Report on the Long-Range Projected Finances of the City's Pension Plans

The purpose of this report is to enable the City to better understand the pattern of emerging pension costs and liabilities due to proposed benefit and financing changes. The projections contained herein are for illustration purposes only. This project is not intended to provide precise projections of current or future costs; the plans' actuaries will prepare annual actuarial valuations which will be the basis for the City's actual contributions. Differences between our projections and actual amounts depend on the extent to which future experience conforms to the assumptions made for this analysis. Actual experience will not conform exactly to the assumptions made for this analysis. Actual amounts will differ from projected amounts to the extent that actual experience deviates from expected experience. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions, changes in economic or demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status), and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of such future measurements.

Our projections are based on a deterministic model that assumes emerging plan experience always exactly matches the actuarial assumptions; in particular the market returns will match the assumed rate year in and year out. Actual experience will not match the actuarial assumptions each and every year. Actual variation in the plans' experience will have a significant impact on the financial health of the plans, the liquidity constraints on plan assets, and the City's future contribution levels. We highly recommend that stochastic projections be prepared that would enable the City to understand the potential range of future results based on the expected variability in investment returns.

Milliman's work is prepared solely for the internal business use of the City of Jacksonville. To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product, and Milliman may include a legend on its reports so stating. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exceptions: the City may provide a copy of Milliman's work, in its entirety, to the City's professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to benefit the City; and the City may provide a copy of Milliman's work, in its entirety, to other governmental entities, as required by law. No third party recipient of Milliman's work product should rely upon Milliman's work product. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

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.

Rebecca A. Sielman, FSA
Principal and Consulting Actuary

City of Jacksonville

Police and Fire Pension Fund - Long-Range Forecast Based on October 1, 2015 Valuation

06/24/2016

Purpose of the project

Enable the City to better understand the pattern of emerging costs and liabilities due to proposed benefit and financing changes.
This project is not intended to provide precise projections of current or future costs; the plan's actuary will prepare annual actuarial valuations which will be the basis for the City's actual contributions.

Basis for projections

This project is based on Milliman's replication of the October 1, 2015 actuarial valuation prepared by Pension Board Consultants Inc. (PBC), as described in their report dated January 29, 2016.
We have relied on the valuation results and actuarial methods and assumptions described by PBC in their October 1, 2015 actuarial valuation report and on the census data that PBC supplied to us. We make no judgment as to the appropriateness of PBC's actuarial methods or assumptions. Note that we explicitly valued the cost of the DROP and BACKDROP features, whereas PBC indirectly valued them via a load factor. We assumed 100% of employees would elect the DROP.
We performed a limited review of the data used directly in our analysis for reasonableness and consistency and have not found material defects in the data. If there are material defects in the data, it is possible that they would be uncovered by a detailed, systematic review and comparison of the data to search for data values that are questionable or for relationships that are materially inconsistent. Such a review was beyond the scope of our assignment. If the underlying data or information is inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete and our calculations may need to be revised.

Projection assumptions

The number of active employees remains constant; terminating and retiring active members will be replaced by new members with the same age / service / gender characteristics as members who were hired during the past few plan years.
New members will be subject to the plan changes that were contained in Ordinance 2015-304-E.
The City always pays the minimum contribution (offset by 50% of Chapter Funds for 15 years and by Court Fines) plus the additional amounts required by Ordinance 2015-304-E (i.e. $5m/$10m/$15m/$32m).
Surplus funds in the Enhanced Benefits Account are used to fund annual retiree bonuses and/or share plan contributions such that the balance of the account remains at its October 1, 2015 level.
Allocations from Chapter 175/185 Funds are assumed to grow by 2% per year. Court fines are assumed to be equal to 0.58% of payroll for all active employees (including future new hires who may be covered by a DC plan).
Based on data provided for members currently in DROP we estimated current DROP balances and the outstanding balances for those who are past the DROP period. We assumed this remaining balance would be paid out over a period of 15 years.
Emerging plan experience will exactly follow the actuarial assumptions, except 100% of retiring members are assumed to elect DROP or BackDROP, respectively. In particular, the investments will earn the assumed rate of return every year.
The mortality assumption will be updated effective with the October 1, 2016 valuation to match the Special Risk mortality assumptions that were used in the July 1, 2014 valuation of the Florida Retirement System.
There are no other plan changes, assumption changes, funding method changes, or actuarial gains / losses, except as described herein.

Differences between our projections and actual amounts depend on the extent to which future experience conforms to the assumptions made for this analysis. Actual experience will not conform exactly to the assumptions made for this analysis. Actual amounts will differ from projected amounts to the extent that actual experience deviates from expected experience. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions, changes in economic or demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status), and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of such future measurements.

Employee contribution increase

Effective April 1, 2017, the employee contribution rate may be increased to 10%.

Plan closing

Effective October 1, 2018, the DB plan may be closed and new hires thereafter may be covered by a plan which will cost the City 12% of pay. Such changes are subject to the collective bargaining process.

Resetting amortization bases

Effective with the October 1, 2017 valuation, all existing amortization bases may be combined and reamortized over 30 years.
The salaries of both current plan members as well as new hires who will be covered by the new plan may be included for purposes of determining the payroll growth assumption that is used to calculate the amortization payments.
Note that 30 years is longer than the expected working lifetime of members covered by this plan, and therefore falls outside recommended actuarial practice.
The Government Finance Officers Association in their 2013 "Core Elements of a Pension Funding Policy" Best Practice stated that amortization periods should "never exceed 25 years, but ideally fall in the 15-20 year range".
The Conference of Consulting Actuaries in their 2014 "Actuarial Funding Policies and Practices for Public Pension Plans" labels amortization periods longer than 25 years as a "Non-recommended Practice".
A long amortization period coupled with level percent of payroll amortization produces a situation known as "negative amortization", where amortization payments are not sufficient to cover interest on the Unfunded Actuarial Accrued Liability for a number of years.
The City should therefore be prepared for a long period when the Unfunded Actuarial Accrued Liability may potentially increase as a dollar amount and the funded ratio may potentially make very little progress towards 100%, until towards the end of the amortization period.
Although combining and reamortizing bases reduces City contributions in the short term, this should not be considered a savings, but rather a deferral of contributions. Funding a pension plan is a "pay now or pay more later" proposition.

Limitations on our analysis

Our projections are based on a deterministic model that assumes emerging plan experience always exactly matches the actuarial assumptions; in particular the market returns will match the assumed rate year in and year out.
Actual experience will not match the actuarial assumptions each and every year. In the past ten years, for instance, market returns for this plan have varied from -13.07% to +18.25%.
Such variation will have a significant impact on the financial health of the plan, the liquidity constraints on plan assets, and the City's future contribution levels.
We highly recommend that stochastic projections be prepared that would enable the City to understand the potential range of future results based on the expected variability in investment returns.

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Rebecca A. Sielman, FSA
Principal and Consulting Actuary

Updates from Milliman's prior projection model

Census data

Prior model was based on October 1, 2012 census data with some updates to reflect certain 2013 demographic experience; current model reflects October 1, 2015 census data

Active population very comparable in demographic composition
Little or no pay increases
Retiree population has grown by about 200 members
Members in DROP are about the same

Investment performance

Prior model was based on October 1, 2013 balance; current model reflects October 1, 2015 balance

Return for 2013-14 was +10.73%
Return for 2014-15 was -3.95%

Plan changes

Prior model and current model both reflect plan changes made per Ordinance 304-E; prior model assumed 2.6% COLA for employees with < 20 years of service; current model reflects PBC's assumption of 2.5%

Assumption changes

Prior model reflected PBC's implicit recognition of the impact of the DROP and BACKDROP provisions via a load; current model explicitly values these provisions

Prior model reflected the assumptions used in the 2012 valuation plus the 2013 expense load change; current model reflects a number of assumption changes implemented in the 2013 and 2015 valuations as well as the mortality update that will be implemented in 2016

2013	2% load added to reflect value of DROP - note our analysis indicates that 2% is somewhat conservative
2015	Salary increases lowered from 4.0% to 3.5%
2015	Turnover rates increased 50%
2015	Mortality base table updated; longevity improvement projections extended and strengthened
2016	Mortality assumption will be further updated to reflect the 2014 change in the Florida Retirement System valuation assumptions

Prior model assumed DROP accounts for current post-DROP members would be paid out over 5 years; current model uses 15 year period

Prior model assumed administrative expenses would increase by 2.5% per year; current model assumes 3.25%

Financing changes

Early versions of the prior model reflected 2012 valuation's combination/reamortization of bases over 23 years; later versions and the current model reflect 2015 valuation's change back to individual bases

Prior model assumed the new 50% Chapter 175/185 allocation would be a flat $5m/year starting in FYE2015; current model reflects actual FYE2015 allocation of $5.3m with 2% increases thereafter

Prior model reflected 2012 valuation's development of a mid-year contribution that was payable 2 fiscal years later; current model reflects 2015 valuation's application of 1 year of payroll growth plus 2 months of interest; models also differ in whether adjustments for timing are applied before or after reductions for Chapter 175/185 allocation and Court Fines

City of Jacksonville

Police and Fire Pension Fund - Long-Range Forecast Based on October 1, 2015 Valuation

06/24/2016

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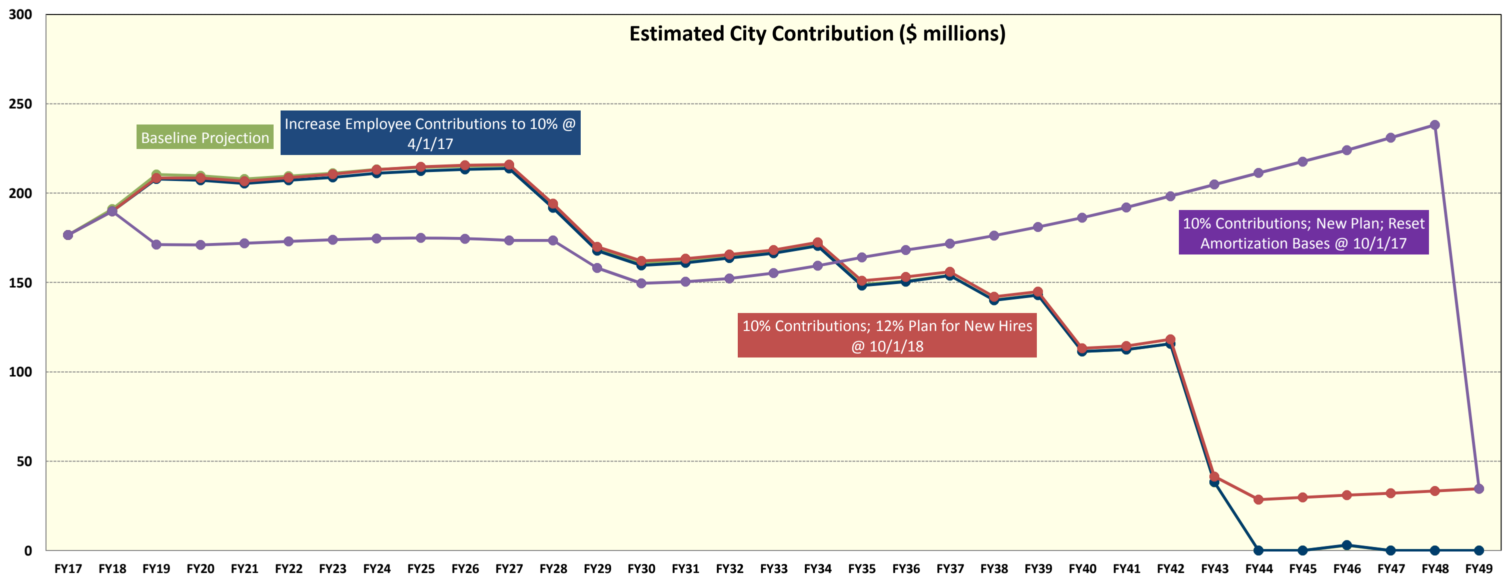

City Contribution	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
Baseline Projection	177	191	210	210	208	210	211	213	214	215	215	193	169	161	162	164	167
Increase Employee Contributions to 10% @ 4/1/17	177	190	208	207	205	207	209	211	212	213	214	192	168	160	161	164	166
10% Contributions; 12% Plan for New Hires @ 10/1/18	177	190	208	208	207	209	211	213	215	216	216	194	170	162	163	166	168
10% Contributions; New Plan; Reset Amortization Bases @ 10/1/17	177	190	171	171	172	173	174	175	175	174	173	174	158	150	150	152	155
Combined impact of all changes from baseline	0	(1)	(39)	(39)	(36)	(37)	(37)	(39)	(39)	(41)	(42)	(20)	(11)	(11)	(12)	(12)	(12)

City Contribution	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45	FY46	FY47	FY48	FY49
Baseline Projection	171	149	151	154	140	143	111	112	116	38	0	0	3	0	0	0
Increase Employee Contributions to 10% @ 4/1/17	170	148	150	154	140	143	111	112	116	38	0	0	3	0	0	0
10% Contributions; 12% Plan for New Hires @ 10/1/18	172	151	153	156	142	145	113	114	118	41	28	30	31	32	33	35
10% Contributions; New Plan; Reset Amortization Bases @ 10/1/17	159	164	168	172	176	181	186	192	198	205	211	218	224	231	238	35
Combined impact of all changes from baseline	(12)	15	17	18	36	38	75	80	83	167	211	218	221	231	238	35

City of Jacksonville

Police and Fire Pension Fund - Long-Range Forecast Based on October 1, 2015 Valuation

06/24/2016

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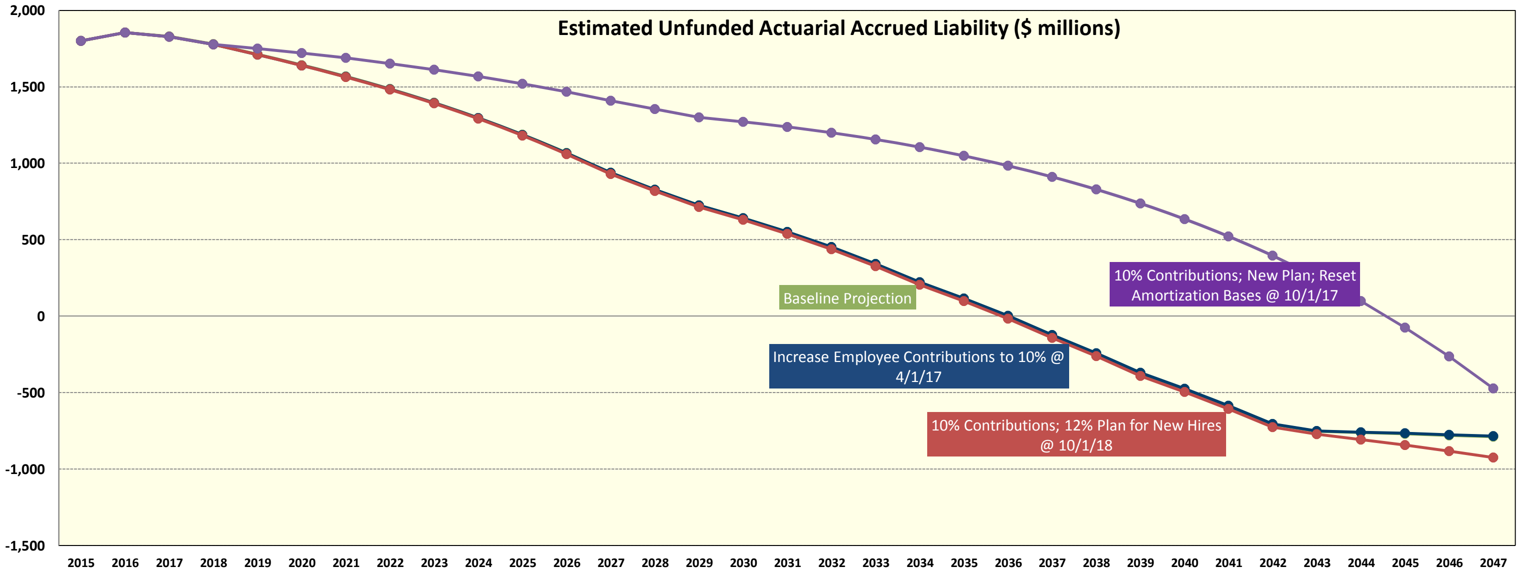
We have relied on the valuation results and actuarial methods and assumptions used by Pension Board Consultants Inc. in their October 1, 2015 actuarial valuation report, with the exception that we explicitly valued the cost of the DROP and BACKDROP features, whereas PBC indirectly valued them via a load factor. We make no judgment as to the appropriateness of PBC's actuarial methods or assumptions.



Estimated Unfunded Accrued Liability	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Baseline Projection	1,801	1,855	1,829	1,779	1,713	1,642	1,568	1,486	1,396	1,296	1,187	1,067	938	828	726	642	551
Increase Employee Contributions to 10% @ 4/1/17	1,801	1,855	1,827	1,776	1,710	1,640	1,566	1,484	1,394	1,295	1,186	1,067	937	828	726	642	552
10% Contributions; 12% Plan for New Hires @ 10/1/18	1,801	1,855	1,827	1,776	1,710	1,639	1,565	1,482	1,391	1,291	1,181	1,060	929	818	715	630	538
10% Contributions; New Plan; Reset Amortization Bases @ 10/1/17	1,801	1,855	1,827	1,776	1,749	1,721	1,689	1,653	1,613	1,569	1,520	1,467	1,410	1,354	1,301	1,270	1,237

Estimated Unfunded Accrued Liability	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047
Baseline Projection	451	342	221	115	1	(125)	(243)	(372)	(476)	(587)	(707)	(753)	(761)	(769)	(780)	(788)
Increase Employee Contributions to 10% @ 4/1/17	452	343	222	117	2	(123)	(241)	(370)	(474)	(584)	(705)	(751)	(758)	(766)	(777)	(784)
10% Contributions; 12% Plan for New Hires @ 10/1/18	437	328	206	100	(16)	(142)	(261)	(391)	(495)	(605)	(725)	(771)	(806)	(843)	(882)	(924)
10% Contributions; New Plan; Reset Amortization Bases @ 10/1/17	1,199	1,156	1,106	1,049	983	911	829	738	636	522	396	255	99	(74)	(263)	(472)

City of Jacksonville

Police and Fire Pension Fund - Long-Range Forecast Based on October 1, 2015 Valuation

06/24/2016

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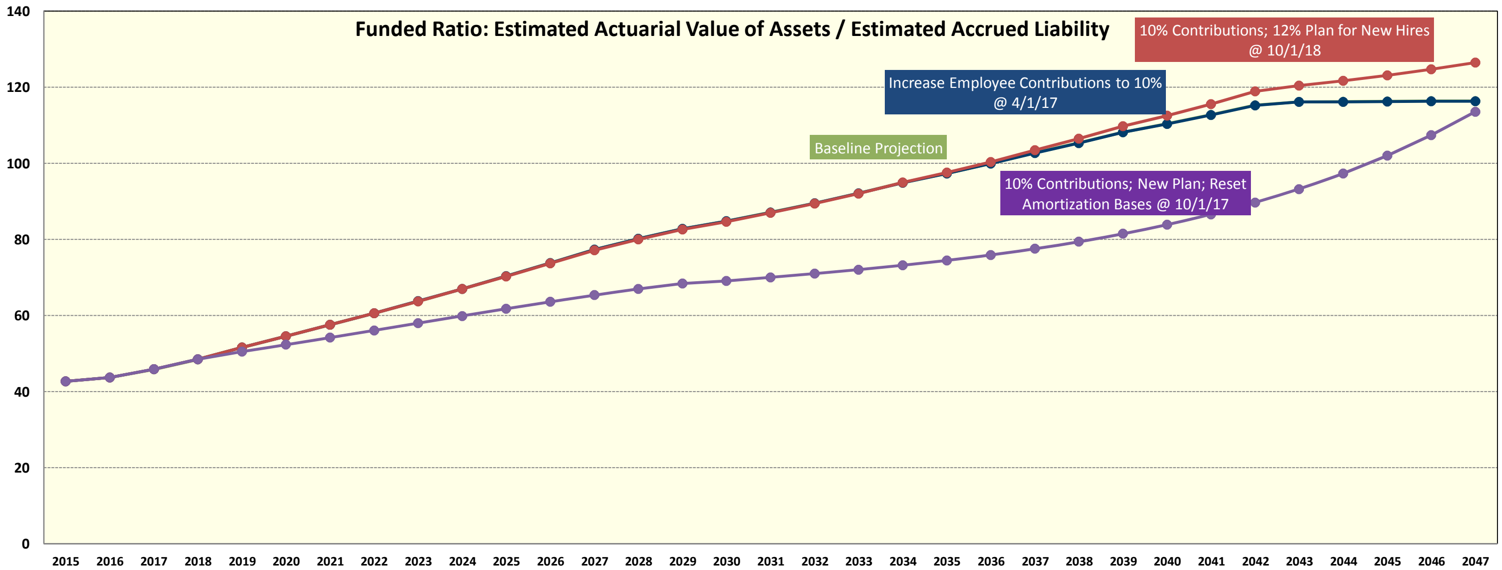
We have relied on the valuation results and actuarial methods and assumptions used by Pension Board Consultants Inc. in their October 1, 2015 actuarial valuation report, with the exception that we explicitly valued the cost of the DROP and BACKDROP features, whereas PBC indirectly valued them via a load factor. We make no judgment as to the appropriateness of PBC's actuarial methods or assumptions.



Estimated Funded Ratio	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047
Baseline Projection	43	44	46	48	52	55	58	61	64	67	70	74	77	80	83	85	87	90	92	95	97	100	103	105	108	110	113	115	116	116	116	116	116
Increase Employee Contributions to 10% @ 4/1/17	43	44	46	49	52	55	58	61	64	67	70	74	77	80	83	85	87	90	92	95	97	100	103	105	108	110	113	115	116	116	116	116	116
10% Contributions; 12% Plan for New Hires @ 10/1/18	43	44	46	49	52	55	58	61	64	67	70	74	77	80	83	85	87	89	92	95	98	100	103	106	110	113	116	119	120	122	123	125	127
10% Contributions; New Plan; Reset Amortization Bases @ 10/1/17	43	44	46	49	51	52	54	56	58	60	62	64	65	67	68	69	70	71	72	73	74	76	78	79	82	84	87	90	93	97	102	107	114

City of Jacksonville

Police and Fire Pension Fund - Long-Range Forecast Based on October 1, 2015 Valuation

06/24/2016

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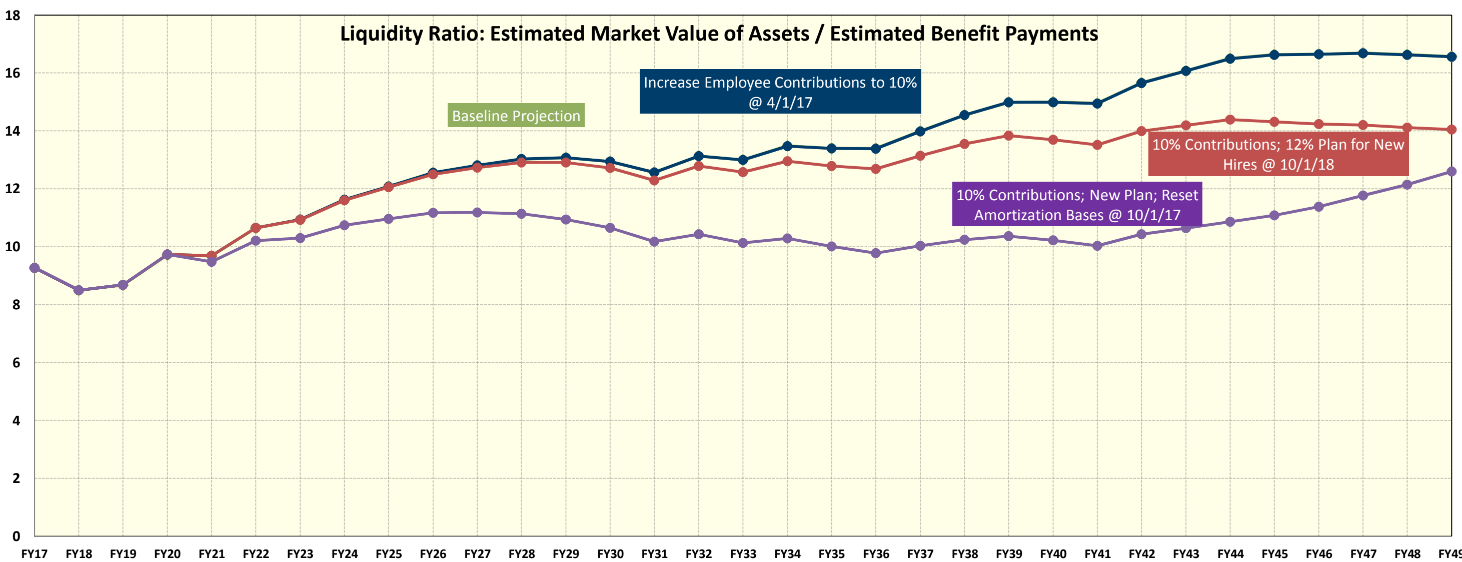

Estimated benefit payments ($ millions)	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
Baseline Projection	145	170	179	172	189	185	195	197	203	210	220	231	244	259	278	273
Increase Employee Contributions to 10% @ 4/1/17	145	170	179	172	189	185	195	197	203	210	220	231	244	259	278	273
10% Contributions; 12% Plan for New Hires @ 10/1/18	145	170	179	172	189	185	195	197	203	210	220	230	244	258	277	272
10% Contributions; New Plan; Reset Amortization Bases @ 10/1/17	145	170	179	172	189	185	195	197	203	210	220	230	244	258	277	272

Estimated benefit payments ($ millions)	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45	FY46	FY47	FY48	FY49
Baseline Projection	287	287	300	312	307	305	307	317	328	321	322	323	325	327	329	333	337
Increase Employee Contributions to 10% @ 4/1/17	287	287	300	312	307	305	307	317	328	321	322	323	325	327	329	333	337
10% Contributions; 12% Plan for New Hires @ 10/1/18	286	286	298	310	305	303	304	314	325	317	317	317	318	317	316	315	314
10% Contributions; New Plan; Reset Amortization Bases @ 10/1/17	286	286	298	310	305	303	304	314	325	317	317	317	318	317	316	315	314

Estimated assets ($ millions)	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
Baseline Projection	1,341	1,443	1,548	1,673	1,825	1,970	2,127	2,287	2,457	2,634	2,818	3,005	3,195	3,353	3,491	3,592
Increase Employee Contributions to 10% @ 4/1/17	1,341	1,443	1,550	1,675	1,827	1,973	2,129	2,288	2,458	2,635	2,819	3,006	3,195	3,353	3,490	3,591
10% Contributions; 12% Plan for New Hires @ 10/1/18	1,341	1,443	1,550	1,675	1,827	1,972	2,127	2,284	2,449	2,620	2,795	2,971	3,146	3,287	3,404	3,481
10% Contributions; New Plan; Reset Amortization Bases @ 10/1/17	1,341	1,443	1,550	1,675	1,788	1,890	2,003	2,113	2,227	2,342	2,455	2,564	2,666	2,751	2,818	2,841

Estimated assets ($ millions)	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45	FY46	FY47	FY48	FY49
Baseline Projection	3,731	3,869	4,020	4,171	4,298	4,441	4,599	4,753	4,909	5,031	5,171	5,323	5,402	5,445	5,488	5,536	5,579
Increase Employee Contributions to 10% @ 4/1/17	3,731	3,868	4,019	4,170	4,297	4,439	4,597	4,751	4,907	5,029	5,168	5,320	5,400	5,442	5,485	5,532	5,576
10% Contributions; 12% Plan for New Hires @ 10/1/18	3,593	3,699	3,814	3,926	4,008	4,101	4,204	4,296	4,386	4,436	4,496	4,562	4,549	4,517	4,483	4,447	4,408
10% Contributions; New Plan; Reset Amortization Bases @ 10/1/17	2,895	2,938	2,986	3,026	3,059	3,102	3,151	3,206	3,258	3,306	3,369	3,441	3,522	3,612	3,713	3,828	3,956

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Purpose of the project

Enable the City to better understand the pattern of emerging costs and liabilities due to proposed benefit and financing changes.
This project is not intended to provide precise projections of current or future costs; the plan's actuary will prepare annual actuarial valuations which will be the basis for the City's actual contributions.

Basis for projections

This project is based on Milliman's replication of the October 1, 2015 actuarial valuation prepared by Segal Consultants, as described in their report dated March 22, 2016.
We have relied on the valuation results and actuarial methods and assumptions described by Segal in their October 1, 2015 actuarial valuation report and on the census data that Segal supplied to us. We make no judgment as to the appropriateness of Segal's actuarial methods or assumptions.

We performed a limited review of the data used directly in our analysis for reasonableness and consistency and have not found material defects in the data. If there are material defects in the data, it is possible that they would be uncovered by a detailed, systematic review and comparison of the data to search for data values that are questionable or for relationships that are materially inconsistent. Such a review was beyond the scope of our assignment. If the underlying data or information is inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete and our calculations may need to be revised.

Projection assumptions

The number of active employees remains constant; terminating and retiring active members will be replaced by new members with the same age / service / gender characteristics as members who were hired during the past few plan years.
The City always pays the minimum contribution.
The payroll growth assumption will grade over the next ten years from the rate used for the October 1, 2015 valuation (1.14%) to the ultimate pay growth assumption (2.75%).
Emerging plan experience will exactly follow the actuarial assumptions. In particular, the investments will earn the assumed rate of return every year.
The mortality assumption will be updated effective with the October 1, 2016 valuation to match the non-Special Risk mortality assumptions that were used in the July 1, 2014 valuation of the Florida Retirement System.
There are no other plan changes, assumption changes, funding method changes, or actuarial gains / losses, except as described herein.

Differences between our projections and actual amounts depend on the extent to which future experience conforms to the assumptions made for this analysis. Actual experience will not conform exactly to the assumptions made for this analysis. Actual amounts will differ from projected amounts to the extent that actual experience deviates from expected experience. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions, changes in economic or demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status), and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of such future measurements.

Employee contribution increase

Effective April 1, 2017, the employee contribution rate may be increased to 10%.

Plan closing

Effective October 1, 2018, the DB plan may be closed and new hires thereafter may be covered by a plan which will cost the City 8% of pay. Such changes are subject to the collective bargaining process.

Resetting amortization bases

Effective with the October 1, 2017 valuation, all existing amortization bases may be combined and reamortized over 30 years.
The salaries of both current plan members as well as new hires who will be covered by the new plan may be included for purposes of determining the payroll growth assumption that is used to calculate the amortization payments.
Note that 30 years is longer than the expected working lifetime of members covered by this plan, and therefore falls outside recommended actuarial practice.
The Government Finance Officers Association in their 2013 "Core Elements of a Pension Funding Policy" Best Practice stated that amortization periods should "never exceed 25 years, but ideally fall in the 15-20 year range".
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A long amortization period coupled with level percent of payroll amortization produces a situation known as "negative amortization", where amortization payments are not sufficient to cover interest on the Unfunded Actuarial Accrued Liability for a number of years.
The City should therefore be prepared for a long period when the Unfunded Actuarial Accrued Liability may potentially increase as a dollar amount and the funded ratio may potentially make very little progress towards 100%, until towards the end of the amortization period.
Although combining and reamortizing bases reduces City contributions in the short term, this should not be considered a savings, but rather a deferral of contributions. Funding a pension plan is a "pay now or pay more later" proposition.

Limitations on our analysis

Our projections are based on a deterministic model that assumes emerging plan experience always exactly matches the actuarial assumptions; in particular the market returns will match the assumed rate year in and year out.
Actual experience will not match the actuarial assumptions each and every year. In the past ten years, for instance, market returns for this plan have varied from -15.65% to +18.92%.
Such variation will have a significant impact on the financial health of the plan, the liquidity constraints on plan assets, and the City's future contribution levels.
We highly recommend that stochastic projections be prepared that would enable the City to understand the potential range of future results based on the expected variability in investment returns.

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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.

Rebecca A. Sielman, FSA
Principal and Consulting Actuary

City of Jacksonville

General Employees Retirement Plan - Long-Range Forecast Based on October 1, 2015 Valuation

06/24/2016

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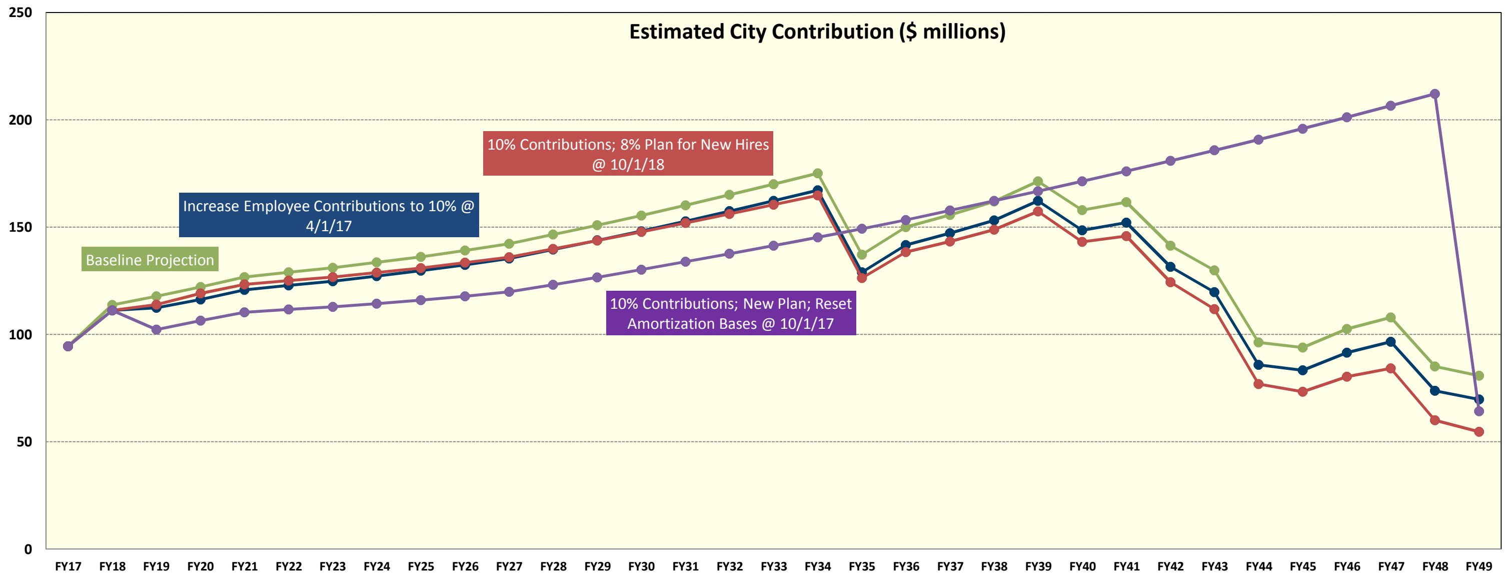
We have relied on the valuation results and actuarial methods and assumptions used by Segal Consultants in their October 1, 2015 actuarial valuation report. We make no judgment as to the appropriateness of Segal's actuarial methods or assumptions.



City Contribution	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
Baseline Projection	95	114	118	122	127	129	131	134	136	139	142	146	151	155	160	165	170
Increase Employee Contributions to 10% @ 4/1/17	95	111	112	116	121	123	125	127	130	132	135	140	144	148	153	157	162
10% Contributions; 8% Plan for New Hires @ 10/1/18	95	111	114	119	123	125	127	129	131	133	136	140	144	148	152	156	160
10% Contributions; New Plan; Reset Amortization Bases @ 10/1/17	95	111	102	106	110	112	113	114	116	118	120	123	127	130	134	138	141
Combined impact of all changes from baseline	0	(3)	(16)	(16)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(29)

City Contribution	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45	FY46	FY47	FY48	FY49
Baseline Projection	175	137	150	156	162	171	158	162	141	130	96	94	103	108	85	81
Increase Employee Contributions to 10% @ 4/1/17	167	129	142	147	153	162	149	152	131	120	86	83	92	97	74	70
10% Contributions; 8% Plan for New Hires @ 10/1/18	165	126	138	143	149	157	143	146	124	112	77	73	80	84	60	55
10% Contributions; New Plan; Reset Amortization Bases @ 10/1/17	145	149	153	158	162	167	171	176	181	186	191	196	201	207	212	64
Combined impact of all changes from baseline	(30)	12	3	2	0	(5)	13	14	40	56	95	102	99	99	127	(16)

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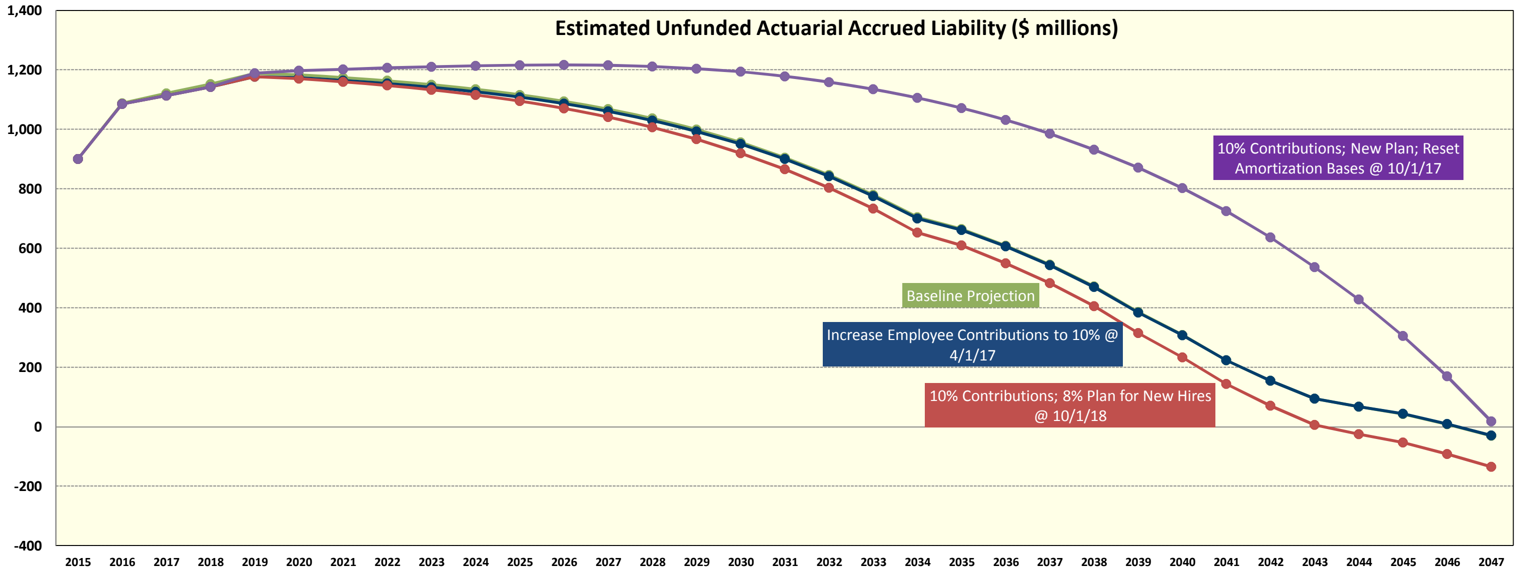

Estimated Unfunded Accrued Liability

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Baseline Projection	900	1,087	1,121	1,152	1,187	1,183	1,174	1,164	1,150	1,134	1,116	1,094	1,068	1,036	999	956	905
Increase Employee Contributions to 10% @ 4/1/17	900	1,085	1,114	1,142	1,177	1,173	1,164	1,154	1,141	1,126	1,108	1,086	1,061	1,030	993	950	900
10% Contributions; 8% Plan for New Hires @ 10/1/18	900	1,085	1,114	1,142	1,177	1,171	1,160	1,148	1,133	1,115	1,094	1,071	1,042	1,007	966	920	865
10% Contributions; New Plan; Reset Amortization Bases @ 10/1/17	900	1,085	1,114	1,142	1,189	1,197	1,201	1,206	1,210	1,213	1,216	1,217	1,216	1,212	1,204	1,194	1,178

	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047
Baseline Projection	846	780	704	664	609	545	472	386	309	224	155	94	67	42	8	(31)
Increase Employee Contributions to 10% @ 4/1/17	842	776	700	661	606	543	470	384	308	223	154	94	67	43	9	(29)
10% Contributions; 8% Plan for New Hires @ 10/1/18	803	733	653	609	550	482	405	314	233	144	71	6	(25)	(54)	(92)	(135)
10% Contributions; New Plan; Reset Amortization Bases @ 10/1/17	1,159	1,135	1,105	1,072	1,031	985	931	871	802	724	636	537	427	305	169	18

City of Jacksonville

General Employees Retirement Plan - Long-Range Forecast Based on October 1, 2015 Valuation

06/24/2016

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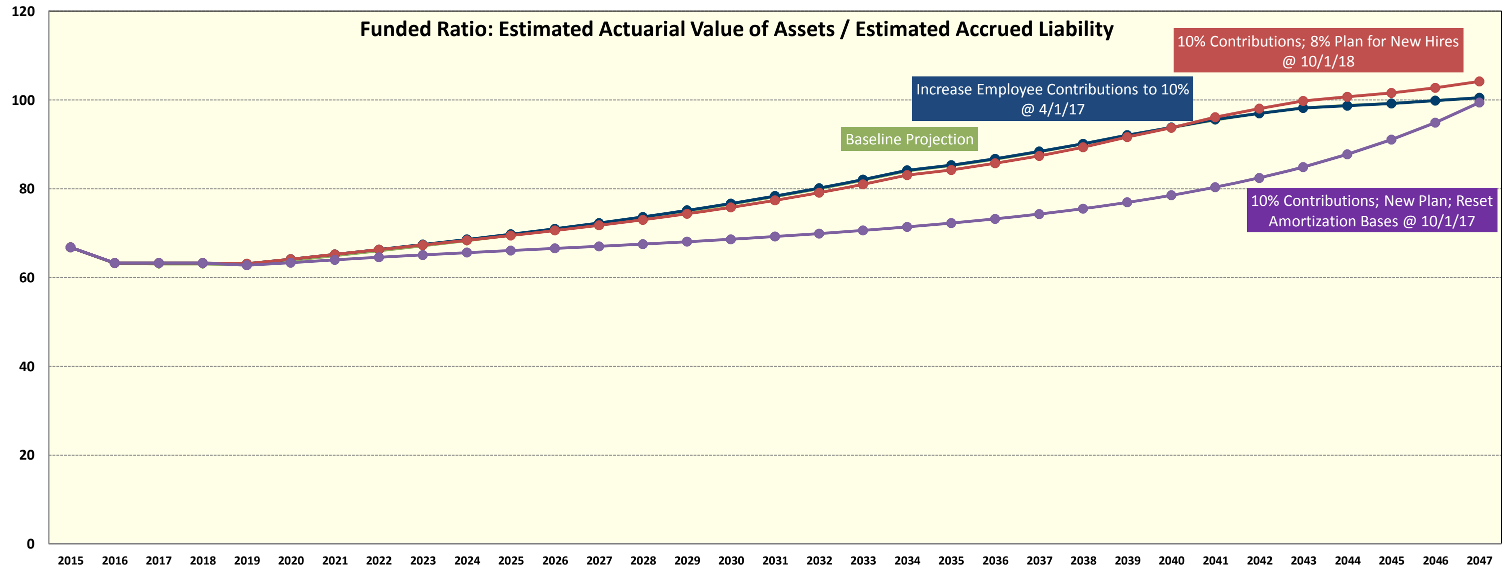

Estimated Funded Ratio	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**	**2045**	**2046**	**2047**
Baseline Projection	67	63	63	63	63	64	65	66	67	68	70	71	72	73	75	77	78	80	82	84	85	87	88	90	92	94	96	97	98	99	99	100	101
Increase Employee Contributions to 10% @ 4/1/17	67	63	63	63	63	64	65	66	67	69	70	71	72	74	75	77	78	80	82	84	85	87	88	90	92	94	96	97	98	99	99	100	101
10% Contributions; 8% Plan for New Hires @ 10/1/18	67	63	63	63	63	64	65	66	67	68	69	71	72	73	74	76	77	79	81	83	84	86	87	89	92	94	96	98	100	101	102	103	104
10% Contributions; New Plan; Reset Amortization Bases @ 10/1/17	67	63	63	63	63	63	64	65	65	66	66	67	67	68	68	69	69	70	71	71	72	73	74	76	77	79	80	82	85	88	91	95	99

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City of Jacksonville

General Employees Retirement Plan - Long-Range Forecast Based on October 1, 2015 Valuation

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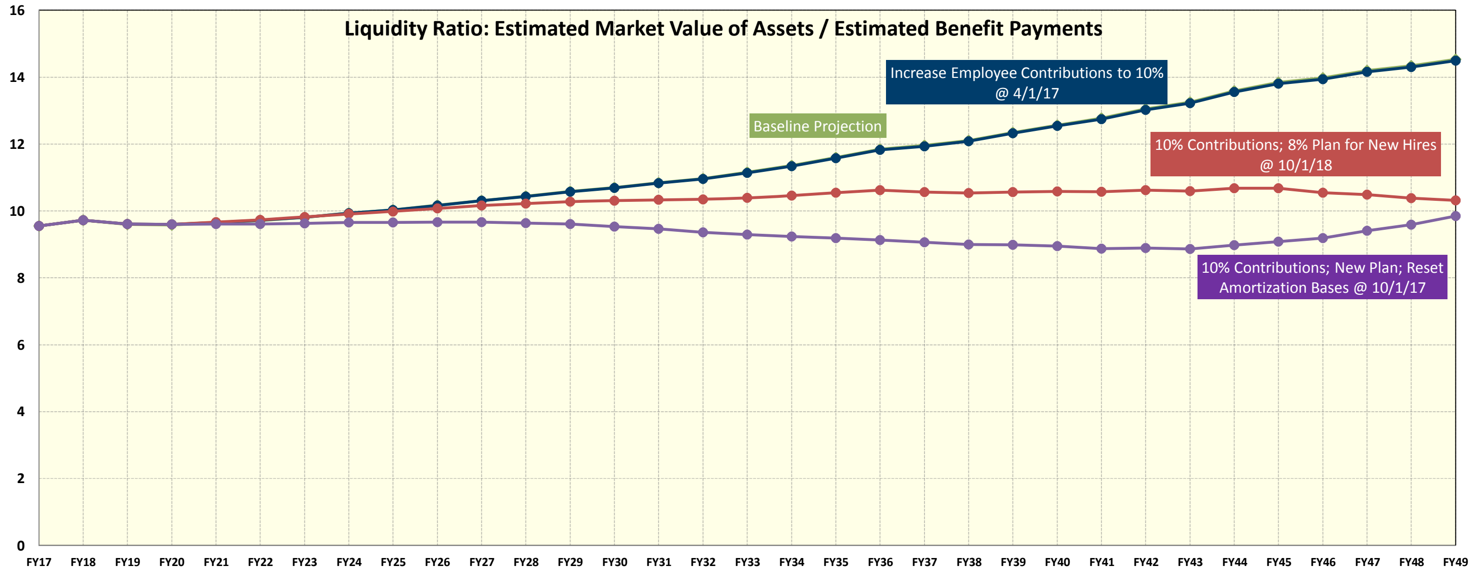

Estimated benefit payments ($ millions)	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45	FY46	FY47	FY48	FY49
Baseline Projection	182	184	193	201	208	215	222	228	235	241	247	254	261	268	276	284	291	299	305	312	320	328	334	341	349	355	363	367	372	378	382	390	396
Increase Employee Contributions to 10% @ 4/1/17	182	184	193	202	208	216	222	229	236	242	248	255	262	270	277	285	293	300	307	314	322	329	335	343	351	357	365	369	374	380	384	392	398
10% Contributions; 8% Plan for New Hires @ 10/1/18	182	184	193	202	208	215	222	227	234	240	245	252	257	265	271	279	285	291	296	302	308	313	317	322	327	330	334	333	333	333	330	329	327
10% Contributions; New Plan; Reset Amortization Bases @ 10/1/17	182	184	193	202	208	215	222	227	234	240	245	252	257	265	271	279	285	291	296	302	308	313	317	322	327	330	334	333	333	333	330	329	327

Estimated assets ($ millions)	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45	FY46	FY47	FY48	FY49
Baseline Projection	1,740	1,792	1,852	1,928	2,007	2,088	2,174	2,263	2,354	2,449	2,547	2,651	2,758	2,872	2,992	3,118	3,250	3,391	3,541	3,701	3,827	3,969	4,120	4,284	4,463	4,634	4,816	4,984	5,149	5,288	5,429	5,587	5,756
Increase Employee Contributions to 10% @ 4/1/17	1,740	1,792	1,855	1,935	2,014	2,096	2,182	2,271	2,363	2,458	2,556	2,660	2,767	2,881	3,001	3,127	3,260	3,401	3,551	3,712	3,838	3,980	4,132	4,296	4,475	4,646	4,829	4,997	5,163	5,302	5,443	5,601	5,770
10% Contributions; 8% Plan for New Hires @ 10/1/18	1,740	1,792	1,855	1,935	2,014	2,094	2,176	2,256	2,335	2,414	2,492	2,570	2,648	2,726	2,805	2,884	2,963	3,043	3,125	3,209	3,251	3,301	3,350	3,403	3,461	3,500	3,539	3,552	3,552	3,512	3,464	3,419	3,374
10% Contributions; New Plan; Reset Amortization Bases @ 10/1/17	1,740	1,792	1,855	1,935	2,002	2,068	2,134	2,197	2,258	2,315	2,371	2,424	2,473	2,522	2,568	2,611	2,650	2,688	2,723	2,757	2,789	2,819	2,848	2,876	2,905	2,931	2,959	2,987	3,021	3,060	3,105	3,159	3,221

Purpose of the project	Enable the City to better understand the pattern of emerging costs and liabilities due to proposed benefit and financing changes. This project is not intended to provide precise projections of current or future costs; the plan's actuary will prepare annual actuarial valuations which will be the basis for the City's actual contributions.
Basis for projections	This project is based on Milliman's replication of the October 1, 2015 actuarial valuation prepared by Segal Consultants, as described in their report dated March 22, 2016. We have relied on the valuation results and actuarial methods and assumptions described by Segal in their October 1, 2015 actuarial valuation report and on the census data that Segal supplied to us. We make no judgment as to the appropriateness of Segal's actuarial methods or assumptions. Note that Segal did not explicitly value this plan's DROP provision. We performed a limited review of the data used directly in our analysis for reasonableness and consistency and have not found material defects in the data. If there are material defects in the data, it is possible that they would be uncovered by a detailed, systematic review and comparison of the data to search for data values that are questionable or for relationships that are materially inconsistent. Such a review was beyond the scope of our assignment. If the underlying data or information is inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete and our calculations may need to be revised.
Projection assumptions	The number of active employees remains constant; terminating and retiring active members will be replaced by new members with the same age / service / gender characteristics as members who were hired during the past few plan years. The City always pays the minimum contribution. The payroll growth assumption will grade over the next ten years from the rate used for the October 1, 2015 valuation (0.68%) to the ultimate pay growth assumption (2.75%). Emerging plan experience will exactly follow the actuarial assumptions. In particular, the investments will earn the assumed rate of return every year. The mortality assumption will be updated effective with the October 1, 2016 valuation to match the Special Risk mortality assumptions that were used in the July 1, 2014 valuation of the Florida Retirement System. There are no other plan changes, assumption changes, funding method changes, or actuarial gains / losses, except as described herein. Differences between our projections and actual amounts depend on the extent to which future experience conforms to the assumptions made for this analysis. Actual experience will not conform exactly to the assumptions made for this analysis. Actual amounts will differ from projected amounts to the extent that actual experience deviates from expected experience. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions, changes in economic or demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status), and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of such future measurements.
Employee contribution increase	Effective April 1, 2017, the employee contribution rate may be increased to 10%.
Plan closing	Effective October 1, 2018, the DB plan may be closed and new hires thereafter may be covered by a new plan which will cost the City 8% of pay. Such changes are subject to the collective bargaining process.
Resetting amortization bases	Effective with the October 1, 2017 valuation, all existing amortization bases may be combined and reamortized over 30 years. The salaries of both current plan members as well as new hires who will be covered by the new plan may be included for purposes of determining the payroll growth assumption that is used to calculate the amortization payments. Note that 30 years is longer than the expected working lifetime of members covered by this plan, and therefore falls outside recommended actuarial practice. The Government Finance Officers Association in their 2013 "Core Elements of a Pension Funding Policy" Best Practice stated that amortization periods should "never exceed 25 years, but ideally fall in the 15-20 year range". The Conference of Consulting Actuaries in their 2014 "Actuarial Funding Policies and Practices for Public Pension Plans" labels amortization periods longer than 25 years as a "Non-recommended Practice". A long amortization period coupled with level percent of payroll amortization produces a situation known as "negative amortization", where amortization payments are not sufficient to cover interest on the Unfunded Actuarial Accrued Liability for a number of years. The City should therefore be prepared for a long period when the Unfunded Actuarial Accrued Liability may potentially increase as a dollar amount and the funded ratio may potentially make very little progress towards 100%, until towards the end of the amortization period. Although combining and reamortizing bases reduces City contributions in the short term, this should not be considered a savings, but rather a deferral of contributions. Funding a pension plan is a "pay now or pay more later" proposition.
Limitations on our analysis	Our projections are based on a deterministic model that assumes emerging plan experience always exactly matches the actuarial assumptions; in particular the market returns will match the assumed rate year in and year out. Actual experience will not match the actuarial assumptions each and every year. In the past ten years, for instance, market returns for this plan have varied from -15.61% to +18.14%. Such variation will have a significant impact on the financial health of the plan, the liquidity constraints on plan assets, and the City's future contribution levels. We highly recommend that stochastic projections be prepared that would enable the City to understand the potential range of future results based on the expected variability in investment returns.

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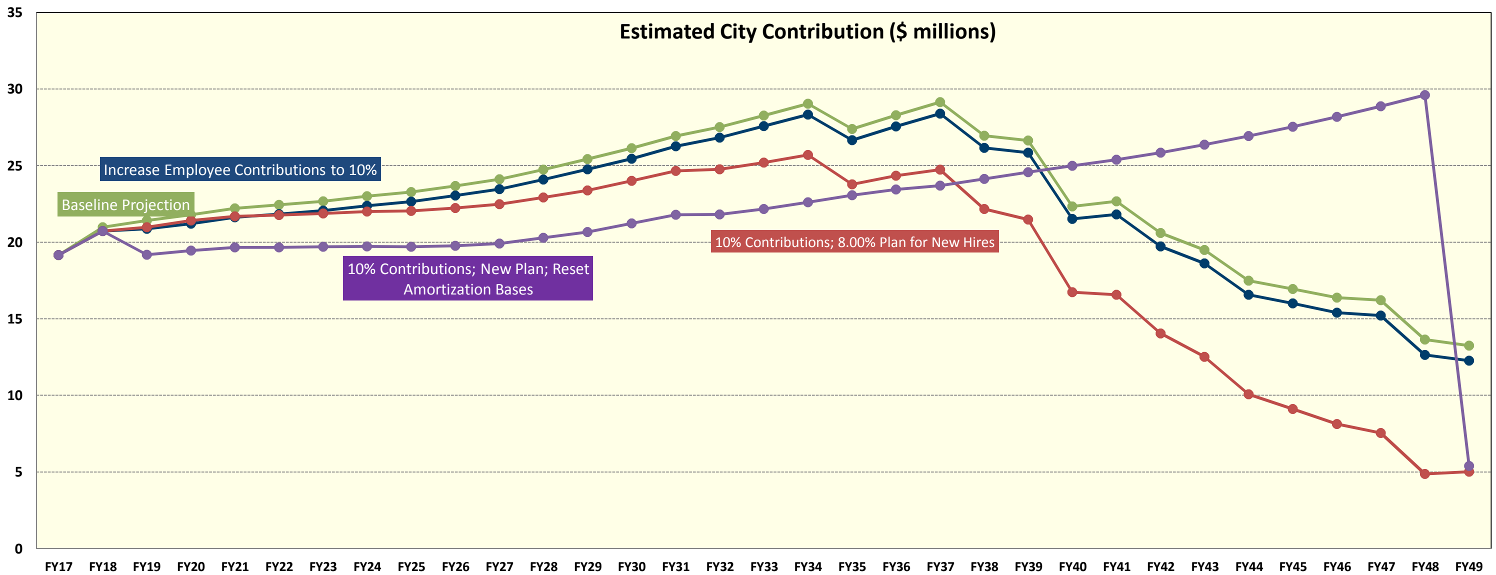

City Contribution	**FY17**	**FY18**	**FY19**	**FY20**	**FY21**	**FY22**	**FY23**	**FY24**	**FY25**	**FY26**	**FY27**	**FY28**	**FY29**	**FY30**	**FY31**	**FY32**	**FY33**
Baseline Projection	19	21	21	22	22	22	23	23	23	24	24	25	25	26	27	28	28
Increase Employee Contributions to 10%	19	21	21	21	22	22	22	22	23	23	23	24	25	25	26	27	28
10% Contributions; 8.00% Plan for New Hires	19	21	21	21	22	22	22	22	22	22	22	23	23	24	25	25	25
10% Contributions; New Plan; Reset Amortization Bases	19	21	19	19	20	20	20	20	20	20	20	20	21	21	22	22	22
Combined impact of all changes from baseline	0	(0)	(2)	(2)	(3)	(3)	(3)	(3)	(4)	(4)	(4)	(4)	(5)	(5)	(5)	(6)	(6)

City Contribution	**FY34**	**FY35**	**FY36**	**FY37**	**FY38**	**FY39**	**FY40**	**FY41**	**FY42**	**FY43**	**FY44**	**FY45**	**FY46**	**FY47**	**FY48**	**FY49**
Baseline Projection	29	27	28	29	27	27	22	23	21	20	17	17	16	16	14	13
Increase Employee Contributions to 10%	28	27	28	28	26	26	22	22	20	19	17	16	15	15	13	12
10% Contributions; 8.00% Plan for New Hires	26	24	24	25	22	21	17	17	14	13	10	9	8	8	5	5
10% Contributions; New Plan; Reset Amortization Bases	23	23	23	24	24	25	25	25	26	26	27	28	28	29	30	5
Combined impact of all changes from baseline	(6)	(4)	(5)	(5)	(3)	(2)	3	3	5	7	9	11	12	13	16	(8)

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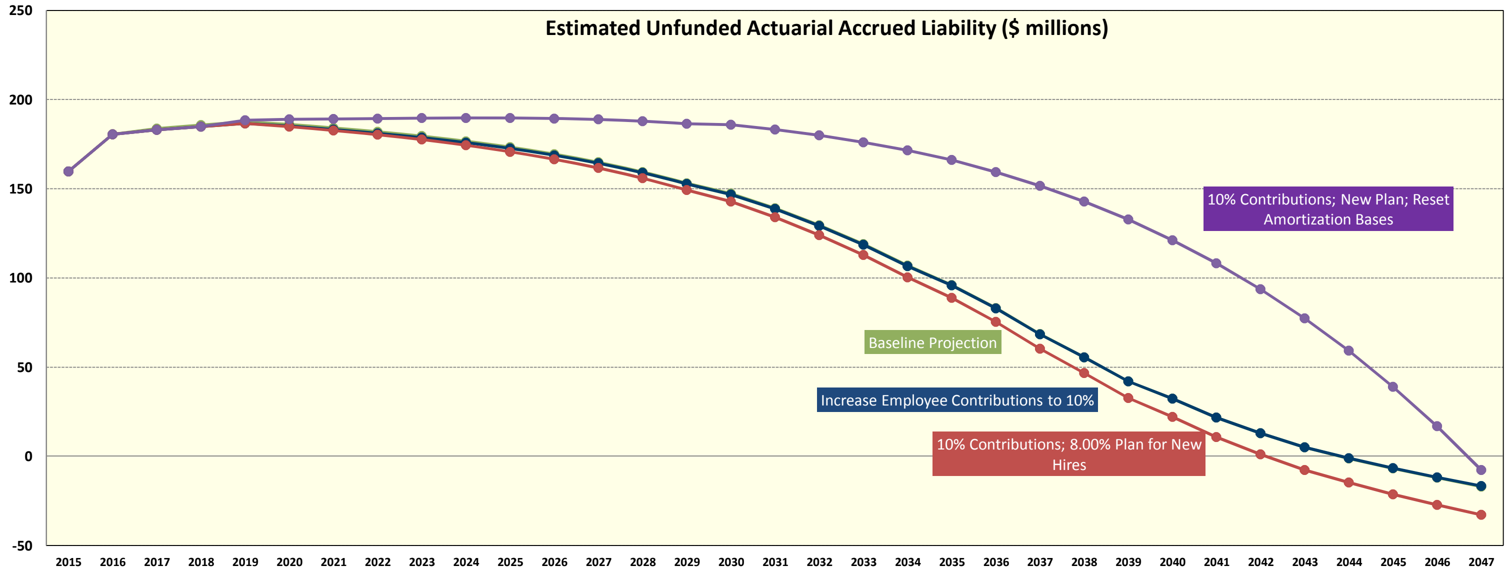
We have relied on the valuation results and actuarial methods and assumptions used by Segal Consultants in their October 1, 2015 actuarial valuation report, with the exception that we explicitly valued the cost of the DROP feature, whereas Segal did not. We make no judgment as to the appropriateness of Segal's actuarial methods or assumptions.



Estimated Unfunded Accrued Liability	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Baseline Projection	160	181	184	186	188	186	184	182	180	177	173	169	165	159	153	147
Increase Employee Contributions to 10%	160	180	183	185	187	185	183	181	179	176	173	169	164	159	153	147
10% Contributions; 8.00% Plan for New Hires	160	180	183	185	187	185	183	180	178	174	171	166	162	156	149	143
10% Contributions; New Plan; Reset Amortization Bases	160	180	183	185	188	189	189	189	190	190	190	189	189	188	186	186

Estimated Unfunded Accrued Liability	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047
Baseline Projection	139	130	119	107	96	83	69	56	42	32	22	13	5	(1)	(7)	(12)	(17)
Increase Employee Contributions to 10%	139	129	119	107	96	83	68	55	42	32	22	13	5	(1)	(7)	(12)	(17)
10% Contributions; 8.00% Plan for New Hires	134	124	113	100	89	75	60	47	33	22	11	1	(8)	(15)	(21)	(27)	(33)
10% Contributions; New Plan; Reset Amortization Bases	183	180	176	172	166	159	152	143	133	121	108	94	77	59	39	17	(8)

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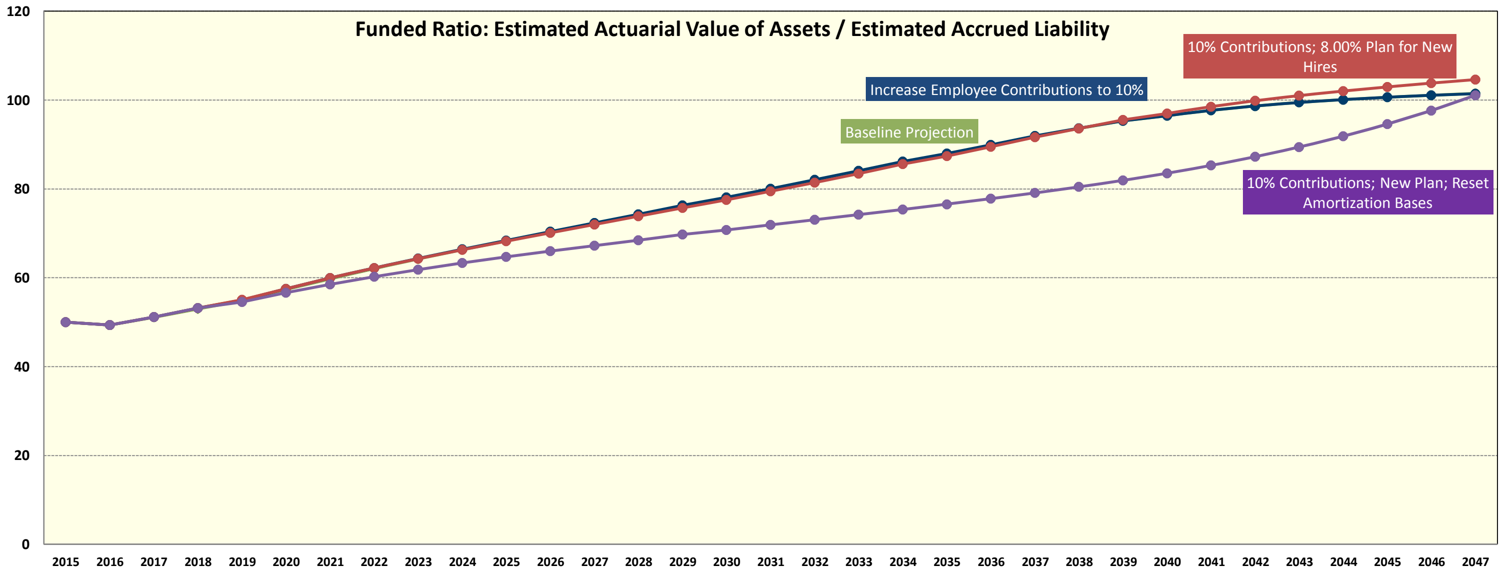

Estimated Funded Ratio	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Baseline Projection	50	49	51	53	55	57	60	62	64	66	68	70	72	74	76	78	80
Increase Employee Contributions to 10%	50	49	51	53	55	58	60	62	64	66	68	70	72	74	76	78	80
10% Contributions; 8.00% Plan for New Hires	50	49	51	53	55	58	60	62	64	66	68	70	72	74	76	78	79
10% Contributions; New Plan; Reset Amortization Bases	50	49	51	53	55	57	59	60	62	63	65	66	67	68	70	71	72

Estimated Funded Ratio	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047
Baseline Projection	82	84	86	88	90	92	94	95	96	98	99	99	100	101	101	102
Increase Employee Contributions to 10%	82	84	86	88	90	92	94	95	97	98	99	99	100	101	101	101
10% Contributions; 8.00% Plan for New Hires	81	83	86	87	89	92	94	96	97	99	100	101	102	103	104	105
10% Contributions; New Plan; Reset Amortization Bases	73	74	75	77	78	79	80	82	84	85	87	89	92	95	98	101

This work was prepared solely for the City of Jacksonville for the purposes described herein and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

City of Jacksonville

Corrections Officers Retirement Plan - Long-Range Forecast Based on October 1, 2015 Valuation

06/24/2016

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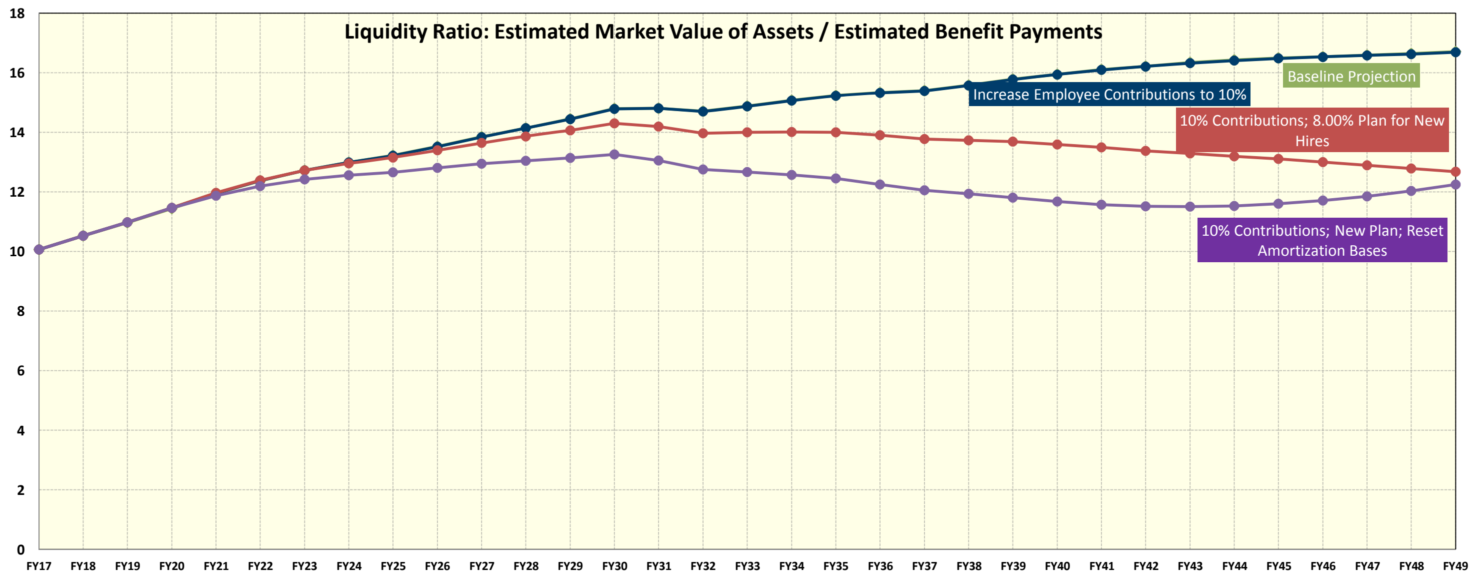


Estimated benefit payments ($ millions)	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45	FY46	FY47	FY48	FY49
Baseline Projection	15	16	17	18	19	20	21	23	24	26	27	28	30	31	33	36	37	39	41	43	45	47	49	51	53	55	57	59	61	62	64	66	68
Increase Employee Contributions to 10%	15	16	17	18	19	20	22	23	24	26	27	28	30	31	33	36	37	39	41	43	46	47	49	51	53	55	57	59	61	63	65	66	68
10% Contributions; 8.00% Plan for New Hires	15	16	17	18	19	20	21	23	24	26	27	28	30	31	33	35	37	39	41	43	45	47	49	50	52	53	55	56	56	57	58	58	58
10% Contributions; New Plan; Reset Amortization Bases	15	16	17	18	19	20	21	23	24	26	27	28	30	31	33	35	37	39	41	43	45	47	49	50	52	53	55	56	56	57	58	58	58

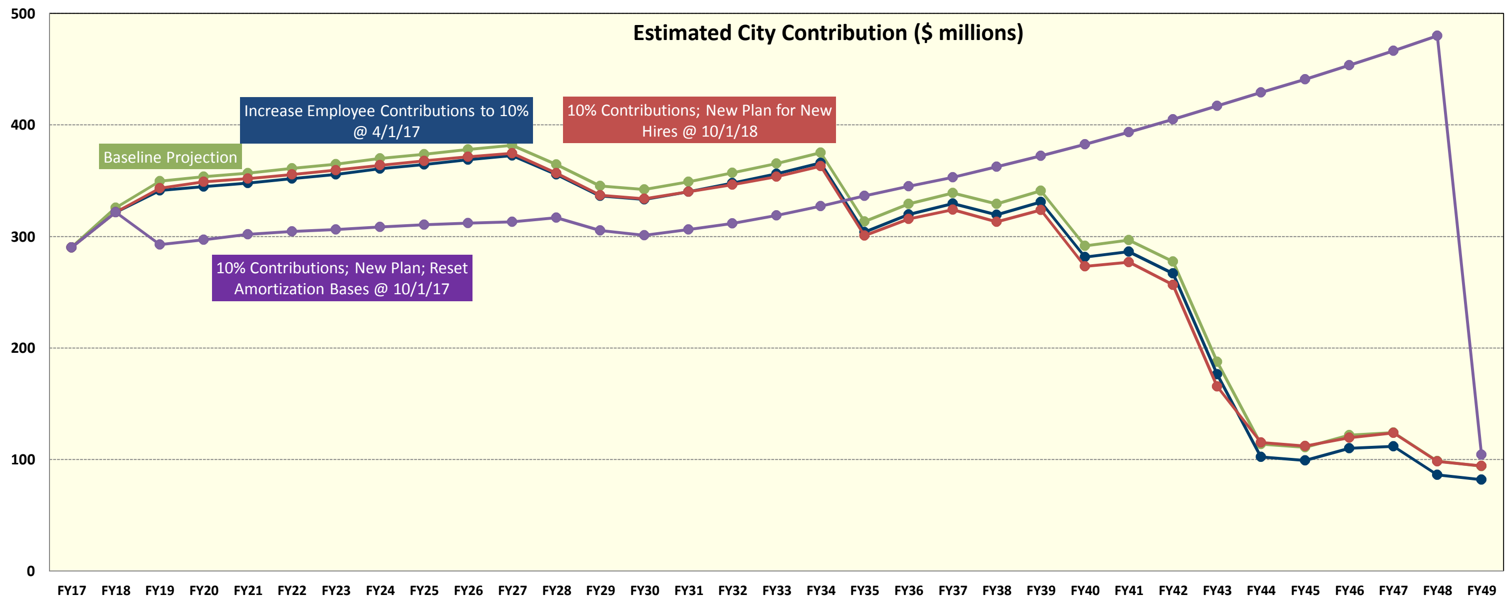
Estimated assets ($ millions)	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45	FY46	FY47	FY48	FY49
Baseline Projection	150	168	186	206	228	250	273	297	322	347	373	400	429	459	490	523	556	590	626	664	700	738	778	816	856	891	928	964	1,000	1,034	1,068	1,103	1,138
Increase Employee Contributions to 10%	150	168	186	207	228	251	274	298	322	348	374	401	430	460	491	523	557	591	627	665	701	739	779	817	857	892	930	965	1,001	1,035	1,070	1,104	1,139
10% Contributions; 8.00% Plan for New Hires	150	168	186	207	228	251	273	296	320	343	367	391	415	440	467	493	518	544	570	596	619	642	665	684	702	715	726	734	740	743	744	743	742
10% Contributions; New Plan; Reset Amortization Bases	150	168	186	207	226	246	267	287	308	328	348	368	388	408	429	450	469	488	507	525	542	558	573	588	602	616	629	642	655	669	684	699	716

City of Jacksonville

All Three Plans - Long-Range Forecast Based on October 1, 2015 Valuation

06/24/2016

This projection is for illustration purposes only, based on Milliman's replications of the October 1, 2015 valuations of the Police and Fire Pension Plan, the General Employees Retirement Plan, and the Corrections Officers Retirement Plan. Please see the limitations and caveats contained with our projection results for each of the individual plans.



City Contribution	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
Baseline Projection	290	326	350	354	357	361	365	370	374	378	382	364	345	342	349	357	365
Increase Employee Contributions to 10% @ 4/1/17	290	322	341	345	348	352	356	361	365	369	373	355	336	333	340	348	356
10% Contributions; New Plan for New Hires @ 10/1/18	290	322	343	349	352	356	359	364	368	371	374	357	337	334	340	346	354
10% Contributions; New Plan; Reset Amortization Bases @ 10/1/17	290	322	293	297	302	304	306	309	310	312	313	317	305	301	306	312	319
Combined impact of all changes from baseline	0	(4)	(57)	(57)	(55)	(57)	(58)	(61)	(63)	(66)	(68)	(48)	(40)	(41)	(43)	(45)	(46)

City Contribution	FY34	FY35	FY36	FY37	FY38	FY39	FY40	FY41	FY42	FY43	FY44	FY45	FY46	FY47	FY48	FY49
Baseline Projection	375	313	329	339	329	341	292	297	277	187	114	111	122	124	99	94
Increase Employee Contributions to 10% @ 4/1/17	366	304	320	329	319	331	281	286	267	177	102	99	110	112	86	82
10% Contributions; New Plan for New Hires @ 10/1/18	363	301	316	324	313	324	273	277	257	166	115	112	119	124	98	94
10% Contributions; New Plan; Reset Amortization Bases @ 10/1/17	327	336	345	353	362	372	383	393	405	417	429	441	453	466	480	104
Combined impact of all changes from baseline	(48)	23	16	14	33	31	91	97	127	230	315	330	331	342	381	10

City of Jacksonville

All Three Plans - Long-Range Forecast Based on October 1, 2015 Valuation

06/24/2016

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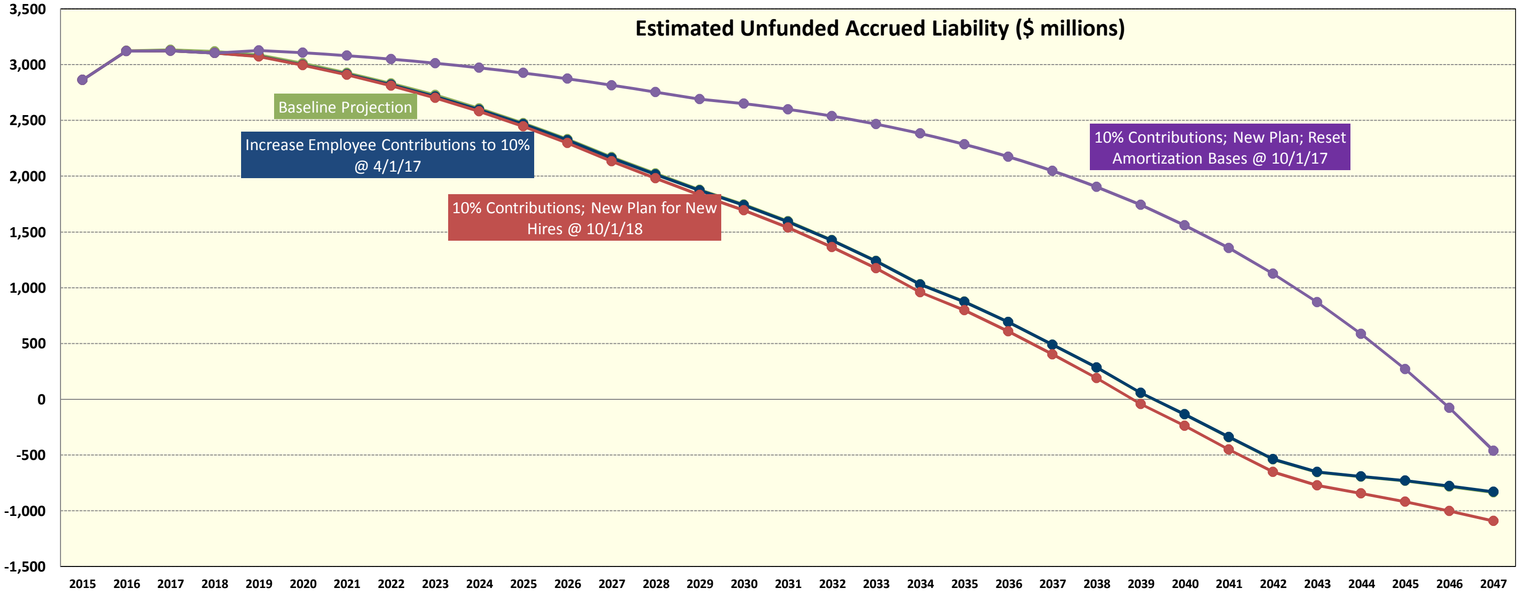

Estimated Unfunded Accrued Liability

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Baseline Projection	2,861	3,123	3,133	3,117	3,087	3,011	2,926	2,832	2,726	2,607	2,476	2,331	2,170	2,024	1,878	1,745
Increase Employee Contributions to 10% @ 4/1/17	2,861	3,120	3,124	3,103	3,074	2,998	2,913	2,820	2,715	2,597	2,466	2,322	2,162	2,016	1,871	1,739
10% Contributions; New Plan for New Hires @ 10/1/18	2,861	3,120	3,124	3,103	3,073	2,995	2,907	2,810	2,702	2,581	2,446	2,297	2,133	1,981	1,831	1,693
10% Contributions; New Plan; Reset Amortization Bases @ 10/1/17	2,861	3,120	3,124	3,103	3,127	3,107	3,079	3,048	3,013	2,972	2,926	2,873	2,814	2,754	2,691	2,650

	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047
Baseline Projection	1,595	1,427	1,241	1,032	875	693	489	284	55	(135)	(341)	(540)	(654)	(696)	(734)	(784)	(835)
Increase Employee Contributions to 10% @ 4/1/17	1,590	1,423	1,237	1,029	873	691	489	284	56	(134)	(339)	(537)	(651)	(692)	(729)	(779)	(830)
10% Contributions; New Plan for New Hires @ 10/1/18	1,538	1,365	1,173	960	798	609	401	190	(44)	(239)	(450)	(653)	(773)	(846)	(918)	(1,001)	(1,092)
10% Contributions; New Plan; Reset Amortization Bases @ 10/1/17	2,598	2,538	2,467	2,383	2,287	2,174	2,047	1,903	1,741	1,559	1,355	1,126	870	586	271	(78)	(462)