

Understanding Actuarial Valuations and their Impact

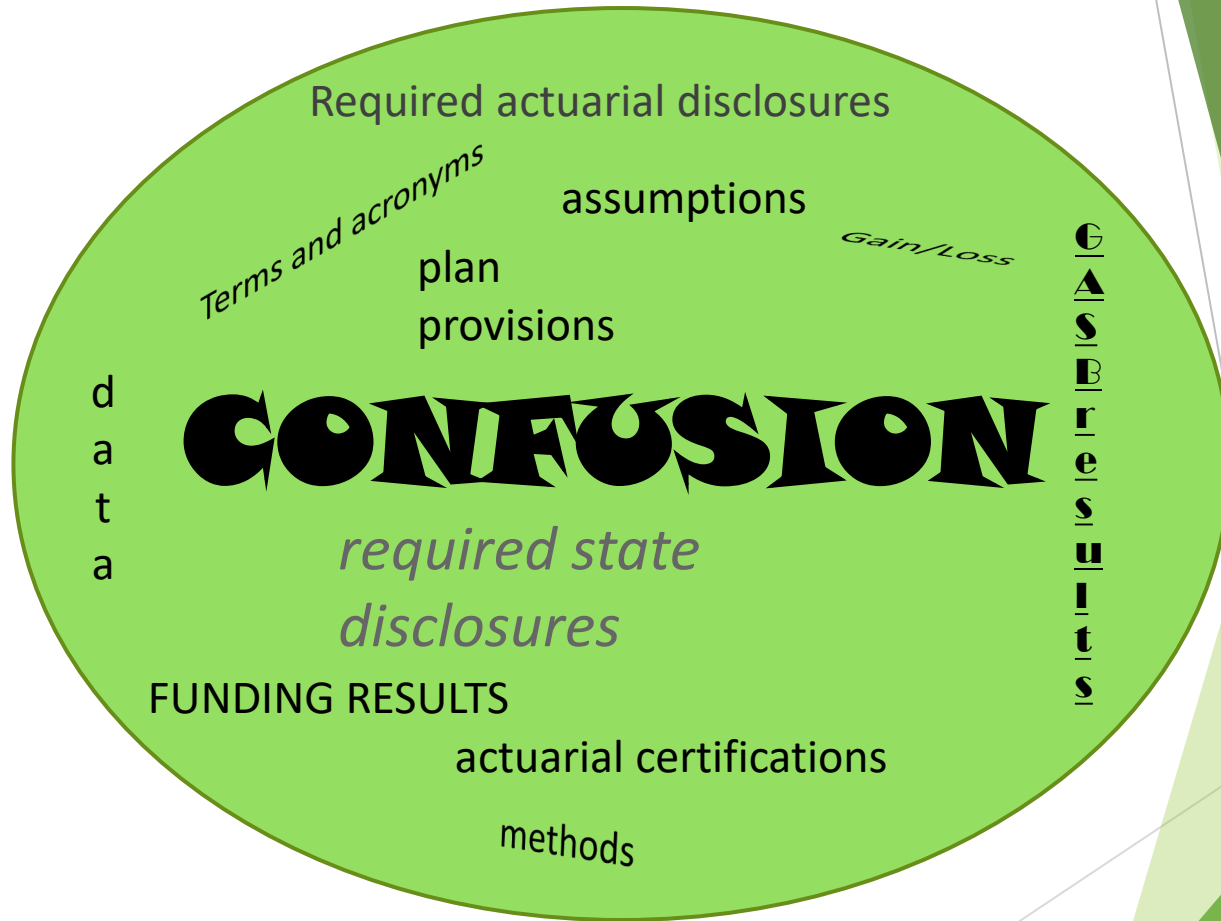
Presented By:

Sara Carlson, ASA, EA, MAAA

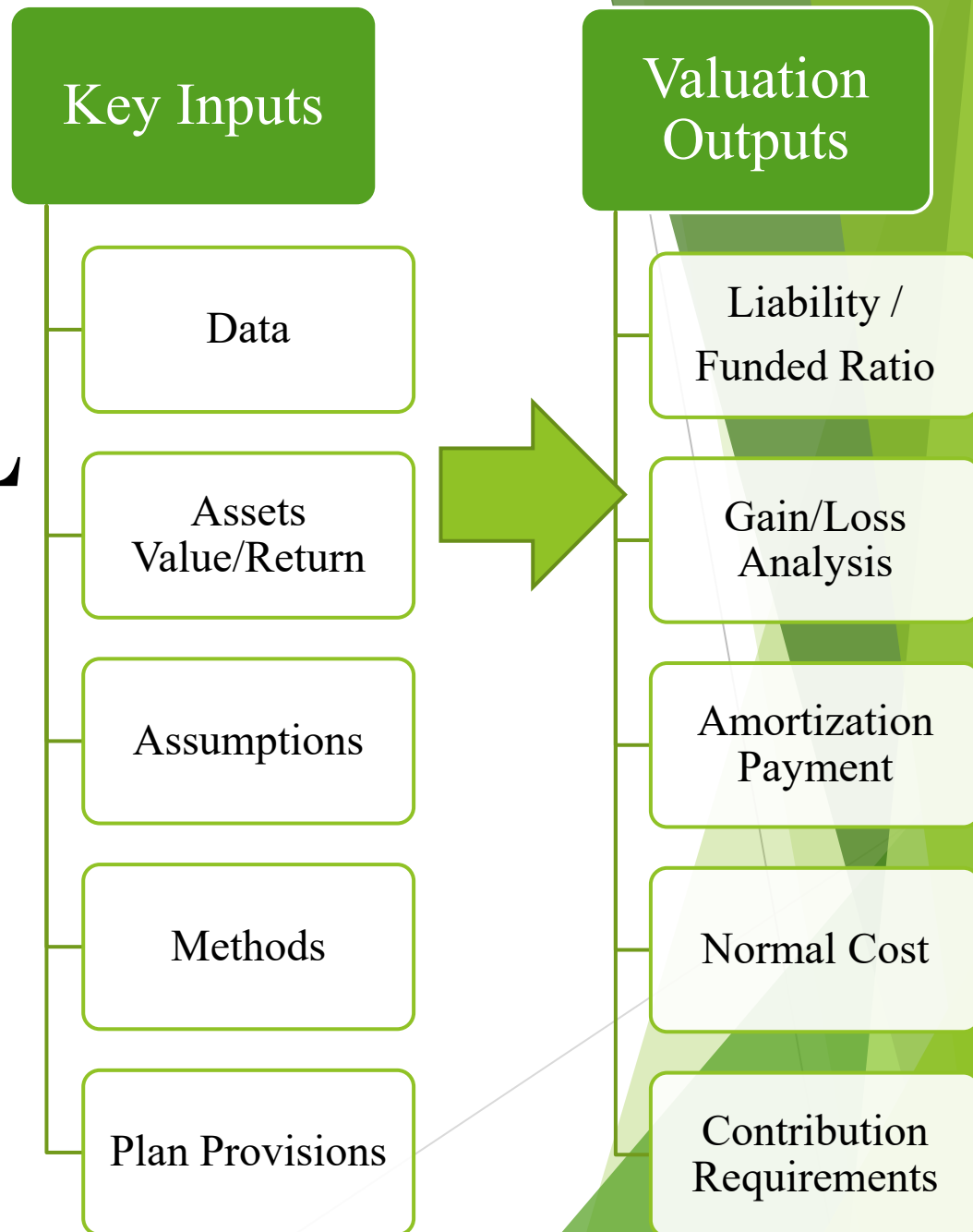


FOSTER & FOSTER
ACTUARIES AND CONSULTANTS

WHAT DOES AN ACTUARIAL VALUATION PRODUCE?



ACTUARIAL VALUATION PIPELINE



DATA

- Census data requested from plan sponsor around fiscal year end (9/30)



DATA

- Lots of data checks!

| | 2023 Earnings | 2022 Earnings | % Difference |
|--------------|------------------|------------------|-----------------|
| Joe Actuary | 50,000 | 70,000 | -28.57% |
| Jane Actuary | 100,000 | 50,000 | 100.00% |

- Confirm salary increases/decreases
- Breaks in service?

DATA

- Lots of data checks!

| | 2024 Birth Date | 2023 Birth Date |
|--------------|--------------------|--------------------|
| Jane Actuary | 10/1/1990 | 10/1/2000 |

- Confirm birth date changes

DATA

- Lots of data checks!

| | 2024 Entry Date | 2023 Entry Date |
|--------------|--------------------|--------------------|
| Joe Actuary | 10/1/2023 | 10/1/2021 |
| Jane Actuary | 10/1/2022 | 10/1/2023 |

- Confirm hire date / entry date changes
- Breaks in service? Buybacks?

DATA

- Timing to finalize data significantly impacts the rest of the valuation process and ultimate delivery
- Could spend most of valuation process on data!



ASSET VALUES

- Compiled from financial statements provided by custodian and asset managers



ASSET VALUES

- **45-90 day delay** in reporting typical for alternative asset classes, including:
 - Private Equity
 - Infrastructure
 - Real Estate
- **Potential delay in actuarial valuation!**

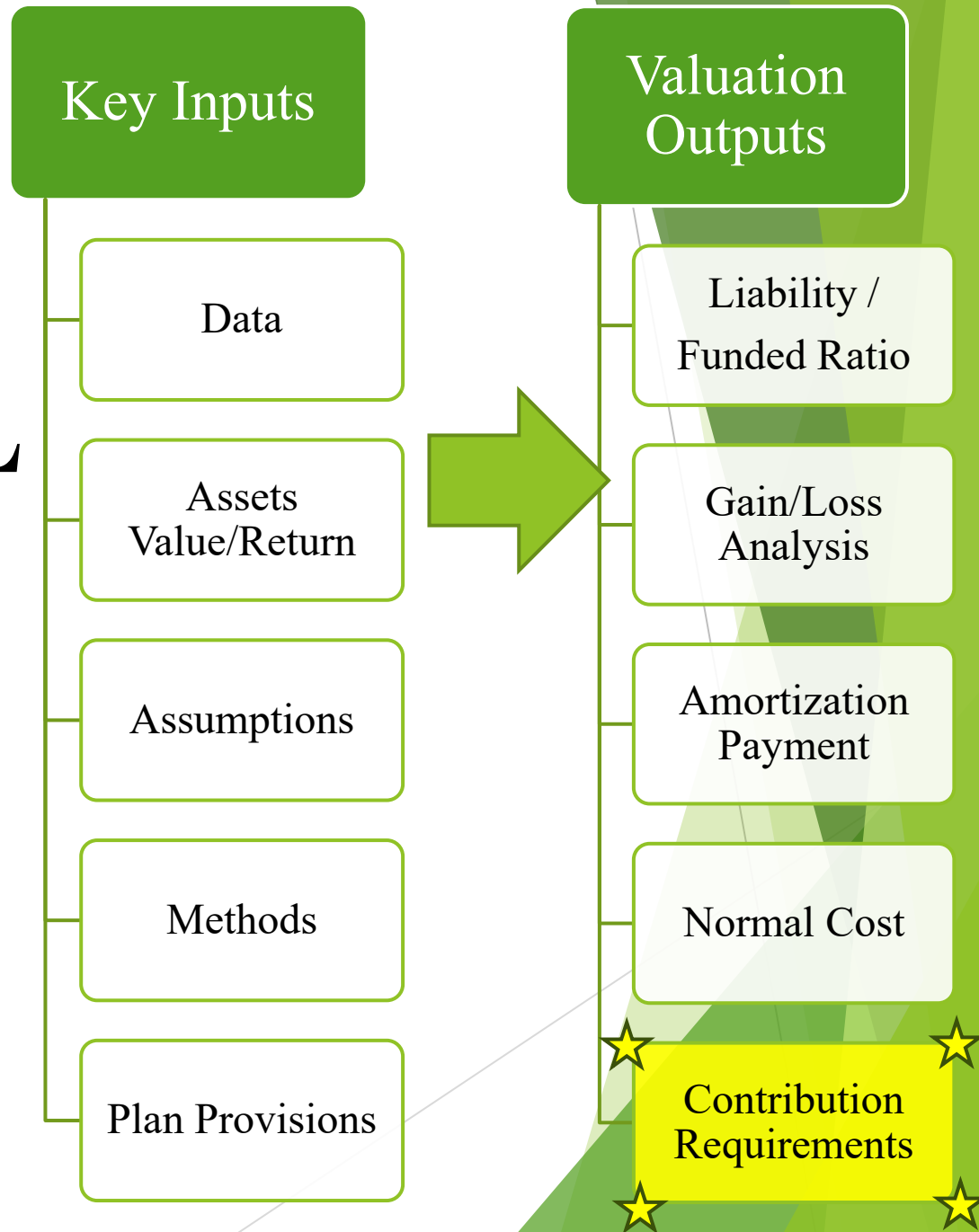
ASSUMPTIONS AND METHODS

- Set prior to working on the actuarial valuation
- Investment return assumption discussions can take place at any Board meeting
- Other actuarial assumptions and methods are typically changed following an experience study

PLAN PROVISIONS

- Known before working on the actuarial valuation
- Plan provisions are typically changed by ordinance
- Impact of plan changes determined with Actuarial Impact Statement

ACTUARIAL VALUATION PIPELINE



GOALS FOR ACTUARIAL VALUATIONS

- Prepared in accordance with Actuarial Standards of Practice
- Approved at the State level
- Determine relatively stable sponsor contributions

ACTUARIAL STANDARDS OF PRACTICE (ASOPs)

- The Actuarial Standards Board (ASB) is responsible for determining generally accepted actuarial principles
- The ASB issues guidance in the form of the ASOPs

ACTUARIAL STANDARDS OF PRACTICE (ASOP)

- The ASOPs provide a framework to be used in the completion of all actuarial work
- Identifies what the actuary should consider, document and disclose when performing actuarial assignments

IMPACT OF ASOPs ON ACTUARIAL VALUATIONS

- If Actuarial Standards Board updates an ASOP, the actuarial valuation must be updated to comply
- Potentially lengthier and more expensive actuarial valuations
- Most recent updates were ASOP 51 and ASOP 4

IMPACT OF ASOPs ON ACTUARIAL VALUATIONS

- ASOP 51 – Risk Metrics
 - Support Ratio
 - Accrued Liability Ratio
 - Funded Ratio
 - Net Cash Flow Ratio

IMPACT OF ASOPs ON ACTUARIAL VALUATIONS

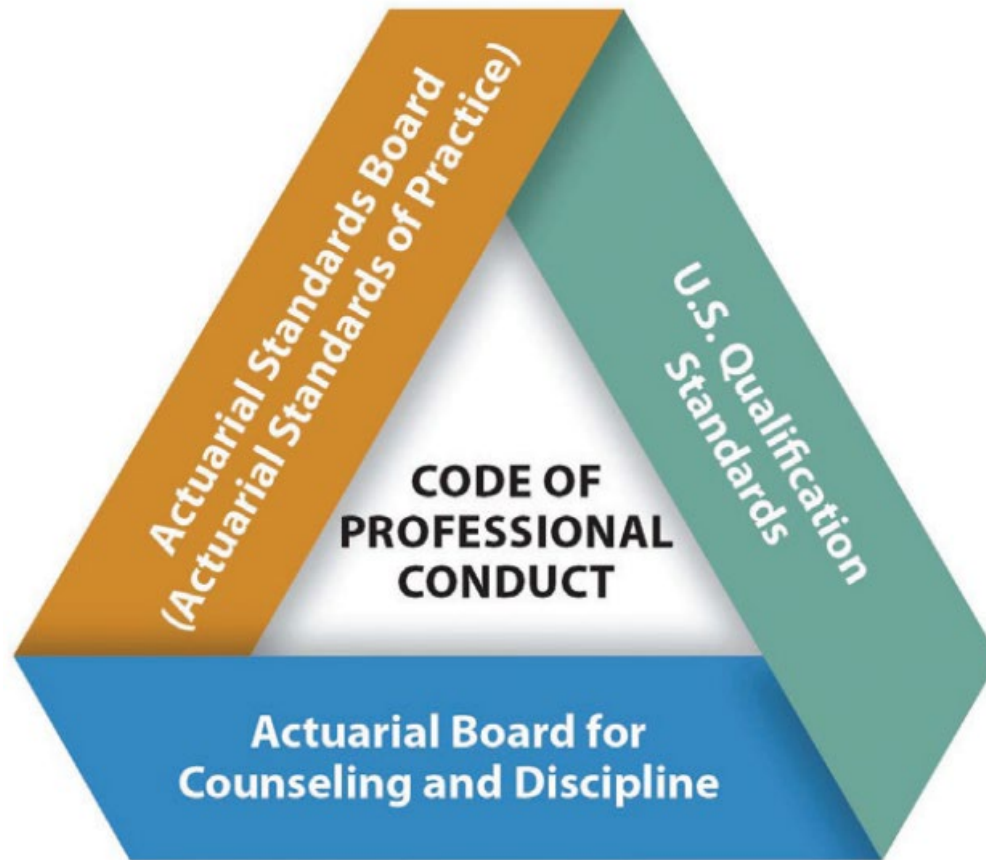
- ASOP 4 Update – Low Default-Risk Obligation Measure (“LDROM”)
 - Recalculates liabilities with an interest rate tied to low-default-risk fixed income securities (e.g.: S&P Muni Bond)
 - Just a reporting – not used for any other purposes
 - Taxpayer savings?

ASOPs

The following ASOPs are specific to pension valuations:

| | |
|---------|--|
| ASOP 4 | Measuring Pension Obligations and Pension Plan Costs |
| ASOP 25 | Credibility Procedures |
| ASOP 27 | Selection of Economic Assumptions |
| ASOP 35 | Selection of Demographic Assumptions |
| ASOP 44 | Selection and Use of Asset Valuation Methods |
| ASOP 51 | Assessment and Disclosure of Risk |

CODE OF PROFESSIONAL CONDUCT



APPROVAL PROCESS

- Actuary presents actuarial valuation at Board meeting
- If not approved (rare), Actuary revises valuation to present at next Board meeting
- If approved, Actuary sends valuation to State
- State typically reviews on a triennial lookback period

APPROVAL PROCESS

- State may not approve for reasons such as unreasonable actuarial assumptions or methodologies
- If State does not approve, case-by-case basis
- May have to revise past valuations, which would affect contribution requirements and sponsor's budgeting

ACTUARIAL VALUATION

TIMING

- Required by FL statute once every 3 years
- *Most* are done annually
- Annual actuarial valuations help prevent volatility in sponsor contributions

ASSUMPTIONS & METHODS

- Contributions + Investment Earnings = Benefit Payments + Expenses
- Actual cost to the plan are determined by actual experience – not assumptions
- Better Assumptions = Less Volatile Contributions

ASSUMPTIONS & METHODS

- Investment Return
- Asset Smoothing
- Salary Increases
- Demographic Assumptions
- Unfunded Actuarial Accrued Liability (UAAL) Amortization

INVESTMENT RETURN ASSUMPTION

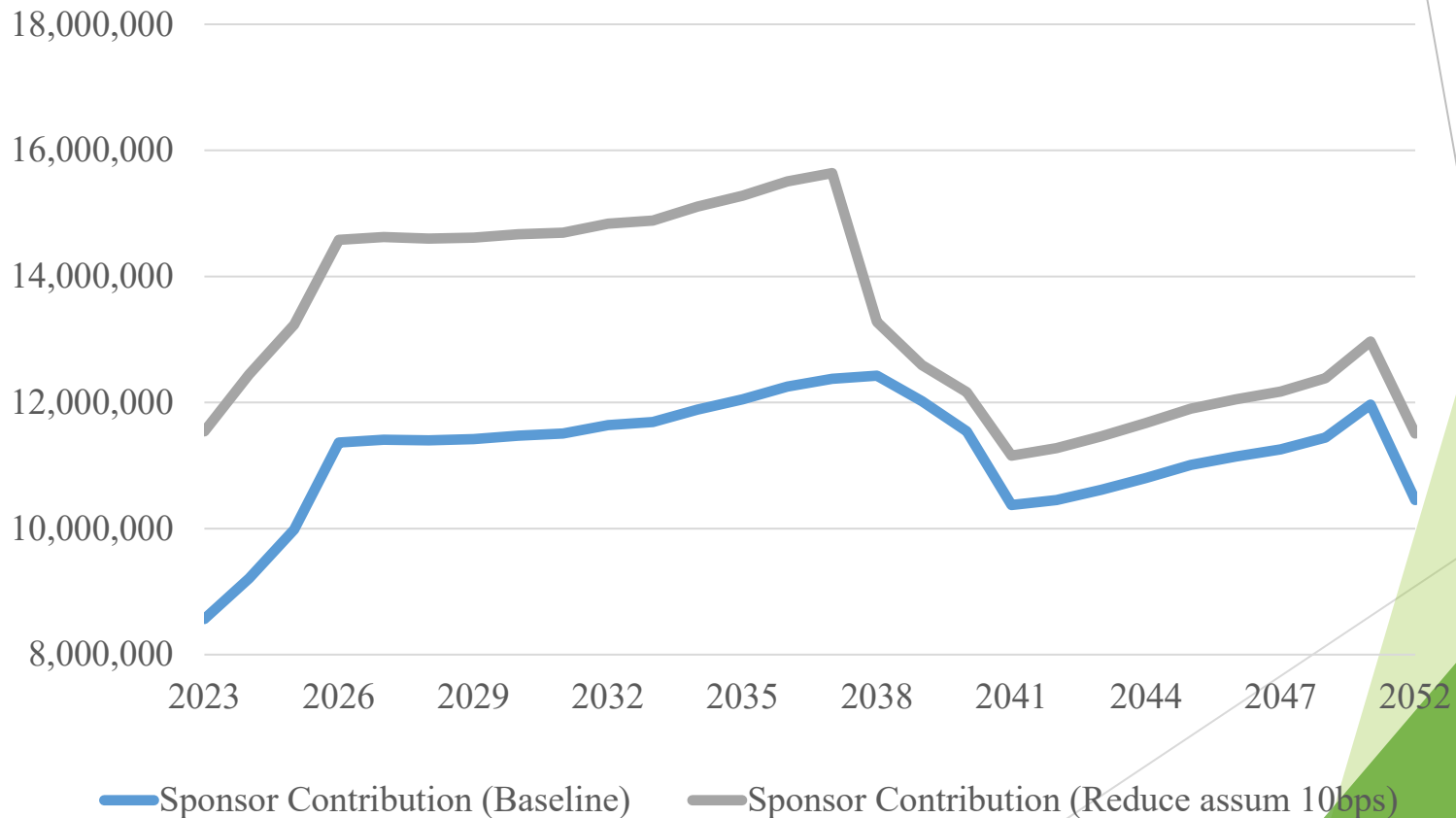
$$C + I = B + E$$

INVESTMENT RETURN ASSUMPTION

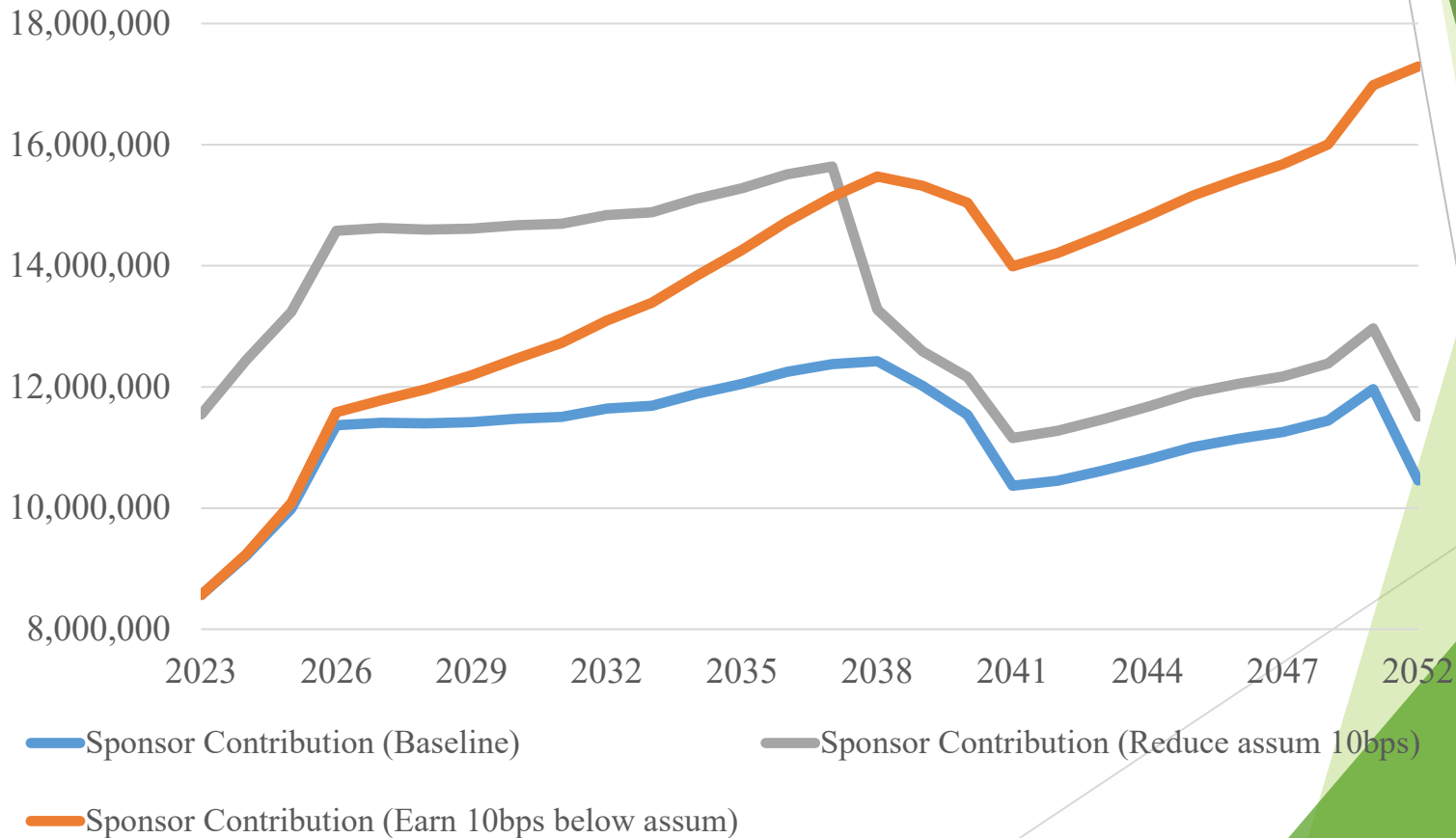
$$C + I = B + E$$

- If I decreases, then C must increase
- Lowering investment return assumption increases contribution requirements

INVESTMENT RETURN ASSUMPTION




INVESTMENT RETURN ASSUMPTION



ASSET SMOOTHING

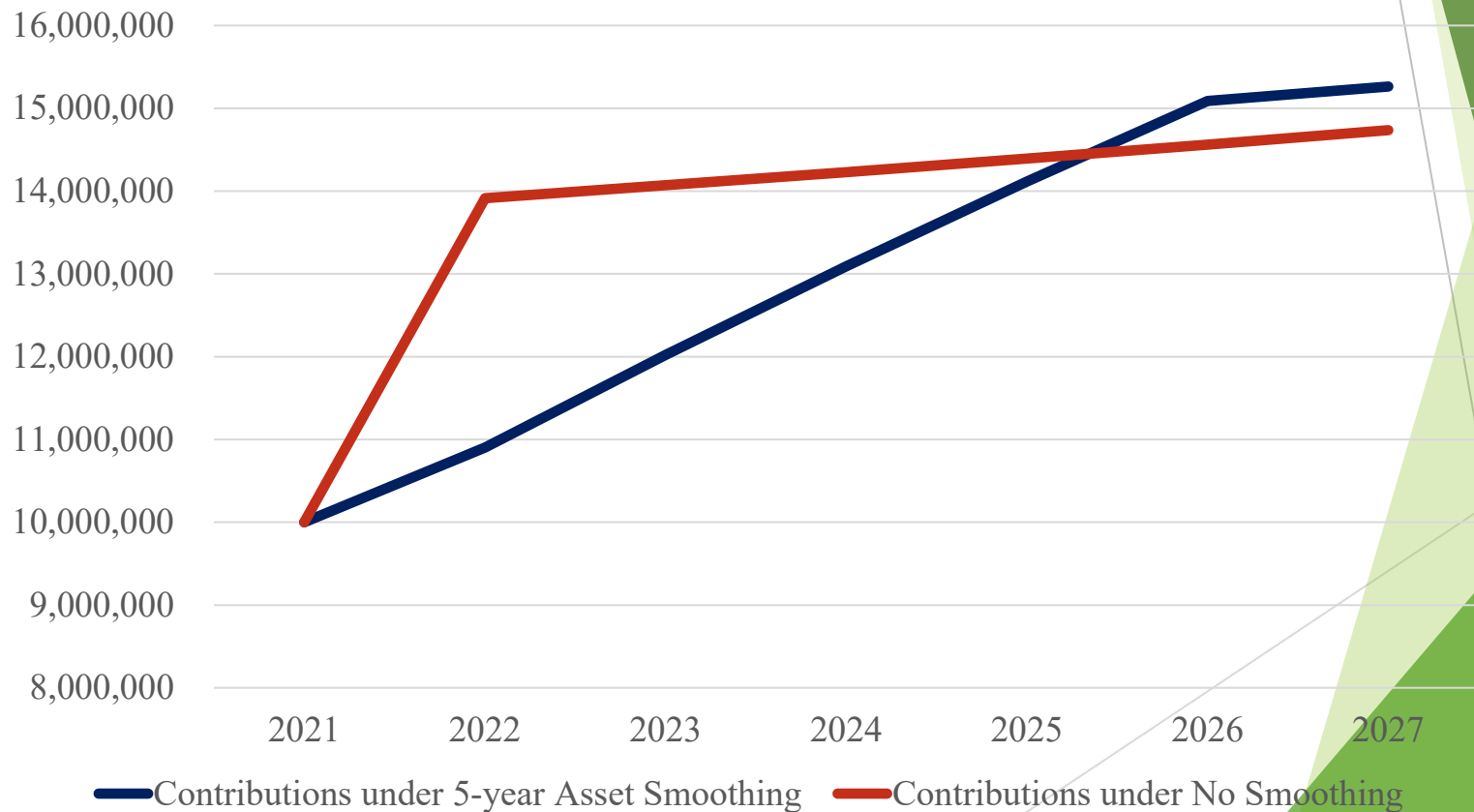
- **NEGATIVE**
double digit return
for **FYE 9/30/2022**
still playing a role
in today's actuarial
valuations!



It's me. Hi.
I'm the
problem. It's
me.

ASSET SMOOTHING

- Smoothing helps with volatility by spreading impact to future years



SALARY INCREASE

ASSUMPTION

- Typically service-based
- Projects employee's salary from date of hire to expected date of retirement



SALARY INCREASE

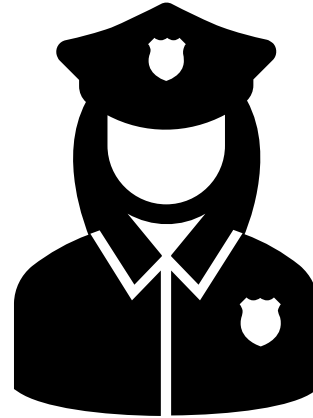
ASSUMPTION

- Merit
- Promotions
- Inflation / Cost-of-Living Adjustments
- Negotiated Increases



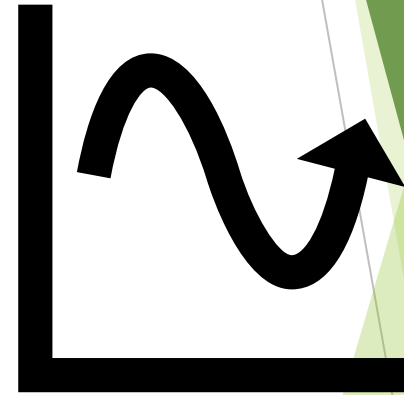
DEMOGRAPHIC ASSUMPTIONS

- Retirement Rates
- Withdrawal Rates
- Disability Rates
- Mortality Rates



EXPERIENCE STUDIES

- Important to perform every 5 years!
 - Stable contributions
 - State Approval
- Immediately impacts sponsor contributions, but “pay now or pay later”



ACTUARIAL VALUATIONS

$$C + I = B + E$$

The ultimate cost of your retirement plan is independent of any assumptions or methods.

Questions?

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