

Kentucky Teachers' Retirement System Funding Work Group

Discussion of Alternatives

November 16, 2015

William B. Fornia, FSA

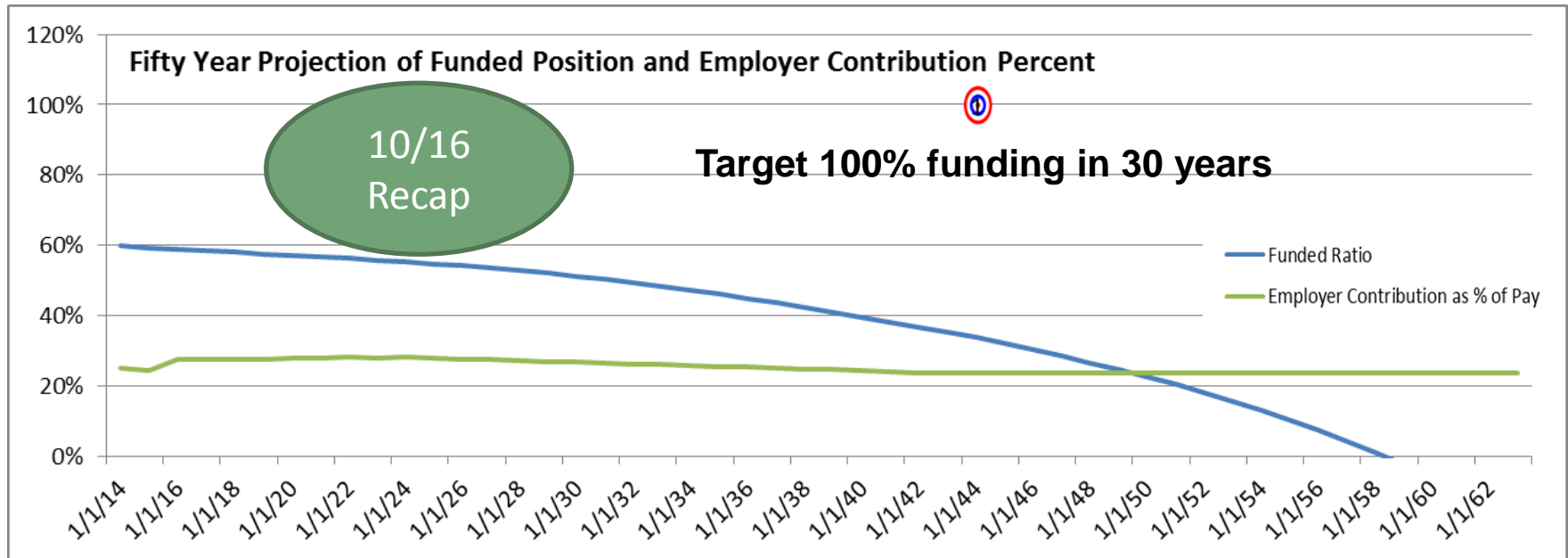
Goal: Make recommendations to strengthen the solvency of the KTRS

PTA Discussion Items

- Recap from October 16 alternatives to strengthen solvency
- Further discussion of alternatives
 - Additional specific scenarios
 - Individual impact analysis
 - DC considerations
- Dedicated revenue examples
- Actuarial review
- Fiscal impacts of alternatives

Where Are We Now?

- Without action , will run out of money

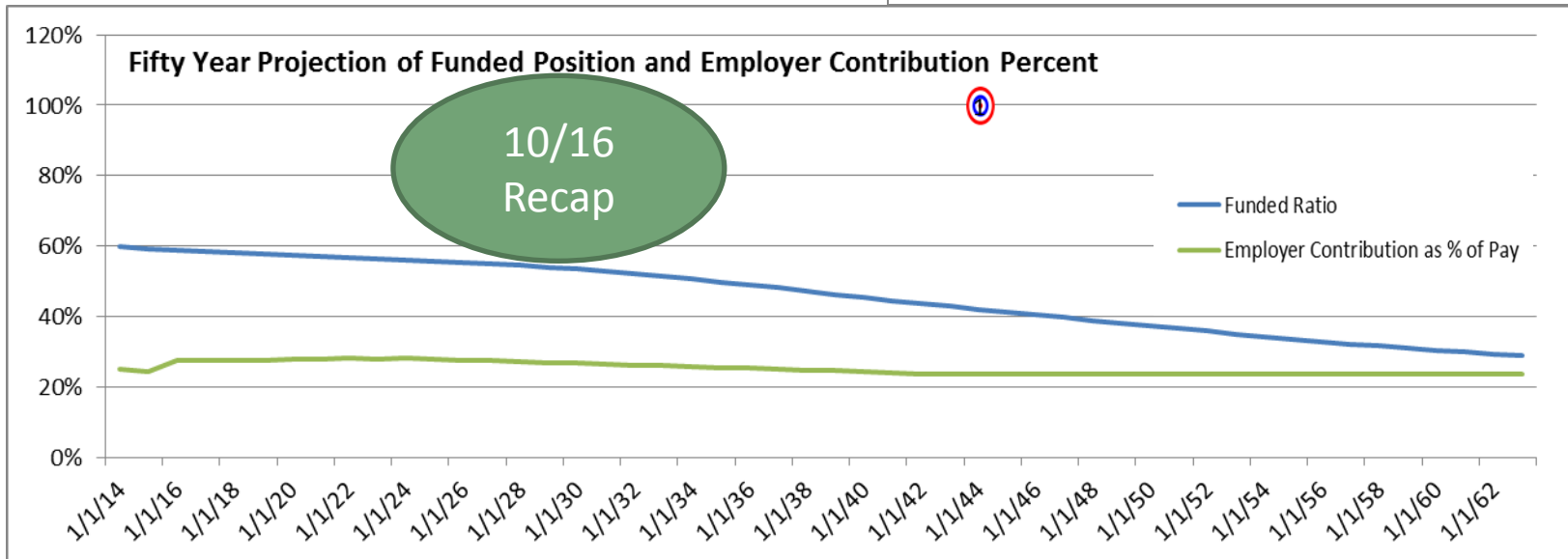
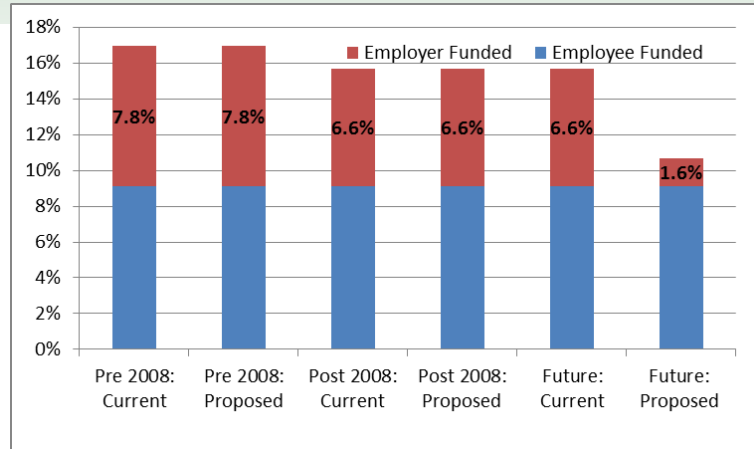


- No contribution increase (actually decrease from 28% of pay to 23% of pay as special appropriation ends)
- No benefit reductions

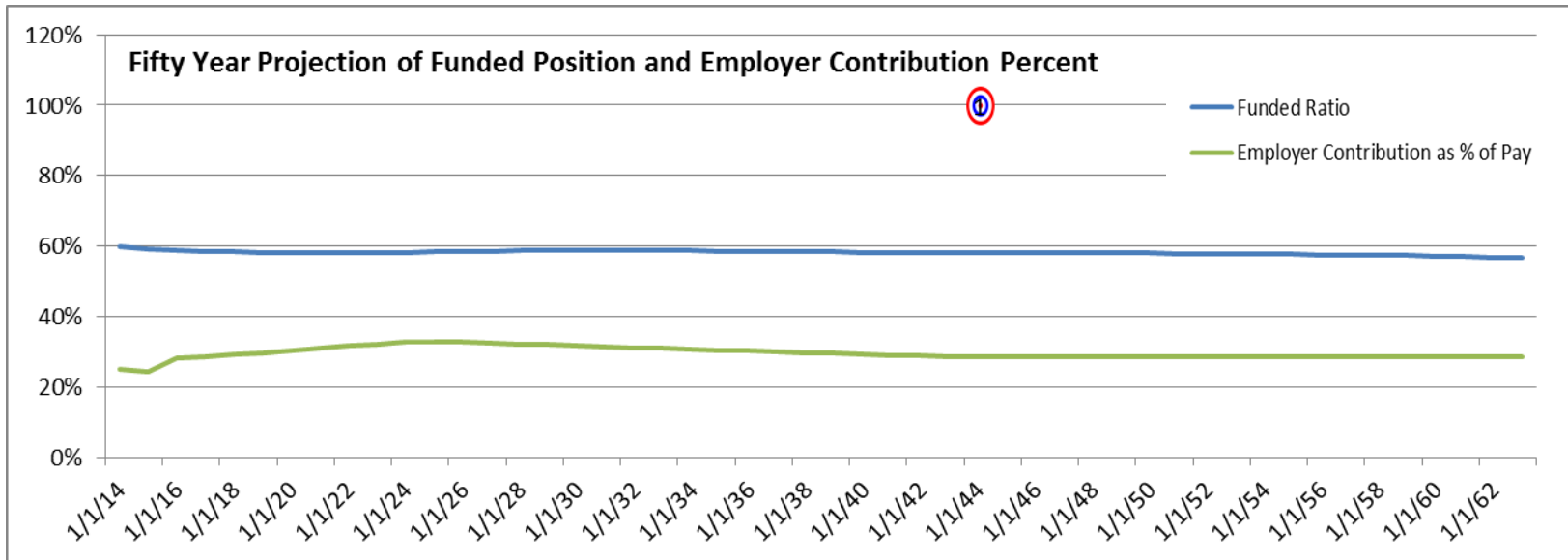
Note that this projection model is an estimate of future experience. Once the work group is closer to a proposed solution, KTRS actuary can true-up these estimates

Even with reduction for future teachers, will run out of money

- No contribution increase
- ✓ 5% benefit reductions for future teachers



Modest contribution Increase (5% of pay) will stretch solvency for over a decade

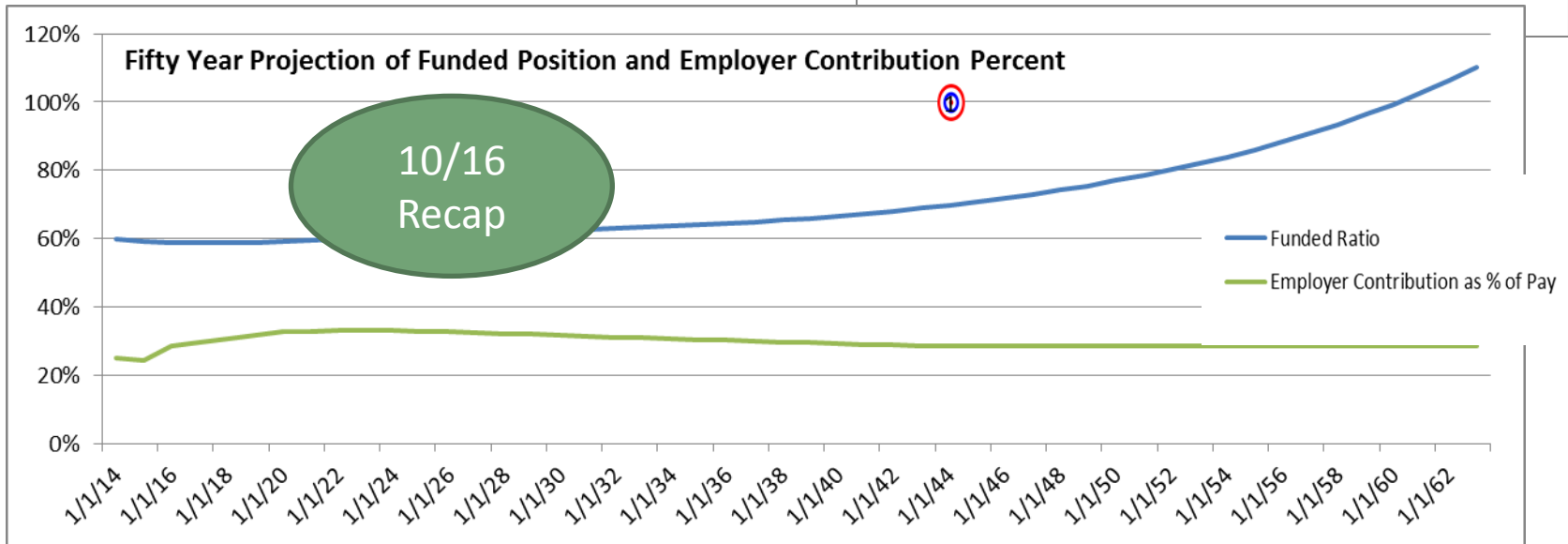
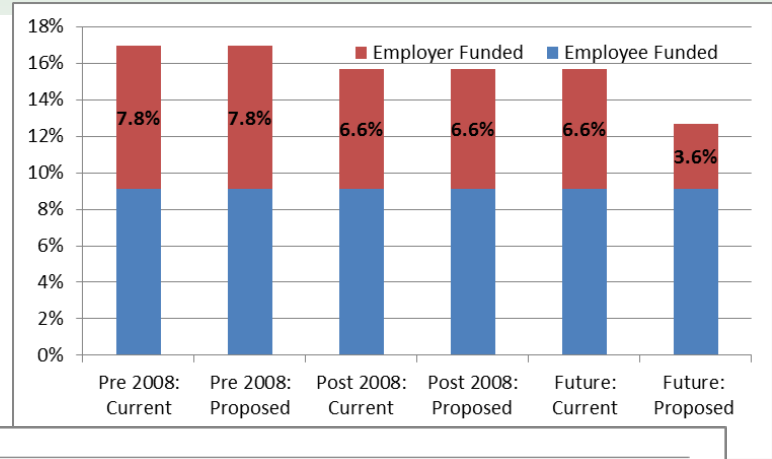


- ✓ 5% contribution increase
- ✓ Phase in over 10 years
- No benefit reductions

10/16
Recap

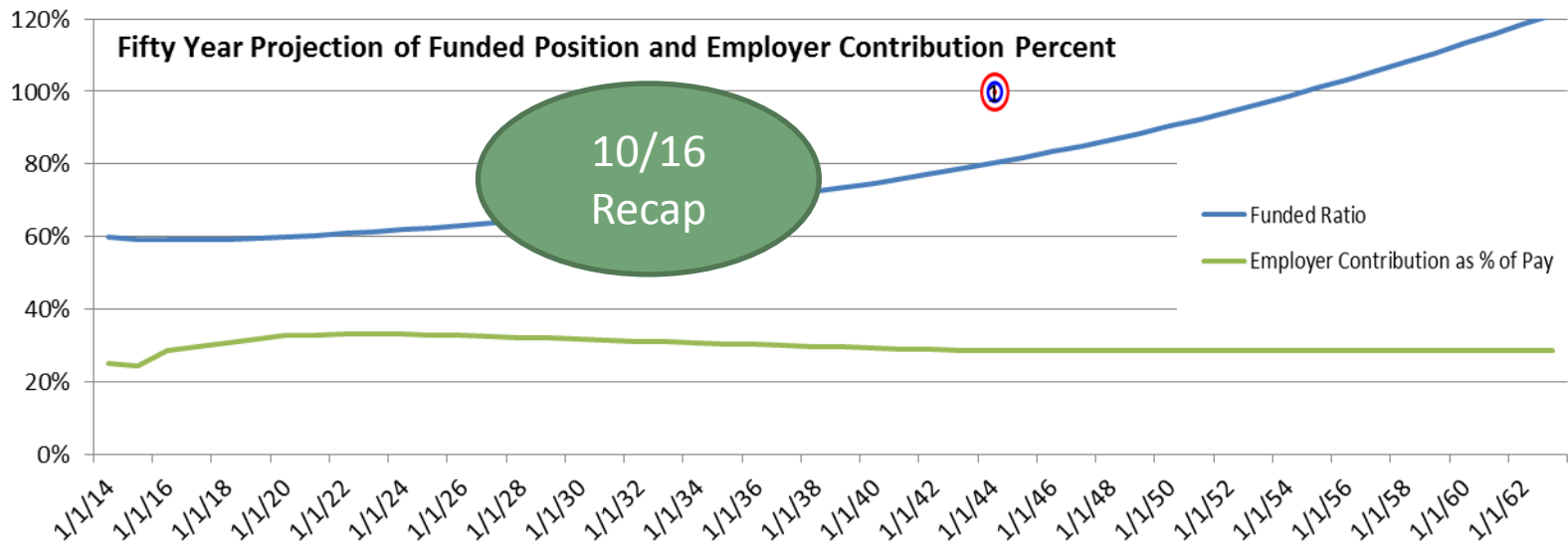
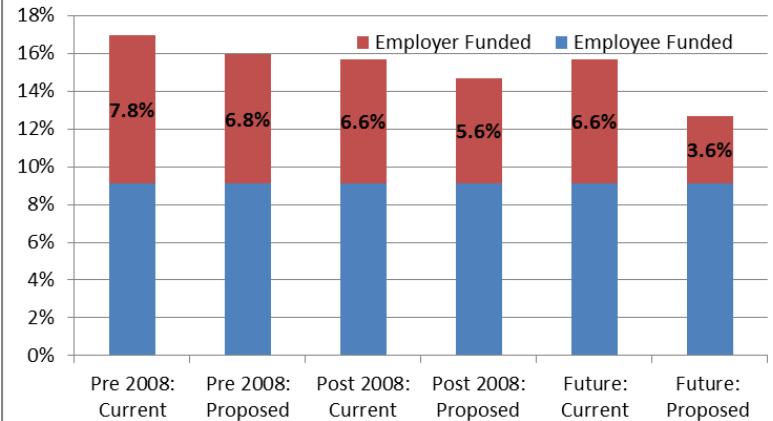
Combine contribution Increase (5% of pay) with future benefit reductions (3% of pay) can create solvency for good

- 5% contribution increase
- Phase in over 5 years
- ✓ 3% benefit reductions for future teachers



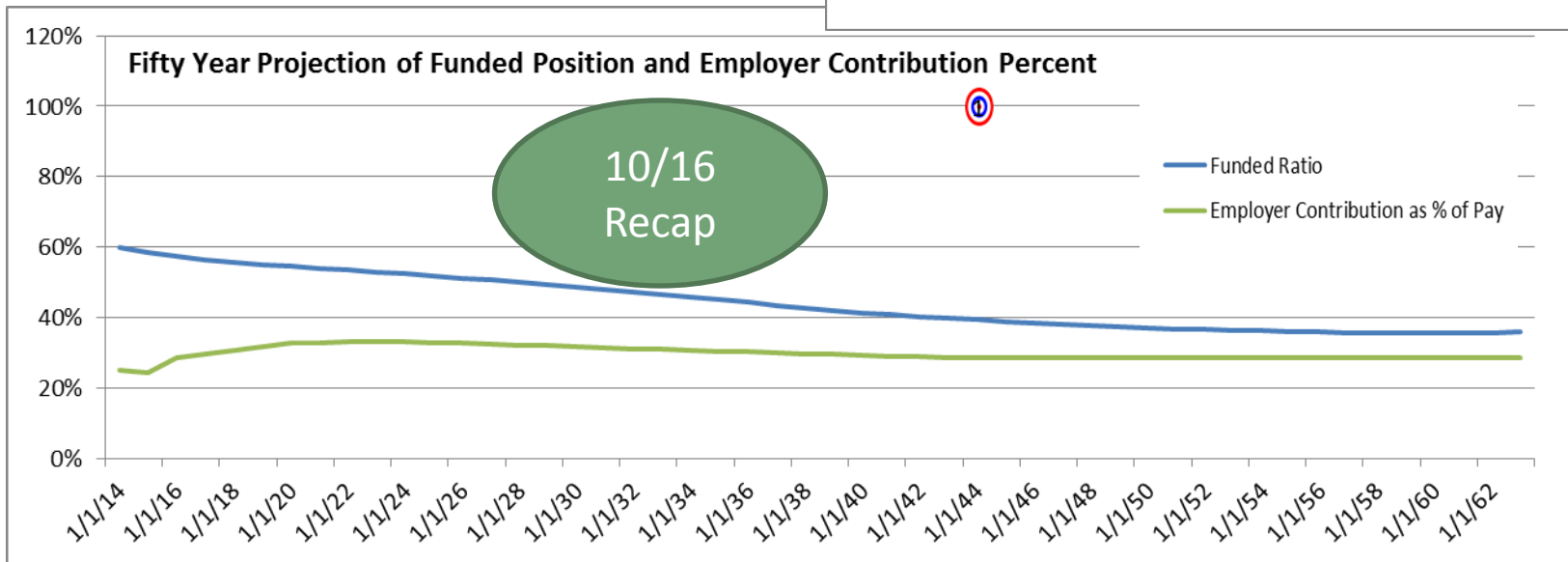
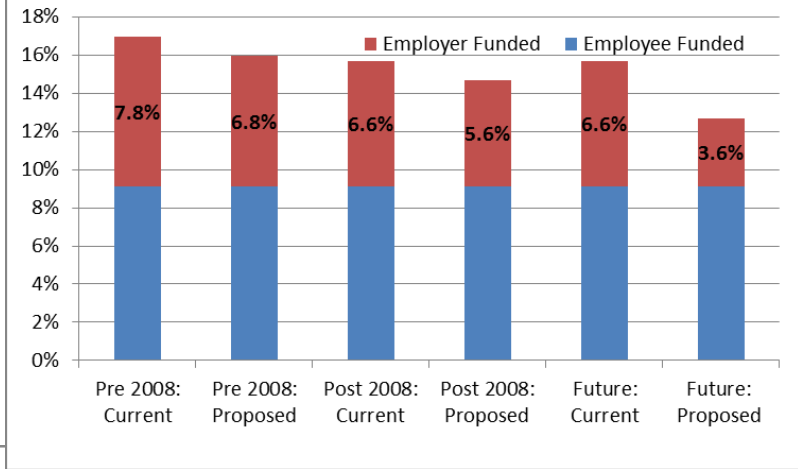
Especially with 1% cut for current members

- 5% contribution increase
- Phase in over 5 years
- 3% benefit reductions for future teachers
- ✓ 1% benefit reductions for current teachers



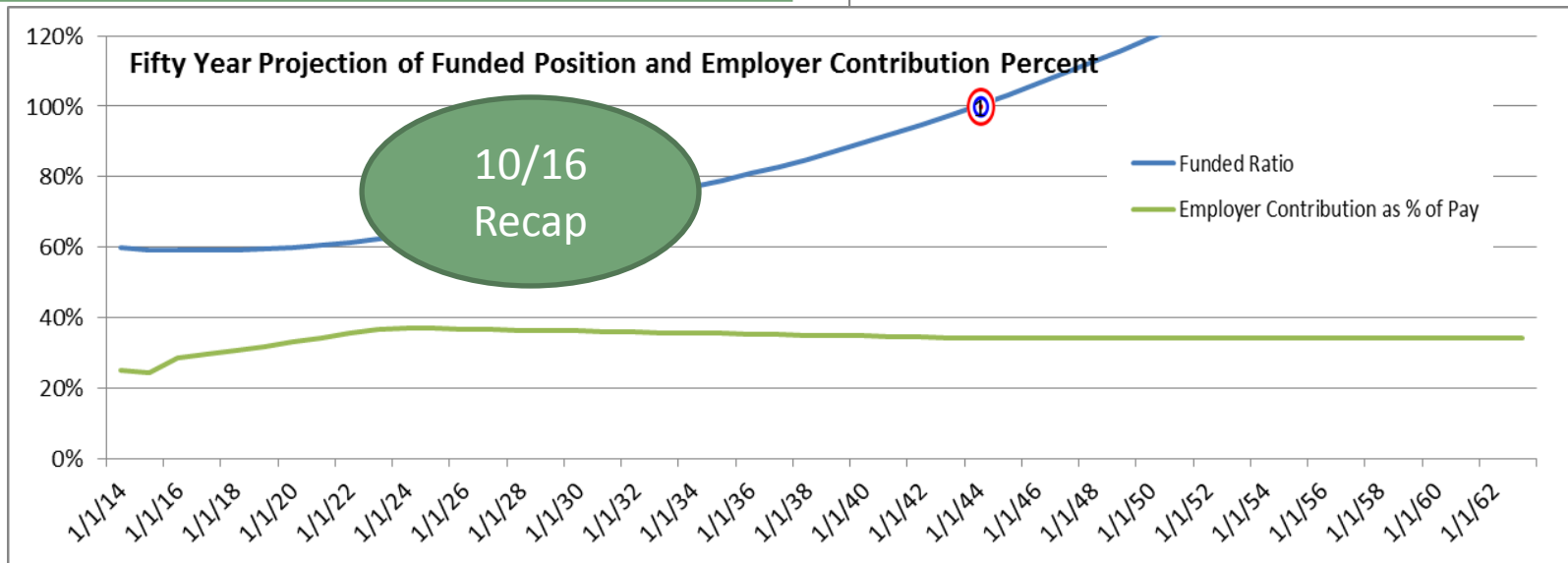
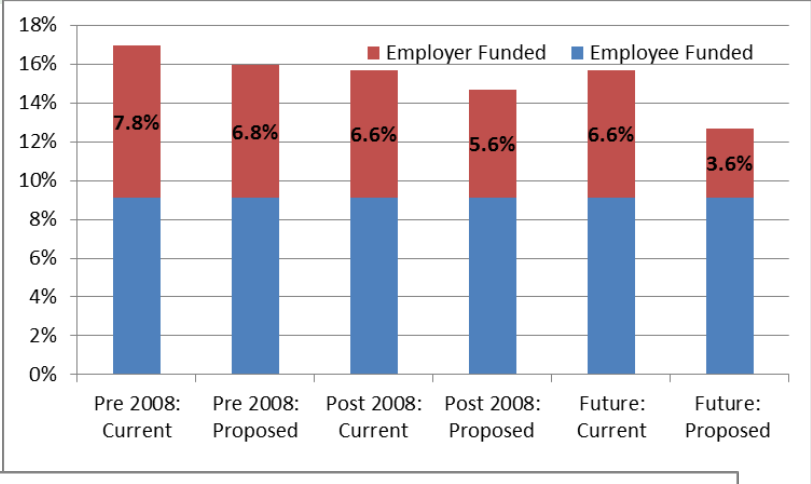
But this gives little margin of error if we don't hit investment return target

- 5% contribution increase
- Phase in over 5 years
- 3% benefit reductions for future teachers
- 1% benefit reductions for current
- ✓ 6% investment return



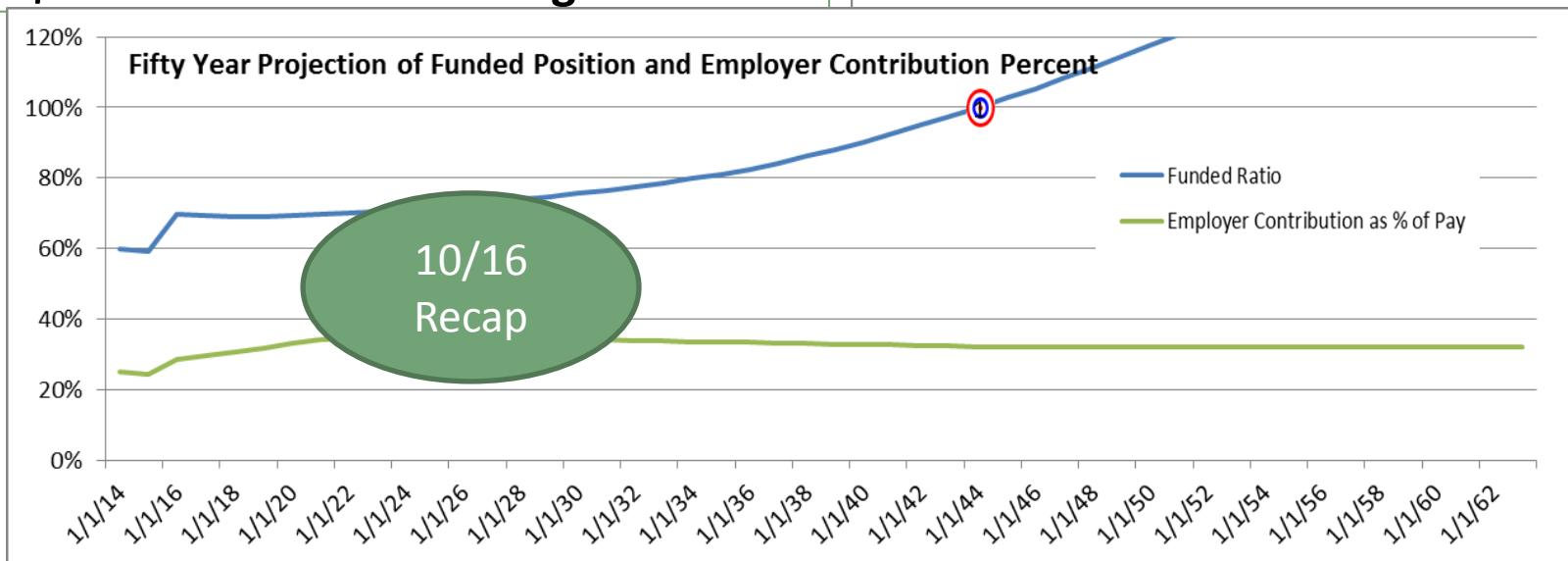
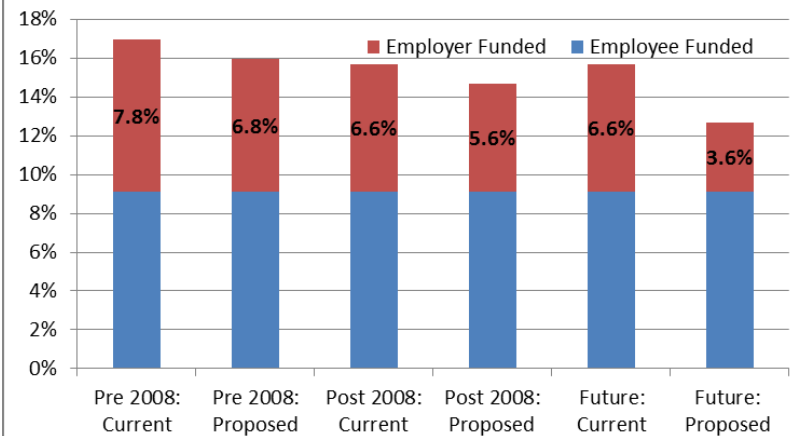
Getting to actuarial soundness requires more

- ✓ 8% contribution increase
- ✓ Phase in over 8 years
- ✓ Extend 2.7% special assessment
- 3% benefit reductions for future teachers
- 1% benefit reductions for current



Modest POB could reduce additional employer costs

- ✓ **6% contribution increase**
- ✓ **Phase in over 6 years**
- Extend 2.7% special assessment
- 3% benefit reductions for future
- 1% benefit reductions for current
- ✓ **\$3.3 billion Pension Obligation**



Impact of various increases in State contributions – Assume no benefit changes

Increase in State Contributions	Pension Obligation Bond	Anticipated full funding period
None	None	Never
By 1% per year over 12 years	None	30 years
By 0.5% per year over 20 years	None	39 years
By 0.5% per year over 20 years	\$1 billion	38 years
By 0.5% per year over 20 years	\$2 billion	37 years
By 0.5% per year over 20 years	\$3 billion	36 years
By 0.5% per year over 20 years	\$4 billion	34 years

Note: Figures above also assume extension of special appropriation and that POB paid out of additional State contribution

Chamber of Commerce Request: Implications of specific alternatives

- Assume average teacher hired at age 33
- Current teacher
 - Assume now age 60
 - This is 27 years of service
 - Now eligible to retire with benefit of $27 \times 2.5\% = 67.5\%$ of three year average pay
 - Assume last five years' pay of \$70K, \$69K, \$68K, \$67K, \$66K
- Future teacher
 - Assume same information
 - But years in the future and in today's dollars

Implications of potential reductions on current teacher

- Only “violable” benefit features are:
 - Remove final earnings adjustment
 - Change sick leave to be service based
 - Remove improved multiplier after 30 years
- Current benefit structure
 - Can retire now with 3-year highest average salary of \$69K
 - If typical sick leave accrual, would add \$3,500
 - So current benefit level is $67.5\% \times \$72,500 = \$48,939$
 - Based on 15% average tax rate, take home pay is \$3,466
 - Versus \$4,507 preretirement monthly take home pay after tax
 - If she waits until 65, grows to \$4,447 based on 32 years
 - Versus \$4,829 pre-retirement monthly take home pay after tax

Implications of potential reductions on current teacher - samples

Retire at age 60 with 27 years

Proposal/ Plan Changes	Age	Final Average Pay (FAP)	Sick Leave?	Multiplier	After Tax Monthly Benefit
Current	60	3 Years	Pay Credit	2.5%	\$3,466
Proposed A No “violable” benefits	60	5 Years	Service Credit	2.5%	\$3,340 (4% cut)
Proposed B Sick leave = service	60	3 Years	Service Credit	2.5%	\$3,388 (2% cut)
Proposed C 5-year FAP	60	5 Years	Pay Credit	2.5%	\$3,419 (1% cut)
Proposed E Sick leave = service 2.5% over 30	60	3 Years	Service Credit	2.5%	\$3,388 (2% cut)
Proposed F 5-year FAP 2.5% over 30	60	5 Years	Pay Credit	2.5%	\$3,419 (1% cut)

Implications of potential reductions on current teacher - samples

Retire at age 65 with 32 years

Proposal/ Plan Changes	Age	Final Average Pay (FAP)	Sick Leave?	Multiplier	After Tax Monthly Benefit
Current	65	3 Years	Pay Credit	2.5%/3.0%	\$4,447
Proposed A No “violable” benefits	65	5 Years	Service Credit	2.5%	\$4,242 (5% cut)
Proposed B Sick leave = service	65	3 Years	Service Credit	2.5%/3.0%	\$4,352 (2% cut)
Proposed C 5-year FAP	65	5 Years	Pay Credit	2.5%/3.0%	\$4,389 (1% cut)
Proposed D 2.5% over 30	65	3 Years	Pay Credit	2.5%	\$4,392 (1% cut)
Proposed E Sick leave = service 2.5% over 30	65	3 Years	Service Credit	2.5%	\$4,298 (3% cut)
Proposed F 5-year FAP 2.5% over 30	65	5 Years	Pay Credit	2.5%	\$4,335 (3% cut)

Implications of potential reductions on future teacher - samples

Proposal/ Plan Changes	Age	Final Average Pay (FAP)	Sick Leave?	Multiplier	After Tax Monthly Benefit
Current	60	3 Years	Pay Credit	2.5%	\$3,466
Proposed A No “violable” benefits	60	5 Years	Service Credit	2.5%	\$3,340 (4% cut)
Age 62 for full No “violable” benefits 5-year FAP	60	5 Years	Service Credit	2.5%	\$2,939 (15% cut)
Age 62 for full No “violable” benefits 7-year FAP	60	7 Years	Service Credit	2.5%	\$2,896 (16% cut)
Current	65	3 Years	Pay Credit	2.5%/3.0%	\$4,447
Proposed A No “violable” benefits	65	5 Years	Service Credit	2.5%	\$4,242 (4% cut)
Proposed G No “violable” benefits 7-year FAP	65	7 Years	Service Credit	2.5%	\$4,184 (6% cut)

Long Term Consequences of Social Security

- Employer Social Security Contribution Requirement is 6.2% of pay
 - Based on \$3.5 billion pay, this would be \$217 million
- Current Employer Normal Cost is 6.58%
 - For non-university post 2008 group
 - Based on long-term \$3.5 billion pay, this is \$230 million
- If entered Social Security:
 - 0.38% of pay would be available to provide teacher pensions
 - This would provide only negligible DB or DC benefit

Long Term Consequences of Defined Contribution Plan

- DC is a less efficient retirement vehicle because:
 - Individuals cannot predict their life expectancy, while KTRS can predict group life expectancies well
 - Individuals must invest conservatively as they age
 - Individual investment returns typically lag professional returns by more than 1% due to:
 - Individual recordkeeping and education expenses
 - Inferior investment skills compared to professionals
- DB v DC disparity can be half

Long Term Consequences of Defined Contribution Plan (continued)

- So for 6.58% breakeven equivalent employer cost, DC would provide about half the benefits
 - Risk sharing is a more efficient approach to manage future state burden
- Closed KTRS Plan might eventually have reduced investment returns
 - Increasing the cost of paying off legacy liabilities

Are there vastly different approaches that could be worthwhile?

- Future employee risk sharing
 - Investment return and possibly mortality improvement
 - Contribution amount sharing
 - Adjustable COLAs
 - Other benefits based on investment return
- Other approaches?

Dedicated Revenue Sources Seen in Other Jurisdictions

- Oklahoma TRS receives
 - 5% of sales, use and corporate and individual income taxes and lottery proceeds
 - 1% of cigarette taxes
 - Some surplus state revenue (if < 90% funded)
- Some Police & Fire – Insurance Premium Tax
- Kansas – some gaming revenue & sale of surplus state owned real estate
- Montana – some coal severance tax
- Some states – Judicial fees
- Illinois – dedicated property tax levies

Dedicated Revenue (continued)

- Studies have shown that dedicated revenue can have negative effect on pension funding
 - Might be because often insufficient
 - Might be because not tied to actuarial required contributions
 - Might be because only worst funded plans explore dedicated revenue

Actuarial Issues

- Segal has completed KTRS actuarial audit
- No significant concerns which impact this study
- Remember that unfunded liability is attributed to prior teacher service and must be paid off
- Failure to do so over reasonable period (30 years)
 - Unfairly shifts cost to future Kentuckians
 - Puts plan at risk of future insolvency
 - Is clear red flag to bond rating agencies

Estimates Various Cost Savings – Future Teachers

Potential Change	Future Teacher Savings	Long term \$\$ (today's \$\$)
Require minimum age 62 for full retirement	2.0% of pay	\$70 million
Increase Employee Contribution Rate by 1.0%	0.7% of pay	\$35 million
Remove feature where average salary is based on 3 years instead of 5 for those 55 & 27	0.3% of pay	\$11 million
Remove 3.0% formula multiplier service beyond 30 years of service; continue with 2.5%	0.1% of pay	\$4 million
Sick Leave treatment – time instead of pay	0.3% of pay	\$11 million
Increase final avg salary period from 5 to 7 years	0.6% of pay	\$21 million
Reduce COLA	Up to 2% pay	Up to \$70 mm
Reduce Multiplier to 2.0% for all service	2.9% - 3.7% of pay	\$102 to \$130 million

Normal Cost Savings – Future Members (composite University & Non-University)

Potential Change	Cost Savings	Long term \$\$ (today's \$\$)
Require minimum age 60 for full retirement	1.55% of pay	\$54 million
Require Rule of 90 for full retirement	1.10% of pay	\$39 million
Require Rule of 85 for full retirement	0.53% of pay	\$19 million
Require minimum age 55 for full retirement	0.48% of pay	\$17 million
Some other type of benefit reduction by 10% of full value	1.58% of pay	\$55 million

Next Meeting to dos?

?