

## 2019 NCCMP Annual Conference

David A. Dean, MAAA, EA
Senior Vice President and Actuary
Jason L. Russell, FSA, MAAA, EA Senior Vice President and Actuary

The opinions expressed in this presentation are those of the presenter and do not necessarily represent the views of the Segal Group or the National Coordinating Committee for Multiemployer Plans.

## Discussion Topics

## 1. The Current Environment

2. Assessing Your Plan's Health
3. Reducing Investment Risk
4. Strengthening Your Funding Policy
5. Alternative Plan Designs

## PPA/MPRA Zone Status Rules

## Status / Zone Criteria

"Green Zone"

## Endangered

Critical

## Critical and Declining

None of the below: above $80 \%$ funded and no funding deficiency projected for next 7 years

Not in critical status; below $80 \%$ funded and/or funding deficiency projected in next 7 years

Funding deficiency projected in next 4 or 5 years
In critical status and projected to become insolvent (i.e., run out of money) in next 15 or 20 years

PPA" = Pension Protection Act; first effective in 2008
"MPRA" = Multiemployer Pension Reform Act; first effective in 2015
Above rules are simplified; exceptions may apply

## For Perspective: Zone Status by Industry



[^0]Source: Segal Consulting analysis of Form 5500 data for plan years ending in 2017. Zone status applies to plan years ending in 2018.

## For Perspective: Distribution of Plans

Multiemployer Pension Universe


Plan Count: 1,231 | Total Participants: 10.9 Million
Source: Segal Consulting analysis of Form 5500 data for plan years ending in 2017. Zone status applies to plan years ending in 2018. The size of each "bubble" is based on the total number of participants covered by the plan.

## For Perspective: Plan Maturity

## Inactive/Active Participant Ratio vs. Zone Status


> Source: Segal analysis of Form 5500 data for plan years ending in 2017
$>$ Zone status applies to plan years ending in 2018 (estimated for some plans)
> "Inactive" participants include terminated vested participants, retirees, and beneficiaries

## Historical Returns and Yields

## Historical Multiemployer Plan Returns

_Rolling 5-Year $\quad$ Rolling 10-Year $\quad$ _-_ Rolling 20-Year $\quad$ _- Rolling 30-Year


Source: Median investment returns for multiemployer plans per Segal Marco Advisors

## Lower Returns, Higher Volatility

## Rolling the Dice

Investors grappling with lower interest rates have to take bigger risks if they want to equal returns of two decades ago.

Estimates of what investors needed to earn 7.5\%

|  | 1995 | 2005 | 2015 |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  | 12\% | Bonds |
|  |  | 52\% | 33\% | U.S. <br> Large <br> Cap |
|  | 100\% |  | 8\% | U.S. <br> Small <br> Cap |
|  | Bonds | 20\% | 22\% | Non-U.S Equity |
|  |  | 5\% |  |  |
|  |  | 14\% | 13\% | Real Estate |
|  |  | $\begin{aligned} & 5 \% \\ & 4 \% \end{aligned}$ | 12\% | Private Equity |
| Expected return | 7.5\% | 7.5\% | 7.5\% |  |
| Standard deviation* | 6.0\% | 8.9\% | 17.2\% |  |

## Actuarial point of view?

$>$ Set investment return assumption based on plan asset allocation Investment point of view?
>Adjust plan asset allocation to increase likelihood of meeting desired return

## Expected Returns

Note: Hypothetical asset allocation from WSJ / Callan Associates graphic

## Hypothetical Pension Fund Review of Expected Investment Returns

| Asset Classes | Plan <br> Allocation | Average Arithmetic Returns |  |  | Average Arithmetic Returns |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 10-Year Horizon | 20-Year Horizon | Standard Deviation | 10-Year <br> Horizon | 20-Year Horizon | Standard Deviation |
| Domestic Equity | 41.0\% | 7.86\% | 8.40\% | 17.00\% | 7.56\% | 8.64\% | 17.17\% |
| International Developed Equity | 16.0\% | 8.86\% | 9.40\% | 20.00\% | 8.40\% | 9.30\% | 18.23\% |
| Emerging Markets Equity | 6.0\% | 11.26\% | 11.80\% | 24.00\% | 10.62\% | 11.67\% | 24.73\% |
| Core Fixed Income | 9.0\% | 3.21\% | 3.75\% | 5.50\% | 3.74\% | 4.46\% | 5.47\% |
| High Yield Fixed Income | 3.0\% | 5.76\% | 6.30\% | 11.00\% | 5.60\% | 6.38\% | 10.06\% |
| Core Real Estate | 13.0\% | 6.56\% | 7.10\% | 11.50\% | 6.95\% | 7.94\% | 15.03\% |
| Commodities | 0.0\% | 6.36\% | 6.90\% | 20.00\% | 5.41\% | 6.29\% | 17.66\% |
| Short-Term Money Market | 0.0\% | 2.56\% | 3.10\% | 2.50\% | 2.71\% | 3.07\% | 2.31\% |
| Hedge Funds, GTAA, Risk Parity, Etc. | 0.0\% | 5.56\% | 6.10\% | 5.80\% | 5.63\% | 6.61\% | 8.38\% |
| Private Equity | 12.0\% | 12.16\% | 12.70\% | 22.50\% | 11.34\% | 12.82\% | 22.05\% |
| Total Plan Assets | 100.0\% | 8.07\% | 8.61\% | 14.01\% | 7.85\% | 8.89\% | 14.11\% |
| Annualized Geometric Returns |  | 10-Year Horizon | 20-Year Horizon |  | 10-Year Horizon | 20-Year Horizon |  |
| 90th Percentile |  | 12.85\% | 11.72\% |  | 12.64\% | 12.02\% |  |
| 75th Percentile |  | 10.16\% | 9.82\% |  | 9.93\% | 10.10\% |  |
| 50th Percentile (Median) |  | 7.17\% | 7.70\% |  | 6.92\% | 7.97\% |  |
| 25th Percentile |  | 4.18\% | 5.59\% |  | 3.91\% | 5.85\% |  |
| 10th Percentile |  | 1.49\% | 3.69\% |  | 1.20\% | 3.93\% |  |

[^1]
## Distribution of Expected Returns

$>$ Note: Hypothetical asset allocation from WSJ / Callan Associates graphic

## Hypothetical Pension Fund <br> Distribution of Expected Returns

Actuarial Assumption

-     - Segal Marco: 10-Year
_Segal Marco: 20-Year
-     - Horizon Survey: 10-Year
- Horizon Survey: 20-Year

Optimistic

For this exercise, returns are assumed to be normally-distributed

Segal Marco Advisors
2019 Assumptions

2019 Horizon Survey* Average Assumptions

| $10-$ Year <br> Horizon | $20-$ Year <br> Horizon | 10-Year <br> Horizon | $20-$ Year <br> Horizon |
| :--- | :--- | :--- | :--- |
| $\mathbf{4 7 . 0 \%}$ | $\mathbf{5 2 . 6 \%}$ | $\mathbf{4 4 . 8 \%}$ | $\mathbf{5 6 . 0 \%}$ |
| $\mathbf{5 6 . 0 \%}$ | $65.0 \%$ | $53.8 \%$ | $68.0 \%$ |
| $\mathbf{6 4 . 7 \%}$ | $\mathbf{7 5 . 9 \%}$ | $\mathbf{6 2 . 5 \%}$ | $\mathbf{7 8 . 4 \%}$ |

[^2]
## Discussion Topics

1. The Current Environment

## 2. Assessing Your Plan's Health

3. Reducing Investment Risk
4. Strengthening Your Funding Policy
5. Alternative Plan Designs

## How Healthy is Your Plan?

$>$ Review strength of actuarial assumptions

- Investment return assumption
- Mortality, other demographic assumptions
- Administrative expense assumption
$>$ How demographically mature is your plan?
- Consider inactive/active participant ratio
- Consider net cash flow ("burn rate")
$>$ What are your plan's funding levels?
- Consider both current and projected funded percentages
>How resilient is your plan to adverse experience?
- More mature plans tend to be less resilient


## Actuarial Assumptions under ERISA

From ERISA "Actuarial assumptions must be reasonable. For
section
304(c)(3) purposes of this section, all costs, liabilities, rates of interest, and other factors under the plan shall be determined on the basis of actuarial assumptions and methods -
> (A) each of which is reasonable (taking into account the experience of the plan and reasonable expectations), and
(B) which, in combination, offer the actuary's best estimate of anticipated experience under the plan."

From ERISA section
305(b)(3)
"...The actuary's projections shall be based on reasonable actuarial estimates, assumptions, and methods that, except [for assumptions regarding future industry activity], offer the actuary's best estimate of anticipated experience under the plan."

## Actuarial Assumptions in the Aggregate

From Actuarial Standard of Practice (ASOP) on Modeling, Fourth Exposure Draft:
"Reasonable Model in the Aggregate - The actuary should assess whether the assumptions and parameters are reasonable in the aggregate. While assumptions and parameters might appear to be reasonable individually, conservativism or optimism in multiple assumptions and parameters may result in a set of assumptions and parameters that produces unreasonable output."

## Two Green Zone Plans

Key Results for 2019 Plan A ..... Plan B
Zone Status
Investment Return Assumption
Green7.0\%
Green7.0\%
Funded Percentage ..... 97\% ..... 81\%
Inactive/Active Ratio ..... 2.2 ..... 1.4
Net Cash Flow "Burn Rate" ..... $-5.1 \%$ ..... -3.6\%
Contributions/Assets ..... 2.0\% ..... 6.2\%
$>$ Plan A has been in the "green zone" since 2008

- Trustees have adopted modest changes in the future accrual rate over the years to remain in the "green zone"
$>$ Plan B was previously in critical status (and then in endangered status)
- Rehabilitation plan included benefit reductions and contribution rate increases
- Benefits and contributions under the rehabilitation plan remain in effect


## Hypothetical Asset Allocation (Both Plans)

| Time Horizon | $\mathbf{1 0}$ Years | $\mathbf{2 0}$ Years |
| :--- | :---: | :---: |
| Expected Return (Geometric) | $6.6 \%$ | $7.1 \%$ |
| Annual Volatility | $11.2 \%$ | $11.2 \%$ |
| Probabilities of Meeting Benchmarks |  |  |
| $7.0 \%$ Annualized | $46 \%$ | $52 \%$ |
| 6.0\% Annualized | $58 \%$ | $67 \%$ |
| 5.0\% Annualized | $69 \%$ | $81 \%$ |
| 4.0\% Annualized | $78 \%$ | $90 \%$ |

## Plan A Sensitivities



Projected Funded Percentage


## Plan A Sensitivities Continued



## Plan B Sensitivities




## Plan B Sensitivities Continued



Projected Funded Percentage


## Two Plans: Commentary

>Plan A is more "at risk" than Plan B

- More demographically mature
- More dependent on investment performance
>Consider capacity for future corrective action
- Further adjustments to benefits?
- Further increases in contribution rates?
>Consider strategies to reduce risk
- Perhaps over time, after meeting certain benchmarks?
$>$ Also consider sensitivity to changes in future work levels


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## Impact on Plan Liability

Lower investment return assumption = higher actuarial liability
$>$ Illustrative impact of 50 basis point increase in return assumption:
Impact of 0.5\% Reduction in
Investment Return (from 7.5\% to 7.0\%)

Increase in Actuarial Accrued Liability

| Actives | $6 \%-10 \%$ |
| :--- | :---: |
| Inactive Vested Participants | $6 \%-10 \%$ |
| Retirees and Beneficiaries | $3 \%-4 \%$ |
| Total Participants | $5 \%-6 \%$ |

Impact of reduction in investment return on plan funding:
$>$ Plan liabilities: immediate increase in actuarial accrued liability
$>$ Plan assets: no change in asset value
$>$ Funded percentage: immediate decrease funded percentage
$>$ Unfunded liability: immediate increase in unfunded liability
$>$ Credit balance: increase in unfunded liability is amortized (paid for) over a 15-year period in the funding standard account (credit balance)

## Impact on Plan Liability Continued

## $>$ What if plan is well-funded?

If a plan is well funded with a sharply increasing funded percentage, the plan's investment return assumption can probably be reduced without significantly harming current and future funding levels.

## $>$ What if plan is NOT well-funded?

If a plan does not have a significant funding standard account credit balance and a sharply increasing funded percentage, a decrease in the plan's investment return assumption will probably cause the plan to fall into a lower zone status and it may take years to recover.

## >Consider "glide path" approach.

Slowly moving the plan's investment return assumption from the current level to a desired level over time when certain benchmarks are reached (typically funded percentages).

## Case Study: Overview

## Evaluating a potential reduction in the investment return assumption

$>$ Trustees interested in reducing risk in investment portfolio

- Lower investment risk likely means lower expected returns
- Lower expected returns likely means lower return assumption
> Glide path approach to reducing return assumption:
- Current assumption = 7.5\%; target assumption = 6.5\%
- Applies to both liability interest rate and asset projection
- Reduce assumption $0.25 \%$ each year funded percentage $\geq 90 \%$
$>$ Even with reduction in return assumption:
- Projected funded percentage $\geq 90 \%$ in each year from 2022-2025
- Projected funded percentage $\geq 100 \%$ by 2029
- Plan is projected to remain in "green zone" in all future years


## Case Study: "Glide Path" Projection

| Plan Year | Assumed <br> Investment <br> Return | Total Hours <br> (in Millions) | Contribution <br> Rate | Funded <br> Percentage |
| :---: | :---: | :---: | :---: | :---: |
| 2019 | $7.50 \%$ | 18.8 | $\$ 13.61$ | $83 \%$ |
| 2020 | $7.50 \%$ | 18.8 | $\$ 13.86$ | $85 \%$ |
| 2021 | $7.50 \%$ | 18.8 | $\$ 13.86$ | $88 \%$ |
| 2022 | $7.25 \%$ | 18.8 | $\$ 13.86$ | $89 \%$ |
| 2023 | $7.00 \%$ | 18.8 | $\$ 13.86$ | $89 \%$ |
| 2024 | $6.75 \%$ | 18.8 | $\$ 13.86$ | $99 \%$ |
| 2025 | $6.50 \%$ | 18.8 | $\$ 13.86$ | $99 \%$ |
| 2026 | $6.50 \%$ | 18.8 | $\$ 13.86$ | $99 \%$ |
| 2027 | $6.50 \%$ | 18.8 | $\$ 13.86$ | $95 \%$ |
| 2028 | $6.50 \%$ | 18.8 | $\$ 13.86$ | $98 \%$ |

Note: Projected funded percentages shown above are after any change in the investment return assumption.

## Case Study: Impact on Projected Funding Levels




Decreasing the investment return by 0.25\% on each June 1 from 2022 to 2025 results in the Plan becoming 100\% funded on June 1, 2029, 4 years later than in the Baseline projection.

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## Funding Policies

$>$ Overview

- Help manage risk, achieve certain funding targets
- Reduce subjectivity in benefit/funding decisions
- Must describe funding policy on annual funding notice
$>$ Possible objectives
- Meet ERISA minimum funding standards
- Meet other PPA targets (e.g., remain in the "green zone")
- Define when to take corrective action
- Define when appropriate to improve benefits


## Funding Policies Continued

$>$ Documenting a funding policy
-Write into trust agreement, or document elsewhere?

- Guidelines or firm requirements?

Considerations
-What reasonable corrective actions could be taken?

- Trustee objectives, risk tolerance?
- Evaluate with stress testing or stochastic modeling
- Under what scenarios would the policy fail?


## Example: Proactive Corrective Measures

## When to take corrective measures?

The answer will vary based on plan-specific factors and trustee objectives.

EXAMPLE: No PPA action required, but plan is headed in wrong direction.

QUESTION: Should the plan focus on meeting statutory requirements or take proactive corrective measures?

ProjectedFunded Percentage


## Example: Funding Cushion

## What is the right amount of cushion? The answer will vary based on plan-specific factors and trustee risk tolerance.

EXAMPLE: Plan is projected to be $120 \%$ funded in 15 years. Projected cushion enables plan to remain "green" after significant investment loss.



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## 5. Alternative Plan Designs

## Alternative Plan Designs

>Cannot completely eliminate risks

- But can significantly reduce them
- Transfer risk from plan to participants
>Important considerations
- Hybrid design applies only to future service benefits
- Legacy plan (past service) liability remains a major concern
- In most cases, some (but not all) risk
 is transferred


## Finding Balance



- Benefit level adequacy
- Stable, lifetime retirement income
- Understandability, perceived value

- Contribution rate sustainability
- Stable, predictable contribution rates

- Are benefits really guaranteed?
- Probability of delivering promised benefits?
- Consequences of underfunding?


## Hybrid Plans: Overview

## Combine Elements of DB and DC Plans

>DB: traditional defined benefit pension plans
>DC: defined contribution savings plans

## Key Advantages

- Provide lifetime income
- Reduce volatility in funding, contribution requirements
- Higher probability of delivering promised benefits


## Key Disadvantages

- Legacy liability remains
- Benefit levels may vary, therefore uncertain
- May be more difficult to communicate, understand


## Hybrid Plans: Key Questions

$>$ Is it feasible?

- Is there room in the "budget"?
- Legacy liability must still be funded
$>$ How to fund the legacy liability?
>Reduce investment risk?
- Future service only? Legacy liability as well?
- Duration matching? Annuity purchase?
- Reduced risk = reduced return $=$ higher costs



## One Size Does NOT Fit All

>Discuss options with all Decision Makers

- What legal issues must be addressed?
-What are administrative concerns, complexities?
>Evaluate via stochastic analysis
-Which option gives highest probability of success?
- What measures define "success"?
>Keep in mind benefit adequacy
- Consider target income replacement ratio?
-Consider other sources of retirement income?



## Plan Design Possibilities

## DC Plan <br> - Freeze DB Plan; Start DC Plan

## Hybrid Plan Options

- Cash Balance Plan
- Variable Accrual Rate
- Variable Annuity Plan
- Composite Plan*

[^3]
## Impact of a Plan Freeze

Actuarial Liabilities: Past and Future Service
■ Legacy Inactive ■ Legacy Active sFuture Service


Moving to an alternative plan design is not an overnight fix. Maintain commitment to legacy liability funding.

## Freeze DB Plan

## >Freeze legacy DB plan

- No accruals under DB plan for future service
- Provide future service retirement benefits through DC plan
$>$ Requirements remain for legacy DB plan
- Future service counts for vesting in old DB plan
- ERISA/PPA funding standards still apply
- PBGC premiums must still be paid


## Key Advantages

- Freeze DB = stop adding to legacy liability
- Legacy liability will decline over time as benefits are paid out
- DC plan = stable costs for future service


## Key Disadvantages

- Legacy liability remains
- Participants bear investment and longevity risk
- Participants may not make good investment decisions
- Purchasing annuities is very expensive


## Cash Balance Plan

## >Benefit expressed as a hypothetical account

- Account grows with annual principal, interest credits
- Principal credits usually based on service
- Interest credits based on plan-specified rate


## $>$ Technically DB plan

- Higher vesting requirement: 3 years of service
- Must satisfy QPSA, QJSA requirements, pay PBGC premiums


## Key Advantages

- Reduces investment risk
- Participant principal is protected
- Benefits are portable
- Benefits are subject to PBGC guarantees

Key Disadvantages

- Legacy liability remains
- Risks are not completely eliminated
- Participants exposed to longevity risk (or must pay premium for annuities)
- Annuitization is expensive, especially for older workers


## Variable Accrual Rate

## >Future benefit accrual rate adjusts each year

- Usually based on asset returns for prior year(s)
$>$ Benefits are fixed once they have been accrued
- Pension is sum of each year's accrual
- Pension remains fixed in retirement


## Key Advantages

- Reduces risk somewhat
- Removes subjectivity from benefit/funding decisions
- Benefits are fixed once accrued
- Benefits are subject to PBGC guarantees


## Key Disadvantages

- Legacy liability remains
- Risks are reduced but not eliminated
- Benefits are fixed once accrued
- Variable accrual much less powerful as plan matures
- Accrual rate legal issues?


## Variable Annuity Plan

## >Combines elements of DB and DC plans

- Provides lifetime income, like traditional defined benefit (DB) plan
- Reduces risk to plan sponsor, like defined contribution (DC) plan
>Benefits automatically adjust each year based on asset returns
- Compare actual asset return vs. "hurdle rate"
- Stabilization strategies can be used to reduce benefit volatility


## Key Advantages

- Significantly reduces risk to plan sponsor
- Removes subjectivity from benefit/funding decisions
- Retiree benefits expected to outpace inflation over time
- Benefits are subject to PBGC guarantees


## Key Disadvantages

- Participant benefits may decline, even after retirement
- Adding protections (floors, fixed post-retirement benefit) adds back risk exposure


## Composite Plan

## $>$ Combines elements of DB and DC plans

- Provides lifetime income like traditional DB plan
- Trustees adjust benefit levels each year to meet prescribed funding targets
- Adjustments are not automatic, as with variable designs
>By definition, neither DB nor DC
- No PBGC premiums, no PBGC guarantees (on future service)
- No employer withdrawal liability (on future service)


## Key Advantages

- Similar in many ways to traditional DB design
- No PBGC premiums*
- No withdrawal liability*
- Clearly defines legacy liability funding requirements


## Key Disadvantages

- Clearly defines legacy liability funding requirements
- Plan retains some risk; reasonable actions may not meet funding obligations
- No PBGC guarantees*
- Not yet permitted under law
* On composite plan benefits for future service


## Key Takeaways

$>$ Traditional DB pension model has flaws; as plans mature, exposure to risk increases
$>$ Trustees may wish to consider hybrid plan designs to manage, reduce risk over time
$>$ One size does not fit all; Trustees should find balance between benefits/contributions/risk
>Keep an eye on Capitol Hill

## Comments? Discussion?


[^0]:    Percentages may not add to $100 \%$ due to rounding.
    For simplicity, certain industries and trades are grouped as follows:

    - Transportation includes trucking and freight, warehouse workers, bakery drivers, and maritime
    - Manufacturing includes bakery workers, printing, energy, mining, and agriculture
    - Service includes hospitality, healthcare, education, and communications

[^1]:    * Survey of Capital Market Assumptions by Horizon Actuarial Services, LLC, 2019 Edition

[^2]:    * Survey of Capital Market Assumptions by Horizon Actuarial Services, LLC, 2019 Edition

[^3]:    * Not yet permissible under law.

