses

Source: Management information

(1) "Other state funds" includes the General Fund, RHIF Major medical, AK Mental Health Trust Reserve Fund and Illinois Creek Mine Reclamation Fund

(2) FY17proj. inflation assumed at 2.25%

(3) Excludes Participants Directed Plan's Assets

Disclaimer – This report is based on the assessment completed using information submitted by APFC and Treasury management. KPMG has not independently verified the information. This report describes the pros and cons of a fund merger within the options specified in the scope of work. It does not make recommendations or conclusions as to whether it is prudent to move forward with any merger.

Contacts

The KPMG contacts in connection with this report are:

Beth Stuart
Partner, Audit
907–265–1248
emstuart@kpmg.com

Amaresh Kumar, CFA
Manager, Advisory
917–346–6719
amareshkumar@kpmg.com

Agnel Kagoo
Principal, Advisory
949–885–5512
akagoo@kpmg.com

Ana Kemp
Director, Advisory
310–384–9941
analisabetdiaz@kpmg.com

kpmg.com/socialmedia