

Retirement Income Plan for
General Employees of City of
Pembroke Pines
4-27083

Actuarial valuation report

for the plan year beginning 10/01/2018
and ending 09/30/2019

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This report is for the defined benefit retirement plan named on the report cover. It may only be provided to other parties in its entirety and should not be altered. Employee data and other information you provide, along with benefits described in your plan document are used for the basis of this report. This report includes your actuarial determined contribution. Amounts in this report are not meant for your financial statements or to terminate your plan. Upon request, we will prepare other reports for these purposes.

Summary of results

Current year plan costs

The following is a synopsis of your plan costs for the current year, including the actuarially determined contribution (ADC). For a complete schedule of the cash due and received by the plan, see the [Contribution schedule](#).

The actuarially
determined
contribution is
\$2,243,128

- See [Funding calculations](#) for details.
- We have received \$875,000 in employer for the current plan year.
- Contributing less than the actuarially determined contribution amount will increase your next year's amount.

Consider contributing more than your annual cost.

Contributing just your actuarially determined contribution (ADC) can lead to higher required funding in future years. To mitigate these increases, you should consider contributing more than the ADC. While there are many contribution options, one common alternate funding level is the amount of ADC without regard to the Credit Balance offset. That amount for 2019 budget year is \$6,355,758,

Factors impacting current year costs

Your actuarially determined contribution has not changed materially since last year.

Your actuarially determined contribution decreased from \$2,660,082 in 2017 to \$2,243,128 for 2018.

You can compare your contributions to the actuarially determined contribution for each year in the Historical results section at the back of this report.

Contact your pension actuarial analyst, Gary R Peffer, at

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- 412-394-9379

Understanding your plan's funded status

While it is important to know the actuarially determined contribution level, it is also important to understand your plan's funded status. The funded status determines contribution levels and can help you make informed decisions about plan funding, investment policies and benefit changes.

Measures of plan funded status

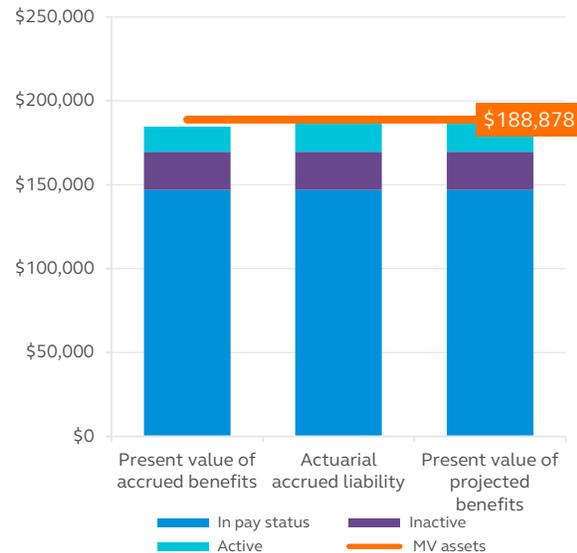
The table below compares the plan's 10/01/2018 market value of assets (the solid line) to 10/01/2018 plan liabilities measured using the assumptions we have made about future events. The liabilities assume:

- No one will enter the plan after the valuation date.
- Your asset allocation will remain the same with a return of 6.75% each year into the future.
- Plan participants will retire, die, terminate, and become disabled based on our assumptions.
- Annual pay per person will increase based on the [salary increase assumption](#).

Three liability measures are shown:

1. **Present value of accrued benefits** - benefits already earned through the valuation date.
2. **Actuarial accrued liability (AAL)** - represents the targeted asset level under your plan's cost method.
3. **Present value of projected benefits** - all benefits expected to be earned through assumed retirement date.

Compare your plan's assets to each of the three liability measures to determine the funded status.



Considerations

These funded status measurements should be evaluated when making decisions about your plan. The goal of the plan's cost method is to accumulate assets equal to the AAL. As long as your AAL is fully funded, you will only need to contribute the plan's Normal Cost each year. Otherwise, you'll also need to contribute amortization payments toward funding this liability.

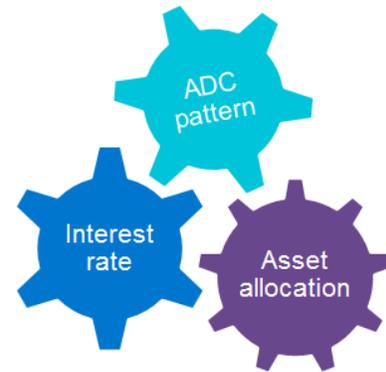
Understanding how your assets compare to your Present Value of Accrued Benefits is important. At a minimum you want to have enough assets in the plan to cover the present value of the benefits accrued to date.

Funding in excess of the Present Value of Projected Benefits may not be the best use of your organization's funds. However, having excess assets may provide funding and plan design flexibility.

Understanding your plan's funded status

Asset allocation, interest rates and actuarially determined contribution (ADC)

Three key factors are linked in the determination of the pattern and level of the ADC for your plan: your asset allocation, the assumed funding interest rate and the pattern of your ADC. This section discusses how these three factors are related, illustrates the impact of interest rates on measures of benefit liability, and provides information to consider as you review your funding and asset allocation decisions.



The liability measures shown on the previous page and used to calculate your actuarially determined contribution (ADC) reflect assumptions about future investment returns and on your asset allocation. However, future investment returns are not guaranteed, and will fluctuate. To make informed decisions about funding policy, benefit design, and asset allocations, you need to understand the effect of the [liability interest rate assumption](#).

The only sources of funding for your benefits are your cash contributions and asset earnings. The present value of benefits (liability measure) is less than the benefits payable because it is reduced for assumed future asset earnings. When asset earnings fall below expectations, additional cash will be needed to allow payment of all your benefits. Your cost method is used to budget the expected total cost of your plan, and determines the ADC for each plan year.

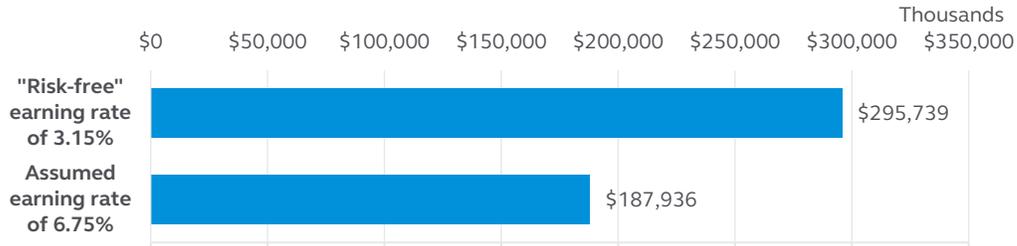
Asset allocations and interest rates

To help understand how the level of ADC can change over time, a best practice is to evaluate the benefit liability ignoring the plan's asset allocation. A recommended approach is to use a conservative "risk-free" interest rate such as U.S. Treasury instruments.

	Diversified asset allocation	"Risk free" return
Expected future returns (interest rates) based on	Your plan's asset allocation	Conservative interest rates such as U.S. Treasury instruments (<u>not</u> your plan's investment allocation)
Current effect	Lower ADC	Higher ADC
Later effect	Potentially higher ADC if returns fall below that assumed	Potentially lower ADC if greater returns are earned

The chart below shows your plan’s Actuarial Accrued Liability used in the ADC calculation compared to the liability determined using a “risk-free” interest rate. This chart indicates how much impact asset earnings can have on the cash required to fund benefits over the life of the plan.

Actuarial accrued liability



As you can see above, higher expected returns generate a lower benefit liability. The additional assumed returns between funding basis (6.75%) and risk-free basis (3.15%) are referred to as “risk premium”. The \$107,802,558 difference in the two liability amounts is the assumed risk premium to be earned over the life of the plan.

The [Risk-free results](#) section later in this report shows additional liability comparisons.

Asset allocation and ADC

The interest return assumption we use to measure benefit liabilities for funding is [based on your asset allocation](#). As a result, your asset allocation choices impact your ADC:

- More volatile asset classes may reduce the current ADC for your plan, but will cause both future ADC and funded status to fluctuate more. There is the potential for severe declines in funded status and increases in ADC when markets perform poorly.
- More conservative asset classes may result in a higher ADC, but provide a more stable basis for planning and budgeting.

The more volatile the value of your asset classes, the greater the range of the potential ADC. You can evaluate the potential impact of alternative asset allocations - and how you could balance your long-term cost and the volatility of your annual ADC - through forecasting studies.

Benefit changes and risk-free interest rates

A decision to change plan benefits can have long-term funding implications. Plan sponsors should be cautious about spending what appears to be excess assets in a given plan year on benefit increases. Working with your actuary to request a plan design study can help with your decision.

Recognizing the volatility of the ADC (discussed in the paragraph above), you will want to include the value of the proposed benefit change on a more conservative rate (ex. a risk-free rate) and/or a forecast of long-term funding levels. Discussing the study with your plan actuary can help you decide what, if any, benefit changes you can afford over the long term.

Forecasting: a best practice

Industry experts agree that it is a prudent best practice to review the long-term trends of your plan. We provide historical information at the back of this report. But that is like driving using just your rear view mirror: you only see part of the picture.

Short-term

Neither this year's ADC nor funded status is a good estimate of future amounts because they are volatile from year to year. These measures depend on your plan's assets and benefit liability:

- **Plan asset values** increase or decrease with market returns on investments, contributions made, benefit payments and expenses. Using an asset smoothing method also affects the upcoming year asset values.
- **Benefit liability** is impacted by benefit payments, salary experience, census or demographic changes, and assumption changes.

If you need to budget for next year or explore the potential volatility of results over the next few years, consider requesting a short-term forecast.

Long-term

A 10- or 20-year forecast of your plan's ADC and funded status under both expected and adverse economic scenarios is an excellent planning tool and can be a good investment.

- Comparing the results from your current asset allocation to alternative investment options can provide valuable insights to guide asset allocations. Comparing different funding policies can help evaluate whether your policy will meet your goals and fit in your budget.
- Stress-testing based on economic conditions can help you assess plan risk, and to set funding and investment policies.
- Projecting salary experience, census or demographic changes, and the benefits offered can help identify long-term trends.

If you want to explore the potential volatility of results over an extended time period, consider requesting a long-term forecast.

Keep us informed



Please make us aware of any upcoming plan design or significant participant group changes (such as layoffs, increases in staff, or large retirements). Knowing about possible changes gives us the chance to advise you whether further analysis of the cost impact should be considered.

Contribution schedule

The table below shows the contributions received and payments that are due to meet the Actuarially Determined Contribution (ADC) for this year. You can fund more than this schedule.

- The total cash contributions made for the 2016 plan year is \$2,500,068.
- The total cash contributions made for the 2017 plan year is \$5,500,000.
- So far, cash contributions of \$ 875,000 have been received for the current plan year.
- Employee contributions of \$234,516 have been received for the 2017 plan year and \$66,499 employee contributions have been received through 02/04/2019 for the 10/01/2018 plan year.

Paid or date due	Plan year beginning 2016	Plan year beginning 2017	Plan year beginning 2018	Plan year beginning 2019
12/13/2016	\$625,017			
03/13/2017	\$625,017			
06/20/2017	\$625,017			
09/28/2017	\$625,017			
12/14/2017		\$875,000		
03/06/2018		\$875,000		
06/14/2018		\$875,000		
09/17/2018		\$875,000		
11/28/2018		\$2,000,000		
12/13/2018			\$875,000	
09/30/2019			\$1,785,082	
09/30/2020				\$2,243,128

Blue shading shows employer contribution due for current plan year.

Funding calculations

Actuarially determined contribution

The actuarially determined contribution (ADC) consists of three parts:

- 1** Normal cost - the cost attributed to the current year (due to the continued accrual of plan benefits for active employees) and plan expenses.
- 2** Amortization of any unfunded accumulated past costs (unfunded actuarial accrued liability).
- 3** Interest on 1 and 2 above to the end of the plan year.



Employer normal cost	\$5,953,872
Plus valuation interest to the end of the plan year	401,886
Minus 15 year amortization of credit balance	3,852,581
Minus valuation interest to the end of the plan year on credit balance	260,049

Your actuarially determined contribution (ADC) is **\$2,243,128**

The Actuarially Determined Contribution is in addition to employee contributions.

2016 ADC - \$2,378,931
ADC with interest - \$2,539,509
Prior Credit Balance - \$32,783,286
2016 Contributions - \$5,500,000
Prior Credit Balance and Contributions with interest - \$40,595,710
Credit Balance as of 10/1/2018- \$38,056,201 (\$40,595,710 - \$2,539,509)

Funding calculations

Development of total normal cost for fiscal year ending 09/30/2019

Normal cost is the portion of cost assigned to each year based on the [cost method](#) and [assumptions](#) shown in this report. The normal cost is shared by the employer and the employees based on plan provisions.

Normal cost	\$410,956
Plus estimated expenses	53,000
Total normal cost	\$463,956
Plus amortization charges	6,812,428
Minus amortization credits	1,516,183
Employer normal cost	\$5,760,201

Development of total normal cost for fiscal year ending 09/30/2020

Normal cost is the portion of cost assigned to each year based on the [cost method](#) and [assumptions](#) shown in this report. The normal cost is shared by the employer and the employees based on plan provisions.

Employer normal cost	\$5,760,201
Plus adjustment for salary increase (4.01%)	18,605
Plus adjustment for interest (6.75%)	390,069
Total normal cost for 09/30/2020 FYE	\$6,168,875
Minus employee normal cost (7.25% of compensation - \$2,965,553)	215,003
Employer normal cost	\$5,953,872

Actuarial accrued liability

The actuarial accrued liability (AAL) is the targeted asset level for the plan and is used in the calculation of the unfunded actuarial accrued liability on the following page. The AAL below is the amount after any assumption or plan changes.

Active participants	\$18,293,638
Inactive participants	22,677,040
Participants and beneficiaries in pay status	146,965,311
Actuarial accrued liability	\$187,935,989

Funding calculations

Unfunded actuarial accrued liability

Each year the unfunded actuarial accrued liability (UAAL) is calculated and equals the actuarial accrued liability less the actuarial value of assets. An experience gain or loss occurs when actual plan experience differs from what was assumed. The gain or loss is calculated separately and amortized as a charge (for a loss) or a credit (for a gain). The UAAL is then adjusted for amendments, assumption changes, or method changes and a liability base is created.

Expected unfunded actuarial accrued liability

10/01/2017 unfunded actuarial accrued liability (UAAL)	\$10,043,630	
10/01/2017 employer normal cost	2,378,931	
Interest on the above items	838,523	
Total expected UAAL without contributions		\$13,261,084
Employer contributions	\$5,500,000	
Interest on employer contributions	99,552	
Total contributions with interest		\$5,599,552
Expected 10/01/2018 unfunded actuarial accrued liability		\$7,661,532
Total expected UAAL less contributions with interest		

Actual unfunded actuarial accrued liability

Actuarial accrued liability	\$187,935,989	
Less actuarial value of assets	182,111,690	
10/01/2018 unfunded actuarial accrued liability		\$5,824,299

Experience (gain) or loss

Actual unfunded actuarial accrued liability	\$5,824,299	
Less expected unfunded actuarial accrued liability	7,661,532	
(Gain)loss		\$(1,837,233)
2017 amortization balances	\$4,947,565	
Interest on amortization balances	333,961	
Additional (gain)/loss from (excess) shortage of contributions		\$5,281,526
Total experience (gain) or loss		\$3,444,293

Your 10/01/2018 unfunded actuarial accrued liability is **\$5,824,299**

Schedule of amortization bases

Your cost method allocates a portion of plan funding to be amortized in equal annual installments, rather than to be paid through future normal costs. The following amortization periods will be applied consistently to any amortization bases created 10/01/2012 and later.

- Initial unfunded actuarial accrued liability: 15 years
- Experience gains/losses: 15 years.
- Amendments: 15 years
- Assumption changes: 15 years

Date created	Reason	Initial balance	Remaining years	Outstanding balance	Annual amortization
10/01/2018	Experience (gain)/loss	3,444,293	15	3,444,293	348,680
10/01/2017	Experience (Gain)/Loss	6,063,551	14	5,817,569	613,838
10/01/2016	Experience (Gain)/Loss	4,504,434	13	4,126,634	456,002
10/01/2016	Assumption	16,390,356	13	15,015,650	1,659,261
10/01/2015	Experience (Gain)/Loss	(2,799,322)	12	(2,440,913)	(284,060)
10/01/2015	Assumption	7,693,822	12	6,708,750	780,727
10/01/2014	Experience (Gain)/Loss	(3,974,549)	11	(3,279,577)	(404,613)
10/01/2013	Experience (Gain)/Loss	(8,101,838)	10	(6,276,735)	(827,510)
10/01/2012	CMET	28,822,233	9	20,764,829	2,953,920
Total				43,880,500	5,296,245

Funding calculations

Data and assumptions

Plan assets

We measure your plan's assets at the beginning of each plan year. Plan assets reflect all contributions made for prior plan years. Contributions you may have already made for the 2018 plan year are not included.

Both market value and actuarial value for the 2018 plan year are shown below.

Market value of assets

Investments held by Principal	\$186,874,284
Contributions received on or after 10/01/2018	2,003,221
Total market value of assets	\$188,877,505

Actuarial value of assets

Your plan uses an asset smoothing method for the actuarial value instead of the market value. Using this method allows you to soften the volatility of assets from year to year. The actuarial value of assets is used to calculate your actuarially determined contribution (ADC).

The actuarial value of assets held by Principal is determined on a combined basis. See the following page for the development of this value.

Adjusted market value of investments held by Principal	\$180,108,469
Contributions received on or after 10/01/2018	2,003,221
Total actuarial value	\$182,111,690

The actuarial value of plan assets is **\$182,111,690**

Calculation of adjusted market value

To determine the actuarial value of Investments held by Principal, we adjusted the market value by:

- Subtracting any remaining deferred appreciation in excess of expected investment earnings.
- Adding any remaining deferred appreciation short of expected investment earnings (shortfall).

Of the total excess appreciation or shortfall for any one plan year, 25% is allocated to the current plan year and each of the next three plan years.

1 Determine excess appreciation/(shortfall)

Compare actual to expected assets

Market value of assets as of 2017	\$179,828,476
Contributions/transfers	5,734,516
Benefit payments	(11,074,842)
Expenses	(52,400)
Expected 6.75% interest on above items	11,840,992
Expected value of assets as of 10/01/2018	\$186,276,742
Market value as of 10/01/2018	\$188,877,505
Current year excess appreciation/(shortfall)	2,600,763
25% of current year excess appreciation/(shortfall)	650,191

2 Allocate deferred appreciation/(shortfall)

Allocation year	Plan year			
	2015	2016	2017	2018
2015	\$(3,503,907)			
2016	(3,503,907)	\$208,203		
2017	(3,503,907)	208,203	\$2,303,521	
2018	(3,503,907)	208,203	2,303,520	\$650,191
2019		208,203	2,303,520	650,191
2020			2,303,520	650,191
2021				650,190
Total		\$832,812	\$9,214,081	\$2,600,763
Deferred		208,203	4,607,040	1,950,572
Adjustment to market value (sum of deferred amounts)				\$6,765,815

3 Adjust market value for deferred amounts

Market value as of 10/01/2018	\$188,877,505
Adjustment to market value (sum of deferred amounts)	6,765,815
Adjusted value of investments	\$182,111,690

Data and assumptions

Census characteristics

	10/01/2017	10/01/2018	Change
Number of covered participants			
Actives	35	34	-1
Terminated vested	245	233	-12
Disabled	1	0	-1
Retirees	399	408	+9
Total	680	675	-5
Average age			
Actives	50.1	51.0	+0.9
Terminated vested	49.4	50.1	+0.7
Disabled	55.0	N/A	N/A
Retirees	67.6	68.1	+0.5
All	60.1	61.0	+0.9
Reported annual payroll			
Actives	\$3,148,593	\$3,128,143	-0.6%
Average pay per active	89,960	92,004	+2.3%
Average years of service			
Actives	13.8	14.5	+5.1%
Monthly projected retirement benefits			
Actives	\$215,273	\$213,575	-0.8%
Terminated vested	224,850	206,494	-8.2%
Disabled	1,130	0	-100.0%
Retirees	882,317	914,789	+3.7%

The monthly projected retirement benefit for actives was calculated at normal retirement age (current age if later) with projected service and projected salaries.

Data and assumptions

Benefit cash flows

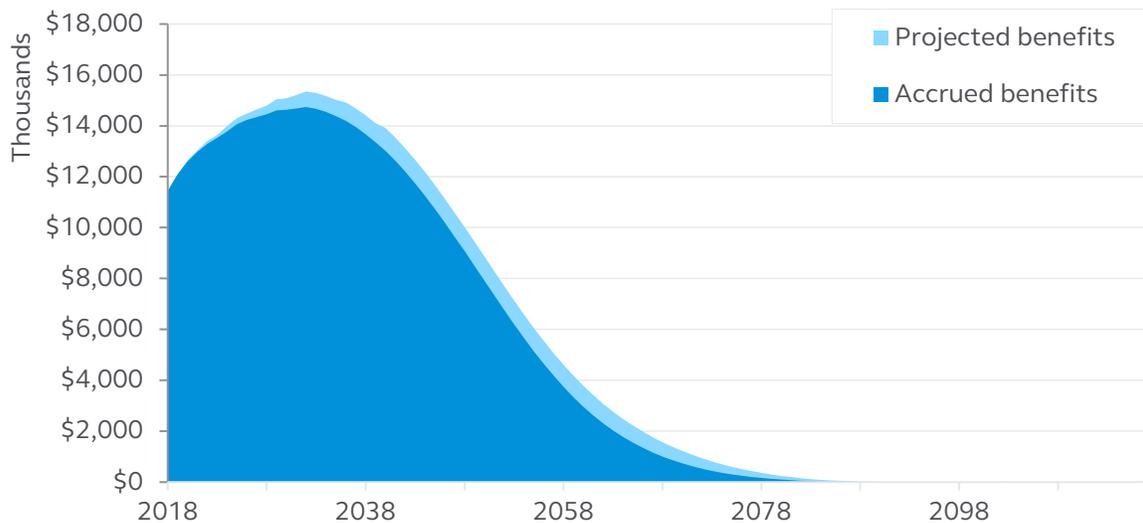
Benefit cash flows are the benefit payments expected to be paid from your plan assets. We provide cash flows to help you calculate and understand your plan obligations and the future liquidity needs of the plan.

You can compare your cash flows to the 10/01/2018 market value of assets, \$188,877,505, to evaluate your asset liquidity needs, and whether cash contributions in excess of the actuarially determined contribution may be needed in the short term.

Benefit cash flows can be based on either the current plan participants (“closed group”) or a group that assumes future new entrants (“open group”). The benefit payments could be based on the accrued benefits or the projected plan benefits (reflecting future service and salary increases).

In this report, we are showing you the benefit cash flows for a closed group. The graph below shows the total benefits expected to be paid for current participants (closed group). The split between benefits already accrued and those to be earned in the future is indicated on the graph. The top line represents the total projected benefits expected to be paid in each plan year.

Accrued and projected benefit payments - closed group



The table on the next page provides the details of this graph, showing the accrued and projected benefits expected to be paid, by plan year. All benefit cash flows shown on these two pages are based on the demographic assumptions (retirement and withdrawal rates, mortality, salary growth, and form of benefit) as outlined in the [Assumptions and methods](#), but do not reflect an interest discount.

Data and assumptions

Benefit cash flow detail

Year	Accrued benefit cash flow	Projected benefits cash flow	Year	Accrued benefit cash flow	Projected benefits cash flow	Year	Accrued benefit cash flow	Projected benefits cash flow
2018	11,448,315	11,448,315	2051	7,338,998	8,281,143	2084	32,769	91,628
2019	12,103,335	12,106,345	2052	6,766,994	7,704,523	2085	23,790	67,994
2020	12,604,407	12,649,097	2053	6,207,520	7,138,491	2086	16,935	49,313
2021	12,978,308	13,049,780	2054	5,665,903	6,588,275	2087	11,745	34,676
2022	13,290,197	13,404,180	2055	5,146,587	6,058,185	2088	7,997	23,838
2023	13,526,781	13,644,513	2056	4,652,631	5,551,133	2089	5,333	15,937
2024	13,785,324	13,988,428	2057	4,186,384	5,069,343	2090	3,486	10,417
2025	14,069,981	14,308,410	2058	3,750,180	4,615,147	2091	2,231	6,624
2026	14,233,648	14,477,786	2059	3,345,106	4,189,639	2092	1,416	4,184
2027	14,346,688	14,645,191	2060	2,971,087	3,792,752	2093	889	2,626
2028	14,450,720	14,793,151	2061	2,627,245	3,423,545	2094	550	1,630
2029	14,603,612	15,049,758	2062	2,313,870	3,082,374	2095	335	1,003
2030	14,631,362	15,085,025	2063	2,031,352	2,769,963	2096	203	617
2031	14,677,046	15,208,903	2064	1,777,903	2,484,639	2097	118	370
2032	14,739,260	15,351,840	2065	1,551,443	2,224,441	2098	67	219
2033	14,669,938	15,291,864	2066	1,349,125	1,986,756	2099	40	134
2034	14,541,331	15,171,326	2067	1,168,571	1,769,518	2100	24	82
2035	14,375,571	15,013,864	2068	1,008,138	1,571,414	2101	12	43
2036	14,197,163	14,921,587	2069	865,793	1,390,720	2102	3	18
2037	13,953,012	14,686,639	2070	739,529	1,225,941	2103	2	11
2038	13,673,889	14,416,469	2071	627,907	1,076,067	2104	1	6
2039	13,352,451	14,102,827	2072	529,628	940,152	2105	0	3
2040	13,020,663	13,921,227	2073	443,278	816,630	2106	0	1
2041	12,629,844	13,539,764	2074	367,863	704,820	2107	0	0
2042	12,204,485	13,123,158	2075	303,047	604,961	2108	0	0
2043	11,745,757	12,670,086	2076	247,557	515,667	2109	0	0
2044	11,257,662	12,188,423	2077	200,492	435,994	2110	0	0
2045	10,742,928	11,679,172	2078	160,657	364,688	2111	0	0
2046	10,205,320	11,145,976	2079	127,441	301,760	2112	0	0
2047	9,648,744	10,592,598	2080	99,921	246,450	2113	0	0
2048	9,077,679	10,023,388	2081	77,329	197,999	2114	0	0
2049	8,498,792	9,444,908	2082	58,978	155,983	2115	0	0
2050	7,917,811	8,862,771	2083	44,275	120,593	2116	0	0

Data and assumptions

Plan provisions

This report reflects the maximum benefit limits under Internal Revenue Code (IRC) Section 415 and maximum compensation limits under IRC Section 401 in effect on the first day of each plan year.

The following is a summary of plan provisions and does not alter the intent or meanings of the provisions contained in the contract or plan document

Plan eligibility

Class	<p>Any general or utility employee whose customary employment with the employer is at least 30 hours per week or an elected official subject to the provisions of Chapter 112.048 of the Florida Statutes.</p> <p>Bargaining - no employee hired on and after 02/01/2010 will become an active participant and no inactive participant or former participant will again become an active participant.</p> <p>Non-collective bargaining - no employee hired on and after 10/01/2014 will become an active participant and no inactive participant or former participant will again become an active participant.</p>
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Normal retirement benefit

Age	The later of attained age 55 or ten years vesting service.
Form	Monthly annuity payable for life with payments guaranteed to be at least equal to the participant's accumulation on the normal retirement date (optional forms may be elected in advance of retirement).
Amount (accrued benefit)	<p>2.85% of average compensation multiplied by accrual service. Maximum benefit is 80% of average compensation (28.07 years). Reduce by the amount of deferred monthly retirement benefit in which the participant has received a single sum payment under the plan.</p> <p>Benefit is frozen effective 07/01/2010 for those covered under the bargaining agreement.</p>

Early retirement benefit

Age	Attained age 50.
Service	Completed 5 years of service.
Form	Same as normal retirement benefit.
Amount	Accrued Benefit on Early Retirement Date reduced by 6 2/3% for each year that the Early Retirement Date precedes Normal Retirement Date.

Data and assumptions

Late retirement benefit

Age	No maximum age.
Form	Same as normal retirement benefit.
Amount	Greater of Accrued Benefit on Late Retirement Date or Accrued Benefit on Normal Retirement Date increased to recognize that annuity commences subsequent to normal retirement.

Termination benefit

Vesting percentage	Subsequent to five years of service, 50%, plus 10% for each year of service thereafter, up to 100%. However, vesting shall be 100% on or subsequent to the earliest of normal retirement date, date when first eligible to early retire or the date of total and permanent disability.
Form	Same as normal retirement benefit with income deferred until normal retirement date.
Amount	Equal to the sum of <ul style="list-style-type: none">(a) The amount of retirement annuity which could be purchased on his normal retirement date by his participant's required contribution account.(b) Vesting percentage times the excess of the pension benefit as of the date of termination over (a) above. At any time on or after termination, the participant may elect to receive his participant's required contribution account in cash in lieu of any and all retirement benefits that could be provided by his participant's required contribution account.

Disability benefit

Eligibility	An active participant who becomes totally and permanently disabled prior to his retirement date. Ten years of vesting service is required for a non-service related disability benefit to be payable.
Form	Monthly income payable until normal retirement, death, or recovery and a deferred annuity payable at the Normal Retirement Date.
Amount	For a service related disability, the greater of his accrued benefit on date of disability or 40% of his current monthly compensation on such date. For a non-service related disability, the accrued benefit on date of disability.

Data and assumptions

Contributions

Salary reduction contribution	Tax deductible contributions made by the employer on behalf of the employee. This is 7.25% of monthly earnings that have been deducted from the employees pay. Effective 07/01/2010, 0% of monthly earnings will be deducted for those covered under the bargaining agreement.
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Death benefit

Greater of A or B

A. Single sum death benefit

Form	Single sum.
Amount	Participant's accumulation on date of death.

B. Pre-retirement death benefit

Age	Attained age 50.
Service	Five years of service.
Form	Monthly annuity payable to spouse.
Amount	If death occurs between Early Retirement Date and Normal Retirement Date, the benefit is an annuity to the spouse for an amount no less than would have been received had the participant elected a joint and 50% survivorship benefit option and early retired the day before death.

Deferred retirement option plan

Eligibility	An active participant first becomes eligible to elect the DROP on the first day of the month on or after reaching normal retirement date.
Election	An election to participate in the DROP shall constitute an irrevocable election to resign from service not later than sixty (60) months of reaching the start of the DROP eligibility period. An election to participate must be made within the first five years of eligibility. The period of participation in the DROP cannot exceed a period ending sixty months from first becoming eligible for the DROP or when the participant ceases to be an employee.
Form	Same as normal retirement benefit. While the employee is in the DROP the pension benefit payments will be credited to a separate account that will earn a return based on investments chosen by the employee.
Amount	<p>Accrued benefit on retirement date. No additional accrual service will accumulate after entry into the DROP. Any changes in pension benefits shall not apply to participants in the DROP.</p> <p>Once the DROP period expires or the participant ceases to be an employee, any subsequent pension benefit payments will be paid to the employee. The accumulation in the DROP account will be paid to the employee based on his payment option once the participant ceases to be an employee.</p>

Optional forms of benefit

- A monthly income to the employee for life. No benefits are payable at death.
- A monthly income to the employee for life, with a 5, 10, or 15 year period where payments continue to the beneficiary.
- A monthly income to the employee for life. If the employee dies before the amount paid equals the employee account on the retirement date, payments continue to the beneficiary until the totals equal that amount.
- A monthly income to the employee for life, with a 50%, 66 2/3%, 75%, or 100% of the monthly benefit paid to the surviving spouse.

Cost of living adjustment

Amount	<p>Annual 2% cost of living adjustment effective 10/01/2003 to active participants and DROP participants on and after 10/01/2003 and to participants who started receiving retirement or disability benefits on or after 10/01/2001.</p> <p>Effective 10/01/2004 the cost of living adjustment was increased to 3.0%.</p> <p>Effective 02/01/2010 the cost of living adjustment is decreased to 2% for any plan participant who attains normal retirement date or becomes a participant in the DROP after 02/01/2010.</p> <p>Effective 07/01/2010 the cost of living adjustment shall not apply for those who are covered under the bargaining agreement and have not reached normal retirement date by 07/01/2010.</p>
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Early retirement window

Available to any participant who is employed with the city of Pembroke in the position of Assistant City Manager, Director Community Services, Assistant Director Community Services, Administrative Services Director, has attained age 50, has 14 years of vesting service, and elected an early retirement date between September 3, and September 12, 2008.

The retirement benefit will not be reduced for the application of the early retirement reduction factors. In addition, for the Assistant City Manager position, the retirement benefit will be calculated as if the participant was employed until Normal Retirement Date.

Definitions

Average compensation	The monthly average of total pay received for the two years out of all compensation years prior to retirement date which gives the highest average.
Participant's required contribution account	Participant's contributions, accumulated to the date of determination with interest of 5% compounded annually, plus salary reduction contributions not previously paid out or applied.
Required contribution accrued benefit	Monthly retirement benefit under normal form accrued by an active participant payable at normal retirement date that is derived from their required contributions.
Accrual service	An employee's current and all prior periods of continuous service expressed in whole years and fractional parts of a year.

Data and assumptions

Assumptions and methods

The following assumptions and methods are used in this year's valuation report. The rationale for each non-prescribed economic and demographic assumption is also included.

Some economic assumptions rely on the Principal RAS Long-Term Capital Market Assumptions (CMA) 2018. These assumptions are developed focusing on forward-looking market indicators and valuation models, as well as utilizing the analysis of historical data and trends, the outlook and forecasts from credible economic studies, and investment expert opinions. See [Long-Term Capital Market Assumptions 2018](#) for additional information.

Changes since last year

Assumption changes

There have been no assumption changes since the last plan year.

Method changes

No methods affecting the comparability of results were changed since the last valuation report was completed.

Assumptions selected by actuary

Liability interest

During benefit payment period
6.75%

Before benefit payment period
6.75%

The interest rate is developed as a long-term expected geometric return on plan assets. Arithmetic expected return is calculated as the weighted average of broad asset classes' arithmetic returns of the plan's target asset allocation, and then converted to the geometric under lognormal distribution assumption. For details, see Long-Term Capital Market Assumptions link. The interest rate was picked by the City.

Asset return

6.75% for the current plan year.

The asset return is developed as a weighted average rate based on the target asset allocation of the plan and the long-term capital market assumptions. The calculated return is on an arithmetic mean basis. For details, see the See Long-Term Capital Market Assumptions link.

See liability interest rate for how this rate was determined

Interest rate for employee accumulations

5.00%

Data and assumptions

Retirement cost of living adjustment	3.00% & 2.00% per year depending on location. See Plan Provision for additional information.								
Expected expense	The expected expense included in normal cost is an estimate based on prior year expenses paid from plan assets. This is the best estimate available of upcoming year's expenses.								
Retirement	Active and inactive participants are assumed to retire at normal retirement age as defined in Plan provisions . This assumption is based on the results of recent experience analysis and anticipated future experience.								
Inflation	2.25% increase per year. See Long-Term Capital Market Assumptions link.								
Upcoming salary increases	The preceding year's salary is increased using the S-5 Table from The Actuary's Pension Handbook, increased by 2.50% at each age. This table provides a rate of increase that declines as participants age. Note: not used for Plan accounting calculations.								
	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Age</th> <th style="text-align: center;">Upcoming increase</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">25</td> <td style="text-align: center;">6.68%</td> </tr> <tr> <td style="text-align: center;">40</td> <td style="text-align: center;">5.22%</td> </tr> <tr> <td style="text-align: center;">55</td> <td style="text-align: center;">4.38%</td> </tr> </tbody> </table>	Age	Upcoming increase	25	6.68%	40	5.22%	55	4.38%
Age	Upcoming increase								
25	6.68%								
40	5.22%								
55	4.38%								
	Expected salary increase is composed of salary inflation, a real wage growth and a merit increase.								
Compensation limit increase	2.25% increase per year. Compensation limit increase should be consistent with the inflation assumption.								
Mortality	Based on RP-2006, 50% blue collar, 50% white collar for males and 100% white collar for females mortality table projected to future years with Scale BB mortality improvement rates.								
Disability mortality	Florida disability mortality 2016 – males set back 4 years & females set forward 2 years.								

Data and assumptions

Disability	<p>1987 Commissioner’s Group Disability Table, six month elimination period, male and female.</p> <p>We rely on a publicly published table due to the limited size of the plan. The 1987 CGDT was recommended by the Society of Actuaries for pension valuation purposes.</p>
Withdrawal	<p>2003 Society of Actuaries Small Plan Age Table, multiplied by 0.75.</p> <p>We rely on a publicly published table due to the limited size of the plan. The SOA Small Plan Age Table is the most recent withdrawal experience table published by the Society of Actuaries. A multiplier of 0.75 is applied to this table to reflect the results of the most recent experience analysis and anticipated future experience.</p>
Marriage	<p>75% married; husbands are 3 years older than wives.</p> <p>This assumption does not have material impact on the results of this report and has been selected based on our best estimate of active workforce.</p>
Form of benefit	<p>Participants are assumed to receive their benefits on the normal form at the assumed retirement age.</p>

Methods selected by plan sponsor

Actuarial value of plan assets	<p>The market value of the Principal accounts is adjusted by spreading the expected value minus the actual value over four years.</p> <p>Contributions received in the current plan year but applied to the prior plan year are added to the actuarial value of the Principal accounts.</p>
Actuarial cost method	<p>The entry age normal (EAN) cost method is used for this valuation.</p>

Methods selected by actuary

Retirees	<p>Assets and liabilities for current and future retirees are included.</p>
Vested benefits	<p>A benefit is included in vested benefits when the participant will meet age and service eligibility requirements at the valuation date. The benefit is multiplied by the participant’s vesting percentage applicable to each benefit on the valuation date.</p> <p>The following ancillary benefits are always treated as nonvested: disability benefits payable to retirement age unless in pay status, and pre-retirement death benefits in excess of the survivor annuity death benefit except as noted in the Plan provisions.</p>

Data and assumptions

Actuary statement

This report was prepared at the request of the sponsor of the plan named on the cover of this report. It provides information needed for plan funding. It is not to be used for plan termination estimates, accounting information, or other purposes. If these or other measures of liabilities are needed, please contact me.

In preparing this report, I have relied on:

- reports of participants, salary, and service provided by the plan sponsor as of the last day of the 2017 plan year.
- information for any retirees, beneficiaries, and alternate payees being paid by Principal Life Insurance Co as of the last day of the 2017 plan year, as reported by Principal Life Insurance Company.
- benefit, contribution, and expense transaction information for the preceding plan year, and the market value of assets reported as of the last day of the 2017 plan year by Principal and the plan sponsor.
- plan documents on file with Principal Life Insurance Company, including changes as noted on the Summary of plan provisions page of this report.

Appropriate tests of reasonableness and accuracy have been made and reviewed. The information provided is adequate to support the results in this report.

I confirm that as the actuary for this pension plan, I am completely independent of the plan sponsor and any of its officers or key personnel. Neither I nor anyone closely associated with me has any relationship known to me which would impair my independence.

In my opinion, each assumption and method chosen by the actuary is reasonable (taking into account the experience of the plan and reasonable expectations). Each material economic assumption is consistent with other economic assumptions selected by the actuary for this measurement period. Note that several different assumptions may be reasonable for a given measurement, and different actuaries will apply different professional judgment and may choose different reasonable assumptions. Demographic assumptions are not expected to produce significant cumulative actuarial gains or losses over the measurement period, and the combined effect of the assumptions is reasonable.

I am a member of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. To the best of my knowledge, this report is complete and accurate, and complies with all relevant pension actuarial standards and legal requirements.



02/25/2019

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Data and assumptions

Present value of accrued plan benefits

The current year present value of vested and nonvested accrued benefits are based on the assumptions and methods shown earlier in this report. (The salary scale, if any, is not included in the calculation of accrued benefits). All retiree liability is included below except for purchased annuities. These amounts below should not be used for other purposes such as estimating plan termination sufficiency.

The prior year present value of vested and nonvested accrued benefits are based on the assumptions shown in that year's valuation report.

	10/01/2018	10/01/2017
Present value of vested benefits		
Participants in pay status	\$146,965,311	\$143,989,350
Inactive participants	22,677,040	24,279,015
Active participants	14,287,532	13,971,848
Total	\$183,929,883	\$182,240,213
Present value of nonvested benefits		
Participants in pay status	\$0	\$0
Inactive participants (not in pay status)	0	0
Active participants	735,474	648,964
Total	\$735,474	\$648,964
Total present value of accumulated plan benefits	\$184,665,357	\$182,889,177
Value of future service and compensation	6,222,687	6,362,177
Total present value of projected plan benefits	190,888,044	189,251,354

Change in present value of accumulated plan benefits

Present value of accumulated plan benefits as of 10/01/2017	\$182,889,177
Increase (decrease) during the year due to:	
Increase for interest due to decrease in the discount period	11,977,347
Benefits paid	(11,074,842)
Benefits accumulated and plan experience	873,675
Present value of accumulated plan benefits as of 10/01/2018	\$184,665,357

Risk-free results

In the [Asset allocation, interest rates and actuarially determined contributions](#), we explained the difference between long term and risk-free returns. The table below shows your plan’s liabilities and assets on both the funding and risk-free interest rate basis.

Risk premium	Assets	Results
The difference in the liability amounts on a funding basis versus a risk-free basis represents the additional assumed returns to be earned over the life of the plan; this is also referred to as the “risk premium”.	The assets in the funding basis column reflect the asset method used to determine your plan’s ADC; the assets in the risk-free basis column are on a mark-to-market basis consistent with the risk-free liabilities.	The unfunded actuarial accrued liability and normal cost on the funding basis are used to calculate your ADC. Those same measures on a risk-free basis show you more conservative results.

If plan’s investment returns fall short of the funding basis interest rate, **additional contributions will likely be needed.**

	Funding basis (ADC)	Risk-free basis
Interest rate	6.75%	3.15%¹
Standard deviation	10.25%	---
Normal cost ²	\$635,559	\$1,625,251
Actuarial accrued liability	\$187,935,989	\$295,738,547
Market value of assets	N/A	\$188,877,505
Actuarial value of assets	\$182,111,690	N/A
Unfunded actuarial accrued liability	\$5,824,299	\$106,861,042
Present value of accrued benefits	\$184,665,357	\$289,997,833

Standard deviation is one way to measure the potential volatility risk in the current asset portfolio. For example, a standard deviation close to 0% would represent a portfolio with minimal volatility risk. For this plan, about two-thirds of your actual annual returns are likely to fall within a range of -5.50% to 17.00% (6.75% +/- 10.25%)

¹ The 30-year Treasury rate at 09/30/2018 was chosen as the risk-free interest rate. To isolate the impact of the interest rate, all other assumptions are the same. See the Assumptions and methods for other assumptions.

² The normal cost does not include any expense estimate or a reduction for estimated employee contributions.

Historical results

	2014	2015	2016	2017	2018
Funded status of accrued benefits					
Present value of accrued benefits (PVAB)	\$151,668,364	\$161,178,009	\$179,662,705	\$182,889,177	\$184,665,357
Market value of assets (MVA)	160,770,276	158,607,927	167,490,116	179,828,476	188,877,505
Under (over) funded PVAB	\$(9,101,912)	\$2,570,082	\$12,172,589	\$3,060,701	\$(4,212,148)
Accrued benefit funded percentage	106%	98%	93%	98%	102%
Funded status of actuarial accrued liability					
Actuarial accrued liability (AAL)	\$154,618,516	\$164,345,046	\$183,233,784	\$186,049,047	\$187,935,989
Actuarial value of assets	153,746,756	166,921,684	173,332,291	176,005,417	182,111,690
Unfunded actuarial accrued liability	\$871,760	\$(2,576,638)	\$9,901,493	\$10,043,630	\$5,824,299
Funded percentage	99%	102%	95%	95%	97%
Normal cost					
Total normal cost (NC)	\$2,191,395	\$2,792,276	\$5,151,232	\$5,810,663	\$5,953,872
Total NC as % of projected current year compensation	68.35%	81.58%	159.02%	193.67%	200.77%
Actuarially determined contribution (ADC) (per valuation date)					
Employer normal cost	\$2,191,395	\$2,792,276	\$5,151,232	\$5,810,663	\$5,953,872
Valuation interest	169,833	209,421	347,708	392,220	401,886
15-year amortization of credit balance	1,487,379	2,265,002	2,922,725	3,318,783	3,852,581
Valuation interest on credit balance	115,272	169,877	197,284	224,018	260,049
Expected Employer ADC	\$758,577	\$566,798	\$2,378,931	\$2,660,082	\$2,243,128
Actual contributions					
Actual employer contributions	\$9,174,902	\$6,500,000	\$2,500,068	\$5,500,000	--
Percentage of employer's ADC paid	1,209%	1,147%	105%	207%	--
Liability interest rate	7.75%	7.50%	6.75%	6.75%	6.75%
Projected current year compensation	\$3,206,370	\$3,422,635	\$3,239,391	\$3,000,274	\$2,965,553

	2014	2015	2016	2017	2018
Census at beginning of year					
Number of active participants	43	39	39	35	34
Number of terminated vested participants	285	272	255	245	233
Number of disabled participants	3	3	2	1	0
Number of retirees	375	381	393	399	408
Total participants	706	695	689	680	675
Prior year reported payroll	\$3,163,848	\$3,280,160	\$3,441,627	\$3,148,593	\$3,128,143
Plan maturity measures					
Non-active employees as a percentage of total	94%	01%	94%	95%	95%
In pay status PV accrued benefits as a percentage of total	77%	01%	77%	79%	80%
Relative size of plan					
Market value of assets (beginning of year)	\$160,770,276	\$158,607,927	\$167,490,116	\$179,828,476	\$188,877,505
as a percent of prior year reported payroll	5,081%	4835%	4,867%	5,711%	6,038%
Actuarial accrued liability (AAL)	\$154,618,516	\$164,345,046	\$183,233,784	\$186,049,047	\$187,935,989
as a percent of prior year reported payroll	4,887%	5010%	5,324%	5,909%	6,008%
Prior year benefits paid	\$10,021,946	\$9,814,147	\$10,243,459	\$10,560,812	\$11,074,842
as a percent of prior year reported payroll	317%	299%	298%	335%	354%
Achievement of economic assumptions					
Expected rate of return	7.75%	7.50%	6.75%	6.75%	6.75%
Actual market value rate of return	-1.11%	7.88%	12.32%	8.15%	--
Average expected salary increase	4.71%	4.68%	4.70%	4.66%	0.00%
Average actual salary increase	16.44%	4.92%	2.48%	4.25%	--
Liability interest rate	7.75%	7.50%	6.75%	6.75%	6.75%

Historical results

Florida disclosures

This section provides information as required by Part VII of Chapter 112, and by Chapter 60T-1 of the Florida Statutes. To the best of our knowledge, we have reflected in our calculations and assumptions, any event or trend which would materially increase plan costs.

This section also provides the information used to determine the Actuarially determined contribution (ADC). Please see [Summary of results](#) of this valuation report for additional information.

Comparative summary of principal valuation results

Participant data	Actuarial valuation prepared as of	
	10/01/2018	10/01/2017
Active members	34	35
Total annual payroll	\$3,128,143	\$3,148,593
Retired members and beneficiaries	408	399
Total annualized benefit	\$10,977,468	\$10,587,804
Disabled members receiving benefit	0	1
Total annualized benefit	\$0	\$13,560
Terminated vested members	233	245
Total annualized benefit	\$2,477,928	\$2,698,200

Reconciliation of lives	Active	Inactive	Retired
Total last valuation	35	246	399
New lives	0	0	0
Voluntary discontinuances	0	0	0
Vested terminations	0	0	0
Non-vested terminations	0	0	0
Retirements	-1	-13	14
Deaths	0	0	-9
Other:	0	0	4
Total this valuation	34	233	408

Please refer to the [Schedule of active participant data](#) and [Census characteristics](#) for demographic information such as the number of participants by age group, years of service, current year compensation, and projected normal retirement benefits. Please refer to [Benefit cash flows](#) for a projection of emerging liabilities/cash flow needs.

Total annual payroll Includes participants assumed to retire immediately who are not included in payroll used to calculate normal cost. Neither column includes the salary increase that is used to calculate normal cost.

Florida disclosures

Assets

Since these funds are commingled with other funds in the general and separate accounts of the Principal Financial Group, it is not possible to identify specific investments as being made for a particular customer. Refer to the reconciliation of assets in this section.

Actuarial valuation prepared as of:	10/01/2018	10/01/2017
Market value of assets		
Participants Fund1	\$0	\$0
Long-term Equity Investments	106,568,352	99,004,403
Short-term Investments	0	0
Real Estate	11,599,789	10,853,227
Bonds/Fixed Income	68,706,143	69,967,196
Other:	2,003,221	3,650
Total	\$188,877,505	\$179,828,476

Actuarial value of assets²		
Participants Fund1		
Long-term Equity Investments		
Short-term Investments		
Real Estate		
Bonds/Fixed Income		
Other		
Total	\$182,111,690	\$176,005,417

¹ The participant's fund under the FPI contract is included in total assets. These assets amounts do not include deposits received after the plan year-end.

² The actuarial value of assets used in determining annual funding requirements are determined as stated in the Assumption and Methods section report.

Three-year comparison of investment return

The actual percentage was calculated using the Form 5500 Schedule MB investment return method.

Plan year beginning	Actual return on actuarial basis	Actual return on market basis	Assumed return
10/01/2017	6.63%	8.15%	6.75%
10/01/2016	8.76%	12.32%	6.75%
10/01/2015	7.62%	7.88%	7.50%

Based on current assumptions, the market value of assets is projected to last until the plan year beginning 10/01/2030 assuming 0% return on assets. The market value of assets is projected to last until the plan year beginning 10/01/2059 assuming 6.75% return on assets.

Florida disclosures

Liabilities

Actuarial valuation prepared as of:	10/01/2018	10/01/2017
Present value of all future expected benefit payments:		
Active members		
Retirement benefits	\$17,976,561	\$17,560,304
Vesting benefits	2,746,551	2,869,735
Disability benefits	441,130	466,595
Death benefits	81,451	86,355
Return of contribution	0	0
Accumulated leave	0	0
Total	\$21,245,693	\$20,982,989
Terminated vested members		
Total	\$22,677,040	\$24,153,920
Retired members and beneficiaries		
Retired (other than disabled) and beneficiaries	\$146,965,311	\$143,989,350
Disabled members	0	125,095
Total	\$146,965,311	\$144,114,445
Total present value of all future benefit payments	\$190,888,044	\$189,251,354
Liabilities due and unpaid:		
Initial actuarial accrued liability	N/A	N/A
Unfunded actuarial accrued liability (UAAL)	N/A	N/A

A list of liability bases is shown in [Schedule of amortization bases](#).

Florida disclosures

Actuarial present value of accrued benefits

Statement of actuarial value of all accrued benefits

Actuarial valuation prepared as of:	10/01/2018	10/01/2017
Vested accrued benefits		
Inactive members and beneficiaries	\$169,642,351	\$168,268,365
Active members (includes non-forfeitable accumulated member contributions in the amount of \$639,018)	14,287,532	13,971,848
Total	\$183,929,883	\$182,240,213
Non-vested accrued benefits		
Total	\$735,474	\$648,964
Total actuarial present value of all accrued benefits	\$184,665,357	\$182,889,177

These values are based on the actuarial assumptions shown in the [Assumptions and methods](#) section this report, except that the calculation of accrued benefits does not include a salary scale, (if any).

A statement of changes in total actuarial present value of all accrued benefits is shown in the [Present value of accrued benefits](#) section of this report.

Statement of actuarial value of all accrued benefits

Actuarial valuation prepared as of:	10/01/2018 volatility assumption ¹
Vested accrued benefits	
Inactive members and beneficiaries	\$212,736,983
Active members	19,640,037
Total	\$232,377,020
Non-vested accrued benefits	
Total	\$1,040,769
Total actuarial present value of all accrued benefits	\$233,417,789

¹ The volatility interest rate used is 4.75% which is 2.00% lower than the valuation interest rate as directed in the Florida Statutes. All other assumptions are as shown in the [Assumptions and methods](#) section of this report.

Florida disclosures

Pension cost

Actuarial valuation prepared as of:	10/01/2019	10/01/2018	10/01/2017
Base Normal Cost	\$5,900,872	\$5,749,663	\$5,101,232
Administrative expenses	53,000	61,000	50,000
Total Normal Cost	5,953,872	5,810,663	5,151,232
Payment to amortize unfunded liability(ies)	0	0	0
Expected plan sponsor contribution (including normal cost, amortization payment and interest, as applicable)	2,243,128	2,660,082	2,378,931
As % of payroll	75.64%	88.66%	73.44%
Amount to be contributed by members	215,003	217,520	234,855
As % of payroll	7.25%	7.25%	7.25%

For the 2019 plan year:

Interest is based on 6.75%. A Credit Balance in the Minimum Funding Standard Account has been recognized.

For the prior plan years:

Interest is based on 6.75%. A Credit Balance in the Minimum Funding Standard Account has been recognized.

	10/01/2018 volatility assumption ¹
Base normal cost	\$821,521
Administrative expenses	61,000
Amortizations	9,099,268
Total normal cost	9,981,789
Adjusted normal cost	10,879,388
Expected plan sponsor contribution (including normal cost, amortization payment and interest, as applicable)	8,063,037
As % of payroll (<u>full payroll</u>)	268.74%
Amount to be contributed by members	217,520
As % of payroll	7.25%

¹The volatility interest rate used is 4.75% which is 2.00% lower than the valuation interest rate as directed in the new Florida Statutes. All other assumptions are as shown in the [Assumptions and methods](#) section of this report.

Plan year beginning	10/01/2017	10/01/2016
Past contributions		
Required plan sponsor contribution	\$2,378,931	\$566,798
Required member contributions	234,855	248,141
Actual contributions made by		
Plan sponsor	5,500,000	2,500,068
Members	234,516	244,566
Other	0	0
Net actuarial gain(loss) (if applicable)	N/A	N/A

Florida disclosures

Other disclosures

Actuarial valuation prepared as of:	10/01/2018	10/01/2017
Present values of active members:		
Future salaries		
at attained age	\$14,436,489	\$15,357,385
at entry age	13,104,499	13,456,860
Future contributions		
at attained age	1,013,105	1,077,731
at entry age	919,630	944,358
Present value of future contributions from other sources	N/A	N/A
Present value of future expected benefit payments for active members at entry age	\$2,779,354	\$2,885,967

The numerical development of total normal cost for the current plan year is shown in the [Development of normal cost](#) section of this report.

Three year comparison of actual and assumed salary increases.

Plan year beginning	Actual increases	Assumed increases
10/01/2017	4.25%	4.66%
10/01/2016	2.48%	4.70%
10/01/2015	4.92%	4.68%

Other disclosures (continued)

Changes in costs during the year due to a change in assumptions, cost method, benefits, or other, as specified.

See the Present value of accrued plans benefits section of this report.

Cost of \$1.00/month benefit on normal form

Retirement Age	Valuation assumptions ¹		Contract purchase rates ²		Current purchase rates ³	
	Male	Female	Male	Female	Male	Female
55	\$186.58	\$196.10	\$238.22	\$256.75	\$204.22	\$231.81
60	169.66	180.68	218.66	238.32	179.50	208.96
62	162.20	173.77	210.52	230.60	169.23	199.41

¹ Assumes 2.0% COLA.

² Rates guaranteed rates by the contract.

³ Non-guaranteed rates in effect 10/01/2018. These rates may change daily.

Actuarial value of assets under Flexible Pension Investment contract

	Grouped FPI
Balance as of 10/01/2017	\$176,005,417
Additions	
Contributions	\$5,734,516
Interest, dividends & fund earnings	14,441,755
Total additions	\$20,176,271
Withdrawals	
Expenses charged	52,400
Benefit payments	11,074,842
Total withdrawals	\$11,127,242
Actuarial valuation market value spread adjustment	(2,942,756)
Balance as of 10/01/2018	\$182,111,690

Schedule of active participant data

Years of credited service

Attained Age	Years of credited service																						
	Under 1		1 to 4		5 to 9		10 to 14		15 to 19		20 to 24		25 to 29		30 to 34		35 to 39		40 & up		Total		
	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	No.	Avg. Comp.	
Under 25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30 to 34	0	0	1	105,267	0	0	1	115,933	0	0	0	0	0	0	0	0	0	0	0	0	0	2	110,600
35 to 39	0	0	0	0	0	0	1	115,963	0	0	0	0	0	0	0	0	0	0	0	0	0	1	115,963
40 to 44	0	0	1	79,595	0	0	1	126,966	2	145,256	0	0	0	0	0	0	0	0	0	0	0	4	124,268
45 to 49	0	0	1	126,075	2	101,014	0	0	2	71,564	0	0	0	0	1	70,724	0	0	0	0	0	6	90,326
50 to 54	0	0	0	0	1	144,001	2	121,203	2	84,715	3	111,617	3	94,760	1	85,719	0	0	0	0	0	12	105,057
55 to 59	0	0	3	71,447	0	0	2	52,271	2	97,674	0	0	0	0	0	0	0	0	0	0	0	7	73,462
60 to 64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
65 to 69	0	0	0	0	0	0	1	43,523	0	0	0	0	0	0	0	0	0	0	0	0	0	1	43,523
70 & up	0	0	0	0	0	0	0	0	0	0	1	78,108	0	0	0	0	0	0	0	0	0	1	78,108
Total	0	0	6	87,546	3	115,343	8	93,667	8	99,802	4	103,240	3	94,760	2	78,221	0	0	0	0	0	34	96,257



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