



## Lycoming County Employees' Retirement System Actuarial Valuation as of January 1, 2016

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Municipal Finance Partners, Inc.  
September 1, 2016



## Agenda

- 2016 Annual Required Contribution (ARC)
- Fund Performance – Market v. Actuarial
- Plan Membership
- Actuarial Assumptions
- Liabilities
- Method Change
- GASB 67 and 68
- Actuarial Equivalence for Plan Benefits

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## Funding Philosophy

- No funding requirements for County Pension Plans
- Act 205 imposes funding requirements on municipal pension plans
- Despite these rules, plans can become underfunded (losses, benefit increases)
- Without these rules, it can get even worse (see State pension plans, Illinois)
- Concept of Intergenerational Equity: Each generation of taxpayers funds the services they receive, including pensions.

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## Disclaimers

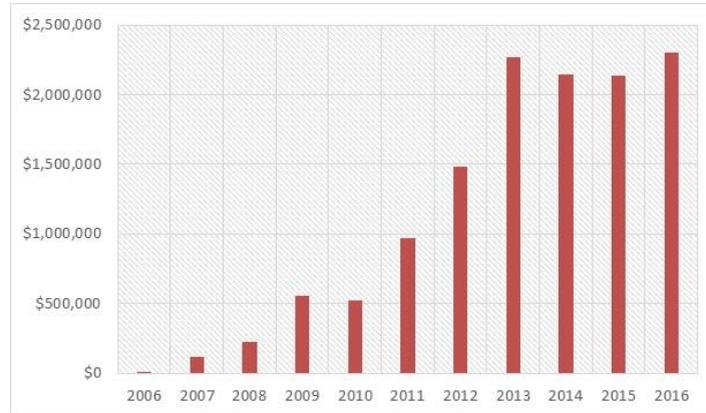
- Information in presentation is based on same plan provisions, census and trust information, and actuarial assumptions and methods as draft 1/1/2016 actuarial valuation.
- Please refer to draft actuarial valuation report for reference to these items and my qualifications to determine and present this information.

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## Actuarially Determined Employer Contribution (ADEC)

- ADEC increased from \$2,139,753 in 2015 to \$2,304,865 in 2016:



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## Reasons for the ADEC Increase

- Change in assumption/method for valuing member annuity
- Very minor liability loss (0.08%)
- Offset by small investment gain (actuarial basis) of \$480,911 (0.48%)
  - Market yield 1.49%, Actuarial yield 7.56%
  - Recognizing 20% of 2012 - 2014 gains
  - Smoothing market value down by \$94,269 (this was \$5.76 million last year)

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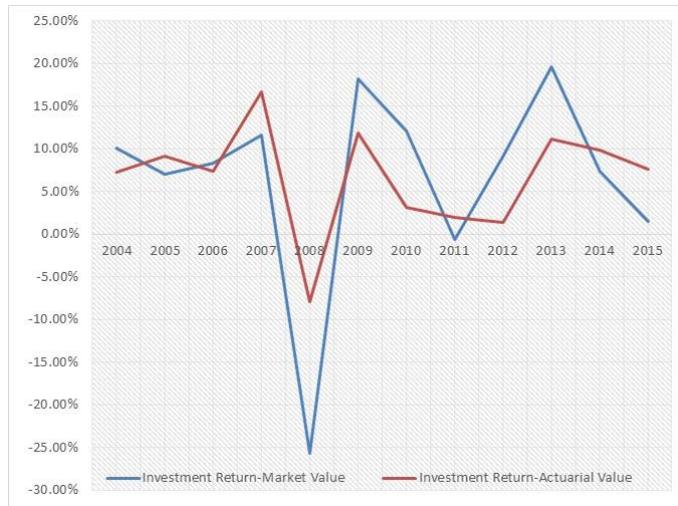
# History of Fund Values



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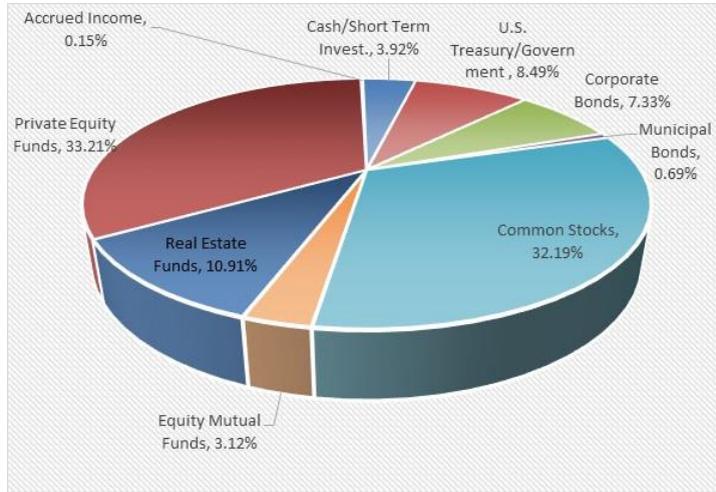
# Asset Performance History



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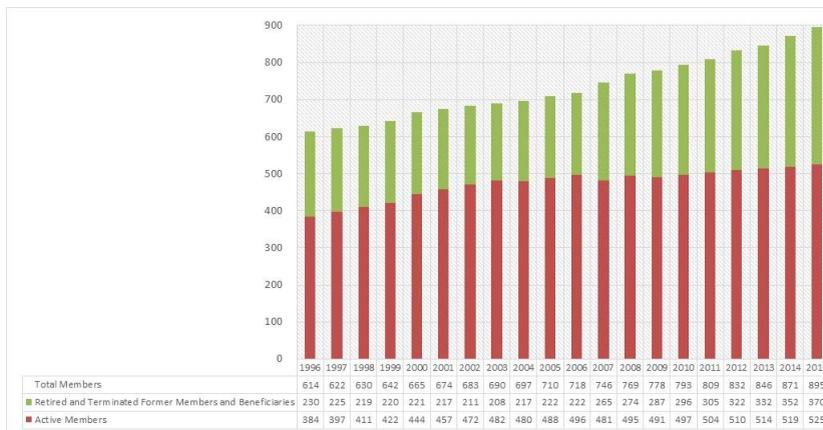
# Fund Investment Allocation



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# Plan Membership



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## Actuarial Assumptions and Methods

- Interest Rate: 7.0%
- Salary Scale: 4.0% per year
- Mortality: RP-2000 with full projection
- Turnover Table: T-4, six-year select period
- Accumulated Member Deductions: Valued by projecting balances to expected distribution date. Assuming 70% elect Options 1-3 (30% elect lump sum of Member Annuity)

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## Actuarial Cost Method

- Entry Age Normal Cost Actuarial Cost Method
  - Fund normal costs from hire date to retirement date as level percentage of payroll
  - Actuarial Accrued Liability is funding target, equal to present value of prior normal costs.
  - Amortization of changes in unfunded actuarial accrued liability.

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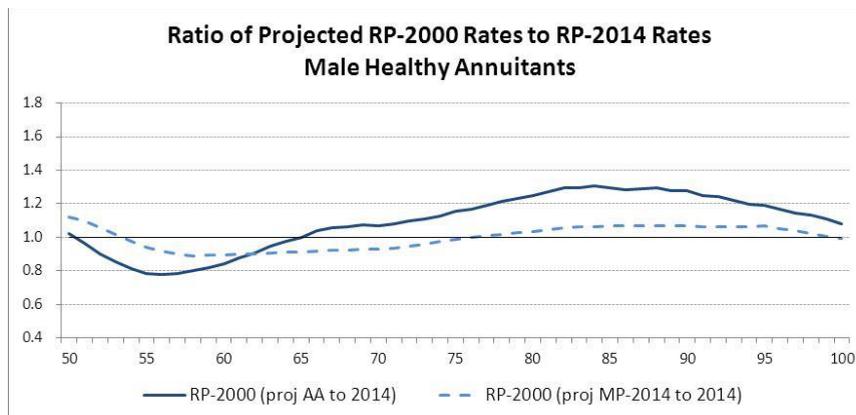
## Mortality

- Mortality continues to improve among the general population.
- Currently using RP-2000 with rates projected using Scale AA (age related)
- Newer table (RP-2014) includes base mortality improvement and projections rates based on age and birth year
- Table features blue- and white-collar versions.

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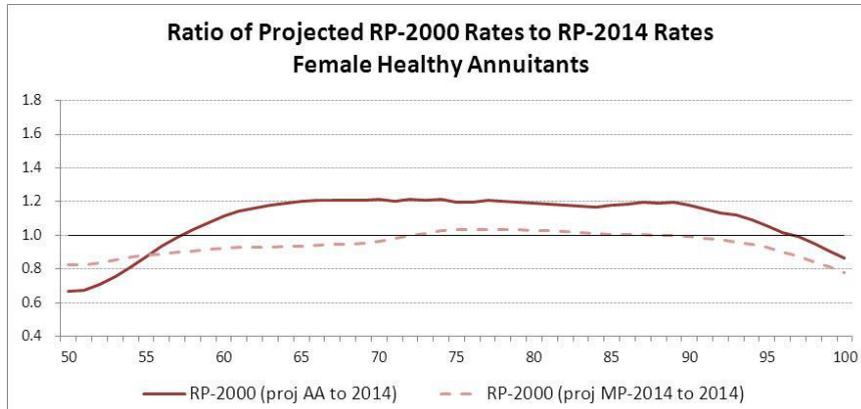
## Retirees are Living Longer (Males)



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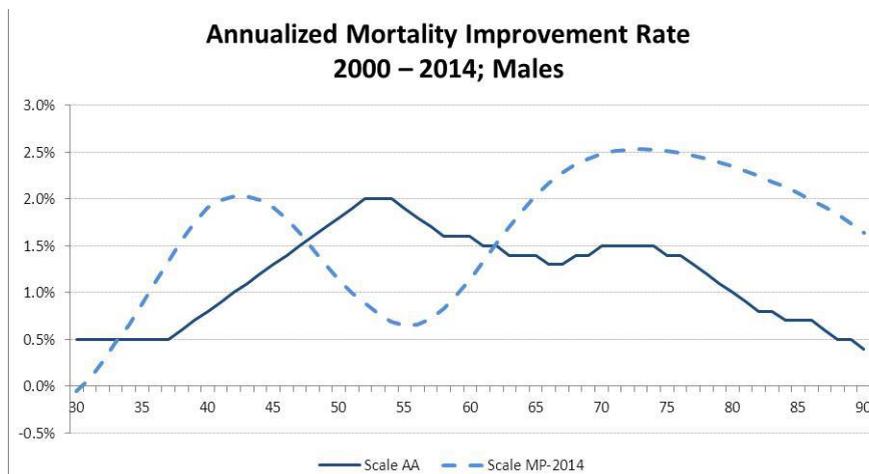
## Retirees are Living Longer (Females)



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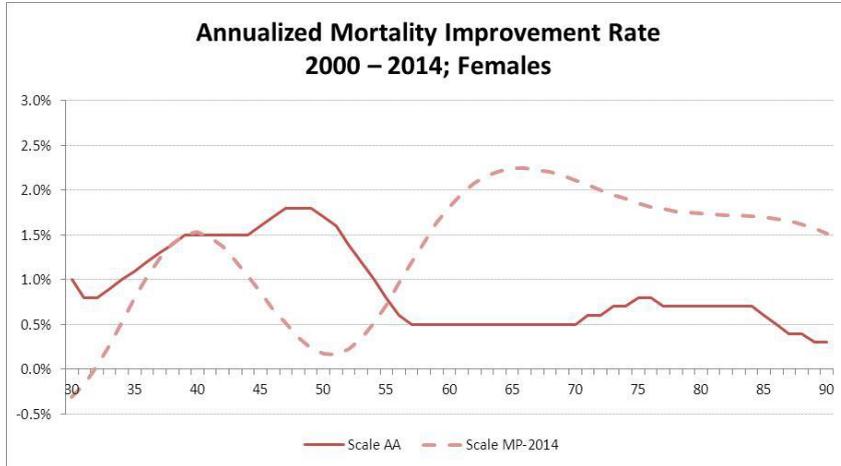
## Mortality Improvement-Males



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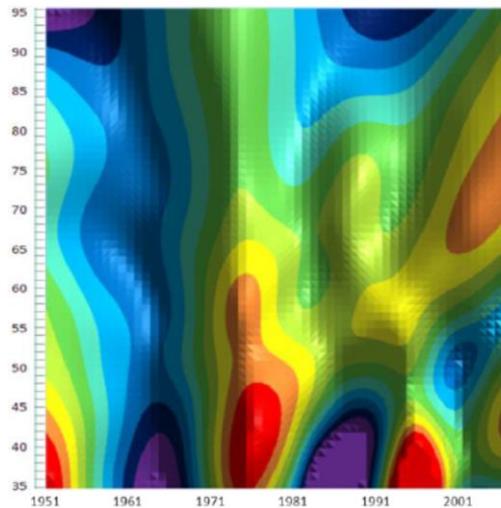
# Mortality Improvement-Females



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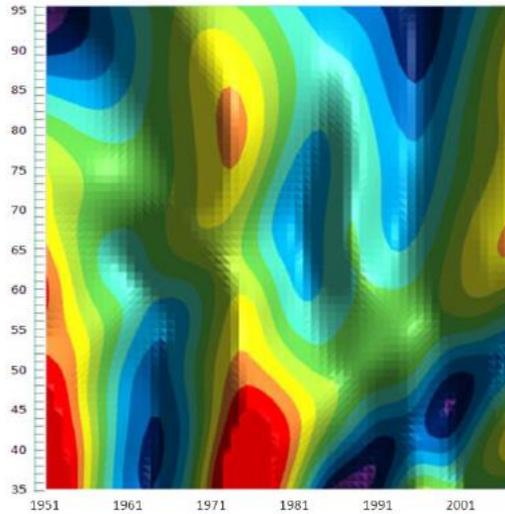
# Mortality Improvement-Males



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## Mortality Improvement-Females

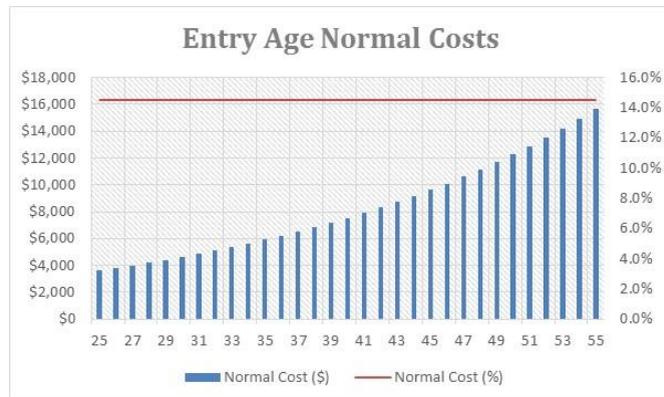


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## Illustration of EANC Method

- Pattern of normal costs, level as percentage of payroll.



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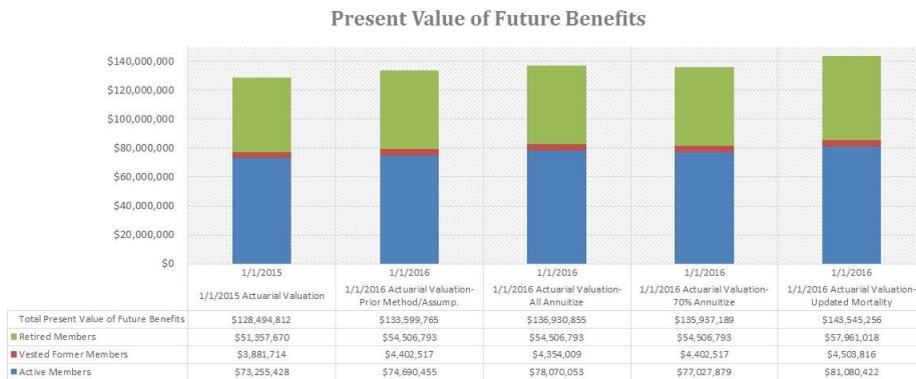
# ADEC Calculation-Including Method Changes and Mortality Table Update



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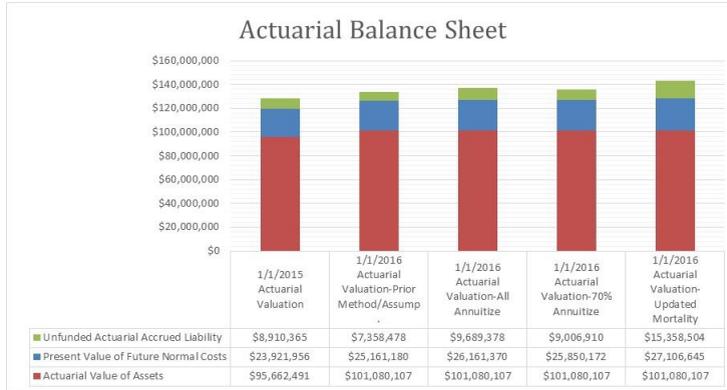
# Actuarial Study Details



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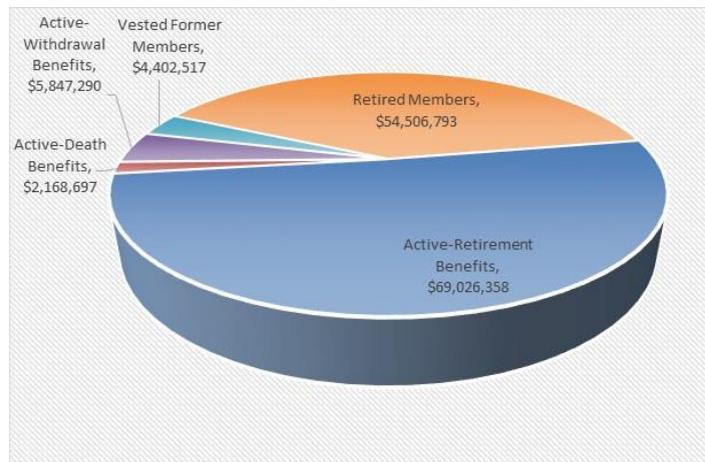
# Actuarial Balance Sheet



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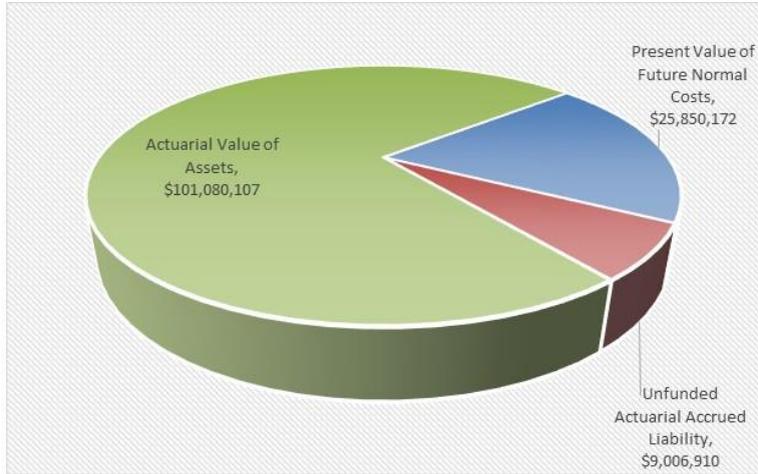
# Plan Liabilities



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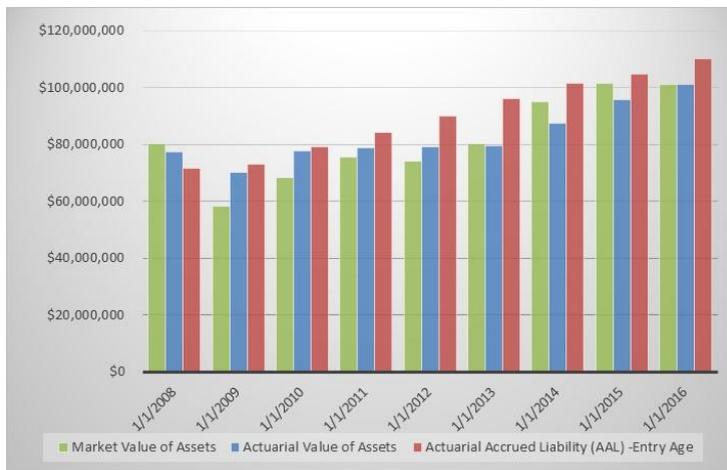
# Actuarial Balance Sheet



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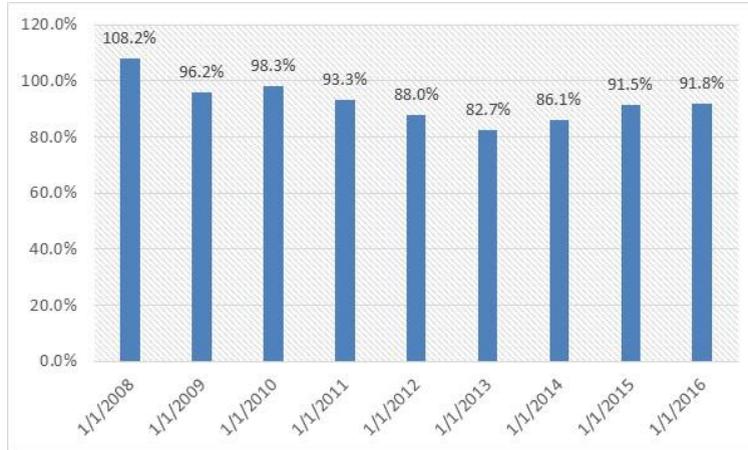
# Assets v. Liabilities



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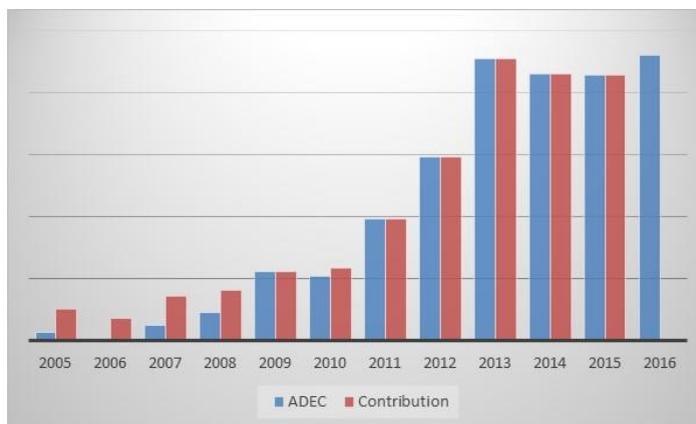
## Funded Ratio



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## ARC vs. Contributions



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## GASB 67 and 68-The Great Separation

- Annual Required Contribution (ARC) concept under GASB 25 no longer in standards
- Disclosures based on unfunded liabilities
- Replaced by Actuarially Determined Employer Contribution (ADEC)
- Actuarial Standards are only constraint upon ADEC calculation

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## Actuarial Equivalence

- These are the assumptions that are used to determine the optional forms of payment or early retirement pension for retiring members.
- Basis is GA1983 Mortality, 7% Interest Rate
  - Table assumes higher (male) mortality for participant and spouse.
  - Table does not take into account mortality improvement over the last 30 years.

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## Forms of Benefit Payment

Option	Survivor Pension	Guaranteed Payments	Refund at Retirement
No	None	Accumulated deduct. at retirement, less benefits paid	None
One	None	Actuarial present value of pension at retirement, less benefits paid	None
Two	100% of Original Pension (prior to COLA)	Accumulated deduct. at retirement, less benefits paid	None
Three	50% of Original Pension (prior to COLA)	Accumulated deduct. at retirement, less benefits paid	None
Four (A)	None	None	Accum. deduct. at retirement
Four (B)	None	Actuarial present value of pension at retirement, less benefits paid	Accum. deduct. at retirement
Four (C)	100% of Original Pension (prior to COLA)	None	Accum. deduct. at retirement
Four (D)	50% of Original Pension (prior to COLA)	None	Accum. deduct. at retirement

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## Benefits of Tabular Factors

- The use of tabular factors allows ease of calculation. This was particularly important in the development of the actuarial profession, prior to modern technology (the “green paper spreadsheet days”)
- Except for rounding, the use of tabular factors for most calculations might not have a material impact.

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## Shortfalls of Tabular Factors

- In County Pension Plans, we use factors to convert from a No Option form of payment to Option One
  - This increases the guaranteed payments from the accumulated deductions at retirement to the entire present value at retirement.
  - The factor is based on age and therefore does not reflect the potential difference in the accumulated deductions (e.g., due to voluntary contributions). We are giving an extra three years of payments whether one already has two or five years guaranteed.

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## An illustration of the problem

- We are effectively saying:
  - 95% of A is always equal to A - 5
  - REGARDLESS OF HOW BIG "A" IS**
  - OR
  - I see you have 20 oranges. I'll give you half of my apples and you give me half of your oranges. **How many apples do you have? I'M NOT TELLING!**

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## Potential Updates

- Update to mortality table (RP-2000 or RP-2014)
- Use of blended male/female rates
- Use of actual assumptions to replace tabular factors

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## Impact of Changes

- Longer expected lifespans for members will decrease the amount of monthly pension purchased under.
- Longer expected lifespans for members will increase the lump sum death benefit amount.
- Impact on other conversions will be mixed:
  - Joint and survivor options (and Option One) reflect relative age of survivor and amount of accumulated deductions at retirement.
  - Early retirement pensions will increase slightly.

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## Potential Secondary Impact

- Surge of retirements ahead of change.
- Option Four more popular
  - Reduces plan longevity risk
  - Reduces cost of COLAs to retirees
- Reduced liabilities over long term due to decreased purchasing power of accumulated deductions (County no longer running a sale on annuities)
- More work for actuary.

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## Recommended Course of Action

- Actuarial study:
  - Chose most appropriate mortality table
  - Impact on sample participants
  - Impact on plan liabilities
- Implementation schedule
- Communication to plan members, potential retirees

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# Questions



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