RAMSEY COUNTY

December 31, 2016 Actuarial Valuation of Other Postemployment Benefits (OPEB) Under GASB Statement No. 45 For Fiscal Year Ending 2017

October 13, 2017

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RAMSEY COUNTY

December 31, 2016 Actuarial Valuation of Other Postemployment Benefits (OPEB)

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Introduction and Actuarial Certification

This report presents an actuarial valuation of Other Postemployment Benefits (OPEB) for Ramsey County (the County). The 'Other' refers to postemployment benefits other than pensions. Accounting for OPEB is required under Governmental Accounting Standards Board Statement No. 45 (GASB 45).

Purpose of the valuation

The purpose of this valuation is to provide the County's GASB 45 accounting information. It is important to recognize that calculations performed for other purposes may yield significantly different results. Other considerations are summarized in the Important Notices section of this report.

Basis for the valuation

In conducting the valuation, we have used the following information as of December 31, 2016:

- the provisions of the substantive OPEB for the medical plan
- census data
- premiums and/or claims experience information

All plan provisions, premiums/claims experience, and census data were provided by the County. The premiums/claims experience and census data used were reviewed and considered to be reasonable, but not formally audited.

A summary of the data, assumptions, methods, and plan provisions used to prepare the results, including changes from the prior valuation, can be found in the Actuarial Basis section of this report.

County Funding

In 2005, the County began appropriating money in its General Fund to segregate it for future OPEB liabilities.

In 2008, the County established an Internal Service Fund (the "OPEB Fund") for future OPEB liabilities separate from the General Fund and allocated previously designated amounts as well as 2008 through 2014 contributions to the OPEB Fund.

On November 20, 2012, the County Board authorized the County Manager to replace the current OPEB Internal Service Fund with a new revocable OPEB Trust Fund. In this action, the County Board authorized administration of this fund to be done by Public Employees Retirement Association (PERA) and the investment of the trust to be administered by the State Board of Investment. $43 million in the OPEB Internal Service Fund was transferred to the trust by December 31, 2012.

In 2014 the County implemented the use of a payroll surcharge to fund post-employment benefits. The surcharge is deposited to the internal service fund and it is used to cover the pay as you go benefits. Any overage in the fund may be transferred to the revocable trust. The trust will also be used to fund any shortfalls.

As of December 31, 2016, a total of approximately $63 million is on deposit in the OPEB Fund for future OPEB liabilities.

Introduction and Actuarial Certification (continued)

Changes from the prior valuation

The County's unfunded actuarial accrued liability (UAAL) increased from $235,503,520 as of 1/1/2015 to $243,582,068 as of 12/31/2016. A detailed liability reconciliation can be found on page 9. Additional information regarding the methods and assumptions can be found on pages 20 through 36. The increase was due in part to the following:

1) passage of time and additional accruals, net of benefit payouts: $12.1 million;
2) changes in actuarial demographic assumptions to align with the assumptions used in the state retirement plan valuations: $4.9 million;
3) change in the actuarial cost method from Projected Unit Credit (PUC) to Entry Age Normal (EAN) to align with the requirements of GASB 74/75 effective for FYE 2018. The cost method is a way to allocate liabilities to prior years, the current year and future years. The EAN allocates more to the past, resulting in an increase in AAL: $5.6 million;
4) change in health care trend rates compared to last year to reflect updated cost increase expectations based on recent survey information: $8.8 million;
5) change in the election assumptions which predict how many participants will elect coverage: $3.8 million.

The increase in liability was offset by several factors including the following:

1) experience different than expected – this means that the new demographic, claims and premium data resulted in lower than expected liability compared to the prior valuation: ($14.6 million);
2) change in the discount rate from 5.35% to 5.75% to reflect the expected weighted long-term rates of return on the County's general assets and revocable trust: ($12.5 million).

Changes to the plan provisions and actuarial assumptions reflected in this valuation are described at the end of each of those sections in this report.

Upcoming OPEB accounting changes

Starting with FY2018, new OPEB accounting rules go in effect that will significantly affect your reported balance sheet liability. These new OPEB accounting guidelines are known as GASB 74/75 and replace the current GASB 43/45 reporting requirements. Significant changes include:

- The Net OPEB Obligation is eliminated and the entire unfunded liability goes on the face of the financial statements.
- Funding and accounting are officially separated; employers who pre-fund their OPEB and calculate an Actuarially Determined Contribution (ADC) will need to report this number.

We encourage you to prepare by reviewing your OPEB funding and investment policies. We would be glad to discuss the potential impact on your plan.

Introduction and Actuarial Certification (continued)

Actuarial certification

To the best of our knowledge, this report is complete and accurate and all costs and liabilities under the plan were determined in accordance with generally accepted actuarial principles and practices. Upon receipt of the valuation report, the County should notify us if you disagree with any information contained in the report or if you are aware of any information that would affect the results that has not been communicated to us. The report will be deemed final and acceptable to the County unless you notify us otherwise.

The actuarial assumptions and methods are the responsibility of the plan sponsor. We have reviewed the assumptions and believe that they are reasonable estimates of future plan experience, both individually and in the aggregate. The calculations reported herein are consistent with our understanding of the provisions of GASB 45.

The undersigned credentialed actuaries are Members of the American Academy of Actuaries and meet the Qualification Standards of the Academy to render the actuarial opinion contained herein. We are available to answer questions on the material contained in the report or to provide explanations or further detail, as may be appropriate. We are not aware of any material direct or indirect financial interest or relationship that could create a conflict of interest or impair the objectivity of our work.

Brenda K. Hardy, ASA, EA, MAAA
Consulting Actuary

Mary P. Ratelle, FSA, MAAA
(Health claims and assumptions)

October 13, 2017
L/D/C/R: 4/ee/bh/sb
v.05/02/2017

RAMSEY COUNTY

December 31, 2016 Actuarial Valuation of Other Postemployment Benefits (OPEB)

Summary of Results

		12/31/2016		1/1/2015
A. Participants				
1. Active employees electing coverage		3,154		3,139
2. Actives waiving coverage		484		507
3. Retirees electing coverage		2,011		1,947
4. Total		5,649		5,593
B. Funded Status				
1. Actuarial Accrued Liability (AAL)	$	243,582,068	$	235,503,520
2. Market value of assets		0		0
3. Unfunded Actuarial Accrued Liability (UAAL) (1. - 2.)		243,582,068		235,503,520
		FYE 2017		**FYE 2015**
C. Annual Required Contribution (ARC)[1]	$	20,705,930	$	20,632,628
D. Annual OPEB Cost (see page 12)		19,159,078		19,205,533
E. Net OPEB Obligation at Beginning of Year (see page 12)		117,041,771		100,715,358
F. Effect of a 1% Increase in Discount Rate (expected asset return)				
1. Percent change in Actuarial Accrued Liability		-10.8%		-11.1%
2. Percent change in Annual OPEB Cost		-3.3%		-3.2%
G. Key Assumptions (see pages 21 through 36)				
1. Discount rate for liabilities (see pages 23 and 35)		5.75%		5.35%
2. Healthcare trend rates		See pages 22, 23 and 36 for more details.		
3. Future participation in health plans at retirement		See pages 24 and 36 for more details.		

1 Note that Annual Required Contribution is a misleading term; no annual cash contribution is required to fund OPEB benefits. The ARC is a component of the Annual OPEB Cost, and the latter is the annual expense the County is required to recognize in its financial statements.

Benefit Liabilities and Assets

	12/31/2016	1/1/2015
A. Benefit Liabilities		
1. Present value of benefits paid by employer	$ 271,771,791	$ 275,113,604
2. Present value of benefits attributed to future service	28,189,723	39,610,084
3. Actuarial Accrued Liability (AAL) (1. - 2.)	$ 243,582,068	$ 235,503,520

B. Revocable Trust[1]

Year	Transfers In	Investment Earnings	Early Retiree Reinsurance Program[2]	Total	Investment Rate of Return[3]
2016	$ 0	$ 4,890,079	$ 0	$ 4,890,079	8.39%
2015	1,500,000	637,675	0	2,137,675	1.16%
2014	2,500,000	4,236,704	0	6,736,704	10.29%
2013	3,705,838	2,506,625	0	6,212,463	7.06%
2012	6,314,755	35,399	0	6,350,154	0.09%
2011	3,027,326	14,534	899,739	3,941,599	0.04%
2010	2,348,428	38,545	548,331	2,935,304	0.12%
2009	1,520,918	39,717	0	1,560,635	0.14%
2008	3,948,904	342,487	0	4,291,391	1.31%
2007	23,290,254	915,652	0	24,205,906	7.86%
Total	$ 48,156,423	$ 13,657,417	$ 1,448,070	$ 63,261,910	

1 The County also has an internal service fund which held all OPEB assets prior to the establishment of the revocable trust in 2012. The internal service fund has available cash of $2,898,390 as of 12/31/2016.

2 This is funding from the Federal government's Affordable Care Act's Early Retiree Reinsurance Program. The County credits this revenue to the Retiree Insurance Fund.

3 Investment rates of return for 2013 - 2016 were provided by the County. Rates of return for 2007 - 2012 were estimated assuming mid-year contributions.

Breakdown of Actuarial Accrued Liability by Fund - Retirees

A. Breakdown of AAL	Pre 65	Post 65	Total
1. Early Retirees			
a. Fund 11101	$ 19,165,776	$ 19,417,760	$ 38,583,536
b. Fund 11102	4,452,864	6,355,631	10,808,495
c. Fund 12101	237,109	387,458	624,567
d. Fund 12202	0	0	0
e. Fund 12302	101,226	121,224	222,450
f. Fund 12401	0	0	0
g. Fund 12501	0	0	0
h. Fund 12901	0	0	0
i. Fund 13301	0	0	0
j. Fund 13901	0	0	0
k. Fund 14001	0	0	0
l. Fund 21101	311,200	434,919	746,119
m. Fund 21102	406,222	553,294	959,516
n. Fund 22102	407,455	493,711	901,166
o. Fund 22109	0	0	0
p. Fund 22110	0	0	0
q. Fund 22112	166,827	119,828	286,655
r. Fund 22113	187,492	284,179	471,671
s. Fund 31110	0	0	0
t. Total	25,436,171	28,168,004	53,604,175
2. Regular Retirees			
a. Fund 11101	$ 147,306	$ 52,009,379	$ 52,156,685
b. Fund 11102	(470)	27,626,844	27,626,374
c. Fund 12101	(5,560)	1,772,805	1,767,245
d. Fund 12202	0	61,606	61,606
e. Fund 12302	(9,125)	1,455,032	1,445,907
f. Fund 12401	0	0	0
g. Fund 12501	0	0	0
h. Fund 12901	0	45,594	45,594
i. Fund 13301	0	0	0
j. Fund 13901	0	0	0
k. Fund 14001	0	0	0
l. Fund 21101	9,791	2,184,358	2,194,149
m. Fund 21102	7,393	1,470,997	1,478,390
n. Fund 22102	0	1,781,922	1,781,922
o. Fund 22109	0	0	0
p. Fund 22110	0	0	0
q. Fund 22112	4,469	1,202,646	1,207,115
r. Fund 22113	0	52,592	52,592
s. Fund 31110	0	35,643	35,643
t. Total	153,804	89,699,418	89,853,222

Breakdown of Actuarial Accrued Liability by Fund - Actives

	Actuarial Accrued Liability			Service Cost
A. Breakdown of AAL	**Pre 65**	**Post 65**	**Total**	
1. Actives				
a. Fund 11101	$ 31,216,819	$ 31,026,056	$ 62,242,875	$ 2,256,564
b. Fund 11102	7,719,809	13,608,775	21,328,584	611,030
c. Fund 12101	1,014,389	1,843,359	2,857,748	65,843
d. Fund 12202	1,007	63,221	64,228	3,526
e. Fund 12302	620,201	1,429,128	2,049,329	38,360
f. Fund 12401	221,546	639,821	861,367	18,922
g. Fund 12501	69,838	70,087	139,925	3,907
h. Fund 12901	375,660	553,498	929,158	22,236
i. Fund 13301	353,490	653,346	1,006,836	34,820
j. Fund 13901	3,158	0	3,158	496
k. Fund 14001	163,010	171,427	334,437	13,903
l. Fund 21101	1,129,939	1,638,883	2,768,822	64,552
m. Fund 21102	873,712	1,200,686	2,074,398	51,108
n. Fund 22102	577,126	928,619	1,505,745	47,507
o. Fund 22109	13,969	16,682	30,651	2,434
p. Fund 22110	3,748	0	3,748	647
q. Fund 22112	435,322	572,255	1,007,577	23,858
r. Fund 22113	369,861	542,859	912,720	31,376
s. Fund 31110	3,365	0	3,365	374
t. Total	45,165,969	54,958,702	100,124,671	3,291,463

Actuarial Accrued Liability

	12/31/2016	1/1/2015
A. By Status and Coverage Period		
1. Actives		
a. Coverage before 65	$ 45,165,969	$ 51,585,662
b. Coverage after 65	54,958,702	45,516,566
c. Total	100,124,671	97,102,228
2. Retirees		
a. Coverage before 65	25,589,975	32,496,022
b. Coverage after 65	117,867,422	105,905,270
c. Total	143,457,397	138,401,292
3. All participants		
a. Coverage before 65	70,755,944	84,081,684
b. Coverage after 65	172,826,124	151,421,836
c. Total	$ 243,582,068	$ 235,503,520
B. By Status and Subsidy Type		
1. Actives		
a. Implicit Subsidy	$ 16,133,307	$ 17,271,587
b. Direct Subsidy	83,991,364	79,830,641
c. Total	100,124,671	97,102,228
2. Retirees		
a. Implicit Subsidy	8,298,185	12,578,345
b. Direct Subsidy	135,159,212	125,822,947
c. Total	143,457,397	138,401,292
3. All participants		
a. Implicit Subsidy	24,431,492	29,849,932
b. Direct Subsidy	219,150,576	205,653,588
c. Total	$ 243,582,068	$ 235,503,520

Change in Unfunded Actuarial Accrued Liability

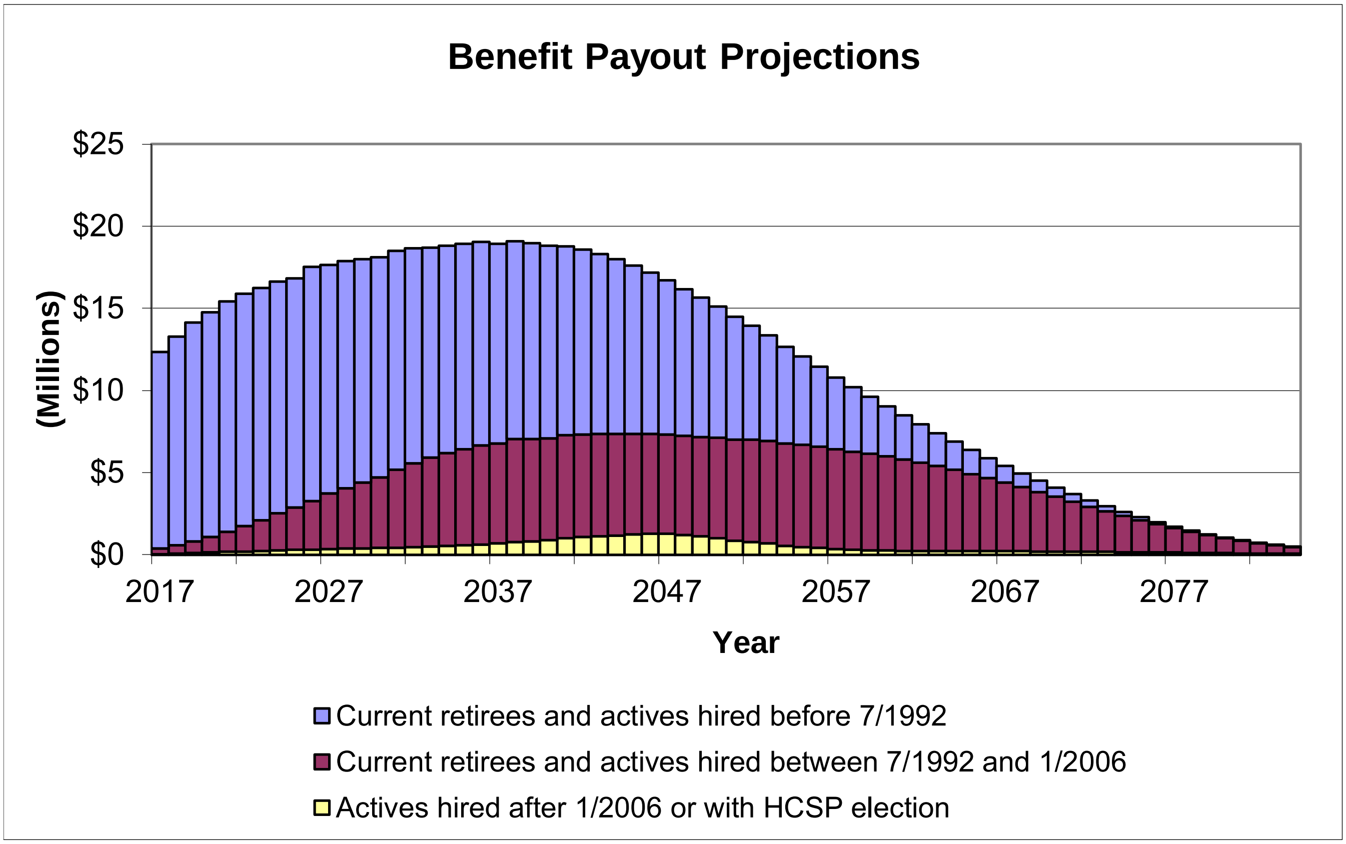
A. Liability changes		
1. Expected Actuarial Accrued Liability as of December 31, 2016		
a. AAL as of January 1, 2015		$ 235,503,520
b. Normal costs for fiscal years ending 2015 and 2016		8,915,426
c. Benefit payments for fiscal years ending 2015 and 2016		(22,256,764)
d. Interest on a., b. and c.		25,395,122
e. Expected AAL as of December 31, 2016 (a. + b. + c. + d.)		247,557,304
2. AAL (gain) or loss attributable to:		
a. Experience different than expected	(14,617,185)	
b. Change in demographic rates	4,923,643	
c. Change in actuarial cost method	5,625,864	
d. Change in healthcare trend rates	8,818,858	
e. Change in participation and coverage rates	3,779,469	
f. Change in discount rate	(12,505,885)	
g. Plan amendments	0	
h. Total (sum a. - g.)		(3,975,236)
3. Actual AAL as of December 31, 2016 (1.e. + 2.h.)		$ 243,582,068
B. Asset gain or (loss)		
1. Expected asset value as of December 31, 2016		
a. Asset value as of January 1, 2015		$ 0
b. Contributions for fiscal years ending 2015 and 2016		0
c. Benefit payments and expenses for fiscal years ending 2015 and 2016		0
d. Interest to December 31, 2016 on a., b. and c.		0
e. Expected asset value as of December 31, 2016 (a. + b. + c. + d.)		0
2. Gain/(loss)		0
3. Actual assets as of December 31, 2016 (1.e. + 2.)		$ 0
C. Change in Unfunded Actuarial Accrued Liability (UAAL)		
1. UAAL as of January 1, 2015 (A.1.a. - B.1.a.)		$ 235,503,520
2. Expected change in the UAAL		12,053,784
3. Expected UAAL as of December 31, 2016 (A.1.e. - B.1.e.)		247,557,304
4. Change in UAAL due to:		
a. Experience (gains)/losses (A.2.a. - B.2.)	(14,617,185)	
b. Demographic rates (A.2.b.)	4,923,643	
c. Actuarial cost method (A.2.c.)	5,625,864	
d. Healthcare trend rates (A.2.d.)	8,818,858	
e. Participation and coverage rates (A.2.e.)	3,779,469	
f. Discount rate (A.2.f.)	(12,505,885)	
g. Plan amendments (A.2.g.)	0	
h. Total (sum a. - g.)		(3,975,236)
5. UAAL as of December 31, 2016 (3. + 4.h.)		$ 243,582,068

Projected Benefit Payments

Fiscal Year Ending	Employer-Paid Premiums Direct Subsidy (Pay as you go cost) Current Retirees	Future Retirees	Total	Implicit Subsidy Current Retirees	Future Retirees	Total
2017	$ 9,635,350	$ 783,397	$ 10,418,747	$ 1,674,464	$ 253,245	$ 1,927,709
2018	9,682,136	1,479,632	11,161,768	1,599,975	536,904	2,136,879
2019	9,651,021	2,202,670	11,853,691	1,460,482	830,181	2,290,663
2020	9,506,648	2,921,154	12,427,802	1,206,244	1,111,514	2,317,758
2021	9,457,074	3,553,799	13,010,873	1,063,901	1,370,318	2,434,219
2022	9,359,090	4,091,235	13,450,325	893,126	1,556,608	2,449,734
2023	9,221,107	4,608,170	13,829,277	683,133	1,717,264	2,400,397
2024	9,111,421	5,120,987	14,232,408	485,115	1,917,074	2,402,189
2025	8,981,924	5,548,074	14,529,998	275,416	2,006,463	2,281,879
2026	9,037,636	6,050,677	15,088,313	226,747	2,209,612	2,436,359
2027	9,027,724	6,277,965	15,305,689	162,912	2,162,653	2,325,565
2028	9,008,553	6,608,258	15,616,811	92,126	2,183,322	2,275,448
2029	9,025,276	6,800,820	15,826,096	68,485	2,114,837	2,183,322
2030	9,038,892	7,030,760	16,069,652	74,359	1,988,049	2,062,408
2031	9,035,756	7,388,867	16,424,623	74,963	2,025,134	2,100,097
2032	9,000,322	7,639,165	16,639,487	74,854	1,931,835	2,006,689
2033	8,933,390	7,879,120	16,812,510	70,537	1,824,479	1,895,016
2034	8,823,944	8,169,825	16,993,769	50,842	1,765,045	1,815,887
2035	8,694,569	8,500,599	17,195,168	40,582	1,710,858	1,751,440
2036	8,558,849	8,810,522	17,369,371	46,969	1,649,954	1,696,923
2037	8,345,438	9,038,344	17,383,782	12,964	1,530,078	1,543,042
2038	8,132,581	9,388,199	17,520,780	0	1,571,444	1,571,444
2039	7,891,949	9,593,911	17,485,860	0	1,485,565	1,485,565
2040	7,621,038	9,803,038	17,424,076	0	1,411,554	1,411,554
2041	7,332,852	10,042,052	17,374,904	0	1,416,815	1,416,815
2042	7,019,818	10,194,836	17,214,654	0	1,358,519	1,358,519
2043	6,672,244	10,365,507	17,037,751	0	1,286,637	1,286,637
2044	6,304,884	10,475,212	16,780,096	0	1,211,973	1,211,973
2045	5,921,584	10,552,668	16,474,252	0	1,126,612	1,126,612
2046	5,526,501	10,603,382	16,129,883	0	1,057,610	1,057,610
2047	5,124,058	10,631,697	15,755,755	0	973,502	973,502

Notes: The projections are based on current participants and do not include any future entrants (closed group projections).

Breakdown of Projected Benefit Payments



Valuation Results - Net OPEB Obligation and Schedule of Employer Contributions

		FYE 2017
A. Net OPEB Obligation (NOO)		
1. Annual Required Contribution (ARC)		
a. Normal Cost	$	3,291,464
b. Amortization of the UAAL		16,288,612
c. Interest to end of fiscal year on a. and b.		1,125,854
d. Annual Required Contribution (not < 0)	$	20,705,930
2. Interest on NOO		6,729,902
3. Adjustment to ARC		(8,276,754)
4. Annual OPEB Cost (1.d. + 2. + 3.)		19,159,078
5. Estimated employer contributions[1]		
a. OPEB trust		n/a
b. Implicit subsidy benefits		1,927,709
c. Direct subsidy benefits		10,418,747
d. Reimbursement from OPEB trust		n/a
e. Total		12,346,456
6. Increase (decrease) in NOO (4. - 5.e.)		6,812,622
7. Net OPEB Obligation at fiscal year beginning		117,041,771
8. Net OPEB Obligation at fiscal year end	$	123,854,393

B. Schedule of Employer Contributions

Fiscal Year Ending	Annual OPEB Cost	Estimated Employer Contributions[1]	% of Annual OPEB Cost Contributed	Net OPEB Obligation
2014	19,648,733	11,662,274	59.4%	100,715,358
2015	19,205,533	11,117,160	57.9%	108,803,731
2016	19,377,644	11,139,604	57.5%	117,041,771
2017	19,159,078	12,346,456	64.4%	123,854,393

1 These are estimates and they include both OPEB trust contributions, if any, and net benefits paid by the employer. Financial statements should use actual employer contributions which will change the year-end NOO and subsequent calculations of Interest on NOO and Adjustment to ARC.

Valuation Results - Required Supplementary Information

(a) Actuarial Valuation Date	(b) Actuarial Value of Assets	(c) Actuarial Accrued Liability	(d)=(c)-(b) Unfunded Actuarial Accrued Liability	(e)=(b)/(c) Funded Ratio	(f) Estimated Covered Payroll	(g)=(d)/(f) UAAL as a % of Payroll
1/1/2015	0	235,503,520	235,503,520	0.0%	227,822,509	103.4%
12/31/2016	0	243,582,068	243,582,068	0.0%	236,111,064	103.2%

Summary of Plan Participants

This section presents the demographic information for the active employees and retired participants included in the OPEB valuation. The actuarial valuation was based on December 31, 2016 census data provided by the County. The following exhibits summarize the personnel characteristics of the data used for the valuation.

A. Medical[1]

1. Benefits-eligible active employees	Single	Single+1	Family	Total
a. HealthPartners Distinctions (under age 65)	1,821	0	1,333	3,154
b. Total with coverage	1,821	0	1,333	3,154
c. Total without coverage				484
d. Total active employees				3,638
e. Average age				46.9
f. Average service				12.4

2. Benefits-eligible retirees	Single	Single+1	Family	Total
a. HealthPartners Distinctions (under age 65)	251	0	109	360
b. HealthPartners Major Medical (65+ non-Medicare eligible plan)	0	0	0	0
c. HealthPartners Freedom and HealthPartners National (65+ Medicare eligible plan)	945	589	42	1,576
d. Blue Cross Platinum Blue Plan B w/Rx (65+ Medicare eligible plan)	41	16	0	57
e. Total with coverage	1,252	605	154	2,011
f. Total without coverage				0
g. Total retirees				2,011
h. Average age with coverage				72.1

1 Participant count summaries only include medical plans available as of December 31, 2016.

Summary of Plan Provisions

A. Eligibility

At retirement, employees of the County receiving a retirement or disability benefit, or eligible to receive a benefit, from a Minnesota public pension plan may continue to participate in the County's group insurance plan.

County employees are participants in either the PERA of Minnesota General Employees Retirement Plan, PERA of Minnesota Public Employees Police & Fire Plan or the PERA of Minnesota Local Government Correctional Service Retirement Plan. Retirement and disability eligibility for these pension plans are as follows:

<u>**PERA of Minnesota General Employees Retirement Plan**</u>

Retirement[1]:

- Tier 1 members (Hired before 7/1/1989):
  - Normal: Age 65 and 3 years of service (proportionate annuity available at age 65 and 1 year of service)
  - Early: Age 55 and 3 years of service or any age and 30 years of service
  - Unreduced: Age plus service total at least 90
- Tier 2 members (Hired on or after 7/1/1989):
  - Normal: Social Security retirement age, but no later than age 66 and vested (proportionate annuity available at normal retirement age and 1 year of service)
  - Early: Age 55 and vested

Disability: Total and permanent disability and vested

Vesting: 3 years (hired before 7/1/2010) or 5 years (hired on or after 7/1/2010)

<u>**PERA of Minnesota Public Employees Police & Fire Plan**</u>

Retirement[2]:

- The earlier of 1) age 65 and at least 1 year of service, 2) age 50 and at least partially vested

In the line of duty disability: Any age and service
Regular disability: Any age and 1 year of service

Vesting:

- Hired before July 1, 2010: 100% vested after 3 years
- Hired after June 30, 2010 and before 7/1/2014: 50% vested after 5 years of service, increasing 10% each year until 100% vested after 10 years of service
- Hired after 6/30/2014: 50% vested after 10 years, increasing 5% each year until 100% vested after 20 years of service

1 Eligibility for Tier 2 members entering before July 1, 2010 was used for all PERA General members because the difference in eligibility is assumed to be insignificant for the current participant group.

2 Eligibility for members entering before July 1, 2010 was used for all PERA Police & Fire members because the difference in eligibility is assumed to be insignificant for the current participant group.

Summary of Plan Provisions (continued)

A. Eligibility (continued)

<u>**PERA of Minnesota Local Government Correctional Service Retirement Plan**</u>

Retirement[1]:

- The earlier of 1) age 65 and at least 1 year of service, 2) age 50 and at least partially vested

In the line of duty disability: Any age and service
Regular disability: Any age and 1 year of service

Vesting:

- Hired before July 1, 2010: 100% vested after 3 years
- Hired after June 30, 2010: 50% vested after 5 years of service, increasing 10% each year until 100% vested after 10 years of service

1 Eligibility for members entering before July 1, 2010 was used for all PERA Correctional members because the difference in eligibility is assumed to be insignificant for the current participant group.

Summary of Plan Provisions (continued)

B. Plan Premiums

Eligible participants and their dependents are allowed access to the health plan and contribute the following plan premiums effective January 1, 2017. Participants meeting additional requirements are eligible for a direct subsidy of the premium paid by the County as described in item D. Direct Subsidy below.

Medical (not Medicare Eligible)	Single	Family (spouse with Medicare A & B)	Family (spouse without Medicare A & B)
HealthPartners Distinctions	$ 822.90	$ 1,092.90	$ 1,961.16
HealthPartners Major Medical	734.61	N/A	1,471.32
Medical (Medicare Eligible)			
HealthPartners Freedom and HealthPartners National	270.00	540.00	1,092.90
Blue Cross Platinum Blue Plan B w/Rx	192.50	385.00	N/A
Medicare Part B	134.00	268.00	N/A

C. Implicit Subsidy

The implicit subsidy is provided to all retirees and dependents who elect non-Medicare medical coverage, provided the retiree has satisfied the applicable pension plan requirements described in item A. Eligibility.

The implicit subsidy is the difference between the actual and apparent cost of OPEB coverage. The actual cost for early retirees is usually higher than the average per-person premium for the active/retiree group. Plans in which retirees pay the average active/retiree rate (the apparent cost) give rise to an implicit rate subsidy: the employer pays the difference between the actual and apparent cost.

D. Direct Subsidy

Participants meeting the following eligibility receive a County direct subsidy toward the premium as described below:

Group	Premium Paid by County
Employees hired before July 1, 1992 with 20,800 hours of service or 10,400 hours of service if retiring under PERA disability	County pays full defined county contribution
Employees hired between July 1, 1992 and January 1, 2006 with 41,600 hours of service (excluding those who made a one-time election to participate in Health Care Savings Plan (HCSP))	County pays 50% of the defined county contribution for 20 years of service, plus an additional 4% per year of service beyond 20, up to a maximum of 90% of the defined county contribution
Other eligible participants who do not meet years of service requirements or hired after January 1, 2006 and those electing to participate in HCSP	Retiree may continue medical coverage by paying the full premium

Summary of Plan Provisions (continued)

E. Defined County Contribution

Participants meeting the following eligibility receive a defined County contribution toward the premium as described below:

Group	Defined County Contribution
Retirees under age 65, including those disabled in the line of duty	County pays same contribution as paid for active employees (in 2017 participant pays $60 per month for single coverage and $497.80 for family coverage)
Retirees age 65 and over who retired before January 1, 1996	County pays full premium
Retirees age 65 and over who retired on or after January 1, 1996	County pays contribution not exceeding the county contribution for active employees, except member will pay at least $55 per month for single coverage and at least $120 per month for family coverage

F. Additional County Benefit

Employees who retired prior to July 1, 1990 are reimbursed for Medicare B premiums by the County.

G. Valuation Changes

Since the last valuation the following changes have been made:

- Retiree premiums were updated to current levels.
- The portion of retiree premiums that members are responsible for were updated to current levels.

Summary of Plan Provisions (continued)

H. Severence

Only participants meeting the following eligibility receive a severance from the County as described below. No other employee groups are eligible.

AFSCME Group	Severence Benefit
General County, Community Human Services, Licensed Practical Nurses, Workforce Solutions, Lake Owasso Residence, Ramsey County Care Center, Parks and Recreation, and Public Health Registered Nurses	Option A: daily pay times one-half of unused sick days* up to a maximum of $13,000 Option B: $210 per year of service for years 1 through 10 plus $280 per year for years 11 through 20 plus $350 per year for years over 20, up to a maximum of $7,000

Eligibility
Option A: 10 years of service with at least 480 hours of unused accumulated sick leave
Option B: 20 years (41,600 hours) of service

* Employees are assumed to accumulate future unused sick leave based on the current average unused sick days of the eligible group. It is assumed each employee would accrue 41 hours of sick leave per year.

Because GASB only applies to severance Option B, we have not included severance liability when Option A is projected to be larger than Option B.

Summary of Actuarial Methods

A. Actuarial Cost Method

Liabilities are based on the Entry Age Normal level percent of pay cost method. In this method, the actuarial Present Value of Benefits (PVB) for each individual is allocated as a level percent of pay from entry age (hire age, for most employees) to last decrement age with a future benefit. The portion of the PVB allocated to the valuation year is called the Normal Cost (NC). The portion of the PVB allocated to past years is called the Actuarial Accrued Liability (AAL), and the difference between the AAL and any OPEB-dedicated assets is called the Unfunded Actuarial Accrued Liability (UAAL).

B. Amortization Method

GASB accounting rules allow several options for amortizing an OPEB plan's Unfunded Actuarial Accrued Liability (UAAL). The County has chosen to amortize the entire UAAL as a level dollar amount over a 30-year open period (the maximum period allowed). This method will re-amortize the UAAL each year over 30 years. The County should be aware that, absent actuarial gains, the UAAL may never be fully recognized under this method.

C. Funding Policy

The County has assets designated for OPEB. These assets are not in a GASB 45 qualified irrevocable trust and are not allowed to be used in determining the plan's unfunded actuarial accrued liability (UAAL). As a result, the funding policy is considered to be the pay-as-you-go method under which contributions to the plan are generally made at the same time and in the same amount as retiree benefits and expenses become due.

D. Data Methods

The County provided census and financial information for the valuation and we have relied on this data in preparing the results in this report. The data was reviewed for reasonableness and consistency, but we have not performed a complete audit.

To the extent that census data was collected as of a date later than December 31, 2016, we have assumed that it is reasonably representative of the plan census on the valuation date and used it with only minor adjustments.

E. Covered Payroll

Covered payroll information for the fiscal year ending December 31, 2017 was provided by the County.

Summary of Healthcare Assumptions and Methods

A. Per Capita Claims Costs

Non-Medicare Eligible	When premiums for non-Medicare retirees are determined using a blend of active employee and retiree experience, it creates an implicit subsidy to the retirees. The subsidy is equal to the difference between the retiree's expected true costs (claims and administration fees) and apparent costs (blended premium charged) of coverage. Non-Medicare retiree per capita claims costs are developed by first determining the per member per month (PMPM) claims cost using the plan's claims, stop loss fees (if applicable) and membership experience. This average-age PMPM claims cost is then converted to an age 65 retiree claims cost by adjusting for the difference between the age, utilization and Medicare eligibility (if applicable) of the experience group versus non-Medicare age 65 retirees. PMPM retiree claims costs for all non-Medicare retirement ages are developed by applying the pre-65 aging factors (shown in the Summary of Actuarial Assumptions) to the age-65 retiree claims cost. PMPM administrative costs are based on administrative fee data provided to us. Final per capita claims costs are equal to the PMPM administrative cost added to the PMPM retiree claims cost at each individual age. If applicable, administrative costs and/or retiree claims costs are adjusted for medical trend to the valuation month.
Medicare Eligible	We have assumed that premiums for Medicare eligible retirees are based on Medicare eligible retiree experience and equal the expected true cost of retiree coverage. As a result, there is no implicit subsidy for these benefits.

Summary of Healthcare Assumptions and Methods (continued)

B. Healthcare Cost Trend

Trend is a forecast of per capita claims cost increases due to factors such as price inflation, per capita income growth (GDP), and new technology. We developed our trend assumption using the “Getzen” model published by the Society of Actuaries (v2016_a). This model produces a long-term estimate of medical cost trends based on an analysis of historical US healthcare expenditures and industry experts. It assumes that healthcare costs will continue to grow at their historical trends until the economy (GDP) can no longer support the excess growth. At that time, rates revert to an ultimate trend rate which is projected to be supportable by GDP growth rates.

The trend assumption is comprised of three elements: (1) initial short-term rates (up to 5 years), (2) a multi-decade transition period of medium-term rates until projected healthcare costs exceed GDP capacity, and (3) a transition to the ultimate trend rate supported by the GDP assumptions. The short-term medical trend rates are based on published survey data, recent premium increase rates, and long-term expectations. Medium-term and ultimate trend rates are based on the default Getzen model assumptions; except that we have adjusted the inflation and technology expectations to be consistent with our underlying capital market assumptions.

The medical trend rates do not reflect future potential taxes resulting from the Affordable Care Act's "Cadillac Tax." We have assumed the Getzen model's caps on economy-wide healthcare costs will prevent potential tax increases from affecting long-term trend rates.

Actual plan sponsor healthcare costs will differ from the trend assumption since we cannot precisely predict the factors affecting trend and annual plan costs in the future. This assumption is merely one estimate among a wide range of possibilities.

Summary of Actuarial Assumptions

A. General Information

Valuation Date	December 31, 2016
Census Date	December 31, 2016
Benefits Valued	Medical coverage and select severance benefits

B. Economic Assumptions

	12/31/2016	1/1/2015
Discount Rate (See page 35 for rationale)	5.75%	5.35%
Investment Return		
General County Assets	3.50%	4.00%
Revocable Trust Assets	7.00%	6.75%
Inflation Rate (General)	2.75%	2.75%

Healthcare Trend Rates — Annual increases in per capita claims costs and plan premiums are as follows:

Fiscal Year Beginning	12/31/2016 Medical	1/1/2015 Medical Non-Medicare Eligible	1/1/2015 Medical Medicare Eligible
2017	6.80%	6.60%	5.90%
2018	6.50%	6.30%	5.80%
2019	6.20%	5.90%	5.60%
2020	5.80%	5.60%	5.40%
2021	5.50%	5.30%	5.20%
2022-2023	5.50%	5.00%	5.00%
2024-2049	5.40%	5.00%	5.00%
2050-2074	Transition to ultimate rate	5.00%	5.00%
2075+	4.40%	5.00%	5.00%

- Medicare Part B premiums are assumed to increase 5.0% annually.
- To apply the Entry Age Normal actuarial cost method, we have assumed annual medical and Medicare Part B premium cost increases between each participant's entry age and the valuation date to be 6.80% and 5.00%, respectively.

Increases in Direct Subsidy — Assumed to increase with healthcare trend rates.

Summary of Actuarial Assumptions (continued)

C. Medical Elections

Current Retirees

- Participation — 100% of current retirees are assumed to continue coverage for life.
- Coverage Level — Current retirees are assumed to elect dependent coverage based on their current elections.
- Plan Election[1] — Current retirees under age 65 are assumed to continue coverage in their current plan until age 65 and then elect coverage based on the plan elections outlined below for future retirees. Current retirees over age 65 are assumed to continue coverage in their current plan.

Future Retirees

- Participation — For those currently electing coverage, the assumed percent electing coverage at retirement is as follows:
  - Hired before 7/1/1992 — 100% are assumed to elect coverage at retirement for life.
  - Hired between 7/1/1992 and 1/1/2006 with 41,600 hours — 75% are assumed to elect coverage at retirement for life.
  - Hired between 7/1/1992 and 1/1/2006 with less than 41,600 hours — 25% are assumed to elect coverage at retirement for life.
  - Hired after 1/1/2006 or made one-time HCSP — 25% are assumed to elect coverage at retirement for life.
- Coverage Level
  - Hired before 7/1/1992 — 50% of those electing coverage are assumed to cover a spouse.
  - Hired between 7/1/1992 and 1/1/2006 with 41,600 hours — 35% of those electing coverage are assumed to cover a spouse.
  - Hired between 7/1/1992 and 1/1/2006 with less than 41,600 hours — 20% of those electing coverage are assumed to cover a spouse.
  - Hired after 1/1/2006 or made one-time HCSP — 20% of those electing coverage are assumed to cover a spouse.
- Plan Election[1] — The following table provides the assumed percent electing each plan:

Medical Plan	Not Medicare Eligible	Medicare Eligible
HealthPartners Distinctions	100%	n/a
HealthPartners Major Medical	0%	n/a
HealthPartners Freedom and National	n/a	95%
Blue Cross Platinum Blue Plan B w/Rx	n/a	5%

1 Plan election rates only include medical plans available as of the December 31, 2016 valuation date. Any new plans added after the valuation date are excluded from this valuation, but will be included in the next valuation.

Summary of Actuarial Assumptions (continued)

D. Demographic Assumptions

Withdrawal

- General Employees — Rates used in the July 1, 2016 PERA of Minnesota General Employees Retirement Plan actuarial valuation. Sample rates are shown in the table below.

- Police & Fire — Select and ultimate rates used in the July 1, 2016 PERA of Minnesota Public Employees Police & Fire Plan actuarial valuation. Select and ultimate rates after the third year are shown below.

- Correctional — Select and ultimate rates used in the July 1, 2016 PERA of Minnesota Local Government Correctional Service Retirement Plan. Select and ulitmate rates after the third year are shown below.

	First Year	Second Year	Third Year
Police & Fire Select Rates	8.0%	5.0%	3.5%
Correctional Select Rates	25.0%	20.0%	15.0%

General Employees			Ultimate Rates			
				Police	Correctional	
Service	Male	Female	Age	& Fire	Male	Female
0	25.00%	25.00%	20	6.01%	14.70%	14.20%
1	20.00%	20.00%	25	3.24%	14.70%	14.20%
2	15.00%	15.00%	30	1.90%	9.10%	11.40%
3	10.00%	11.00%	35	1.46%	6.00%	8.60%
4	9.00%	10.00%	40	1.26%	4.40%	6.90%
5	7.00%	9.00%	45	0.91%	3.40%	4.30%
10	3.25%	4.25%	50	0.50%	2.40%	3.10%
15	2.25%	3.00%	55	0.11%	1.40%	2.20%
20	1.50%	2.25%	60	0.00%	0.00%	0.00%
25	1.00%	1.75%	65	0.00%	0.00%	0.00%
26+	1.00%	1.50%	70	0.00%	0.00%	0.00%

Summary of Actuarial Assumptions (continued)

D. Demographic Assumptions (continued)

Disability

- General Employees None

- Police & Fire Rates used in the July 1, 2016 PERA of Minnesota Public Employees Police & Fire Plan actuarial valuation. Sample rates are shown in the table below.

Age	Disability Rate
20	0.11%
25	0.13%
30	0.16%
35	0.19%
40	0.29%
45	0.54%
50	1.04%
55	2.03%
60	0.00%

- Correctional Rates used in the July 1, 2016 PERA of Minnesota Local Government Correctional Service Retirement Plan actuarial valuation. Sample rates are shown in the table below.

	Disability Rate	
Age	Male	Female
20	0.04%	0.04%
25	0.06%	0.06%
30	0.10%	0.08%
35	0.18%	0.11%
40	0.23%	0.18%
45	0.34%	0.39%
50	0.55%	0.70%
55	0.88%	1.18%
60	1.41%	2.41%
65	1.67%	2.67%

Summary of Actuarial Assumptions (continued)

D. Demographic Assumptions (continued)

Retirement

- General Employees — Rates used in the July 1, 2016 PERA of Minnesota General Employees Retirement Plan actuarial valuation. Rates are shown in the table below.
- Police & Fire — Rates used in the July 1, 2016 PERA of Minnesota Public Employees Police & Fire Plan actuarial valuation. Rates are shown in the table below.
- Correctional — Rates used in the July 1, 2016 PERA of Minnesota Local Government Correctional Service Retirement Plan actuarial valuation. Rates are shown in the table below.

	General Employees				
	Tier 1				
Age	Early Retirement	Unreduced or Normal Retirement	Tier 2	Police & Fire	Correctional
50	5.0%	20.0%	n/a	13.0%	3.0%
51	5.0%	20.0%	n/a	10.0%	2.0%
52	5.0%	20.0%	n/a	10.0%	2.0%
53	5.0%	20.0%	n/a	10.0%	2.0%
54	5.0%	20.0%	n/a	13.0%	5.0%
55	5.0%	20.0%	5.0%	30.0%	20.0%
56	5.0%	15.0%	5.0%	20.0%	8.0%
57	5.0%	15.0%	5.0%	20.0%	8.0%
58	6.0%	15.0%	5.0%	20.0%	8.0%
59	7.0%	15.0%	6.0%	20.0%	8.0%
60	8.0%	15.0%	7.0%	25.0%	15.0%
61	10.0%	18.0%	9.0%	25.0%	15.0%
62	20.0%	35.0%	15.0%	35.0%	30.0%
63	20.0%	25.0%	15.0%	35.0%	30.0%
64	25.0%	25.0%	15.0%	35.0%	30.0%
65	n/a	32.5%	25.0%	50.0%	40.0%
66	n/a	25.0%	25.0%	50.0%	40.0%
67	n/a	20.0%	20.0%	50.0%	40.0%
68	n/a	17.5%	17.5%	50.0%	40.0%
69	n/a	15.0%	15.0%	50.0%	40.0%
70	n/a	17.5%	17.5%	100.0%	100.0%
71+	n/a	100.0%	100.0%	100.0%	100.0%

Summary of Actuarial Assumptions (continued)

D. Demographic Assumptions (continued)

Mortality[1]

- General Employees

Rates used in the July 1, 2016 PERA of Minnesota General Employees Retirement Plan actuarial valuation as described below and shown in the General Employees Rate Tables on page 29.

Healthy Pre-retirement: RP 2014 non-annuitant generational mortality projected fully generational with scale MP-2015, white collar adjustment, male rates set forward 1 year and female rates set back 1 year.

Healthy Post-retirement: RP 2014 annuitant generational mortality projected fully generational with scale MP-2015, white collar adjustment, male rates set forward 2 years and female rates multiplied by a factor of 90%.

Disabled: RP 2014 disabled retiree mortality projected fully generational with scale MP-2015, male rates set forward 1 year and female rates set forward 6 years.

- Police & Fire

Rates used in the July 1, 2016 PERA of Minnesota Public Employees Police & Fire Plan actuarial valuation as described below and shown in the Police & Fire Rate Tables on page 30.

Healthy Pre-retirement: RP 2000 non-annuitant generational mortality projected fully generational with Scale AA, white collar adjustment, male rates set back 2 years, female rates set back 2 years.

Healthy Post-retirement: RP 2000 annuitant generational mortality projected fully generational with Scale AA, white collar adjustment, without age adjustments.

Disabled: RP 2000 annuitant mortality, white collar adjustment, male rates set forward 8 years and female rates set forward 8 years.

- Correctional

Rates used in the July 1, 2016 PERA of Minnesota Local Government Correctional Service Retirement Plan as described below and shown in the Correctional Rate Rate Tables on page 31.

Healthy Pre-retirement: RP 2000 non-annuitant generational mortality projected fully generational with Scale AA, white collar adjustment, without age

Healthy Post-retirement: RP 2000 annuitant generational mortality projected fully generational with Scale AA, white collar adjustment, without age

Disabled: RP 2000 disabled retiree mortality, without adjustments.

1 Since pension plan information was not provided for inactive employees, mortality rates for General Employees were used for all current healthy retirees and disabled participants.

Summary of Actuarial Assumptions (continued)

D. Demographic Assumptions (continued)

General Employees

Rate Tables[1]

	Healthy Pre-Retirement[2] Mortality Rates		Disabled[3] Mortality Rates	
Age	Male	Female	Male	Female
25	0.032%	0.014%	0.252%	0.263%
30	0.033%	0.017%	0.558%	0.467%
35	0.038%	0.023%	0.941%	0.709%
40	0.047%	0.031%	1.355%	0.973%
45	0.076%	0.050%	1.757%	1.245%
50	0.131%	0.085%	2.102%	1.496%
55	0.216%	0.131%	2.395%	1.760%
60	0.368%	0.191%	2.741%	2.198%
65	0.651%	0.286%	3.308%	3.028%
70	1.152%	0.486%	4.265%	4.441%
75	2.040%	0.847%	5.793%	6.607%

	Healthy Post-Retirement[4] Mortality Rates	
Age	Male	Female
50	0.320%	0.187%
55	0.436%	0.244%
60	0.598%	0.350%
65	0.911%	0.589%
70	1.538%	0.950%
75	2.651%	1.582%

1 Since pension plan information was not provided for inactive employees, mortality rates for General Employees were used for all current healthy retirees and disabled participants.

2 Rates shown are the base RP 2014 non-annuitant generational mortality, white collar adjustment, male rates set forward 1 year and female rates set back 1 year.

3 Rates shown are the base RP 2014 disabled retiree mortality, male rates set forward 1 year and female rates set forward 6 years.

4 Rates shown are the base RP 2014 annuitant generational mortality, white collar adjustment, male rates set forward 2 years and female rates multiplied by a factor of 90%.

Summary of Actuarial Assumptions (continued)

D. Demographic Assumptions (continued)

Police & Fire Rate Tables[1]

Age	Healthy Pre-Retirement[2] Mortality Rates Male	Healthy Pre-Retirement[2] Mortality Rates Female	Disabled[3] Mortality Rates Male	Disabled[3] Mortality Rates Female
25	0.037%	0.020%	0.048%	0.040%
30	0.039%	0.024%	0.077%	0.056%
35	0.048%	0.040%	0.112%	0.084%
40	0.077%	0.056%	0.171%	0.134%
45	0.112%	0.084%	0.572%	0.290%
50	0.171%	0.134%	0.569%	0.469%
55	0.240%	0.202%	0.923%	0.742%
60	0.355%	0.311%	1.583%	1.239%
65	0.564%	0.498%	2.671%	2.090%
70	0.853%	0.759%	4.748%	3.496%
75	2.671%	2.090%	8.398%	5.951%

Age	Healthy Post-Retirement[4] Mortality Rates Male	Healthy Post-Retirement[4] Mortality Rates Female
50	0.598%	0.245%
55	0.543%	0.349%
60	0.661%	0.562%
65	1.163%	0.911%
70	1.928%	1.519%
75	3.363%	2.572%

1 Since pension plan information was not provided for inactive employees, mortality rates for General Employees were used for all current healthy retirees and disabled participants. See page 29 for General Employee rates.

2 Rates shown are the base RP 2000 non-annuitant generational mortality, white collar adjustment, male rates set back 2 years, female rates set back 2 years.

3 Rates shown are the base RP 2000 annuitant mortality, white collar adjustment, male rates set forward 8 years and female rates set forward 8 years.

4 Rates shown are the base RP 2000 annuitant generational mortality, white collar adjustment, with no age adjustments.

Summary of Actuarial Assumptions (continued)

D. Demographic Assumptions (continued)

Correctional Rate Tables[1]

	Healthy Pre-Retirement[2] Mortality Rates		Disabled[3] Mortality Rates	
Age	Male	Female	Male	Female
25	0.038%	0.021%	2.257%	0.745%
30	0.035%	0.028%	2.257%	0.745%
35	0.059%	0.047%	2.257%	0.745%
40	0.089%	0.065%	2.257%	0.745%
45	0.134%	0.102%	2.257%	0.745%
50	0.198%	0.159%	2.898%	1.154%
55	0.275%	0.237%	3.544%	1.654%
60	0.426%	0.375%	4.204%	2.184%
65	0.673%	0.594%	5.017%	2.803%
70	0.982%	0.880%	6.258%	3.764%
75	3.363%	2.572%	8.207%	5.223%

	Healthy Post-Retirement[4] Mortality Rates	
Age	Male	Female
50	0.598%	0.245%
55	0.543%	0.349%
60	0.661%	0.562%
65	1.163%	0.911%
70	1.928%	1.519%
75	3.363%	2.572%

1 Since pension plan information was not provided for inactive employees, mortality rates for General Employees were used for all current healthy retirees and disabled participants. See page 29 for General Employee rates.

2 Rates shown are the base RP 2000 non-annuitant generational mortality, white collar adjustment, with no adjustments.

3 Rates shown are the base RP 2000 disabled retiree mortality, without adjustments.

4 Rates shown are the base RP 2000 annuitant generational mortality, white collar adjustment, with no age adjustments.

Summary of Actuarial Assumptions (continued)

D. Demographic Assumptions (continued)

Salary Scale

- General Employees — Rates used in the July 1, 2016 PERA of Minnesota General Employees Retirement Plan actuarial valuation. Rates are shown in the table below.
- Police & Fire — Rates used in the July 1, 2016 PERA of Minnesota Public Employees Police & Fire Plan actuarial valuation. Rates are shown in the table below.
- Correctional — Rates used in the July 1, 2016 PERA of Minnesota Local Government Correctional Service Retirement Plan actuarial valuation. Rates are shown in the table below.

Service	General	Police & Fire	Age	Correctional
1	11.50%	12.75%	20	8.75%
2	8.50%	10.75%	25	7.50%
3	7.00%	8.75%	30	6.50%
4	6.00%	7.75%	35	6.00%
5	5.50%	6.25%	40	5.50%
6	5.20%	5.85%	45	4.75%
7	4.90%	5.55%	50	4.75%
8	4.80%	5.35%	55	4.50%
9	4.70%	5.15%	60	4.00%
10	4.50%	5.05%	65	3.75%
11	4.25%	4.95%	70+	3.75%
12	4.10%	4.85%		
13	4.00%	4.75%		
14	3.90%	4.65%		
15	3.90%	4.55%		
16	3.85%	4.55%		
17	3.80%	4.55%		
18	3.75%	4.55%		
19	3.75%	4.55%		
20	3.75%	4.55%		
21	3.75%	4.45%		
22	3.70%	4.35%		
23	3.60%	4.25%		
24	3.60%	4.25%		
25	3.60%	4.25%		
26+	3.50%	4.25%		

Summary of Actuarial Assumptions (continued)

D. Demographic Assumptions (continued)

Spouse Age Difference

- Future retirees — Husbands are assumed to be 3 years older than wives.
- Retirees — Actual spouse date of birth, if provided. Otherwise, husbands are assumed to be 3 years older than wives.

Medicare Eligibility — 100% of current and future retirees under age 65 are assumed to become Medicare eligible at the later of age 65 or retirement. Actual Medicare status was used for retired members.

E. Per Capita Claims Costs

Medical — Per capita claims costs were developed using claims, premiums, fees and enrollment information provided by the County. The results contained herein are highly dependent on the accuracy and credibility of the data provided to us. The claims experience was adjusted for aging, plan values, participant status and coordination with Medicare, if applicable. Sample monthly costs by plan and age are below:

Age	HealthPartners Distinctions	HealthPartners Major Medical
40	$ 637	$ n/a
45	735	n/a
50	849	n/a
55	991	n/a
60	1,175	n/a
64	1,377	n/a
65	n/a	756
70	n/a	870
75	n/a	978
80	n/a	1,075
85	n/a	1,128
90+	n/a	1,155

Aging Factors — Increases in medical costs from one age to the next are based on the factors shown below:

Age	Aging Factor
18 - 49	3.10%
50 - 54	3.30%
55 - 59	3.60%
60 - 64	4.20%
65 - 69	3.00%
70 - 74	2.50%
75 - 79	2.00%
80 - 84	1.00%
85 - 89	0.50%
90+	0.00%

Summary of Actuarial Assumptions (continued)

F. Assumption Changes

Since the last valuation the following changes have been made:

- The actuarial cost method changed from using the Projected Unit Credit cost method to the Entry Age Normal level percent of pay cost method in anticipation of the FY2018 GASB 75 report.
- The discount rate was changed from 5.35% to 5.75% based on updated capital market assumptions regarding the employer's general fund investments and revocable trust assets.
- Healthcare trend rates were reset to reflect updated cost increase expectations. See pages 22, 23 and 36 for more details.
- Medical per capita claims costs were updated to reflect recent experience.
- Withdrawal, retirement and mortality rates were updated from the rates used in the 7/1/2014 PERA General Employees Retirement Plan valuation to the rates used in the 7/1/2016 valuation.
- A salary scale assumption was added to reflect the cost method change. Rates are from the 7/1/2016 PERA General Employees Retirement Plan valuation, 7/1/2016 PERA Public Employees Police & Fire Plan valuation and the 7/1/2016 PERA Local Government Correctional Service Retirement Plan valuation.
- The percent of future retirees not eligible for a direct subsidy assumed to elect coverage at retirement changed from 50% to 25% to reflect recent plan experience.
- The percent of future Medicare eligible retirees electing each medical plan changed from 98%/2% electing HealthPartners Freedom and HealthPartners National/Blue Cross Platinum Blue Plan B w/Rx to 95%/5% electing HealthPartners Freedom and HealthPartners National/Blue Cross Platinum Blue Plan B w/Rx. This change was made to reflect recent plan experience.
- The percent of retirees hired before 7/1/1992 assumed to cover a spouse at retirement has changed from 35% to 50%. This change was made to reflect recent plan experience.
- The percent of retirees hired between 7/1/1992 and 1/1/2006 who are eligible for a direct subsidy assumed to cover a spouse at retirement has changed from 30% to 35%. This change was made to reflect recent plan experience.
- Assumed sick leave accruals were changed from 38 hours of sick leave per year to 41 hours per year to reflect current average accruals of benefiting group.

Selection of Economic Assumptions

The Actuarial Standards Board (ASB) provides coordinated guidance for measuring pension and retiree group benefit obligations through a series of Actuarial Standards of Practice (ASOPs). ASOP No. 27, Selection of Economic Assumptions for Measuring Pension Obligations, requires that the actuary disclose the rationale used in selecting each non-prescribed economic assumption and any changes to non-prescribed economic assumptions.[1]

The table below summarizes the rationale for selecting the non-prescribed economic assumptions. The rationale for assumption changes, along with a description of the assumptions themselves, is included in the Actuarial Assumption and Methods section of the report.

Economic Assumptions (non-prescribed)	
Assumption	**Rationale for Selecting Assumption**
Discount rate	Based on a blend of the long-term expected return on (1) plan assets to the extent they are projected to be sufficient to pay plan benefits, and (2) employer general assets to the extent that projected plan assets are insufficient to pay plan benefits.
Expected return on assets	The expected trust asset return (if any) is based on a blend of the trust's expected asset class returns and target asset allocation. The expected employer asset return is based on the long-term expected return on short-term/cash-equivalent assets using our capital market assumption model.
Inflation rate	Based on analysis of historical CPI-U inflation rates and the estimated forward-looking inflation rate implied by 30-Year Treasury rates vs. 30-Year TIPS rates.
Annual salary increases	Based on the most recently disclosed assumption for the pension plan in which the employee participates.

1 ASOP No.6, Measuring Retiree Group Benefits Obligations and Determining Retiree Group Benefits Program Periodic Costs or Actuarially Determined Contributions, specifies that actuaries should comply with ASOP 27 when selecting economic assumptions not covered by ASOP 6.

Selection of Non-Economic Assumptions

The Actuarial Standards Board (ASB) provides coordinated guidance for measuring pension and retiree group benefit obligations through a series of Actuarial Standards of Practice (ASOPs). ASOP No. 35, Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations, requires that the actuary disclose the rationale used in selecting each non-prescribed non-economic assumption and any changes to non-prescribed non-economic assumptions.[1]

The table below summarizes the rationale for selecting the non-prescribed non-economic assumptions. The rationale for assumption changes, along with a description of the assumptions themselves, is included in the Actuarial Assumption and Methods section of the report.

Non-Economic Assumptions (non-prescribed)	
Assumption	Rationale for Selecting Assumption
Healthcare trend rates	Developed using the Society of Actuaries "Getzen" model, with short-term rates set annually based on review of recent healthcare trend surveys and relevant client-specific experience. Additional details can be found in the Healthcare Assumptions and Methods section.
Plan participation, plan election and spouse coverage	Based on review of the County's historical experience and current participant elections.
Withdrawal, retirement and mortality	Based on the current actuarial assumptions for the pension plan in which the current or future retiree participates.
Disability incidence and disabled mortality	Not applicable for retirees who do not receive a disability retirement benefit or OPEB plans that do not provide disability benefits. Otherwise, based on the current actuarial assumptions for the pension plan in which the current or future retiree participates.
Spouse ages	Based on a standard age difference assumption from general industry experience, unless substantial plan-specific data is available.
Medicare eligibility	Based on review of current retiree data. Otherwise, we assume all post-65 retirees are Medicare eligible since there are generally very few retirees not eligible for Medicare.
Per capita claims costs	Developed using claims, premiums, fees and enrollment information provided by the County. Aging factors are based on sample rates described in "Aging Curves for Health Care Costs in Retirement" published in 2005 North American Actuarial Journal. Additional details can be found in the Per Capital Claims Cost section of the Summary of Healthcare Assumptions and Methods.

1 ASOP No.6, Measuring Retiree Group Benefits Obligations and Determining Retiree Group Benefits Program Periodic Costs or Actuarially Determined Contributions, specifies that actuaries should comply with ASOP 35 when selecting economic assumptions not covered by ASOP 6.

Important Notices

Purpose and Scope of the Valuation

This valuation has been prepared exclusively for the County and solely to provide GASB 45 accounting information. It is important to recognize that calculations performed for other purposes (such as benefit design, investment policy, or plan funding) may yield significantly different results.

A valuation report is only a snapshot of a plan's estimated financial condition at a single point in time. A plan's total cost will depend on many factors and variables that are uncertain and unknowable at the current valuation date.

Actuarial valuations are extremely complex and it's possible that data, computer coding, and mathematical errors could occur during the valuation process. Errors in a valuation discovered after its preparation may be corrected by revising the current valuation or in a subsequent year's valuation.

Assumptions and Methods

Since modeling all possible future outcomes is not possible or practical, the valuation is based on a single set of data, assumptions, methods, and plan provisions which satisfy current GASB 45 accounting requirements. We may also use estimates or simplifications to model future events in an efficient and cost-effective manner, so long as we believe that these simplifying techniques do not affect the reasonableness of the valuation results.

The County is responsible for the assumptions, methods, and funding policies used to prepare the valuation. The assumptions used in this report are among a wide range of possibilities (each of which may be considered reasonable), but have been chosen as a single "best estimate". If the County is interested in analyzing the effect of different assumption sets on the valuation results, then we suggest a sensitivity analysis to be performed at a later date.

To the extent that actual plan experience differs from the valuation assumptions, actuarial gains and losses will occur and be amortized over future periods. A summary of the actuarial assumptions and methods used in this valuation are summarized in the Actuarial Basis section of the report.

Impact of Amortization Method

GASB 45 accounting rules require selection of a method for amortizing the unfunded actuarial accrued liability (UAAL) when calculating the ARC and Annual OPEB Cost. For the current valuation, the County has elected to amortize the UAAL as a level dollar amount over a 30-year open period (i.e. the entire UAAL is re-amortized over a new 30-year period each year). Amortization over an open period means that, absent actuarial gains, the current UAAL may never be fully recognized.

Important Notices (continued)

Accuracy of Substantive Plan Information and Census Data

For purposes of this valuation, we have assumed that the County has validated our summary of the substantive plan provisions and has provided us with any relevant information regarding interpretation of the plan provisions and changes to the plan terms since the prior valuation.

The County is solely responsible for the validity, accuracy and comprehensiveness of this information. If any data or plan provisions supplied are not accurate and complete, the valuation results may differ significantly. Moreover, different interpretations of the substantive plan may produce substantially different valuation results.

Funding Considerations

The County is solely responsible for selecting funding and investment policies. Actuarial valuations do not affect the ultimate cost of a plan, only the timing of contributions and Annual OPEB Cost. If contributions over time are lower or higher than necessary, then future contribution levels can be adjusted to fund the plan at the desired level.

This report has not been prepared to develop a funding policy for the County's OPEB plan. For example, the Annual Required Contribution (ARC) calculated under GASB rules is an accounting term and may or may not be the appropriate level of funding for the plan. If the County would like to analyze different funding policies, then we suggest a separate funding policy study to be completed at a later date.

Accounting Requirements and Valuation Considerations

This section summarizes the applicable accounting requirements for the plan and describes important considerations and methods used to complete the valuation.

Accounting Information under GASB 43 and GASB 45

The Governmental Accounting Standards Board (GASB) finalized Statements No. 43 (GASB 43 for funded OPEB plans) and 45 (GASB 45 for employers) in 2004. The statements' objectives are to establish uniform standards of financial reporting by state and local governmental entities for postemployment benefit plans other than pension benefits (OPEB plans). This includes benefits such as postemployment medical, dental, vision and life insurance benefits.

For OPEB plans sponsored by governmental entities, these GASB Statements require certain standards and disclosures of plan and fund information including financial reporting of plan assets, liabilities of plan, changes in net assets, funded status and funding progress of the plan, and contributions to the plan in comparison to the annual required contributions of the employer (ARC).

Valuing Postretirement Health Benefits

Determining the value of future healthcare benefits is challenged by the fact that assumptions must be made about many future events that are especially hard to predict. Future increases in healthcare costs are affected by many factors, including:

- OPEB inflation
- Utilization
- Technological advances
- Cost shifting between private and public healthcare plans
- Cost leveraging (i.e., erosion of fixed deductibles and out-of-pocket maximums)

OPEB obligations are also heavily influenced by demographic assumptions such as:

- Withdrawal rates (i.e., employees terminating before receiving benefits)
- Retirement rates (i.e., employees retiring at various ages and subsidy levels)
- Mortality rates (i.e., how long employees and spouses will receive benefits)
- Election rates (i.e., retirees electing to participate, electing which plan, and electing spouse coverage or not)

The Summary of Actuarial Assumptions and Methods section outlines the assumptions used in this valuation.

Accounting Requirements and Valuation Considerations (continued)

Estimating Healthcare Costs and Implicit Subsidy

Estimating future healthcare costs involves calculating a starting claims plus administrative cost on a per-covered-individual basis, as well as developing an assumption regarding future increases in healthcare costs.

For insured plans, the premiums represent a blended average cost of both active and retired individuals. Since older, pre-65 retirees generally incur higher claims than younger active employees, GASB requires employers to value retiree liability based on retirees' estimated true costs rather than anticipated premium costs. Age-adjusted claims are developed and used to value the OPEB liability.

Impact of Legislative Changes

The legislative and regulatory environments have many implications for OPEB plans. Changes to current rules and implementation of new legislation are difficult to predict but could have a dramatic impact on the value of future plan benefits. These include:

- Changes to government medical programs, such as Medicare, when applicable. Under the Medicare Modernization Act of 2003 (MMA), the Part D prescription drug program was established. GASB requirements state that the determination of the actuarial accrued liabilities, the annual required contribution, and the annual OPEB cost should be done without reduction for Medicare Part D payments.

- Effect of the Patient Protection and Affordable Care Act. Many of the Act's provisions are in the process of being implemented, while others (such as the Cadillac Tax on certain high-cost medical plans) are still on the horizon. As guidance is released we will reflect any potential impact to your plan. This report does not contain an explicit liability for the Cadillac Tax because it is unclear at this time exactly how those taxes would impact your plan costs.

Glossary of Selected Terms

This section provides the definitions of applicable terminology in the actuarial valuation, with references to both the Governmental Accounting Standards Nos. 43 (GASB 43) and 45 (GASB 45).

Actuarial Cost Method - a procedure for determining the actuarial present value of benefits and for developing an allocation of such value to time periods.

Actuarial Present Value of Benefits - the value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a set of actuarial assumptions.

Actuarial Accrued Liability (AAL) - the portion of the actuarial present value which is not provided for by future normal costs, determined under the actuarial cost method.

Annual OPEB Cost - the OPEB expense recognized in the employer's financial statements.

Annual Required Contribution (ARC) - the basis for the annual OPEB cost shown in the employer's financial statements. This term is misleading: no annual cash contribution is actually required to fund OPEB.

Direct Subsidy - OPEB explicitly provided by employer.

Discount Rate - the interest rate used to adjust liabilities and obligations for the time value of money.

GASB Statement No. 43 & GASB Statement No. 74 - the Governmental Accounting Standards Statement Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans

GASB Statement No. 45 & GASB Statement No. 75 - the Governmental Accounting Standards Statement Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions

Implicit Subsidy or Implicit Rate Subsidy - the difference between the actual and apparent cost of OPEB coverage. The actual cost for early retirees is higher than the average per-person premium for the active/retiree group. Plans in which retirees pay the average active/retiree rate (the apparent cost) give rise to an implicit rate subsidy: the employer pays the difference between the actual and apparent cost.

Medicare - a U.S. government program of hospitalization insurance and voluntary medical insurance for persons aged 65 and over and for certain disabled persons under 65.

Medicare Part B - provides medical insurance coverage for services such as physician's services, outpatient services, and home health care. Participation under Part B is voluntary, and beneficiaries pay monthly premiums. Part B is also called Supplementary Medical Insurance.

Medicare Part D - also called the Medicare prescription drug benefit, is a federal program to subsidize the costs of prescription drugs for Medicare beneficiaries in the United States. It was enacted as part of the Medicare Modernization Act of 2003 (MMA) and went into effect on January 1, 2006.

Net OPEB Obligation (NOO) - the OPEB liability (asset) at transition, if any and the cumulative difference since the effective date of Statement No. 45 between annual OPEB cost and the employer's contributions.

Normal Cost - the portion of the actuarial present value which is allocated to the valuation year by the actuarial cost method.

Valuation Date - the date as of which assets and liabilities are measured for this OPEB valuation.