EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: November 19, 2015

MEMO TO: Members of the Retirement Board

THROUGH: Laura Brunson, Manager of Human Resources

FROM: Lisa Sorani, Manager of HR Employee Services L.S.

SUBJECT: Retirement Board Regular Meeting – November 19, 2015

A regular meeting of the Retirement Board will convene at 8:30 a.m. on Thursday, November 19, 2015 in the Training Resource Center (TRC1) of the Administration Building.

Enclosed are the agenda for the November 19, 2015 meeting and the minutes for the September 17, 2015 regular meeting. The package also includes the following: **(1) ACTION** items: Recommend Changes to Retirement Board Ordinance for IRS Letter of Determination (R.B. Resolution No.6832); **(2) INFORMATION** items: 3rd Quarter Performance Review as of September 30, 2015, Annual Retirement System Audited Financial Report, District Health Plan Update, Disability Earnings Income Verification for 2014, Training Module – ESG, ESG Presentation; **(3) REPORTS FROM THE RETIREMENT BOARD**.

LS:eg

Enclosures

AGENDA

EBMUD EMPLOYEES' RETIREMENT SYSTEM
November 19, 2015
Training Resource Center (TRC1) 8:30 a.m.

ROLL CALL:

PUBLIC COMMENT: The Retirement Board is limited by State Law to providing a brief response, asking questions for clarification, or referring a matter to staff when responding to items that are not listed on the agenda.

CONSENT CALENDAR:

1. Approval of Minutes – Regular meeting of September 17, 2015

2. Ratifying and Approving Investment Transactions by Counselors for August 2015 and September 2015 (R.B. Resolution No. 6830)

3. Ratifying and Approving Short-Term Investment Transactions by Treasurer for August 2015 and September 2015 (R.B. Resolution No. 6831)

4. Approving Treasurer's Statement of Receipts and Disbursements for August 2015 and September 2015

ACTION:

5. Recommend changes to Retirement Board Ordinance for IRS Letter of Determination – L. Matthew

INFORMATION:

6. 3rd Quarter Performance Review as of September 30, 2015 – S. Klein

7. Annual Retirement System Audited Financial Report – S. Klein

8. District Health Plan Update – L. Sorani

9. Disability Earnings Income Verification for 2015 – E. Grassetti

10. Training Module – Environmental, Social, Governance (ESG) Considerations - S. Klein

11. ESG Fiduciary Considerations Presentation – S. Klein

12. Schedule of Retirement Board Meetings for Calendar Year 2016 – E. Grassetti

<u>REPORTS FROM THE RETIREMENT BOARD</u>:

13. Brief report on any course, workshop, or conference attended since the last Retirement Board meeting.

<u>ITEMS TO BE CALENDARED</u>:

<u>MEETING ADJOURNMENT</u>:
The next regular meeting of the Retirement Board will be held at 8:30 a.m. on Thursday, January 21, 2016.

<u>2016 Retirement Board Meetings</u>

January 21, 2016
March 17, 2016
May 19, 2016
July 21, 2016
September 15, 2016
November 17, 2016

MINUTES OF THE RETIREMENT BOARD
September 17, 2015

A regular meeting of the Retirement Board convened on Thursday, September 17, 2015 at 8:40 a.m. in the Large Training Resource Center (TRC) Room. The meeting was called to order by President Doug Higashi.

Roll Call – The following Retirement Board Members were present: Alex Coate, Doug Higashi, Tim McGowan, Frank Mellon, Marguerite Young, and Lisa Ricketts.

The following staff members were present: Laura Brunson, Elizabeth Grassetti, Scott Klein, Saji Pierce and Sophia Skoda.

PUBLIC COMMENT

Eric Larsen from AFSCME 2019 announced that AFSCME 2019 approved the Responsible Investing Resolution that he had shared with the Retirement Board at the May 21, 2015 meeting.

1 - 4. **Consent Calendar** – A motion was made by Frank Mellon and seconded by Marguerite Young to approve the Consent Calendar. The motion carried (5-0) by the following voice vote: AYES (Coate, Higashi, McGowan, Mellon), NOES (none), ABSTAIN (none), ABSENT (none).

ACTION

5. **Appoint Laura A. Brunson as Secretary of the Retirement Board (Resolution No. 6829)** In accordance with Section 4(b) of the Retirement Ordinance, the Manager of Human Resources, Laura A. Brunson is appointed as the Secretary of the Retirement Board. Frank Mellon moved the motion and Alex Coate seconded the motion. Tim McGowan stated that he would vote no because he would like to see the Board be more autonomous and select its own administrator, secretary, consultant and attorney. Frank Mellon said that the retirement system should be an arm of the District. Marguerite Young and Lisa Ricketts expressed support for more autonomy. The motion carried (4-1-0) by the following voice vote: AYES (Coate, Higashi, Mellon, Young,), NOES (McGowan), ABSTAIN (none), ABSENT (none).

6. **Review Barrow Hanley Performance and Release from Watch Status -** Based on the Investment Policy criteria and performance review by PCA it was recommended that Barrow Hanley be removed from watch status. Over the past quarter and one year period Barrow Hanley has outperformed its benchmark by 1.4% and 2.5% respectively. The portfolio has tracked the benchmark for the three and five year periods. Doug Higashi made the motion to remove from watch status and Tim McGowan seconded the motion. The motion carried (5-0) by the following voice vote: AYES (Coate, Higashi, McGowan, Mellon, Young), NOES (none), ABSTAIN (none) ABSENT (none).

INFORMATION

7. **1st Quarter Performance Review as of June 30, 2015 -** Eric White from PCA presented the second quarter performance review. The portfolio was at $1.4 billion as of June 30, 2015, a decrease of $2.0 million over the quarter, but an increase of $60.4 million for the year. Over the

longer periods the portfolio has outperformed both the policy benchmark and the median public fund. The portfolio is overweight on domestic equities due to market movement and underweight on international equities and fixed income.

8. **Training Module – Real Estate -** Eric White of PCA provided an overview of the Real Estate investments and EBMUD's portfolio. Real Estate encompasses a broad range of sectors including apartments, offices, shopping malls, warehouses, etc. Each sector has different risk/reward opportunities. Real Estate investments are classified as private or public depending on whether the investment is publicly traded or privately held. Real Estate in a portfolio provides diversification, low correlation, income, and a hedge against inflation.

9. **Investment Manager Presentation – Centersquare** Scott Maguire gave an overview of the firm, which was founded in 1987 and focuses solely on Real Assets and has $7.2 Billion under management. It has three strategies, listed real estate, private real estate and listed infrastructure. EBMUD's portfolio value is $45 million dollars and is slightly trailing the benchmark for the quarter, and has returned 6.09% for the one year period and 10.11% for the three year period.

REPORTS FROM THE RETIREMENT BOARD:

10. Brief report on any course, workshop, or conference attended since the last Retirement Board meeting.

- Frank Mellon said he will be attending the International Foundation Conference in November.
- Alex Coate said that he was going to attend the CALAPRS Trustee Roundtable on September 18th.
- Lisa Ricketts thanked staff for running an article in Splashes that invited retirees to sign up for her e-mail list.
- Doug Higashi congratulated Rod Deiter on his Retirement.

ITEMS TO BE CALENDERED / UPCOMING ITEMS

- ESG Education - November

ADJOURNMENT – Frank Mellon moved to adjourn the meeting at 11:29 a.m. and Marguerite Young seconded the motion; the motion carried (5-0) by the following voice vote: AYES (Coate, Higashi, McGowan, Mellon Young), NOES (none), ABSTAIN (none), ABSENT (none).

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President

ATTEST: ____________________________
Secretary

11/19/2015

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: October 22, 2015

MEMO TO: Members of the Retirement Board

FROM: D. Scott Klein, Acting Director of Finance DSK

SUBJECT: Investment Transactions by Retirement Fund Managers for August 2015 and September 2015

The attached Investment Transactions by Retirement Fund Managers report for the months of August 2015 and September 2015 is hereby submitted for Retirement Board approval.

Attachment

DSK: LF:vw

INVESTMENT TRANSACTIONS BY RETIREMENT FUND MANAGERS

August 2015

	PURCHASES	SALES	PORTFOLIO VALUE
FIXED INCOME			
Western Asset Management Co.-IG	$589,990	$846,095	$64,997,242
Western Asset Management Co.-HI	$0	$0	$31,719,819
Western Asset Management Co.-HY	$0	$0	$29,776,955
C.S. McKee	$7,163,197	$710,717	$132,653,546
TOTAL	**$7,753,187**	**$1,556,812**	**$259,147,561**
DOMESTIC EQUITY			
Barrow Hanley	$873,385	$311,441	$149,874,724
Opus Capital	$2,270,748	$1,599,868	$29,825,771
Russell 1000 Growth Index Fund	$0	$0	$223,094,359
Russell 2000 Growth Index Fund	$0	$0	$24,556,772
INTECH	$9,149,825	$8,978,255	$66,297,591
T. Rowe Price	$2,484,076	$2,477,616	$66,231,335
Total Domestic Equity	**$14,778,034**	**$13,367,180**	**$559,880,552**
COVERED CALLS			
Parametric (BXM)	$1,669,407	$1,629,189	$93,699,697
Parametric (Delta-Shift)	$673,344	$481,436	$85,237,248
Van Hulzen	$15,106,749	$18,779,600	$88,646,176
Total Covered Calls	**$17,449,500**	**$20,890,225**	**$267,583,122**
INTERNATIONAL EQUITY			
Franklin/Templeton	$1,316,121	$905,669	$90,535,210
Fisher Investments	$1,505,781	$1,116,266	$93,134,922
Total International Equity	**$2,821,902**	**$2,021,936**	**$183,670,132**
REAL ESTATE EQUITY			
RREEF America II	$0	$0	$29,492,036
CenterSquare	$2,541,935	$1,904,382	$45,328,750
Total Real Estate	**$2,541,935**	**$1,904,382**	**$74,820,786**
TOTAL ALL FUND MANAGERS	**$45,344,557**	**$39,740,536**	**$1,345,102,153**

September 2015

	PURCHASES	SALES	PORTFOLIO VALUE
FIXED INCOME			
Western Asset Management Co.-IG	$635,310	$7,074	$65,142,243
Western Asset Management Co.-HI	$0	$0	$31,371,506
Western Asset Management Co.-HY	$0	$0	$29,071,697
C.S. McKee	$13,232,712	$8,741,687	$133,457,172
TOTAL	**$13,868,021**	**$8,748,761**	**$259,042,617**
DOMESTIC EQUITY			
Barrow Hanley	$2,820,289	$1,622,232	$144,984,559
Opus Capital	$1,930,133	$2,042,554	$29,043,279
Russell 1000 Growth Index Fund	$0	$0	$216,973,260
Russell 2000 Growth Index Fund	$0	$0	$23,012,908
INTECH	$2,492,185	$1,764,571	$64,973,790
T. Rowe Price	$2,459,235	$3,121,019	$63,853,364
Total Domestic Equity	**$9,701,842**	**$8,550,376**	**$542,841,160**
COVERED CALLS			
Parametric (BXM)	$2,617,268	$2,292,640	$93,510,854
Parametric (Delta-Shift)	$1,249,143	$665,402	$92,535,523
Van Hulzen	$13,967,792	$9,102,085	$88,655,986
Total Covered Calls	**$17,834,203**	**$12,060,127**	**$274,702,363**
INTERNATIONAL EQUITY			
Franklin/Templeton	$0	$0	$85,625,650
Fisher Investments	$0	$0	$89,448,669
Total International Equity	**$0**	**$0**	**$175,074,320**
REAL ESTATE EQUITY			
RREEF America II	$0	$0	$29,492,036
CenterSquare	$2,697,032	$2,640,745	$46,914,955
Total Real Estate	**$2,697,032**	**$2,640,745**	**$76,406,991**
TOTAL ALL FUND MANAGERS	**$44,101,098**	**$32,000,009**	**$1,328,067,452**

Prepared By: Virginia Wong Date: 10-22-15

R.B. RESOLUTION NO. 6830

RATIFYING AND APPROVING INVESTMENT TRANSACTIONS BY THE COUNSELORS FOR MONTHS OF AUGUST, 2015 AND SEPTEMBER, 2015

Introduced by: ; Seconded by:

WHEREAS, Retirement Board Rule No. B-5 provides for investment transactions without prior specific approval by the Retirement Board; and

WHEREAS, investment transactions have been consummated during August, 2015 and September, 2015, in accordance with the provisions of said rule and in securities designated as acceptable by Retirement Board Resolution No. 4975, as amended;

NOW, THEREFORE, BE IT RESOLVED that the investment transactions appearing on the following exhibits are hereby ratified and approved.

President

ATTEST:

Secretary

9/19/15

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: September 25, 2015

MEMO TO: Members of the Retirement Board

THROUGH: D. Scott Klein, Acting Finance Director DSKlein

FROM: Lawrence Fan, Acting Controller LF

SUBJECT: Short Term Investment Transactions for August 2015

The attached Short Term Investment Transactions report for the month of August 2015 is hereby submitted for Retirement Board approval.

Attachment

DSK:LF:vw

EBMUD EMPLOYEES' RETIREMENT SYSTEM
SHORT TERM INVESTMENT TRANSACTIONS
CONSUMMATED BY THE TREASURER
MONTH OF AUGUST 2015

COST/ FACE VALUE	DESCRIPTION	DATE OF PURCHASE	DATE OF SALE/MATURITY	YIELD (%)
$ (3,900,000.00)	Local Agency Investment Fund		3-Aug-15	0.330
3,300,000.00	Local Agency Investment Fund	14-Aug-15		0.330
(3,900,000.00)	Local Agency Investment Fund		28-Aug-15	0.330
$ (4,500,000.00)	Net Activity for Month			

SUBMITTED BY ____________________ DATE 9/25/15
Lawrence Fan
Acting Controller

SDS
S. D. Skoda
Treasury Manager

S. F. Lindley
S. F. Lindley
Acctg. Systems Supvr.
prepared by vwong

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE:	October 22, 2015
MEMO TO:	Members of the Retirement Board
THROUGH:	D. Scott Klein, Acting Finance Director
FROM:	Lawrence Fan, Acting Controller
SUBJECT:	Short Term Investment Transactions for September 2015

The attached Short Term Investment Transactions report for the month of September 2015 is hereby submitted for Retirement Board approval.

Attachment

DSK:LF:vw

EBMUD EMPLOYEES' RETIREMENT SYSTEM
SHORT TERM INVESTMENT TRANSACTIONS
CONSUMMATED BY THE TREASURER
MONTH OF SEPTEMBER 2015

COST/ FACE VALUE	DESCRIPTION	DATE OF PURCHASE	DATE OF SALE/MATURITY	YIELD (%)
$ 3,300,000.00	Local Agency Investment Fund	11-Sep-15		0.337
(3,900,000.00)	Local Agency Investment Fund		25-Sep-15	0.337
$ (600,000.00)	Net Activity for Month			

SUBMITTED BY ____________________ DATE 10/22/15
Lawrence Fan
Acting ~~Controller~~

S. D. Skoda
Treasury Manager

WOC for S. Lindley 10/22
S. F. Lindley
Acctg. Systems Supvr.
prepared by vwong

R.B. RESOLUTION NO. 6831

RATIFYING AND APPROVING INVESTMENT TRANSACTIONS BY THE TREASURER FOR AUGUST, 2015 AND SEPTEMBER, 2015

Introduced by: ; Seconded by:

WHEREAS, Retirement Board Rule No. B-7 provides for the temporary investment of retirement system funds by the Treasurer or Assistant Treasurer in securities authorized by Sections 1350 through 1366 of the Financial Code or holding funds in inactive time deposits in accordance with Section 12364 of the Municipal Utility District Act; and

WHEREAS, investment transactions during August 2015, and September, 2015 have been made in accordance with the provisions of the said rule;

NOW, THEREFORE, BE IT RESOLVED that the investment transactions consummated by the Treasurer and included on the attached Exhibit A for August 2015, and September, 2015 are hereby ratified and approved.

President

ATTEST:

Secretary

9/19/2015

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE:	September 25, 2015
MEMO TO:	Members of the Retirement Board
THROUGH:	D. Scott Klein, Acting Finance Director
FROM:	Lawrence Fan, Acting Controller
SUBJECT:	Statement of Receipts and Disbursements for August 2015

The attached Statement of Receipts and Disbursements report for the month of August 2015 is hereby submitted for Retirement Board approval.

Attachment

DSK:LF:vw

STATEMENT OF RECEIPTS AND DISBURSEMENTS
EMPLOYEES' RETIREMENT FUND
MONTH OF AUGUST 2015

CASH BALANCE at July 31, 2015			$	(4,218,097.56)
Receipts				
Employees' Contributions	$	1,111,675.78		
District Contributions		5,624,103.60		
LAIF Redemptions		7,800,000.00		
Refunds and Commission Recapture		1,541.93		
TOTAL Receipts				14,537,321.31
Disbursements				
Checks/Wires Issued:				
Service Retirement Allowances	$	6,559,655.61		
Disability Retirement Allowances		144,213.30		
Health Insurance Benefit		238,020.61		
LAIF Deposits		3,300,000.00		
Administrative Cost		73,048.15		
TOTAL Disbursements				(10,314,937.67)
CASH BALANCE at August 31, 2015			$	4,286.08
LAIF				6,002,441.54
LAIF and Cash Balance at August 31, 2015			$	6,006,727.62
Domestic Equity				
Barrow Hanley	$	149,874,724.02		
Russell 1000 Index Fund		223,094,359.05		
Russell 2000 Growth Index Fund		24,556,772.42		
Opus		29,825,770.58		
Intech		66,297,591.01		
T. Rowe Price		66,231,334.95		
Subtotal Domestic Equity		559,880,552.03		
Covered Calls				
Parametric (BXM)	$	93,699,697.28		
Parametric (Delta-Shift)		85,237,248.30		
Van Hulzen		88,646,176.02		
Subtotal Covered Calls		267,583,121.60		
International Equity				
Franklin Templeton	$	90,535,210.23		
Fisher Investments		93,134,921.94		
Subtotal International Equity		183,670,132.17		
Real Estate				
RREEF America REIT II	$	29,492,036.00		
Center Square		45,328,749.91		
Subtotal Real Estate		74,820,785.91		
Fixed Income				
CS Mckee	$	132,653,545.83		
Western Asset Mgt Co-Short Term Inv Grade		64,997,241.87		
Western Asset Mgt Co-Short Term High Income		31,719,818.62		
Western Asset Mgt Co-Short Term High Yield		29,776,954.65		
Subtotal Fixed Income		259,147,560.97		
Total for Domestic & International Equities				1,345,102,152.68
MARKET VALUE of ASSETS at AUGUST 31, 2015			$	1,351,108,880.30

Respectfully submitted,

Lawrence Fan
Acting Controller

S. D. Skoda
Treasury Manager

S. F. Lindley
Acctg Sys Supvr.

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: October 22, 2015

MEMO TO: Members of the Retirement Board

THROUGH: D. Scott Klein, Acting Finance Director

FROM: Lawrence Fan, Acting Controller

SUBJECT: Statement of Receipts and Disbursements for September 2015

The attached Statement of Receipts and Disbursements report for the month of September 2015 is hereby submitted for Retirement Board approval.

Attachment

DSK:LF:vw

STATEMENT OF RECEIPTS AND DISBURSEMENTS
EMPLOYEES' RETIREMENT FUND
MONTH OF SEPTEMBER 2015

CASH BALANCE at August 31, 2015			$	4,286.08
Receipts				
Employees' Contributions	$	1,112,159.97		
District Contributions		5,631,958.98		
LAIF Redemptions		3,900,000.00		
Refunds and Commission Recapture		3,138.44		
TOTAL Receipts				10,647,257.39
Disbursements				
Checks/Wires Issued:				
Service Retirement Allowances	$	6,512,388.16		
Disability Retirement Allowances		142,533.17		
*Health Insurance Benefit		1,203,750.56		
Payments to Retiree's Resigned/Deceased		18,312.85		
LAIF Deposits		3,300,000.00		
Administrative Cost		124,227.93		
TOTAL Disbursements				(11,301,212.67)
CASH BALANCE at September 30, 2015			$	(649,669.20)
LAIF				5,402,441.54
LAIF and Cash Balance at September 30, 2015			$	4,752,772.34
Domestic Equity				
Barrow Hanley	$	144,984,558.67		
Russell 1000 Index Fund		216,973,259.86		
Russell 2000 Growth Index Fund		23,012,908.19		
Opus		29,043,278.74		
Intech		64,973,790.48		
T. Rowe Price		63,853,364.28		
Subtotal Domestic Equity		542,841,160.22		
Covered Calls				
Parametric (BXM)	$	93,510,854.02		
Parametric (Delta-Shift)		92,535,523.13		
Van Hulzen		88,655,986.08		
Subtotal Covered Calls		274,702,363.23		
International Equity				
Franklin Templeton	$	85,625,650.41		
Fisher Investments		89,448,669.38		
Subtotal International Equity		175,074,319.79		
Real Estate				
RREEF America REIT II	$	29,492,036.00		
Center Square		46,914,954.85		
Subtotal Real Estate		76,406,990.85		
Fixed Income				
CS Mckee	$	133,457,171.84		
Western Asset Mgt Co-Short Term Inv Grade		65,142,243.25		
Western Asset Mgt Co-Short Term High Income		31,371,505.58		
Western Asset Mgt Co-Short Term High Yield		29,071,696.82		
Subtotal Fixed Income		259,042,617.49		
Total for Domestic & International Equities				1,328,067,451.58
MARKET VALUE of ASSETS at SEPTEMBER 30, 2015			$	1,332,820,223.92

Respectfully submitted,

Lawrence Fan
Acting Controller

S. D. Skoda
Treasury Manager

for S. Lindley 10/22/15
S. F. Lindley
Acctg Sys Supvr.

*Prior period Health Insurance Premiums paid in September

EAST BAY MUNICIPAL UTILITY DISTRICT
Office of the General Counsel

DATE:	November 13, 2015
MEMO TO:	Retirement Board
FROM:	Lourdes Matthew, Attorney Lourdes Matthew
SUBJECT:	Recommend Changes to the Retirement Ordinance for IRS Letter of Determination

INTRODUCTION

At the May 21, 2015 meeting of the Retirement Board, the Board unanimously authorized counsel to seek renewal of the Internal Revenue Service's ("IRS") favorable determination that the plan constituting the East Bay Municipal Utility District's Retirement Ordinance continues to be a tax-qualified plan. Based on tax counsel's review of the criteria under which the IRS will review the plan, a further amendment to the Retirement Ordinance is required. As such, the Retirement Board is asked to vote to recommend the proposed Retirement Ordinance amendment to the Board of Directors.

DISCUSSION

As the Board may recall, on May 21, 2013, the IRS issued a favorable determination letter declaring the Retirement System a tax-qualified plan. The determination, however, was subject to an expiration date of January 31, 2014. The IRS has provided retirement systems subject to this expiration date an opportunity to retain its tax-qualified status during this period and renew the favorable tax determination by submitting an application for renewal by January 31, 2016.

For the current cycle of review, the IRS has added an additional requirement for governmental plans which was not included in the previous review cycle in which the Retirement System received a favorable determination. The additional requirement arises from the Heroes Earnings Assistance and Relief Tax Act of 2008 ("HEART Act"), which provided, in part, that when a plan member dies while performing qualified military service, the plan must allow the beneficiaries of the member to be entitled to any additional benefits (other than benefit accruals relating to the period of qualified military service) that would have been provided under the plan had the participant resumed employment and then terminated employment on account of death. For example, if a member who has less than the five years of Continuous Employment required to be vested and for his or her survivors to be eligible for a death benefit, dies during a period of qualified military service, the member's survivor must be allowed to count that service in order to qualify for survivor benefits as if the member had been employed immediately prior to death. In this case, the member's survivor would be allowed the opportunity to make contributions sufficient to receive the necessary service credit and become vested and eligible for survivor benefits, as if the member had returned to employment, paid the contributions, and then died while an employee.

The Retirement Ordinance provides for broad eligibility for benefits upon death of any member, but does not have the express provision pertaining to members who die while on active military duty. While the Retirement System would likely be in compliance operationally, the Retirement Ordinance is required to contain express written plan provisions reflecting this right of beneficiaries. To meet this requirement, Section 7 of the Retirement Ordinance must be amended to include the language required by the IRS. Attached for the Retirement Board's review is a draft Amendment to the Retirement Ordinance.

CONCLUSION

To meet the renewal application deadline of January 31, 2016, the Board of Directors must conduct a first reading of the proposed amendment no later than the board meeting on November 24, 2015. The second reading and adoption must be no later than December 8, 2015 in order to allow for time to publish the amendment. The amendment will take effect 30 days after its adoption, which will mean that it will be in effect by the time the renewal application is submitted on or before January 31, 2016.

LM:vsh

Enclosure

Draft Prepared By

____
Office of General Counsel

ORDINANCE NO. ____________

AN ORDINANCE AMENDING SECTION 7
OF ORDINANCE NO. 40, WHICH IS THE EMPLOYEES'
RETIREMENT SYSTEM ORDINANCE

Introduced by Director ; Seconded by Director

BE IT ENACTED by the Board of Directors of the East Bay Municipal Utility District that Ordinance No. 40, which is entitled "AN ORDINANCE ESTABLISHING A RETIREMENT SYSTEM FOR EMPLOYEES OF EAST BAY MUNICIPAL UTILITY DISTRICT, PROVIDING FOR THE PAYMENT OF RETIREMENT ALLOWANCES TO MEMBERS OF THE RETIREMENT SYSTEM, FOR THE PAYMENT OF DEATH BENEFITS AND SURVIVORSHIP BENEFITS, AND FOR COST OF LIVING ADJUSTMENT BENEFIT, HEALTH INSURANCE BENEFIT, AND LOW INCOME BENEFIT PRESCRIBING THE CONDITIONS UNDER WHICH SAID ALLOWANCES AND BENEFITS SHALL BE PAID, DETERMINING RATES OF CONTRIBUTION AND THE AMOUNTS OF RETIREMENT ALLOWANCES, DEATH BENEFITS AND SURVIVORSHIP BENEFITS, AND THE PERCENTAGE OF COST OF LIVING ADJUSTMENT, AND PROVIDING FOR THE ADMINISTRATION OF SAID RETIREMENT SYSTEM," as amended from time to time, is further amended as follows:

1. Section 7 (b) of this Ordinance, entitled "ALLOWANCE FOR SERVICE" is amended by adding the following terms to read as follows:

(b) Notwithstanding Section 13(c) of this Ordinance and provided that the Member re-enters District Service within the applicable time period entitling the Member to reinstatement to the District Service under the state Military & Veterans Code or the federal Uniform Service Employment and Re-Employment Rights Act of 1994 ("USERRA"), any Member who is absent from District Service by reason of unpaid Military Leave shall have the right to contribute to the Retirement System upon his or her return to District Service at times and in a manner fixed by the Retirement Board in an amount equal to the contribution which would have been made by him or her had he or she not been absent from District Service. If he or she does so contribute, he or she shall receive credit for District Service for such time and in the same manner as if he or she had not been absent from District Service. **Notwithstanding any other provisions of the Ordinance to the contrary, and pursuant to the requirements of the Heroes Earnings Assistance and Relief Tax Act of 2008 ("HEART Act"), if a Member dies on or after January 1, 2007, while performing qualified military service (as defined in section 414(u) of the Internal Revenue Code), his or her Beneficiaries shall receive benefits (other than benefit accruals related to the period of qualified military services) that would have been provided had the Member resumed employment and then terminated on account of death.**

The provisions of the Retirement Ordinance with reference to disability retirement and the payment of death benefits shall not be available to any Member during the period of his or her absence hereinabove referred to, but in the event of his or her death during such absence there shall be paid to his or her beneficiary or to his or her estate the amount of his Accumulated Contributions.

____
President

I HEREBY CERTIFY that the foregoing Ordinance was duly and regularly introduced at a regular meeting of EAST BAY MUNICIPAL UTILITY DISTRICT held on __________, 2015, at the offices of said District, 375 - 11th Street, Oakland, California, and thereupon, after being read, further action was scheduled for the regular meeting of said Board of Directors held at the same place on __________, 2015, at which time the same was finally adopted by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

ATTEST:

____
Secretary

APPROVED AS TO FORM AND PROCEDURE:

____
General Counsel

W:\400\450\450.05\BOARD\BOARD MEMOS\2015 Board Memos\EBMUD - Retirement System - Ordinance - HEART Act - DRAFT 11-2-15.DOCX

Recent Investment Performance

	Quarter	1 Year	3 Year	5 Year	10 Year	20 Year
Total Portfolio	-5.2	0.1	9.3	9.7	6.3	7.8
Policy Benchmark	*-5.1*	*-1.0*	*8.0*	*8.8*	*6.1*	*7.5*
Excess Return	**-0.1**	**1.1**	**1.3**	**0.9**	**0.2**	**0.3**

*Gross of Fees

Portfolio Valuation as of September 30, 2015
(in millions $)

	Sept. 30, 2015	June 30, 2015	Quarterly Change	Percentage Change*	Sept. 30, 2014	Annual Change	Percentage Change*
EBMUD	$1,333.5	$1,404.4	-$70.9	-5.0%	$1,341.2	-$7.7	-0.6%

*Percentage change in value due to both investment results and cash flows.

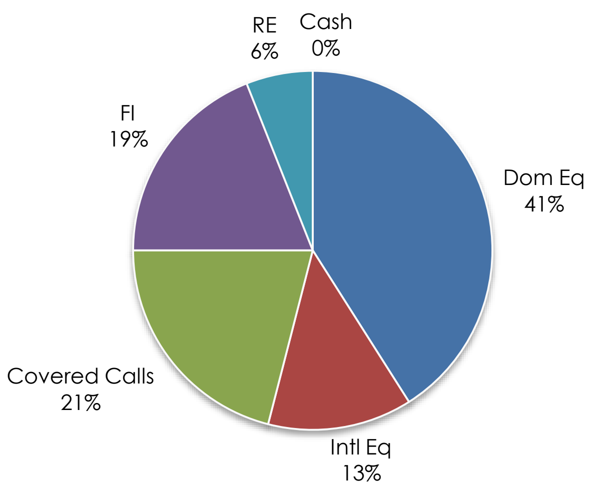
Actual vs. Target Allocations
As of September 30, 2015

Segment	Actual $(000)	Actual %	Target %*	Variance
Total Portfolio	1,333,482	100%	100%	---
Domestic Equity	542,841	40.7%	40.0%	0.7%
International Equity	175,074	13.1%	15.0%	-1.9%
Covered Calls	274,715	20.6%	20.0%	0.6%
Total Fixed Income	259,043	19.4%	20.0%	-0.6%
Real Estate**	76,407	5.7%	5.0%	0.7%
Cash	5,402	0.4%	0.0%	0.4%

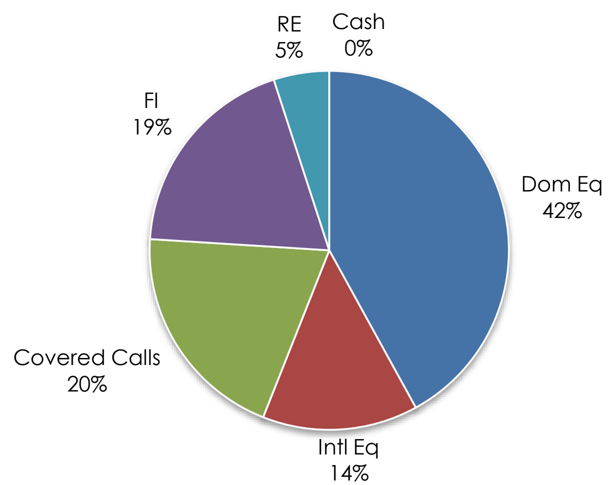
*Policy target allocations elected by the Board in September 2013 which took effect March 2014 upon the funding of the new Covered Calls asset class and Non-Core Bonds allocation within Total Fixed Income.
**RREEF performance results and allocation are lagged one-quarter.

Actual Asset Allocation Comparison

September 30, 2015



June 30, 2015



Asset Class Performance (Gross of Fees)
Periods ending September 30, 2015

Asset Class	Quarter	1 Year	3 Year	5 Year	10 Year	20 Year
Total Portfolio	-5.2	0.1	9.3	9.7	6.3	7.8
*Policy Benchmark^*	*-5.1*	*-1.0*	*8.0*	*8.8*	*6.1*	*7.5*
Domestic Equity	-6.9	1.1	12.9	13.5	6.9	8.2
*Russell 3000 (blend)**	*-7.2*	*-0.5*	*12.5*	*13.3*	*6.9*	*8.7*
International Equity	-11.7	-8.8	4.8	4.0	4.3	6.6
*MSCI ACWI x U.S.(blend)***	*-12.1*	*-11.8*	*2.8*	*2.3*	*3.4*	*4.6*
Covered Calls	-3.7	0.7	---	---	---	---
CBOE BXM	*-2.4*	*0.4*	---	---	---	---
Total Fixed Income	-0.5	0.7	1.4	3.6	4.7	5.9
*Fixed Income benchmark (blend)****	*-0.1*	*1.5*	*1.4*	*3.0*	*4.6*	*5.6*
Real Estate	3.4	13.8	12.3	15.5	---	---
*50/50 NCREIF/FTSE NAREIT All Equity*****	*2.0*	*10.4*	*10.3*	*12.7*	---	---
Cash	0.1	0.3	0.3	0.3	1.9	---
Citigroup T-bills	*0.0*	*0.0*	*0.0*	*0.1*	*1.3*	---

^Total Portfolio Benchmark consists of 40% Russell 3000 (blend), 15% MSCI ACWIxU.S. (blend), 20% CBOE BXM, 10% BC Aggregate, 5% BC US 1-3 Year Government/Credit, 2.5% BC 1-5 Year U.S. High Yield Cash Pay, 2.5% S&P/LSTA Performing Loans, 2.5% NCREIF (lagged), and 2.5% FTSE NAREIT All Equity REITs index 4/1/14-present; 40% Russell 3000 (blend), 15% MSCI ACWIxU.S. (blend), 20% CBOE BXM, 15% BC Aggregate, 2.5% BC 1-5 Year U.S. High Yield Cash Pay, 2.5% S&P/LSTA Performing Loans, 2.5% NCREIF (lagged), and 2.5% FTSE NAREIT All Equity REITs index 3/1/14-3/31/14; 50% Russell 3000 (blend), 20% MSCI ACWIxU.S. (blend), 25% BC Universal (blend), 2.5% NCREIF (lagged), 2.5% FTSE NAREIT All Equity REITs index 11/1/11-2/28/14

*Russell 3000 as of 10/1/05. Prior: 30% S&P500, 10% S&P400, 10% Russell 2000 (4/1/05-9/30/05); 33% S&P500, 10% S&P400, 10% Russell 2000 (9/1/98-3/31/05); 30% S&P500, 15% Wilshire 5000 (4/1/96-8/31/98)

**MSCI ACWIxU.S. as of 1/1/07; MSCI EAFE ND thru 12/31/06

***50% BC Aggregate, 25% BC US 1-3 Year Government/Credit, 12.5% BC 1-5 Year U.S. High Yield Cash Pay, and 12.5% S&P/LSTA Performing Loans index 4/1/14-present; 75% BC Aggregate, 12.5% BC 1-5 Year U.S. High Yield Cash Pay, and 12.5% S&P/LSTA Performing Loans index 3/1/14-3/31/14; BC Universal 1/1/08-2/28/14; BC Aggregate thru 12/31/07

****50% NCREIF (lagged), 50% FTSE NAREIT All Equity REITs Index as of 11/1/11; NCREIF (lagged) thru 10/31/11

Manager Performance (Gross of Fees)

Domestic Equity – Periods ending September 30, 2015

Manager	Mkt Value ($000)	Asset Class	Management Style	Quarter	1 YR	3 YR	5 YR	Estimated Annual Fee (bps)[1]	Current Monitoring Status
Northern Trust Co.	216,973	Large Cap Core	Passive	-6.8	-0.5	12.7	13.4	3	---
Russell 1000 Index	---	---	---	*-6.8*	*-0.6*	*12.7*	*13.4*	---	---
Intech	64,974	Large Cap Growth	Active	-4.8	6.6	13.9	15.1	5 bps + 12.5% on excess returns	Watch 12/2014
T. Rowe Price	63,853	Large Cap Growth	Active	-4.6	6.9	15.8	15.7	49	---
Russell 1000 Growth Index	---	---	---	*-5.3*	*3.2*	*13.6*	*14.5*	---	---
Barrow Hanley	144,985	Large Cap Value	Active	-7.8	-2.4	12.2	12.6	31	---
Russell 1000 Value Index	---	---	---	*-8.4*	*-4.4*	*11.6*	*12.3*	---	---
Northern Trust Co.	23,013	Small Cap Growth	Passive	-13.0	4.3	13.1	13.6	5	---
Russell 2000 Growth Index	---	---	---	*-13.1*	*4.0*	*12.8*	*13.3*	---	---
Opus	29,043	Small Cap Value	Active	-6.8	5.3	11.3	10.9	5 bps + 25% on excess returns	Watch 12/2012
Russell 2000 Value Index	---	---	---	*-10.7*	*-1.6*	*9.2*	*10.2*	---	---

International Equity – Periods ending September 30, 2015

Manager	Mkt Value ($000)	Asset Class	Management Style	Quarter	1 YR	3 YR	5 YR	Estimated Annual Fee (bps)[1]	Current Monitoring Status
Franklin Templeton[2]	85,626	ACWI x U.S.	Active	-11.8	-11.4	4.7	3.7	56	---
Fisher Investments	89,449	ACWI x U.S.	Active	-11.7	-6.1	4.9	4.3	65	---
*MSCI ACWI x U.S. (blend)**	---	---	---	*-12.1*	*-11.8*	*2.8*	*2.3*	---	---

*As of January 1, 2007, the benchmark changed from MSCI EAFE to MSCI ACWI x U.S.

[1] Reviewed annually. Last reviewed June 30, 2015.

[2] Franklin Templeton's historical returns are reported net of fees (inception – 6/30/2011). The Franklin Templeton institutional mutual fund account was liquidated in June 2011 and moved to a transition account which later funded the Franklin Templeton new separate account in the same month. The Q2-2011 return is an aggregate of the institutional mutual fund account, Franklin transition account, and new separate account.

Covered Calls – Periods ending September 30, 2015

Manager	Mkt Value ($000)	Asset Class	Management Style	Quarter	1 YR	3 YR	5 YR	Estimated Annual Fee (bps)[3]	Current Monitoring Status
Parametric – BXM	93,511	Covered Calls	Replication	-2.3	3.8	---	---	20	---
Parametric – Delta Shift	92,536	Covered Calls	Semi-Active	-5.6	1.4	---	---	34	---
Van Hulzen	88,668	Covered Calls	Fully Active	-3.2	-3.0	---	---	25	---
CBOE BXM	---	---	---	*-2.4*	*0.4*	*5.7*	*7.3*	---	---

Total Fixed Income – Periods ending September 30, 2015

Manager	Mkt Value ($000)	Asset Class	Management Style	Quarter	1 YR	3 YR	5 YR	Estimated Annual Fee (bps)[3]	Current Monitoring Status
CORE FIXED INCOME									
CS McKee	133,457	Core	Active	1.1	3.2	2.0	3.5	20	---
BC Aggregate	---	---	---	*1.2*	*2.9*	*1.7*	*3.1*	---	---
NON-CORE FIXED INCOME									
WAMCO – Short Duration	65,142	Non-Core	Active	0.2	1.1	---	---	16	---
BC U.S. 1-3 Yr Govt/Credit	---	---	---	*0.3*	*1.2*	*0.9*	*1.0*	---	---
WAMCO – Short-Term HY	29,072	Non-Core	Active	-6.5	-8.0	---	---	40	---
BC 1-5 Yr U.S. HY Cash Pay	---	---	---	*-4.9*	*-3.8*	*3.1*	*5.4*	---	---
WAMCO – Bank Loans	31,372	Non-Core	Active	-2.5	-1.0	---	---	45	---
S&P/LSTA Performing Loans	---	---	---	*-1.0*	*1.9*	*3.6*	*4.8*	---	---

Real Estate – Periods ending September 30, 2015

Manager	Mkt Value ($000)	Asset Class	Quarter	1 YR	3 YR	5 YR	Estimated Annual Fee (bps)[3]	Current Monitoring Status
RREEF II*	29,492	Real Estate	3.8	15.8	14.2	16.2	95	---
*NCREIF**	---	---	*3.1*	*13.0*	*11.6*	*12.7*	---	---
CenterSquare (formerly Urdang)	46,915	Real Estate	3.2	13.1	11.2	---	27.5 bps + 15% on excess returns	---
FTSE NAREIT All Equity REITs	---	---	*0.8*	*7.3*	*8.6*	*11.7*	---	---

*Results are lagged one quarter.

[3] Reviewed annually. Last reviewed June 30, 2015.

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November 19, 2015

The Retirement Board
East Bay Municipal Utility District Employees' Retirement System
375 Eleventh Street
Oakland, CA 94607

Letter of Transmittal: Financial Report of the East Bay Municipal Utility District Employees' Retirement System for the Year Ended June 30, 2015

Dear Board Members:

The financial report of the Employees' Retirement System for the year ended June 30, 2015, is transmitted herewith as required by Section 4 of the Ordinance establishing the Retirement System. This report consists of the Basic Financial Statements and Supplementary Information for the year ended June 30, 2015, (with the Independent Auditors' report therein) as examined and accompanied by the opinion of Maze & Associates.

The Retirement System's net assets as of June 30, 2015 were $1,407.21 million, an increase of $60.32 million (4.48 percent) during the year. Investment returns for the year were 4.50 percent. Cumulative annualized investment returns for the five years ending June 30, 2015, were 13.00 percent or 5.50 percent above the current 7.50 percent actuarial assumed investment rate of return.

During the year, the Retirement Board approved a cost of living adjustment (COLA) benefit of 2.7 percent and up to an additional 0.3 percent accumulated COLA bank credit, effective July 1, 2015.

Review of Schedule and Charts

<u>Membership Activity</u>

As of June 30, 2015, the number of active and terminated vested employees participating in the retirement plan increased by 49 to 2,004, while members retired and receiving benefits increased by 66 to 1,563.

<u>Chart 1: Service and Disability Allowances, and Health Benefits Paid to Retired Members</u>

During fiscal year 2015, $84.98 million was paid to retirees, an increase of 8.74 percent from fiscal year 2014. Pension benefit payments increased by 9.09 percent while health insurance benefit payments increased by 5.12 percent.

<u>Chart 2: Contributions Received</u>

During fiscal year 2015, total District and member contributions (net of member withdrawals), were $73.14 million and $13.22 million, respectively for a total of $86.36 million, an increase of 5.15 percent from fiscal year 2014. The District's $73.14 million contribution was 84.69 percent of the total amount contributed to the Plan, net of member withdrawals. It was an increase of $3.02 million, due to an increase in the contribution rate, effective June 15, 2014, from 43.70 percent to 44.06 percent for the 1980 Plan and 36.47 percent to 37.35 percent for the 2013 Plan. The contribution rate for employees also increased from 7.42 to 7.93 percent effective April 21, 2014 and increased again to 8.41 percent on April 19, 2015 for 1980 Plan. The contribution rate for Plan 2013 is set at 50 percent of the total normal cost rate with an annual adjustment if the normal rate change is more than 1 percent of payroll. As a result, the set rates for 2015 and 2016 are at 8.84 percent.

Chart 3: Sources of Funds

The Retirement System is funded from three sources - District contributions, members' net contributions, and gross investment income or loss. The District and member contributions increased since last year due to the changes in District and members' contribution rates. Gross investment income or loss includes interest, dividends, earnings from real estate investments and net realized and unrealized gains or losses on investments, and tends to vary from year to year. To help maintain stable contribution rates for the District, only 20 percent of investment returns or losses for any given year are recognized in that year in the actuarial evaluation, with the balance spread equally over the succeeding four years. As new actuarial liabilities arise, all UAAL established prior to July 1, 2011 is funded over separate decreasing 30-year periods. On or after July 1, 2011, plan changes are amortized over separate decreasing 15-year periods; assumption changes are amortized over separate decreasing 25-year periods; and experience gains/losses are amortized over separate decreasing 20-year periods.

Chart 4: Unfunded Pension and Health Insurance Benefits Actuarial Accrued Liability (UAAL) and Funded Ratio (Fiscal year 2014 is the latest information available from the actuary at the time of the audit)

During the year ended June 30, 2014, the Pension Plan actuarial value using valuation value of pension plan asset basis (VVA) increased from $1,095.85 million to $1,210.32 million, while actuarial accrued liability increased from $1,646.53 million to $1,756.71 million. This generated a net decrease of unfunded actuarial accrued liability (UAAL) of $4.3 million. As the result, the Pension Plan's UAAL as of year-end is $546.39 million and funded ratio is 68.90 percent.

During the year ended June 30, 2014, the Health Benefit Plan actuarial value using actuarial value of asset basis (AVA) increased from $16.52 million to $19.63 million, while the actuarial accrued liability increased from $138.12 million to $140.42 million. This generated a net decrease of unfunded actuarial accrued liability (UAAL) of $0.82 million. As a result, the Health Benefit Plan's UAAL as of year-end is $120.78 million and funded ratio is 13.98 percent.

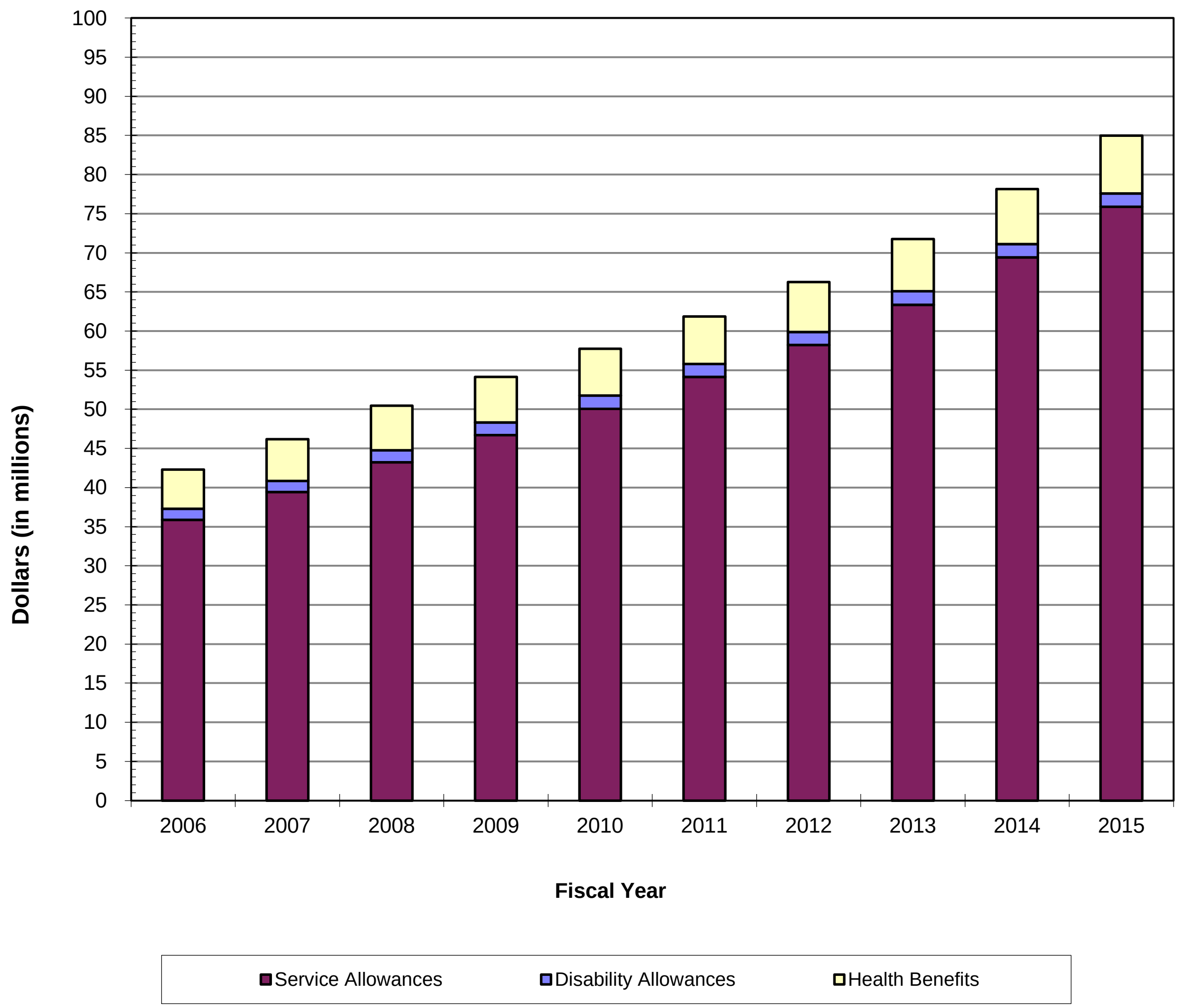
Chart 5: Membership Growth

The chart reflects an increasing active membership (including terminated vested employees) from last year, with a total of 2,004 as of June 30, 2015. Meanwhile, a total number of 1,563 people receiving retirement, disability retirement, or survivor benefits as of June 30, 2015 represent an average of increase 4.04 percent per year of the number of people receiving retirement benefits over the last 10 years.

Respectfully submitted,

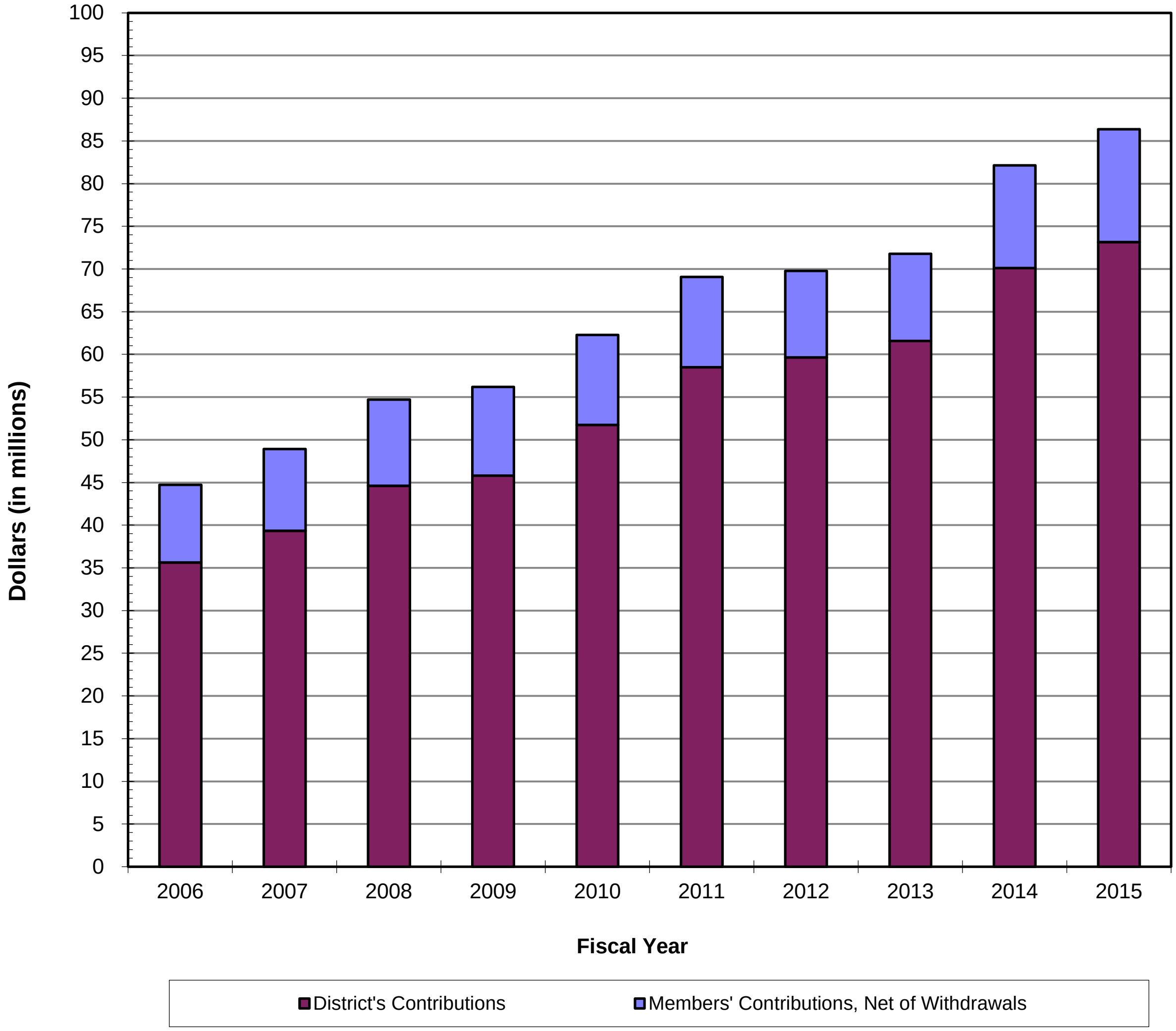
D. Scott Klein
Acting Director of Finance – East Bay Municipal Utility District
Treasurer – Employees' Retirement System
DSK:LF:cs

CHART 1:
Service & Disability Allowances, & Health Benefits Paid to Retired Members



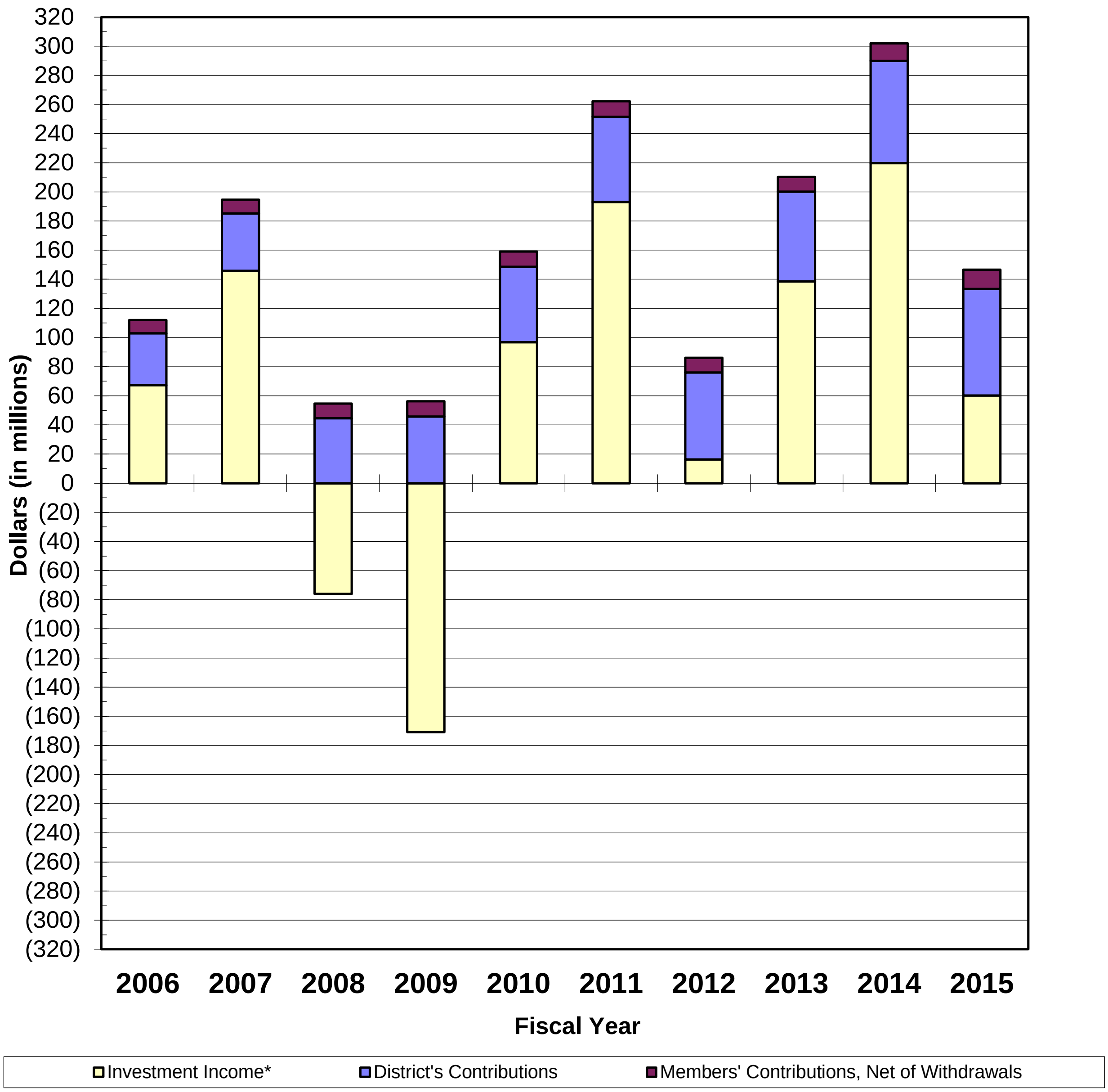
Service Allowances, Disability Allowances, and Health Benefits (in millions)										
Fiscal Year	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Service Allowances	35.89	39.41	43.22	46.69	50.08	54.12	58.20	63.37	69.40	75.88
Disability Allowances	1.39	1.44	1.56	1.63	1.69	1.67	1.68	1.72	1.72	1.71
Health Benefits	5.02	5.34	5.69	5.82	5.96	6.07	6.37	6.67	7.03	7.39
TOTAL	42.30	46.19	50.47	54.14	57.73	61.86	66.25	71.76	78.15	84.98

CHART 2:
Contributions Received



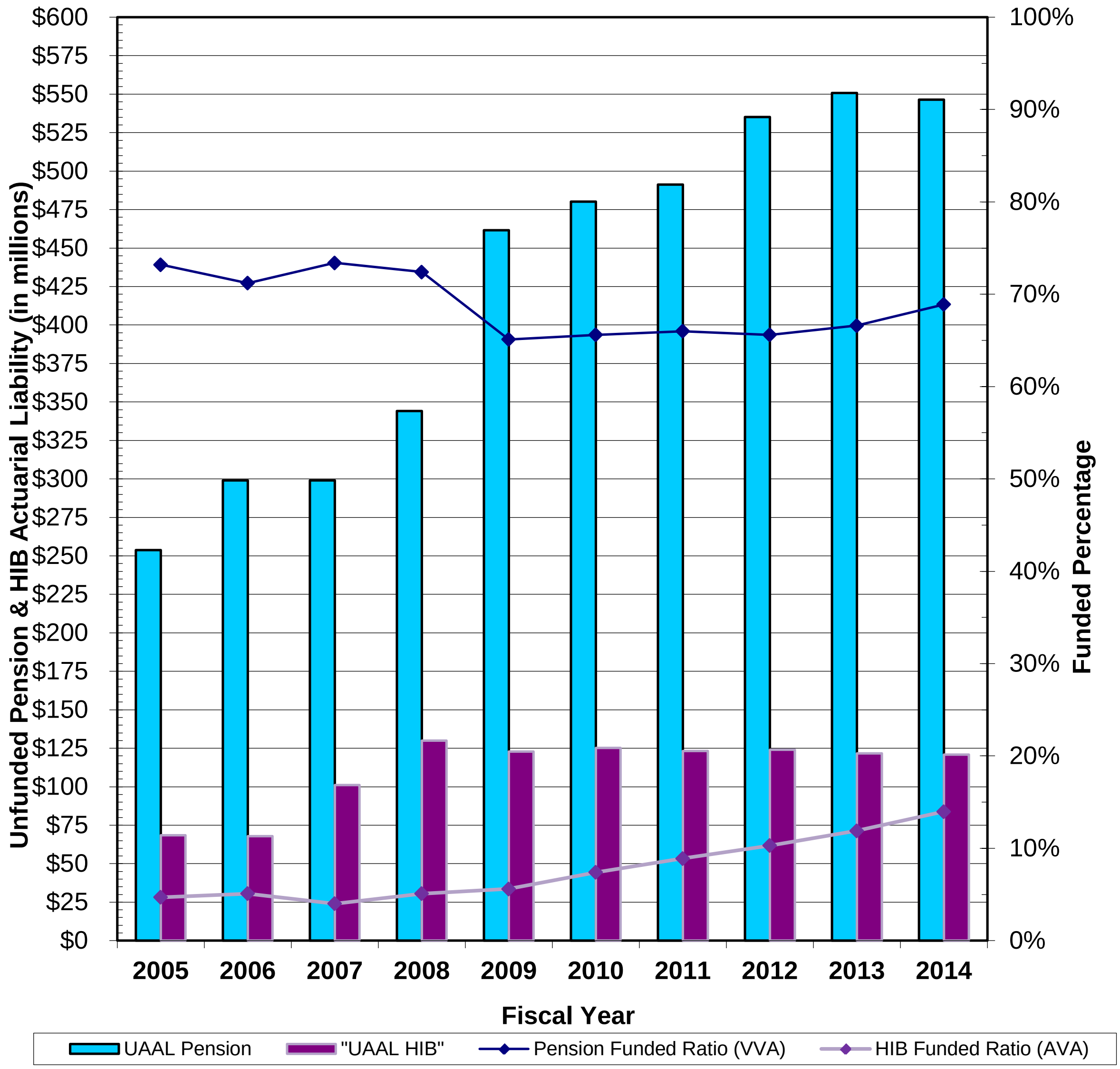
Contributions Received (in millions)										
Fiscal Year	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
District's Contributions	35.63	39.33	44.60	45.80	51.76	58.48	59.65	61.57	70.12	73.14
Members' Contributions (net)	9.09	9.57	10.09	10.38	10.54	10.60	10.13	10.23	12.02	13.22
TOTAL	44.72	48.90	54.69	56.18	62.30	69.08	69.78	71.80	82.14	86.36

CHART 3:
Sources of Funds



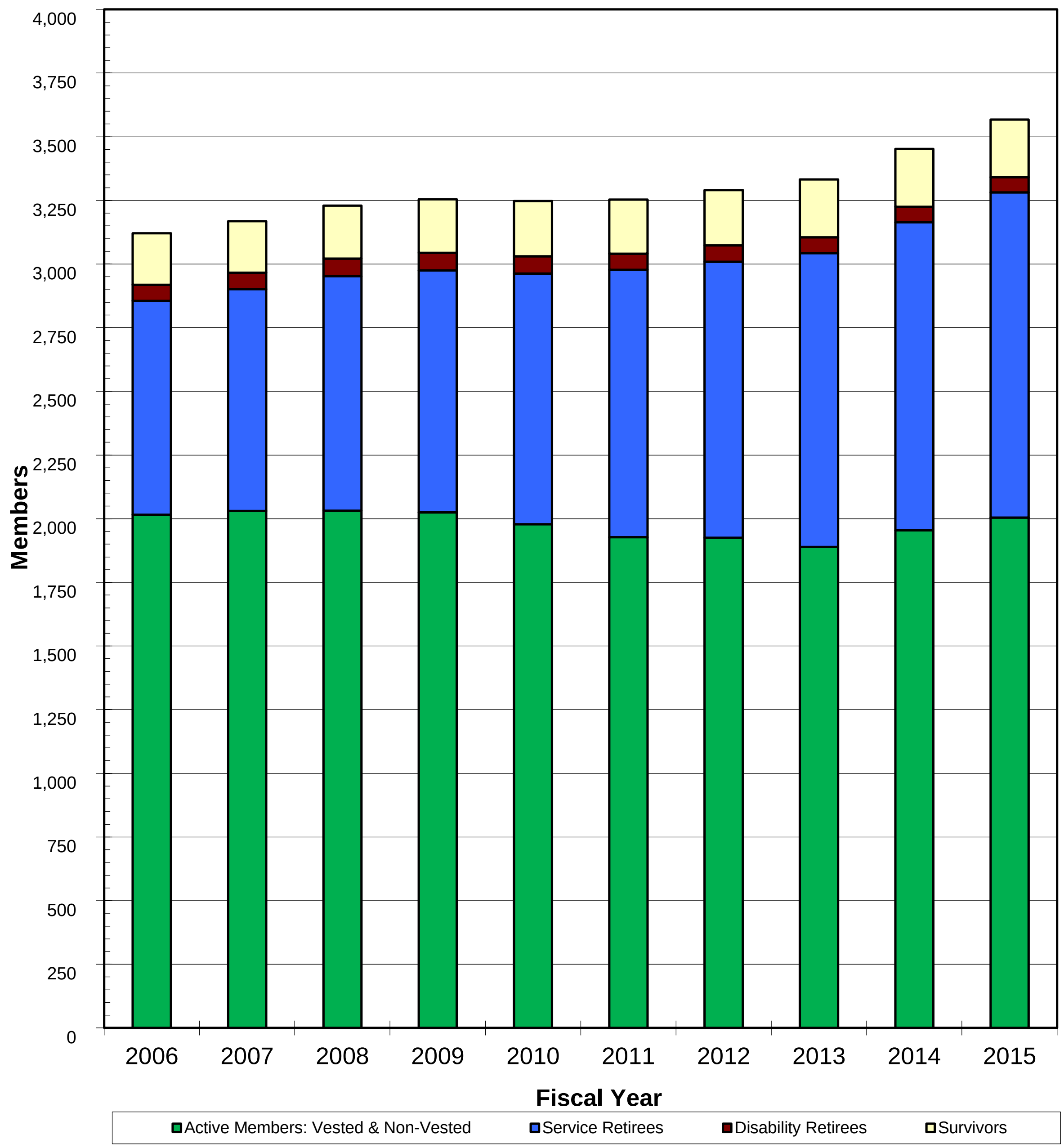
Total Sources of Funds (in millions)										
Fiscal Year	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Investment Income	67.23	145.78	(75.99)	(170.93)	96.79	193.11	16.29	138.54	219.83	60.23
District's Contributions	35.63	39.33	44.60	45.80	51.76	58.48	59.65	61.57	70.12	73.14
Members' Contributions (net)	9.09	9.57	10.09	10.38	10.54	10.60	10.13	10.23	12.02	13.22

CHART 4:
Unfunded Pension & Health Insurance Actuarial Accrued Liability & Funded Ratio



Unfunded Pension & Health Insurance Actuarial Accrued Liability & Funded Ratio (in millions)										
Fiscal Year	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
UAAL Pension	253.67	299.13	299.01	344.08	461.53	480.16	491.32	535.15	550.69	546.39
Pension Funded Ratio	73.2%	71.2%	73.4%	72.4%	65.1%	65.6%	66.0%	65.6%	66.6%	68.9%
UAAL Health Insurance Benefits	68.48	67.80	101.20	130.05	122.89	125.32	123.31	124.00	121.60	120.78
HIB Funded Ratio	4.7%	5.1%	4.0%	5.1%	5.6%	7.4%	8.9%	10.3%	11.9%	14.0%

CHART 5:
Membership Growth



Membership Growth										
Fiscal Year	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Active: Vested & Non-Vested	2,016	2,030	2,031	2,025	1,978	1,928	1,925	1,889	1,955	2,004
Service Retirees	839	872	922	950	985	1,049	1,084	1,154	1,209	1,278
Disability Retirees	64	64	69	69	68	64	65	62	61	59
Survivors	202	203	207	210	217	212	216	227	227	226

EAST BAY MUNICIPAL UTILITY DISTRICT
EMPLOYEES' RETIREMENT SYSTEM

(A Component Unit of the
East Bay Municipal Utility District)

Financial Statements and Supplementary Information

For The Year Ended June 30, 2015

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EAST BAY MUNICIPAL UTILITY DISTRICT
EMPLOYEES' RETIREMENT SYSTEM

(A Component Unit of the East Bay Municipal Utility District)

For The Year Ended June 30, 2015

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INDEPENDENT AUDITORS' REPORT

The Board of Directors
East Bay Municipal Utility District
Employees' Retirement System
Oakland, California

Report on Financial Statements

We have audited the accompanying financial statements of the East Bay Municipal Utility District Employees' Retirement System (the System), a component unit of the East Bay Municipal Utility District as of and for the year ended June 30, 2015, and the related notes to the financial statements, which collectively comprise the System's basic financial statements as listed in the Table of Contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of the financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the System's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

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

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the plan net position of the East Bay Municipal Utility District Employees' Retirement System as of June 30, 2015, and changes in plan net position for the year then ended in conformity with accounting principles generally accepted in the United States of America.

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Other Matters

Report on Summarized Comparative Information

We have previously audited East Bay Municipal Utility District Employees' Retirement System's 2014 financial statements, and we expressed an unmodified audit opinion on those audited financial statements in our report dated September 5, 2014. In our opinion, the summarized comparative information as and for the year ended June 30, 2014 is consistent, in all material respects, with the audited financial statements from which it has been derived.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that Management's Discussion and Analysis and certain schedules related to the Pension and Post Employment Healthcare Plans be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic or historical context. We have applied certain limited procedures to the required supplementary information in accordance with generally accepted auditing standards in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards,* we have also issued our report dated August 27, 2015 on our consideration of the System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the System's internal control over financial reporting and compliance.

Maze + Associates

Pleasant Hill, California
August 27, 2015

EAST BAY MUNICIPAL UTILITY DISTRICT
EMPLOYEES' RETIREMENT SYSTEM
(A Component Unit of the East Bay Municipal Utility District)

Management's Discussion and Analysis

(Dollars in thousands)

June 30, 2015

This section presents management's analysis of the East Bay Municipal Utility District Employees' Retirement System's (the System) financial condition and activities as of and for the year ended June 30, 2015. Management's Discussion and Analysis (MDA) is intended to serve as an introduction to the System's basic financial statements. The MDA represents management's examination and analysis of the System's financial condition and performance.

This information should be read in conjunction with the audited financial statements that follow this section. The information in the MDA is presented under the following headings:

- Organization and Business
- Overview of the Financial Statements
- Financial Analysis: *Financial Highlights*
- Financial Analysis: *Financial Condition*
- Factors Impacting Future Periods
- Request for Information

Organization and Business

The East Bay Municipal Utility District (the District) is the sponsoring agency of the System and provides for its funding. The System is accounted for on a flow of economic resources measurement focus, using the accrual basis of accounting. Under this method, all assets and deferred outflow, all liabilities and deferred inflow associated with operations are included on the statement of plan net position, and revenues are recorded when earned and expenses are recorded at the time liabilities are incurred.

The System administers a single-employer, contributory, defined benefit pension plan (the Plan) which provides retirement, disability, survivorship, and postemployment healthcare benefits for eligible directors, officers, and employees of the District. The Plan is administered by a retirement board composed of three members appointed by the District's board of directors, two members elected by and from the active membership of the Plan, and a nonvoting member elected by the retirees of the Plan. Retirement Ordinance Number 40 assigns the authority to establish Plan benefit provisions to the District's board of directors.

All regular full-time employees of the District are members of the Plan. In accordance with the ordinance governing the Plan, eligible employees become members on the first day they are physically on the job. Plan defined benefits vest in part with members after completion of five years of continuous, full-time employment.

For additional information, please see the notes to the basic financial statements.

Overview of the Financial Statements

The basic financial statements include a *statement of plan net position,* a *statement of changes in plan net position,* and *notes to basic financial statements.* The report also contains other required supplementary information in addition to the financial statements.

The system's financial statements include:

The *Statement of Plan Net Position and the Statement of Changes in Plan Net Position* report information to assist readers in determining whether the System's finances as a whole are better off or worse off as a result of the year's activities. These two statements report the net assets of the System and changes in them, respectively.

The *Statement of Plan Net Position* presents information on all assets and liabilities of the System, with the difference between the two reported as net position. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position of the System is improving or deteriorating.

The *Statement of Changes in Plan Net Position* presents the results of the System's activities over the course of the fiscal year and information as to how the *net position* changed during the year. This statement measures the results of the System's investment performance as well as the System's income from contributions and expenses, including the payment of benefits, refunds of contributions, and administrative and investment expense. All changes in net position are reported during the period the underlying event giving rise to the change occurs, regardless of the timing of the related cash flows. Thus, revenues and expenses are reported in this statement for some items that will result in cash flows in future fiscal periods.

The *Notes to the Basic Financial Statements* provide additional information that is essential to a full understanding of the data provided in the basic financial statements. Effective last fiscal year, GASB 67: Financial Reporting for Pension Plan requires the District to include significant assumptions and other inputs used to calculate the net pension liability (see Note 6- Net Pension Liability). The notes to the basic financial statements can be found on pages 13 to 29 of this report.

Other Information. In addition to the financial statements and accompanying notes, this report also presents *certain required supplementary information* concerning the District's contributions and the System's progress in funding its obligation to provide pension and postemployment healthcare benefits to the employees of the District. This section has been changed to provide information about the sources of changes in the net position liability and components of the net pension liability including the related ratios as required by GASB 67. The required supplementary information can be found on pages 30 to 33 of this report.

Financial Analysis: Financial Highlights

- The total assets of the System exceeded the total liabilities by $1,407,209 as of June 30, 2015 (Table 1). All of the net assets are available to meet the System's ongoing obligations to Plan participants and their beneficiaries.
- Net position only increased by $60,321 or 4.48% during the fiscal year ended June 30, 2015 compared to the increase of $222,560 or 19.79% of the prior year. This is primarily due to the decline in net investment income of $159,605 or 72.60%. Contributions from the District of $73,141 and employee contributions of $13,427 were offset in part by the cost of pension, health insurance benefits, refunds of contributions, and administrative expenses of $86,473.
- As of June 30, 2015, 18.50% of the System's investments were in fixed income securities, 41.50% were in domestic equities, 14.10% were in international equities, 20.30% were in covered calls, 5.30% was in Real Estate, and 0.30% were in cash and cash equivalents. As of June 30, 2014, 19.20% of the System's investments were in fixed income securities, 40.00% were in domestic equities, 14.60% were in international equities, 20.10% were in covered calls, 5.10% was in Real Estate, and 1.00% were in cash and cash equivalents.

- The Plan's funding objective is to meet long-term benefit obligations through contributions and investment income. As of June 30, 2014, the date of the last actuarial valuation, the Pension Plan's funded ratio was 68.90% and the Post-employment Health Care plan funded ratio was 13.98%.
- During the fiscal year ended June 30, 2015, combined District and employee contributions increased by $4,318 or 5.25% to $86,568 (Table 2). For the 1980 Plan, the District's average contribution rate increased to 44.06% and the employees' contribution rate increased to 7.84% for fiscal year 2015. For the 2013 Plan, the District's average contribution rate increased to 36.47% and the employees' contribution rate remained unchanged at 8.75% for fiscal year 2015.
- Retirement, Disability, and Survivor Benefit payments increased by $6,471 or 9.10% to $77,587 (Table 3). Along with the 0.22%-3.00% cost-of-living increase in July 2014, there was an additional 6.68% increase from July 1, 2014 to June 30, 2015, in monthly payroll due to net increases in the number of retirees and beneficiaries.
- Health Insurance Benefits increased by $361, or 5.13%, to $7,394 (Table 3), primarily due to the increase in the number of retirees receiving health benefits.
- Refunds of Contributions to terminated or deceased employees increased by $87, or 75.00%, to $203.
- Administrative expenses (not including Investment Advisors' Fees or Custodial Asset Management Fees) increased by $33, or 2.63%, to $1,289, primarily due to increased actuarial services of $43, offset by decreased consulting fees of $18.
- Investment Advisors' Fees increased by $1,479, or 43.02%, to $4,916 primarily due to the timing of payments of the fees of the five newly added investments from previous fiscal year. There was also an increase in the average investment fund balances.

Financial Analysis: Financial Condition

The System's financial condition reflects an increase of $116,009 in the Projected Benefit Obligation (PBO) as of the June 30, 2014, versus the previous actuarial report of June 30, 2013. Because of the increased contributions and strong market performance, the market value of assets as of June 30, 2014, increased $222,560 during the same period based on the actuarial reports. The PBO funded percentage at the end of the previous fiscal year is used to determine the cost-of-living adjustment (COLA) at the end of the current fiscal period. The Funded PBO percentage was 74.20% as of June 30, 2014, versus 66.20% as of June 30, 2013. Whenever the PBO funded percentage is less than 85.00%, the COLA for pension beneficiaries is limited to 3.00%.

The overall Actuarial Accrued Liability funding ratio for the System increased from 63.50% to 65.90% as of the June 30, 2014 actuarial report versus the previous actuarial report of June 30, 2013. The component Plans of Pension and Health Insurance Benefit changed from 66.60% to 68.90% and 15.83% to 17.87% funded, respectively.

(Dollars in thousands)

During the year ended June 30, 2015, the System's net position increased by $60,321 compared to an increase of $222,560 in 2014.

(Table 1)
Net Position
Years ended June 30, 2015 and 2014

	2015	2014	Variance	%
Other assets	$151,413	$175,166	($23,753)	(13.56)%
Investments at fair value	1,375,550	1,306,938	68,612	5.25%
Total assets	1,526,963	1,482,104	44,859	3.03%
Total liabilities	119,754	135,216	(15,462)	(11.44)%
Net position	$1,407,209	$1,346,888	$60,321	4.48%

(Table 1)
Net Position
Years ended June 30, 2014 and 2013

	2014	2013	Variance	%
Other assets	$175,166	$153,757	21,409	13.92%
Investments at fair value	1,306,938	1,096,091	210,847	19.24%
Total assets	1,482,104	1,249,848	232,256	18.58%
Total liabilities	135,216	125,520	9,696	7.72%
Net position	$1,346,888	$1,124,328	222,560	19.79%

EAST BAY MUNICIPAL UTILITY DISTRICT
EMPLOYEES' RETIREMENT SYSTEM
(A Component Unit of the East Bay Municipal Utility District)

Management's Discussion and Analysis

(Dollars in thousands)

June 30, 2015

The financial reserves needed to fund retirement and health benefits are accumulated through the collection of employer and employee contributions and through earnings on investment income. As Table 2 shows, the System experienced net investment gain for 2015.

(Table 2)
Additions to Net Position
Years ended June 30, 2015 and 2014

	2015	2014	Variance	%
Employer contributions	$73,141	$70,117	$3,024	4.31%
Members' contributions	13,427	12,133	1,294	10.67%
Total contributions	$86,568	$82,250	$4,318	5.25%
Net investment gain/(loss)*	$60,226	$219,831	($159,605)	(72.60)%
Total additions, net	$146,794	$302,081	($155,287)	(51.41)%

* Net of investment expenses and borrower's rebates and other agent fees on securities lending transactions of $5,021 for June 30, 2015, and $3,504 for June 30, 2014.

(Table 2)
Additions to Net Position
Years ended June 30, 2014 and 2013

	2014	2013	Variance	%
Employer contributions	$70,117	$61,567	$8,550	13.89%
Members' contributions	12,133	10,566	1,567	14.83%
Total contributions	$82,250	$72,133	$10,117	14.03%
Net investment gain/(loss)*	$219,831	$138,535	$81,296	58.68%
Total additions, net	$302,081	$210,668	$91,413	43.39%

* Net of investment expenses and borrower's rebates and other agent fees on securities lending transactions of $3,504 for June 30, 2014, and $3,851 for June 30, 2013.

(Dollars in thousands)

As summarized in Table 3, the Plan provides retirement, disability, survivor, and health insurance benefits to qualified members and their beneficiaries. The Plan must also provide refunds of employee contributions with interest to terminated employees who do not choose or are not qualified to vest.

(Table 3)
Deductions in Net Position
Years ended June 30, 2015 and 2014

	2015	2014	Variance	%
Pension benefits paid	$77,587	$71,116	$6,471	9.10%
Health insurance benefits paid	7,394	7,033	361	5.13%
Refunds of contributions	203	116	87	75.00%
Administrative expenses	1,289	1,256	33	2.63%
Total deductions	$86,473	$79,521	$6,952	8.74%

(Table 3)
Deductions in Net Position
Years ended June 30, 2014 and 2013

	2014	2013	Variance	%
Pension benefits paid	$71,116	$65,092	$6,024	9.25%
Health insurance benefits paid	7,033	6,668	365	5.47%
Refunds of contributions	116	335	(219)	(65.37)%
Administrative expenses	1,256	1,217	39	3.20%
Total deductions	$79,521	$73,312	$6,209	8.47%

(Dollars in thousands)

As summarized in Table 4 beginning fiscal year 2014, the District is required to present the past 10 years of net pension liability for the Employees' Retirement System pension plan (excluding Other Post-Employment Benefits) as it becomes available. The District has provided the past two fiscal years 2014 and 2013 in the footnotes and required supplemental information. The Net Pension Liability (NPL) measured as of June 30, 2014 and 2013 have been determined from the actuarial valuations as of June 30, 2014 and 2013 respectively. The NPL decreased by $107,587 from $538,906 as of June 30, 2014 to $431,319 as of June 30, 2015 primarily as a result of a net increase in Plan's Fiduciary Net Position of $217,759.

(Table 4)
Net Pension Liability
Years ended June 30, 2015 and 2014

	2015	2014	Variance	%
Net Pension Liability	$431,319	$538,906	($107,587)	(19.96)%
Plan net position as a percentage of Total Pension Liability	75.45%	67.27%	8.18%	12.16%

Request for Information

This financial report is designed to provide viewers with a general overview of the East Bay Municipal Utility District Employees' Retirement System's finances and demonstrate the District's accountability for the monies it manages. If you have any questions about this report or need additional information, please contact: the Controller, Accounting Division MS #402, P.O. Box 24055, Oakland, CA 94623-1055.

EAST BAY MUNICIPAL UTILITY DISTRICT
EMPLOYEES' RETIREMENT SYSTEM
(A Component Unit of the East Bay Municipal Utility District)
STATEMENT OF PLAN NET POSITION
June 30, 2015
(With summarized comparative financial information as of June 30, 2014)
(DOLLARS IN THOUSANDS)

	2015			
	Pension plan benefits	Post-employment healthcare benefits	Total	2014 Total
Assets:				
Cash and cash equivalents, at fair value (Note 5)	$29,713	$501	$30,214	$36,658
Invested securities lending collateral (Notes 5 and 2B)	106,749	1,799	108,548	129,511
Prepaid expenses		495	495	477
Receivables:				
Brokers, securities sold	5,742	97	5,839	2,945
Employer	2,805	415	3,220	2,964
Plan members	634		634	537
Interest and dividends	2,422	41	2,463	2,074
Total receivables	11,603	553	12,156	8,520
Investments, at fair value (Note 5):				
U.S. government obligations	72,380	1,220	73,600	82,377
Municipal bonds	2,213	37	2,250	4,385
Domestic corporate bonds	158,275	2,667	160,942	153,500
International bonds	17,880	301	18,181	10,847
Domestic stocks	812,776	13,695	826,471	783,177
International stocks	216,509	3,648	220,157	204,458
Real estate	72,724	1,225	73,949	68,194
Total investments	1,352,757	22,793	1,375,550	1,306,938
Total assets	1,500,822	26,141	1,526,963	1,482,104
Liabilities:				
Accounts payable and accrued expenses	1,660	28	1,688	1,507
Payables to brokers, securities purchased	9,360	158	9,518	4,198
Securities lending collateral (Note 2B)	106,749	1,799	108,548	129,511
Total liabilities	117,769	1,985	119,754	135,216
Net position held in trust for pension benefits and post-employment healthcare benefits	$1,383,053	$24,156	$1,407,209	$1,346,888

See accompanying notes to financial statements

EAST BAY MUNICIPAL UTILITY DISTRICT
EMPLOYEES' RETIREMENT SYSTEM
(A Component Unit of the East Bay Municipal Utility District)
STATEMENT OF CHANGES IN PLAN NET POSITION
For the Year Ended June 30, 2015
(With summarized comparative financial information for the year ended June 30, 2014)
(DOLLARS IN THOUSANDS)

	2015			
	Pension plan benefits	Post-employment healthcare benefits	Total	2014 Total
Additions:				
Contributions (Note 3):				
Employer	$64,177	$8,964	$73,141	$70,117
Plan members	13,260	167	13,427	12,133
Total contributions	77,437	9,131	86,568	82,250
Investment income:				
Net appreciation (depreciation) in fair value of investments:				
Traded securities	38,196	605	38,801	197,439
Real estate	2,256	36	2,292	2,129
Interest	4,263	67	4,330	7,193
Dividends	18,475	293	18,768	15,470
Real estate operating income, net	1,040	16	1,056	1,104
Total investment income	64,230	1,017	65,247	223,335
Less:				
Investment expense	(4,839)	(77)	(4,916)	(3,437)
Borrowers' rebates and other agent fees on securities lending transactions	(103)	(2)	(105)	(67)
Net investment income	59,288	938	60,226	219,831
Total additions, net	136,725	10,069	146,794	302,081
Deductions:				
Benefits paid (Notes 1C & 1D)	77,587	7,394	84,981	78,149
Refund of contributions (Note 4)	203		203	116
Administrative expenses	1,269	20	1,289	1,256
Total deductions	79,059	7,414	86,473	79,521
Change in net position	57,666	2,655	60,321	222,560
Net position:				
Beginning of year	1,325,387	21,501	1,346,888	1,124,328
End of year	$1,383,053	$24,156	$1,407,209	$1,346,888

See accompanying notes to financial statements

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(Dollars in Thousands)

NOTE 1 – PLAN DESCRIPTION

A. General

The East Bay Municipal Utility District (the District) Employees' Retirement System (the System) was established in 1937 to administer a single-employer, contributory, defined benefit pension plan (the Plan). The System provides retirement, disability, survivorship, and post-employment health insurance benefits for eligible directors, officers, and employees of the District. The System is administered by a Retirement Board composed of three members appointed by the board of directors of the District, two members elected by and from the active membership, and one (nonvoting) member elected by and from the retired membership of the System. Retirement Ordinance No. 40 (Ordinance) assigns the authority to establish Plan benefit provisions to the District's board of directors.

The System is exempt from the regulations of the Employee Retirement Income Security Act of 1974. The System is also exempt from federal income taxes and California franchise taxes.

The System is an integral part of the District and the District appoints the majority of the retirement board of the System and provides for its funding. Accordingly, the System's operations have been reported as a Pension and Other Employee Benefit Trust Fund in the District's basic financial statements.

B. Membership

All regular full-time employees of the District are members of the Plan in addition to certain job share and intermittent employees. In accordance with the ordinance governing the System, eligible employees become members on the first day they are physically on the job. Members become vested in the Plan after five years of continuous full-time employment. Vested members who terminate employment may elect a refund of their contributions or leave them in the Plan until eligible to receive benefits.

Investment income is credited semiannually to the accounts of the members using a rate of interest approved by the Retirement Board and determined as the lower of the latest five year average of the plan or the actuarial assumed earnings rate of the plan (7.50%). Interest was credited at an annual rate 3.875% for the six months ended December 31, 2014 and 3.75% for the six months ended June 30, 2015.

Membership in the Plan consisted of the following as of June 30, 2014, the date of the latest actuarial valuation:

Retirees and beneficiaries receiving benefits	1,497
Terminated plan members entitled to but not yet receiving benefits	237
Active plan members	1,715
Total	3,449

NOTE 1 – PLAN DESCRIPTION (Continued)

C. Retirement Benefits and Allowances

There are two tiers in effect currently, the 1980 Plan and the 2013 Plan. Employees who became Members of the retirement system prior to January 1, 2013, or who have reciprocal Membership are in the 1980 Plan, Employees who became Members on or after January 1, 2013 are in the 2013 Plan.

1980 Plan Members may elect voluntary reduced service retirement upon attaining the age of 54 and completing 5 years of continuous full-time employment. Members may elect voluntary unreduced service retirement upon attaining the age of 62 and completing 5 years of continuous full-time employment or age 65 without restriction. Members who continue to work upon attaining the normal retirement age of 65 continue to contribute to the Plan, and at the time they retire, computation of their retirement allowance is based upon their compensation and length of service as of the date of retirement. Service retirement allowances are computed by formulas specified in the Ordinance and are based on date of employment, length of employment, age at date of retirement, and compensation earned during employment.

2013 Plan Members may elect voluntary reduced service upon attaining the age of 52 and completing 5 years of continuous full-time employment. Members may elect voluntary unreduced service retirement upon attaining the age of 67, and completing 5 years of continuous full-time employment. Members who continue to work upon attaining the normal retirement age of 67 continue to contribute to the Plan, and at the time they retire, computation of their allowance is based upon their compensation and length of service as of the date of retirement. Service retirement allowances are computed by formulas specified in the Ordinance and are based on length of service, age at retirement, and compensation earned during employment.

D. Disability and Death Benefits and Allowances

Members may receive disability retirement benefits prior to age 65 if the member is determined to be physically or mentally incapacitated, provided the member has 8 or more years of continuous full-time employment. The allowance for disability retirement is computed by a formula specified in the Ordinance and is based upon compensation earnable during employment, years of continuous service, and date upon which the retiring individual became a member. There is a guaranteed minimum disability benefit equal to the greater of one-third of terminal compensation (final average salary) or the retirement allowance, based on the disability formula.

NOTE 1 – PLAN DESCRIPTION (Continued)

Death benefits are payable to the estate or beneficiary of a member who dies before retirement. Survivorship benefits are payable to the spouse of a member who dies after retirement, or who was eligible but had not retired from service, provided the spouse was married to the member at the date of retirement and for at least one year prior to the member's death.

E. Post-Employment Healthcare Benefits

Post-employment healthcare and similar benefit allowances are provided to eligible employees who retire from the District or to their surviving spouses. Effective July 1, 1996, a 20-year vesting schedule for full benefits was implemented for all new participants. Eligible participants are reimbursed up to $450 per month for service members and up to $550 for members with a spouse or registered domestic partner for any combined health, dental, or long-term care insurance premiums paid by the participant or his/her surviving spouse. Effective July 1, 1999, retirees may be reimbursed up to the designated maximum for the combined health insurance premiums for themselves, their current spouses, or registered domestic partners. The benefits were funded entirely by the District on an actuarial basis up until June 17, 2002. Effective June 18, 2002, a portion of the post-employment healthcare benefit costs is recovered through employee contributions. The actual benefits paid in cash to retirees were $7,394 and $7,033 and for the years ended June 30, 2015 and 2014, respectively.

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

A. Basis of Accounting and Presentation

The System's activities are accounted for on a flow of economic resources measurement focus, using the accrual basis of accounting. Plan member contributions are recognized in the period in which the contributions are due. Employer contributions to the Plan are recognized when due and the employer has made a formal commitment to provide the contributions. Benefits, refunds, and other liabilities are recognized when due and payable in accordance with the terms of the Plan.

The basic financial statements include partial prior year comparative information. A complete presentation of the prior year information can be found in the System's financial statements for the year ended June 30, 2014.

B. Investments

Investments are reported at fair value. Securities and bonds traded on a national or international exchange are valued at the last reported sales price at current exchange rates. Investments that have no quoted market price are reported at estimated fair value, which is determined based on yields equivalent for such securities or for securities of comparable maturity, quality, and type as obtained from market makers. Measurement of the fair value of real estate investments is estimated by the investment managers and reflects both internal and independent appraisals of real estate properties.

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

The System presents in the Statements of Changes in Plan Net Position the net change in the fair value of its investments, which consists of the realized gains or losses and the unrealized appreciation (depreciation) on those investments. Purchases and sales of securities are recorded on a trade-date basis. Interest income is recorded on the accrual basis. Dividends are recorded on the ex-dividend date.

Each of the financial instruments invested in by the System represents a potential concentration of credit risk. However, as the portfolio and the components of the various instruments are diversified and issuers of securities are dispersed throughout many industries and geographical locations, the concentrations of credit risk are limited.

The System invests in a combination of stocks, bonds, fixed income securities, real estate, and other investment securities. These investments are exposed to various risks, such as interest rate and market risks. Due to the level of risk associated with certain investment securities, it is at least reasonably possible that changes in the values of investment securities will occur in the near term and those such changes could materially affect the amounts reported in the Statement of Plan Net Position.

Retirement Board policies permit the System to use investments of the Plan to enter into securities lending transactions, which are loans of securities to broker-dealers and other entities for collateral with a simultaneous agreement to return collateral for the same securities in the future. The System's securities custodian is an agent in lending the Plan's securities for cash collateral, U.S. government securities, and irrevocable letters of credit of 102% for domestic securities and 105% for international securities lent.

As of June 30, 2015, the System had no credit risk exposure to borrowers because the amounts the System owed the borrowers exceeded the amounts the borrowers owed the System. Contracts with the lending agent require them to indemnify the System under certain circumstances if the borrowers fail to return the securities (and if the collateral is inadequate to replace the securities lent) or fail to pay the System for income distributions by the securities issuers while the securities are on loan. The risk of any loss of collateral or investment of cash collateral (including a loss of income or principal, or loss of market value thereon) lies with the System, except for losses resulting from negligence or intentional misconduct of the agent in performing the duties allocated under the securities lending agreement with respect to collateral. During the year ended June 30, 2015, there were no violations of legal or contractual provisions, and no borrower or lending agent default losses known to the securities lending agent.

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

In lending securities, cash collateral is invested in the lending agent's short-term investment pool, which as of June 30, 2015, had a weighted average maturity of 26 days. The relationship between the maturities of the investment pool and the System's loans is affected by the maturities of the securities loans made by other entities that use the agent's pool, which the System cannot determine. Cash collateral may also be invested separately in term loans, in which case the maturity of the collateral investment generally matches the term of the loan. Noncash collateral cannot be pledged or sold unless the borrower defaults. All securities loans can be terminated on demand by either the lender or the borrower, although the average term of overall loans for the System was approximately 110 days. There are no dividends or coupon payments owing on the securities lent. Cash received as collateral on securities lending transactions is reported as an asset of the System with a corresponding liability.

As of June 30, 2015, the fair value of securities on loan was $108,548. The total cash and noncash collateral held by the System's custodian to secure these securities on loan was valued at $106,202 (all cash collateral).

C. Allocation of Income and Expenses

Contributions and benefit expenses are booked against the separate trusts as incurred. The recognition of investment income/loss is based on a pro rata share of total income/loss allocated quarterly on the basis of net position held in trust for pension benefits and post-employment healthcare benefits of the previous quarter. General expenses of the trust are allocated consistent with investment income/loss based on asset balances of the previous quarter.

D. Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

(Dollars in Thousands)

NOTE 3 – CONTRIBUTION INFORMATION

The System is funded by contributions from its members and from the District. District contribution percentages are recommended by the Retirement Board, and employee contribution rates are established by the Board of Directors pursuant to the Retirement Ordinance, giving consideration to actuarial recommendations and prospective changes in factors which affect funding. Each member contributes to the 1980 Plan based upon a percentage of his or her covered compensation, which was 8.33 effective April 20, 2015 and 8.75 for the 2013 members effective January 1, 2013. The District's contribution is based upon the aggregate amount of members' covered compensation, at an actuarially determined rate.

The individual entry age normal method is used to determine the normal cost for other post-employment benefits (OPEB) and service cost for pension, and the OPEB unfunded actuarial accrued liability (past service liability) is amortized as a level percentage of future payroll over 30 years open period.

District contributions for the year ended June 30, 2015 are as follows:

1980 Plan:	
Pension plan:	
Employer service cost	15.02%
Toward unfunded pension liability	23.59%
Other post-employment benefits:	
Employer normal cost	1.21%
Unfunded actuarial accrued liability	4.24%
2013 Plan:	
Pension plan:	
Employer service cost	8.65%
Toward unfunded pension liability	23.59%
Other post-employment benefits:	
Employer normal cost	0.87%
Unfunded actuarial accrued liability	4.24%

(Dollars in Thousands)

NOTE 3 – CONTRIBUTION INFORMATION (Continued)

Effective June 30, 2015, contributions for fiscal year 2015/2016 are as follows:

1980 Plan:	
Pension plan:	
Employer service cost	14.86%
Toward unfunded pension liability	22.85%
Other post-employment benefits:	
Employer normal cost	1.22%
Unfunded actuarial accrued liability	4.29%
2013 Plan:	
Pension plan:	
Employer service cost	8.07%
Toward unfunded pension liability	22.85%
Other post-employment benefits:	
Employer normal cost	0.77%
Unfunded actuarial accrued liability	4.29%

Contributions for the years ended June 30, 2015 and June 30, 2014, based on the June 30, 2014, actuarial valuation (latest available and includes amounts for post-employment healthcare benefits), were as follows:

	2015			2014
	Pension	Healthcare Benefit Plan	Totals	
Regular contributions:				
District contributions	$64,177	$8,964	$73,141	$70,117
Member contributions	13,240	167	13,407	12,103
	77,417	9,131	86,548	82,220
Other contributions:				
Member buybacks	20		20	30
	$77,437	$9,131	$86,568	$82,250

Regular District and member contributions in fiscal 2015 represent an aggregate of 43.67 % and 7.98% of covered payroll, respectively. The District's contributions include amounts for post-employment healthcare benefits at a rate of 5.43% of covered payroll, determined by the actuarial dated June 30, 2014. The actual payroll for the District employees covered by the Plan for the year ended June 30, 2015, was $167,380 which was 91.13% of the total District payroll of $183,678.

(Dollars in Thousands)

NOTE 3 – CONTRIBUTION INFORMATION (Continued)

The total District contribution of $73,453 as of June 30, 2015, consisted of $73,141 regular contribution ($26,528 for normal cost and service cost also includes $46,613 for amortization of the unfunded actuarial accrued liability and payment to reduce the net pension liability) and $312 interest on contribution.

Regular District and member contributions in fiscal 2014 represent an aggregate of 43.83% and 7.58% of covered payroll, respectively. The District's contributions include amounts for post-employment healthcare benefits at a rate of 5.45% of covered payroll, determined by the actuarial dated June 30, 2013. The actual payroll for the District employees covered by the Plan for the year ended June 30, 2014, was $159,961 which was 90.34% of the total District payroll of $177,063.

The total District contribution of $70,491 as of June 30, 2014, consisted of $70,117 regular contribution ($27,584 for normal cost and $42,533 for amortization of the unfunded actuarial accrued liability) and $374 interest on contributions.

Member buyback contributions relate to prior years' service credits for Plan participants. The Plan was amended in 1998 for limited temporary construction workers and in 2003 for intermittent employees to allow current members, who previously worked for the District in a status which did not qualify for membership in the System, to establish retirement service credit for prior service with payments over a period of two to eight years.

The District's annual other post-employment benefits (OPEB) costs and schedules of contributions for the past three years are as follows:

Health Insurance Benefit Plan:

	Actual Contribution	Annual OPEB Cost	Percentage Contributed	Net OPEB Obligation
Fiscal year ended June 30:				
2013	$8,054	$11,443	70%	$19,332
2014	8,831	11,184	79%	21,685
2015	9,275	11,241	83%	23,651

(Dollars in Thousands)

NOTE 3 – CONTRIBUTION INFORMATION (Continued)

During the fiscal year ended June 30, 2015, the District made contributions to the Health Insurance Benefit Plan toward the Annual Required Contribution (ARC) amounting to $8,963 which represented 4.88% of the $183,678 total District payroll. During the fiscal year ended June 30, 2014, the District made contributions toward the ARC amounting to $8,457 to the plan which represented 4.78% of the $177,063 total District payroll. As a result, the District has recorded the Net OPEB Obligation (NOO), representing the difference between the ARC and actual contributions, as presented below:

Net OPEB obligation at June 30, 2013		$19,332
Annual required contribution (ARC)	$11,196	
Interest on net OPEB obligation	1,362	
Adjustments to the ARC	(1,374)	
Annual OPEB cost - fiscal 2012/2013	11,184	
Less contributions made during fiscal year:		
Contributions to Northern Trust	(8,457)	
Interest on Contributions to Northern Trust	(374)	
Contributions	(8,831)	
Contributions less than ARC		2,353
Net OPEB obligation at June 30, 2014		21,685
Annual required contribution (ARC)	11,254	
Interest on net OPEB obligation	1,533	
Adjustments to the ARC	(1,546)	
Annual OPEB cost - fiscal 2014/2015	11,241	
Less contributions made during fiscal year:		
Contributions to Northern Trust	(8,963)	
Interest on Contributions to Northern Trust	(312)	
Contributions	(9,275)	
Increase in net OPEB obligations		1,966
Net OPEB obligation at June 30, 2015		$23,651

(Dollars in Thousands)

NOTE 3 – CONTRIBUTION INFORMATION (Continued)

A schedule of funding progress for the pension and post-employment healthcare plans presenting multiple-year trend information as to whether the actuarial value of plan assets is increasing or decreasing relative to the actuarial accrued liability for benefits over time is presented immediately following the notes to basic financial statements in the Required Supplementary Information Section.

Public Employees' Pension Reform Act (PEPRA)

Assembly Bill 340 (AB 340) created the Public Employees' Pension Reform Act (PEPRA) that implemented new benefit formulas and final compensation periods, as well as new contribution requirements for new employees hired on or after January 1, 2013, who meet the definition of new member under PEPRA.

The table below provides the details of the new provisions.

Benefit Formula	2.5% at Age 67
Final Compensation Period	Average of last 3 years
Employer Contribution Rate as a percentage payroll	8.65% of Reportable Compensation
Member Contribution Rate as a percentage of payroll	8.75% of Reportable Compensation

The employer contribution rate listed above was in effect until June 30, 2015. In accordance with the provisions of AB 340, the member contribution rate shown above was set at 50 percent of the expected total normal cost rate for the benefits that will apply to new members on January 1, 2013. The total normal cost rate used for this calculation is 17.4% of payroll for new members.

NOTE 4 – CONTRIBUTION REFUNDS

When a member's District service is terminated, except by death or retirement, and prior to five years of continuous full-time employment, the amount of that member's accumulated contributions, plus interest, is refunded and membership is terminated. After a member has completed five years of continuous full-time employment, upon termination, except death or retirement, the member has the option of (a) ceasing to be a member and receiving the amount of his accumulated contributions, plus interest, or (b) remaining as a member and leaving his accumulated contributions, plus interest, in the Plan. After termination, a member cannot make additional contributions to the Plan.

If a member with fewer than five years of employment terminates employment and within six months becomes a member of the Public Employees' Retirement System or another reciprocal system, the individual may elect to remain a member, leaving his accumulated contributions, plus interest, in the Plan.

NOTE 5 – CASH AND INVESTMENTS

A. Authorized Investment Strategy

The System's investment policies authorize the System to invest in financial instruments in three broad investment categories: equity, fixed income, and real estate. These financial instruments can include, but are not limited to, corporate bonds, commercial paper, U.S. government securities, common and preferred stock, real estate investment trusts, and mutual funds. Fixed income investments may include futures and options contracts in order to provide added flexibility in managing the fixed income portfolio. The following is a summary of the System investment policy adopted by the System with Resolution No. 6807.

The Retirement Board is authorized to designate multiple investment managers to manage the assets under their supervision subject to the laws of the State of California and the Investment Guidelines established by the Retirement Board. Allocation of assets to the investment managers are determined by the Retirement Board to accommodate changing conditions and laws. The long-range asset allocation goal is as follows:

Core Fixed Income	10%
Non-Core Fixed Income	10%
Domestic Equity	40%
Covered Calls	20%
International Equity	15%
Real Estate	5%
Allocation to Cash	0%

NOTE 5 - CASH AND INVESTMENTS (Continued)

The composite asset allocation goal is pursued by the System on a long-term basis and revised if significant changes occur within the economic and/or capital market environment. Progress toward the goal is reviewed at least annually.

The Director of Finance is authorized to transfer assets from any asset class which varies the long-term asset allocation goal by more than 3% at the end of two or more consecutive quarters, allocating the excess assets to a manager or group of managers with the exception of real estate managers. The Director of Finance is further authorized to withdraw assets from assigned managers as necessary to efficiently meet operating needs.

The equity and fixed income asset allocations may vary by up to ± 5% from the long-range asset allocation goals.

The core fixed income target allocation (10% of the total portfolio) will primarily consist of U.S. denominated fixed income securities. Individual managers may invest up to 20% of their assets in international fixed income securities.

The non-core fixed income target allocation (10% of the total portfolio) will primarily consist of U.S. denominated fixed income securities. Individual managers may invest up to 35% of their assets in international fixed income securities. It is expected that this allocation may have a material allocation to below investment grade securities.

The domestic equity allocation target (40% of the total portfolio) will consist of approximately 37% in large cap market related growth and value (average risk) securities, 3% in small capitalized securities, and 20% in international securities. The international equity allocation target will consist of approximately 17% international equities and 3% emerging markets. It is expected this allocation will allow for exposure to mid cap securities based on tactical decisions by the Retirement Fund's large cap and small cap domestic equity managers.

The covered calls target allocation (20% of the total portfolio) may consist of a combination of Chicago Board Options Exchange S&P 500 BuyWrite Index (the "BXM Index") replication strategy and/or active non-replication strategies and their underlying domestic equity portfolios.

The international equity target allocation (15% of the total portfolio) will consist of approximately 12% in international equities and 3% in emerging markets equities.

The real estate target allocation (5% of the total portfolio) will consist of either equity (ownership) and/or fixed income participation in commercial, industrial, or residential properties. Investments may include interests in mortgages pools secured by loans of underlying properties.

NOTE 5 - CASH AND INVESTMENTS (Continued)

The allocation goal recognizes that at any time equity and fixed income managers may have transactional cash on hand and the District will maintain enough cash as working capital to effectively meet cash flow demands on the system. However, there is no specific allocation for cash as all investable cash is allocated to specific investment disciplines.

Holding of securities issued by the United States Government or any of its agencies need not be diversified. Securities of any one issuer with maturities of more than one year, other than the United States Government or any of its agencies, shall not exceed 5% of the value of the total portfolio. Securities of any one issuer of foreign government issues shall not exceed 10% of the value of the total portfolio at the time of purchase. Fixed income managers have the authority to make international investments, not to exceed 20% of their total portfolio.

The use of futures and options in the fixed income accounts may be used as part of their portfolio management strategy and will be incidental to their securities trading activities. The resulting aggregate risk profile (volatility) of the portfolio will not be different from that permissible by using securities only.

Short (sold) options positions will generally be hedged, either with current portfolio security holding, other options or futures options. Mortgage derivatives with significant short option characteristics will not exceed 5% of the portfolio, and will generally be a) offset by position in other mortgage derivatives, or b) offset by other portfolio positions.

No derivatives will be executed which will increase the value at risk of the portfolio by more than 25 basis points of the portfolio's market value.

Structured notes with significant short options positions or increasing leverage will not be purchased, and in no case will structured notes exceed 5% of portfolio value. Structured notes issued by the U.S. Government (treasuries and agencies) will be considered allowable investments, and are restricted to 25%.

Fixed income managers are authorized to use futures and options contracts to supplement their investment capabilities to provide flexibility in managing the fixed income portfolios and reduce the cost of implementing strategies to respond to changing market conditions without incurring the higher transaction costs associated with buying and selling specific securities. These transactions are authorized to enable the manager to reduce the exposure of the portfolio to interest rate changes by reducing or increasing the duration of the portfolio without selling any of the actual holding.

No more than 5% of the portfolio will be invested in original futures margin and options premiums, exclusive of any in-the-money portion of the premiums.

(Dollars in Thousands)

NOTE 5 - CASH AND INVESTMENTS (Continued)

Each equity portfolio shall be diversified. When fully invested in equities or at its normal level of investment, a minimum of 20 securities should be held. At no time may a single equity investment exceed 5% of the value of the total retirement fund.

Each international equity portfolio shall be diversified. When fully invested in international equities or at its normal level of investment, a minimum of 20 securities should be held. At no time may a single international equity investment exceed 5% of the value of the total retirement fund.

B. *Financial Statement Presentation*

Total cash and investments at fair value as of June 30, consisted of the following:

	2015			
	Pension plan benefits	Post-employment healthcare benefits	Total	2014
Cash and cash equivalents	$29,713	$501	$30,214	$36,658
Invested securities lending collateral	106,749	1,799	108,548	129,511
Investments	1,352,757	22,793	1,375,550	1,306,938
Total cash and investments	$1,489,219	$25,093	$1,514,312	$1,473,107

(Dollars in Thousands)

NOTE 5 - CASH AND INVESTMENTS (Continued)

C. Interest Rate Risk

Interest rate risk is the risk that changes in market rates will adversely affect the fair value of an investment. Normally, the longer the maturity of an investment, the greater the sensitivity of its fair value to changes in market interest rates. The system generally manages its interest rate risk by holding investments to maturity.

Information about the sensitivity of the fair values of the System's investments (including investments held by bond trustees) to market interest rate fluctuations is provided by the following table that shows the distribution of the System's investments by maturity or earliest call date:

Investment Type	Less than 12 Months	12 to 72 Months	72 to 120 Months	More than 120 Months	Maturity not Determined	Total
Asset Backed Securities		$5,623	$408	$3,076		$9,107
Equity Securities	$ 1,036,574					1,036,574
Commercial Mortgage - Backed Securities				8,021		8,021
Corporate Bonds	1,035	46,614	18,910	8,313	$31,080	105,952
Government Agencies		2,964	7,759	16,659		27,382
Government Bonds	6,956	11,040	655	3,308		21,959
Government Mortgage - Backed Securities			8	21,166		21,174
Government Issued Commercial Mortgage - Backed Securities		319				319
Index Linked Government Bonds	264	1,015		1,487		2,766
Short Term Investment Funds					10,054	10,054
Municipal Bonds				2,250		2,250
Mutual Funds				193		193
Real Estate					73,949	73,949
Other Fixed Income		22,660	1,012		32,178	55,850
Total System Investments	$1,044,829	$90,235	$28,752	$64,473	$147,261	$1,375,550

The System's investments include the following investments that are highly sensitive to interest rate fluctuations to a greater degree than already indicated above:

Highly Sensitive Investments	Fair Value at Year End
Commercial Mortgage - Backed Securities	$8,021
Government Mortgage - Backed Securities	21,174
Government Issued Commercial Mortgage - Backed Securities	319

(Dollars in Thousands)

NOTE 5 - CASH AND INVESTMENTS (Continued)

D. Foreign Currency Risk

Foreign currency risk is the risk that changes in foreign exchange rates will adversely affect the fair values of an investment or deposit. Presented below in US dollars is the fair market value of the System's foreign investments at June 30, 2015:

Foreign Currency	Equity Securities Investment Type
Euro	$62,140
British Pound Sterling	37,114
Hong Kong Dollar	19,960
Swiss Franc	15,726
Japanese Yen	13,744
South Korean Won	7,783
Danish Krone	5,223
Canadian Dollar	4,638
Singapore Dollar	2,858
Australian Dollar	2,830
Brazilian Real	2,307
Swedish Krona	1,792
Norwegian Krone	1,384
Indonesian Rupiah	1,251
Mexican Peso	915
Thai Baht	811
Turkish Lira	633
Total	$181,109

The Fund's investment policy permits it to invest 20% of total investment on foreign currency-denominated investments. The Fund's current position is 13%.

(Dollars in Thousands)

NOTE 5 - CASH AND INVESTMENTS (Continued)

E. Credit Risk

Credit risk is the risk that an issuer of an investment will not fulfill its obligation to the holder of the investment. This is measured by the assignment of a rating by a nationally recognized statistical rating organization. Presented below is the actual rating as of June 30, 2015, for each investment type as provided by Moody's or Standard and Poor's.

Investment Type	Aaa	Aa	A	Baa	Ba	U.S. Government Guaranteed	Not Rated	Total
Asset Backed Securities	$6,224	$88	$596	$572	$699		$928	$9,107
Equity Securities							1,036,574	1,036,574
Commercial Mortgage - Backed Securities	5,593		35				2,393	8,021
Corporate Bonds	1,386	16,749	33,058	21,451	339		32,969	105,952
Government Agencies	21,160					$6,222		27,382
Government Bonds	21,959							21,959
Government Mortgage - Backed Securities						20,964	210	21,174
Government Issued Commercial Mortgage - Backed						319		319
Index Linked Government Bonds	2,766							2,766
Short Term Investment Funds							10,054	10,054
Municipal Bonds		1,569					681	2,250
Mutual Funds		5	120				68	193
Real Estate							73,949	73,949
Other Fixed Income							55,850	55,850
Total System Investments	$59,088	$18,411	$33,809	$22,023	$1,038	$27,505	$1,213,676	$1,375,550

F. Concentration Risk

The market value of investments in any one organization exceeding 5% of the System's investments as of June 30, 2015 are as follows:

Nature of investment	Fair Value at Year End
Northern Trust Collective Daily Russell 1000 Equity Index Fund	$232,808

The District held demand deposits (overdrafts) amounting to ($959) and $267 on behalf of the System as of June 30, 2015 and 2014, respectively. The financial institution which holds these deposits is required by state law to maintain collateral pools against all public deposits they hold.

NOTE 5 - CASH AND INVESTMENTS (Continued)

G. Custodial Credit Risk

Custodial credit risk for cash on deposits is the risk that, in the event of the failure of a depository financial institution, a government will not be able to recover its deposits or will not be able to recover collateral securities that are in the possession of an outside party. The custodial credit risk for investments is the risk that, in the event of the failure of the counterparty (e.g. broker-dealer) to a transaction, the System will not be able to recover the value of its investment or collateral securities that are in the possession of another party.

California Law requires banks and savings and loan institutions to pledge government securities with a market value of 110% of the System's cash on deposit, or first trust deed mortgage notes with a market value of 150% of the deposit, as collateral for these deposits. Under California Law this collateral is held in a separate investment pool by another institution in the System's name and places the System ahead of general creditors of the institution.

The System invests in individual investments and in investment pools. Individual investments are evidenced by specific identifiable securities instruments, or by an electronic entry registering the owner in the records of the institution issuing the security, called the book entry system. In order to increase security, the System employs the Trust Department of a bank or trustee as the custodian of certain System investments, regardless of their form.

As of June 30, 2015 and 2014, the System's brokers/dealers held $294 and $77, respectively, in cash exposed to custodial credit risk.

(Dollars in Thousands)

NOTE 6 – NET PENSION LIABILITY

The net pension liability (the Plan's liability determined in accordance with GASB 67 less the fiduciary net position) as of June 30, is as shown below:

	2015	2014
Total pension liability	$1,756,706	$1,646,534
Plan fiduciary net position	(1,325,387)	(1,107,628)
Employer net pension liability	$431,319	$538,906
Plan fiduciary net position as a percentage of total pension liability	75.45%	67.27%
Covered payroll	$173,111	$166,762
Liability as a percentage of covered employee payroll	249.16%	323.16%

Actuarial valuation of the ongoing System involve estimates of the reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment mortality and future salary increases. Amounts determined regarding the net pension liability are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future. The Schedule of Employers' net pension liability presents multi-year trend information about whether the plan fiduciary net positions are increasing or decreasing over time relative to the total pension liability. These schedules are presented in the Required Supplementary Information section. The net pension liabilities was measured as of June 30, 2014 and 2013 and are not adjusted or rolled forward to the June 30, 2015 and 2014 reporting dates, respectively.

(Dollars in Thousands)

NOTE 6 – NET PENSION LIABILITY (Continued)

A summary of the actuarial assumptions as of the latest actuarial valuation is shown below.

Valuation date	June 30, 2014
Actuarial cost method	Entry Age Normal Cost Method
Amortization method	Level percent of payroll
Remaining amortization period	Plan changes are amortized over separate decreasing 15-year periods; assumptions changes are amortized over separate decreasing 25-year periods; experience gains/ losses are amortized over separate decreasing 20-year periods.
Assets valuation method	Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized over a five year period, further adjusted, if necessary, to be within 30% of the market value.
Actuarial assumptions:	
Investment rate of return	7.50%
Average projected salary increases*	Ranges from 4.00% to 9.50% based on years of service*
Inflation rate	3.00%
Cost-of-living adjustments	3.00%
Mortality	Healthy: RP-2000 Combinded Healthy Mortality Table projected with scale AA to 2016, set back one year for males and set back two years for females
Annual healthcare costs trend rates	6.875% reduced by increments to a rate of 5% after 10 years

** Includes inflation of 3.00% plus aross the board salary increases of 0.50% plus merit and promotional increases*

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimates ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighing the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

(Dollars in Thousands)

NOTE 6 – NET PENSION LIABILITY (Continued)

The target allocation and projected arithmetic real rates of return, after deducting inflation, but before investment expenses, used in the derivation of the long-term expected investment rate of return assumption for each major asset class are summarized below:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Domestic Large Cap Equity	36%	5.91%
Domestic Small Cap Equity	4%	6.47%
Developed International Equity	12%	6.88%
Emerging Markets Equity	3%	8.24%
Domestic Bonds	10%	0.85%
Non-Core Fixed Income	10%	3.10%
Real Estate	5%	4.79%
Covered Calls	20%	4.90%
Total	100%	

The discount rates used to measure the total pension liability were 7.50% and 7.75% as of June 30, 2015 and June 30, 2014, respectively. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the actuarially determined contribution rates. For this purpose, only employer contributions that are intended to fund benefits of current plan members and their beneficiaries are included. Projected employer contributions that are intended to fund the service costs of future plan members and their beneficiaries, as well as projected contributions from future plan members, are not included. Based on those assumptions, the Pension Plan's fiduciary net position was projected to be available to make all projected future benefit payments for current plan members. Therefore, the long-term expected rate of return on Pension Plan investments was applied to all periods of projected benefit payments to determine the total pension liability as of both June 30, 2015 and June 30, 2014.

In accordance with GASB 67 regarding the disclosure of the sensitivity of the net pension liability to changes in the discount rate, the following table presents the net pension liability of the Plan as of June 30, 2015, calculated using the discount rate of 7.50%, as well as what the Plan's net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.50%) or 1-percentage-point higher (8.50%) than the current rate:

	1% Decrease (6.50%)	Current Discount (7.50%)	1% Increase (8.50%)
Net Pension Liability	$659,789	$431,319	$241,010

NOTE 7 – BENEFIT GUARANTY

A. Pension Plan

The District may, at any time, change or repeal the ordinance governing the Plan. The District's obligations to those members receiving or eligible for a retirement allowance prior to such change or repeal shall continue in full force. The District is obligated to those members neither receiving nor eligible for a retirement allowance at the time of such change or repeal. This allowance will be a retirement allowance at retirement age equal to the actuarial equivalent of the accumulated value of the member's contributions standing to the member's credit at the date of retirement and the accumulated value of the District's contribution for current service to the date of such change or repeal, increased by the accumulation of interest to date of retirement.

B. Post-Employment Healthcare Benefits

In addition to retirement benefits, the District provides post-employment health benefits assistance (administered by the Employees' Retirement System) for employees who retire from the District or their surviving spouses. As of June 30, 2015, there were 1,433 participants receiving these health care benefits.

Effective July1, 1996, a 20-year vesting schedule for full benefits was implemented for all new participants. Effective January 1, 1999, retired members who had separated from the District prior to their retirement who has at least 10 years of service also became eligible for the post-employment health benefits based on the same sliding scale. The scale provides for 25% of healthcare benefits for service from 5 through 10 years, 50% of healthcare benefits for service from 10 through 15 years, 75% of healthcare benefits for service from 15 through 20 years, and 100% of healthcare benefits for service of 20 years or more. Effective July 1, 2003, the District reimbursed up to $450 per month ($550 per month effective July 1, 2004, for membership of a spouse or registered domestic partner) for any health, dental, or long-term care insurance premiums paid by the retiree for themselves, current spouse, or domestic partner, or any health, dental, or long-term care insurance premiums paid by the eligible surviving spouse of a retiree. These benefits are paid from a separate post-employment healthcare benefits fund which up until June 17, 2002, was advance funded entirely by the District on an actuarially determined basis. Cash reimbursement of these benefits totaled $7,393,728 in the year ended June 30, 2015. Effective June 18, 2002, a portion of the post-employment healthcare benefits costs is recovered through employee contributions.

Through June 30, 1999, the medical premium subsidy was not a vested benefit and the District reserved the right to modify or terminate the benefit at any time. If the medical subsidy were terminated, assets accumulated from contributions made for the subsidy would be used to provide other pension benefits. Effective July 1, 1999, the medical premium subsidy became a vested benefit to a maximum of $200 per month, was changed effective October 1, 2000, to a maximum of $250 per month, and was changed effective July 1, 2002, to a maximum of $400 per month per month, and was changed effective July 1, 2003, to a maximum of $450 per month, and was changed again effective July 1, 2004, to a maximum of $450 per month and $550 per month for membership of a spouse or registered domestic partner.

NOTE 8 – RELATED PARTY TRANSACTIONS

The District provides the System with accounting, treasury, and other administrative services, which are reimbursed by the System on a monthly basis. Total reimbursements in 2015 and 2014 were $950 and $943, respectively.

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REQUIRED SUPPLEMENTARY INFORMATION

EAST BAY MUNICIPAL UTILITY DISTRICT
EMPLOYEES' RETIREMENT SYSTEM
(A Component Unit of the East Bay Municipal Utility District)

Required Supplementary Information

(Dollars in Thousands)

For the Year Ended June 30, 2015

(1) Pension Plan

Schedule of Changes in Employer's Net Pension Liability (in thousands):

	2015	2014
Total pension liability		
Service cost	$34,987	$34,857
Interest	127,558	120,810
Change of benefit terms		
Differences between expected and actual experience	438	(402)
Changes of assumptions	18,421	
Benefit payments, including refunds of employee contributions	(71,232)	(65,427)
Net change in total pension liability	110,172	89,838
Total pension liability - beginning	1,646,534	1,556,696
Total pension liability - ending (a)	$1,756,706	$1,646,534
Plan fiduciary net position		
Contributions - employer	$61,660	$53,795
Contributions - employee	11,963	10,427
Net investment income	216,601	136,630
Benefit payments, including refunds of employee contributions	(71,232)	(65,427)
Administrative expense	(1,233)	(1,200)
Net change in plan fiduciary net position	217,759	134,225
Plan fiduciary net positon - beginning	1,107,628	973,403
Plan fiduciary net position - ending (b)	$1,325,387	$1,107,628
Plan's net pension liability - ending (a) - (b)	$431,319	$538,906

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

Unaudited

EAST BAY MUNICIPAL UTILITY DISTRICT
EMPLOYEES' RETIREMENT SYSTEM
(A Component Unit of the East Bay Municipal Utility District)

Required Supplementary Information

(Dollars in Thousands)

For the Year Ended June 30, 2015

(2) Pension Plan

Schedule of Employer's Net Pension Liability (in thousands):

	2015	2014
Total pension liability	$1,756,706	$1,646,534
Plan fiduciary net position	(1,325,387)	(1,107,628)
Net pension liability	$431,319	$538,906
Plan fiduciary net position as a percentage of total pension liability	75.45%	67.27%
Covered employee payroll	$173,111	$166,762
Plan net pension liability as percentage of covered employee payroll	249.16%	323.16%

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

(3) Pension Plan

Schedule of Employer's Contributions (in thousands):

Year ended June 30	Actuarially determined contributions	Contributions in relation to the actuarially determined contributions	Contributions deficiency (excess)	Covered-employee payroll *	Contributions as a percentage of covered employee payroll
2005	$27,670	$27,670	$0	$138,836	19.93%
2006	30,600	30,600	0	142,991	21.40%
2007	33,698	33,698	0	145,125	23.22%
2008	37,387	37,387	0	152,538	24.51%
2009	39,485	39,485	0	158,193	24.96%
2010	44,031	44,031	0	161,641	27.24%
2011	50,987	50,987	0	160,336	31.80%
2012	52,156	52,156	0	158,481	32.91%
2013	53,795	53,795	0	166,762	32.26%
2014	61,660	61,660	0	173,111	35.62%

* "Derived" by dividing the contributions in relation to the actuarial determined contributions by the contributions as a percentage of covered employee payroll. These amounts may therefore be different from the actual payrolls of the District.

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

(4) Pension Plan

Schedule of Investment Returns:

	2015	2014
Annual money weighted rate of return, net of investment expense	6.67%	19.42%

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

(5) Post-Employment Healthcare Plan

Schedule of funding progress for the post-employment healthcare plan (in thousands):

Actuarial valuation date	Actuarial value of assets (a)	Actuarial accrued liability (AAL) – entry age (b)	Unfunded AAL (UAAL) (b-a)	Funded ratio (a/b)	Covered payroll (c)	UAAL as a percentage of covered payroll ((b-a)/c)
6/30/2005	$3,409	$71,892	$68,483	4.7%	$139,514	49.1%
6/30/2006	3,608	71,409	67,801	5.1%	142,373	47.6%
6/30/2007	4,208	105,409	101,201	4.0%	153,394	66.0%
6/30/2008	7,010	137,055	130,045	5.1%	158,499	82.0%
6/30/2009	7,354	130,245	122,891	5.6%	161,893	75.9%
6/30/2010	10,061	135,379	125,318	7.4%	164,085	76.4%
6/30/2011	12,048	135,360	123,312	8.9%	159,505	77.3%
6/30/2012	14,240	138,240	123,999	10.3%	158,847	78.1%
6/30/2013	16,522	138,120	121,598	12.0%	159,246	76.4%
6/30/2014	19,634	140,416	120,782	14.0%	167,196	72.2%

Unaudited

EAST BAY MUNICIPAL UTILITY DISTRICT
EMPLOYEES' RETIREMENT SYSTEM
(A Component Unit of the East Bay Municipal Utility District)

Notes to Required Supplementary Information

(Dollars in Thousands)

For the Year Ended June 30, 2015

The information presented in the required supplementary schedules was determined as part of the actuarial valuation at the date indicated. Additional information as of the latest actuarial valuation follows:

Valuation date	June 30, 2014
Actuarial cost method	Entry Age Normal Cost Method
Amortization method	Level percent of payroll
Remaining amortization period	Plan changes are amortized over separate decreasing 15-year periods; assumptions changes are amortized over separate decreasing 25-year periods; experience gains/ losses are amortized over separate decreasing 20-year periods.
Assets valuation method	Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized over a five year period, further adjusted, if necessary, to be within 30% of the market value.
Actuarial assumptions:	
Investment rate of return	7.50%
Average projected salary increases*	Ranges from 4.00% to 9.50% based on years of service*
Inflation rate	3.00%
Cost-of-living adjustments	3.00%
Mortality	Healthy: RP-2000 Combinded Healthy Mortality Table projected with scale AA to 2016, set back one year for males and set back two years for females
Annual healthcare costs trend rates	6.875% reduced by increments to a rate of 5% after 10 years

** Includes inflation of 3.00% plus aross the board salary increases of 0.50% plus merit and promotional increases*

All assumptions are the same for the post-employment health care benefits except for the discount rate, assumed at a rate of 7.00%, for the funded and unfunded portions.

Unaudited.

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**INDEPENDENT AUDITOR'S REPORT ON
INTERNAL CONTROL OVER FINANCIAL REPORTING
AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN
AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE
WITH *GOVERNMENT AUDITING STANDARDS***

Board of Directors
East Bay Municipal Utility District
Employees' Retirement System
Oakland, California

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the basic financial statements of the East Bay Municipal Utility District Employees' Retirement System (the System), as of and for the year ended June 30, 2015 and the related notes to the financial statements, and have issued our report thereon dated August 27, 2015.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the System's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, we do not express an opinion on the effectiveness of the System's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the System's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

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Compliance and Other Matters

As part of obtaining reasonable assurance about whether the System's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

We have also issued a separate Memorandum on Internal Control dated August 27, 2015 which is an integral part of our audit and should be read in conjunction with this report.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the System's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the System's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

Maze + Associates

Pleasant Hill, California
August 27, 2015

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: November 19, 2015

MEMO TO: Retirement Board

FROM: Lisa Sorani, Manager of Employee Services L.S.

SUBJECT: Benefit Plan Renewals for Calendar Year 2016

The purpose of this memo is to inform the Retirement Board of health plan premium changes for retirees for benefit Plan Year 2016.

Listed below is a summary of the rate changes for 2016. There were no plan design changes to any of the plans for 2016.

Health Plan	Percent Premium Increase/Decrease
Kaiser Under Age 65	8.09
Kaiser CDHP (high deductible plan)	8.09
Kaiser Age 65+	-0.66 – -0.79*
ACWA/JPIA Blue Cross Classic Under Age 65	13.81– 13.93*
ACWA/JPIA Blue Cross CDHP	11.04 – 11.15*
ACWA/JPIA Blue Cross Age 65+	0 – 23.8*
Health Net Under Age 65	6.93
Health Net CDHP	9.66
Health Net Age 65+	1.48 – 8.30*
Delta Dental	-
Delta Dental Retiree Plans (Delta Care & Delta Premier)	-

*depends on plan and/or coverage level selected

The national trend for medical and prescription drug cost increases for 2016 is 6-7%. The cost of prescription drugs continue to climb with the continued increase in use of costly specialty drugs across the nation. While the national medical care trend is staying low, as compared to our rate changes for 2016, much of the continued low healthcare cost trend is due to aggressive and creative steps by employers that have introduced new venues and models for providing care such as high deductible plans, private exchanges and new narrow network HMO products. With the potential 40% high cost excise tax on the horizon, insurers and employers are under pressure to find cost-effective ways to lower health spending.

In the State of California, the cost of care is highest in the Bay Area. The District's 2016 rate increases are reflective of higher utilization in the past year and higher cost of care in the Bay Area.

ATTACHMENT 1

EBMUD RETIREE PRE AGE 65 HEALTH PLAN PREMIUM RATES
January 1, 2016

Kaiser	2015 Rates	2016 Rates	% Change
Single	572.53	618.86	8.09%
Double	1145.06	1237.73	8.09%
Family	1620.26	1751.39	8.09%

Kaiser CDHP	2015 Rates	2016 Rates	% Change
Single	495.02	535.09	8.09%
Double	990.04	1070.17	8.09%
Family	1400.90	1514.29	8.09%

Blue Cross	2015 Rates	2016 Rates	% Change
Single	742.90	845.52	13.81%
Double	1512.57	1722.95	13.91%
Family	2033.02	2316.25	13.93%

Blue Cross CDHP	2015 Rates	2016 Rates	% Change
Single	610.96	678.39	11.04%
Double	1242.09	1380.33	11.13%
Family	1668.85	1854.98	11.15%

Health Net	2015 Rates	2016 Rates	% Change
Single	1079.32	1154.17	6.93%
Double	2158.63	2308.32	6.93%
Family	3054.41	3266.23	6.93%

Health Net CDHP	2015 Rates	2016 Rates	% Change
Single	962.49	1055.47	9.66%
Double	1925.00	2110.96	9.66%
Family	2723.88	2987.00	9.66%

Delta Dental	2015 Rates	2016 Rates	% Change
Single	80.05	80.05	0.00%
Double	160.10	160.10	0.00%
Family	224.14	224.14	0.00%

VSP	2015 Rates	2016 Rates	% Change
Single	8.52	8.52	0.00%
Double	17.03	17.03	0.00%
Family	23.85	23.85	0.00%

EBMUD RETIREE 65+ HEALTH PLAN & DENTAL PREMIUM RATES
January 1, 2016

KAISER	2015 Rates	2016 Rates	% Change
Senior Advantage (High Option)			
Single	311.35	309.30	-0.7%
Double (1 w/Medicare)	883.88	928.17	5.0%
Double (2 w/Medicare)	622.70	618.60	-0.7%
Family (1 w/Medicare) + Dependents	1359.08	1441.83	6.1%
Family (2 w/Medicare) + Dependents	1097.90	1132.26	3.1%
Senior Advantage (Low Option)			
Single	254.64	252.64	-0.8%
Double (1 w/Medicare)	827.17	871.51	5.4%
Double (2 w/Medicare)	509.28	505.28	-0.8%
Family (1 w/Medicare) + Dependents	1302.37	1385.17	6.4%
Family (2 w/Medicare) + Dependents	984.48	1018.94	3.5%

HEALTH NET	2015 Rates	2016 Rates	% Change
Seniority Plus			
Single	566.50	594.83	5.0%
Double (1 w/Medicare)	1645.82	1749.00	6.3%
Double (2 w/Medicare)	1133.00	1189.66	5.0%
Family (1 w/Medicare) + Dependents	2541.59	2706.89	6.5%
Family (2 w/Medicare) + Dependents	2212.32	2245.13	1.5%
Medicare Coordination of Benefit Plan			
Single	775.43	839.81	8.3%
Double (1 w/Medicare)	1854.75	1993.98	7.5%
Double (2 w/Medicare)	1550.86	1679.62	8.3%
Family (1 w/Medicare) + Dependents	2750.52	2951.87	7.3%
Family (2 w/Medicare) + Dependents	2630.18	2833.79	7.7%

BLUE CROSS	2015 Rates	2016 Rates	% Change
Medicare Coordinated Plan			
Single	484.74	484.74	0.0%
Double (1 w/Medicare)	1217.76	1320.38	8.4%
Double (2 w/Medicare)	985.84	985.84	0.0%
Family (1 w/Medicare) + Dependents	1774.86	2197.81	23.8%
Family (2 w/Medicare) + Dependents	1358.50	1358.50	0.0%

DELTA DENTAL	2015 Rates	2016 Rates	% Change
Delta Premier			
Single	39.50	39.50	0.0%
Double	71.06	71.06	0.0%
Family	100.72	100.72	0.0%
Delta Care			
Single	29.25	29.25	0.0%
Double	49.05	49.05	0.0%
Family	72.25	72.25	0.0%

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: November 19, 2015

MEMO TO: Members of the Retirement Board

THROUGH: Lisa Sorani, Manager of Employee Services

FROM: Elizabeth Grassetti, Senior Human Resources Analyst EG

SUBJECT: Disability Earnings Income Verification for 2015

BACKGROUND

Section 18 (c) of the Retirement Ordinance and related Board Rule C-21 provides that Members who retire on disability and have not attained Normal Retirement Age, currently age sixty-five, are required to report their "outside earnings" to the Retirement System that are in excess of their "earnings safeguard." Their "earnings safeguard" is defined as their final monthly salary inflated by wage increases minus their retirement allowance.

SUMMARY

Rule C-21 provides that Disability Retired Members whose earnings exceed their earnings safeguard in any quarter must notify the Retirement Board Secretary before the end of that quarter so any necessary adjustment to the retirement allowance can be made. In addition, the Rule provides for staff to verify outside earnings through the State Employment Development Department (EDD) Reports for Disability Retired Members based in California.

In order to monitor Disability Retired Members' compliance with this rule, a process was developed to review their outside earnings. Under this process, each calendar year a cover letter is sent to disability retirees who are under age 65 notifying them of their quarterly "earnings safeguard." The letter advises them that, if they exceeded their earnings safeguard, they are required to submit an "Employee Retirement System Quarterly Earnings Report Form" to the Retirement System by the end of each quarter for which their earnings exceeded the earnings safeguard.

Thirty-eight disability retirees were monitored in 2015 with no Disability Retired Members reporting income greater than their earnings safeguard. Member income was verified through the Employment Development Department reports and concluded that Members' self-reporting was consistent as no report indicated Member outside earnings greater than allowed earnings safeguards.

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE: November 19, 2015

MEMO TO: Members of the Retirement Board

FROM: D. Scott Klein, Acting Director of Finance DSK

SUBJECT: Environmental, Social, and Governance Training

In response to interest from the Board on sustainable investing and climate change, staff conducted research on the steps that our peer pension funds and others have taken to address these issues. Sustainable investing and climate change fall under the broader arena of Environmental, Social, and Governance (ESG) issues. Staff will provide training on integrating ESG issues into investment decisions focusing on the processes undertaken by CalPERS, the UC Regents, and others.

The slides that will accompany the training are attached as Attachment A as are two supplementary documents. Attachment B is an October 2015 report from Pension Consulting Alliance (PCA) titled ESG/Sustainability Institutional Investor Market Developments. Attachment C is a publication entitled Action on Climate: A Practical Guide for Fiduciaries. Review of Attachments B and C might be most meaningful after the staff training.

DSK:SDS:DB

Attachments

ESG Training

ERS Board of Directors

November 19, 2015

Agenda

- What is ESG?
  - Has the Retirement Board addressed ESG issues in the past?
- Are other pension funds addressing ESG?
  - If yes, how is are they doing so?

Investing Considering ESG

- What is ESG?
  - Environmental, Social, and Governance
- Investing with consideration for Environmental, Social and Governance concerns
- Sustainable Investing considers ESG as a factor in investment decisions

Investing Considering ESG

- Environmental -
  - Does the company manage resources well and prevent pollution?
  - Do they reduce emissions and climate impact?
  - Do they execute strong environmental reporting/disclosure?
- Social -
  - Does the company respect human rights?
  - Do they encourage good labor-management relations?
  - Is there a focus on product integrity?
- Governance -
  - How does the firm consider diversity and accountability of the Board?
  - How does it report and disclose information?

Previous ERS ESG Actions

- South Africa (1985)
  - Retirement Board directed investment counselors to suspend investment in companies doing business in South Africa and monitor the impact on the portfolio.
    - Received reports that earnings were reduced and portfolio underperformed
    - General Counsel determined in 1992 that there was a question whether the divestments was a legitimate use of fiduciary power, particularly given investment impact

Previous ERS ESG Actions (contd.)

- Sudan (2003)
  - District Board urged CalPERS and CalSTRS to "encourage companies in which employee retirement funds are invested … to act responsibly and not take actions that promote or otherwise enable human rights violations"
    - District reviewed its operating fund investments and determined none were in companies doing business in Sudan
  - Retirement Board did not divest
    - Unlike CalPERS and CalSTRS, District was not indemnified by State of California from any claims of damage as a result of divesting

Previous ERS ESG Actions (contd.)

- Request for PCA memo on fossil fuel divestiture (2014)
  - Memo discussed a wide range of possible response modes
- Request for ESG training (2015)
  - Prompted in part by resolution presented by AFSCME Local 444 requesting Board “direct its agents to make ethical investment decisions in the context of Climate Change”

Other Pension Funds and ESG

- CalPers (~$297B)
- UC Retirement (~$91B)
- Peer Pension Funds

CalPERS ESG Activities

- CalPers has a long history of activity in the ESG arena
- Some highlights:
  - 1989 – Helped fund CERES
  - 1996 – Launched International Corporate Governance Program
  - 2003 – Adopted energy efficiency goals for real estate portfolio
  - 2013 – Adopted Investment Beliefs

1984
Initiated corporate governance reform program.

1985
Helped establish The Council of Institutional Investors.

1987
Launched our annual "Focus List" identifying underperforming companies.

1989
Helped found Ceres, a coalition dedicated to integrating sustainability into capital markets.

1994
Developed Real Estate's Responsible Contractor Program Policy.

1995
Became a founding member of the International Corporate Governance Network (ICGN).

1996
Launched International Corporate Governance Program.

1999
Launched corporate governance website.

2001
Earmarked $457 million to 11 California emerging private equity firms.

2002
Launched our financial market reform initiative in the wake of the Enron scandal.

2003
With Ceres, launched the Investor Network on Climate Risk (INCR).

2004
Adopted the Energy Efficiency Goal to reduce energy consumption in Real Estate's core portfolio by 20 percent over a five-year period.

Initiated Environmental Technology Investment Program.

2005
Joined a multi-stakeholder group of experts coordinated by the United Nations (U.N.), leading to the formation of the Principles for Responsible Investment (PRI).

CalPERS Real Estate Unit joins the U.N. Environmental Program Finance Initiative focusing on the Property Working Group.

2007
Forestland Policy revised to incorporate governance, environmental, and social principles.

Joined the Advisory Board for the Credit Roundtable.

2008
The "Global Principles of Accountable Corporate Governance" were approved by the CalPERS Board and guide corporate engagement and proxy voting.

2009
Helped draft the Institutional Limited Partners Association (ILPA) Principles, encouraging governance best practice for private equity investment.

Created the CalPERS Sustainable Operations Program.

2010
Formed the Global Peer ESG Exchange to benchmark our sustainable investment efforts against 11 leading asset owners.

Participated in developing the Mercer Report, *Climate Change Scenarios—Implications for Strategic Asset Allocation.*

Backed federal financial market reform.

2011
CalPERS Board of Administration decided on a Total Fund ESG Integration plan.

Contributed to the United Nations Environmental Programme Finance Initiative's *An Investor's Perspective on Environmental Metrics for Property and Implementing Responsible Property Investment Strategies.*

2012
CalPERS Board of Administration approved the implementation plan for Total Fund ESG Integration.

Launched the Cross Asset Class Sustainable Investment Team.

2013
CalPERS Board of Administration adopted Investment Beliefs.

Launched the Sustainable Investment Research Initiative (SIRI).

Piloted Robert F. Kennedy Compass Certificate on Sustainable Investing.

CalPERS ESG Activities: 2013

CalPERS' view of Sustainable Investing involves all ESG factors: environmental, governance, and social issues. In 2013 CalPERS:

- Launched *Sustainable Investment Research Initiative (SIRI)*
  - Compiled more than 700 academic papers that evaluated how sustainability factors impact investment risk and return
- Created internal Cross Asset Class Team on Sustainable Investment including members from all areas of the CalPERS Investment Office.
  - Team is responsible for developing clear expectations for CalPERS' investment managers with regards to ESG.
  - Private Equity developed ESG due diligence questionnaire used to evaluate external managers
  - Infrastructure and Forestland Program created an ESG risk matrix for its internal due diligence
  - Infrastructure and Forestland Program also refining process for monitoring sustainability once CalPERS owns an investment

CalPERS Process of Developing Investment Beliefs

Two-year process to develop Investment Beliefs:

- Engaged consultant
- Held in-depth, one-on-one interviews with Board members, Investment Office staff, executives and external consultants
- Investment Beliefs Stakeholder Workshops – participants included employer, labor, and pension managements representatives

Outcome: Investment Beliefs Policy

- Board initially adopted 10 investment beliefs in 2013
- Mission Statement
- Vision Statement
- Currently 11 Investment Beliefs, each with Sub-beliefs

CalPERS Investment Beliefs

1. Liabilities must influence the CalPERS asset structure.
2. A long-time investment horizon is a responsibility and an advantage.
3. Investment decisions may reflect wider stakeholder views, provided they are consistent with CalPERS' fiduciary duty to members and beneficiaries.
4. Long-term value creation requires effective management of three forms of capital: financial, physical, human.
5. CalPERS must articulate its investment goals and performance measures and ensure clear accountability for their execution.
6. Strategic asset allocation is the dominant determinant of portfolio risk and return.
7. CalPERS will take risk only where we have a strong belief we will be rewarded for it.
8. Costs matter and need to be effectively managed.
9. Risk to CalPERS is multi-faceted and not fully captured through measures such as volatility or tracking error.
10. Strong processes and teamwork and deep resources are needed to achieve CalPERS goals and objectives.
11. As a leader, CalPERS should advocate for retirement security for America's workers and for the value of defined benefit plans.

CalPERS Investment Belief Underlying ESG

Investment Belief #2 including sub-beliefs forms the basis for incorporating ESG into the portfolio

A long time investment horizon is a responsibility and an advantage

<u>Long time horizon requires that CalPERS:</u>

- Consider the impact of its actions on future generations of members and taxpayers
- Encourage investee companies and external managers to consider the long-term impact of their actions
- Favor investment strategies that create long-term, sustainable value and recognize the critical importance of a strong and durable economy in the attainment of funding objectives
- Advocate for public policies that promote fair, orderly and effectively regulated capital markets.

New Divestment Regulation for CalPERS and CalSTRS

Senate Bill No. 185

- Approved by the Governor October 8, 2015
- Requires CalPERS and CalSTRS to divest from "thermal coal power" as defined
- Purpose: To require PERS and STERS consistent with, and not in violation of, their fiduciary responsibilities, to divest their holding of thermal coal power as one part of the state's broader efforts to decarbonize the California economy and to transition to clean, pollution free energy resources.
  - "The board **shall not make additional or new investments** or renew existing investments of public employee retirement funds in a thermal coal company."
  - "The board **shall liquidate investments in a thermal coal company on or before July 1, 2017.** In making a determination to liquidate investments, the board shall constructively engage with a thermal coal company to establish whether the company is transitioning its business model to adapt to clean energy generation, such as through a decrease in its reliance on thermal coal as a revenue source. "

UC Sustainability Activities: began September 2014

- *Joined Ceres and its Investor Network on Climate Risk (INCR)*
- Signed the Ceres request to the SEC for increased carbon risk disclosure by oil and gas companies
- Joined Ceres Water Risk Working Group
- Member of United Nations-supported Principles for Responsible Investing (PRI)
- Signed the Montreal Carbon Pledge sponsored by PRI
- Joined PRI Private Equity Steering Committee
- Signed PRI letter to G7 finance ministers calling for ambitious international COP21 climate agreement
- Joined the Carbon Disclosure Project (CDP)
- Signed Japan Stewardship Code
- *Signed Global Investor Statement on Climate Change*
- Signed open letter on climate change to Finance Ministers in the Group of Seven
- Signed statement of Investor Expectations on Corporate Climate Lobbying and is engaging with companies on the issue
- Publicly supported BP and Shell shareholder resolution for greater climate risk disclosure
- Signed Statement of Investor Expectations for the Green Bond Market
- *Purchased first Green Bond*
- *Commenced ESG portfolio review utilizing MSCI ESG assessment methodology*
- *Reviewed energy industry holdings and strategy*
- *Initiated ESG integration into external manager selection and monitoring*
- *Committed to allocating $1 billion over 5 years to climate change and sustainability solutions*
- Participate in collaborative research and engagement activities

UC Framework for Sustainable Investing

UC published a framework for Sustainable Investing, in September 2015, outlining approach to ESG investing:

- ESG risk will become more material over time.
- Consideration of ESG is fundamental to risk evaluation and aligns with fiduciary duty.
- For the framework to be successful, it must be integrated into the investment culture.
- Investing in solutions can present opportunities for savvy investors.

UC Steps Towards Integrating ESG Into Investment Portfolio

Established Task Force on Sustainable Investing in 2014

- 3 Regents
- Chief Investment Officer
- Academic Council Vice-Chair
- 2 members of Investment Advisory Group
  - Consists of 4-7 members including one represented employee with expertise in investments
- 2 student representatives from Fossil Free UC campaign

UC Framework Development Process

- Prioritizing alignment with UC sustainability values, goals, and policies through engagement of stakeholders
- Learning from experience of peers
- Circulating framework document to UC community/leadership for refinement and input with stakeholder engagement conducted through:
  - Town hall discussions, forums, roundtables
  - Consulting with UC faculty and researchers
  - One-on-one meetings with student groups
  - Collaborating with partners and networks
  - Media relations and website

UC Identified Core ESG Risks

- Climate Change
- Inequality
- Human Rights
- Food and Water Security
- Diversity
- Aging Population
- Circular Economy
- Ethics and Governance

These are expected to guide investment decisions, fund manager selection, and ongoing monitoring.

UC Investment Beliefs

Chief Investment Officer identified 10 beliefs that inform the work of the CIO, with roots in UC culture and practice:

1. We invest for the long term.
2. We invest in people.
3. We build a high-performing culture.
4. We are all risk managers.
5. We allocate wisely.
6. Costs matter.
7. We diversify with care.
8. Sustainability affects investing.
9. We collaborate widely.
10. Innovation counts.

Belief #1 underlies UC approach to ESG investing

Peer Pension Systems

Does your pension fund take sustainability or other ESG factors into account when investing or administering your investment portfolio?		
System	**Assets**	**Response**
- Fresno County Employees' Retirement	$4.5 B	No
- Kern County Employees' Retirement	$3.8 B	No
- San Luis Obispo County Pension Trust	$1.1 B	No
- Santa Barbara County Employees' Retirement	$2.5 B	No
- Sonoma County Employees Retirement	$2.5 B	No
- Stanislaus County Employees' Retirement*	$1.8 B	No
- Tulare County Employees' Retirement**	$1.2 B	No

Responses to Staff survey of California Association of Public Retirement Systems (CALAPRS) member agencies and discussion with contacts

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*An asset/liability study scheduled for December will include a discussion on ESG.

**Have discussed but haven't amended the investment policy or taken any other formal steps. However, did invest 3% of total assets in a Global Water Fund.

How Pension Funds Are Addressing ESG - Summary

- Large pension funds are already addressing ESG
  - A common denominator in consideration of ESG concerns has been developing a beliefs statement
- Small pension funds are generally not considering ESG
- ESG consideration is a growing industry trend
  - PCA report on ESG/Sustainability Institutional Investor Market Developments, October 2015
- As measureable standards are developed, the trend is likely to accelerate

Sustainable Accounting Standards Board

- Several varying frameworks for evaluating sustainability; two leaders:
- Sustainable Accounting Standards Board (SASB)
    - Nonprofit formed in 2011
    - Developing sustainability accounting standards
    - Aim to have its standards used in reporting form 10-K which corporations must file with SEC
- Global Reporting Initiative (GRI)
    - Formed 1997, headquartered in Amsterdam
    - Commonly used globally, especially Europe

Department of Labor Interpretive Bulletin for ERISA Plans, Oct 2015

- No clear guidelines for non-ERISA plans like EBMUD ERS
- 2008 interpretative bulletin “unduly discouraged plan fiduciaries” from considering environmental, social and governance factors under appropriate circumstances…Changes in the financial markets since that time, particularly improved metrics and tools allowing for better analyses of investments, make this the right time to clarify our position.”
- While fiduciaries cannot accept lower expected returns or greater risks, they may take ESG benefits into account as “tiebreakers” when investments are otherwise equal and when ESG factors have a direct relationship to the economic and financial value of an investment, “these factors are more than just tiebreakers”.

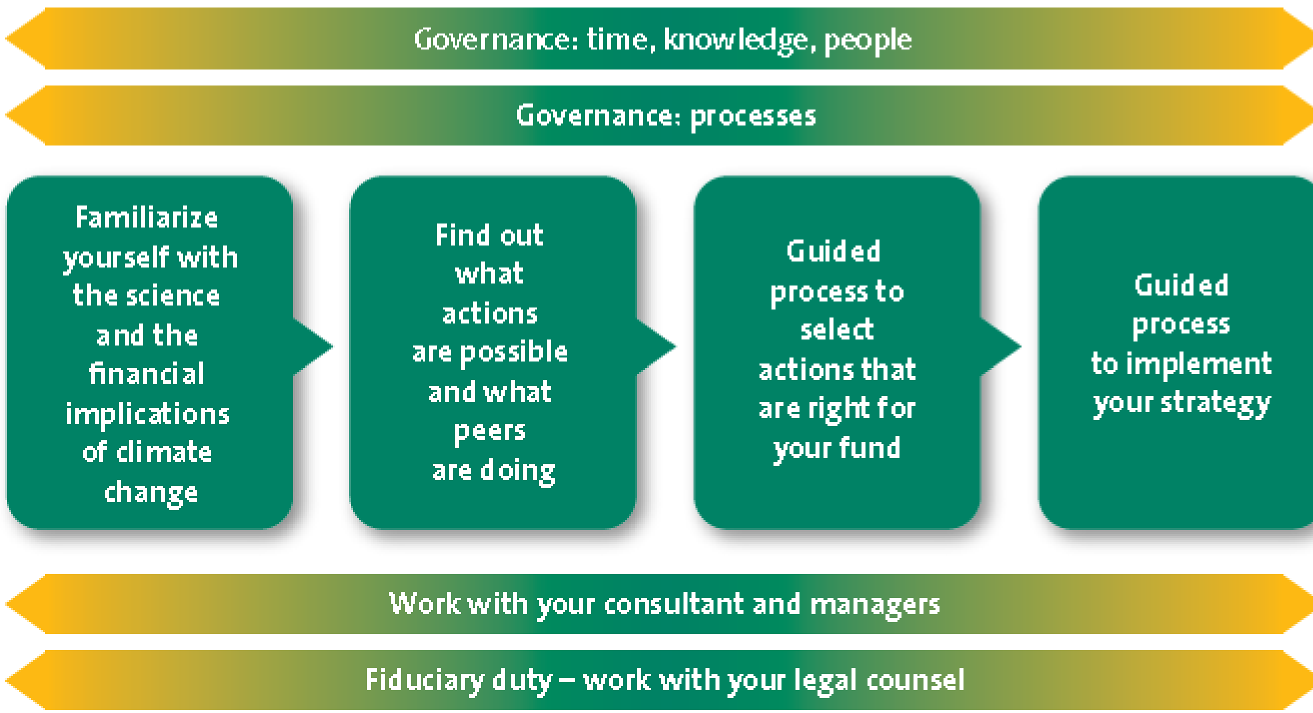
ESG Roadmaps

- While a number of endowments/pension funds are moving forward with ESG investing, roadmaps were scarce
- Action on Climate: A Practical Guide for Fiduciaries, September 2015
  - Designed to be used by small and medium-sized pension funds and others that do not have large internal staff teams
  - Spearheaded by Responsible Endowments Coalition and the SEIU Capital Stewardship Program, with support from multiple organizations.
  - 10-person Project Team gathered information from 18 trustees, staff and fiduciaries from mid-sized institutional investors

Action on Climate: A Practical Guide for Fiduciaries, September 2015

EBMUD

– Steps to Follow and Questions to Ask - A Governance Approach



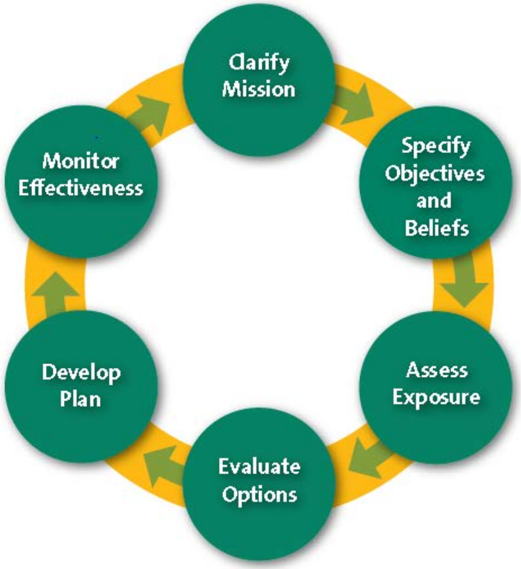
Action on Climate: A Practical Guide for Fiduciaries, September 2015

- Presents six types of actions investors can take to address climate change:
  - Integrating climate change and sustainability into investment portfolio
  - Reducing portfolio's carbon intensity
  - Investing in climate solutions
  - Divestment
  - Engaging with corporations
  - Engaging with policymakers

"Not all of them will be right for every investor"

Action on Climate: A Practical Guide for Fiduciaries, September 2015

1. Be clear about your mission as an organization and an investor
2. Specify your objectives and your investment beliefs
3. Understand your climate change exposure
4. Analyze options and decide on the mix that best meets your objectives
5. Implement your plan
6. Monitor and evaluate the outcomes



Many questions to ask, decisions to make, steps to take along the way

Summary

- Investing with ESG in mind includes climate change considerations
- ESG investing is a growing industry trend and is starting with larger funds first
- The foundation of ESG investing is a thoughtful approach on investment beliefs

ESG/Sustainability

Institutional Investor

Market Developments

Sarah Bernstein
October 2015

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Executive Summary

Just 10 to 15 years ago, environmental, social and governance ("ESG") risks were generally fringe issues for institutional investors. Only a miniscule amount of assets were managed using any form of non-traditional capital markets analysis as part of their overall investment decision-making. Today, many global institutional investors, especially European ones, look at ESG issues as part of their decision-making to one extent or another. In PCA's opinion, domestic U.S. pension plans will be grappling with integrating sustainability issues in the not too distant future, if they aren't already.

This report provides a broad overview of institutional investor ESG developments and how they are evolving in equity investing. The review is not intended to offer analysis on specific investment issues such as decisions to engage, divest, or shift exposure around CO_2 emissions. Today, ESG often encompasses an approach to the entire pension plan portfolio. ESG is frequently referred to as sustainability, though investor attention can be specific to E, S, or G concerns. For this report, we use ESG and sustainability interchangeably.

Globally, particularly in Europe, pension funds are incorporating sustainability. While far from common in the U.S., more regulators and pension fund investors globally now consider the materiality of ESG risks and hold that ESG investing can be consistent with fiduciary duty, depending on how it is implemented. A traditional view posits that ESG investing inherently restricts the investable universe based on non-financial investment criteria. Impact investing evolved to target investments for a specific social or environmental outcome. Impact investing can offer a range of market, above or below, return expectations. For pension funds, impact investing means seeking a competitive rate of return and a social return around the social impact that is sought. Most recently, an increasing number of institutional investors approach sustainability as a set of potentially material risks. More large institutional investors now demand comprehensive attention to ESG risks.

ESG industry seems poised to enter the mainstream. With the general market expansion in ESG and greater attention from institutions seeking competitive market returns and comprehensive portfolio attention to sustainability, the ESG data and analysis necessary to make investment decisions is growing. Seventy-five percent of the S&P500 issue sustainability reports, up from under 20% in 2011. ESG accounting frameworks are rapidly evolving, but corporate sustainability data is still far from being available in a standard framework from most corporations. Approaches to identifying key sustainability material risks seem to be converging. Providers are developing ESG analytic tools to integrate ESG factors into investment, including ESG company databases, ratings, screening and benchmarks, and manager rankings. Traditional financial analyst organizations, such as the Chartered Financial Analysts ("CFA"), now offer classes and educational credits in sustainability.

Equity ESG demand is sparking new thinking, new market entrants, new products and new hype. Heavily debated, some new equity research finds material ESG risks are not fully priced into the market. ESG equity investing continues to expand beyond 'negative' exclusionary screening to impact investing and to positive inclusion of ESG analysis by traditional managers in security selection. The ESG manager universe increasingly includes large global investment managers. More quantitative managers are applying their capabilities to ESG. Active manager engagement beyond proxy voting is rising. Some traditional managers are relabeling existing products to ESG.

Conclusions

Growing levels of interest in responsible investment and ESG factors from institutional and retail investors have sparked development of a new investment information industry as well as growth of the ESG investment management industry. In our opinion, U.S. pension funds will likely, over time, need to consider how they might best incorporate sustainability into their investment beliefs, policies and practices, if they are not already doing so.

- Since ESG investors span foundations, endowments, and individuals that may not have the same market return requirements as pension funds, we expect ESG investment manager offerings to encompass everything from simple exclusionary screening, to impact investing (which may or may not seek an above market return), to positive screening by managers integrating sustainability factors more comprehensively into their analysis to generate alpha. With the wide dispersion of goals among ESG investment managers, pension plans should be extremely diligent in assessing whether a given product fits its needs.

- ESG material risk factors are not new to institutional investors or to investment managers that manage portfolios with traditional financial information, even though specific risks, notably climate change, are more recent. What is new is the push for disclosure, standardization, quantification and systematic risk analysis to integrate sustainability into risk/return analysis across the market, rather than prolonging integration until individual issues arise for a particular security or sector. Some issues, particularly environment-related risks are becoming prominent. For example, a decade ago, a typical institutional investor interested in the energy sector would not necessarily consider a firm's track record on environmental issues. Today, regulatory changes facing the energy sector make such non-financial issues potentially material.

- In PCA's opinion, it is increasingly likely that some sustainability framework will become standard in the United States over time. Similar to the evolution of financial standards, U.S. standards may well differ from other countries in their details. Today, in our view, one likely emerging U.S. sustainability accounting framework comes from the Sustainability Accounting Standards Board ("SASB"). The SASB standards are being developed based on the U.S. Supreme Court's definition of materiality. SASB is modeled after the Financial Accounting Standards Boards ("FASB"). The shift to common reporting standards is nascent. Just a modest number of publicly held companies today reference SASB in some form.

- If ESG becomes mainstream, market impacts may resemble the evolution of broad market availability and analysis of corporate financial data. If corporate ESG material risk data becomes standardized and widely disclosed, it may offer all investors enhanced information with which to analyze companies and portfolios, similar to the earlier evolution to standard disclosure of material financial data. PCA believes that institutional investors and investment managers will differ in their analyses and conclusions of particular ESG factors, just as they reach different conclusions on financial data and proxy voting issues.

- Active equity ESG managers that seek to generate above market returns face all the associated risks of any active management. Among these managers, asset owners should expect manager performance to range around standard benchmarks. Broadly available market knowledge of specific factors may result in potential decay of particular active equity ESG alpha and/or shift to new ESG factors over time, just as for any other form of information.

Globally, more pension funds are incorporating sustainability

Different forms of ESG investing have taken place for decades. During the last decade, and accelerating in the last five years, sustainability issues, in general, gained prominence, and climate change escalated to an everyday matter of concern. These developments impact institutional investors understandings of how sustainability fits, or not, with pension plans' investment strategies.

<u>Regulatory Background on ESG</u>

Bolstered by regulatory developments, the view that considering ESG has become more common abroad. Today, a number of countries (such as the U.K., France and Australia) require disclosure of sustainability factors by pension funds. Germany and South Africa now require integration of ESG considerations into pension fund investment decision-making as part of the fiduciary's duty.

In the U.S., integrating ESG factors into investment decision-making is not mainstream among pension funds. In 2005, the United Nations Environment Programme Finance Initiative landmark report covering many countries concluded that, in the U.S., "there appears to be a consensus that, so long as ESG considerations are assessed within the context of a prudent investment plan, ESG considerations can (and, where they affect estimates of value, risk and return, should) form part of the investment decision-making process."

However, the most recent (2008) Department of Labor ("DOL") ERISA interpretive bulletin is widely interpreted as strongly discouraging economically targeted investments (ETIs), and investments that take into account environmental and social criteria. The bulletin states:

> *ERISA's fiduciary standards expressed in sections 403 and 404 do not permit fiduciaries to select investments based on factors outside the economic interests of the plan until they have concluded, based on economic factors, that alternative investments are equal. A less rigid rule would allow fiduciaries to act on the basis of factors outside the economic interest of the plan in situations where reliance on those factors might compromise or subordinate the interests of plan participants and their beneficiaries. The Department rejects a construction of ERISA that would render the Act's tight limits on the use of plan assets illusory, and that would permit plan fiduciaries to expend ERISA trust assets to promote myriad public policy preferences.*

Since 2008, pressure on the DOL increased to clarify the 'tone' of the 2008 bulletin to indicate that, within fiduciary standards, other factors may be taken into account. Recent court cases and regulatory guidance may further influence ESG implementation. Examples include:

- In 2010, the U.S. Securities and Exchange Commission issued guidance on the disclosure of climate risk information by publicly-listed companies.

- In May 2015, the U.S. Supreme Court ruled unanimously in Tibble v. Edison that trustees of the defined contribution plan have a fiduciary duty, in addition to their duty to exercise prudence in the initial selection of investments, to timely and continually monitor fund investments and to remove imprudent ones. As legal observer Youngdahl comments: "*…the effects of climate change on investments and on society was not an issue when many holdings were purchased. Today however, it is. Thus, trustees must consider what effect climate change has on their investments today...*" *He notes more broadly that…"if responsible investment is not a 'special' argument, of much greater magnitude than the* *fads of smart beta, risk parity and the like, it probably does not need to be considered by trustees in periodic investment reviews."*

As far as we are aware, no lawsuit has been filed against a defined benefit pension fund seeking for the plan to address sustainability risks in its investing.

<u>More pension plans seek comprehensive attention to ESG risks</u>

Some large U.S. pension funds, often those not directly subject to ERISA, are shifting their focus to a comprehensive integration of sustainability across plans. Some U.S. pension plans now recognize ESG factors in Investment Beliefs and/or Investment Policy Statements. For example, the investment policy and proxy voting guidelines of several state pension funds, including the California Public Employees' Retirement System ("CalPERS"), California State Teachers Employees' Retirement System ("CalSTRS"), the New York State Common Retirement Fund ("NYSCRF"), and the Connecticut Retirement Plans and Trust Fund (CRPTF), explicitly recognize the need to consider ESG risk factors in investment activities.

CalSTRS articulated eight guiding principles whose purpose "is to shape our organization's environmental, social and governance actions and interactions with our stakeholders". CalPERS adopted 10 Investment Beliefs in 2013 based on what is required for CalPERS' funds to be sustainable over the CalPERS 70-year liability horizon, including:

> Investment Belief 4: Long-term value creation requires effective management of three forms of capital: financial, physical and human.
>
> Investment Belief 9: Risk to CalPERS is multi-faceted and not fully captured through measures such as volatility or tracking error.

Plans that recognize ESG factors or investments that incorporate social criteria, premise their approach on the priority of economic justifications. For example, the Maryland State Employees' Retirement and Pension System's Investment Policy states that: "Economic justification for investment proposals will override social and/or local justifications. Social and/or local investments will only be considered when they provide reasonable and competitive rate of return expectations in comparison to other comparable investments."

Five years ago, questions on ESG exposure were an anomaly in standard Requests for Proposals ("RFPs") and investment manager monitoring. Today such questions are becoming a regular part of RFPs from large institutional investors and their consultants. ESG questions and requests for manager reporting are beginning to be integrated into monitoring of investment managers.

In June 2015, CalPERS launched a pilot program to formalize, over time, requirements regarding ESG principles for all CalPERS managers. "One of the most important things we're doing in this process is setting up an investment demand for better sustainability data and better modeling, and fundamentally, the integration of these factors into financial reporting," CalPERS' Anne Simpson stated. "The prize here would be that, through this process, you get investment managers behind the notion that sustainability issues need to be properly defined, properly tracked and ultimately connected into the risk/return framework that investment is all about," she said.

Institutional investor organizations designed to foster collaboration and pooling of scarce resources are also evolving to address sustainability. The sheer growth among institutional investor organizations in which U.S. pension plans participate escalated in recent years. The organizations noted below represent just a few established national or international organizations that are involved in sustainability as it affects institutional investors in which U.S. pension plans actively participate. Founded in:

- 2006, PRI (Principals for Responsible Investing), grew to $59 trillion Assets under Management ("AUM") representing 1,383 global signatories by July 2015. PRI includes a number of large U.S. pension funds as shown in Appendix I.

- 2003, INCR (Investor Network on Climate Risk), organized by Ceres, today is a network of more than 110 institutional investors representing more than $13 trillion in assets committed to addressing the risks and seizing the opportunities resulting from climate change and other sustainability challenges.

- 1990, CERES (Coalition for Environmentally Responsible Economies), seeks to promote a sustainable business model and has gained traction among large institutional investors.

- 1985, CII (Council of Institutional Investors), pools their resources to strengthen governance standards at public companies and shareholder rights. Today, CII provides regular collaborative forums for corporate governance efforts. Members use their proxy votes, shareowner resolutions, pressure on regulators, discussions with companies and litigation where necessary to effect change. CII's voting membership has grown to more than 125 U.S. public, union and corporate employee benefit plans, endowments and foundations with combined assets that exceed $3 trillion.

ESG investment industry seems poised for the mainstream

Assets managed under some form of ESG mandate are growing in the U.S. and abroad. The US SIF's (The Forum for Sustainable and Responsible Investment) 2014 report shows that U.S. assets engaged in sustainable, responsible and impact ("SRI") investing practices jumped 76% from $3.74 trillion in 2012 to $6.57 trillion in 2014 (18% of the estimated $36.8 trillion in total AUM). US SIF numbers include ESG exclusion strategies, ESG integration into traditional financial analysis, positive/best-in-class selection based on ESG performance, impact investing and sustainability themed investments.

A similar trend was reported by the Global Sustainable Investment Alliance, which showed that sustainable-investment assets jumped 61 percent globally in two years to $21.4 trillion at the start of 2014. Because the US SIF data and much of the global data are self-reported, the magnitude of the increase may be significantly overstated. However, the upward trend seems in line with other indicators of demand.

Alongside this trend, financial organizations, including traditional ones such as the CFA, and new organizations designed to explicitly address non-financial issues, such as SASB, now offer educational courses and credits on sustainability.

With the general market expansion in ESG, and attention from institutions seeking competitive market returns and comprehensive portfolio attention to sustainability, investment ESG tools are proliferating. These include corporate sustainability reporting and a wide array of investment information tools and products, including new sustainability accounting standards, identification of material ESG risks, third party sustainability corporate databases and research, company rankings and benchmarks, and investment manager ratings.

Corporate sustainability reporting began prior to any established accounting standard or required reporting in most countries. Large pension funds are both requesting sustainability reports, and reporting on sustainability for their own organizations. For example, CalSTRS inaugurated its guideline-based sustainability reporting with the release of its 2013-14 sustainability report. Today, 93% of the largest 250 global listed companies produce annual sustainability or corporate responsibility reports. The number of S&P500 companies that issue sustainability reports grew from just under 20% in 2011 to 75% in 2014.

A number of sustainability accounting frameworks exist or are under development, often with different particular objectives. There is no single commonly accepted standard in the United States at this time. Two reporting organizations gaining prominence in the U.S. are:

> <u>GRI (Global Reporting Initiative)</u>, founded in 1997 and is headquartered in Amsterdam. GRI is used globally and has taken hold most prominently in Europe. Many European entities report through GRI, which offers different levels of verification (C –self verification, B- needs external auditor, and A – most data and verification). In 2014, the Council of the European Union ("EU") established legal sustainability reporting requirements for more than 6,000 corporations with greater than 500 employees in the EU. This Directive on ESG transparency gives EU member states two years to develop their national legal framework with the first company reports due by 2017-2018. Each of these 6,000 corporations will be encouraged to apply industry-recognized "best-in-class" ESG frameworks, of which GRI's Sustainability Reporting Guidelines is one of the noted frameworks.

> <u>SASB (Sustainable Accounting Standards Board)</u>, a U.S. non-profit, launched in 2011 with Michael Bloomberg as Chairman of the Board, develops and disseminates sustainability accounting standards modeled on the Financial Accounting Standards Board ("FASB") and grounded in the U.S. Supreme Court's definition of materiality. As articulated by SASB: "While the FASB has for the past forty years developed the accounting principles currently used in financial reporting in the United States, other social and environmental measures are now understood to be of relevance". The SASB aims to integrate its standards into the Form 10-K, which must be filed by public companies with the U.S. Securities and Exchange Commission".

In the very near term, we do not anticipate any accounting framework to become a commonly accepted standard in the United States. For example, in real estate alone, in addition to GRI and upcoming SASB standards for Real Estate, platforms such as the Global Real Estate Sustainability Benchmark (GRESB); the Commercial Building Energy Consumption Survey (CBECS) of the U.S. Energy Information Administration; the Carbon Disclosure Project (CDP); the Investor Confidence Project (ICP) of the Environmental Defense Fund (EDF); and the Urban Land Institute (ULI)/Greenprint Center for Building Performance are, at varying levels, designed to encourage transparency and promote standards for real estate companies to take action to protect their investors from risks associated with energy and environmental externalities. Other industries are convening to identify specific standards for their industry. Globally, financial reporting standards vary and we expect the same will be true for sustainability accounting standards. Over time, in our opinion, the SASB standard today appears to be the most likely to emerge as a common reporting framework across all industry segments in the U.S.

ESG risk reporting and analysis

Comprehensive market identification of significant sustainability issues is still at an early stage. As the demand for sustainability risk analysis grows, approaches to identifying risk seem to be converging among market participants. Common themes are:

1) ESG risks/opportunities are considered long term risks that are not expected to determine short term price movements.

   ESG risks may drive value over the long term and/or result in tail risk (e.g., a company getting faced with a big lawsuit due to an ESG risk). Typically, an ESG risk may encompass various long term potential risk parameters. For example, climate change might be identified as carrying physical risk of impacts of climate change, reputational and competitive risk, regulatory risk, litigation risk, and potentially stranded assets risk.

   In stock markets, ESG is typically considered more relevant to longer term holding strategies and more difficult to apply to investment strategies executed through heavy active trading of securities. Similarly, in bond markets, some managers view ESG risks as more relevant to longer term bonds (e.g., 30-year bonds, compared to shorter term bonds).

2) ESG reporting should focus on material risk, rather than generic ESG risk reporting.

   Focusing on the materiality of risk has gained considerable traction. For example, in 2013, GRI updated their guidelines to their 4.0 version to introduce materiality. SASB generates a materiality map that outlines material ESG risks.

3) Materiality of specific ESG risks/opportunities differ across industries, sectors within industries, and across companies within a given industrial sector.

   Industry associations, investment firms and institutional investors have begun to develop industry-specific methods for determining materiality as it relates to ESG issues. SASB is working to outline material ESG risks for 10 industries and 88 sectors within those industries (see Appendix II). Morgan Stanley's ESG Materiality Map is similarly premised on industry and company specific materiality for the bank's equity analysts to incorporate ESG 'Key Performance Indicators' into company valuations. Mercer's 2015 assessment of the impact of climate change on different assets classes, revised its initial 2011 report to develop more industry-specific analysis in response to comments of institutional investors. Generally, investment management approaches, such as macro driven or multi-strategy hedge funds and absolute return strategies, currently find ESG less directly applicable to their investment approaches.

ESG company databases, analytics, ratings, and benchmarks and manager ESG rankings

The work on sustainability accounting frameworks illustrate the breadth of potential material risks that might be considered, quantified, analyzed and integrated into investment decision-making. SASB's list below includes 30 different general issues.

SASB Sustainability Risk Issues				
Environment	**Social Capital**	**Human Capital**	**Business Model and Innovation**	**Leadership and Governance**
GHC emissions	Human rights and community relations	Labor relations	Lifecycle impacts of products and services	Systemic risk management
Air Quality	Access and affordability	Fair labor practices	Environmental, social impacts on assets and operations	Accident and safety management
Energy Management	Customer welfare	Employee health, safety and well-being	Product packaging	Business ethics and transparency of payments
Fuel Management	Data security and customer privacy	Diversity and inclusion	Product quality and safety	Competitive behavior
Water and Waste Water Management	Fair disclosure and labeling	Compensation and benefits		Regulatory capture and political influence
Waste and hazardous materials management	Fair marketing and advertising	Recruitment, development and retention		Materials sourcing
Biodiversity impacts				Supply chain management

Source: SASB

A vibrant sustainability investment information services industry is springing up from established information providers, newer firms specializing in ESG, existing financial data analytics firms, and large global investment services corporations. Many companies are swiftly broadening their product suites to meet burgeoning sustainability opportunities.

For example, companies including Trucost, South Pole Group and MSCI ESG provide carbon footprint data analysis of companies and of investment portfolios. Trucost (incorporated in 2000) focuses on all 'natural capital' dependency analysis for investors. The firm produced its first investment portfolio carbon footprint analysis in 2006 and overtime deepened its database, suite and breadth of research offerings. South Pole Group (founded in 2006) originally targeted efficient and sustainable emission reduction projects. In 2015 the company rebranded to move beyond emissions reduction to provide expertise that covers key natural capital sustainability-related areas of climate change, forests and land use, water, sustainable cities and buildings, and renewable energy and energy efficiency. MSCI actively pursued the ESG market with its acquisition of RIskmetrics in 2010. MSCI ESG first provided corporate research and ratings, benchmarks and proxy voting services. By 2015 MSCI ESG launched its Carbon Portfolio Analytics service that includes portfolio carbon footprint analysis.

Similarly, sustainability company ratings are offered by large index providers and firms whose resources are dedicated to ESG. For example, independent ESG research firm, Sustainalytics (founded in 2008), provides ESG ratings, rankings and analysis that cover all major global indices. Corporate Knights Capital's (CK Capital) best-known rankings include the Global 100 Most Sustainable Corporations. MSCI-ESG provides ratings on 5,700 global equity and 9,000 fixed income issuers. Thomson Reuters Corporate Responsibility ratings rank the ESG performance of over 4,600 companies worldwide in 52 industries and nine different regions. FTSE ESG ratings cover over 2,400 securities in the FTSE All-World Developed Index.

Most large index providers offer some type of ESG indexes, including S&P Dow Jones Indices, MSCI, FTSE Russell, as do long-time dedicated ESG providers such as Calvert, Impax, or PaxWorld that had their roots primarily in the retail, endowment and foundation markets. ESG indexes range from custom indexes designed for an individual institutional investor, to issue-specific indexes, to broad sustainability indexes. Within each issue area, benchmark offerings vary. For example, within carbon concerns, benchmark options include carbon free, coal free, low carbon, and renewable/clean energy Indexes.

ESG benchmarks are not confined to equity markets. For example, in 2013, Barclays and MSCI launched a global family of fixed income ESG indices. In 2015, Cambridge Associates and the Global Impact Investing Network ("GIIN") collaborated to launch the Impact Investing Benchmark to provide comprehensive analysis of the financial performance of market rate private equity and venture capital impact investing funds.

Online financial information services are offering more ESG data and analysis. For example, Bloomberg's corporate news and information services on ESG now include a growing spectrum of third party ESG data services. Bloomberg, using Southpole's data analytics, now provides a free online service to find the carbon footprint of a company by simply typing in the corporate ticker symbol. Bloomberg recently added Sustainalytic's corporate ratings online, among other services.

The market for ranking investment managers may soon become more widely distributed and less expensive. Mercer first provided ESG ratings at the manager level in 2006 and at the strategy level in 2008. Today, Mercer rates 5,000 strategies across asset classes. In August 2015, investment research and leading fund rating house, Morningstar and Sustainalytics announced that they will jointly develop ESG ratings for global mutual funds and exchange traded funds. Morningstar expects to launch the fund-level ESG scores in the fourth quarter of 2015 and through its datafeeds and its major software platforms in 2016. Morningstar tracks the holdings of more than 200,000 global managed products, and Sustainalytics provides ESG ratings on more than 4,500 companies. Users will also be able to "drill down" to see scores for each of the three ESG pillars.

In 2015, Mercer released its new ESG-passive (ESG-p) rating scale for passively managed equity strategies. Because passive managers are long-term shareholders of stocks that cannot 'walk away from companies that underperform', the key focus of Mercer's ESG-p rating scale is on exercising ownership rights though proxy voting and engagement activities, among other factors, to generate value through good ESG practices. Mercer notes that, unlike its ESG ratings in active management, the passive management assessments have been undertaken at the firm-wide level with the central corporate governance teams due to a lack of product-specific data.

In our opinion, the growing competition in these markets is spurring improvements and refinements that should benefit investors.

Equity ESG sparks new thinking, market players, products and hype

Taking into account environmental, social and governance risks is not new to equity investment managers. Many ESG individual risks have long been assessed by equity investors in security selection. Driven by client demand, investment managers are reviewing and reconsidering their approach to ESG based on a more structured, comprehensive approach to ESG. Along with the heightened attention to ESG, new research and product development is becoming available.

Equity research

Historically, much ESG research analyzed the results of negative or exclusionary screenings in keeping with the type of ESG investing that often occurred, many times in the context of divestment campaigns. Theoretical models suggest that a portfolio that is restricted for non-financial reasons would be expected to reduce the risk-adjusted return of the portfolio.

PCA's 2014 review of divestment empirical research found mixed results, in large part due to the breadth of the market that was excluded, market price dynamics for the stocks excluded during the time period studied, and portfolio characteristics of the 'replacement' portfolio compared to the benchmark portfolio. Portfolio characteristic biases such as sector, small cap/large cap, growth/value, and country had positive or negative effects on risk-adjusted performance. Other biases depended on the time period and magnitude of the difference between the replacement portfolio and the benchmark.

Current benchmark developments show that in many cases, adjusting the exposure to different companies based on a particular ESG screen, rather than divesting from the largest stocks that do not pass a screen, provide another look at this same issue. For example, the S&P Dow Jones Indices (S&PDJI) offers the "Carbon Efficient Index", which tracks the broad market and simultaneously rewards more carbon efficient companies at the expense of less carbon efficient ones. Historically, their S&P500 results show the reduction of annual carbon footprint (GHG emissions/Annual Revenue) of one third to half of that of the S&P500, with performance correlation of 99.9% for the years 2004-2013.

More broadly, there is more common recognition that particular environmental, social and governance issues not captured by traditional quantitative investment analysis can prove material to investment performance. Studies identify issues, such as energy efficiency, carbon emissions, toxic waste treatment, workplace safety, employee relations and corporate governance, as materially affecting traditional financial indicators such as price/earnings ratio and reputation with investors.

The growing demand for integrating sustainability data into traditional portfolio analysis has stimulated additional new research. Still heavily debated, some new equity research finds material ESG risks are not fully priced into the market and argue that ESG investing has not generated good returns in many cases because investors didn't focus on materiality. For example, a 2015 Harvard Business School study argues that prior academic literature did not distinguish between material and immaterial sustainability issues. A primary finding is that "firms with good performance on material sustainability issues significantly outperform firms with poor performance on these issues, suggesting that investments in sustainability issues are shareholder-value enhancing."

We anticipate that research results will continue to generate mixed results depending on the focus and time period of a particular study. The newer research dedicated to material risk factors represents an informative development in the literature. Because the materiality of given risk factors may change over time, for any given industry or company, we expect varied results to emerge based on the universe, time period and definitions of materiality studied as this research develops.

Approaches to ESG equity investing

The range of ESG approaches to investment management encompasses traditional socially responsible investing (which often rests on 'negative' screening out of particular social outcomes) to impact investing, which seeks to achieve a social impact and can seek both market or below market performance. While all investors typically prefer a competitive return, not all are legally bound. For example, individuals may decide they prefer investing in stocks that meet their social criteria, even with the expectation that their portfolio may generate below market investment returns. For pension funds, Impact Investing aims to achieve a market return and a social return, or a double bottom line return, as shown below. Most recently, active managers have begun more systematically incorporating ESG risk factors alongside traditional financial factors seeking to improve active management returns.

ESG Investment Management

Investment Approach to ESG Factors	Description	Social Outcome	Competitive Performance Outcome
Negative Screening	Exclude companies based on non-financial concerns such as tobacco, firearms, more recently, CO_2.	REQUIRED	NOT REQUIRED
Impact Investing	Incorporate social outcome and seek to make a market return	REQUIRED	VARIED
Positive Screening	Integrate ESG material risks into traditional financial analysis, independent of seeking any specific social/environmental outcome to improve portfolio performance.	NOT EXPLICITLY REQUIRED	REQUIRED

The growth in ESG investment demand has fueled an expansion of the ESG investment manager universe. Historically ESG was the purview of primarily specialized ESG managers, with some managers that offered both traditional investment products and ESG products. Large global investment firms are developing their ESG product line, both through acquisition and increased hiring and reorganization. In some cases, a new ESG profile means emphasizing what a manager believes they have always done regarding these risks, by, for example, establishing a new ESG position and rebranding.

The eVestment Alliance list of all U.S. ESG managers below shows a current list of managers, including long-time dedicated ESG managers (Walden and Calvert), managers who for some time have provided both traditional and socially driven products (Neuberger Berman and DFA), alongside managers that are rebranding (PIMCO, which now lists its flagship Total Return Fund under eVestment's general fixed income and US-ESG universe).

eVestment Alliance Universe of U.S. ESG Managers
(Listed Alphabetically)
August 2015

#-C	D-H	H-Q	R-Z
1919	Dana Investment Advisors	IPM	RDC GAM
Alger	Deutsche Investment Advisors	Kennedy Capital Management	Riverbridge
Atlanta Capital	DFA	Light Green Advisors	Saturna Caital
Boston Common Asset	Domini	Miller/Howard	SKBA Capital Management
Breckenridge	Estabrook	Neuberger Berman	SSgA
Brown Advisory	Fiera Capital	New Amsterdam	Sustainable Insight
Calvert	GAMCO	PaxWorld	TIAA-CREF
Capstone	Great Lakes Advisors	PIMCO (Total Return Fund)	Trillium
Clearbridge	Green Century Capital	Ponder Investment Co.	Vanguard
Contravisory	Goldman Sachs AM	Praxis Mutual Funds	Walden
CsMcKee	Horizon Investments	Quotient Investors	

Source: eVestment Alliance.

Due to heightened interest in ESG, we expect the lists of ESG managers to change in the near term. For example, in 2015, BlackRock announced its launch of an ESG presence, while others may begin listing existing products that serve this market such as GMO, Aperio Group and others.

Historically, active ESG equity managers primarily have been fundamental stock selection managers. Today, more quantitative managers are adapting their data mining approaches to develop ESG products. With the profusion of investment funds that span all of types of sustainability investing, it is critical that any plan conducting a manager search clearly assesses and understands the investment goals and processes of any fund that markets itself as an ESG, Impact, or Sustainability fund, particularly because some may be designed for investors that may not require a market return.

The increased profile of sustainability is also impacting active shareholder approaches by managers. Active ESG managers typically exercise active shareowner governance rights. Managers of traditional investment products are generally increasing their engagement beyond proxy voting. For separate account funds, investors may stipulate that a manager vote according to its voting guidelines. Commingled vehicle managers often have formal proxy voting guidelines designed to vote in the interest of all shareholders. In situations where the manager believes taking a certain position on an issue would represent the interests of all shareholders, it is becoming more common for managers to engage with a given company beyond voting proxies.

Conclusions

Growing levels of interest in responsible investment and ESG factors from institutional and retail investors have sparked development of a new investment information industry as well as growth of the ESG investment management industry. In our opinion, U.S. pension funds will likely, over time, need to consider how they might best incorporate sustainability into their investment beliefs, policies and practices, if they are not already doing so.

- Since ESG investors span foundations, endowments, and individuals that may not have the same market return requirements as pension funds, we expect ESG investment manager offerings to encompass everything from simple exclusionary screening, to impact investing (which may or may not seek an above market return), to positive screening by managers integrating sustainability factors more comprehensively into their analysis to generate alpha. With the wide dispersion of goals among ESG investment managers, pension plans should be extremely diligent in assessing whether a given product fits its needs.

- ESG material risk factors are not new to institutional investors or to investment managers that manage portfolios with traditional financial information, even though specific risks, notably climate change, are more recent. What is new is the push for disclosure, standardization, quantification and systematic risk analysis to integrate sustainability into risk/return analysis across the market, rather than prolonging integration until individual issues arise for a particular security or sector. Some issues, particularly environment-related risks are becoming prominent. For example, a decade ago, a typical institutional investor interested in the energy sector would not necessarily consider a firm's track record on environmental issues. Today, regulatory changes facing the energy sector make such non-financial issues potentially material.

- In PCA's opinion, it is increasingly likely that some sustainability framework will become standard in the United States over time. Similar to the evolution of financial standards, U.S. standards may well differ from other countries in their details. Today, in our view, one likely emerging U.S. sustainability accounting framework comes from the Sustainability Accounting Standards Board ("SASB"). The SASB standards are being developed based on the U.S. Supreme Court's definition of materiality. SASB is modeled after the Financial Accounting Standards Boards ("FASB"). The shift to common reporting standards is nascent. Just a modest number of publicly held companies today reference SASB in some form.

- If ESG becomes mainstream, market impacts may resemble the evolution of broad market availability and analysis of corporate financial data. If corporate ESG material risk data becomes standardized and widely disclosed, it may offer all investors enhanced information with which to analyze companies and portfolios, similar to the earlier evolution to standard disclosure of material financial data. PCA believes that institutional investors and investment managers will differ in their analyses and conclusions of particular ESG factors, just as they reach different conclusions on financial data and proxy voting issues.

- Active equity ESG managers that seek to generate above market returns face all the associated risks of any active management. Among these managers, asset owners should expect manager performance to range around standard benchmarks. Broadly available market knowledge of specific factors may result in potential decay of particular active equity ESG alpha and/or shift to new ESG factors over time, just as for any other form of information.

APPENDIX I: PRI U.S. Asset Owner Signatories

PRI U.S. Asset Owner Signatories	Type of Organization
Nathan Cummings Foundation	Foundation
United Church Funds	Foundation
Wespath Investment Management (General Board of Pension and Health Benefits of the United Methodist Church)	Foundation
Treehouse Investments LLC	Investment Co.
International Finance Corporation (IFC)	Public Intl Finance
CalPERS	Public Pension
CalSTRS	Public Pension
Connecticut Retirement Plans and Trust Funds (CRPTF)	Public Pension
Los Angeles County Employees Retirement Association (LACERA)	Public Pension
Maryland State Retirement and Pension System	Public Pension
New York City Employees Retirement System	Public Pension
New York State Local Retirement System	Public Pension
State Universities Retirement System of Illinois	Public Pension
United Nations Joint Staff Pension Fund	Public Pension
University of California	Public Pension
AFL-CIO Reserve Fund	Taft-Hartley Pension
Middletown Works Hourly and Salaried Union Retirees Health Care Fund	Taft-Hartley Pension
Multi-Employer Property Trust	Taft-Hartley Pension
SEIU Pension Plans Master Trust	Taft-Hartley Pension
UAW Retiree Medical Benefits Trust	Taft-Hartley Pension
UFCW International Union Pension Plan for Employees	Taft-Hartley Pension
Harvard University Endowment	University Endowment

Source: PRI August 2015.

APPENDIX II: SASB Materiality Map

SASB's Materiality Map for First Seven Sectors

	Health Care	Financials	Technology and Communications	Non-Renewable Resources	Transportation	Services	Resource Transformation
ISSUES							
Environment							
GHG emissions							
Air Quality							
Energy Management							
Fuel management							
Water and wastewater management							
Waste and hazardous materials management							
Biodiversity impacts							
Social Capital							
Human rights and community relations							
Access and affordability							
Customer welfare							
Data security and customer privacy							
Fair disclosure and labeling							
Fair marketing and advertising							
Human Capital							
Labor relations							
Fair labor practices							
Employee health, safety and wellbeing							
Diversity and inclusion							
Compensation and benefits							
Recruitment, development and retention							
Business Model and Innovation							
Lifecycle impacts of products and services							
Environmental, social impacts on assets and operations							
Product packaging							
Product quality and safety							
Leadership and Governance							
Systemic risk management							
Accident and safety management							
Business ethics and transparency of payments							
Competitive behavior							
Regulatory capture and political influence							
Materials sourcing							
Supply chain management							
Sector Level Map		Not likely to be material for any of the industries in the sector					
		Likely to be material for less than 50% of the industries in the sector					
		Likely to be material for more than 50% of the industries in the sector					

Source: www.SASB.org

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Action on Climate:

A Practical Guide for Fiduciaries

"Climate change is a 'threat multiplier'...because it has the potential to exacerbate many of the challenges we already confront today – from infectious disease to armed insurgencies – and to produce new challenges in the future. "

— Chuck Hagel, former Defense Secretary

"I think it's the existential threat of our day. Once you see it as having catastrophic impact, any economic argument follows that, because you're not going to have an economy."

— Robert E. Rubin, former Treasury Secretary

SEIU Capital Stewardship Program

responsible endowments coalition

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About this Toolkit

This toolkit is the product of two input meetings, or "charrettes," held in New York City and in Oakland, California in late 2014. A total of eighteen trustees, staff, and fiduciaries from mid-sized institutional investors (including endowments, foundations, religious investors, and Taft-Hartley funds) participated in the charrettes. At these meetings, the project team gathered information from these participants about what is important to them when considering changes to their policies and portfolios. Their feedback has shaped the formation of this toolkit.

This toolkit is not meant to be read cover-to-cover, but rather to be used as a resource as your fund undergoes an internal process to take action on climate change. Signposts indicate which sections are relevant to which audience: endowments, foundations, or pensions. Feel free to print and copy any sections of the toolkit for use in meetings with trustees, investment managers, or investment consultants.

This project has been spearheaded by Responsible Endowments Coalition and the SEIU Capital Stewardship Program, with support from the Institute for Responsible Investment at Harvard University and the Croatan Institute. This report was made possible thanks to generous support from the V. K. Rasmussen Foundation.

This toolkit is available online at http://actiononclimate.us/.

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Final responsibility for the content of this report lies with the Responsible Endowments Coalition (REC) and the Service Employees International Union (SEIU).

Disclaimer

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Responsible Endowments Coalition (REC) is the leading voice for responsible investment in higher education in the United States. REC educates and empowers students and campus communities on over one hundred campuses nationwide to encourage their institutions to incorporate environmental and social issues into investment practices. REC also trains the next generation of leaders on the importance of understanding money in creating change.

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Introduction and context

Over the last three decades, people and governments around the world have recognized climate change as an issue of increasing urgency. Increases in large storms, droughts, and other problems have already been linked to climate change. Consensus has emerged that substantially stronger action is required to slow human-induced climate change and mitigate its effects. To date, however, and despite the urgency, actions taken to mitigate climate change and prepare for its consequences have been limited.

In recent years, investors have been both the objects of climate advocacy and important stakeholders wrestling with how climate change should affect their investment strategies. Advocates insist that investors need to account for their contributions to climate change, and to prepare for a necessary shift to a low-carbon economy, which will transform investment portfolios.

Founded by student organizers at Swarthmore College in 2011, the fossil-fuel divestment campaign began by targeting university endowments and has now gained national momentum. This advocacy has extended to foundation endowments, retail investors, and pension funds.[1] Investors of all kinds are facing substantial demands from stakeholders to address investments in the largest coal, oil, and gas companies. Some high-profile investors have responded to these calls: Stanford University has divested its endowment from direct holdings in coal companies, Yale University has engaged its money managers on climate risk, and the Rockefeller Brothers Fund announced its plan to divest from all fossil fuels in September 2014[2]. Advocacy has pushed an even larger set of investors to address climate change and its potential consequences more actively, even if they do not choose divestment as a solution.

Institutional investors – perhaps because of their need and capacity to manage portfolios over longer time horizons for multiple generations of beneficiaries – have taken the lead in exploring how to recognize the possible effects of climate change across entire investment portfolios. They are looking for ways to protect portfolios from risks associated with climate change, from the policy risks associated with carbon pricing to the physical risks associated with changing weather patterns and intensity. And they are exploring new investment opportunities likely to emerge from a transition to a sustainable and low-carbon economy.

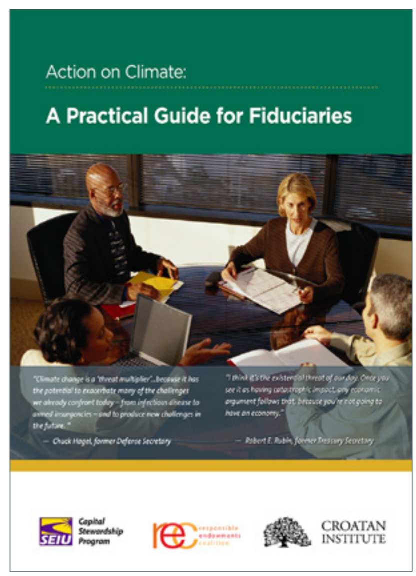
But investors can also struggle to integrate a long-term macro-trend, like the systemic effects of climate change, into their existing investment strategies. Day-to-day challenges of portfolio management can make it hard to take on long-term issues, no matter how important these may be. Due to funding concerns and managing current volatility in the capital markets, defined benefit pension plans can find climate risk a daunting challenge. This is especially true for those under resourced in climate and other ESG areas.

Large investors like Stanford University (with a $21.5 billion endowment and dozens of employees dedicated to endowment management) have the advantage of substantial resources at their disposal to examine the effects of climate change on their investments. Unlike these investors, small and medium-sized endowments, pension funds, and foundations do not have large internal staff teams. These institutional investors may have outsourced their investment management entirely, or have one or two internal team members. They face particular challenges implementing climate change strategies while respecting fiduciary responsibility and investment strategy, but the long-term issues that arise from climate change will affect them too, and their beneficiaries and stakeholders are raising the issue on campus lawns and at quarterly meetings.

If you are one of these investors, this Toolkit is for you – an investor concerned about the future of your fund and the future of the world, or a pension plan fiduciary whose overriding focus is the financial interests of your beneficiaries and the long-term interest of your plan. This Toolkit will help you take climate change into consideration with your fund while respecting concerns about fiduciary duty and investment performance.

How to Use This Toolkit

This Toolkit is intended to help investors examine climate change from different angles. It explores various interconnected approaches: integrating climate change into your investments; reducing your portfolio's carbon intensity; investing in climate solutions; divestment; engaging with corporations; and engaging with policymakers. Each tactic has its advantages and disadvantages. Not all of them will be right for every investor. The aim here is not to advocate a particular approach; it is to support you in making decisions that make sense for your fund and institution.



At the core of this Toolkit are:

- A decision-making process you can customize for your fund, including how to work with consultants, managers, and legal counsel
- An implementation guide for your strategy.

To support you in these processes, we provide information on:

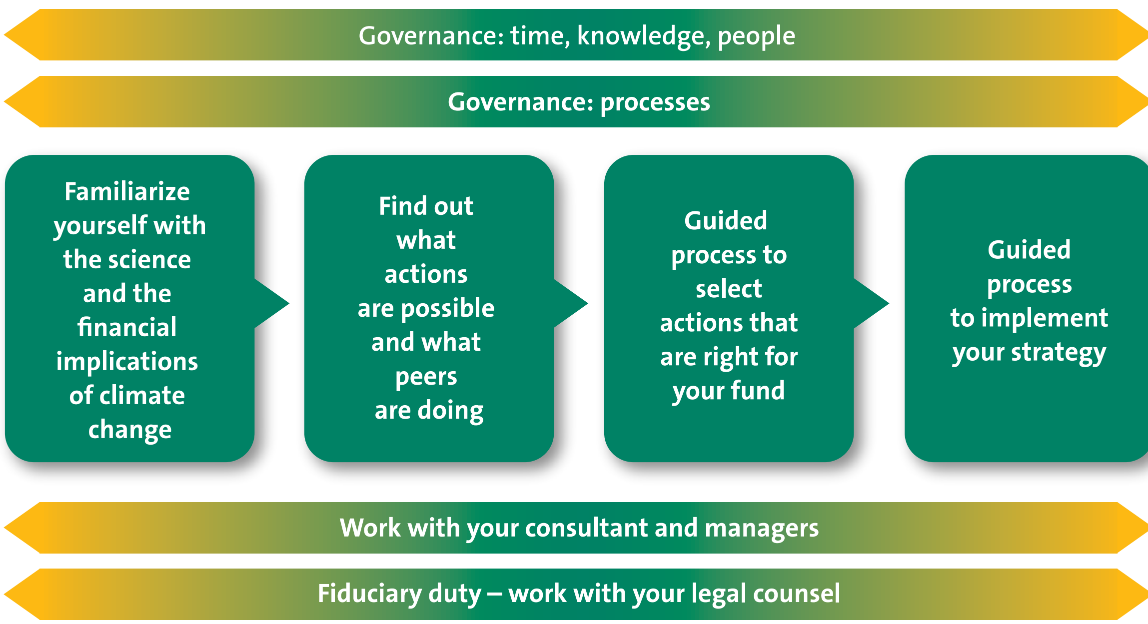
- The science and impacts of climate change
- The financial implications of climate change
- Fiduciary duty and climate change
- The impacts of climate change on workers and communities.

- Available actions and examples of what peer investors are doing.

For each of these you can find a high-level summary in the main part of the Toolkit, with more detail in appendices.

A governance approach

The overall path we suggest an investor follow is set out in the chart below. We take a governance approach. This outlines steps to follow and questions to ask, while taking account of the resources available to the investor – in terms of time, knowledge, and people. Throughout the process, ensuring that you act in accordance with fiduciary duty remains crucial.



1

Climate change science: in brief

- The UN Intergovernmental Panel on Climate Change's Fifth Assessment Report concluded that "human influence on the climate system is clear, and recent anthropogenic emissions of greenhouse gases are the highest in history. Recent climate changes have had widespread impacts on human and natural systems". Continued emissions of greenhouse gases will "increase the likelihood of severe, pervasive and irreversible impacts for people and ecosystems."[3]
- NASA notes that "the current warming trend is of particular significance because most of it is very likely human-induced and proceeding at a rate that is unprecedented in the past 1,300 years."[4]
- NASA studies show that the average global temperature on Earth has increased by about 0.8° Celsius (1.4° Fahrenheit) since 1880. Two-thirds of the warming has occurred since 1975, at a rate of roughly 0.15-0.20°C per decade.[5]
- Carbon dioxide concentrations in the atmosphere have now reached 400 parts per million (ppm), compared with the 350 ppm scientists consider to be a safe level.[6]
- The UN finds that if emissions continue to rise at the current rate, impacts by the end of this century are projected to include a global average temperature 2.6–4.8° Celsius higher than at present, and sea levels 0.45–0.82 meters higher than at present.
- A scientific report commissioned by the World Bank concludes that the impacts of a 4 degree temperature rise are "potentially devastating: the inundation of coastal cities; increasing risks for food production potentially leading to higher under and malnutrition rates; many dry regions becoming dryer, wet regions wetter; unprecedented heat waves in many regions, especially in the tropics; substantially exacerbated water scarcity in many regions; increased intensity of tropical cyclones; and irreversible loss of biodiversity, including coral reef systems."[7]
- According to the National Academies of Science, each degree of warming will produce:
  - 200-400% increases in the area burned by wildfire in parts of the western US
  - 5-15% reductions in the yields of crops as currently grown

  - 5-10% changes in precipitation across many regions
  - 3-10% increases in the amount of rain falling during the heaviest precipitation events.[8]

- Climate change will likely not proceed in a linear fashion. There could be sudden “tipping points” at which change accelerates and consequences become irreversible.[9]

- According to the Department of Defense, “Global climate change will aggravate problems such as poverty, social tensions, environmental degradation, ineffectual leadership and weak political institutions that threaten stability in a number of countries. [...] Climate change is a security risk because it degrades living conditions, human security and the ability of governments to meet the basic needs of their populations. [...] The Defense Department already is observing the impacts of climate change in shocks and stressors to vulnerable nations and communities, including in the United States, the Arctic, the Middle East, Africa, Asia and South America.”[10]

- The New York City Panel on Climate Change predicts sea level to rise by anywhere from 11 to 21 inches by the 2050s in the city, and 18 to 39 inches by the 2080s. By the end of the century, sea level could be six feet higher than it is today.[11]

You can find more information on climate science in Appendix 1.

2

Financial implications of climate change: in brief

The economic and financial implications of climate change are significant. This is particularly relevant to fiduciaries at a time when low investment returns are placing pressures on pension funding levels and pose challenges for foundations seeking to maintain distribution levels in perpetuity and endowments with commitments to their sponsor institutions. In these difficult times, it is more important than ever to understand all investment risks and opportunities in both the short and long term. Understanding the financial implications of climate change is an essential part of the picture.

- According to the Risky Business Project – founded by former Treasury Secretary Hank Paulson, former Mayor of New York Michael Bloomberg, and hedge fund investor Tom Steyer – "The American economy is already beginning to feel the effects of climate change. These impacts will likely grow materially over the next 5 to 25 years and affect the future performance of today's business and investment decisions." Within the next 15 years, the total annual price tag for hurricanes and other coastal storms could be $35 billion. Some Midwestern and Southern counties could see a decline in crop yields of more than 10% over the next 5 to 25 years, with a 1-in-20 chance of yield losses of more than 20%. Temperature changes will likely necessitate the construction of up to 95 gigawatts of new power generation capacity over the next 5 to 25 years—costing residential and commercial ratepayers up to $12 billion per year. [12]

- The Economist Intelligence Unit (the research arm of The Economist magazine) calculates that by 2100, 4°C of warming would result in expected losses of $4.2 trillion in present value terms to the world's total stock of manageable assets of $143 trillion – roughly equivalent to the total value of all the world's listed oil and gas companies or Japan's entire GDP. Much of the impact on future assets will come in the form of weaker growth and lower asset returns across the board. Investors cannot simply avoid climate change by moving out of vulnerable asset classes.[13]

- Research by the former CEO of a UK asset management company finds that "if it reaches 4°C or more, global warming may cause severe economic damage with the consequence that a significant portion of the value of a diversified equity investment portfolio will be placed at risk… We estimate that in a plausible worst case for climate damage the value at risk in 2030 may be equivalent to a permanent reduction of between 5% and 20% in portfolio value compared to what it would have been without warming."[14] In other words, in this scenario, portfolios will lose up to 20% of their value, and never regain the lost ground.

- The investment consulting firm Mercer believes that uncertainty over climate policy could contribute as much as 10% to overall portfolio risk by 2030.[15] More recent work by Mercer concludes that "Climate change will inevitably have an impact on investment returns. [...] A 4°C scenario (i.e. an average global temperature increase of 4°C) could negatively impact emerging market equities, real estate, timber and agriculture."[16]

Tim J. Keegan / Flicker (CC BY-SA 2.0)

- The Carbon Tracker Initiative argues that climate change could leave fossil fuel companies with uneconomic "stranded assets" – mines, oilfields, and tar sands deposits that lose their value, potentially costing their investors hundreds of millions of dollars. This is because the fossil fuel reserves held by oil, gas, and coal companies far exceed the amount that can be burned if we are to remain within the world's "carbon budget" (the amount of CO_2 that can be emitted if global temperature rise is to be limited to 2°C). This leaves a remaining budget of 565 $GtCO_2$. Government action to curb emissions would make it impossible for these reserves to be used.

- The money management firm Schroders believes that "the long-run effects of climate change will most certainly be negative for global economic activity. Damage to the global capital stock and disruptions to labour supply will reduce productivity and economic activity. Inflation will increase as production is curtailed, particularly in agriculture, further weakening real incomes and spending. Whilst there will be winners and losers from warming of several degrees, all countries will, at some point, lose out to climate change. [...] Valuing the future loss in economic output attributable to climate change produces a range of estimates which vary according to views about whether a tipping point is reached between 2 - 4°C of warming. In a worst case scenario, global warming could be seen to reduce annual GDP growth by over 1% between the present day and 2080."[17]

- A study by the Investment Leaders Group at the University of Cambridge concludes that "on a worst case basis, only half of the negative impact on portfolio returns due to climate change can be hedged through cross-industry diversification. Furthermore, one half can be hedged by shifting from an equity portfolio to one with a higher percentage of fixed income."[18]

You can find more detailed information on the financial implications of climate change for portfolios, asset classes and sectors in Appendix 2.

3 Fiduciary duty and climate change: in brief

We are grateful to Keith Johnson of the law firm Reinhart Boerner Van Deuren for reviewing the material on fiduciary duty in this Toolkit. Please note that this section is intended to provide a summary of general fiduciary principles and does not constitute formal legal advice. Fiduciaries are encouraged to consult with their legal counsel when applying legal principles to specific circumstances.

- For pension plans, an approach to climate change grounded in an assessment of financial risk and opportunity, with a clear focus on the financial interests of beneficiaries and the economic interests of the plan, is, we believe, entirely consistent with fiduciary duty.
- For foundations and endowments, fiduciary duty includes an obligation to assess how their investment practices relate to their organization's charitable mission and public benefit purposes.
- For pension plans, foundations, and endowments with long-term or perpetual obligations, future needs must be fairly balanced with short-term demands.
- The Employee Benefits Security Administration stresses that the duty of prudence "focuses on the process for making fiduciary decisions."[19] In assessing what is "prudent," it will be relevant to look at how other pension plans, and fiduciary investors more generally, are addressing climate change. As we show in this Toolkit, leading investors are taking climate change very seriously from a fiduciary and financial perspective.
- Fiduciaries should always document their decision-making process carefully so that there is a written record of fact-based research, discussions, and conclusions on climate change.
- Always work closely with your legal counsel as you develop your climate change strategy.

You can find more detailed information on fiduciary duty and climate change in Appendix 3.

4

Climate change impacts on workers and communities: in brief

The overriding reason for pension fiduciaries to consider climate change is the financial risk it poses to their funds. Climate change poses workplace and health risks to workers that have economic and financial implications. At the same time ongoing carbon pollution, the growing incidence of climate related disasters, and other climate related costs disproportionately impact the health and well being of low income communities and communities of color. Moreover, efforts to mitigate climate change and hasten a transition to a low-carbon economy could create large numbers of new jobs in many industries and may provide for more equitable allocation of economic opportunity for those impacted workers and communities. These issues may be of particular interest to union fiduciaries – while also being relevant to other pension trustees. They may also be particularly relevant to certain foundations, and to endowments.

- The Federal Government's 2014 National Climate Assessment finds that the health impacts of climate change could be serious. "Public health in the US can be affected by disruptions of physical, biological, and ecological systems, including disturbances originating in the US and elsewhere. Health effects of these disruptions include increased respiratory and cardiovascular disease, injuries, and premature deaths related to extreme weather events, changes in the prevalence and geographical distribution of food and waterborne illnesses and other infectious diseases, and threats to mental health."[20]

- A briefing by the BlueGreen Alliance notes that higher temperatures and more extreme weather events will bring new hazards in the workplace. Hotter weather will mean sicker patients for healthcare workers and more severe wildfires for firefighters. Changing weather patterns will cause damage to out-of-date school buildings and disrupt school time, harming teachers' ability to educate students. Worsening public health and increased disaster response work will pose a risk for healthcare workers.

- Climate change is also a civil rights issue. Jacqueline Patterson, executive director of the NAACP's Climate Justice Initiative reminds us in a 2014 Nation interview that 68% of African-Americans live within thirty miles of a coal-fired power plant, the zone of maximum exposure to pollutants that cause an array of ailments, from heart disease to birth defects. Communities of color breathe in nearly 40% more polluted air than whites. African-American children are three times as likely to suffer an asthma attack.

- The Center for American Progress and the Political Economy Research Institute finds that $200 billion in annual public and private investment is needed for the US alone to align itself with internationally agreed emission reduction goals.[21] This investment would:
  - Create 4.2 million overall jobs both by new investments and expanded levels of operations and maintenance.
  - Bring a 2.7 million net increase in jobs, even after estimated contractions in fossil fuel sectors.
  - Generate net employment expansion at all levels of pay in the US labor market and a decrease in the unemployment rate by about 1.5 percentage points—e.g. from 6.5% to 5% within the 2030 US labor market.[22]

You can find more detailed information on the implications of climate change forfor workers and communities in Appendix 4.

5

Responding to the climate challenge – available actions: in brief

Investors in the US and around the world are adopting six main tactics to respond to climate change. These tactics are not mutually exclusive: investors are combining them to create a mix that best suits their particular circumstances and objectives. The tactics, in no particular order, are: integrating climate change and sustainability into all their investments; reducing carbon intensity; investing in climate solutions; divesting; engaging with corporations; and engaging with policymakers.

Integrating climate into all investments

Many investors – including pension plans and university endowments – now take the view that climate change and other environmental, social and governance (ESG) issues can be financially material and that these factors should therefore be integrated into all their investments as a matter of fiduciary duty. Academic research supports this view. Recent studies find that companies with strong sustainability and ESG performance achieve superior financial performance (see Appendix 6).

This approach can incorporate many of the other tactics described here. It is distinct from others in that it does not usually involve explicit advance commitments to specific actions - such as divestment. It can be thought of as a framework within which a range of actions can be taken.

In practice, investors adopting this path are, for example:

- Conducting new kinds of research to understand the financial implications of climate change and ESG
- Reflecting this analysis in their financial valuation and security selection (e.g. underweighting, shorting, or screening out stocks with high climate risk)
- Incorporating climate/ESG issues into due diligence for private market investments
- Engaging with corporations and reflecting the risks of climate change in their proxy voting.

Examples: CalPERS,[23] CalSTRS,[24] Amherst College,[25] Harvard,[26] University of California,[27] Yale.[28]

Reducing carbon intensity

Investors are taking various approaches to reducing the carbon intensity of their portfolios (the amount of carbon dioxide and other greenhouse gases emitted per dollar invested). These include measuring and publishing their carbon footprint to establish a baseline, and investing in passive and active low-carbon funds.

Examples: University System of Maryland Foundation,[29] the US-based United Nations Joint Staff Pension Fund,[30] and the public pension plans ERAFP (France) and AP4 (Sweden).

Investing in climate solutions

Numerous opportunities exist to invest in solutions to climate change – in areas such as renewable energy, energy efficiency, and green real estate. These may offer attractive returns as demand for climate solutions grows, and hedge risk (offset losses in value) in portfolios if they perform well, while high-carbon investments fare less well as a result of governments' climate change policies, the physical impacts of climate change or other factors.

Examples: CalPERS, CalSTRS,[31] Middlebury College,[32] University of California.[33]

Divesting

Divesting to combat climate change

Some endowments and foundations have divested from all or some fossil fuel corporations explicitly to make a contribution to combating climate change, and to distance themselves from fossil fuel corporations' rejection of the reality of climate change and their efforts to block government action to tackle it. In some cases these investors also cite financial risk associated with these investments.

Examples: Pitzer College, CA,[34] the Rockefeller Brothers Fund,[35] San Francisco State University,[36] Stanford University,[37] Syracuse University.[38]

The Norwegian parliament has instructed the country's Government Pension Fund (one of the world's largest investment funds) to divest from both coal producers and consumers whose business is more than 30% dependent on coal. The fund has therefore divested not just from coal mining companies but also from utilities with high dependence on coal-fired generation.[39]

Divesting to manage financial risk

Several non-US pension plans have divested from specific fossil fuel corporations on the basis of an analysis of financial risk to their portfolios. These investors have targeted corporations producing coal for power generation and specific companies with tar sands operations.

Examples: AP2 (Sweden),[40] HESTA (Australia).[41]

Engaging with corporations

Investors are using their rights as shareholders to engage with fossil fuel corporations. They are demanding disclosure on the risks they face from climate change and how their businesses will be resilient to the actions governments might take to limit warming to 2^{0}C. Investors are also calling on fossil fuel companies to refrain from lobbying against government action to tackle climate change. Engagement with other sectors can focus, for example, on energy efficiency and emission reduction targets, in both companies' own operations and their supply chains. It can also address companies' public policy positions on climate change. Small and mid-size investors are partnering with collaborative initiatives such as the Investor Network on Climate Risk (INCR) and the Interfaith Center on Corporate Responsibility (ICCR) to increase their leverage. Investors who wish both to divest and to engage can do so by retaining shares of only those fossil fuel companies with which they are engaged in shareholder advocacy. This is the path taken by the Unitarian Universalist Association.[42]

Example: Successful shareholder proposals at BP, Shell and Statoil in 2015 calling for disclosure on climate risk and business strategy, supported by many US pension plans, endowments and faith-based investors.[43]

Engaging with policymakers

Many investors recognize that action on the scale needed to keep the increase in global temperatures within the 2^{0}C threshold can only be taken by governments. Investors are working through coalitions such as INCR – linked with partners around the world – to amplify their voice. Investors are calling for emissions curbs to limit warming to 2^{0}C, carbon pricing, and ambitious policies and incentives to support clean energy deployment.

Example: In September 2014, nearly 350 global institutional investors representing over $24 trillion in assets, including many from the US, coordinated by INCR, called on government leaders to provide "stable, reliable, and economically meaningful carbon pricing that helps redirect investment commensurate with the scale of the climate change challenge, as well as develop plans to phase out subsidies for fossil fuels."[44]

You can find more detailed information on the available investor actions to respond to climate change in Appendix 5.

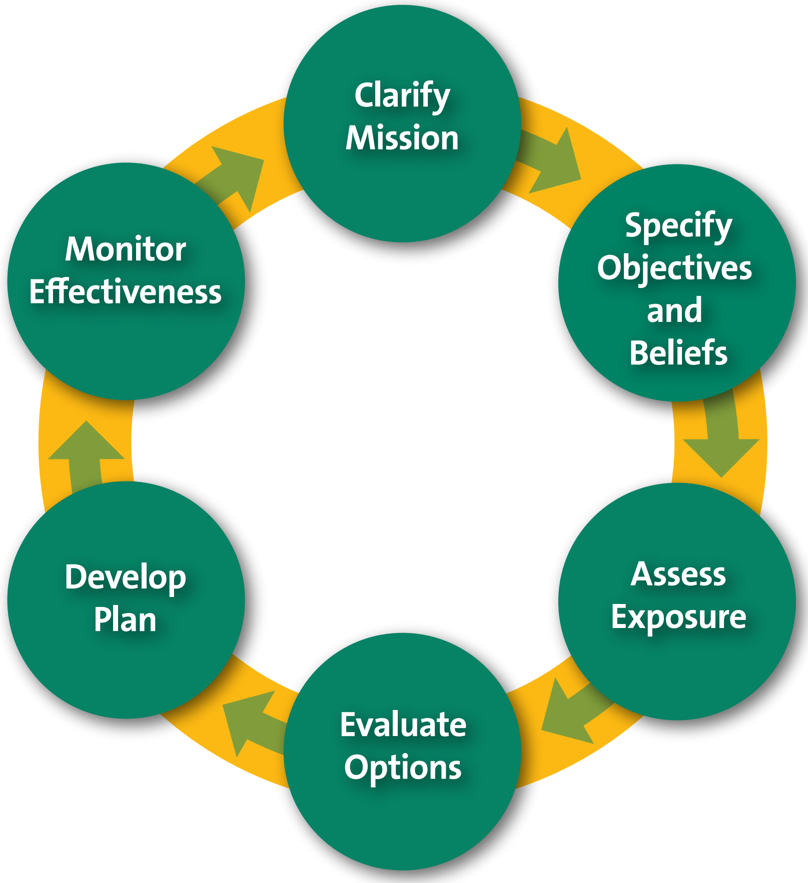
Responding to the challenge – a governance and decision-making process

To decide how to respond to the multiple challenges climate change poses for an institutional investor, the institution's governing body needs to follow a careful process that identifies and assesses the relevant issues. In this section we propose a governance and decision-making framework to support such a process. The goal of this toolkit is not to advocate a particular approach, but to assist investors in charting their own course to achieving their objectives, whatever those may be.

We suggest a six-step process:

1. Be clear about your mission as an organization and an investor.
2. Specify your objectives and your investment beliefs.
3. Understand your climate change exposure.
4. Analyze options and decide on the mix that best meets your objectives.
5. Implement your plan.
6. Monitor and evaluate the outcomes.

Developing your climate change strategy: a six-step process



A good process involves all relevant stakeholders. This allows an investor to generate a robust strategy that commands strong internal and external support from parties including:

- Within your organization: fiduciaries, investment staff, and other senior staff if you have them;
- Professional partners: investment consultants, fund managers, and legal counsel;
- Groups including pension plan beneficiaries, college faculty and students, and foundations' board members and community. Many of these groups may have a strong personal and organizational interest both in ensuring that your fund succeeds financially and that your fund takes a meaningful stand on climate change. The way you take account of their views will of course be determined ultimately by your fiduciary responsibilities.

For example, the following sections describe the steps in the process we suggest. For each step you will find arguments in favor; factors to consider; and questions to ask yourselves, your professional advisors and your service providers. We also highlight sources of further information and guidance – e.g. Intentional Endowments Network.[45]

Taking a broader view: climate, sustainability and ESG

Climate change is closely linked to many other sustainability and environmental, social, and governance (ESG) issues – ranging from water security and food production to human health and the risk management skills of corporate boards. Investors who already have a framework for addressing these other issues are incorporating climate change into their existing processes. For others, climate change may represent a useful entry point into this broader agenda. The process we suggest here can accommodate this wider range of issues. Taking the opportunity presented by climate change to think more broadly may enable your fund to develop a more holistic approach to managing financial risks and addressing emerging stakeholder expectations. To support you in this, Appendix 6 provides a brief summary of recent academic research on links between ESG factors and corporate financial performance. We cite just one study below.

Sustainability pays: evidence from Harvard Business School

"High-sustainability companies significantly outperform their counterparts over the long-term, both in terms of stock market and accounting performance."

The Impact of Corporate Sustainability on Organizational Processes and Performance - Robert G. Eccles, Ioannis Ioannou, George Serafeim, Harvard Business School, 2012

Step 1 Be clear about your mission as an organization and an investor

Each investor should establish a firm foundation for its approach to climate change by being clear about its mission – the primary reason for its existence as an organization and the purpose it seeks to fulfil both as an organization and an investor.

Be clear about your mission: questions to ask

Endowments and foundations

What implications does our sponsor institution's mission or purpose have for the way we think about climate change as an investor?

How might climate change undermine our institution's mission?

How might climate change affect our beneficiaries or target groups?

How might our investments support the execution of our mission beyond purely generating income to support our parent institution or our grantmaking activities?

Pension plans

How might climate change affect our funding levels and our ability to secure the long-term investment returns we need to meet our commitments our beneficiaries?

How might climate change affect our local economy, our plan sponsor and our plan's economic interests? For example, what are the implications of sea-level rise, frequent extreme weather events, or drought?

For Taft-Hartley and private sector pension plans, the Employee Retirement Income Security Act of 1974 (ERISA) requires fiduciaries to act "solely in the interest of the participants and beneficiaries and for the exclusive purpose of providing benefits to participants and their beneficiaries." Other pension plans are governed by state laws. Pension plans that wish to take climate change into consideration will therefore be required take a "finance-first" view. They should create a strong process that develops well-founded assumptions about the financial implications of climate change for their portfolio and bases all decisions firmly on this analysis.

Resources

For endowments and foundations, the briefing Evolving Fiduciary Duty of Foundations and Endowments by the law firm Reinhart Boerner Van Deuren points out that "unlike fiduciaries of for-profit companies or pension trusts, fiduciaries of foundations and endowments owe legal duties of obedience to both the organization's charitable mission and the social benefit purposes required of non-profits. Accordingly, fiduciaries of foundations and endowments must approach investment decisions with these duties in mind."[46]

For pension plans, the Employee Retirement Income Security Act, 29 U.S. Code Chapter 18, Section 1104 sets out the requirements of fiduciary duty.[47]

Fiduciary duty for all the types of investor covered in this Toolkit is discussed further in Appendix 3.

Step 2 Specify your objectives and your investment beliefs

Having established the mission for your investments, you can specify your objectives in relation to your investments and climate change. Spelling out your beliefs as an investor will also help guide your decision-making.

Specify your objectives: questions to ask

- To what extent, if at all, do we want to contribute to protecting the climate?
- How strongly, if at all, do we believe that climate change represents a financial risk and/or opportunity for our investments?
- How will the effects of climate change affect our institution and/or our beneficiaries?
- Do we believe that:
    - certain fossil fuel assets could become stranded as a result of government action to curb greenhouse gas emissions and other factors?
    - the value of non-fossil fuel investments with high greenhouse gas emissions could be at risk as a result of climate change regulation (e.g. carbon pricing or incentives for renewable energy)?
    - the physical impacts of climate change – extreme weather events, sea-level rise, high temperatures, drought – might affect the value of our investments?
    - climate change might negatively affect the economy as a whole?
    - climate change might negatively affect our local economy in ways that undermine our objectives?
    - providing solutions to climate change offers attractive investment opportunities (which might hedge downside risk in other parts of our portfolio)?

Questions to ask your investment consultant and your investment managers

- How do you analyze the implications of climate change for our portfolio, and for investors more generally?
- What have you found, and what is your advice to us on the basis of this analysis?
- If you have not conducted any analysis, are you willing to do so? What capacity do you have to undertake such analysis?

Investment beliefs

It is increasingly common for pension plans to outline their investment beliefs in a formal statement. Investment beliefs are short statements that summarise the fund's high-level approach to investment – e.g. on active vs. passive management, the importance of investment management costs for total returns, etc. According to the Initiative for Responsible Investment, they "articulate the fundamental perceptions of trustees and their institutions on the nature of financial markets and the role they play within these markets. An Investment Beliefs Statement serves as a bridge between high-level goals and practical decision-making, and helps trustees, fiduciaries, and other responsible parties clarify their views on the nature of financial markets through which they must operate and how these markets function."[48]

Some funds now refer to climate change or broader ESG issues in their investment beliefs. For example, Washington State Investment Board states that it "has a long investment horizon and therefore is subject to complex and systemic global risks that unfold over time, including financial risks resulting from global climate change."[49] CalPERS' Investment Beliefs spell out that "risk to CalPERS is multi-faceted and not fully captured through measures such as volatility or tracking error. As a long-term investor, CalPERS must consider risk factors (climate change and natural resource availability, for example) that emerge slowly over long time periods, but could have a material impact on company or portfolio returns."[50]

Resources

The Economic Risks of Climate Change in the United States, Risky Business Project[51]

The Cost of Inaction: Recognising the Value at Risk from Climate Change, Economist Intelligence Unit[52]

Unburnable Carbon – Are the World's Financial Markets Carrying a Carbon Bubble? , Carbon Tracker Initiative[53]

Climate Change Scenarios – Implications for Strategic Asset Allocation, Mercer[54]

The Case for Forceful Stewardship (Part 1): The Financial Risk from Global Warming, Howard Covington and Raj Thamotheram

Investing in a Time of Climate Change, Mercer[55]

The Impact of Climate Change on the Global Economy, Schroders[56]

Environmental Risks and Portfolio Value, Investment Leaders Group, University of Cambridge[57]

Climate Change: Implications for Investors and Financial Institutions, Institutional Investors Group on Climate Change, University of Cambridge, UN Environment Programme[58]

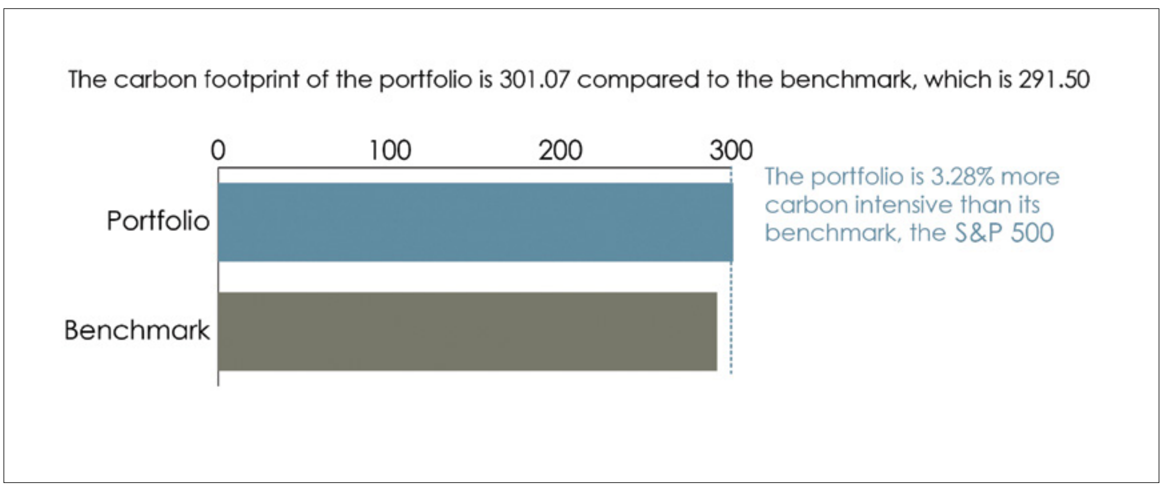
Step 3 Understand your climate change exposure

Before deciding what action to take to achieve the objectives you have identified, it will be useful to assess how your current portfolio is exposed to climate change. Portfolio analysis tools are now available to enable investors to understand various climate change-related risks, including emissions intensity, carbon embedded in fossil fuel reserves, and water use. This analysis can cover various asset classes, including public equity, corporate credit, and private equity. Carbon audits show the carbon footprint of your portfolio compared with the benchmark (e.g. in tonnes of CO_2 per $1 million invested); the carbon intensity of different sectors in your portfolio compared with the benchmark; or the carbon performance of different investment managers you use. You can use this information to understand carbon risk and set targets to reduce it – e.g. by reducing carbon intensity.

Alternatively, you can ask your consultants to identify risks related to climate change in a more qualitative way.

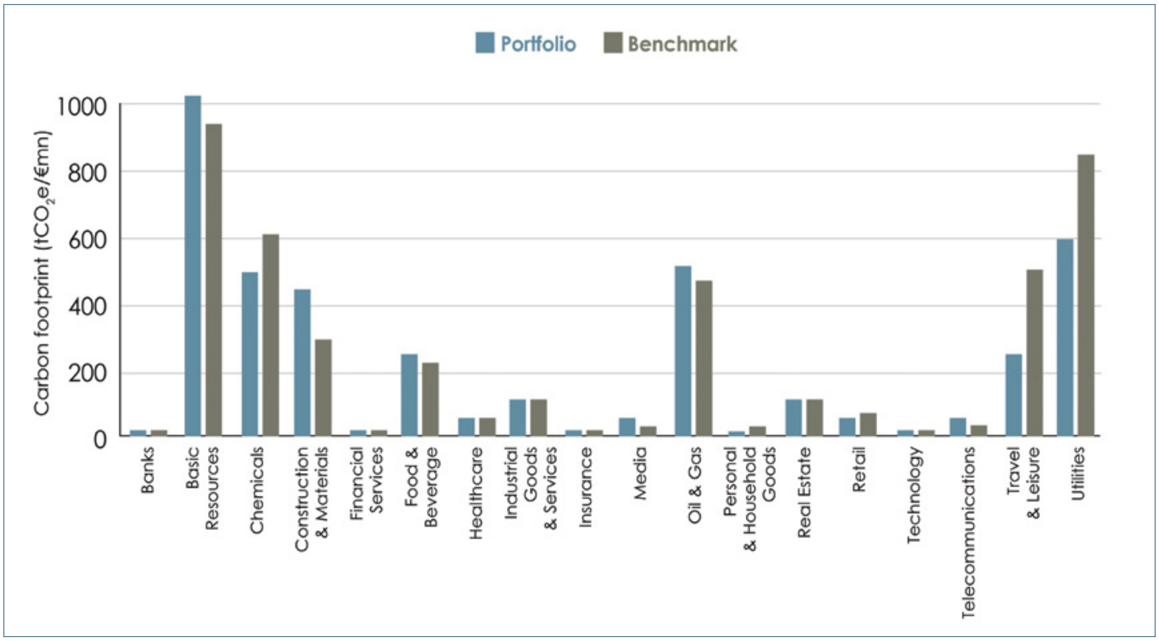
The figures below illustrate what a portfolio carbon analysis (carbon footprint) looks like.

How carbon intensive is my portfolio compared with the benchmark?



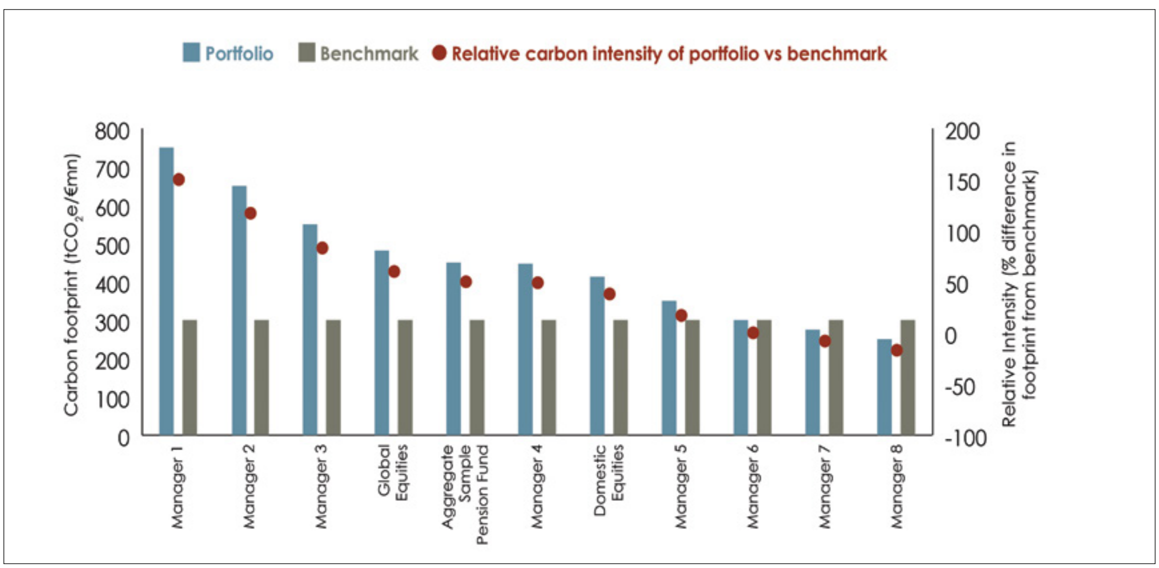
Source: Trucost

How carbon intensive are different sectors within my portfolio compared with the benchmark?



Source: Trucost

How carbon intensive are my investment managers compared with each other and with the benchmark?



Source: Trucost

Understand your climate change exposure: questions to ask

Carbon risk

- What are the areas of high and low carbon risk in our portfolio?
- Are some of our fossil fuel investments more exposed to the risk of stranded assets than others?
- How does our carbon risk compare with the benchmark? If it is higher, do we understand why? What action should we take, if any?
- What are the financial implications of our current exposure?
- Are some of our managers more exposed to carbon risk than others? If so, do we understand why? What action should we take, if any?

Physical risks

- Are there scenarios in which might be at risk from climate-related events?
- What are the implications of extreme weather events, drought, or flooding for my investments in real estate portfolio, agricultural land, or corporations dependent on natural resources such as water, land, or forests?

These are questions you can ask your fund managers and your consultant. They may already have access to portfolio analysis tools and carbon footprint information. If not, they can conduct or obtain this analysis for you. You may also choose to deal directly with a portfolio analysis provider; this will of course involve some cost. We are not able to give an indication of these costs here, as they will depend on your individual circumstances.

Resources

A number of pension funds now publish their carbon footprint – a measure of the carbon emissions from their portfolio. Examples include the Australian fund in the state of Victoria *VicSuper*,[59] and the French public employees' pension plan *ERAFP*.[60] Investors including CalPERS and the University of California have also signed the *Montreal Pledge* to measure and disclose the carbon footprint of their equity investments.[61]

The Global Real Estate Sustainability Benchmark, supported by institutional investors with $5 trillion in assets, provides information on the "sustainability quality" of real estate portfolios.[62] You can ask your existing real estate managers whether they participate in this initiative, and to provide information on the rating of your portfolio.

Step 4 Analyze options and decide on the mix that best meets your objectives

In this section we detail each of the methods for responding to climate change we have highlighted:

- integrate climate change and sustainability into all investments
- reduce carbon intensity
- invest in climate solutions
- divest from some or all fossil fuel producers and major consumers
- engage with corporations
- engage with policymakers.

We set out arguments in favor of each tactic, factors to consider and questions to ask yourself, your investment managers, your consultant, and your legal counsel. This will enable you to assess how well the various actions meet the objectives you have set.

Two broad objectives

For simplicity, we characterize the two broad objectives an investor might have as "protect the climate" and "protect my portfolio" (i.e. in financial terms). In practice, for many investors this will not be an "either/or" question. Pension plans with a focus on financial returns may want to see government action on climate change in order to protect the long-term interests of their portfolio. Foundations or endowments that want to align their investments with their mission or that of their institution will also wish to preserve financial returns. But we hope that structuring the process in this way will help you to think through the issues in a way that makes sense for your institution.

Practical implementation – challenges and risks

Implementing each of the possible actions has practical implications, challenges, and risks. We highlight these in the sections that follow. The box below homes in on some of the most important points to bear in mind as you plan your strategy.

Implementation challenges – questions to ask

- What are the expected financial returns of new investment options you are considering? Might you sacrifice performance?
- What are the costs of transitioning to new managers? Divesting individual stocks from commingled funds may be very difficult. Selling out of a commingled fund and switching to a low-carbon or fossil-fuel free fund or a separate account with the same manager may incur costs.
- What if managers do not cooperate with your requests – e.g. on engagement? Can you work with other investors to increase your leverage?
- How can you ensure that your asset allocation remains right for you – e.g. if you want to invest in climate solutions in private markets?
- Might there be a lack of investment opportunities of the kind you want? Can you proceed in stages as the market develops?
- What are the direct costs of this process – e.g. for carbon footprint analysis?
- Do you have the staff resources to implement the new strategy? If not, how can you find the necessary resources?

Conducting the process

A representative of your fund should work closely with your consultant, investment managers (unless your consultant does this for you), and legal counsel to conduct the process set out here. This of course requires time.

You will need a basic knowledge of climate change, of what action is possible, and of how to frame and conduct discussions with your various advisors. We provide an introduction to this knowledge in this Toolkit. As you work through the process we suggest here, you will learn by doing.

One option might be to establish a small group of fiduciaries (and staff if you have them) to conduct this process and share the load. Collaboration with other investors can also speed up the learning process and enable you to hear first hand how peers have tackled the challenges you face. Depending on what kind of institution you are, it might make sense for you to join the Investor Network on Climate Risk or the Interfaith Center on Corporate Responsibility. Perhaps there is a foundation or endowment collaborative (e.g. the Intentional Endowments Network), or a state pension fund association that could provide assistance.

The matrixon the following page provides a guide to this process. You can think of this as a “worksheet” to use as you develop your climate change strategy.

At the end of this section we provide a table that illustrates various combinations of tactics you might choose to adopt.

Worksheet: **analyzing the available tactics**

	Integrate Climate into all investments	Reduce Carbon Intensity	Invest in Solutions	Divest	Engage with corporations	Engage with policymakers
PROTECT THE CLIMATE	• Arguments in favor • Factors to consider					
PROTECT MY PORTFOLIO						
Consider implementation challenges: investment performance, investment management fees, cost of transition, relationships with managers, staff and resource implications, etc.						

INTEGRATE CLIMATE AND SUSTAINABILITY INTO ALL INVESTMENTS

PROTECT THE CLIMATE

Arguments in favor

- Addressing climate change and sustainability systematically across all asset classes may have greater impact than pursuing an individual highly focused tactic (e.g. divestment). This may send signals to corporations, via investment managers, that investors expect them to reduce emissions and ensure that their business models are resilient in the face of climate change.

Factors to consider

- You may conclude that this tactic does not send a sufficiently clear public signal of your intent to combat climate change, or respond adequately to the expectations of important stakeholders.

PROTECT MY PORTFOLIO

Arguments in favor

- This approach may mitigate financial risk and capitalize on opportunity across your whole portfolio, without restricting your investment universe on the basis of "non-financial" factors.

Factors to consider

- This tactic may not address financial risks associated with climate change adequately unless it is combined with others – e.g. reductions in carbon intensity through low-carbon investments.

Questions to ask your investment managers (or to ask your consultant to ask your managers)

- How does your research process address climate change, in both the short-term and the long-term (please provide specific stock examples)?
- If you are not looking at long-term factors (e.g. beyond 3 years), why not?
- What expertise does your team have in climate change issues (e.g. specialist training)?
- Can you provide carbon audits of our portfolio?
- Can we set targets to reduce emissions?
- Are you willing to cover climate change in your regular reporting to us?

- What is your proxy voting record (where the manager votes on your behalf) on climate-related shareholder proposals and other climate issues (e.g. linking executive compensation to emission reduction)?
- How are individual portfolio managers incentivized to take climate and sustainability factors into account?

... for real estate managers

- How do you address climate change and sustainability in your due diligence before investment and in your ongoing management of the portfolio?
- What is the location-based climate risk of your current properties?
- What is your view of how climate change will impact the real estate industry and how does this impact your investment decisions?
- What proportion of our real estate portfolio is in green buildings? Can this be increased?

... for private equity managers

- How do you address climate change and sustainability in your due diligence before investment and in your ongoing management of the portfolio?
- What proportion of our private equity portfolio is in climate solutions or low carbon investments? Can this be increased?

... for fixed income managers

- What proportion of our fixed income portfolio is in green bonds? Can this be increased?
- What criteria do you use to evaluate green bonds?

Questions to ask yourself

- Are we giving our managers sufficient incentives to look at climate change – e.g. by focusing on long-term investment performance, not just short-term returns?

Reduce Carbon Intensity

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Arguments in favor

Fossil-fuel free funds

- Choosing these funds demonstrates the investor's commitment to divestment and desire for strong governmental action to tackle climate change.

Low-carbon passive investments

- A portfolio explicitly designed to address climate risk from a financial perspective in all sectors will likely favor corporations in all industries that have lower emissions than their competitors. For example, some passive funds and exchange-traded funds (ETFs) constructed in this way may screen out certain fossil fuel companies, e.g. those with higher carbon intensity in their reserves than others (e.g. oil sands), in addition to high emitters in other sectors. The total reduction in carbon intensity (e.g. CO2 emissions or CO2 embedded in fossil fuel reserves per dollar invested) will likely be greater for a portfolio of this kind than for a portfolio that screens out fossil fuel corporations but does not address carbon in other sectors.

Low-carbon active investments[63]

- These funds are designed to offer high emission reductions and offer the opportunity for managers to focus on areas where they believe that carbon intensity matters most in financial terms.

Factors to consider

- All of these investments still involve greenhouse gas emissions. You can work with your consultant or a portfolio analysis provider to assess which option best matches your objectives.

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Arguments in favor

- New indices designed to offer greater reductions in carbon intensity than "fossil fuel divestment only" portfolios also deliver greater reductions in "carbon financial risk", alongside performance close to that of conventional benchmarks. Once carbon regulation is introduced, they should outperform the benchmark.
- Low-carbon and sustainability-focused active funds address carbon and other sustainability risks in the portfolio.

Factors to consider

- An actively managed low-carbon or sustainability fund may have higher short-term volatility than other strategies.
- Fees for actively managed funds will be higher than passively managed indexes. High fees can reduce net investment returns substantially.

Questions to ask your investment consultant

- Can you recommend passive or active low-carbon or sustainability-focused funds that are suitable for us? What are the advantages and disadvantages of each approach?
- How do these funds meet our mission objectives (where applicable) as well as our financial objectives?

Invest in solutions

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Arguments in favor

- Investments in clean energy and other sustainability solutions help reduce greenhouse gas emissions. The International Energy Agency estimates that an extra $36 trillion of investment in clean energy is needed by 2050 in order for the world to have an 80% chance of keeping the global temperature rise below 2°C.[64]
- These investments are a clear public demonstration of commitment to protect the climate.

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Arguments in favor

- Investments in renewable energy, energy efficiency, clean technology, etc., can offer diversification that hedges against climate risk – see the study by Mercer on strategic asset allocation referred to in Section 3 and Appendix 2.[65] They may also offer an additional contribution to returns.
- Investments of this kind are available in many asset classes and from numerous specialist asset managers.
- Green bonds offer opportunities to invest in climate solutions with identical risk/return characteristics to conventional fixed income instruments.

Factors to consider

- Public equity or private equity funds dedicated entirely to climate solutions are by definition narrowly focused and may therefore be high risk – both in relative terms against a benchmark (i.e. stock prices vary more than those of companies in the market as a whole) and in absolute terms (e.g. renewable energy companies may perform poorly because of changes in government subsidies or other policies). You should therefore work closely with your investment consultant to develop an appropriate strategy for your institution.
- Investment strategies that are more broadly focused on a range of sustainability and social issues, not just climate change, may offer lower risk while still allowing you to channel capital to climate change solutions.
- You should consider risk within an individual asset class – e.g. the implications of climate solutions investments for risk/return within your public equity allocation – and for the portfolio as a whole. This is a complex exercise that requires specialist advice.

Question to ask your investment consultant

- How can we best capture potential investment opportunities linked to the need for climate solutions, without adding additional unacceptable risk to our overall portfolio?

Divest

PROTECT THE CLIMATE

Arguments in favor

- Creates political space for government action on climate change.
- Highlights the contradictions between the fossil fuel industry's core business model and the need to rapidly curb carbon emissions.
- Contributes to public awareness about climate change and energy issues.
- Makes a statement about your institution's belief: that climate change is a critical environmental, social, and economic issue.

Factors to consider

- Divestment from fossil fuel producers does not address high emissions in fossil fuel-using sectors still in the portfolio.
- Once you divest, you will lose the ability to influence fossil fuel firms through shareholder engagement - unless you take an approach like Unitarian Universalist Association. Do you think divestment or shareholder engagement is a more effective way to take action on climate change?
- What are the effects of divestment on fossil fuel corporations? Divestment is unlikely to affect a firm's stock price on its own. If the stock price were to fall, the corporation could be taken over or privatized; would the new owners care about climate change?

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Arguments in favor

- Full divestment from fossil fuel producers reduces the risk of "stranded assets" – the risk that the profits of fossil fuel firms will plummet upon (1) science-based, rigorously enforced government regulation of greenhouse has emissions and/or (2) the rising costs of maintaining extraction operations under the physical conditions of climate change. Investors with total AM of $2 trillion have divested, partly in response to shifting investor expectations about the fossil fuel industry's future.
- Partial divestment – e.g. of thermal coal or tar sands corporations only – may remove some of the assets with the highest carbon risk from your portfolio.

Factors to consider

- Oil and gas stocks outperformed other major sectors between July 2009 and June 2014, and during some other time periods; coal, on the other hand, underperformed substantially – see *Fossil Fuel Divestment: a $5 trillion challenge*, by the specialist research firm Bloomberg New Energy Finance'e.[66] On the other hand, oil and gas substantially underperformed the S&P 500 between September 2014 and July 2015.
- Oil and gas companies are important sources of yield (dividends) in many investors' portfolios, and even with future government action and global accords to curb climate change, may continue to be for some time. Investors contemplating divestment should consider carefully how the capital divested from fossil fuels can be re-allocated to other sectors in such a way that they can still achieve their income objectives.[67]
- Divestment from fossil fuel corporations does not address climate risk in other sectors in the portfolio and leaves that part of the portfolio at risk (e.g. high emissions from sectors such as cement; risk of flooding, storm damage, etc., across multiple sectors)
- If you already apply negative screens (e.g. arms, tobacco), the implications of adding a fossil fuel screen for investment performance should be considered carefully.
- As with other investments, some actively managed fossil fuel free portfolios may outperform conventional benchmarks, others may underperform. Also as with all investments, fund management costs should be considered carefully. You should ensure you understand a potential money manager's investment process thoroughly (i.e. how they make investment decisions and how their returns are generated). Moving from existing investments to fossil fuel-free funds will also involve transaction costs and fees (e.g. for buying and selling stocks).

Questions to ask your investment consultant

- How might different divestment options affect our expected returns, risk, income, and investment management costs?
- Can we find money managers who offer fossil fuel-free funds that also address climate risk in other sectors?

Engage with corporations

PROTECT THE CLIMATE

Arguments in favor

- Engagement with fossil fuel firms, and firms that consume a lot of fossil fuels, can encourage them to develop and disclose plans for adapting to the policies that governments will need to introduce in order to achieve the 2°C target, and to transition to low-carbon business models.
- Engagement can expose and challenge political lobbying by these corporations that is impeding government action on climate change.
- Engagement with corporations in other sectors can encourage energy efficiency, emission reductions, the use of renewable energy, and business strategies that may help deal with climate change.

Factors to consider

- Shareholder advocates have demonstrated success at reducing the carbon intensity of numerous industries that are dependent on fossil fuels. Shareholder engagement with fossil fuel companies has improved disclosure in areas such as political spending and emissions data, but has yet to shift core business processes in these industries. According to U.S. shareholder advocate Green Century Fund, some shareholder advocates have been stonewalled, with fossil fuel firms "mounting legal challenges to shareholder requests, and sometimes even refusing phone meetings."
- The time line for meaningful action on climate change is very compressed. Usually, corporate changes via shareholder advocacy can require a good deal of time, and can sometimes cost additional money; do you have the capacity and resources to undertake a shareholder engagement strategy? Do your current financial managers offer shareholder engagement services?

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Arguments in favour

- Engagement with fossil fuel corporations can encourage them to secure sustainable long-term shareholder returns by developing business models that will be resilient in a low-carbon economy. This may include returning capital to shareholders (via dividends and stock repurchases) instead of investing in developing reserves that might become stranded.
- Engagement with corporations in other sectors can encourage cost reductions through energy efficiency; management of risks linked to extreme weather events (e.g. damage to infrastructure, with the associated costs for corporations and their investors); and business strategies that secure sustainable long-term shareholder returns in a low-carbon economy.

- Engagement can challenge the political lobbying that is impeding government action on climate and undermining long-term shareholder interests.
- If your fund manager conducts engagement, the intelligence gained from corporations can be incorporated into investment decisions (e.g. overweighting companies with more resilient business models).
- Academic research has shown that corporations that responded positively to shareowner engagement on climate change outperformed the market in the period following the engagement.[68]

Questions to ask for all engagement with corporations

- Do we believe that engagement with corporations is effective in changing corporate behavior?
- Will engagement persuade fossil fuel companies to change their core business?
- If so, do we have sufficient resources (principally staff or fiduciary time) to take part in engagement – either through our fund managers, individually or collaboratively with other investors?

Question to ask your investment managers

- Can you provide examples of how you have engaged with corporations on climate change, e.g. to encourage reduced emissions, better energy efficiency, adaptation of business models, end lobbying against government action on climate change?

Engage with policymakers

PROTECT THE CLIMATE

Arguments in favor

- Only concerted action by governments will enable climate change to be kept within levels that scientists consider "safe" – limiting warming to 2^{0}C. Investors can play a significant part in encouraging and enabling governments to take this action by demonstrating that they support it.
- It is especially valuable to have voices from the private sector calling for government action on climate change; it helps counter other anti-climate action voices from the private sector that frequently dominate the conversation.

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Argument in favor

- Climate change represents significant financial risks for investors. Its economic and financial impacts could make it more difficult for investors to achieve their objectives. The policy actions needed to achieve the 2^{0}C target will mitigate investors' risk and create investment opportunities. Regulatory uncertainty and delay is a significant risk. Investors' voices can be a huge counterweight to corporations who seek delay.

Factors to consider

- Are your financial managers and financial consultants engaging in political activities that are consistent with your position on climate action? If not, can you leverage your relationship to encourage them to alter their activities?

Question to ask for all engagement with policymakers

- Do we believe that the voice of investors can play an important part in encouraging and enabling governments to take the action needed to address climate change?
- If so, do we have sufficient resources (principally staff or fiduciary time) to take part in engagement – either through our fund managers, individually or collaboratively with other investors?

QUESTIONS TO ASK YOUR INVESTMENT MANAGERS

- Do you agree that it is important that governments act on climate change, in investors' long-term interests?
- Were you a signatory to the Global Investor Statement on Climate Change, calling on government leaders "to provide stable, reliable and economically meaningful carbon pricing that helps redirect investment commensurate with the scale of the climate change challenge, as well as develop plans to phase out subsidies for fossil fuels"?[69]

What might your strategy look like?

Each investor's strategy needs to fit their own objectives and circumstances. Below we present sample strategies that might be developed by three investors:

- Investor 1's primary motivation is to protect the climate – while at the same time being concerned with financial returns.
- Investor 2 is focused exclusively on safeguarding financial returns. This investor believes the financial risks associated with climate change are real, but small.
- Investor 3 is also focused exclusively on safeguarding financial returns. However, this investor believes the financial risks associated with climate change are substantial, including risks to the economy as a whole that will prejudice long-term portfolio returns.

Investor 1 – primary motivation: protect the climate

Integrate climate into all investments	Reduce carbon intensity	Invest in solutions	Divest	Engage with corporations	Engage with policymakers
Ensure managers integrate climate risk into all investments. Pressure managers to lower carbon footprint, and to explain how all investments contribute to climate change and will be affected by it.	Invest in fossil-free and low-carbon funds.	Invest in solutions. % of portfolio depends on your risk appetite.	Divest from all or some fossil fuel producers. Consider divesting from large FF consumers.	Engage on e.g. energy efficiency, emission reduction targets, political lobbying.	Engage to support strong national and international climate policy.

Investor 2 – primary motivation: protect my portfolio – risk from climate change is real but small

Integrate climate into all investments	Reduce carbon intensity	Invest in solutions	Divest	Engage with corporations	Engage with policymakers
Ensure managers integrate climate risk into all investments. Pressure managers to lower carbon footprint where feasible, and to explain and manage climate risk exposure of all investments.	Small investment in low-carbon passive fund/ETF or active fund.	Small investment in solutions.	No divestment.	Engage on e.g. energy efficiency, emission reduction targets, political lobbying.	Engage to support strong national and international climate policy.

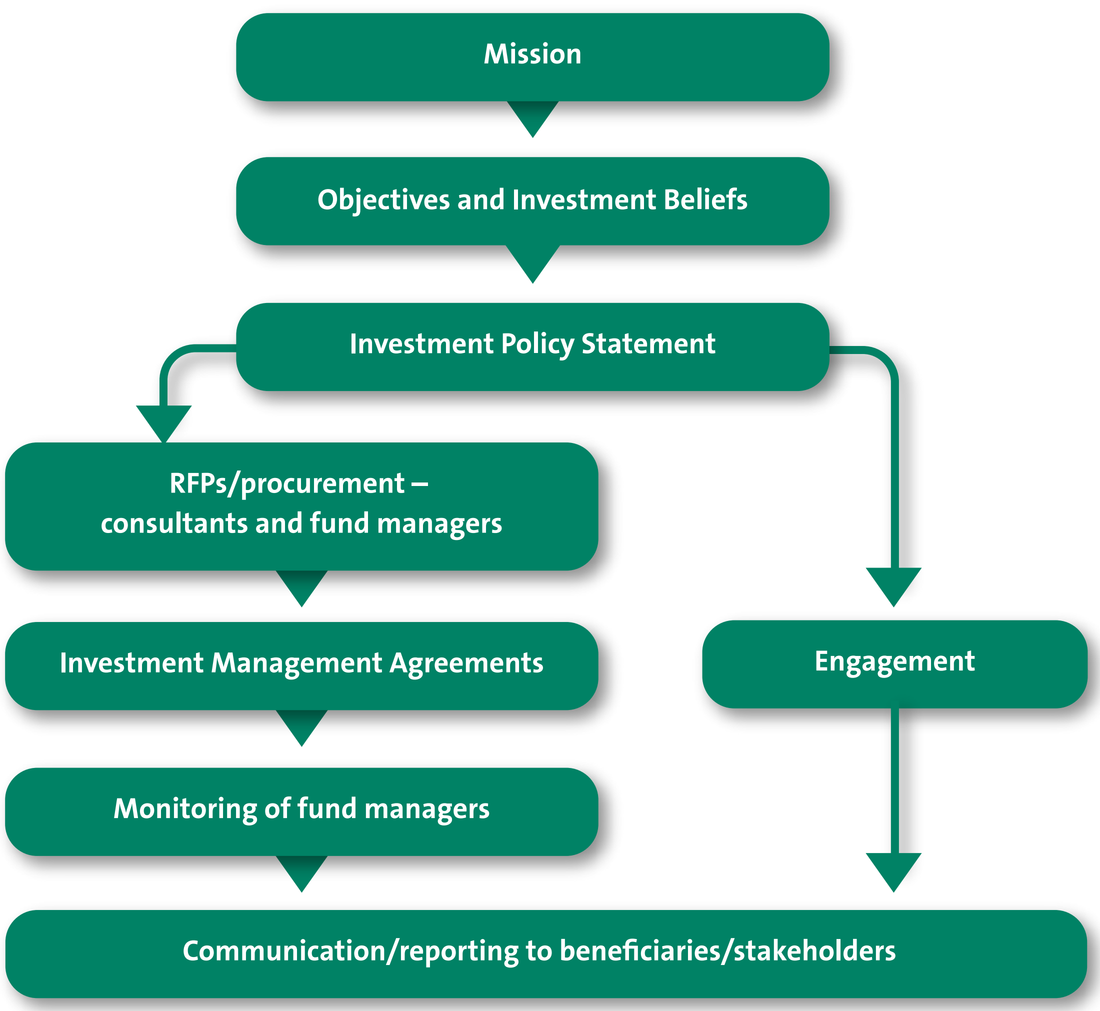
Investor 3 - primary motivation: protect my portfolio – risk from climate change is substantial

Integrate climate into all investments	Reduce carbon intensity	Invest in solutions	Divest	Engage with corporations	Engage with policymakers
Ensure managers integrate climate risk into all investments. Pressure managers to lower carbon footprint where feasible, and to explain and manage climate risk exposure of all investments.	Larger investment in low-carbon passive fund/ETF or active fund.	Larger investment in solutions.	After risk-based analysis, divest from the most carbon-intensive and highest-risk FF corporations – e.g. thermal coal and tar sands.	Stronger engagement on e.g. energy efficiency, emission reduction targets, political lobbying. E.g. file own shareholder proposals, lead investor collaboration, meet corporations.	Stronger engagement to support strong national and international climate policy. E.g. attend meetings with policymakers as part of investor collaborations.

Step 5 Implement your plan

Implementing your chosen approach is a matter of governance. It is important to ensure there is an alignment of objectives and expectations among all relevant parties. Your views on climate change and your expectations of your service providers should therefore be incorporated into your fund's policy statements and your service provider appointment and monitoring procedures. External reporting on your climate change activities will respond to the rapidly growing interest that pension beneficiaries, students, and other stakeholders have in this issue.

Implementing your climate change strategy



Investment beliefs

As discussed in Step 2 of the process suggested above, your investment beliefs might state at a high level how you approach climate change – e.g. how strongly you believe the different dimensions of climate change might affect long-term investment returns, or what your view is on stranded assets.

Investment Policy Statement

Your Investment Policy Statement (IPS) should set out in more detail how you have decided to address climate change. This might include:

- Divestment policy or broader policy on fossil fuels, including whether to consider other ESG factors.
- Expectations of service providers, for example that:
  - consultants will include money managers' capability and performance on climate change in their overall manager assessment and monitoring
  - money managers will integrate climate change risks and opportunities into their research and investment decision-making
  - managers will conduct engagement on climate change
  - managers will reflect climate factors in their proxy voting
  - fund managers will report to you regularly on climate change issues in the portfolio.

Procurement procedures for service providers

If you have not included them in your IPS, you should document your climate change expectations of your service providers separately and include these in your procurement processes. For example, if you use a formal request for proposals process, you can specify requirements such as those above. In addition, you could ask managers to provide information in their proposals along the lines set out in the Questions to ask your investment managers in the "Integrate climate and sustainability into all investments" box earlier in this section.

If manager search and selection is conducted by your consultant on your behalf, you can ask your consultant to cover these areas as part of the process.

Investment Management Agreements

Where feasible – e.g. where you have a separately managed account with a manager – you can incorporate your climate change expectations into the formal agreement with new managers (it is often difficult to change existing agreements except upon renewal). If managers are not willing to accept climate change language in legal documentation, you should communicate your expectations clearly via less formal channels – e.g. at manager selection meetings and regular meetings with managers (or your consultant).

Regular monitoring of managers

Climate change should be on the agenda of your regular monitoring of your managers, or the monitoring carried out by your consultants and reported to you. For example, you can ask managers to:

- Provide an annual carbon footprint of your portfolio and explain areas of high carbon intensity in relation to financial risk and their views on the companies concerned
- Explain whether it would be possible to reduce the fund's carbon footprint
- Explain in detail how climate change has affected their investment decisions for individual stocks
- Report on their dialog with corporations on climate change
- Report and explain their proxy voting record.

Communication

External communication about your climate change strategy and activities will help strengthen the alignment between stakeholders, fiduciaries, and executive staff (if you have them).

You can consider reporting:

- Your overall climate change strategy and investment policies
- Your carbon footprint
- Engagement successes
- Information about investments in climate solutions
- Any divestment decisions or progress towards divestment targets.

Step 6 Monitor and evaluate the outcomes

In addition to your regular monitoring of your managers on their financial performance and issues such as engagement – through your consultant, if this how you work – it is good practice to review your overall climate change strategy. This could be done annually or once every two years: the frequency may depend on your resources.

Issues you can revisit in this process include:

- Your view on the financial risk posed by climate change – has it grown more/less significant?
- For endowments and foundations in particular, any changes in your key stakeholders' expectations
- The financial performance of any new investments you have made
- Whether you have sufficient governance resources (people and time) to implement your strategy.

Conclusion

We are confident that climate change is one of the most pressing challenges humanity faces. Unless ambitious and comprehensive action is taken urgently, it has the potential to wreak far-reaching damage on our society, our economy, and our environment. As a result, climate change brings real and present financial risks for investors. In writing this Toolkit, we are only too aware of the host of other challenges fiduciaries face, and the important responsibilities they bear: to provide retirement incomes for working people, to sustain educational institutions and to support grantmaking to address a wide range of needs. Yet we know that many fiduciaries recognize the urgency of climate change and are searching for ways to deal with it effectively in the context of their own particular circumstances. Our hope is that this Toolkit will support them in this endeavor.

Appendix 1: Climate change science: a closer look

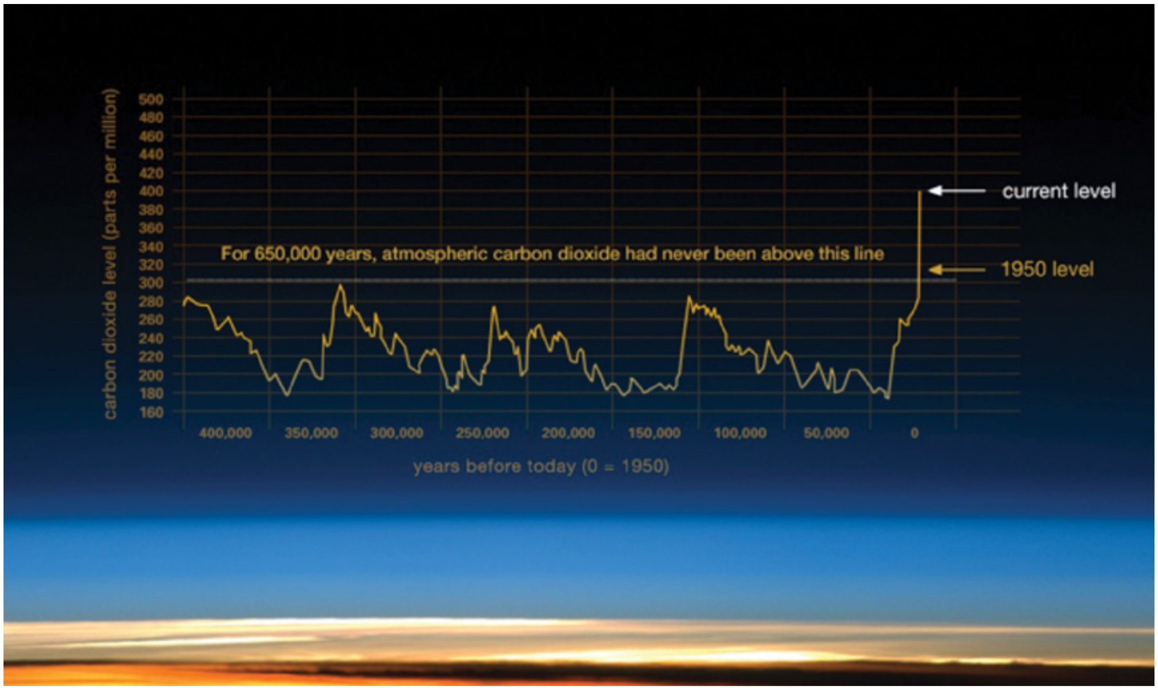
The Earth's climate has changed many times during the planet's history. However, since the Industrial Revolution, the planet has warmed at an unprecedented rate. According to NASA,

> "As the Earth moved out of ice ages over the past million years, the global temperature rose a total of 4 to 7 degrees Celsius over about 5,000 years. In the past century alone, the temperature has climbed 0.7 degrees Celsius, roughly ten times faster than the average rate of ice-age-recovery warming. Models predict that Earth will warm between 2 and 6 degrees Celsius in the next century. When global warming has happened at various times in the past two million years, it has taken the planet about 5,000 years to warm 5 degrees. The predicted rate of warming for the next century is at least 20 times faster. This rate of change is extremely unusual. [...]Models predict that Earth will warm between 2 and 6 degrees Celsius in the next century. When global warming has happened at various times in the past two million years, it has taken the planet about 5,000 years to warm 5 degrees. The predicted rate of warming for the next century is at least 20 times faster. This rate of change is extremely unusual."[70]

The effects of this rapid global temperature rise include sea level rise, warming oceans, shrinking ice sheets, extreme weather events, and ocean acidification.

In peer-reviewed scientific literature, there is a consensus that the current climate change is due to human activities, including greenhouse gas emissions caused by burning fossil fuels.[71] A review of scientific papers found that 97% of those who took a position on climate change "endorsed the consensus opinion that humans are causing global warming"—fewer than 3% disagreed.[72]

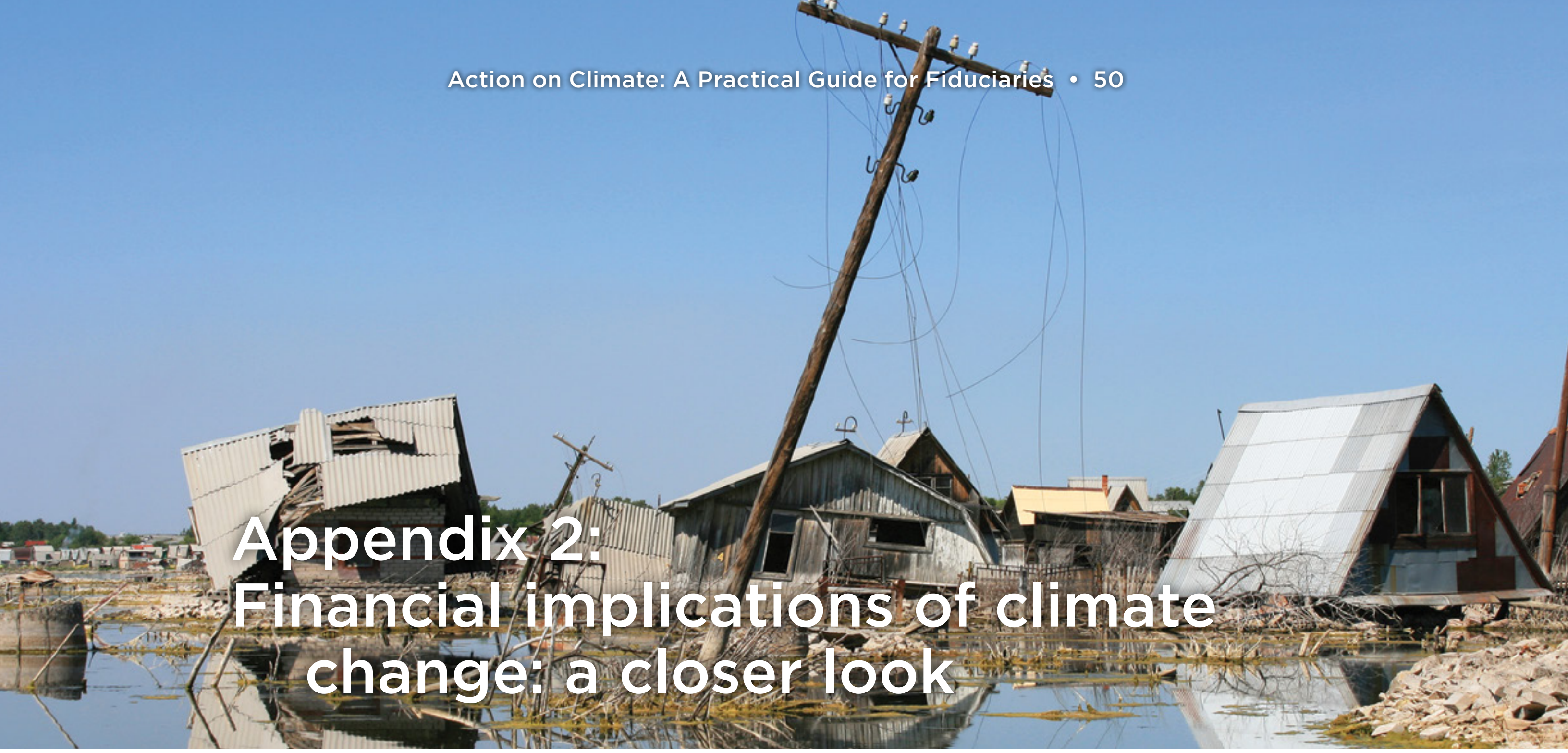
The NASA chart below shows that CO2 concentrations in the atmosphere have risen to unprecedented levels.[73]



The United Nations convenes an intergovernmental scientific body called the Intergovernmental Panel on Climate Change (IPCC), which periodically conducts a complete scientific and technical assessment of climate change. In its Fifth Assessment Report, published in 2014, the IPCC concluded,

> "Continued emission of greenhouse gases will cause further warming and long-lasting changes in all components of the climate system, increasing the likelihood of severe, pervasive and irreversible impacts for people and ecosystems. Limiting climate change would require substantial and sustained reduction in greenhouse gas emissions."[74]

According to the IPCC, although we cannot reverse climate change, we can slow further change by reducing greenhouse gas emissions and we can adapt our energy, transportation, food production and other systems to dampen the effects of climate change.



Appendix 2: Financial implications of climate change: a closer look

Climate change is a systemic risk. It will affect multiple sectors and all countries. Its physical impacts, and the way governments and societies respond to them, will interact in complex ways with other trends such as technology development, aging populations, and the rise of emerging markets. Investors therefore need to consider the implications of climate change both top-down, examining their portfolio as a whole, and bottom-up, examining the individual components of it.

Macroeconomic impacts

The macroeconomic impacts of climate change are becoming increasingly clear (though much uncertainty remains).

The money management firm Schroders believes that

> "the long-run effects of climate change will most certainly be negative for global economic activity. Damage to the global capital stock and disruptions to labour supply will reduce productivity and economic activity. Inflation will increase as production is curtailed, particularly in agriculture, further weakening real incomes and spending. Whilst there will be winners and losers from warming of several degrees, all countries will, at some point, lose out to climate change. [...] Valuing the future loss in economic output attributable to climate change produces a range of estimates which vary according to views about whether a tipping point is reached between 2 - 4°C of warming. In a worst case scenario, global warming could be seen to reduce annual GDP growth by over 1% between the present day and 2080."[75]

Schroders goes on:

> "Inflation is likely to rise over time, driven by rising food prices and an increase in the cost of energy. Although the climate of some countries is predicted to become more accommodative to agricultural yields in the medium term, the long-run implications of rising temperatures are likely to reduce global crop yields overall.

> Costs are also likely to increase through higher insurance charges. The current curtailment of policy cover for flooding in areas such as Florida is the start of a long-term trend whereby insurance companies take climate change further into account. Premiums in climate risk areas are set to increase, feeding into higher costs for businesses and homeowners. From this perspective, the costs of climate change are already affecting global activity.
>
> Global warming is expected to increase the frequency and severity of extreme weather events, bringing with it property and infrastructure loss. The likes of Hurricane Sandy, which flooded much of New York, are prime examples of the economic damage such extreme weather events can cause. Rising sea levels will also likely harm economic output as businesses become impaired and people suffer damage to their homes. Whilst the initial economic response to recover this damage may be positive for GDP (when it is possible to do so), once it is recognized that such events are a permanent feature of the environment, the world economy faces an extreme challenge. Many will find that it is not worth replacing capital stock unless measures can be taken to prevent future damage, or there is an opportunity to move the business to safer ground. At best, this could involve a short period of disruption as businesses relocate; at worst, a permanent loss of capital stock and output. As the temperatures continue to climb, the damage will become increasingly permanent."

The Economist Intelligence Unit (the research arm of *The Economist* magazine) calculates that 4°C of warming would result in expected losses on $4.2 trillion in present value terms by 2100 to the world's total stock of manageable assets of $143 trillion – roughly equivalent to the total value of all the world's listed oil & gas companies or Japan's entire GDP. Much of the impact on future assets will come in the form of weaker growth and lower asset returns across the board. Investors cannot simply avoid climate change by moving out of vulnerable asset classes.[76]

Portfolio impacts

Modeling by the former CEO of a UK asset management company finds that "if it reaches 4°C or more, global warming may cause severe economic damage with the consequence that a significant portion of the value of a diversified equity investment portfolio will be placed at risk.... We estimate that in a plausible worst case for climate damage the value at risk in 2030 may be equivalent to a permanent reduction of between 5% and 20% in portfolio value compared to what it would have been without warming."[79] In other words, in this scenario, portfolios will lose up to 20% of their value, and never regain the lost ground.

In 2011, the investment consultants Mercer, working with a group of some of the world's largest pension funds, investigated the implications of climate change for investors' strategic asset allocation (SAA) – the proportions of the portfolio that are invested in different asset classes.[77] SAA decisions are crucial: some research indicates that they account for more than 90% of the variation in portfolio returns between investors. Mercer concluded that "climate change increases the uncertainty and event risk that could have an impact on the realised returns for risky assets." Specifically, uncertainty over climate policy could contribute as much as 10% to overall portfolio risk by 2030. In other words, uncertainty over climate policy alone – this study did not investigate the implications of the physical impacts of climate change, such as extreme weather events – could mean that investors have to adopt new approaches to asset allocation in order to achieve the returns they need. Options suggested by the study include allocations to renewable energy and clean technology, as well as other assets that will likely be less exposed to climate impacts, such as equities chosen for their sustainability attributes or certain types of private equity and infrastructure, and farmland.

More recent work by Mercer concludes that "Climate change will inevitably have an impact on investment returns. [...] A 4°C scenario (i.e. an average global temperature increase of 4°C) could negatively impact emerging market equities, real estate, timber and agriculture." However, "a 2°C scenario does not have negative return implications for long-term diversified investors at a total portfolio level."[78]

A study by the Investment Leaders Group at the University of Cambridge concludes that "on a worst case basis, only half of the negative impact on portfolio returns due to climate change can be hedged through cross-industry diversification. Furthermore, one half can be hedged by shifting from an equity portfolio to one with a higher percentage of fixed income."[80]

A mainstream investment issue

Climate change is no longer a fringe issue for investors. Some of the country's leading investment bank brokers and investment management firms recognize the financial implications of the issues. Examples from two leading investment banks illustrate how climate change is now well and truly on the mainstream agenda.

Citi

"The recent US-China pledge to fight climate change is described as a "breakthrough" by Citi's commodity team who conclude lower demand from 2015-30 could be valued at $1.3 trillion for oil and $1.6 trillion for coal. The U.S. will reduce greenhouse gas (GHG) emissions 26-28% below its 2005 level by 2025. China aims for CO2 emissions to peak c.2030 and to increase its share of non-fossil fuels by ~20% by 2030. Global GHG emissions could fall by 13%, but the agreement may also induce other countries to follow." Global THEME-book January 2015, Citi [81]

Morgan Stanley

"The prospect of a higher carbon price is a financial risk for companies that use a significant quantity of carbon-based fuel. Focusing on energy efficiency can reduce costs today and any future carbon-based liability. ... We see innovative products that reduce the impact of climate change and water scarcity as a key ESG opportunity that will help top-line growth."[82]

Individual sectors and assets: risk and opportunity

Climate change will likely affect stocks and other assets across most sectors. Of particular significance for fossil fuel companies are the concepts of "unburnable carbon" and "stranded assets." Below we examine these concepts and the risks for different sectors.

Unburnable carbon and stranded assets

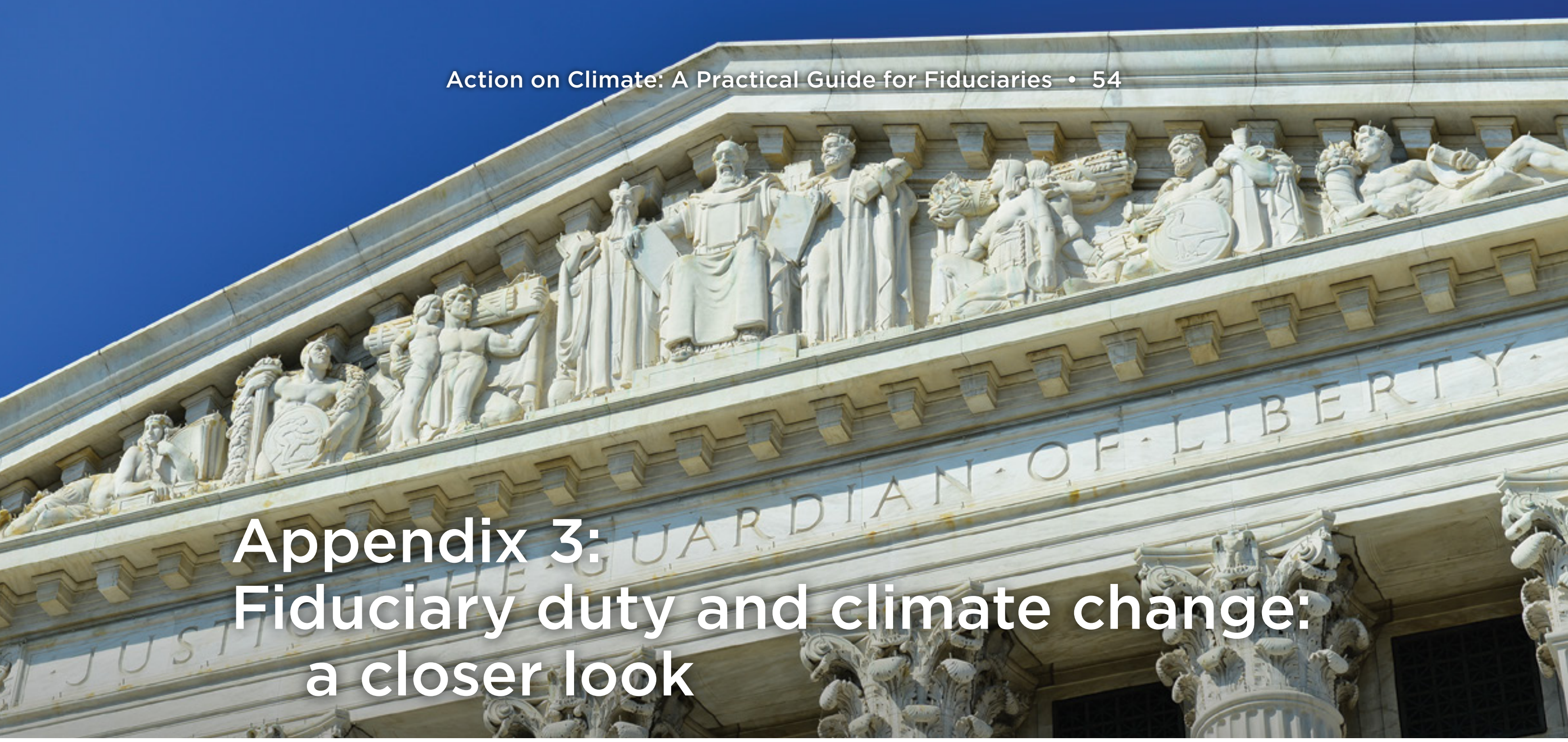
The Carbon Tracker Initiative's 2011 report Unburnable Carbon[83] argued that:

- By 2011, the world had used over a third of its 50-year carbon budget of 886 gigatons of CO^2 (GtCO2) – the amount of CO2 that can be emitted if global temperature rise is to be limited to 2°C. This leaves a remaining budget of 565 GtCO2.
- All of the proven reserves owned by private and public companies and governments are equivalent to 2,795 GtCO2.
- Fossil fuel reserves owned by the top 100 listed coal and top 100 listed oil and gas companies represent total emissions of 745 GtCO2.

- Only 20% of the total reserves can therefore be burned (unless carbon capture and storage technology – which is currently not available – becomes viable), leaving up to 80% of assets technically "unburnable."
- If governments act to restrict emissions to achieve the 2°C target, or if fossil fuel demand falls for other reasons, valuations of fossil fuel companies that are based on the assumption that they will be able to extract and sell all their reserves are therefore unrealistic.
- Some companies would be left with "stranded assets" – mines, oilfields and tar sands deposits - that are no longer economic. These represent potentially significant financial risk for investors.

Climate change risks and opportunities by sector: examples

Fossil fuel producers – oil, gas, coal	Coal: Risk of existing assets being stranded and new mines being uneconomic: declining demand for power generation as a result of improved energy efficiency, GHG emission and other pollution curbs and competition from cheaper alternative fuels. OECD demand is already falling and peak demand in China could be reached soon. See Carbon supply cost curves: Evaluating financial risk to coal capital expenditures – Carbon Tracker Initiative, September 2014.[84] Oil: Risk of high-cost projects (e.g. tar sands, Arctic, deepwater) becoming uneconomic – "stranded assets" – if governments implement emission curbs to meet 2°C target. See Carbon supply cost curves: Evaluating financial risk to oil capital expenditures – Carbon Tracker Initiative, May 2014.[85] Oil and carbon revisited, HSBC, September 2013.[86]
Energy utilities	Risk of declining demand for utilities heavily dependent on coal – e.g. the city of Beijing plans to replace all coal-fired plants with gas-fired by 2016 and reach 200GW of wind power by 2020, according to the investment bank Citi's Global THEME-book January 2015.[87] In the US, distributed generation and renewable energy mandates threaten traditional utilities' business models.[88] In Europe, utilities are also under pressure from renewables.[89]
Food and beverages	According to the Environmental Protection Agency, changes in temperature, amount of CO2, and the frequency and intensity of extreme weather could have significant impacts on crop yields.[90] This would increase food prices and could squeeze profit margins for food companies. Water scarcity – which could become worse as a result of climate change – is already a high priority for many food and beverage companies because of their high water use. 68% of companies responding to the 2014 CDP Water survey reported that water already poses a substantive risk to their business. [91]
Industrials	Risk: Higher energy costs as a result of GHG emission curbs, rising raw material and resource prices (e.g. water). Opportunities: Cost savings from energy and resource efficiency, energy and resource-efficient technologies for customers.
Real estate	Risk: Sea-level rise and flooding in coastal and low-lying areas. Opportunities: Research shows that green buildings command higher rents and asset values.[92]



Appendix 3: Fiduciary duty and climate change: a closer look

We are grateful to Keith Johnson of the law firm Reinhart Boerner Van Deuren for reviewing this section. Please note that this section is intended to provide a summary of general fiduciary principles and does not constitute formal legal advice. Fiduciaries are encouraged to consult with their legal counsel when applying legal principles to specific circumstances.

A critical issue to bear in mind throughout the process of planning and implementing your climate change strategy is fiduciary duty. Many pension plans in particular find that their legal counsel are extremely cautious about actions to address climate change within an investor's portfolio. However, we believe that:

- For pension plans, an approach to climate change grounded in an assessment of financial risk and opportunity, with a clear focus on the financial interests of beneficiaries and their economic interests, is, we believe, entirely consistent with fiduciary duty.
- For foundations and endowments, fiduciary duty includes an obligation to assess how their investment practices relate to their organization's charitable mission and public benefit purposes.
- For pension plans, foundations and endowments with long-term or perpetual obligations, future needs must be fairly balanced with short-term demands.

Fiduciary duty and pension plans

The "prudent man standard of care" that is at the heart of fiduciary duty requires that a fiduciary:

discharge his duties with respect to a plan solely in the interest of the participants and beneficiaries and—

(A) for the exclusive purpose of:

(i) providing benefits to participants and their beneficiaries; and

(ii) defraying reasonable expenses of administering the plan;

(B) with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent man acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character and with like aims;

(C) by diversifying the investments of the plan so as to minimize the risk of large losses, unless under the circumstances it is clearly prudent not to do so.[93]

As we have shown in this Toolkit, there are ample reasons for fiduciaries to conclude that climate change has significant financial implications for their plan and thus for their beneficiaries – both in the short term (e.g. from carbon pollution regulation and energy efficiency opportunities) and the long term (from broader economic impacts).

We believe that considering the implications of climate change for the diversification of portfolio financial risk exposures is consistent with fiduciary duty. As the research on strategic asset allocation by Mercer that we have cited showed, climate change could account for 10% of total portfolio risk by 2030. Examining how to address this – for example by making allocations to assets that are less exposed to climate risk – is an important task for fiduciaries.

The Employee Benefits Security Administration stresses that the duty of prudence "focuses on the process for making fiduciary decisions" (emphasis in the original).[94] In conducting a process "with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent man acting in a like capacity and familiar with such matters would use", it will be relevant to look at how other pension plans, and fiduciary investors more generally, are addressing climate change. As we have shown here, leading pension plans such as CalPERS, CalSTRS, and the UN Joint Staff Pension Fund, and leading money managers and investment banks such as Citi, and Morgan Stanley, are taking climate change very seriously from a fiduciary and financial perspective.

Fiduciaries should always document their decision-making process carefully so that there is a written record of fact-based research, discussions, and conclusions on climate change.

It will always be important, of course, to work closely with your legal counsel in exploring these issues and developing your climate change strategy.

Questions to ask your legal counsel

- Do you agree that our investment approach reflects an appropriate analysis of climate change risk and financial implications for our plan's obligations to all of its beneficiaries?
- If not, what additional research or analysis is required?

- Do you agree that it is appropriate for us in determining a prudent approach to look at leading investors who are addressing climate change in their investment beliefs, research and investment decisions?
- How can we best document the process by which we have considered climate change, in order to demonstrate that we have fulfilled our fiduciary obligations?

Fiduciary duty and foundations/endowments

This section summarises the briefing "Evolving Fiduciary Duty of Foundations and Endowments" by the law firm Reinhart Boerner van Deuren – to whom we are grateful for allowing us to use this material.[95]

Unlike fiduciaries of for-profit companies or pension trusts, fiduciaries of foundations and endowments owe legal duties of obedience to both the organization's charitable mission and the social benefit purposes required of non-profits.

Fiduciary principles have not changed, but they must be applied in such a manner as to reflect current economic, societal, and environmental realities. This includes the implications of climate change both for investment returns and for institutions' charitable mission. For foundations and endowments with long-term or perpetual obligations, future needs and risks must also be fairly balanced with short-term demands.

An increasing number of foundations and endowments are responding to these challenges by cultivating a more contemporary approach to implementation of fiduciary duties. This has led them to a greater focus on holistic integration of program and investment policies to recognize their full range of fiduciary duties and to develop a more balanced investment approach that is consistent with the entity's charitable mission and public benefit purposes.

While divestment and portfolio screening were once seen as the only responsible investment options for foundations and endowments, current management techniques offer a diversity of approaches. These include integration of sustainability factors into investment analysis, exercise of proxy voting rights to support mission, engagement with company directors or management, sponsorship of shareholder resolutions, creation of new portfolios that offer equivalent investment diversity with mission consistency, and selection of external managers that use a mixture of these practices. The objective of these strategies is to generate competitive returns while better aligning investment management practices with each organization's charitable mission and public benefit purposes.

Appendix 4: Climate change impacts on workers and communities: a closer look

Climate change as a risk for American workers

The overriding reason for pension fiduciaries to consider climate change is the financial risk it poses for their funds. Climate change poses workplace and health risks to workers that have economic and financial implications. Moreover, efforts to mitigate climate change and hasten a transition to a low-carbon economy could create large numbers of new jobs in many industries. These issues may be of particular interest to union fiduciaries – while also being relevant to other pension trustees. They may also be particularly relevant to certain foundations, and to endowments.

> The Federal Government's 2014 National Climate Assessment finds that the health impacts of climate change could be serious. "Public health in the US can be affected by disruptions of physical, biological, and ecological systems, including disturbances originating in the US and elsewhere. Health effects of these disruptions include increased respiratory and cardiovascular disease, injuries and premature deaths related to extreme weather events, changes in the prevalence and geographical distribution of food- and waterborne illnesses and other infectious diseases, and threats to mental health."[96] The Assessment goes on to conclude that as a result of climate change:

- Air pollution will likely worsen asthma
- Increased production of pollen and allergens will diminish productive work and school days
- More frequent wildfires will lead to smoke inhalation and emergency room visits.

A briefing by the BlueGreen Alliance notes that higher temperatures and more extreme weather events will bring new hazards in the workplace. Hotter weather will mean sicker patients for healthcare workers and more severe wildfires for fire-fighters. Changing weather patterns will cause damage to out-of-date school buildings and disrupt school time, harming teachers' ability to educate students. Worsening public health and increased disaster response work will pose a risk for healthcare workers.

Additionally, research by the National Bureau of Economic Research called "Feeling the Heat: Temperature, Physiology & the Wealth of Nations" found that climate change may affect worker productivity.[97] This is because researchers found a negative correlation between warmer weather and worker productivity in hot regions of the world. More precisely, "hotter-than-average years are associated with lower output per capita for countries in hot climates." A Business Insider article about the paper notes, "Some of the negative effect likely comes from extreme weather events, decreased agricultural yield, rising sea level, and possible related disruption and violence."[98] At the same time, though, warmer years result in higher output per capita for countries with cold climates, suggesting that there is an optimal temperature for worker productivity.[99]

Disproportionate Impacts

The impacts of climate change are felt more deeply in low income communities of color. According to the Just Energy Report of the NAACP 68% of African Americans live within 30 miles of a coal fired power plant. As such they are impacted disproportionately by the poor health outcomes associated with exposure to particulate pollution. Additionally, those living near coal plants experience 15% lower property values.[100] The consequences of climate related disasters such as Katrina, Sandy, and even the current California drought fall more heavily on low income communities and communities of color. As climate change accelerates, the risks these communities face will be disproportionate.

Job creation in the low-carbon transition

The transition to a sustainable economy—one that limits the increase in global average temperatures to 2°C—will require large-scale investments in clean energy and energy efficiency and significant growth in these industries. It will also include substantially upgrading infrastructure around the globe to deal with the still-challenging results of increased temperatures and a shift from fossil fuels.

Research by the Center for American Progress and the Political Economy Research Institute at the University of Massachusetts Amherst finds that $200 billion in annual public and private investment is needed for the US alone to align itself with internationally agreed emission reduction goals.[101] According to the paper this investment would do the following:

- Create 4.2 million overall jobs both by new investments and expanded levels of operations and maintenance
- Bring a 2.7 million net increase in jobs, even after estimated contractions in fossil fuel sectors
- Generate net employment expansion at all levels of pay in the US labor market and a decrease in the unemployment rate by about 1.5 percentage points—e.g. from 6.5% to 5% within the 2030 US labor market.[102]

In particular, the researchers note that infrastructure investment in a sustainable transition would create more jobs than equivalent investment in the fossil fuel industry. This is because "investments in expanding the clean renewable sectors require more employment per unit of activity—these sectors are more labor intensive—and require a higher proportion of spending within the domestic U.S. economy—renewables have a higher level of domestic content—than spending within the existing non-renewable energy sectors." Additionally, these jobs could be geographically distributed across the country, with special consideration to providing opportunity to economically under-served communities. Most would pay a living wage of $16 per hour or more.

Appendix 5: Responding to the climate challenge – tactics: a closer look

Integrate climate and broader sustainability into all investments

Many investors of different kinds – including pension plans and some large university endowments – now take the view that climate change and other environmental, social and governance (ESG) issues can be financially material and that these factors should therefore be integrated into their investments wherever they are relevant, as a matter of fiduciary duty. Academic research supports this view. Recent studies – summarized in Appendix 6 – find that companies with strong sustainability and ESG performance achieve superior financial performance.

This approach can incorporate many of the other tactics described here. It is distinct from others in that it does not usually involve explicit advance commitments to specific actions – such as divestment. It can be thought of as a framework within which a range of actions that can be taken.

In practice, investors adopting this path are, for example:

- Conducting new kinds of research to understand the financial implications of climate change and ESG
- Reflecting this analysis in their financial valuation and security selection (e.g. underweighting, shorting, or screening out stocks with high climate risk)
- Incorporating climate/ESG issues into due diligence for private market investments
- Engaging with corporations and reflecting the risks of climate change in their proxy voting.

Examples: CalPERS,[103] CalSTRS,[104] Amherst College,[105] Harvard,[106] University of California,[107] Yale.[108]

Examples of integrating climate across the portfolio

Amherst College has created a "Statement on Sustainability and Investment Policy" which addresses climate change: "The Amherst endowment is intended to provide perpetual support to the College. This time horizon enables Amherst to take advantage of long-term opportunities unavailable to short-term investors. At the same time, it exposes the College to long-term risks, such as those posed by climate change. The Board believes that making environmental considerations part of the investment process is sound in practice as well as in principle; that doing so is integral to the long-term financial health of the endowment; and that this is in keeping with the Board's fiduciary responsibility."[109]

CalPERS[110] and CalSTRS[111] both have comprehensive sustainability programs across all their investments, embracing all the action areas highlighted above, in addition to investing in specific climate and sustainability solutions and engaging assertively with policymakers.

Harvard has decided not to divest but rather to integrate climate change and other sustainability issues right across its investments. Jane Mendillo, the President and Chief Executive of Harvard Management Company, said the new approach "was driven by the changing definition of what it means to be a fiduciary investor, and by a conviction that investing sustainably will improve its portfolio returns." Harvard plans to "demand greater details from the managers it employs and its other service providers about their policies and approach to ESG issues."[112]

Yale University , similarly, has decided not to divest, arguing that simply producing fossil fuels or holding fossil fuel reserves does not cause "social injury" as set out in its forty year-old ethical policy, but that emissions are produced by energy utilities, transportation and many other activities.[113] However, Yale argues that "companies, as a matter of sound business practices, should take into account the effects of climate change and anticipate possible regulatory responses with actions that recognize the externalities produced by the combustion of fossil fuels." The endowment's Chief Investment Officer, David Swensen, has written to all the endowment's investment managers to set out this expectation.[114]

Reducing carbon intensity

Investors are taking various approaches to reducing the carbon intensity of their portfolios – the amount of carbon dioxide and other greenhouse gases emitted per dollar invested. These include measuring and publishing their carbon footprint, and investing in passive and active low-carbon funds. These techniques explicitly factor in an investor's desire to address fossil fuel and/or other climate risk across a range of sectors. These are distinct from the "climate solutions" investments we discuss below. The strategies we describe here could be said to "minimize risk from a problem," whereas "climate solutions" investments actively aim to help solve the problem.

Low-carbon passive investments

A new generation of passive investment products is now being developed based on indexes that aim to replicate the performance of the conventional market benchmark while reducing carbon risk. They do this by adjusting stock weightings to reflect emissions and, for fossil fuel corporations, fossil fuel reserves. MSCI, S&P, and FTSE have all developed indices of this kind.[115] Funds based on these indexes are attracting significant interest among pension plans and others looking to avoid fossil fuel investments or reduce the risk from fossil fuel companies in their portfolios.

In December 2014 the US-based United Nations Joint Staff Pension Fund made a seed investment in two low-carbon ETFs launched by BlackRock and State Street. Both ETFs track the MSCI ACWI Low Carbon Target Index.[116] The index overweights companies with low carbon emissions relative to sales and those with low potential carbon emissions per dollar of market capitalization. It addresses two areas of carbon exposure: carbon emissions and fossil fuel reserves. In Europe, France's ERAFP, the Swedish public fund AP4 and the UK's British Telecom Pension Scheme have all made investments in indices of this kind.[117]

We are aware at the time of writing that new products of this kind are under development by leading money managers.

Sustainability-focused active investments

Numerous money managers offer more broadly based funds underpinned by strong sustainability research and with no outright sector screens or ESG performance thresholds.

Invest in climate solutions

The International Energy Agency calculates that to achieve the 2°C target, the world needs to invest an additional $1 trillion per year between now and 2050 compared with current trends.[118] Government incentives for clean energy, together with rapidly advancing technology and falling costs, create investment opportunities. These may hedge risk (offset losses in value in investments that are adversely affected by climate change) or add upside (additional positive return) to a portfolio even if climate risks do not materialize in the ways expected. Climate solutions – such as renewable energy, energy efficiency, and green real estate – represent the "invest" half of the Divest-Invest approach called for by divestment advocates. With or without divestment, investors can help drive capital into solutions to climate change. Thus, we suggest that investors consider investing in climate solutions, regardless of their decision to divest.

Few of the pure-play investment opportunities of this kind are in public markets. As the specialist renewable energy market information provider Bloomberg New Energy Finance (BNEF) points out, the WilderHill New Energy Global Innovation Index consists of just 106 companies, with total market capitalization of about $22 billion – compared with the approximately $390 billion value of ExxonMobil alone.[119] However, there are a number of broader indices that include companies in sectors such as resource efficiency, sustainable water, green buildings and pollution prevention – including those provided by MSCI, S&P, and FTSE.[120] These substantially expand the universe of listed companies available to investors seeking to hedge climate change-related risk, add potential upside to their portfolio, and contribute to climate change solutions. Numerous fund managers offer investment products in this segment of the market.

A larger range of investment opportunities in climate solutions of different kinds is available in the private equity and venture capital, unlisted real estate (green buildings), infrastructure (including efficient electric transmission) and hedge fund asset classes. These may be individual private market funds, or funds-of-funds (with the associated layering of fees). In some cases these are available as specialist investment strategies (e.g. renewable energy private equity or infrastructure). In others, investments may be found within conventional funds – e.g. green buildings within real estate investment trusts (REITs) or unlisted real estate funds.

Fixed income, too, offers a rapidly growing range of opportunities to invest in climate solutions, through green bonds. Green bonds are explicitly designed to have the same risk and return characteristics as conventional bonds – either investment grade or high-yield. They now offer significant opportunities to investors who want proactively to invest in ways that address climate change.

Green bonds

Green bonds are fixed income securities issued by public agencies and corporations to raise finance earmarked for projects with climate change or wider environmental benefits. The securities are usually backed by the issuer's whole balance sheet – i.e. not just by the specific project(s) financed – and have the same credit profile as the issuer's "regular" bonds. The green bond market is growing rapidly: issuance rose to $35 billion in 2014 from $11 billion in 2013, according to the *Climate Bonds Initiative*.[121] Most green bonds are investment grade; however, a high-yield market is now also starting to develop.

The first green bonds were issued by international agencies such as the World Bank. However, state and local governments, corporations and universities are now becoming involved in the market. Recent issues include $29.5 million and $66 million bonds respectively from the University of Cincinnati and the University of Indiana to finance the renovation of student accommodation and the construction of new academic buildings to green building standards; a $20.1 million green muni bond from Jefferson County, NY to finance biomass energy plant; and $150 million in AAA rated asset-backed securities from the Hawaii State Department of Business, Economic Development and Tourism for solar power.

"What Investors Want," a 2014 report by the Clean Energy Group and Croatan Institute, noted that there is increasing demand for green bonds by institutional investors—either as part of a sustainable investment strategy or included in conventional fixed income portfolios.[122] Indeed, a growing number of fund managers offer green bond funds. Yet as with all assets, due diligence is required—the green bond market is relatively new, and investors or their managers should assess the financial and sustainability implications of bonds labelled as "green."

Investing in climate solutions: examples

The **McKnight Foundation**, a foundation with a $2 billion endowment, announced a commitment of $200 million to support transition to a low-carbon economy and regional sustainable development in its home, the Minneapolis-St. Paul metro-area of Minnesota. The investments are managed in tranches areas of $50 million each, three of which aim for market rate returns.[123]

Middlebury College, which has an $800 million endowment managed by outsourced CIO Investure, has directed $25 million of its endowment into investments that generate long-term social, environmental, and economic value including "investments focused on sustainability business such as clean energy, water, climate science, and green building projects."[124]

The Sierra Club Foundation (TSCF) supports the work of the environmental non-profit, The Sierra Club. TSCF has invested in green bonds through the Calvert Green Bond Fund and Breckenridge Capital Advisors. The focus in these vehicles is on domestic bonds and treasuries. The board felt that it was essential to align their investments with their mission. TSCF has also committed to divest from fossil fuels.[125]

CalSTRS' long-standing Green Initiative includes climate solutions investments in public equity, private equity and through green bonds.

Divestment to protect the climate

The movement calling on investors to divest from fossil fuels continues to grow in intensity. Movement leaders argue that the scale of the impacts of climate change on the environment, society, and the economy means that there is a moral imperative to divest from corporations that produce the fossil fuels that are at the root of the problem. Deriving financial gain from activities that pose such risks to us all, it is argued, is morally unacceptable. Moreover, the argument continues, the scale of the fossil fuel industry's ability to influence the political process and impede government action on climate change makes it important for investors to send a strong, public signal that they support such action. Divestment is intended to send this signal, increasing the pressure on governments and other actors to tackle climate change.

Divestment campaigns often focus on the world's 200 largest publicly listed coal, oil, and gas companies, as identified in The Carbon Underground 200 report published annually by the climate change-focused investment firm Fossil Free Indexes.[126] According to the 2015 report, the proven reserves of these 200 companies total 555 gigatons of potential CO2 emissions, "represents over 400% of the firms' carbon budget allocation, based on their share of carbon emissions potential of global reserves." This budget is based on an IPCC scenario that provides a 66% chance of limiting global temperature rise to 2°C.

Some institutions have focused their divestment on coal, and in some cases also tar sands. Coal is the most carbon-intensive fossil fuel: burning it emits more CO2 per unit of energy produced than burning oil or gas. Reducing coal use therefore makes a significant contribution to tackling climate change. Tar sands too are more carbon-intensive than regular oil, and substantially more so than gas. For some funds divesting from coal and tar sands has been the first step toward divestment of all fossil fuel production.

Divestment to protect the climate - examples

Pitzer College, in Claremont, CA, committed to "divest the endowment of substantially all fossil-fuel stocks by the end of 2014" as a key step in "aligning the college's actions more fully with its mission and values."[127]

The Rockefeller Brothers Fund, citing its "deep commitment to combating climate change" has undertaken to divest from coal and tar sands by the end of 2014 and to explore appropriate options for further fossil fuel divestment in the coming years. The Fund wrote, "We will adhere to the longstanding mandate of our board of trustees that our assets be invested with the goal of achieving financial returns that will enable the foundation to meet its annual philanthropic obligations... Therefore, our divestment from fossil fuels, which is now underway, will be accomplished through a careful process of evaluating our exposure and a phased approach that proceeds as quickly as is prudent."[128]

Stanford University has divested from around 100 "publicly traded companies whose principal business is the mining of coal for use in energy generation," citing its long-standing policy that it may divest where "corporate policies or practices create substantial social injury."[129]

San Francisco State University has committed to divest from both the production and use of coal and tar sands (the most carbon-intensive fossil fuels), to publish a carbon footprint of its portfolio and to create a socially responsible investment option for donors.[130]

Syracuse University stressed its "commitment to acting in a way that supports the best interests of the University, our students and the world" when it announced its divestment from coal mining and all other fossil fuel production in March 2015.[131]

A regularly updated list of institutions that have divested from some or all fossil fuels can be found here.[132]

A special case - divesting without divesting

The World Wildlife Fund (WWF) has put in place an equity total return swap[133] to neutralize its investments in coal and tar sands without divesting from the relevant companies.[134] The swap is essentially an agreement between WWF and Deutsche Bank whereby WWF transfers the return on these investments to the bank if it is positive, but the bank pays WWF if the return is negative. In other words, WWF continues to hold the stock, but gains no financial advantage if share prices rise – and benefits if they fall. The swap is based on WWF's view that the value of these investments will go down because of increasing climate change risk. The swap was proposed and designed by Bob Litterman, a former partner at Goldman Sachs who is a member of WWF's investment committee. A more detailed presentation of Litterman's view on carbon risk is available here.[135]

Fossil-free funds

Investors who wish to take a principled stance on climate change and the fossil fuel industry can choose from a growing range of funds that do not invest in any fossil fuel corporations. Many funds of this kind also integrate analysis of the financial implications of ESG issues more generally into their investment decisions. These funds' exclusion of all fossil fuel corporations is driven by a "policy" stance on climate change, rather than a company-by-company assessment of specific financial risks. They will therefore by definition only be suitable for investors who share this view, including those who have made explicit divestment commitments, or those who have determined that divesting from fossil fuels fits their "returns-first" perspective.

Other funds are available that exclude both fossil fuels and various other sectors (e.g. arms, tobacco). Many funds of this kind pursue a "best-in-class" approach, investing only in companies in eligible sectors that are above a specified ESG rating (performance) or are the best performers in certain categories in their classes. Investors should evaluate their funds' investment process and whether this methodology fits their own approach, be it values or financially driven.

Divestment to manage financial risk

Several non-US pension plans have divested from specific fossil fuel corporations on the basis of an analysis of financial risk to their portfolios. These investors have targeted corporations producing coal for power generation and specific companies with tar sands operations. The combination of tightening regulation of emissions from coal-fired power production in the US, China, and the EU; a fall in demand as economic growth slows in China; the rise of shale gas in the US; and the increasing competitiveness of renewable energy has led to falling profits for coal companies in the US and elsewhere, and rising investor perceptions of risk in the sector. For example, Standard and Poor's has said that "a significant decline in coal production and consumption globally is becoming a much more realistic concept."[136] Pension plans that have taken this step have concluded that continuing to hold these specific fossil fuel corporations exposes their portfolios to unacceptable financial risk.

The specific financial risks faced by an individual company depend on its particular circumstances. For example, some oil and gas companies' future investment plans include a larger proportion of projects with high development and production costs than others. These high-cost projects are more vulnerable to being "stranded" in the event of carbon regulation and falling demand. In December 2014 research by Goldman Sachs on 400 of the world's largest new oil and gas fields (excluding US shale) "found projects representing $930 billion of future investment that are no longer profitable with Brent crude at $70 *(Note: Brent crude is the oil typically used as the standard benchmark for international prices)*."[137] The Carbon Tracker Initiative's reports on carbon supply cost curves for coal[138] and oil[139] analyze companies' capital expenditure plans to identify projects that might not break even if prices fall or remain low.

Divestment to manage financial risk – examples

The Swedish public pension fund AP2 has divested from 12 coal and 8 oil and gas companies that it judges to be particularly high-risk in financial terms. The coal companies are primarily involved in coal for power generation, while the oil and gas companies have high-cost projects – such as oil sands - that could become uneconomic if carbon prices are introduced and/or fossil fuel demand falls. The fund said, "by not investing in a number of companies, we are reducing our exposure to risk constituted by fossil-fuel based energy. This decision will help to protect the Fund's long-term return on investment."[140]

The Australian pension plan HESTA has decided to freeze new investments in thermal coal, without divesting its existing holdings.[141] The fund argued that "unburnable carbon" is likely to become an increasing risk in the medium to long term, especially for companies heavily invested in thermal coal, or those seeking to develop new long-term assets. New or expanded thermal coal assets face the highest risk of becoming stranded before the end of their useful life."

Engage with corporations

Institutional investors have long used their positions as shareholders to engage with public companies, including car manufacturers, utilities, and fossil fuel corporations, to exercise positive influence in relation to climate change. Engagement can be a successful way to take action on climate. Academic research shows that companies that responded positively to investor engagement in climate change subsequently outperformed their peers in financial terms.[142] The Impact of Equity Engagement (IE2) Initiative has demonstrated that shareholder engagement—especially when escalated over a long period of time and conducted in close collaboration with grassroots organizations and civil society leaders—can have significant social and environmental impacts.[143]

In planning and conducting engagement, it is important to consider what the objectives should be, and which corporations to target. Some corporations have proved resistant to shareholder efforts to achieve greater transparency, or to accept specific demands (such as returning capital to investors). Working closely with investors with strong engagement experience can help to overcome these challenges.

Investor coalitions such as the Investor Network on Climate Risk[144] and the Interfaith Center on Corporate Responsibility[145] are actively pressing corporations to disclose more information to investors on the implications of climate change for their businesses, to adopt emission reduction targets, to take public stances for climate policy, and to disclose or end political lobbying against government action to tackle climate change. The goal of these projects is to persuade companies to be more responsive to shareholder views and to change their businesses to deal with the issue of climate change. While many of these investor groups are primarily made up of large investors, smaller investors have found it useful to join these coalitions. Small and mid-size investors can maximize their influence by using their institutional credibility to co-sign shareholder letters and occasionally participate directly in shareholder engagements. It is also possible to hire a firm to manage engagements on an investor's behalf.

Engagement case study 1 – The Carbon Asset Risk Initiative

In the Carbon Asset Risk Initiative led by INCR and Carbon Tracker, a group of 70 investors worth $3 trillion called on oil and gas, coal, and electric power companies to assess risks to their operations from climate change.[146] As part of this initiative, in 2014, investors sent letters to and filed shareholder resolutions with dozens of the largest fossil fuel companies asking them to report on their potential carbon asset risk. ExxonMobil complied, publishing a report entitled *Energy and Carbon: Managing the Risks* on its website.[147] According to As You Sow's 2015 Proxy Preview, the investor coalition continues to ask other fossil fuel companies to issue similar assessments.[148]

Engagement case study 2 – Shareholder proposals at BP, Shell, and Statoil

An international coalition of investors coordinated by the UK investment manager CCLA and the Church of England filed shareholder resolutions at the 2015 AGMs of BP and Shell calling on the companies to demonstrate "strategic resilience for 2035 and beyond" by providing climate risk disclosure covering ongoing operational emissions management; asset portfolio resilience to the International Energy Agency's scenarios; low-carbon energy research and development and investment strategies; relevant strategic key performance indicators and executive incentives; and public policy positions relating to climate change. The Boards of both Shell and BP recommended that shareholders support the proposals.[149] Swedish investors filed the same resolution with the Norwegian oil and gas company Statoil.

The BP and Shell resolutions gained over 98% shareholder support, with 99.95% at Statoil. The actions these corporations have committed to will allow investors to assess how they are responding to the multiple risks to their business posed by climate change, and to the opportunities it may offer.

Engagement case study 3 – Nathan Cummings engagement with homebuilding companies

The Nathan Cummings Foundation (NCF) uses its $450 million endowment to engage actively with public companies on climate change. Fully half of the shareholder resolutions filed by NCF between 2003 and 2010 dealt with climate change, many going beyond disclosure to ask for concrete commitments to sustainability. Laura Campos, the Foundation's Director of Shareholder Activities, says, "It's clear that companies need to undertake climate risk disclosure, but disclosure alone is not sufficient. Shareholder resolutions can also prove useful in getting management and boards to begin thinking about the implications of climate change.... [our success] is perhaps the best demonstration of the power of the shareholder resolution process to stimulate concrete changes in corporate behaviour, changes that can help to protect both long-term shareholder value and the environment."[150] As a result of NCF engagements, a number of homebuilders committed to building new homes in accordance with Energy Star standards or to otherwise increase efficiency and sustainability.

Engagement case study 4 – Shareholder proposal calling for return of capital

The NGO As You Sow and the money management firms Arjuna Capital and Zevin Asset Management filed a shareholder proposal at the 2015 Chevron annual general meeting (AGM) asking the company to distribute capital to shareholders in light of concerns about Chevron's spending on high-cost, high-carbon projects, including Arctic drilling, tar sands, and other "unconventional" fossil fuels. This innovative approach shows how investors are developing new tactics to pursue their financial interests in the face of the risks posed by climate change.

This proposal attracted only a low level of support at the AGM. Many investors cited a reluctance to give instructions to the board of the company on an issue they judged to be "operational." Nonetheless, history shows that issues can gain salience over time, and that ultimately "mainstream" investors can join the ranks of those calling for corporate change. This has been the path followed by calls for proxy access – investors' right to appoint members to the board. The nature and scale of the risks posed by climate change may well lead to a similar evolution.

Engage with policymakers

While corporations can reduce emissions and adapt their business strategies to climate change, action on the scale needed to keep the increase in global temperatures within the 2°C threshold set by scientists – and at the same time to reduce long-term portfolio-wide risk for investors – can only be taken by governments. Many investors recognize this and have worked to communicate their support for such action to governments. In September 2014, ahead of the UN Climate Summit in New York, nearly 350 global institutional investors representing over $24 trillion in assets called on government leaders to provide "stable, reliable and economically meaningful carbon pricing that helps redirect investment commensurate with the scale of the climate change challenge, as well as develop plans to phase out subsidies for fossil fuels." In the U.S., this initiative was coordinated by INCR.[151]

Politicians and government agencies care about investors' voices on this issue. Like businesses, investors can speak to climate change's impact on the economy and stress the value of urgent action.

Appendix 6: ESG and financial performance

Research by Oxford University in 2014 reviewed 190 academic studies on the business case for corporate sustainability and the implications of sustainability for investors.[152]

- 90% of the studies on the cost of capital show that sound sustainability standards lower the cost of capital of companies
- 88% of the research shows that solid ESG practices result in better operational performance of firms
- 80% of the studies show that stock price performance of companies is positively influenced by good sustainability practices.

In June 2012 Deutsche Bank (DB) published a comprehensive review of academic literature on ESG and financial performance.[153] This looked at 56 academic studies, 2 literature reviews, and 4 meta-studies.

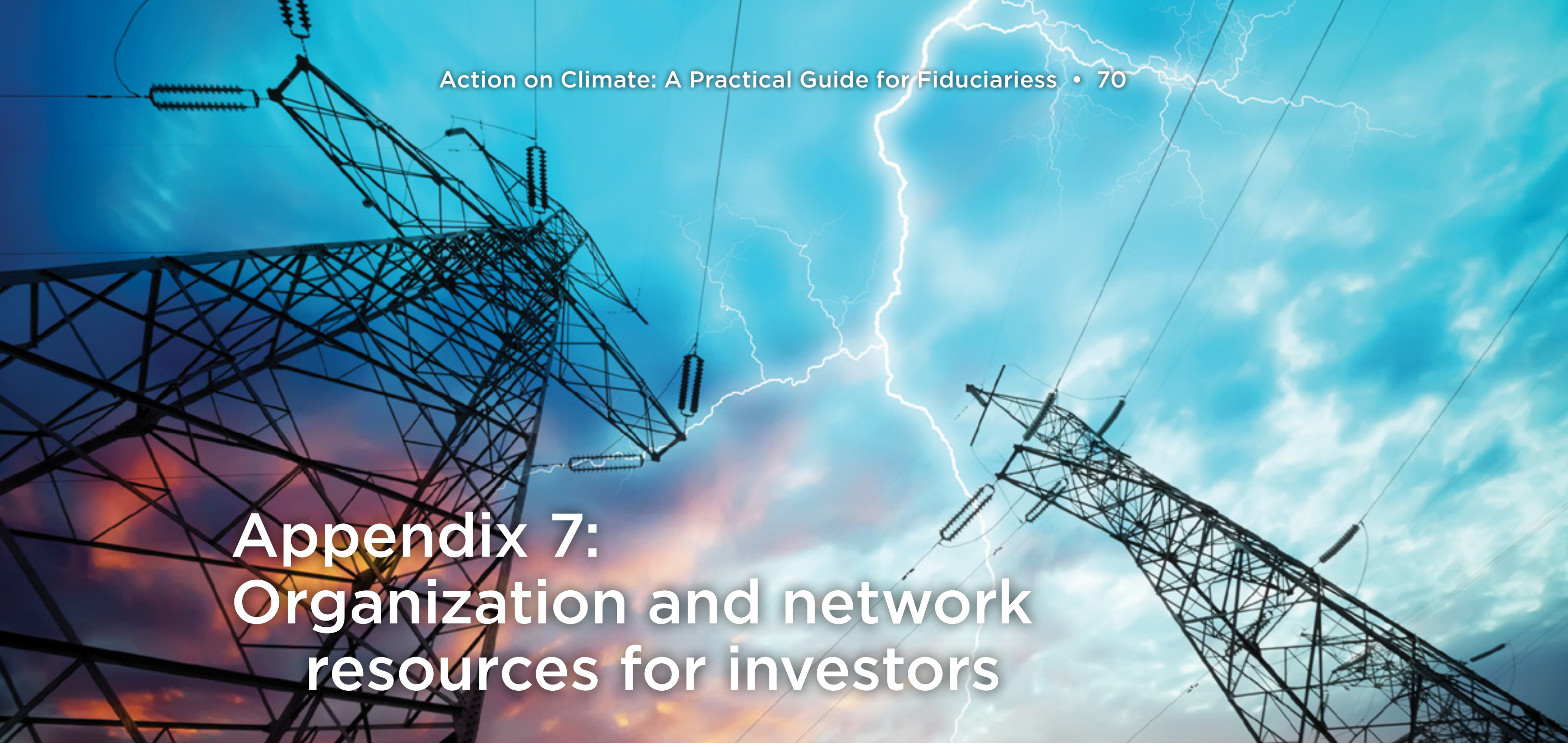
The key conclusions are:

- "Overwhelming academic evidence," within 100% of the studies reviewed, showing that firms with high ESG ratings have a lower ex ante cost of capital in terms of both debt and equity. These firms are "in effect lower risk in a fundamental (not necessarily short-term volatility) sense."
- "Compelling academic evidence" that strong ESG factors are correlated with financial outperformance in both market and accounting terms. 89% and 85% of studies found that firms with high ratings for ESG (or E, S, or G individually) show market-based or accounting-based outperformance respectively. Governance has historically been the strongest influence, followed by the environment – which DB believes is gaining in importance. The studies cover a variety of date ranges, but DB argues that most investors see ESG as a medium- to long-term opportunity (3-5 years to 5-10 years). In DB's view:

- **Governance** was the earliest of the ESG factors to be extensively studied. There is evidence that much of the alpha generated from this factor may now be priced into the market, as it has now been integrated into mainstream investing
- **Environment** may still offer first mover advantage for investors who recognize the materiality of concerns relating to climate change, carbon regulation and energy efficiency
- **Social** factors are the most difficult to quantify but may well offer alpha given the business relevance of factors such as human capital.

The returns of SRI funds have been mixed – 88% of studies showed mixed or neutral results. The authors conclude that “fund managers have struggled to capture the outperformance, with some exceptions at smaller, more specialized funds.” As in all active management, manager skill is a significant factor and many believe that outperformance is hard to maintain.

It is important to note that the SRI funds studied here cover a broad spectrum of fund types, with different negative screens and management styles. It is therefore difficult to draw definitive conclusions from this research finding. You should always work closely with your consultant when analyzing and selecting investment options.



Appendix 7: Organization and network resources for investors

Below is a partial list of organizations working on environmental, social, and governance issues for investors with an emphasis on climate. They are shown in alphabetical order. They represent a range of approaches that investors can take towards climate change.

Organization and Website	About	Activities
350.org 350.org	350.org is building a global climate movement. Its online campaigns, grassroots organizing, and mass public actions are coordinated by a global network active in over 188 countries.	Campus and community based grassroots action, divestment, investment
BlueGreen Alliance www.bluegreenalliance.org	The BlueGreen Alliance unites America's largest labor unions and its most influential environmental organizations to identify ways today's environmental challenges can create and maintain quality jobs and build a stronger, fairer economy.	Advocacy, education, partnerships, policy, research
Committee on Workers' Capital (CWC) www.workerscapital.org/images/uploads/CWC_climate_change.pdf	With over 200 members from 25 different countries, the Committee on Workers' Capital (CWC) connects labor union organizations around the world to advance the responsible investment agenda on the global stage.	Advocacy, education, networking, training
Confluence Philanthropy www.confluencephilanthropy.org	Confluence Philanthropy promotes environmental sustainability and social justice by helping to move philanthropy in the direction of mission-aligned investing. It supports and catalyze its members' efforts to align asset management with organizational mission. Confluence Philanthropy's international network, which represents nearly $134 billion in philanthropic assets, includes private, public, and community foundations; individual donors, and investment firms.	Conferences, webinars and trainings, working groups

Council of Institutional Investors (CII) www.cii.org	The Council of Institutional Investors (CII) is a nonprofit, nonpartisan association of corporate, public, and union employee benefit funds and endowments with a focused policy mission: to be the leading voice for effective corporate governance practices for US companies and strong shareowner rights and protections.	Advocacy, networking, policy development
Divest-Invest divestinvest.org	Divest-Invest is a network of foundations divesting from fossil fuels and switching to clean energy investments. Ethically, our investments shouldn't contribute to dangerous climate change. Financially, fossil fuel stocks are overvalued as most of their reserves cannot be burned. We can get good, safe returns while helping to build a new energy system.	Divest, invest, networking, publications
Initiative for Responsible Investment (IRI) hausercenter.org/iri/	The Initiative for Responsible Investment (IRI) at the Hauser Institute for Civil Society serves as a research center on fundamental issues and theories underlying the ability of financial markets to promote wealth creation across asset classes, while creating a stronger society and a healthier environment.	Convenings, policy development, research
Intentional Endowments Network www.intentionalendowments.org	The Intentional Endowments Network supports colleges, universities, and other mission-driven tax-exempt organizations in aligning their endowment investment practices with their mission, values, and sustainability goals without sacrificing financial returns. In doing so, this broad-based, collaborative network will make a significant and critical contribution to creating a healthy, just, and sustainable society.	Convening, education and training, information exchange, networking, thought leadership
Interfaith Center on Corporate Responsibility (ICCR) www.iccr.org/	The Interfaith Center on Corporate Responsibility (ICCR) is a coalition of faith and values-driven organizations who view the management of their investments as a powerful catalyst for social change. Its membership comprises nearly 300 organizations including faith-based institutions, socially responsible asset management companies, unions, pension funds, and colleges and universities that collectively represent over $100 billion in invested capital.	Conferences, engage, invest, networking, publications, working groups
Investor Environmental Health Network (IEHN) iehn.org	The Investor Environmental Health Network (IEHN) is a collaborative partnership of investment managers, advised by nongovernmental organizations, and concerned about the financial and public health risks associated with corporate toxic chemicals policies. IEHN members manage approximately $35 billion in assets. IEHN staff are available to serve as information resources for companies.	Engagement, policy development
Investor Network on Climate Risk (INCR) www.ceres.org/investor-network/incr	A project of CERES, the Investor Network on Climate Risk (INCR) is a network of more than 110 institutional investors representing more than $13 trillion in assets committed to addressing the risks and seizing the opportunities resulting from climate change and other sustainability challenges. In 2013, INCR turned 10 years old, celebrating a decade of investor action on climate risk.	Conferences, engage, invest, networking, publications, working groups

Principles for Responsible Investment (PRI) www.unpri.org/	The United Nations-supported Principles for Responsible Investment (PRI) Initiative is an international network of investors working together to put the six Principles for Responsible Investment into practice. Its goal is to understand the implications of sustainability for investors and support signatories to incorporate these issues into their investment decision making and ownership practices.	Conferences, engagement, invest, networking, publications, working groups
Responsible Endowments Coalition (REC) www.endowmentethics.org	The Responsible Endowments Coalition (REC) works to ensure that the investment and use of endowments promotes sustainability, equity, human rights, democracy, and prosperity for all. REC does this by supporting student, alumni, and faculty endowment campaigns across the US and Canada, providing intensive leadership development and political education to endowment beneficiaries, and leading hard-hitting endowment research.	Leadership development, networking, political education, research, student organizing
Service Employees International Union (SEIU) Capital Stewardship Program www.seiu.org/cards/all-the-educational-resources-you-need-to-be-a-leader	The Capital Stewardship Program was created to facilitate a more active partnership between SEIU and the trustees, administrators, advisors and investment managers of its members' pension savings in the pursuit of benefit improvements and of prudent, responsible, and financially sound investment policies. It helps elect and appoint effective trustees, educate and provide technical support to union trustees, and promote responsible investment and proxy voting policies.	Advocacy, engagement, networking, training
Shareholder Association for Research and Education (SHARE) www.share.ca/files/KM_Climate_Change_Paper_web.pdf	A Canadian example, Shareholder Association for Research and Education (SHARE) provides investment services, research and education by providing active ownership including proxy voting and engagement, education, policy advocacy, and practical research on issues related to responsible investment. SHARE recently released report on fiduciary duty and climate change for Canadian pension trustees.	Education, policy advocacy, publications, research
Trade Union Congress (TUC) www.tuc.org.uk/economic-issues/touchstone-pamphlets/social-issues/environment/green-and-fair-future-just-transition	The Trade Union Congress (TUC) is the voice of Britain at work. With 52 affiliated unions representing nearly 6 million working people from all walks of life, it campaigns for a fair deal at work and for social justice at home and abroad.	Advocacy, campaigning, education
Trustee Leadership Forum (TLF) hausercenter.org/iri/about/tlf	A project of the Initiative for Responsible Investment, The Trustee Leadership Forum for Retirement Security (TLF) is an applied research collaboration with labor-affiliated trustees of public and Taft-Hartley pension funds, with implications for stakeholders across investment markets. The project draws on the experiences of these trustees to identify the core issues they face in developing strategies for long-term sustainable wealth creation.	Networking, participatory action research

The Forum for Sustainable and Responsible Investment (US SIF) www.ussif.org	US SIF – The Forum for Sustainable and Responsible Investment is the US membership association for professionals, firms, institutions, and organizations engaged in sustainable, responsible, and impact investing. US SIF and its members advance investment practices that consider environmental, social, and corporate governance criteria to generate long-term competitive financial returns and positive societal impact.	Conferences, policy advocacy, publications, working groups
World Resources Institute (WRI) www.wri.org	World Resources Institute (WRI) is a global research organization that spans more than 50 countries, with offices in Brazil, China, Europe,India, Indonesia, and the United States. WRI's more than 450 experts and staff work closely with leaders to turn big ideas into action to sustain our natural resources—the foundation of economic opportunity and human well-being—including the US Climate Initiative.	Publications, research

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ESG Fiduciary Considerations Presentation

EAST BAY MUNICIPAL UTILITY DISTRICT

DATE:	November 19, 2015
TO:	Members of the Retirement Board
FROM:	Elizabeth Grassetti, Senior Human Resources Analyst
SUBJECT:	Schedule of Retirement Board Meetings for Calendar Year 2016

Schedule of Retirement Board Meetings 2016

- Thursday, **January 21, 2016**, at 8:30 a.m.
- Thursday, **March 17, 2016**, at 8:30 a.m.
- Thursday, **May 19, 2016**, at 8:30 a.m.
- Thursday, **July 21, 2016**, at 8:30 a.m.
- Thursday, **September 15, 2016**, at 8:30 a.m.
- Thursday, **November 17, 2016**, at 8:30 a.m.

All Retirement Board meetings will be held in the Administration Building Large Training Room.

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