

Direct Testimony and Schedule
R. Evan Inglis

Before the Minnesota Public Utilities Commission
State of Minnesota

In the Matter of the Application of Northern States Power Company
for Authority to Increase Rates for Electric Service in Minnesota

Docket No. E002/GR-20-723
Exhibit ___(REI-1)

Pension Investments

November 2, 2020

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1 **I. INTRODUCTION**

2
3 Q. PLEASE STATE YOUR NAME AND OCCUPATION.

4 A. My name is R. Evan Inglis. I am an actuary and investment professional
5 employed by Pension Benefit Guaranty Corporation and I work as an
6 independent consultant where I use my experience as an actuary and investment
7 expert to help manage risk based on specific investment objectives such as
8 paying pensions and securing retirement spending. I work to develop solutions
9 for the benefit of my clients and I look for ways to contribute to improve
10 practice in the actuarial and investment professions. I also write white papers
11 and articles, as well as speak publicly about pension plans, pension risk, and
12 investment strategies.

13
14 Q. PLEASE SUMMARIZE YOUR QUALIFICATIONS AND EXPERIENCE.

15 A. I am a Fellow of the Society of Actuaries (FSA) and a Chartered Financial
16 Analyst (CFA Charterholder). I attained my FSA designation in 1990 and
17 became a CFA Charterholder in 2011. I have over 30 years of experience
18 working with pension plan sponsors on issues such as liability and cost
19 measurement, plan design, pension accounting, funding strategies, and
20 investment strategies. Included in my work experience, I have:

- 21 • educated thousands of pension and investment professionals about
22 pension investment strategies through webcasts and presentations at
23 conferences, in-person meetings, and phone conversations;
- 24 • designed, implemented and monitored investment strategies for dozens
25 of pension funds;
- 26 • discussed and recommended strategies with professionals representing
27 dozens of additional pension funds;

- 1 • written white papers on subjects such as management of pension risk,
2 effects of the demographic profile of a pension plan population on the
3 investment strategy, investment glidepath de-risking strategies,
4 immunization investment strategies, investment strategies for
5 terminating pension plans, and investment strategies for cash balance
6 pension plans;
- 7 • spoken publicly on the previously mentioned topics, as well as topics
8 such as evaluating the success of liability-driven investment strategies,
9 stochastic modeling of pension risk, pension investment strategies in a
10 low interest rate environment, pension investment risk from a corporate
11 finance perspective, and risk-based frameworks for decision-making
12 about pension plan investments and plan design;
- 13 • testified before the ERISA Advisory Council on the employer's
14 perspective in pension de-risking trends;
- 15 • testified for the Government Accounting Standards Board on accounting
16 standards for government pension plans;
- 17 • worked with some of the world's largest pension plans and advised the
18 sponsors of those plans about pension risk; and
- 19 • been retained by the World Bank and other organizations to assist with
20 matters related to pensions, investments, and retirement systems in
21 developing countries such as Costa Rica, India, and Indonesia.

22
23 I have recently been a member of the Board of Directors of the Society of
24 Actuaries (SOA) and the Board liaison to the SOA's Investment Section
25 Council, which directs research and education on investments for the actuarial
26 profession. In 2014 I established a continuing education committee for the
27 SOA's Investment Section and chaired that committee for two years. I have

1 been a member of the American Academy of Actuaries (AAA) Public Interest
2 Committee and a regular contributor to issue briefs on public policy issues
3 related to pensions for the AAA. I have been the chairperson for the Pension
4 Finance Task Force jointly sponsored by the SOA and AAA. In the past, I have
5 been elected to the SOA's Pension Section Council and appointed to the AAA's
6 Pension Practice Council. My resume is attached as Exhibit____(REI-1),
7 Schedule 1.

8
9 Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

10 A. I am testifying on behalf of Northern States Power Company - Minnesota
11 (NSPM or Company).

12
13 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

14 A. The purpose of my testimony is to provide an independent, third-party opinion
15 regarding whether the investment strategies and target asset allocations for the
16 Company's pension funds are reasonable, based on the demographics of the
17 Company's workforce and other relevant factors.

18
19 Q. HAVE YOU PREVIOUSLY PROVIDED TESTIMONY REGARDING THE INVESTMENT
20 STRATEGIES FOR AND TARGET ASSET ALLOCATIONS IN THE COMPANY'S
21 PENSION FUNDS?

22 A. Yes. In the Company's 2013 rate case, the Minnesota Public Utilities
23 Commission (Commission) issued an Order Point that required the Company
24 to address the reasonableness of its target asset allocations in the Company's
25 next rate case. More specifically, in Docket No. E002/GR-13-868, the
26 Commission issued the following Order Point that is relevant to my testimony:

27 11. In the initial filing of its next electric rate case, the Company shall:
28

- 1 a. Address why the target asset allocations for its pension fund are
2 reasonable, including ages of retirees and employees. The Company
3 must provide an update to its existing Exhibit 31 (Tyson Rebuttal),
4 Schedule 1 and expand it to include this demographic information.
5
6 b. Provide testimony on its investment strategies and target asset
7 allocations for the qualified pension fund and the justifications for
8 these decisions, for the period from 2007 to the date of its next filing.
9

10 I provided testimony on these topics in the Company's 2015 rate case. While
11 this specific requirement did not apply, I was again asked to review the target
12 asset allocations and provide an opinion regarding whether those allocations are
13 reasonable in the Company's 2019 rate filing, which was subsequently
14 withdrawn. In this current rate case, the Company has again asked me to review
15 its investment strategies and determine whether they are reasonable.
16

17 Q. DID THE COMPANY PROVIDE YOU WITH INFORMATION BY WHICH TO ASSESS
18 THE REASONABLENESS OF THE TARGET ASSET ALLOCATIONS?

19 A. Yes. The Company provided me with the following information to help me
20 analyze the reasonableness of the Company's target asset allocations:

- 21 • Investment policy statements (IPS), as they were amended from time to
22 time.
- 23 • Funded status and changes in both the Company's pension assets and
24 pension liability (which is sometimes referred to as the pension benefit
25 obligation, or PBO) on an accounting basis for 2007 – 2019.
- 26 • A breakdown of the pension plan liability according to benefit formula.
- 27 • Materials, including presentations by the investment consultant, and
28 minutes from several investment committee meetings, over the period
29 2007 – 2019.

- 1 • Information on the assets used for interest rate hedging in the
2 Immunization Portfolio.
- 3 • Demographic information, such as counts, average age, and average
4 service for the active, terminated, and retired participants in the Xcel
5 Energy Pension Plan (XEPP).
- 6 • The Summary Plan Description (SPD) for the XEPP.

7
8 I also reviewed research reports from Willis Towers Watson with information
9 about the asset allocation and investment returns for corporate pension plans
10 in the U.S.

11
12 In addition to reviewing the materials, I was given the opportunity to speak with
13 Company representatives regarding the current and prior investment strategies
14 and the target asset allocations.

15
16 Q. PLEASE SUMMARIZE YOUR TESTIMONY.

17 A. I have considered the Company's investment strategy and asset allocation, based
18 on the materials provided, and I found the stated strategy and asset allocation
19 to be reasonable over the relevant time period. The strategy demonstrates key
20 best practices, such as an understanding of how to measure investment risk
21 relative to the pension liability and the significance of funded status on the
22 desired level of risk. The basic approach is similar to that of other large pension
23 funds throughout the relevant time period.

24
25 I analyzed the Company's target asset allocation as of the end of 2019 and the
26 changes to the target asset allocation since the beginning of 2015. I have

1 considered several key factors that should influence the asset allocation of any
2 pension plan:

- 3 • plan liability characteristics,
- 4 • demographic profile of the participants,
- 5 • status of the plan (open, closed, or frozen),
- 6 • size of the plan relative to the size of the plan sponsor's business, and
- 7 • funded status of the plan.

8
9 As with my prior analyses, I found that the Company's asset allocation is
10 reasonable and that the Company's approach to determining asset allocation
11 reflects current best practices.

12
13 **II. INVESTMENT STRATEGIES**

14
15 Q. WHAT TOPIC DO YOU DISCUSS IN THIS SECTION OF YOUR TESTIMONY?

16 A. I describe the Company's current investment strategy for its pension funds and
17 provide my opinion on the reasonableness of that strategy. I also address the
18 reasonableness of the Company's investment strategies and the changes in those
19 strategies from 2015 to the present.

20
21 Q. HAS THE COMPANY OUTLINED ITS INVESTMENT STRATEGY IN ANY DOCUMENTS
22 THAT YOU HAVE REVIEWED?

23 A. Yes. A fairly complete picture of the investment strategy can be derived from
24 the documents I listed earlier.

1 Q. WHAT FACTORS SHOULD THE COMPANY CONSIDER WHEN DECIDING WHAT ITS
2 INVESTMENT STRATEGY SHOULD BE?

3 A. The investment strategy should define risk in the right way relative to the
4 pension liability and identify tools that are useful to manage risk to a level that
5 is appropriate for pension fund stakeholders. The return objectives should be
6 consistent with the level of risk determined. Some of the key factors to consider
7 include:

- 8 • the fiduciary duty to secure benefits promised to the participants;
- 9 • the risk that funding requirements will be uncertain or volatile, thereby
10 disrupting the plan sponsor's business; and
- 11 • the perspective that the plan sponsor's shareholders or other financial
12 stakeholders, such as customers, might have on pension risk and
13 investment returns.

14

15 Q. CAN YOU DESCRIBE HOW THE XEPP INVESTMENT PORTFOLIO IS GENERALLY
16 STRUCTURED?

17 A. Yes. The XEPP investment portfolio is part of a larger portfolio for a master
18 trust that covers four plans. The portfolio for each plan is organized into three
19 primary sub-portfolios:

- 20 (i) a Growth Portfolio, where specific asset classes are intended to achieve
21 higher returns by taking more risk and through the impact of broad-based
22 U.S. and international economic growth;
- 23 (ii) an Immunization Portfolio, where specific asset classes are intended to
24 change in value in a manner similar to the projected pension liability as
25 interest rates change in order to stabilize and protect the funded status of
26 the plan; and

1 (iii)a Liquidity Portfolio, where specific assets are designed to provide a cash
2 reserve with a stable value to fund monthly cash benefit payments.

3
4 Q. WHAT IS THE COMPANY'S CURRENT INVESTMENT STRATEGY, AS YOU
5 UNDERSTAND IT?

6 A. At a high level, the Company uses a long-term investment horizon and evaluates
7 risk in an asset-liability framework in which the change in the value of assets
8 relative to the value of the liability is more important than the change in value
9 of the assets alone. In other words, changes in the pension plan's funded status
10 (assets – liabilities) are the measure by which results and risk are measured. The
11 strategy uses “interest rate hedging” where the value of some assets change in
12 the same way as the value of the liability when interest rates change as a way to
13 stabilize the funded status. The level of interest rate hedging is referred to as
14 the “hedge ratio” which would be 100 percent if the hedging assets reacted to
15 interest rates exactly like the liability does.

16
17 The strategy also targets relatively high returns with a significant allocation to
18 riskier growth assets. While it is challenging, a successful strategy would, over
19 time, grow the assets faster than the pension liability but would also keep
20 contributions relatively stable and predictable. The strategy is dynamic and
21 designed so that seeking returns and reducing risk can be balanced and
22 controlled. Both the level of interest rates and funded status are used as key
23 factors in determining how much risk to take.

24
25 Q. WHAT TOOLS DOES THE COMPANY RELY ON TO IMPLEMENT THAT STRATEGY?

26 A. The Company pursues its dual goal of pursuing growth while mitigating risk
27 relative to the liability by allocating its investments between the Growth

1 Portfolio, the Immunization Portfolio, and the Liquidity Portfolio as described
2 above. The Growth portfolio is relatively large and very diversified and has been
3 adjusted in recent years based on market conditions for the various asset classes.
4 While the Company does not formally incorporate funded status into its strategy
5 through a stated “glidepath” to determine the portfolio allocations to Growth
6 and Immunization, funded status is still used as a key factor for this
7 determination. The Company adjusts the level of interest of rate hedging based
8 on interest rate “triggers” where the level of interest rate hedging is increased
9 when interest rates rise to certain levels. The Company uses some of the top
10 pension expertise available from Goldman Sachs Asset Management (GSAM)
11 to advise on and implement their strategy.

12
13 Q. DO YOU CONSIDER IT APPROPRIATE FOR THE COMPANY TO RELY ON PENSION
14 ADVISORS SUCH AS GOLDMAN SACHS ASSET MANAGEMENT?

15 A. Yes. Managing a pension fund is complex and requires information, resources,
16 and expertise that is not directly available to the Company without hiring an
17 advisor. Rankings and analysis of investment managers, ALM (asset-liability
18 modeling) tools and actuarial expertise are some of the main resources that the
19 Company is able to access by using an advisor. In addition, an advisor evaluates
20 a wide variety of pension fund managers and can assess whether they and their
21 strategy(ies) are appropriate for any particular pension plan.

22
23 Q. BASED UPON YOUR EXPERIENCE AND EXPERTISE, IS THE COMPANY’S CURRENT
24 INVESTMENT STRATEGY REASONABLE?

25 A. Yes. In my opinion, the strategy is reasonable because both pension plan
26 participants and the financial stakeholders of the Company are well-served by a
27 balanced approach to seeking returns and reducing risk. The balanced approach

1 is also dynamic such that the balance between seeking returns is adjusted based
2 on key factors as described above. The relatively large allocation to growth
3 assets is appropriate for and more common for plans that are still open to new
4 participants. Using funded status, and asset returns relative to pension liability
5 growth to understand risk and measure results is the appropriate approach for
6 a pension plan. Other managers of large pension funds use similar strategies.

7
8 Q. HAS THE COMPANY'S INVESTMENT STRATEGY FOR ITS PENSION PLAN CHANGED
9 OVER TIME?

10 A. Yes, but not significantly. It would be more appropriate to say that the same
11 strategy has been in place since the market turmoil in late 2008, but has evolved
12 and been adjusted as market conditions have changed. The overall strategy has
13 been defined by a long-term, diversified approach to seeking returns, with risk
14 measured by changes in funded status, using specific allocations to growth
15 assets and hedging assets. After 2008, the separate Growth and Immunization
16 portfolios were created to be more explicit about the portfolio objectives and
17 the balance between risk and return.

18
19 In addition, separate portfolios were developed for each of the four pension
20 plans, allowing the balance between risk and return to more accurately reflect
21 the plan provisions, demographics of the plan population, funded status and
22 other factors. This has not changed. The overall target level of risk has been
23 adjusted from time-to-time as has the approach to seeking returns. In addition,
24 the explicit interest rate "triggers" were introduced in 2016.

1 Q. DO YOU CONSIDER THE COMPANY'S INVESTMENT STRATEGIES DURING THE
2 PERIOD 2015 – 2019 TO BE REASONABLE?

3 A. Yes. The Company's investment strategy has been reasonable considering the
4 characteristics of the plan, the economic environment, and typical practices of
5 pension fund investment managers during this period. The overall approach of
6 using separate portfolios for growth and interest rate hedging is common
7 practice. The allocation between those portfolios is similar to other pension
8 plans and is reasonable given the interest rate sensitivity of the plan, the funded
9 status of the plan, and the fact that it is still open to new participants. A set of
10 interest rate triggers has been added, as described above, and this is a common
11 approach to adjusting the level of interest rate hedging by pension plans.
12

13 Q. HAVE YOU EVALUATED THE REASONABLENESS OF THE COMPANY'S PRIOR
14 INVESTMENT STRATEGIES?

15 A. Yes. I have previously examined the Company's investment strategies prior to
16 2015 as outlined in the materials provided to me by the Company, including
17 testimony filed by Company witness Mr. George Tyson in the 2015 rate case,
18 and found the strategy during that period to be reasonable and similar to other
19 large pension plans.
20

21 Q. HAS THE COMPANY'S INVESTMENT STRATEGY PERFORMED AS EXPECTED
22 DURING THE PERIOD 2015 - 2019?

23 A. Yes. The Company's investment strategy performed as expected with the
24 hedging assets increasing and decreasing in value as interest rates changed with
25 improvements in funded status being driven by strong returns in the Growth
26 Portfolio, above the interest-rate driven increases in the liability. Lower interest
27 rates pushed the liability higher during this period, but the immunization

1 portfolio offset much of that increase, as it is designed to do. The overall
2 funded status for the plan increased during the period, but a more significant
3 indicator for the investment strategy is the change in funded status due only to
4 investment returns and changes in the liability due to interest rates. This
5 “market-driven” change in funded status was also positive. During this period,
6 equity returns, and in particular U.S. equity returns, were relatively high which
7 created positive market-driven changes in funded status and pushed up the
8 overall funded status for most large pension plans.

9
10 As expected and desired, investment returns for XEPP were higher in years
11 where the liability increased more and lower in years when the liability increased
12 less or decreased. The use of interest rate triggers worked well as it resulted in
13 increases in the interest rate hedge, when it was less expensive to purchase those
14 hedging assets, and prior to drops in interest rates so that more of the increase
15 in liability value was hedged by an increase in asset values. The performance of
16 the XEPP portfolio was similar to the performance of other large pension funds
17 during this period.

18 19 **III. TARGET ASSET ALLOCATIONS**

20
21 Q. WHAT TOPIC DO YOU DISCUSS IN THIS SECTION OF YOUR TESTIMONY?

22 A. I address the reasonableness of the Company’s current target asset allocation
23 for its qualified pension funds during the period 2015 - 2019. A table
24 summarizing the asset allocation for the XEPP during this period is attached as
25 Exhibit___(REI-1), Schedule 2.

26

1 Q. WHAT FACTORS SHOULD THE COMPANY CONSIDER WHEN DECIDING WHAT ITS
2 TARGET ASSET ALLOCATION SHOULD BE?

3 A. The target asset allocation should have an appropriate and reasonable level of
4 risk, as defined by the investment strategy. To achieve an appropriate and
5 reasonable level of risk a number of factors should be considered:

- 6 • the funded status of the plan;
- 7 • the status (open, closed, or frozen) of the plan;
- 8 • the size of the pension plan relative to the size of the plan sponsor's
9 business;
- 10 • the financial health of the pension plan sponsor;
- 11 • liability profile of the pension plan formula;
- 12 • the duration (interest rate sensitivity) of the plan liability; and
- 13 • the demographic profile of the pension plan participants.

14

15 In addition, most plan sponsors evaluate market conditions and assess the
16 potential for return from different asset classes and make adjustments as these
17 factors change.

18

19 Q. IN YOUR OPINION, IS THE COMPANY'S TARGET ASSET ALLOCATION
20 REASONABLE, INCLUDING CONSIDERATION OF THE DEMOGRAPHIC PROFILE OF
21 THE PLAN PARTICIPANTS?

22 A. Yes. The Company's current asset allocation appears reasonable in light of the
23 various factors that I described above. A range of different asset allocations
24 might be considered reasonable, and the Company's current target is
25 comfortably within that range. XEPP is still open to new participants and this
26 is a key factor that underlies how much risk is being taken in order to achieve
27 higher returns since it extends the investment time horizon.

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Q. HAVE YOU ALSO REVIEWED THE COMPANY’S TARGET ASSET ALLOCATION FOR THE YEARS 2015 - 2019?

A. Yes. Generally, the target asset allocation has remained the same with relatively minor adjustments during this period. The biggest change has been the increase in the level of interest rate hedging. Since 2015, the following key changes have been made:

- There was a shift from corporate bonds to government bonds and derivatives in the Immunization Portfolio, although the hedge ratio remained about the same, in 2015.
- Exposure to commodities was reduced in 2016 and then eliminated in 2017.
- The small allocation to investment grade (core) debt was eliminated in 2017.
- A set of interest rate “triggers,” whereby interest rate hedging is increased when rates go up, was added in 2016 and refined and extended in 2017.
- The level of interest rate hedging was increased late in 2016 and late in 2018 based on the interest rate trigger mechanism.
- The allocation to hedge funds was reduced in 2018 and the allocation to fixed income in the growth portfolio was increased.
- In 2019, the allocation to the Immunization Portfolio was increased (with a corresponding decrease to the Growth Portfolio). Also, a portion of the Immunization Portfolio was reallocated toward corporate bonds, away from Treasuries and derivatives.

1 Q. WAS THE COMPANY'S TARGET ASSET ALLOCATION REASONABLE DURING THE
2 PERIOD FROM 2015 TO 2018?

3 A. Yes. The materials that I reviewed provide good reasons for each of the changes
4 based on market conditions and other factors. More specifically, referring to
5 each of the changes described above:

- 6 • The shift away from corporate bond exposure in 2015 was based on the
7 level of corporate bond spreads. In late 2014, GSAM viewed spreads
8 (the extra yield on corporate bonds relative to Treasury securities) as
9 small and recommended the shift away from corporate bonds for 2015.
- 10 • Exposure to commodities has been reduced or eliminated by many
11 pension funds due to the low expected returns and lack of hedging
12 characteristics for pension liabilities.
- 13 • The investment grade debt allocation that was eliminated had low return
14 expectations and also had duration that was too low to be valuable for
15 interest rate hedging in a pension portfolio.
- 16 • Interest rate triggers are relatively common with pension plans because
17 the value of hedging interest rate risk increases as interest rates increase.
- 18 • The interest rate triggers acted to increase interest rate hedging when
19 rates were higher (and more likely to drop) and produced good short-
20 term results after the hedge ratio increases in both 2016 and 2018.
- 21 • Many pension fund investors have been decreasing their allocation to
22 hedge funds because expected returns for hedge funds have decreased
23 significantly and fees are generally higher than other asset classes.
- 24 • The increase to the immunization portfolio, and corresponding decrease
25 to the growth portfolio, was consistent with a reassessment of the XEPP
26 plan's liability duration and was intended to allow for further interest-rate
27 hedging in the future if interest rates were to rise.

- 1 • The reallocation of the immunization portfolio toward corporate bonds
2 realigned these assets with the target mix for the immunization portfolio.
3

4 Q. IS IT REASONABLE TO ASSUME THAT THE COMPANY'S RETURN ON ITS PENSION
5 FUND INVESTMENTS WILL MATCH THE U.S. STOCK MARKET RETURNS FOR A
6 PARTICULAR YEAR?

7 A. No. The return on the pension fund will reflect the combination of returns for
8 the asset classes that the portfolio is invested in. Equities (the stock market)
9 will generally have the highest return expectation in any portfolio over time, but
10 those returns are quite volatile, and in any one year, or even over periods of
11 several years, they may have very high or very low returns that are not reflective
12 of the long-term expectation. A portfolio designed to match returns in the U.S.
13 equity market would be considered very risky, despite having a high long-term
14 expectation for returns. A well-designed portfolio with a balance of objectives,
15 including seeking high return, diversification, and other risk reduction will, over
16 time, and in many years, have returns lower than the U.S. equity market.
17

18 Q. WHAT IS YOUR OVERALL CONCLUSION REGARDING THE REASONABLENESS OF
19 THE COMPANY'S TARGET ASSET ALLOCATIONS?

20 A. The target asset allocation for the Company's pension plan is reasonable, and
21 the changes in the asset allocation during the period 2015 – 2019 have been
22 consistent with the investment strategy and based on sound assessments of
23 market conditions; reflecting views commonly held by pension plan sponsors.

1 Q. HOW HAS THE COVID-19 PANDEMIC IMPACTED THE COMPANY'S INVESTMENT
2 STRATEGY?

3 A. Although the pandemic happened after the period which I analyzed, my
4 understanding is that the Company's investment strategy and approach to asset
5 allocation has not changed. Financial markets reacted severely early in 2020 but
6 then largely recovered and stabilized relatively quickly so I would not expect
7 those events to impact the Company's approach which is based on a long-term
8 investment time horizon.

9

10 IV. CONCLUSION

11

12 Q. PLEASE SUMMARIZE YOUR TESTIMONY.

13 A. There is no single investment strategy or asset allocation that can be considered
14 appropriate and reasonable for any particular pension plan and plan sponsor;
15 but I consider the Company's investment strategy and asset allocation to be
16 reasonable because it reflects a reasonable and appropriate risk framework and
17 the level of risk that is appropriate for the circumstances of the XEPP and the
18 plan population.

19

20 In addition, the current target allocation and changes in the asset allocation for
21 the Company's plan over the period 2015 – 2019 are reasonable as they reflect
22 broadly held views on market conditions and common approaches to adjusting
23 asset allocation among pension investors.

24

25 Q. DOES THIS CONCLUDE YOUR TESTIMONY?

26 A. Yes.

R. Evan Inglis, FSA, CFA, EA, MAAA, FCA

Mr. Inglis is an Independent Consultant and also an Actuary with the Pension Benefit Guaranty Corporation. As a consultant and during his career he has developed and advised on investment strategies for pension plans and other retirement programs. He is an expert in assessing financial risk and managing assets relative to pension and retirement liabilities. He has over 30 years of experience working with employee benefit plan financial matters and is a frequent speaker and writer on a wide variety of pension, retirement and investment issues and ideas.

The following summarizes Mr. Inglis' career:

- Actuary with the Pension Benefit Guaranty Corporation (July 2019 to present)
- Independent Consultant for World Bank, D3P Global Pension Consulting, The Global Aging Institute and other organizations (December 2014 to present)
- Nuveen Asset Management (January 2015 to September 2018): Senior Vice President
- The Terry Group (1/2014 – 12/2014): Worked with the founders to develop business ideas and contacts and analyzed risks for a number of public pension situations.
- The Vanguard Group (2008 – 2013): Served as the chief actuary and advised pension clients on liability-driven investment strategies and served as a resource for institutional clients on pension and related issues
- Watson Wyatt (2003 – 2008): Lead actuary for General Motors account and led a multi-office team advising and supporting GM on pension and OPEB issues
- Watson Wyatt (1998 – 2003): Served as director of quality and developed and implemented a global quality program focused on efficiency, risk management, and producing high-value work for clients
- Watson Wyatt (1983 – 1998): Senior consulting actuary in Portland (Oregon), Seattle, Oslo and Stockholm

Mr. Inglis is a Fellow of the Society of Actuaries and a CFA Charterholder.

Mr. Inglis has played significant leadership roles within the actuarial profession. He served on the Society of Actuaries Board of Directors from 2012 - 2015 and currently is a member of the Public Plan subcommittee of the American Academy of Actuaries Pension Committee. He established and chaired the Continuing Education Committee for the Investment Section of the Society of Actuaries. He chaired the Pension Finance Task Force, jointly sponsored by the Society and the Academy. He has served on the Pension Practice Council of the Academy and the Pension Section Council of the Society, and has contributed to numerous other research and advocacy efforts within the profession.

Mr. Inglis has a global perspective. He worked in Norway and Sweden for Watson Wyatt, providing pension actuarial consulting services in the 1990s. He was the Global Director of Quality for Watson Wyatt, overseeing the implementation of standards of work and standard processes in the company's offices in Asia and the Americas in the 2000s. He has served as a consultant for the World Bank and other organizations assisting pension regulators in Costa Rica, India, Rwanda and Indonesia with pension actuarial, retirement income and investment issues.

Mr. Inglis is a thought leader in the pension, investment and retirement industry, writing and speaking frequently on various topics. Some of Mr. Inglis' recent contributions include:

- [*A Risk-Based Framework for Making Retirement Income Decisions*](#) (First prize in Society of Actuaries essay contest on products, tools and strategies to address retirement risks, 2020)
- [*Hitting the Wall – Why Investors Can Expect Lower Returns in the Near Future, and For a Long Time to Come*](#) (Contingencies, March/April 2019)
- [*Paying the Pension: Markets, Products and Choices*](#) (Chapter in “Saving the Next Billion from Old-Age Poverty: Global Lessons for Local Action”, 2017)
- [*Feel Free Retirement Spending*](#) (First prize in Society of Actuaries essay contest on diverse retirement risks 2016; covered in USA Today, CBS MoneyWatch, Investment News)
- [*A Risk-based Framework for Pension Decision-making*](#) (Contingencies Magazine, 2013)

Articles, Essays and Book Chapters

A Risk-Based Framework for Making Retirement Income Decisions

Society of Actuaries essay contest on products, tools and strategies in retirement 2020, first prize

Hitting the Wall – Why Investors Can Expect Lower Returns in the Near Future and For a Long Time to Come
Contingencies, March/April 2019

Guaranteed Retirement Income – How Much Do You Need?

Retirement Section News, June 2019

Replacement Ratio – The Dinosaur of Retirement Planning

Retirement Section News, February 2019

Paying the Pension: Markets, Products and Choices

Chapter in “Saving the Next Billion from Old-Age Poverty: Global Lessons for Local Action”, 2017

The Feel Free Approach to Retirement Spending

Society of Actuaries essay contest on diverse risks in retirement 2016, first prize

Long Bonds for the Short Run

Institutional Investor Journal of Investing, Winter 2016

Consideration for Frozen Pension Plans: Immunization or Termination?

Institutional Investor Guide to Pension and Longevity Risk Transfer, 2014

Investment Fallacy: Active Management Overall Performs Differently than Passive Management

Society of Actuaries Investment E-Book, 2014

Trading Places: A Life and Pension Actuary Find Common Ground to Express Funding Concepts

Published in various Society of Actuaries Section Newsletters, 2014

Why are Corporate Pension Plans Reducing Risk Now?
Risk & Rewards, Pension Section News, 2012-2013

A Risk-based Framework for Pension Decision-making
Contingencies Magazine, 2013

Quoted extensively in CFO Magazine article on pension risk, *The Great Pension Derisking*, 2013

Understanding Liabilities Key to Well-Designed Pension Investment Strategies
Investment & Wealth Monitor, 2010

Speech, Panel and Webcast Highlights

Retirement System Payouts
Third Webinar on Pensions, Institute of Actuaries India 2020

Risk Mitigation: Back to Basics
2019 Conference of Consulting Actuaries Annual Meeting

ALM for Public Plans
2019 Conference of Consulting Actuaries Annual Meeting

Developing Return Expectations in Today's Capital Markets – What Methods Work Now
American Academy of Actuaries Webinar, 2019

Retirement System Payouts – Policy Ideas and Issues
Caribbean Association of Pension Supervisors, 2019

Expected Return Q&As for Actuaries
2019 Enrolled Actuaries Meeting

SOA Research and its Application to Pension Actuaries
2019 Enrolled Actuaries Meeting

Rise and Fall of Discount Rates
2019 Enrolled Actuaries Meeting

What's New in the LDI Space
2018 Conference of Consulting Actuaries Annual Meeting

Funding in the New World
2018 Enrolled Actuaries Meeting

Expected Return Q&As for Actuaries
2018 Enrolled Actuaries Meeting

Speech, Panel and Webcast Highlights cont'd.

The Sustainability of Public Pensions

For various public plan trustee audiences in 2017

New Perspectives on Fixed Income for Public Plans

For various public plan investment audiences in 2017

Setting the Investment Return Assumption for Public Plans

2017 Conference of Consulting Actuaries Annual Meeting

Impact of Current Low Rates on Investment Return Assumptions

2017 Conference of Consulting Actuaries Annual Meeting

Delivering Optimum Retirement Outcomes

Saving the Next Billion from Old-Age Poverty: Global Lessons for Local Action Conference

Pension De-Risking Glidepaths: Foundations, Considerations, Implementation

2017 Society of Actuaries Webcast

Setting an Expected Return Assumption – Everything Old is New Again

2017 Society of Actuaries Annual Meeting

Glidepaths in DB and DC Plans

2016 Conference of Consulting Actuaries Annual Meeting

Feel Free Retirement Spending

2016 Society of Actuaries Annual Meeting

Using Derivatives in Pension Investment Strategies

2016 Society of Actuaries Annual Meeting

Beyond Fixed Income – Other Important Asset Classes

Society of Actuaries Investment Bootcamp, 2016

Getting Creative with DC Plans

2016 Enrolled Actuaries Meeting

Public Pension Risk Management

2016 Enrolled Actuaries Meeting

Public Plan Investing – Is There Another Way?

2016 Society of Actuaries Investment Symposium

Ethics in a Pension Context

2015 Society of Actuaries Annual Meeting

Speech, Panel and Webcast Highlights cont'd.

Are Financial Economics Principles Applicable to Public Pension Plans
2015 Society of Actuaries Annual Meeting

Communicating Risk
2015 Enrolled Actuaries Meeting General Session

Potpourri of Investment Topics (Demographic-based Investing)
2015 Enrolled Actuaries Meeting

Public vs. Private Pension Risk Management
2015 Society of Actuaries Investment Symposium

Public Pension Plans: Great Crisis, Small Crisis, or No Problem
2014 Society of Actuaries Meeting

Asset Management to and through Group Annuity Purchase
2014 Society of Actuaries Meeting

Pension Management from a Risk Management Perspective
2014 Society of Actuaries Meeting

Finding Common Ground – Financial Economists and Actuaries Look at Public Pension Plans
2014 Conference of Consulting Actuaries Meeting

Stochastic Modeling
2014 Enrolled Actuaries Meeting

Derisking Investment Strategies in a Low Interest Environment
2014 Enrolled Actuaries Meeting

LDI Challenges
2014 Society of Actuaries Investment Symposium
2014 Mid-Atlantic Actuarial Club Annual Meeting

Pension Risk Transfer & Investment Strategies
2013 Society of Actuaries Annual Meeting

Discount Rates for Pension Plans
Society of Actuaries webcast, 2013

Risk-Sharing Plan Designs - A Look at Variable Annuity Plans and Other Emerging Pension Plan Designs
Society of Actuaries Annual Meeting, 2013

Who's Managing the Risk Anyway? Perspectives on Risk, Risk Management and the Actuarial Profession
2013 Philadelphia Actuarial Club Annual Meeting

Speech, Panel and Webcast Highlights cont'd.

Intergenerational Equity: Who will Pay for Past Promises
Society of Actuaries Annual Meeting, 2013

LDI: Where We've Been, Where We Are and Where We're Going
Conference of Consulting Actuaries webcast, 2013

Measuring the Success of Hedging Portfolios
2013 Society of Actuaries Investment Symposium,
2012 Pensions & Investments Liability Driven Investing Conference

Pension Risk Transfer, Analysis of 2012 Derisking by GM from Corporate Finance Perspective
Society of Actuaries webcast, Michigan Actuarial Society annual meeting

Derisking is Job One: A Review of Ford and GM's Pension De-Risking Efforts and the Impact on Plan Sponsors
Society of Actuaries webcast, 2012

PBGC Risk-based premiums
2012 Society of Actuaries Meeting

Dynamic Asset Allocation
2012 Enrolled Actuaries Meeting

Derisking Pension Plans
2012 Enrolled Actuaries Meeting

Unique Issues for Hybrid Plans
2011 Society of Actuaries Annual Meeting

Pension Derisking: Start with the End in Mind
2011 Pensions & Investments Liability Driven Investing Conference

Green DB: Making Pension Plans Sustainable
2010 ACOPA Advanced Actuarial Conference
2010 Pensions & Investments Liability Driven Investing Conference

Plan Design for the Future
2010 Enrolled Actuaries Meeting

Assumption Setting for Retirement Plans: Market-based vs. Best Estimate
2010 Society of Actuaries Annual Meeting

Pension Investment Strategies for the 21st Century
2010 Enrolled Actuaries Meeting General Session

Research Highlights

Risk Sentiment: Equity Risk Premiums, Return Forecasting and Capital Markets Modeling (Working Paper, 2019)

Demographic-based Asset Allocation for Public Pension Plans (Nuveen Asset Management, 2017)

How Old is Your Pension Plan? Matching Pension Investing to Plan Demographics (Nuveen Asset Management, 2017)

Pension plan immunization strategies: How close can you get? (Vanguard, 2013)

Frozen pension plans: Is immunization or termination the right choice? (Vanguard, 2012)

Pension Derisking: Start with the end in mind (Vanguard, 2012)

For better pension liability matching, consider adding Treasuries (Vanguard, 2012)

Pension plan termination: Minimizing cost and risk (Vanguard, 2011)

Investment strategies for cash balance plans--more risk than you thought (Vanguard, 2011)

Expert Witness and Public Testimony

Testified before the Minnesota State Public Utilities Commission in the Matter of the Application of Northern States Power Company for Authority to Increase Rates for Electric Service in Minnesota, 2016, 2020

Testified on corporate view of pension risk transfer at DOL ERISA Advisory Committee hearings, 2013

Testified on behalf of American Academy of Actuaries to Government Accounting Standards Board, 2010 Preliminary Views on Pension Accounting and Financial Reporting for Employers

Other

Member of Civil Service Retirement System Board of Actuaries, 2016 -

Consultant to World Bank

- Co-author of Asian Provident Funds: Meeting Tomorrow Challenges with Richard Jackson at the Global Aging Institute, 2020
- Hired to advise Vietnam Social Security (VSS) on Asset-Liability Management, 2019-2020
- Hired to advise the Financial Services Authority of Indonesia (OJK), 2017

- Hired to advise India's pension regulator, Pension Fund Regulatory and Development Authority, 2016
- Hired to support training and guidance on new regulations for Costa Rica's pension supervisory body, SUPEN, 2015

Consultant to PINBox – hired to advise Rwandan government on investment and retirement income issues for national Long-Term Savings Scheme (LTSS)

Chairperson of Pension Finance Task Force (jointly sponsored by the Society of Actuaries and the American Academy of Actuaries), 2009 - 2012

Society of Actuaries Initiatives and Projects

- Member of Professional Development Committee, 2017- 2018
- Chair of Society of Actuaries Investment Section Continuing Education Committee, 2016-2017
- Chair of Project Oversight Group for Longevity Pooling Research, 2016-2017
- Program Chair for 2016 Investment Symposium
- SOA Policy Committee Chair, 2015
- Board partner for research initiatives, 2015
- Board liaison to Investment Section Council, 2013-2015
- Longevity pooling research, chair of project oversight group 2014-2015
- Investment Bootcamp for pension actuaries, 2013
- Investment Section Council, board partner 2012 - 2014
- Seminar on plan terminations, 2011 Annual Meeting
- Pension Section Council, elected member 2008 - 2010
- Retirement 20/20, 2006 - 2010
- Non-mortality decrement task force, 2002 - 2003

American Academy of Actuaries Initiatives and Issue Briefs

- Asset Allocation and the Investment Return Assumption: Don't Put the Cart Before the Horse, 2020
- Public Interest Committee's sustainability initiative, 2014
- Measuring Pension Obligations, 2013
- Retirement for the AGES, 2012 - 2013
- The 80% Funded Standard Myth, 2012

Enrolled Actuaries Meeting Pension Symposiums

- 2014, Retirement in the U.S. – Where Are We Headed? - panels on efficiency, alignment
- 2011, Retirement Security – A Call to Action, panel on retirement income

XEPP Targets

	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>
Equities					
US Equity - Large Cap	15.5 %	15.0 %	18.0 %	16.0 %	14.0 %
US Equity - Small Cap	3.0	5.0	3.0	4.0	4.0
Non-US Equity - EAFE	9.0	8.5	10.0	15.0	14.0
Non-US Equity - EM	9.0	9.5	9.0	6.0	7.0
Total Equities	36.5	38.0	40.0	41.0	39.0
Fixed Income					
Core				2.0	2.0
High Yield	8.5	11.0	9.0	6.0	6.0
EM Debt	9.5	9.5	7.5	6.0	6.0
Total Fixed Income	18.0	20.5	16.5	14.0	14.0
Alternatives					
Fund of Hedge Fund	3.5	4.0	7.5	7.0	7.0
Private Equity	5.0	5.0	5.0	5.0	5.0
Real Estate	7.0	7.5	6.0	6.0	6.0
Commodities				2.0	4.0
Total Alternatives	15.5	16.5	18.5	20.0	22.0
Total Growth Portfolio	70.0	75.0	75.0	75.0	75.0
Immunization Portfolio plus Liquidity Portfolio	30.0	25.0	25.0	25.0	25.0
Total Portfolio					
Total Portfolio	100.0	100.0	100.0	100.0	100.0