Washington State Transit Insurance Pool

Target Fund Balance Review & Analysis
As of December 31, 2017

2018-10-22

Ms. Tracey Christianson
Executive Director
Washington State Transit Insurance Pool
2629 12th Court SW
Olympia, Washington 98502

October 22, 2018

Dear Ms. Christianson:

Please find attached a copy of PricewaterhouseCoopers LLP's target fund balance review for the Washington State Transit Insurance Pool ("the Pool" or "WSTIP").

This study was the result of management and the Board's desire to ensure that the financial metrics used by WSTIP to guide key business decisions and assess its financial strength are well defined and consistent with its member expectations. The study findings are based on the Pool's funding objective and consideration of the financial risks of the program.

We appreciate the opportunity to provide our services to the WSTIP and we look forward to your review of our report. If you have any questions or comments regarding the study, please call Kevin Wick at (206) 398-3518.

Sincerely,

Kevin L. Wick, FCAS, MAAA
Managing Director

Si Yuan (Jordan) He, ACAS, MAAA
Manager

Mark W. Littmann, FCAS, MAAA
Principal

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Purpose

Washington State Transit Insurance Pool has retained PricewaterhouseCoopers LLP ("PwC") to provide a target fund balance study. This review results from the desire of WSTIP management and the Board to ensure that the financial metrics being used to assess the Pool's financial strength and guide key business decisions are consistent with its operating environment and member expectations.

The overall approach in this study leverages recent advances in the broader insurance industry related to the question of the appropriate amount of capital required to support risk. Under this capital modeling approach, the capital requirements of the program are the result of an economic model with the key primary inputs being:

1. Funding objectives as defined by management and the Board, and

2. A comprehensive risk measurement process which identifies and measures the specific financial risks facing the Pool, as well as the interdependence of such risks.

The model is sensitive to changes in the risk profile, such as changes in retention limits, mix of business, investments, and receivables. Due to this flexibility, the model can be used to guide financial risk decisions beyond measuring capital adequacy. Examples include assessing the effectiveness and capital impact of alternative reinsurance programs; change in the investment strategy; and monitoring the results of changes in the financial strength and credit quality of reinsurers.

Distribution and use

This report was prepared for internal use by the management of the Pool. Use of this report for other than the stated purpose may be inappropriate. Judgments as to the conditions, methods, and data contained in this report should be made only after studying the report in its entirety and understanding the reliance and limitations inherent in the analysis, as described in the subsequent sections. The Actuarial Services ("AS") staff of PwC is available to explain or elaborate upon the findings presented in this report, and it is assumed that users of this report will seek out such explanation. Further distribution of this report will not result in the creation of any duty or liability by PwC to a third party.

Reliance on data

The data and underlying Pool financial data used in this analysis are the responsibility of the Pool. PwC assumes no responsibility and makes no representations with respect to the accuracy or completeness of the information provided. To the extent that any changes are noted that could potentially have a material impact on our analysis, it is the responsibility of the Pool to notify us of these changes so that they may be properly reflected.

Data provided by the Pool included the following:

- Historical financial statements
- Interest rate sensitivity analyses performed by FinSer
- Individual claims detail that was also used in the Pool's reserve valuation
- Details of reinsurance programs

Limitations

The analysis and models developed for the analysis utilize methodologies and assumptions that are appropriate to measure specific financial risks of the Pool, based on the Pool's historical loss experience data that was available for our review. However, the extreme tail end of financial results is difficult to measure with certainty due to the lack of relevant empirical experience and volume of loss history for certain lines of business. While we attempted to validate reasonableness of our assumptions against historical data and scenario tests, there always remains a possibility that actual financial uncertainty may deviate from our projection.

Qualifications of actuaries

Kevin Wick is a Managing Director with PricewaterhouseCoopers LLP and is a Fellow of the Casualty Actuarial Society. Si Yuan (Jordan) He is a Manager with PricewaterhouseCoopers LLP and is an Associate of the Casualty Actuarial Society. Mark Littmann is a Principal with PricewaterhouseCoopers LLP and is a Fellow of the Casualty Actuarial Society. As such, Mr. Wick, Mr. He and Mr. Littmann each meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Background

When governmental insurance pools first formed several decades ago, insurance coverage for public entities was becoming either unaffordable or unavailable in the traditional insurance marketplace. Pooling risks with similar entities was an alternative to the insurance marketplace and provided greater cost stability than operating with no insurance protection.

Even with the aggregation of risks from many different entities, the annual costs of the pooling programs were still uncertain and thus some form of capital was required. Initially, the capital for many pools came in the form of a "cash call" provision whereby a pool could assess its membership in the event of a funding shortfall. In essence, the contribution paid was a deposit and there could be a retroactive assessment if the initial deposit was insufficient to pay for the program costs.

Over time, most pools have built up a capital position which serves as a buffer between the budgeted outcomes and potential adverse deviations of actual outcomes. The amount of capital to maintain is largely a function of the members' financial expectations of the program they own and participate in. Operating with a remote chance of returning unpaid losses to members requires more capital than a program which can tolerate periodic cash calls to replenish funding shortfalls.

For most pools, the members' financial expectations of their programs have matured over the years. When pools were first formed, the financial benefit of having an insurance program they could control was much greater than the potential risk and burden of a cash call. However, pool members now expect their insurance program to deliver stable rates, financial soundness, and maintain a focused commitment to their own unique risks. These needs all require capital. In addition, many pools have increased their retention levels and made other financial decisions over time which increases their risk and thus capital requirements. At the same time, pool members face their own financial pressures and may prefer lower rates or a return of pool funds if the program has excess capital available.

WSTIP program

Washington State Transit Insurance Pool began its self-insurance program on January 1, 1989 and currently consists of twenty-five full member transit systems. The following table shows the dates when each member joined the Pool:

Pool Membership Joining Date

Transit System	Membership Date
Ben Franklin Transit	January 1, 1989
Clallam Transit System	January 1, 1989
Community Transit	January 1, 1989
Grays Harbor Transportation Authority	January 1, 1989
Intercity Transit	January 1, 1989
Jefferson Transit	January 1, 1989
Kitsap Transit	January 1, 1989
Pacific Transit System	January 1, 1989
Link Transit	December 4, 1990
Island Transit	August 13, 1992
Mason Transit Authority	January 1, 1993
Skagit Transit	August 1, 1993
Whatcom Transportation Authority	December 19, 1995
Grant Transit Authority	February 1, 1997
Twin Transit	July 1, 2002
Pullman Transit	January 1, 2003
Spokane Transit Authority	July 1, 2004
Valley Transit	December 1, 2004
Columbia County Public Transportation	February 7, 2005
Cowlitz County Transit	March 13, 2005
Everett Transit	May 1, 2005
Yakima Transit	September 1, 2005
Asotin County PBTA	July 1, 2007
Pierce Transit	January 1, 2009
C-Tran	January 1, 2011

The purpose for forming the Pool was to provide member transit systems with programs of joint self-insurance, joint purchasing of insurance and joint contracting for hiring personnel to provide risk management, claims handling, training and administrative services. Insurance coverages provided by the Pool include: automobile liability, general liability, auto physical damage, and property. In the event of a funding shortfall the Pool has reassessment capabilities.

The Pool's governing body consists of its Board of Directors, which is comprised of one representative and at least one alternate from each member system. The Board of Directors meets four times a year. The Executive Committee consists of the Pool's officers (President, Vice President, Secretary and Past President), a representative from each

size transit agency group (small, medium, and large) and one additional representative (at large) which can be from any size agency. The Pool's appointed Treasurer also sits on the Executive Committee as a non-voting member. Once elected as Secretary, the positions roll up through the ranks until rolling off as Past President. The member representatives (large, medium, small, and at large) are elected annually. The Executive Committee handles the day-to-day governance of WSTIP and also serves as the Claim Review Committee in all cases involving indemnity reserves greater than $250,000. The Executive Committee meets almost monthly.

Member systems joining the Pool must remain members for a minimum of three years. A member may withdraw from the Pool at the end of any fiscal year by giving six months written notice of its intent to withdraw. No member may withdraw within its first three years of membership. Any member withdrawing from the Pool may not be allowed to rejoin the Pool for a period of three years.

Historical liability amounts retained by the Pool are presented in the following table.

Historical Liability Amounts Retained

Loss Period	Amount Retained
1/1/89-12/31/92	$250,000 per occ.
1/1/93 - 12/31/94	$300,000 per occ.
1/1/95 - 12/31/96	$300,000 per occ. plus $200,000 agg. deductible of layer in excess of $300,000
1/1/97 - 12/31/98	$300,000 per occ. plus $400,000 agg. deductible of layer $200,000 excess of $300,000
1/1/99 - 12/31/00	$250,000 per occ.
1/1/01 - 12/31/02	$250,000 per occ. plus $250,000 agg. deductible of layer in excess of $250,000
1/1/03 - 12/31/03	$500,000 per occ.
1/1/04 - 12/31/05	$600,000 per occ.
1/1/06 - 12/31/07	$1 million per occ.
1/1/08 - 2/31/08	$1 million per occ. plus 33% of losses $3 million excess of $1 million
1/1/09 - 12/31/10	$1 million per occ. plus $500,000 agg. deductible of layer in excess of $1 million
1/1/11 - 12/31/14	$1 million per occ. plus 17% of losses $3 million excess of $1 million
1/1/15 - 12/31/16	$2 million per occ.
1/1/17 – 12/31/18	$2.5 million per occ.

For general liability losses occurring during 1996 through 1998, the aggregate corridor deductibles do not apply.

All member systems have a $5,000 deductible for Public Officials Liability claims.

The Pool's retentions for first-party losses have been as follows:

- *Property claims:* $250,000 pool retention effective July 1, 2013. $500,000 pool retention from July 1, 2012 through June 30, 2013; $250,000 pool retention from July 1, 2011 through June 30, 2012. Property and auto physical damage deductibles are $5,000 for all members except C-Tran ($10,000 deductible), Pierce Transit ($25,000 deductible), and Spokane Transit ($25,000 deductible); Yakima Transit, Pullman Transit and Everett Transit do not purchase property coverage through the Pool.

- *Auto Physical Damage claims:* $250,000 pool retention effective July 1, 2013. $500,000 pool retention from July 1, 2012 through June 30, 2013; $250,000 pool retention from July 1, 2011 through June 30, 2012. UIM is first dollar coverage. Auto physical damage deductibles are $5,000 for all members except C-Tran ($10,000 deductible), Pierce Transit ($25,000 deductible), and Spokane Transit ($25,000 deductible); Pullman Transit and Everett Transit do not purchase APD coverage through the Pool.

Since January 1, 1998 the Pool has adjusted claims in-house. Prior to that time, GAB Robins, Inc. had adjusted WSTIP's claims.

Throughout this report, we refer to figures from the December 2017 unaudited financial statements, which are attached as Appendix 2. The following table shows a summarized version of these financial statements.

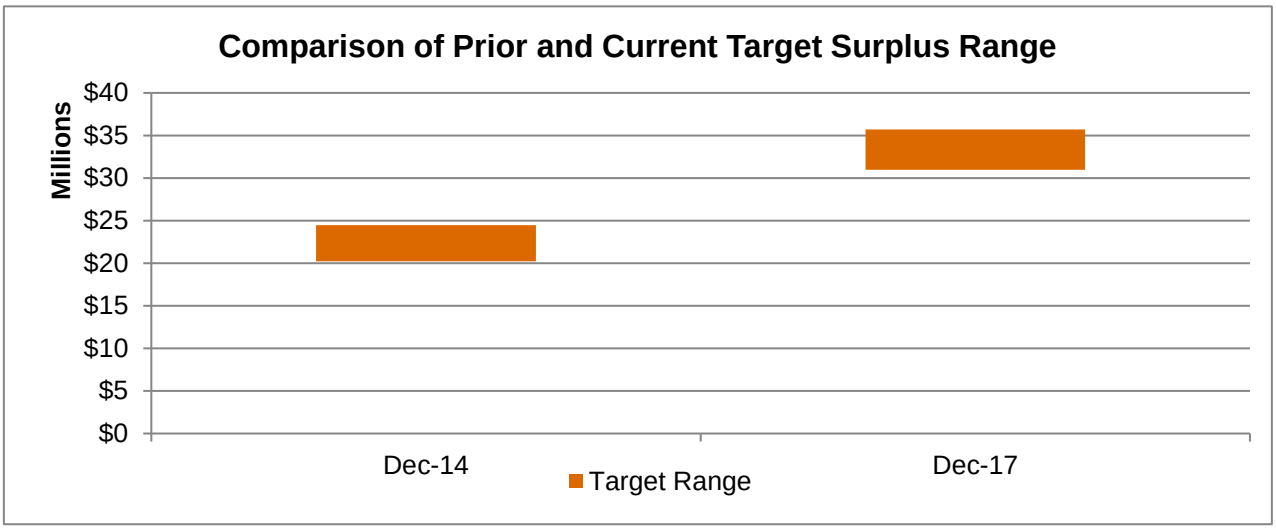
Balance Sheet as of December 31, 2017 ($Millions)			
Assets	**41.4**	**Total Liabilities**	**18.6**
Deposits and Investments	38.9	Unpaid claims	17.6
Equity in GEM	1.4	Other Liabilities	1.0
Other Assets	1.1	**Deferred Inflows of Resources**	**0.1**
Deferred Outflows of Resources	0.1	**Net Position**	**22.7**

Income Statement for Period Ending December 31, 2017 ($Millions)	
Change in Net Position	**0.3**
Revenue	**15.6**
Operating Revenue	15.0
Non-operating Revenue	0.6
Expenses	**15.3**
Incurred Losses	9.9
Insurance Services	2.3
General and Administrative	2.1
Other Operating Expenses	0.9

Key findings

1. The prior capital modeling study prepared by PwC as of December 31, 2014 resulted in a target fund balance range of $20.2 million to $24.5 million, which represented a 1-in-100 year event to a 1-in-200 year event. Using the same risk appetite definition, this updated study resulted in a target fund balance range of $31.0 million to $35.7 million.

   The following chart presents the changes on the funding target range since the prior study:



   The primary reason for the increase in the capital needs relates to higher reserving risk. Since the prior review, the liability retention has increased from $2 million to $2.5 million. As the retention increases, the capital needs will increase as the Pool retains additional risk.

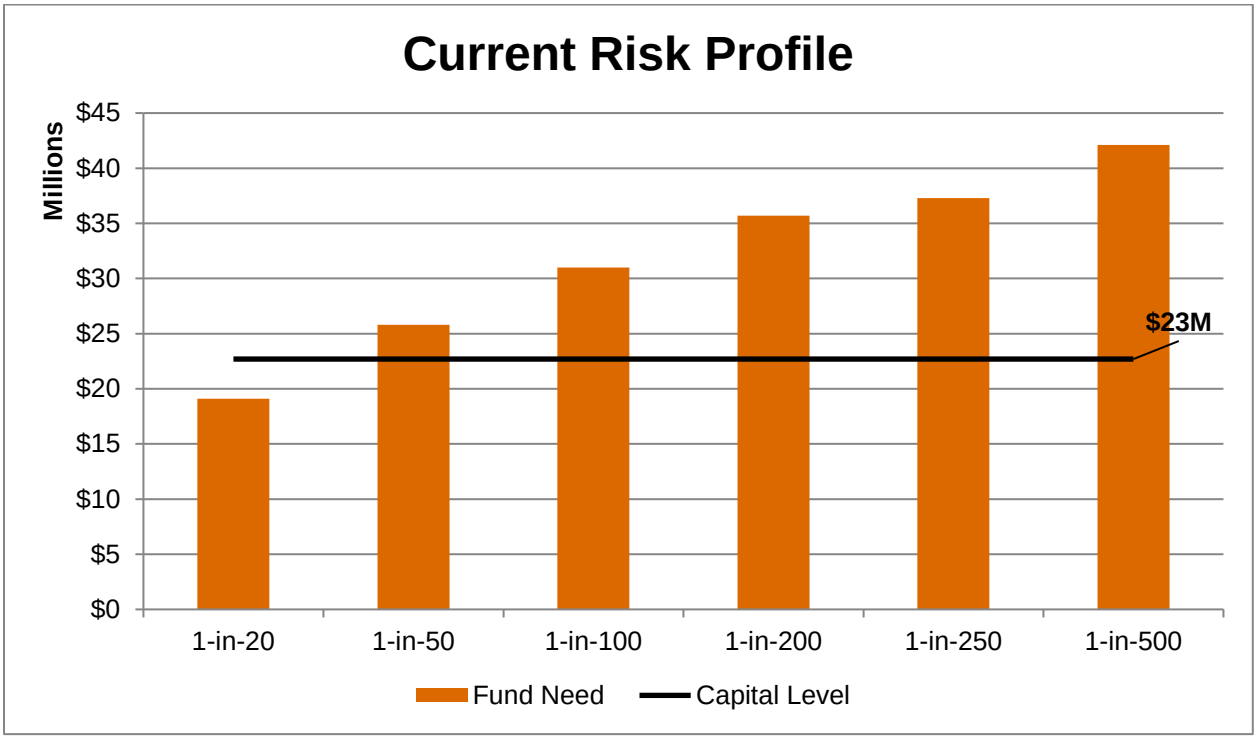
   While the total loss reserves of the Pool remained relatively stable ($17.0 million as of December 31, 2017 compared to $15.9 million as of December 31, 2014), the IBNR (incurred but not reported) estimate has increased sigfinifcantly ($7.3 million as of December 31, 2017 compared to $4.9 million as of December 31, 2014). The higher IBNR estimate has more uncertainty associated with it, thus increasing the reserving risk.

   Lastly, the incurred loss development pattern has been extremely volatile over the past few years. When the prior review was performed, there has been only one year in which the one-year loss development was greater than 85% (2011). Since then the Pool has had two years in which the one-year development exceeds that level (86% for accident year 2014 and 91% for accident year 2016). With the emergence of higher loss development in recent years, there is more uncertainty associated with the reserve development and thus higher capital needs. The following table presents the historical incurred losses and loss development factors since 1998:

Auto Liability
Incurred Loss Development from 12 Months to 24 Months
$2.5 Million SIR

Accident Year	Incurred Losses at 12 Months (1)	Incurred Losses at 24 Months (2)	Loss Development Factor (2)/(1)
1998	532,622	793,269	1.489
1999	836,275	1,139,487	1.363
2000	683,373	782,857	1.146
2001	1,080,688	1,235,258	1.143
2002	730,460	1,275,812	1.747
2003	673,804	775,538	1.151
2004	2,243,015	2,483,953	1.107
2005	1,516,413	2,134,200	1.407
2006	1,856,443	3,278,750	1.766
2007	1,344,533	1,374,967	1.023
2008	3,170,427	5,164,427	1.629
2009	3,107,052	4,790,034	1.542
2010	2,589,384	3,704,781	1.431
2011	2,475,508	4,821,693	**1.948**
2012	1,739,329	2,240,333	1.288
2013	2,491,449	3,217,737	1.292
2014	4,163,470	7,748,586	**1.861**
2015	2,097,236	3,047,886	1.453
2016	1,891,405	3,608,805	**1.908**

2. Based on the Pool's current risk profile, the funding level of $22.7 million as of December 31, 2017 is lower than the estimated fund need at a 1-in-50 year level. The following chart shows the current funding level compared to a range of fund needs at various thresholds. For example, the fund need at the 1-in-100 year level (1 percent chance of failure) at the Pool's current retention is estimated to be $31.0 million.



3. The majority of the fund need relates to the Pool's business of taking on "risks" – that is, insuring members against the risk associated with claims. This is reflected in the underwriting and reserving risk categories. The risk heat map below illustrates the contribution that each risk category and sub-component contributes to the overall level of risk at the current retention and the 1-in-100 year funding level. If there is a significant change in the risk profile, such as changes in retention or changes in the investment portfolio, the shape of heat map will change.

From the risk heat map, the following observations are noted:

1) The "insurance" risk (underwriting risk for the prospective year + reserving risk from prior years) represents the largest share, with 95% of the capital need. This result is not unusual for insurance entities, as insurance risk typically accounts for 70% or more of the total risk

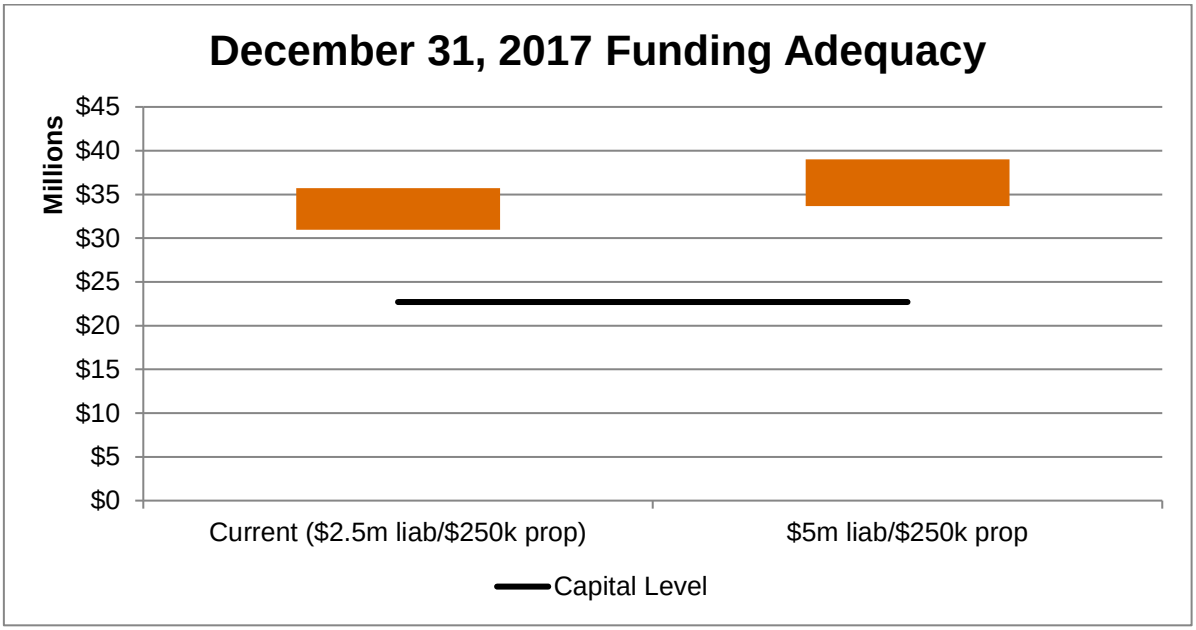
2) Auto liability coverage accounts for 85% of the overall risk

3) Asset and credit risk represents only 3% of the capital need, due to
   a) Minimal interest rate risk – asset portfolio has a short duration
   b) Minimal reinsurer default risk – mostly highly rated reinsurers and high liability retention

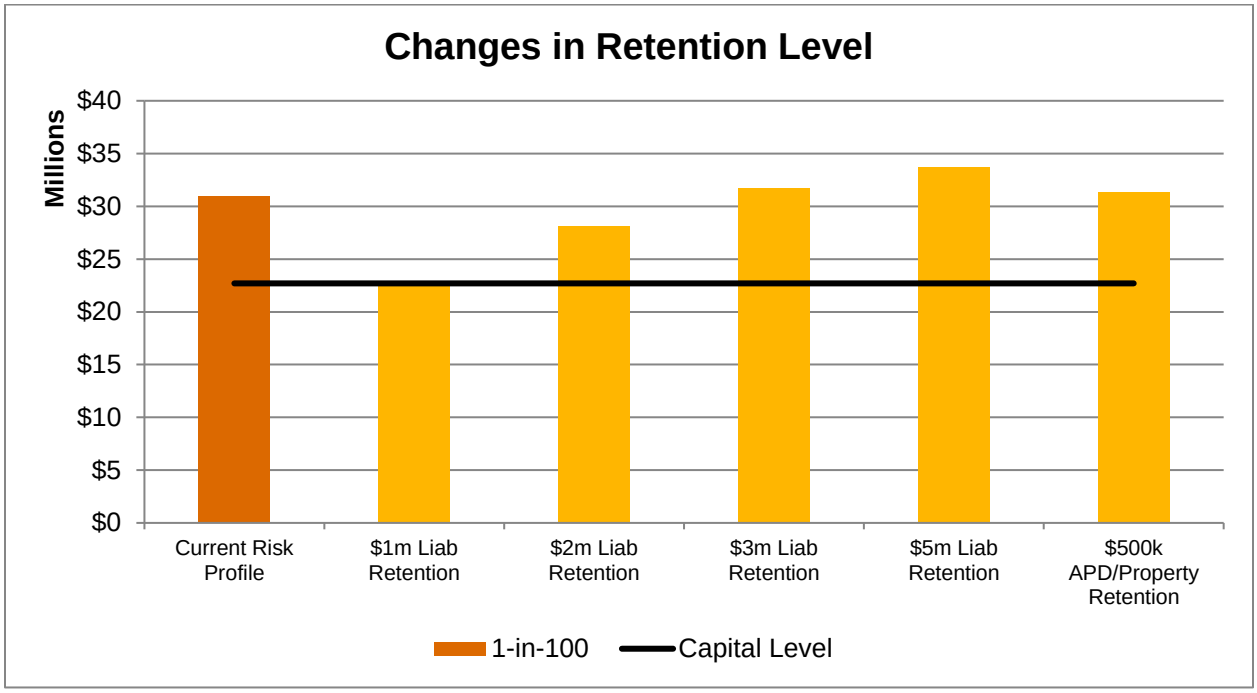
4) Operational risk accounts for only 1% of the capital need

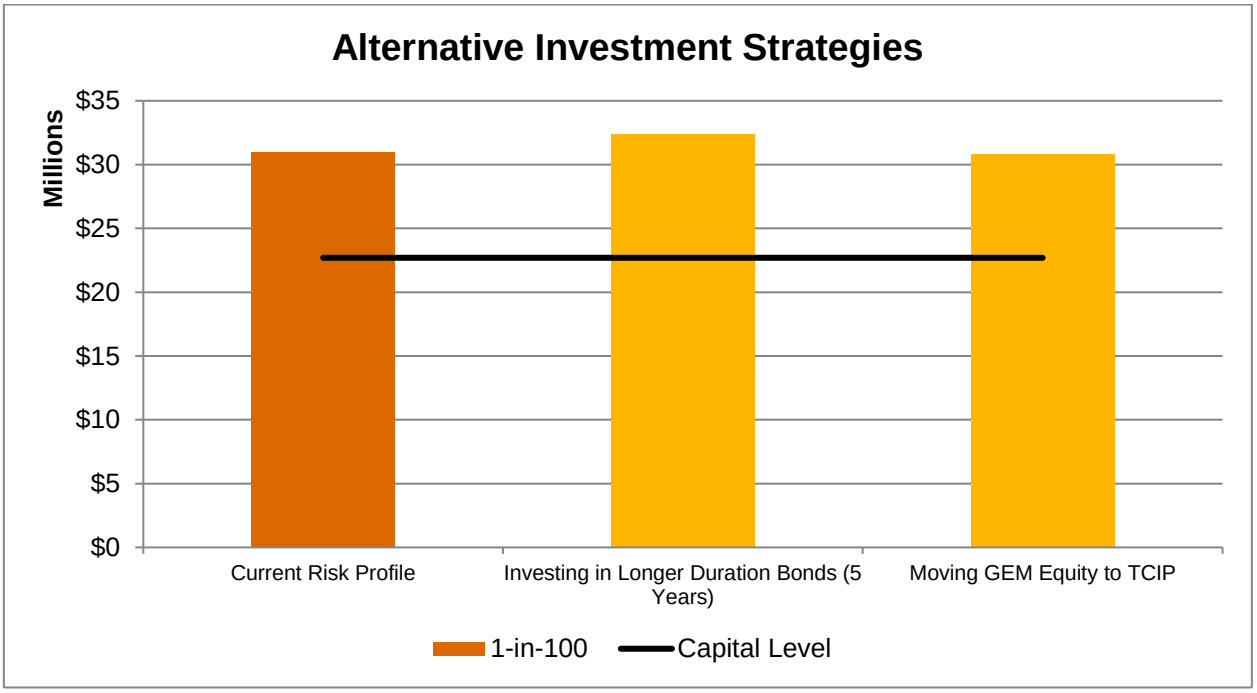
4. WSTIP's management and oversight board also have a long-term goal of accumulating sufficient capital to be largely independent of the commercial insurance market. Meeting this goal has been defined as being in a financial position to support a liability retention level of $5 million per occurrence at a 1-in-100 year event level. The target fund balance necessary to support this secondary goal as of the 2017 fiscal year-end would be between approximately $33.7 million and $39.0 million. The decision whether to increase the retention to $5 million would be dependent on market conditions and other considerations beyond just having sufficient funding.

   The graph below presents the projected December 31, 2017 fund balance along with the Pool's risk profiles under both the current and the $5 million per occurrence scenarios.



5. The required capital will vary depending on the risk profile of the Pool. The underlying economic model allows the measurement of how the capital needs increase or decrease due to changes in the retention and investment mix. The graphs below illustrate how the estimated capital need at the 1-in-100 year level changes under various scenarios.





The various scenarios modeled above are:

A. Current Risk Profile: This scenario reflects the financial risks associated with the current retention and current investment risks

B. $1m Liab Retention: This scenario illustrates the capital needs assuming $1 million liability retention level for all years. As the per occurrence retention decreases, the capital needs will decrease as the Pool retains less risk

C. $2m Liab Retention: This scenario illustrates the capital needs assuming $2 million liability retention level for all years. As the per occurrence retention decreases, the capital needs will decrease as the Pool retains less risk

D. $3m Liab Retention: This scenario illustrates the capital needs assuming $3 million liability retention level for all years. As the per occurrence retention increases, the capital needs will increase as the Pool retains additional risk

E. $5m Liab Retention: This scenario illustrates the capital needs assuming $5 million liability retention level for all years. As the per occurrence retention increases, the capital needs will increase as the Pool retains additional risk

F. $500k APD/Property Retention: This scenario illustrates the capital needs assuming $500,000 APD/Property retention level for all years. As the per occurrence retention increases, the capital needs will increase as the Pool retains additional risk

G. Investing in Longer Duration Bonds: This scenario illustrates the capital needs assuming the Pool invests its assets in longer duration bonds (average duration of five years). As the duration of the fixed-income portfolio increases, the investment assets will be subject to more interest rate risk; therefore the capital needs will increase. In return, the investment earning will be higher

H. Moving GEM Equity to TCIP: This scenario illustrates the capital needs assuming the Pool has the ability to move its equity in GEM to TCIP. As the Pool no longer invests in GEM, there is no investment default risk associated with GEM. However, the interest rate risk will increase as the size of the fixed-income portfolio increases. The overall impact on the capital needs is minimal

Below is the summary result of alternative risk profile scenarios:

Total Fund Need ($M)					
	Fund Need				
Scenario	1-in-50	1-in-100	1-in-200	1-in-250	1-in-500
Current Risk Profile	**25.8**	**31.0**	**35.7**	**37.3**	**42.1**
$1m Liab Retention	18.8	22.6	26.4	27.5	30.9
$2m Liab Retention	23.6	28.1	32.5	34.0	38.4
$3m Liab Retention	26.4	31.7	37.1	38.7	44.0
$5m Liab Retention	27.9	33.7	39.0	40.9	46.3
$500k APD/Property Retention	26.1	31.3	36.1	37.8	42.6
Investing in Longer Duration Bonds (5 Years)	26.8	32.4	37.3	38.9	43.8
Moving GEM Equity to TCIP	25.6	30.8	35.5	37.2	41.9

5. We recommend that at least annually there is a discussion of the target funding and the underlying basis for the target. A more comprehensive review of the Pool's risks and funding policy should be conducted at least once every three years. More frequent reviews are merited if there is a change in the regulatory environment or a significant change in the program such as in membership size. Regular updates will ensure the most up-to-date concepts and approaches are being utilized and considered and that the financial metrics that guide program risk and capital decisions are consistent with the current member expectations.

Project approach

With the advancement of the enterprise risk management framework and computing power for quantifying risks, the insurance industry has been complementing simpler financial ratio metrics and formulaic capital adequacy measures with internal and more robust assessments of risk. Such models are also being increasingly requested by regulators and rating agencies. Overlaying this information with management's risk appetite and tolerance can provide valuable insights into an appropriate level of member protection.

Under this capital adequacy assessment approach, there are two main parameters in determining adequate fund levels:

1. **Risk appetite/tolerance:** The Board's desired level of protection helps define its target funding strategy. Its risk appetite can be translated into specific confidence intervals in the modeling of various risks.

2. **Risk profile of the program**: The study used an approach that is widely known in the insurance industry as economic capital modeling. An economic capital modeling approach reflects an entity's own risk profile. This is the biggest differentiating characteristic when compared to other capital adequacy measures such as NAIC's RBC, rating agency models, reserve confidence levels, and various financial ratio benchmark metrics. From this model, we obtain a distribution of fund needs at all confidence intervals, encompassing all major risk categories.

By enabling companies to visualize their own risk profile and understand the sources of risks in better quantified terms, this approach also helps them make better decisions, by weighing cost of capital against the estimated benefits in terms of earnings and their overall risk appetite. For example, the impact on funding levels of a significant change in retention or business mix can be easily modeled under this approach.

The sections below discuss the two parameters of our approach in detail as they apply to the Pool.

Risk appetite/tolerance

Good target funding strategy, which links to an entity's overall risk appetite or tolerance should consider the following dimensions:

Indicator	Severity	Frequency	Time Horizon
What are we measuring? (all options eventually come back to fund level)	What is the tolerable level of this selected "indicator"?	What is the tolerable frequency that the selected indicator hits the selected severity?	What time horizon is the fund supposed to protect?
• Fund level (most direct) • Some insurers look at RBC or AM Best BCAR, etc. to ensure a certain rating.	• Wiping out entire fund • Reduction in fund to regulatory minimum level • 600% of RBC or 145% BCAR	• 1-in-100 years • 1.0% chance of ruin • 99th percentile confidence level These are all the same!	• The typical time horizon is "one year until runoff," which is most entities' planning cycle

Extremity

The core question for the target funding strategy is "extremity", which is the level of protection the Board or management wishes to provide through its funding.

To answer the question of "what level of protection is considered adequate", we looked at the risk management frameworks built by the property and casualty insurance industry in recent years to address its overall risk appetite. Here are a few benchmark items for consideration:

1. **U.S. insurance regulation by NAIC**: While not specifically calibrated to certain confidence levels for various risks, external consultants who studied the NAIC's RBC system concluded that the factors represent 90th (1-in-10) to 96th (1-in-25) percentile level of protection for an average insurer. It should be recognized, however, that the RBC formula represents a minimum capital requirement for regulatory intervention purposes; therefore the low threshold should not be used to answer questions such as "What is the adequate level of net assets to achieve the Pool's financial goals, operate safely and meet members' expectations?"

2. **European insurance regulation**: The new E.U. regulation, Solvency II, clearly states the calibration standard of a 99.5th percentile (1-in-200), which is consistent with several western European countries' current requirements. This standard is not meant to be a regulatory minimum; instead it is the recommended level of capital adequacy to provide sufficient policyholder protection.

3. **Rating agency models**: Rating agencies, such as AM Best, Standard & Poors, and Moody's, use their own formula-based tools to assess insurance entities' capital adequacy. Their capital adequacy assessments are used as one of the core metrics for determining the financial strength rating. Most rating agencies do not specifically indicate at what confidence level their risk factors in the capital adequacy assessment are calibrated. However, the standards for a "secure" rating of B+ appear to target a 99th percentile (1-in-100) or higher, based on the factors and stress adjustments that are made in their formulaic assessments.

The benchmarks discussed above are from the insurance industry. However, there are a few important operational aspects unique to governmental insurance pools that need to be considered in setting the target equity range.

- Pools do not "manage" their books (i.e. not renewing the policy for the members with worse loss experience) while property & casualty insurance companies exercise this option annually. This higher member retention means pools are exposed to risks arising from having to retain members with poor loss experience, which might in turn require the pools to have a stronger financial position than insurance companies.
- One of the main goals for pooling is rate stability, while insurance companies' main goal is to generate profit. This means the pools are less likely to be able to react to sudden shifts in costs, therefore requiring a stronger financial position than insurance companies.
- Public insurance companies have different sources to raise capital from, while pools only have their members as a sole source of capital.
- Guaranty funds often provide a secondary level of protection for policyholders if the insurer fails, whereas pool members do not have such protection.
- Members often depend on pools for services, such as risk management and education, beyond the insurance mechanism of paying for claims.

These unique aspects of the pool operation all point to a potential need for a stronger financial position for the pools, compared to their insurance industry peers.

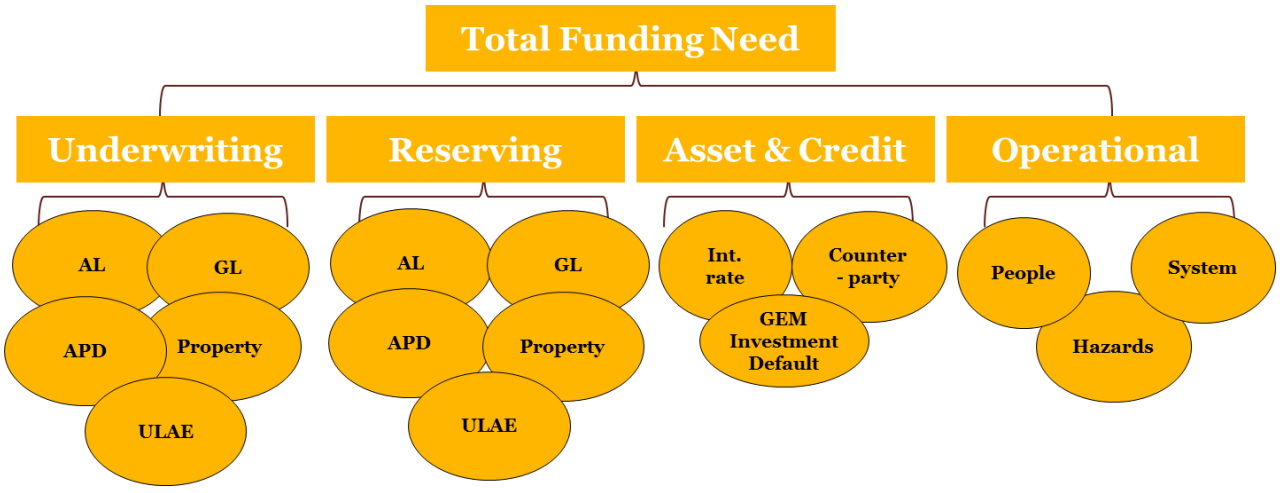
Risk profile of the program

The term "risk" in the context of our review means the possibility or potential for deterioration in the net asset or fund value. Some of the sources for potential deterioration in fund value can be found on the Pool's balance sheet - they would include all asset and liability items that are variable in nature, such as loss reserves, investments, and reinsurance recoverables. Also, the fund is used to protect against potential inadequacy of the budget for future business, which includes one year's worth of business exposure. And lastly, there are operational and administrative events that have a remote chance of occurring and that are not budgeted or reserved for in the financials.

Based on typical categorization of P&C insurance risks and discussions with the management, we have categorized the risks into the following main groups:

Underwriting	Reserving	Asset & Credit	Operational
• Risk that the next year's business result may deviate from plan	• Risk that the eventual loss & expense may exceed booked reserves	• Risk that the value of investment assets and receivables may decrease	• Any other unplanned expense that may arise from operations
• Catastrophic exposures • Systemic losses • Market cycle • Increased severity or frequency of losses • Price inadequacy	• Excessive inflation • Judicial environment on certain claim types • Latent claims • Changes in claims management and case reserving	• Reinsurer failure leading to default on reinsurance recoverable • Bond investment – exposed to interest rate risk and default risk • Equity investment – exposed to market fluctuation	• Disaster recovery • People related (turnover, fraud, reputational) • System and process failure
• Simulation based approach using historical data	**• Simulation based approach using historical data**	**• Based on publicly available market information + own asset profile**	**• Stress scenario test approach based on discussions**

To quantify the risks arising from these major risk categories, we have further segmented each category into appropriate sub-categories that would help the Pool with its future planning, such as types of risks and types of assets. The quantification is done bottom-up as shown in the diagram below: we analyzed and quantified the sub-category level first, and then aggregated to the major risk category levels shown above, and then aggregated the major categories to the total fund needs, arriving at total fund needs at various confidence levels.



Details of our quantification methodologies, assumptions and results, are discussed in the next section of this report.

Quantification of risks

In this section, we discuss the methodologies, main assumptions, and results of our analysis by major risk category, starting from the total fund level down to more granular levels of analysis.

In performing our review, we have built a model we believe to be appropriate for this project in terms of the complexity and practicality. While there are more sophisticated and complex Dynamic Financial Analysis models in the market, use of such models does not necessarily warrant better estimation, since the quality of the estimates depends more on the validity of the model design (e.g. segmentation of risks and data) and assumptions.

Note that details of stochastic, statistical methodologies are described in Appendix 1 and detailed exhibits by risk category are enclosed with this report.

Overall fund needs and aggregation

The overall fund needs were calculated by aggregating the fund needs for major risk categories.

Total Fund Need Under Current Risk Profile ($M)

	Fund Need				
Risk Categories	**1-in-50**	**1-in-100**	**1-in-200**	**1-in-250**	**1-in-500**
Underwriting	9.8	11.9	13.5	14.1	16.2
Reserving	17.0	20.1	23.3	24.4	27.2
Asset and Credit	1.3	1.6	1.8	1.9	2.0
Operational	0.7	1.1	1.4	1.5	1.7
Total Before Diversification	28.8	34.7	40.0	41.9	47.2
Total After Diversification	26.1	31.3	36.1	37.7	42.5
Adjustment for Reserve Discount	(0.4)	(0.4)	(0.4)	(0.4)	(0.4)
Adjusted Total	**25.8**	**31.0**	**35.7**	**37.3**	**42.1**

Note that the fund needs have been adjusted by $0.4 million for reserve discount. This is a measure of the time value of money related to the future payout of loss reserves. Since reserves booked in the financial statements are stated on an undiscounted basis, the economic value of the Pool's net position is understated – this adjustment puts the comparison of surplus to estimated fund need on the same basis.

Simply summing up the fund needs from risk categories at all confidence levels, however, may be unduly pessimistic, since this implies that all elements will go bad to the same degree simultaneously. Since not all risk items are fully dependent on each other, there exists a diversification benefit - the total fund need is less than the sum of all 4 risk categories. The diversification benefit is determined by the level of correlation between each pair of risk categories as well as the spread of risk across categories. Lower correlation and greater spread of risk lead to a higher diversification benefit. The correlation assumptions are shown in the table below.

	Underwriting	Reserving	Asset and Credit	Operational
Underwriting Risk	100%	High	Med	Med
Reserving Risk	High	100%	Med	Low
Asset and Credit Risk	Med	Med	100%	Med
Operational Risk	Med	Low	Med	100%

	Underwriting	Reserving	Asset and Credit	Operational
Underwriting Risk	100%	75%	50%	50%
Reserving Risk	75%	100%	50%	15%
Asset and Credit Risk	50%	50%	100%	50%
Operational Risk	50%	15%	50%	100%

We have first selected high, medium or low for each pair of risks. In doing so, we considered potential correlation of risks at tail end higher confidence levels, because correlation tends to be higher under more stressed situations than under normal situations. Then we assigned percentage correlation values for high, medium and low based on insurance industry benchmarks. Several key characteristics of this correlation and diversification approach are discussed in Appendix 1.

Our logic used in selecting the high, medium and low correlation between major risk categories is as follows:

1. **Underwriting and Reserving:** Both of these risks arise from the core business of pooling and transfer of risk. Therefore, a lot of common factors could cause reserve deterioration and poor future underwriting results simultaneously, such as inflation, tort reform, and emergence of new types of claims, especially for the longer-tailed exposure.

2. **Underwriting and Asset/Credit, Reserving and Asset/Credit:** Asset and credit risks tend to arise from macroeconomic financial factors or systemic factors affecting the overall insurance industry. The underwriting results and reserves for longer tailed liability lines are linked more closely to these factors (e.g., inflation).

3. **Underwriting and Operational:** Catastrophic events, such as earthquakes, can both affect underwriting results and the operational expense related to disaster recovery.

4. **Reserving and Operational:** The type of extreme events that affect operational risks tend to be prospective events such as catastrophes, while the scope of loss reserves are events that have already occurred and unlikely to be affected by operational mishap.

This type of aggregation is done within each major risk category as well; for example, across risk categories and across any other sub-categories we defined during our review. Assumptions used for aggregating across the sub-categories are discussed in major risk category descriptions below.

Overall capital needs under various scenarios

A number of alternative risk profile scenarios were explored:

Total Fund Need ($M)					
	Fund Need				
Scenario	1-in-50	1-in-100	1-in-200	1-in-250	1-in-500
Current Risk Profile	**25.8**	**31.0**	**35.7**	**37.3**	**42.1**
$1m Liab Retention	18.8	22.6	26.4	27.5	30.9
$2m Liab Retention	23.6	28.1	32.5	34.0	38.4
$3m Liab Retention	26.4	31.7	37.1	38.7	44.0
$5m Liab Retention	27.9	33.7	39.0	40.9	46.3
$500k APD/Property Retention	26.1	31.3	36.1	37.8	42.6
Investing in Longer Duration Bonds (5 Years)	26.8	32.4	37.3	38.9	43.8
Moving GEM Equity to TCIP	25.6	30.8	35.5	37.2	41.9

A few points should be noted from the table above:

1. Changing the liability specific retention has a modest impact on the capital need

2. Increasing the APD/property per occurrence retention from $250,000 to $500,000 has minimal impact on the fund needs

3. Different investment strategies will also impact the capital needs differently. Investing in longer duration bonds will result in higher capital needs; Moving GEM equity to TCIP does not change the capital needs significantly.

Underwriting risk

Underwriting risk, also known as pricing risk, represents risk that the actual outcome for the next year (fiscal year 2018) will deviate from the budgeted amount. Typical sources of this risk for the Pool business are volatility in the frequency or severity of claims. Since the expense items are rather predictable, the majority of risk lies within the claims cost. Therefore, we have modeled future claims and the volatility around them to measure underwriting risk.

To do this work, we reviewed the historical unlimited individual claims (before Pool retention). The method we used to measure future claims volatility is a frequency-severity method, which we describe in further detail in Appendix 1. One major advantage of this frequency-severity approach is that it allows direct application of the Pool retention, because individual claims are modeled and simulated.

The resulting fund needs by coverage are shown in the tables below.

Underwriting Risk Under Current Risk Profile ($M)

	Fund Need				
Item	1-in-50	1-in-100	1-in-200	1-in-250	1-in-500
AL	7.6	9.2	10.3	10.8	12.5
GL	1.5	1.9	2.2	2.3	2.6
APD	0.8	0.9	1.1	1.2	1.4
Property	0.3	0.4	0.5	0.5	0.6
ULAE	0.6	0.8	0.9	0.9	1.1
Total Before Diversification	10.9	13.2	15.1	15.7	18.1
Total After Diversification	**9.8**	**11.9**	**13.5**	**14.1**	**16.2**

A summary of the underwriting risk under various scenarios is displayed in the table below.

Underwriting Risk Scenarios ($M)

	Fund Need				
Scenario	1-in-50	1-in-100	1-in-200	1-in-250	1-in-500
Current Retentions	**9.8**	**11.9**	**13.5**	**14.1**	**16.2**
$1m Liab Retention	7.0	8.5	9.9	10.3	11.6
$2m Liab Retention	9.2	11.0	12.6	13.2	14.9
$3m Liab Retention	10.4	12.6	14.5	15.1	17.4
$5m Liab Retention	11.8	14.3	16.5	17.4	19.8
$500k APD/Property Retention	10.0	12.2	13.8	14.4	16.6

A few points should be noted from the table above:

1. Auto liability accounts for a large majority of the underwriting risk
2. ULAE is assumed to be proportional to loss+ALAE
3. Increasing the liability retention will result in a modest increase in the underwriting risk

Correlation assumptions used across items under the underwriting risk category are shown in the table below.

Correlation Between Items Under Underwriting Risk					
Item	AL	GL	APD	Property	ULAE
AL	100%	Med	High	Low	100%
GL	Med	100%	Low	Low	100%
APD	High	Low	100%	Low	100%
Property	Low	Low	Low	100%	100%
ULAE	100%	100%	100%	100%	100%

The logic behind the selected correlation assumptions is that:

1. Liability classes (Auto Liability and General Liability) are similarly driven by the tort law, in terms of frequency and severity behavior of larger claims. Therefore we selected medium correlation between all Liability lines.

2. Auto Physical Damage and Auto Liability are highly correlated because they do share some of the same characteristics and external influences. However, low correlation is assumed between Auto Physical Damage and General Liability and Property.

3. ULAE are assumed to be perfectly correlated with losses, which is supported by the insurance industry experience of ULAE-to-loss.

Reserving risk

Reserving risk measures the potential for actual claims settlement cost deviating unfavorably from the current booked reserves. Typical sources of potential unfavorable reserve development include excessive inflation, emergence of latent or new types of claims, changes in claims management practice and a change in the judicial environment affecting claim settlements.

As we did for underwriting risk, we reviewed historical claim emergence to quantify the reserve variability. Details of the methods used are discussed in Appendix 1.

A summary of the reserving risk by coverage is displayed in the table below.

Reserving Risk Under Current Risk Profile ($M)

	Fund Need				
Item	**1-in-50**	**1-in-100**	**1-in-200**	**1-in-250**	**1-in-500**
AL	15.2	18.0	20.5	21.5	23.9
GL	1.2	1.6	2.2	2.5	2.9
APD	0.5	0.6	0.7	0.8	0.8
Property	0.2	0.2	0.2	0.2	0.3
ULAE	0.6	0.8	0.9	0.9	1.0
Total Before Diversification	17.8	21.1	24.6	25.8	28.9
Total After Diversification	**17.0**	**20.1**	**23.3**	**24.4**	**27.2**

A summary of the reserving risk under various scenarios is displayed in the table below.

Reserving Risk Scenarios ($M)

	Fund Need				
Scenario	**1-in-50**	**1-in-100**	**1-in-200**	**1-in-250**	**1-in-500**
Current Retentions	**17.0**	**20.1**	**23.3**	**24.4**	**27.2**
$1m Liab Retention	12.3	14.5	16.8	17.6	19.7
$2m Liab Retention	15.3	18.0	20.8	21.7	24.5
$3m Liab Retention	17.0	20.2	23.8	24.9	28.0
$5m Liab Retention	17.4	20.7	24.0	25.0	28.2
$500k APD/Property Retention	17.1	20.2	23.4	24.5	27.4

Asset and credit risks

Asset and credit default risks reflect the risks that the value of investment and credit assets may deteriorate due to changes in macroeconomic financial conditions or a decline in the financial strength of debtors.

The resulting fund needs by risk category are shown in the table below.

Asset & Credit Risk Under Current Risk Profile ($M)					
	Fund Need				
Category	1-in-50	1-in-100	1-in-200	1-in-250	1-in-500
Interest Rate Risk	0.9	1.2	1.4	1.4	1.4
Investment Default	0.4	0.4	0.5	0.5	0.6
Reinsurer Default	0.5	0.6	0.7	0.7	0.8
Total Before Diversification	1.8	2.2	2.5	2.6	2.8
Total After Diversification	**1.3**	**1.6**	**1.8**	**1.9**	**2.0**

When interest rates rise, bonds decline in value. The duration of bond assets reflects the degree of the price sensitivity of these assets to interest rate movement.

As of December 31, 2017, WSTIP has $37.5 million with Thurston County Investment Pool (roughly $20 million in treasury notes and the rest is invested in the investment pool) and $0.6 million in Local Government investment Pool.

In order to estimate the impact of interest rate fluctuation to the Pool's fixed income portfolio, WSTIP's investment adviser from FinSer performed an interest rate sensitivity analysis on the Pool's fixed income portfolio.

The duration of bond assets reflects the degree of the price sensitivity of these assets to interest rate movement. If the duration of the bond portfolio is much longer than the duration of loss reserves, then this mismatch further exposes the Pool to asset risk resulting from interest rate changes. In order to measure the net cash flow duration, cash flows from bond assets were offset by expected loss payouts. The net impact of interest rate risk is calculated as the difference of the impact on the bond portfolio and the impact on the reserve discount:

Interest Rate Risk					
	1-in-50	1-in-100	1-in-200	1-in-250	1-in-500
A. $20 million Treasury Notes	1.0	1.2	1.4	1.4	1.5
B. Portion invested in TCIP	0.6	0.7	0.8	0.8	0.9
C. Reserve Discount	-0.6	-0.7	-0.8	-0.8	-0.9
D. Interest Rate Risk ($M) = A + B - C	0.9	1.2	1.4	1.4	1.4

We also explored two alternative asset & credit risk scenarios:

1. If the Pool invests in longer duration bonds (average duration of five years), the asset & credit fund need would increase significantly

2. If the Pool moves its GEM equity into the Thurston County Investment Pool, the asset & credit fund need does not change significantly

Asset & Credit Risk Scenarios ($M)					
	Fund Need				
Scenario	1-in-50	1-in-100	1-in-200	1-in-250	1-in-500
Current Risk Profile	**1.3**	**1.6**	**1.8**	**1.9**	**2.0**
5-Yr Fixed-Income Duration	3.1	3.9	4.4	4.5	4.8
Move GEM Equity to TCIP	1.1	1.4	1.6	1.6	1.7

The other two asset and credit risk categories relate to the Pool's relationship with GEM and its reinsurers. To analyze this credit risk, we estimated the total amount at risk if GEM and the reinsurers were to default on their obligations. The amounts at risk include the following:

Subject Items	Amount ($M)	Note
Recoverable on the prospective (2018) year	0.4	Estimated by PwC
Reinsurance premium for a replacement cover	1.5	125% of reinsurance cost midway through year (assumes higher replacement cost)
Ceded reserve	1.2	Estimated by PwC
Equity Investment in GEM	1.4	2017 WSTIP Financial Report
Total At Risk	**4.5**	

In addition, based on the AM Best publication on mid-term default rate of insurers and exponential extrapolation, we have developed probabilities of default at various rating levels, shown below:

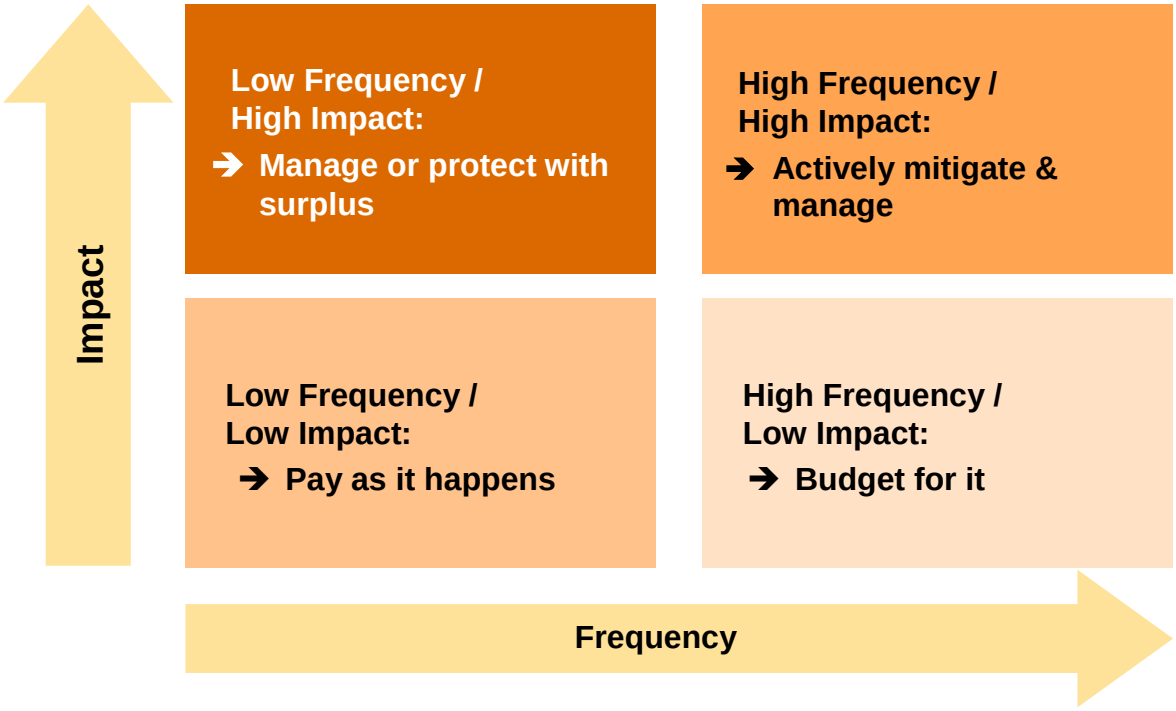
Default Rates						
Rating	Average	1-in-50	1-in-100	1-in-200	1-in-250	1-in-500
a++	0.06%	1.70%	2.00%	2.30%	2.40%	2.70%
a+	0.54%	3.40%	4.00%	4.60%	4.80%	5.40%
a	0.70%	5.10%	6.00%	6.90%	7.19%	8.10%
a-	0.88%	8.49%	10.00%	11.51%	11.99%	13.49%
b+	2.94%	12.74%	15.00%	17.26%	17.98%	20.24%
b	4.30%	25.48%	30.00%	34.52%	35.97%	40.48%
b-	6.22%	33.98%	40.00%	46.02%	47.96%	53.98%
c	9.41%	84.95%	100.00%	100.00%	100.00%	100.00%

For each rating level, the default risk is calcualted as the product of the amount at risk and the probability of default at various return periods.

For asset & credit risk, we assumed that investment default risk is moderately correlated with reinsurer default risk. Low correlation is assumed between the interest rate risk and the two credit risks.

Operational risk

The operational risk category in our study captures the potential for fund deterioration arising from off-balance sheet or unplanned items. The following diagram shows a general risk management framework that categorizes risk events that may be included in an entity's operational risk:



The fund need from the operational risk category is due to risk events that are of low frequency but high severity and that are not mitigated or budgeted for. Difficulties when trying to quantify such risks arise from the lack of experience data. Even within the insurance industry, where a lot of effort has been made to establish risk registers and risk monitoring systems, many insurers have chosen to take the more qualitative approach of monitoring the operational risk events and near-misses and studying the trends in the risk events.

However, for our purposes of reviewing the fund adequacy question, we attempted to quantify this risk by discussing sub-categories of operational risks and relevant potential scenarios with Pool management. The following scenarios were discussed based on the Pool's potential unmitigated exposure and anecdotal experience in the industry and at the Pool:

Category	Amount ($M)	Return Period	Amount ($M)	Return Period	Scenario
People	0.3	1-in-50	0.5	1-in-200	Fraudulent activities by employees, broker, etc.
System	0.5	1-in-100	0.5	1-in-250	System back-up failure or vendor default
Catastrophe	0.3	1-in-50	1.0	1-in-250	A major catastrophic event affecting the pool's property, business interruption, and potentially staff loss

As shown in the table, the scenarios have financial impact and probability estimated for two data points each, and we fitted distributions through these data points to extrapolate the result to various confidence levels.

The table below summarizes the operational risk at various confidence levels:

Operational Risk ($M)					
	Fund Need				
Category	1-in-50	1-in-100	1-in-200	1-in-250	1-in-500
People	0.3	0.4	0.5	0.5	0.6
System	0.5	0.5	0.5	0.5	0.5
Catastrophe	0.3	0.6	0.9	1.0	1.2
Total Before Diversification	1.0	1.5	1.9	2.0	2.3
Total After Diversification	**0.7**	**1.1**	**1.4**	**1.5**	**1.7**

Appendix 1 - Description of the Methods Used in Our Review

Underwriting risk

PwC utilized a Frequency-Severity approach as the general framework for estimating underwriting risk. We separately modeled the severity of individual claims and the frequency of claims for each coverage. Severity parameters and distribution shapes are selected based on historical individual claims, which are developed and trended to the future year level. Development was applied only to open claims.

Historical claim frequency per exposure by accident year was examined to project an expected number of claims and the variability around this expected number. The frequency and severity parameters were assumed to be independent. Because there is a large volume of smaller attritional losses, we modeled these claims separately.

In our modeling, we introduced high severity shock claims to the Pool's own claim history to reflect the experience of similar pools.

The main assumptions used in the frequency-severity method are listed below:

Frequency for Large Losses Only

Coverage	Large Loss Threshold	Average # Claims	Standard Deviation	Distribution
AL	$100K	10	6	Negative Binomial
GL	$75K	3	2	Poisson
APD	$25K	6	5	Negative Binomial
Property	-	16	15	Exponential

Severity for Large Losses Only

Coverage	Average	Standard Deviation	Distribution	Shock Loss Range	Shock Loss Distribution	Shock Loss Probability
AL	485,628	932,560	Inverse Gaussian	-	-	-
GL	202,099	233,360	Inverse Gaussian	-	-	-
APD	66,707	84,469	Inverse Gaussian	$0.5M - $2.5M	Triangle	1%
Property	5,854	31,618	Inverse Gaussian	$1M - $10M	Triangle	0.2%

Attritional Loss Rate (losses per exposure)

Coverage	Exposure Unit	Average	Standard Deviation	Distribution
AL	Miles (000's)	31.17	9.17	Extreme Value
GL	Number of Employees	46.97	25.24	Uniform
APD	Vehicle Value (in millions)	986.03	454.71	Normal

Using the selected of distributions for frequency and severity, simulations were run of ultimate losses for the 2018 underwriting year. Both gross estimates and estimates limited to the current retention level were modeled, as well as other contemplated retention levels. Based on the outcome of the simulations, percentiles of fund needs were developed for the risks analyzed. These percentiles range from a 1-in-5 year event, to a 1-in-1000 year event.

Reserving risk

To quantify the reserving risk, we focus on fitting a distribution around the incremental development factors. The distributions were fit by setting the means equal to the selected incremental development factors and the standard deviations equal to the standard deviations of the incremental year over year development. Due to a low volume of data in some of the older years, we removed some outlier development factors that were distorting the behavior of the simulated LDFs.

Correlation and diversification

The following are key characteristics of our correlation and diversification approach.

1. The higher the correlation, the less the diversification effect.

2. Diversification benefit is greater if each risk component is more equally sized, under the same correlation assumptions.

3. Diversification benefit is allocated back to each risk category, based on each category's contribution to the overall diversification effect. For example, assuming all risk categories are equally sized, operational risk would receive the most diversification effect; because its correlation with other categories is the lowest (see the correlation matrix in the "Quantification of risks" section).

4. Smaller items tend to get diversified away, which means a higher percentage of smaller risk items will be reduced due to diversification. This is a characteristic of the particular allocation method we have chosen, which is based on contribution of each risk item to overall diversification.

5. Correlation matrix needs to be "positive definite". This statistical term basically means that the correlation relationship between a pair of risks needs to make sense based on the correlation relationships that involve one of these risks. For a very simple example, let's assume there are 3 risks we are reviewing - A, B and C. If A and B are 100% correlated and B and C are 100% correlated, then A and C need to be also 100% correlated.

Appendix 2 –Financial Statements as of December 31, 2017

Comparative Statement of Net Position

As of December 31, 2017 and 2016

Assets	**2017**	**2016**
Current Assets		
Deposits and Investments (Note 2)	$38,859,269	$38,071,612
Accounts Receivable (Note 1d)	$151,506	$37,680
Prepaid Expense	$508,269	$538,342
Total Current Assets	$39,519,044	$38,647,635
Noncurrent Assets		
Capital Assets (Note 9) (Net of Accumulated Depreciation)	$456,942	$394,186
Equity in Government Entity Mutual (GEM) (Note 8)	$1,385,780	$1,273,834
Total Noncurrent Assets	$1,842,722	$1,668,020
Total Assets	**$41,361,766**	**$40,315,655**
Deferred Outflows of Resources		
Pension Related (Notes 1, 6)	$99,992	$158,484
Total Deferred Outflows of Resources	**$99,992**	**$158,484**
Liabilities		
Current Liabilities		
Accounts Payable	$170,221	$53,562
Compensated Absences, Current Portion (Note 14)	$60,466	$0
Unpaid Claims Liability (Note 10)	$17,000,771	$16,307,512
Unallocated Loss Adjustment Expense Reserve (Note 10)	$630,000	$610,000
Total Current Liabilities	**$17,861,458**	**$16,971,074**
Noncurrent Liabilities		
Compensated Absences (Note 14)	$107,277	$159,408
Owed to Risk Pool Leadership Development Program (Note 15)	$10,779	$19,062
Net Pension Liabilities (Note 1, 6)	$656,773	$895,328
Total Noncurrent Liabilities	$774,829	$1,073,798
Total Liabilities	**$18,636,287**	**$18,044,872**
Deferred Inflows of Resources		
Pension Related (Notes 1, 6)	$127,964	$16,139
Total Deferred Inflows of Resources	$127,964	$16,139
Net Position		
Net Investment in Capital Assets	$456,942	$394,186
Unrestricted Building Reserve (Note 9)	$17,786	$71,193
Unrestricted Net Position	$22,222,779	$21,947,749
Total Net Position	**$22,697,507**	**$22,413,128**

The accompanying notes are an integral part of these financial statements.

Comparative Statement of Revenues, Expenses, and Changes in Net Position

For the years ended December 31, 2017 and 2016

	2017	2016
Operating Revenues		
Member Assessments	$14,327,086	$12,864,133
Program Revenues (Note 1.B)	$643,944	$246,845
Total Operating Revenues	**$14,971,030**	**$13,110,978**
Operating Expenses		
Incurred Loss / Loss Adjustment Expenses		
Claims Paid	$7,793,770	$6,463,393
Change in Unpaid Claims Liability	$1,685,521	$(1,014,747)
Unallocated Loss Adjustment Expense	$448,776	$402,229
Total Incurred Loss/Loss Adjustment Expense	$9,928,067	$5,850,875
Insurance Services		
Excess / Reinsurance Premiums	$2,215,091	$2,107,752
Brokerage Fee	$101,200	$101,200
Total Insurance Services	**$2,316,291**	**$2,208,952**
General and Administrative Expenses	$2,063,061	$2,504,064
Member Services Expenses[1]	$555,215	$560,642
Depreciation Expense	$15,923	$15,114
Program Expenses[2]	$371,749	$0
Total Operating Expenses	**$15,250,306**	**$11,139,647**
Operating Income (Loss)	**$(279,276)**	**$1,971,331**
Nonoperating Revenues (Expenses)		
Interest and Dividend Income	$451,709	$333,454
Changes in Equity in GEM	$111,946	$91,756
Total Nonoperating Revenues and Expenses	$563,655	$425,210
Change in Net Position	**$284,379**	**$2,396,541**
Total Net Position January 1	$22,413,128	$20,016,587
Total Net Position, December 31	**$22,697,507**	**$22,413,128**

The accompanying notes are an integral part of these financial statements.

[1] Previously reported as Other Insurance Services.

[2] Program Expenses includes Driver Record Monitoring (DRM) and the WSTIP Training programs which was previously reported as part of General Administrative Expenses. See note 1(B).

Appendix 3 – Interim Presentations

Washington State Transit Insurance Pool

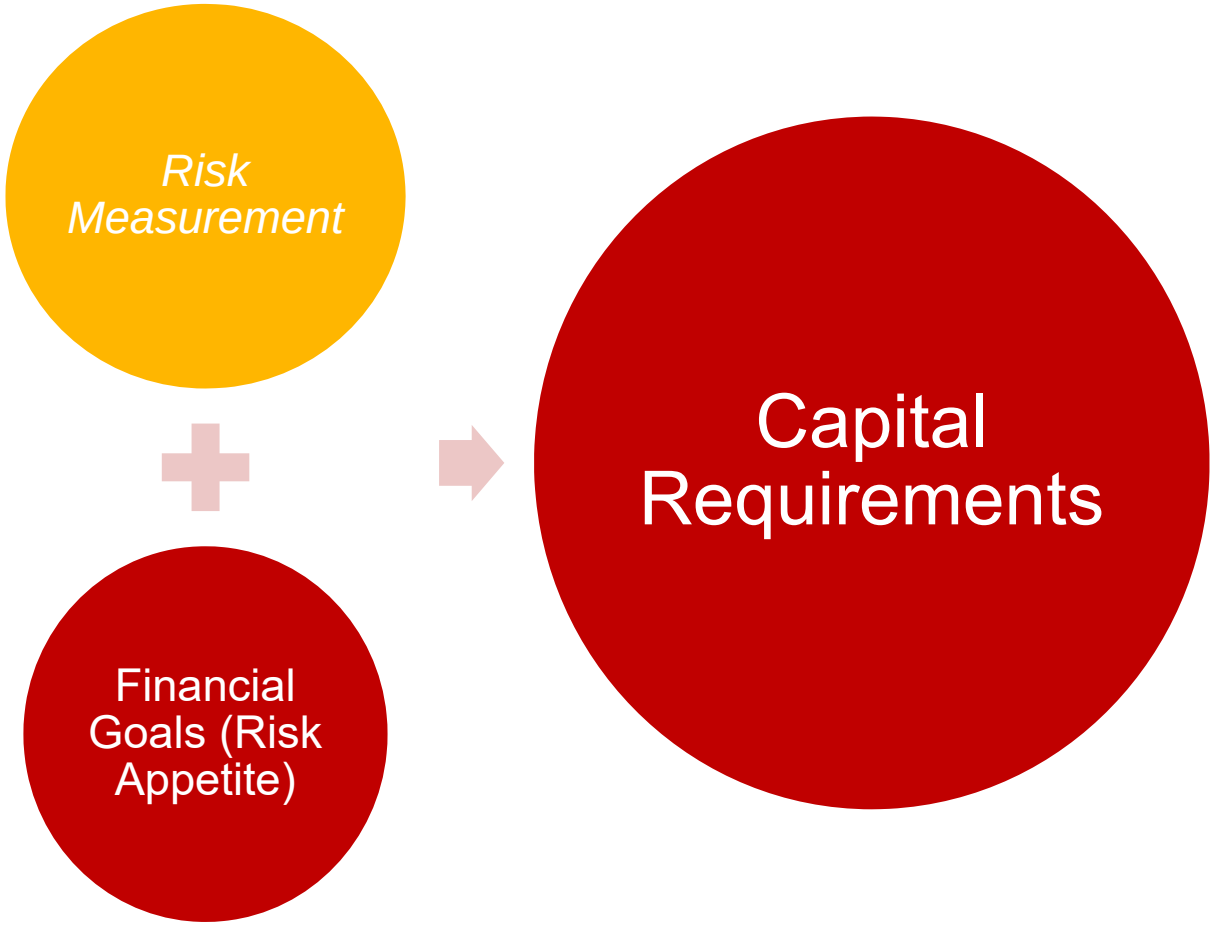
Target Fund Balance Review & Analysis

Preliminary Meeting
August 29, 2018

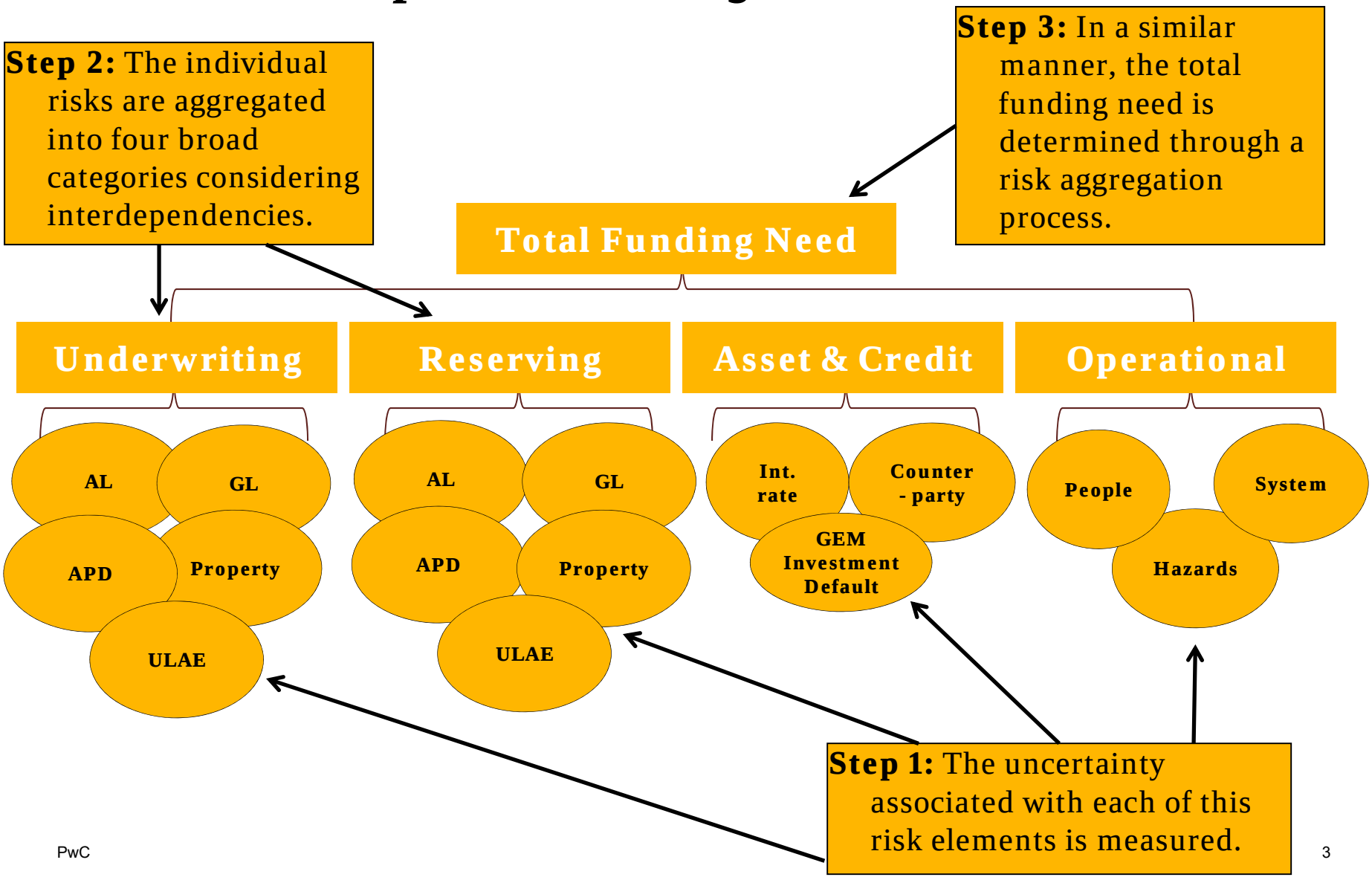
DISCUSSION PURPOSES ONLY

pwc

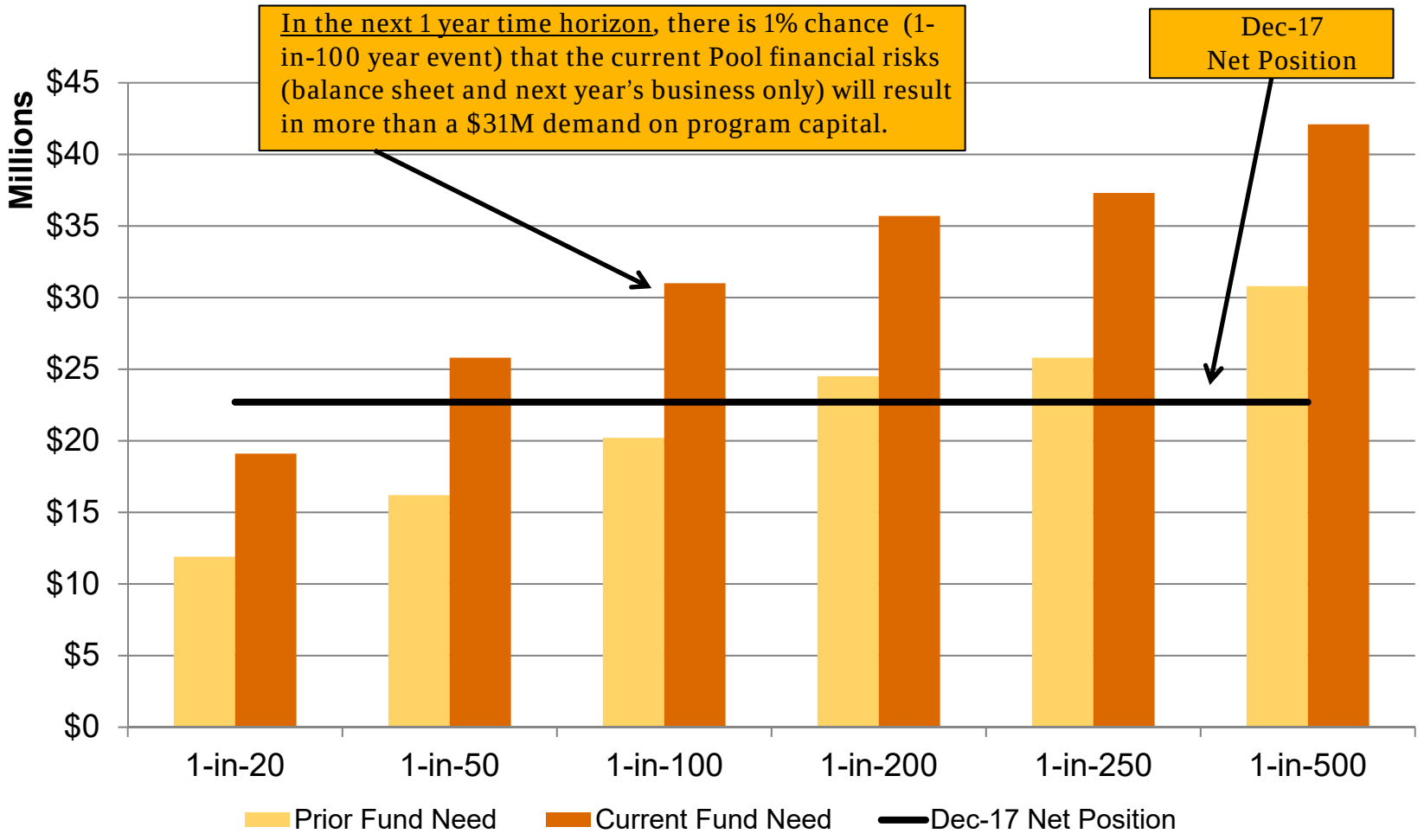
Determining Capital Targets



How Does Capital Modeling Work?



Overall Results (Dec-14 vs. Dec-17)



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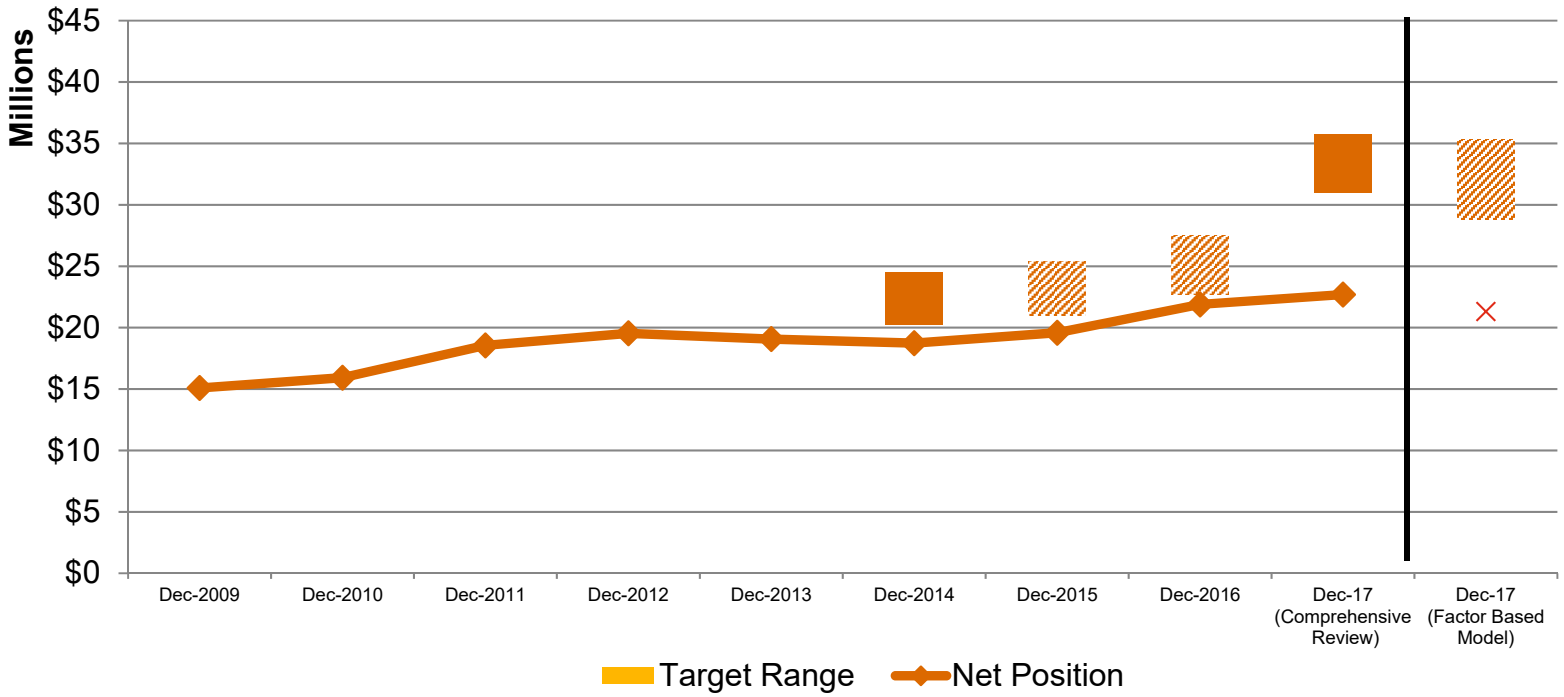

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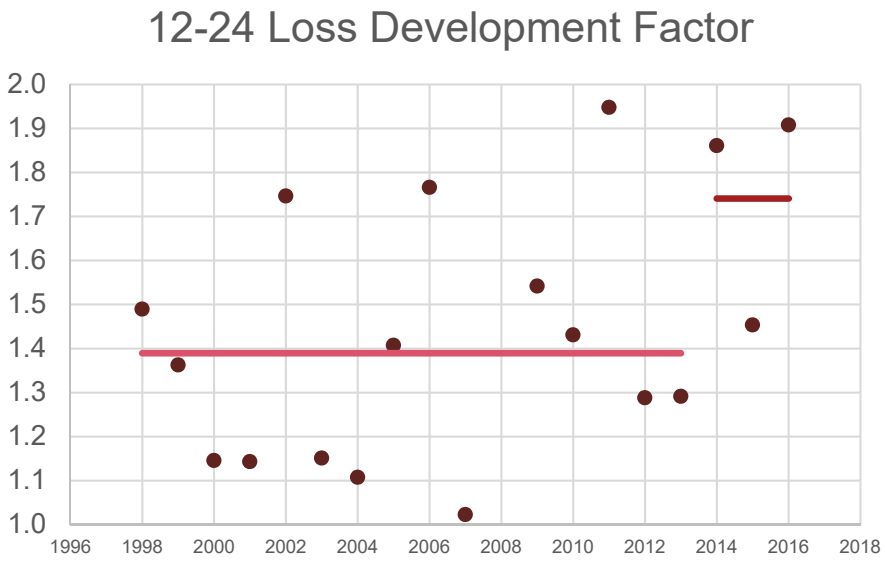

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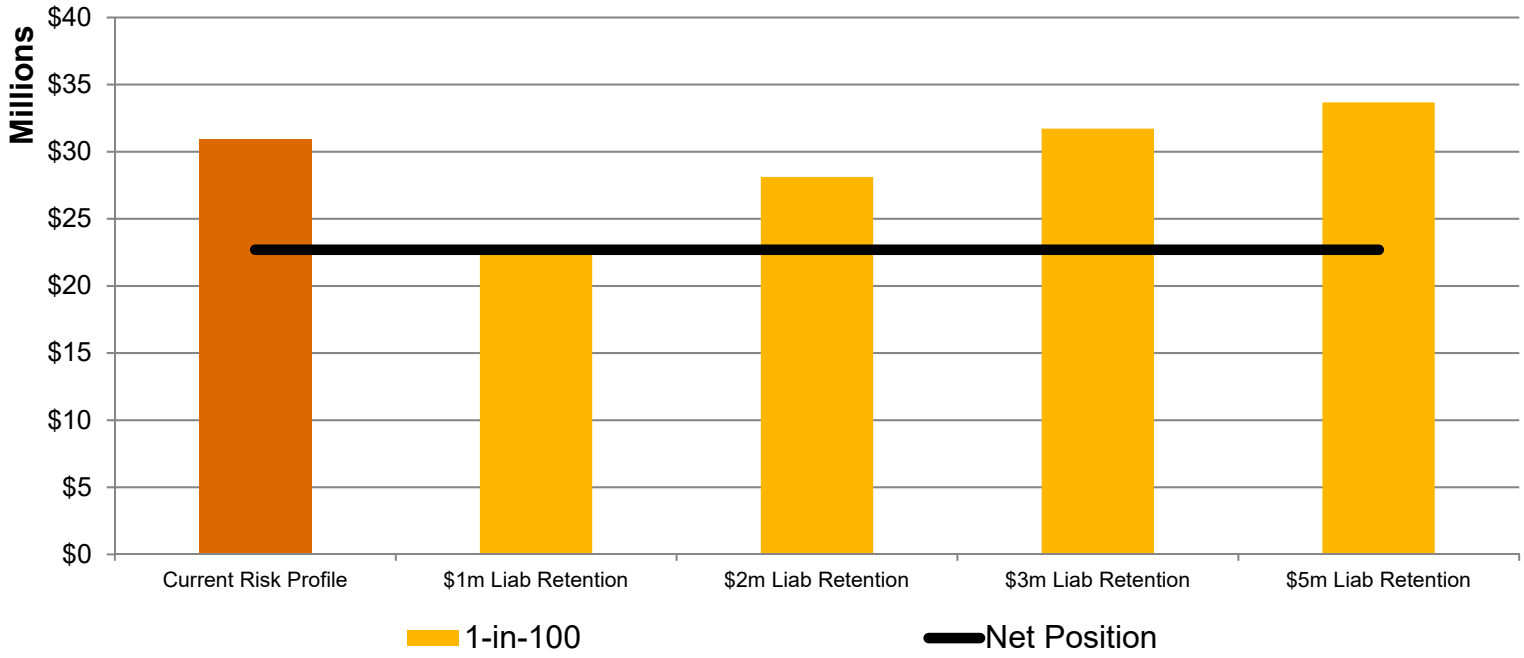

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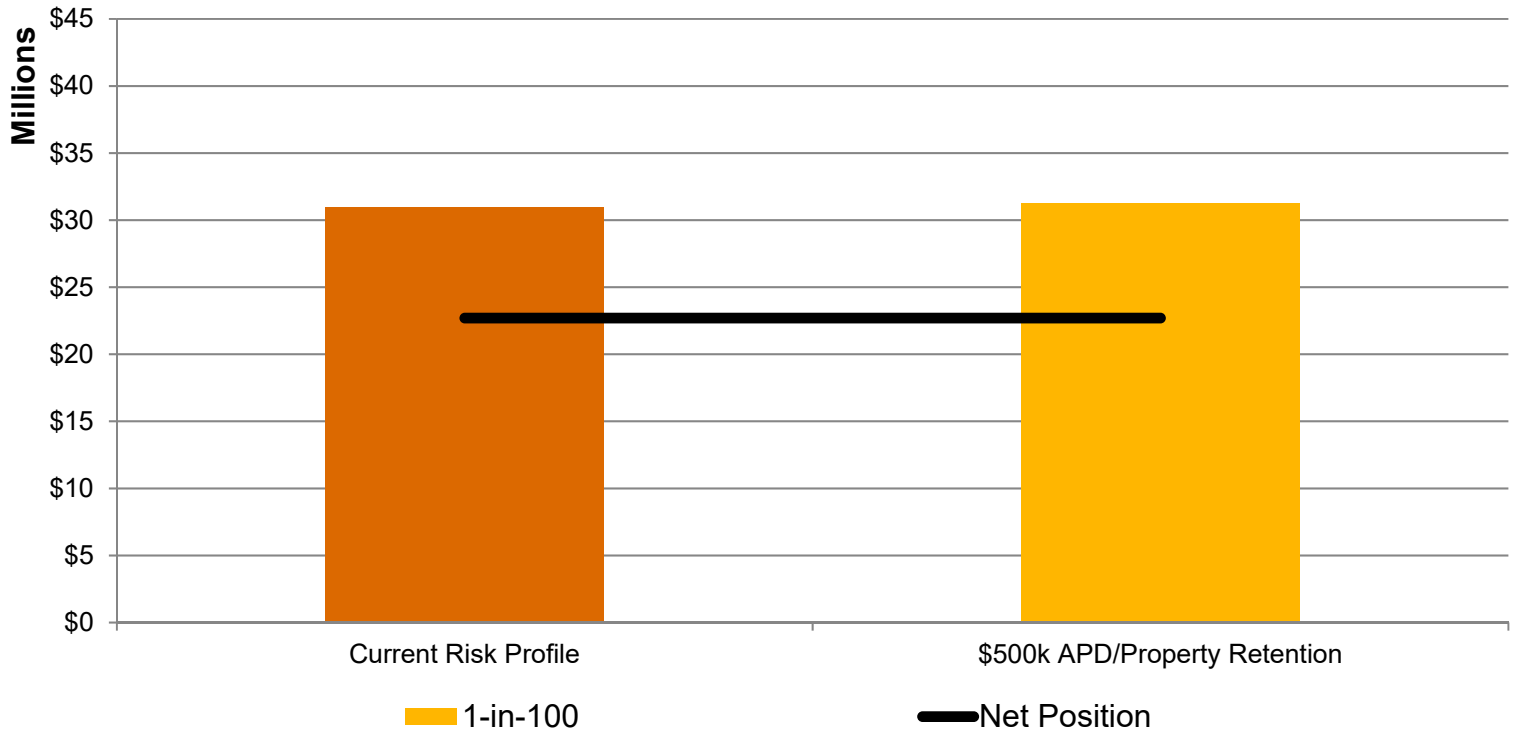

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- Current investment portfolio:
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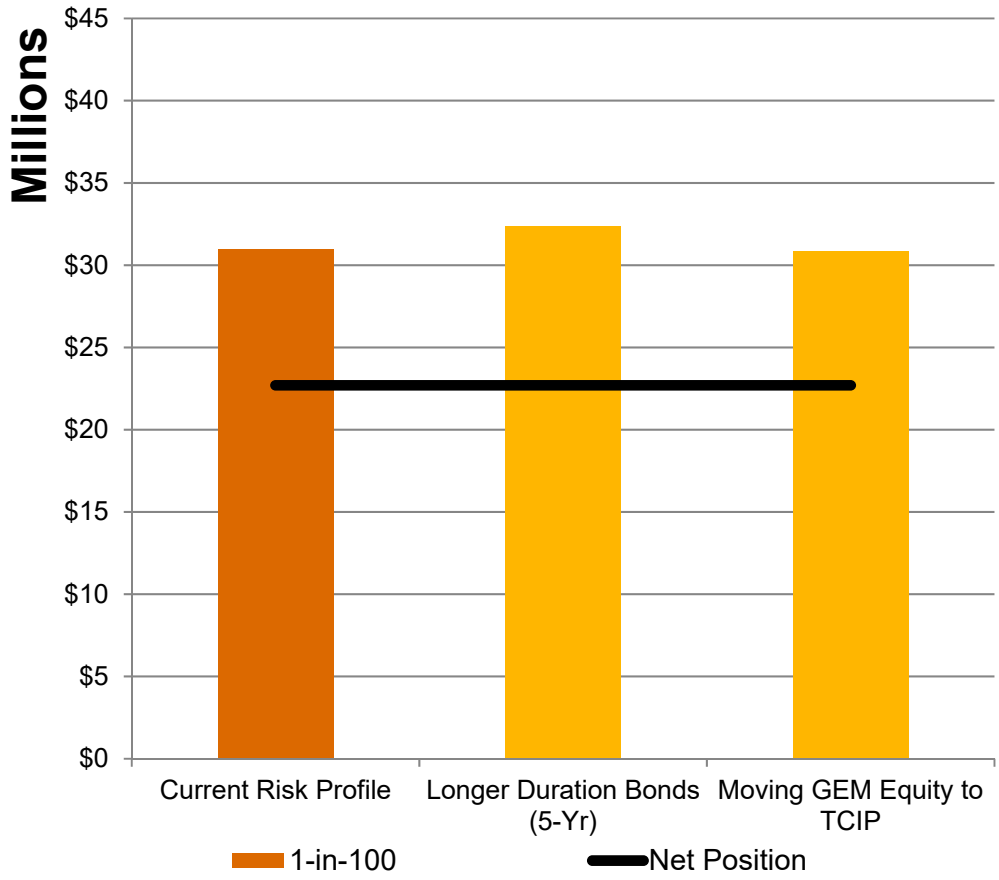

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	Total Fund Need ($Millions)					
Scenario	1-in-20	1-in-50	1-in-100	1-in-200	1-in-250	1-in-500
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$500k APD/Property Retention	19.3	26.1	31.3	36.1	37.8	42.6
Investing in Longer Duration Bonds (5 Years)	20.1	26.8	32.4	37.3	38.9	43.8
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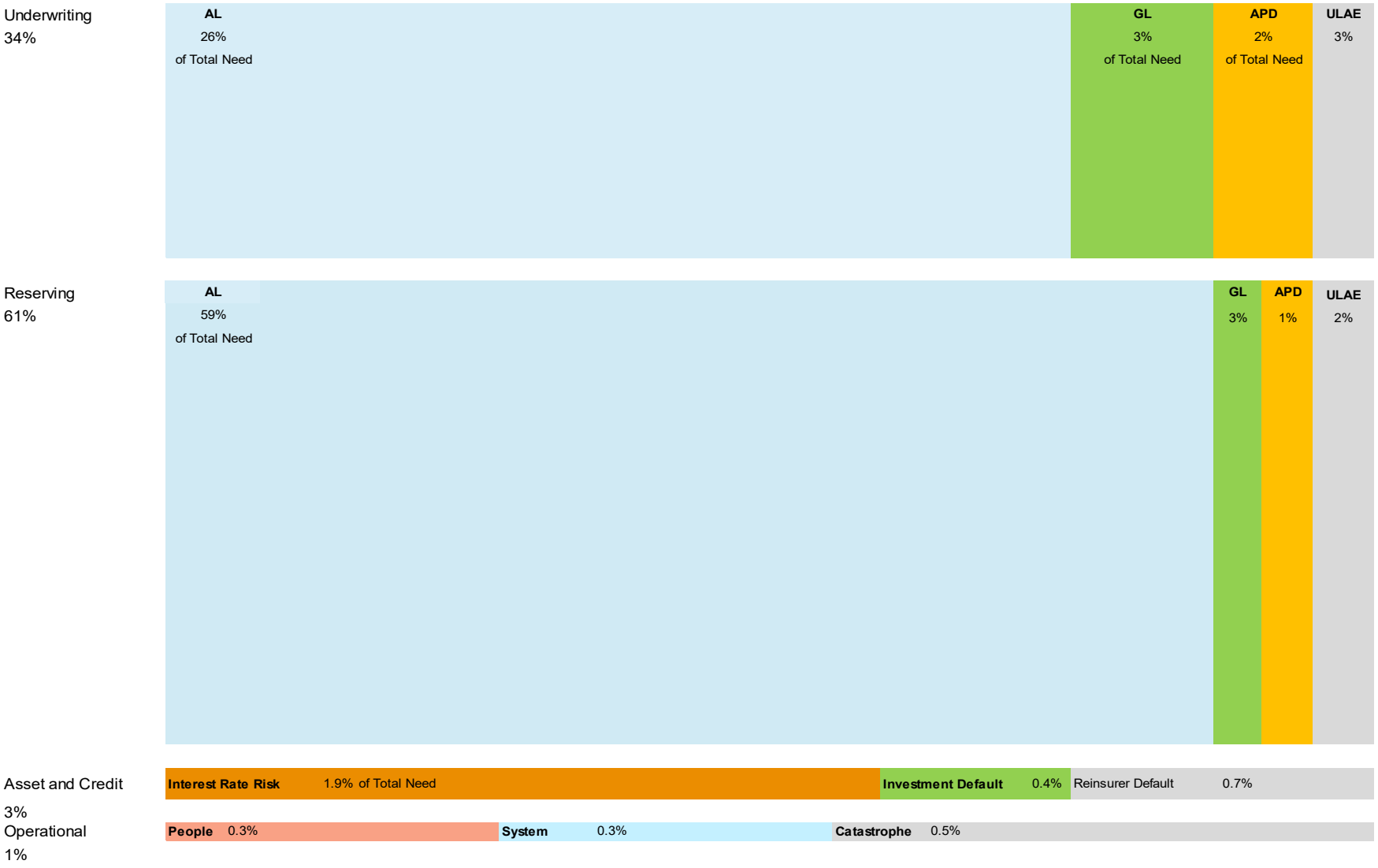
The heatmap shows the sources of capital need at 1-in-100 level:



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- Insurance risk (underwriting risk for prospective year + reserving risk from prior years) represents approximately 95% of the capital need
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- Reserving risk represents over 60% of the capital need
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- Asset and credit risk represents 3% of the capital need
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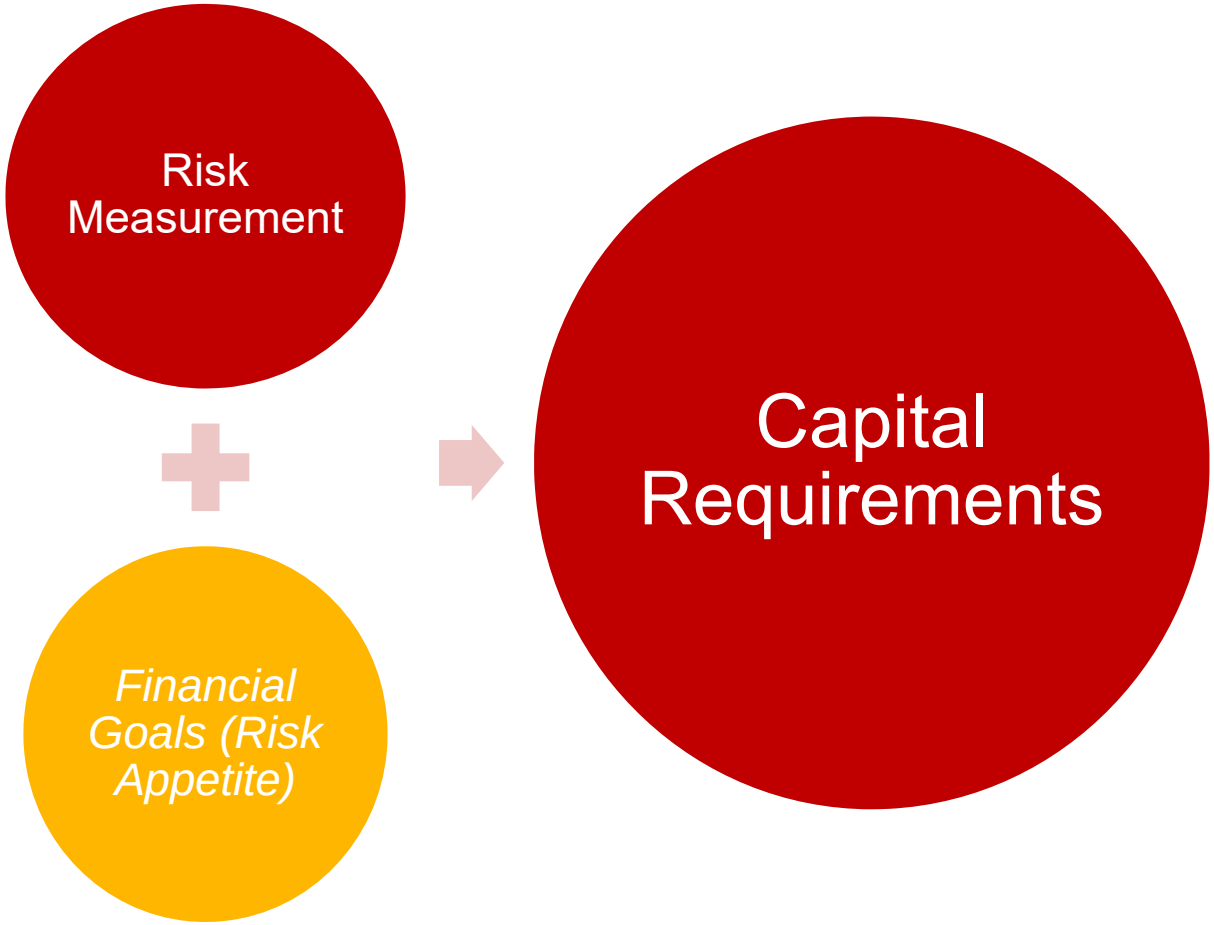

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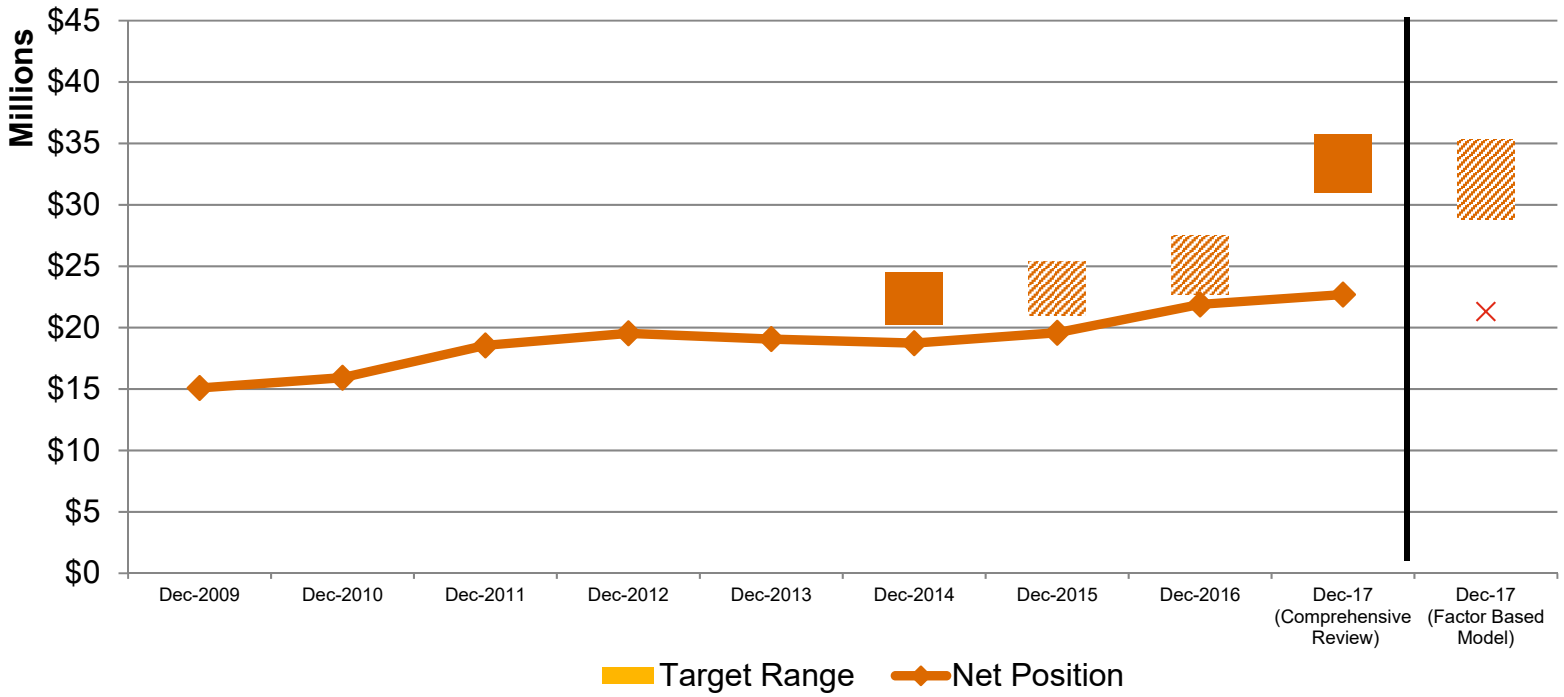

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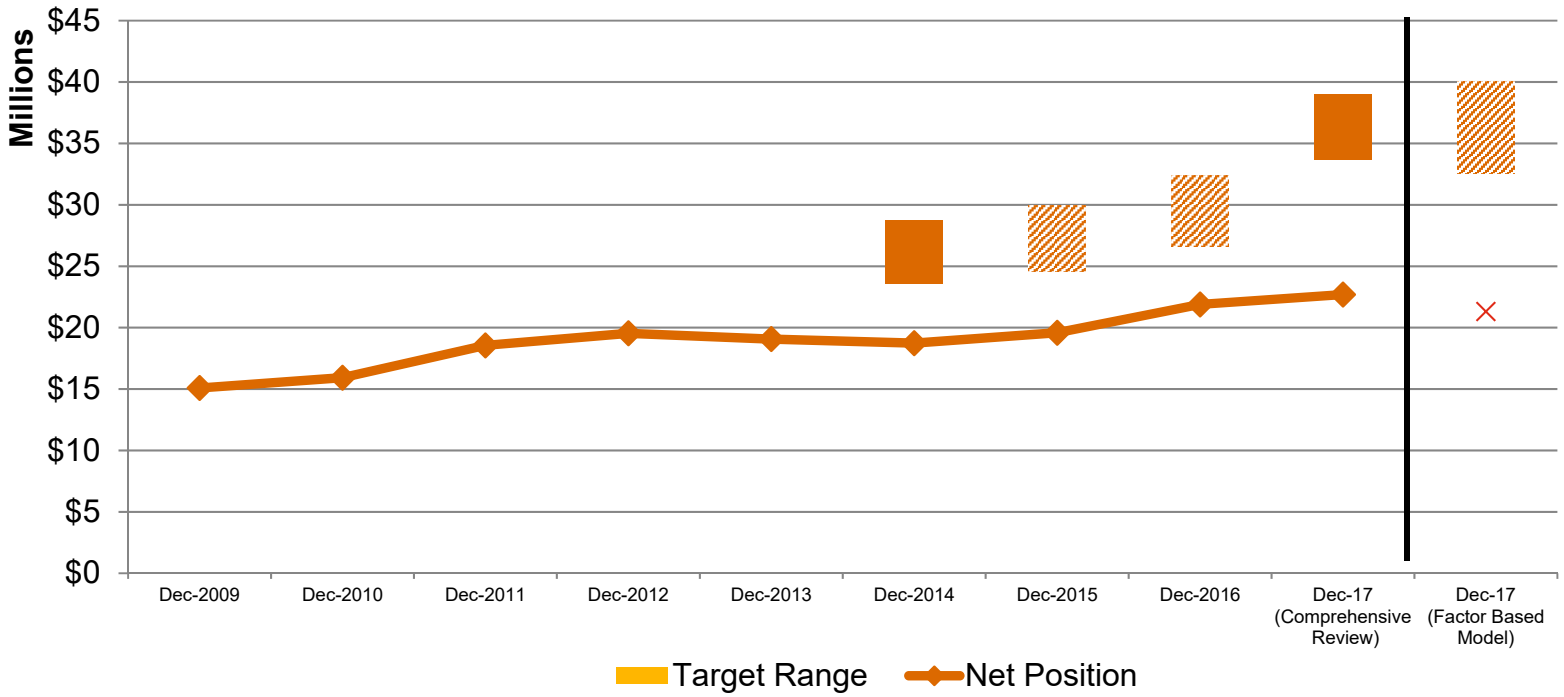

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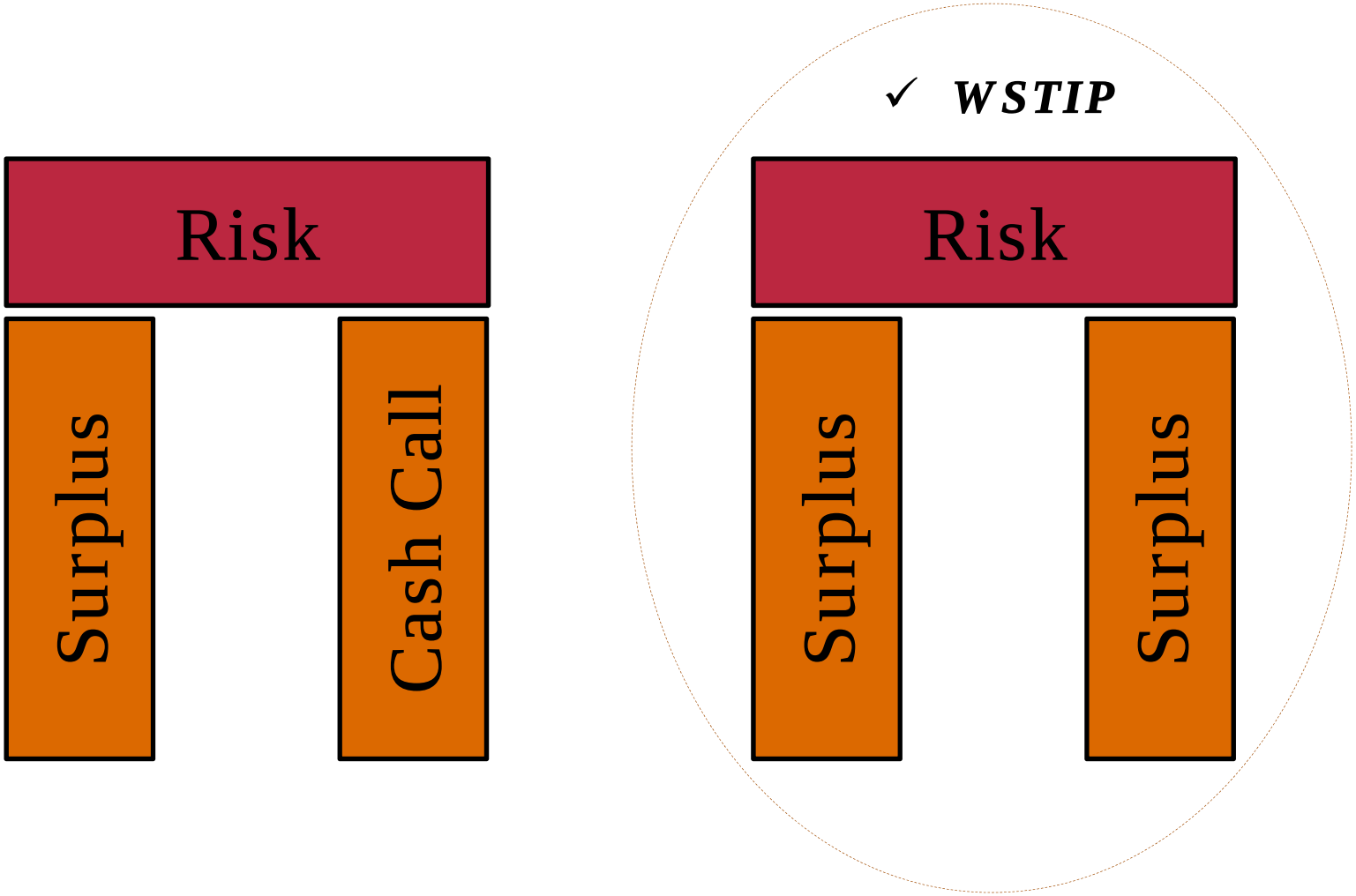

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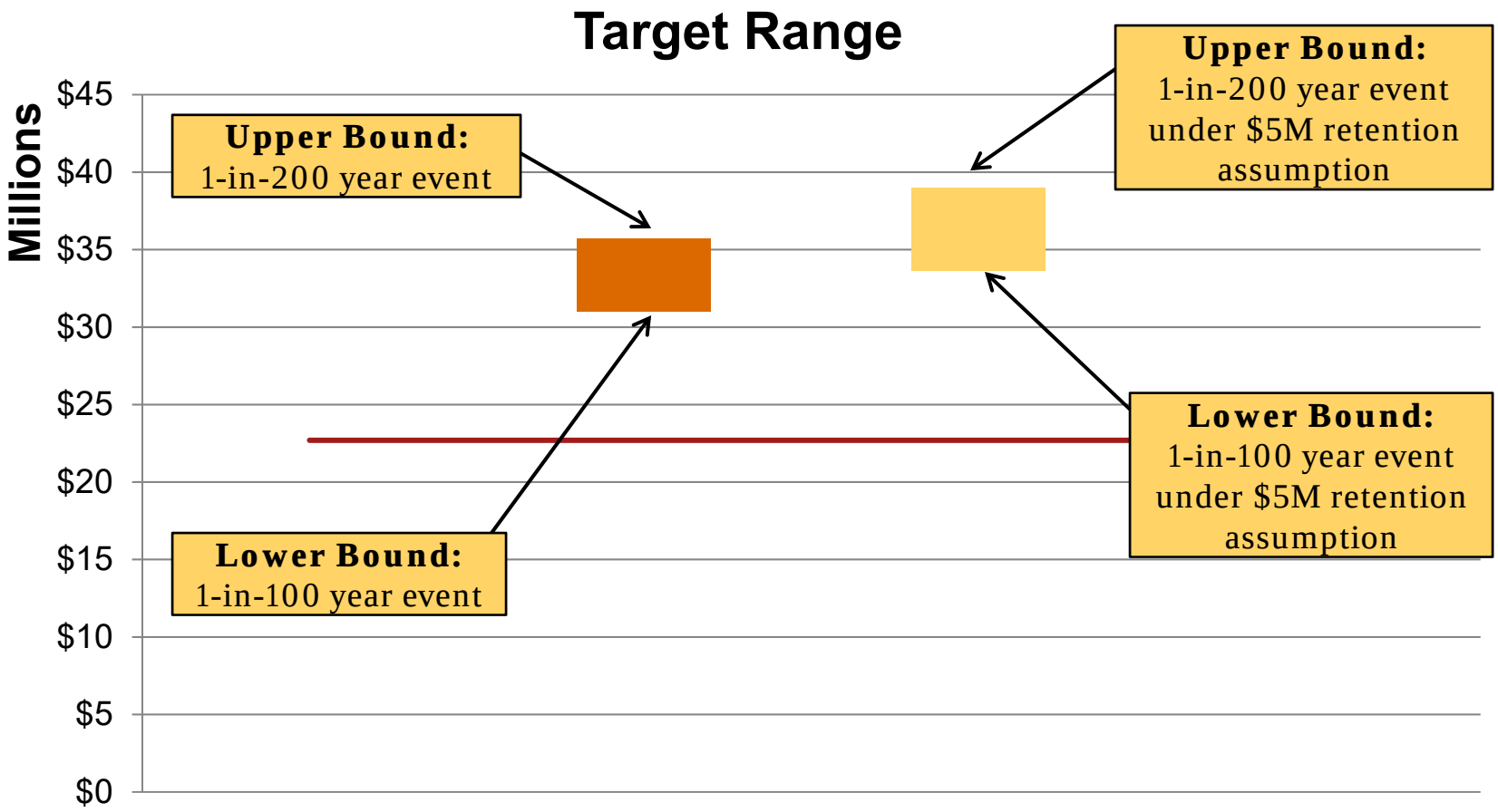

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2018-10-22

Washington State Transit Insurance Pool

Target Fund Balance Review & Analysis

Board Presentation
September 27, 2018

DISCUSSION PURPOSES ONLY

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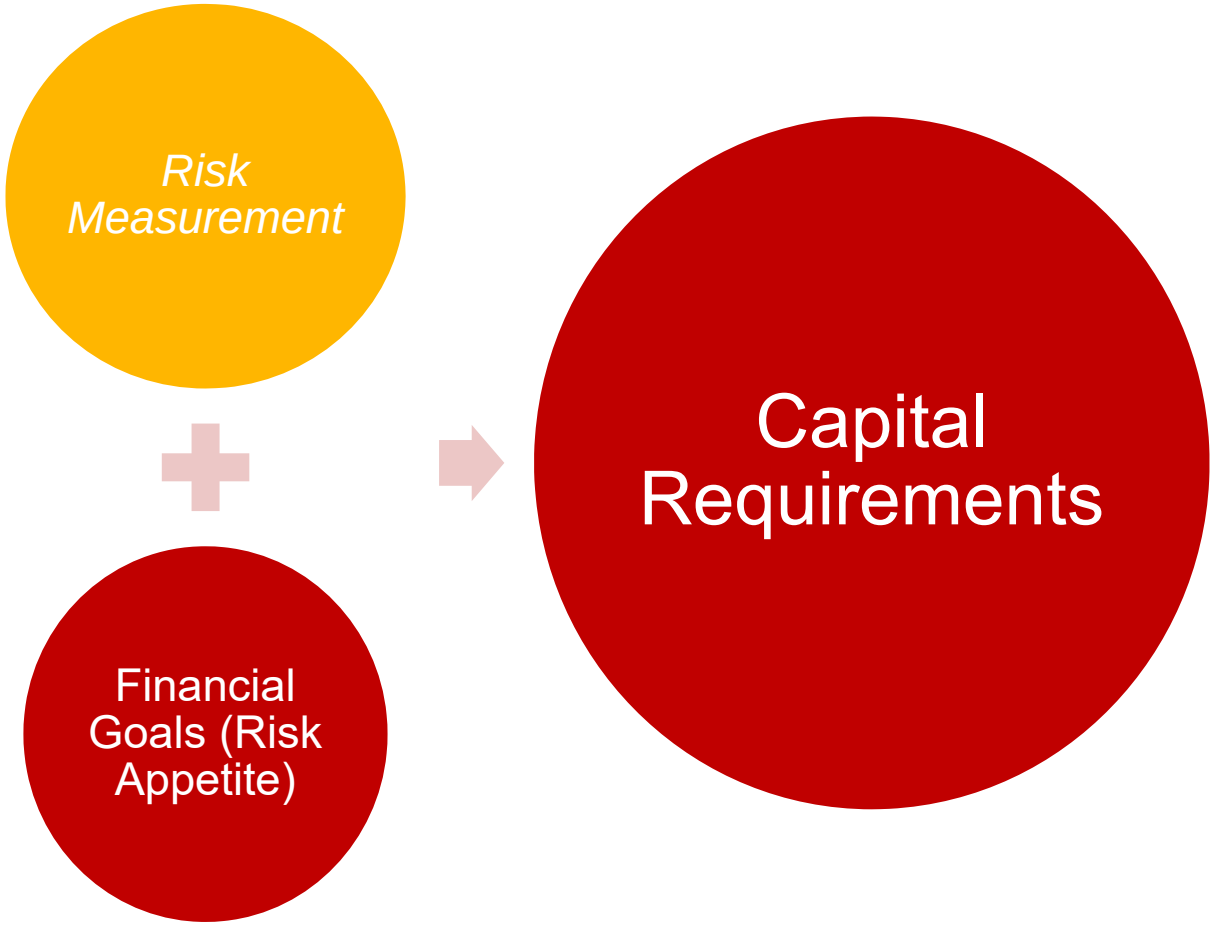

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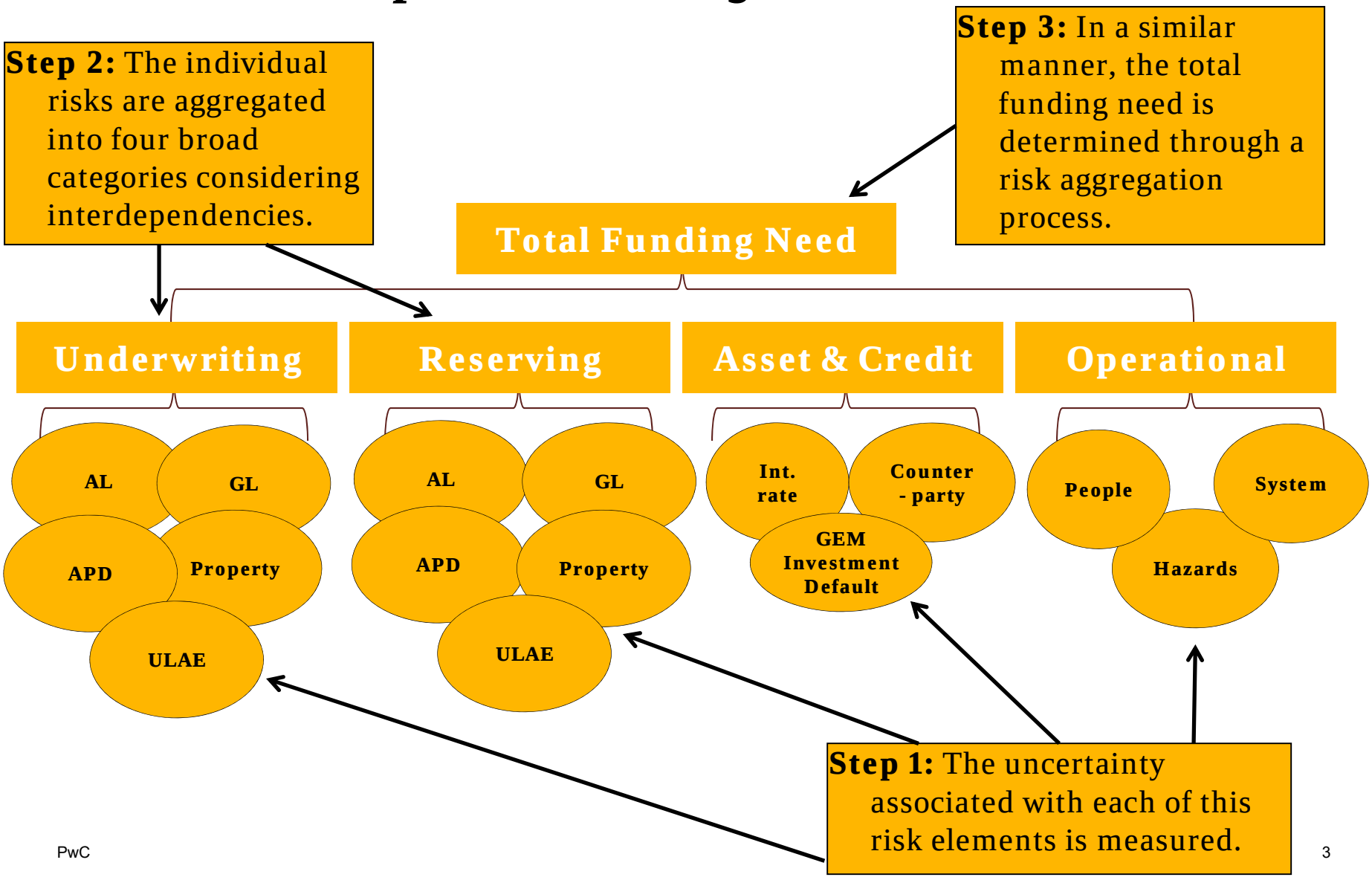

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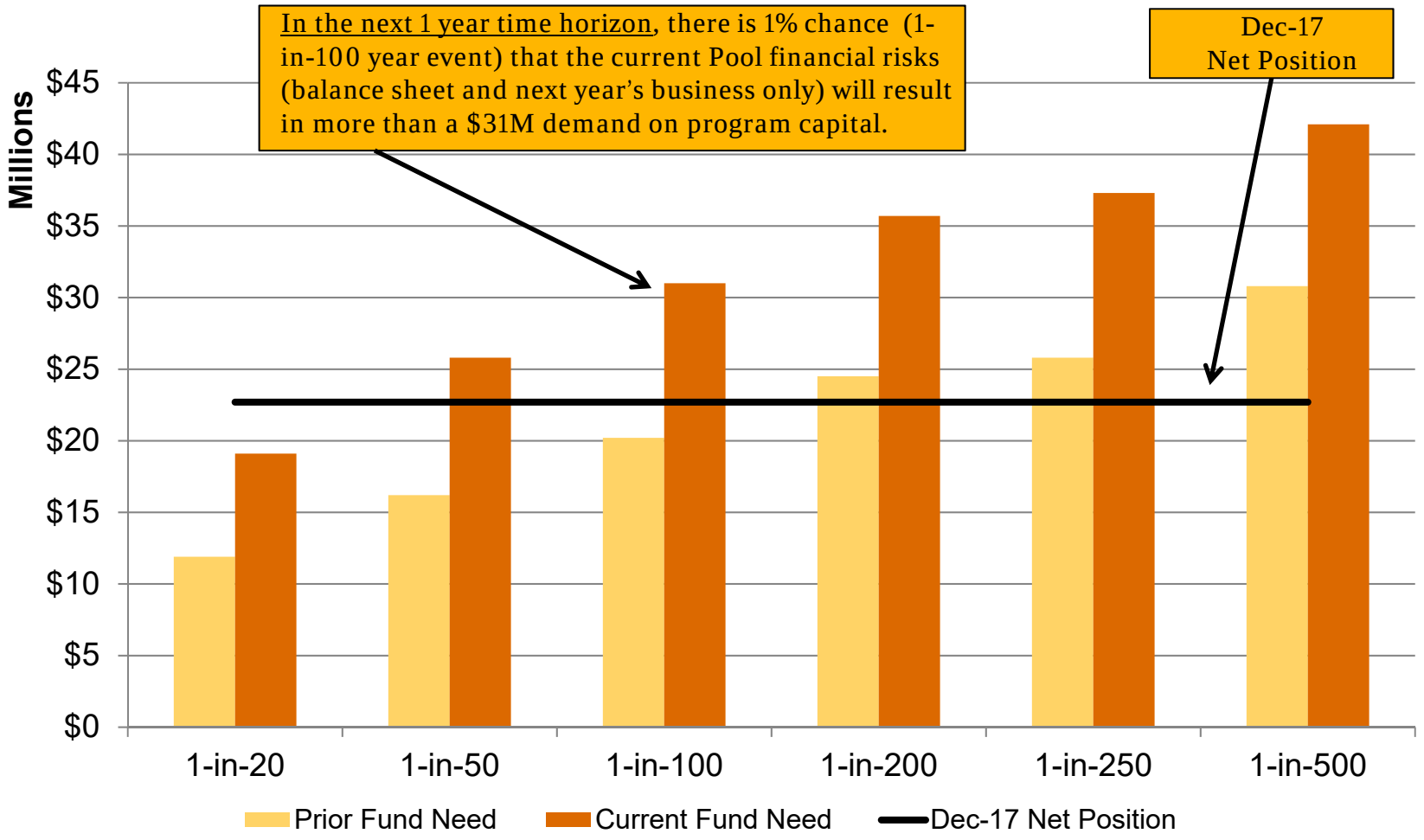

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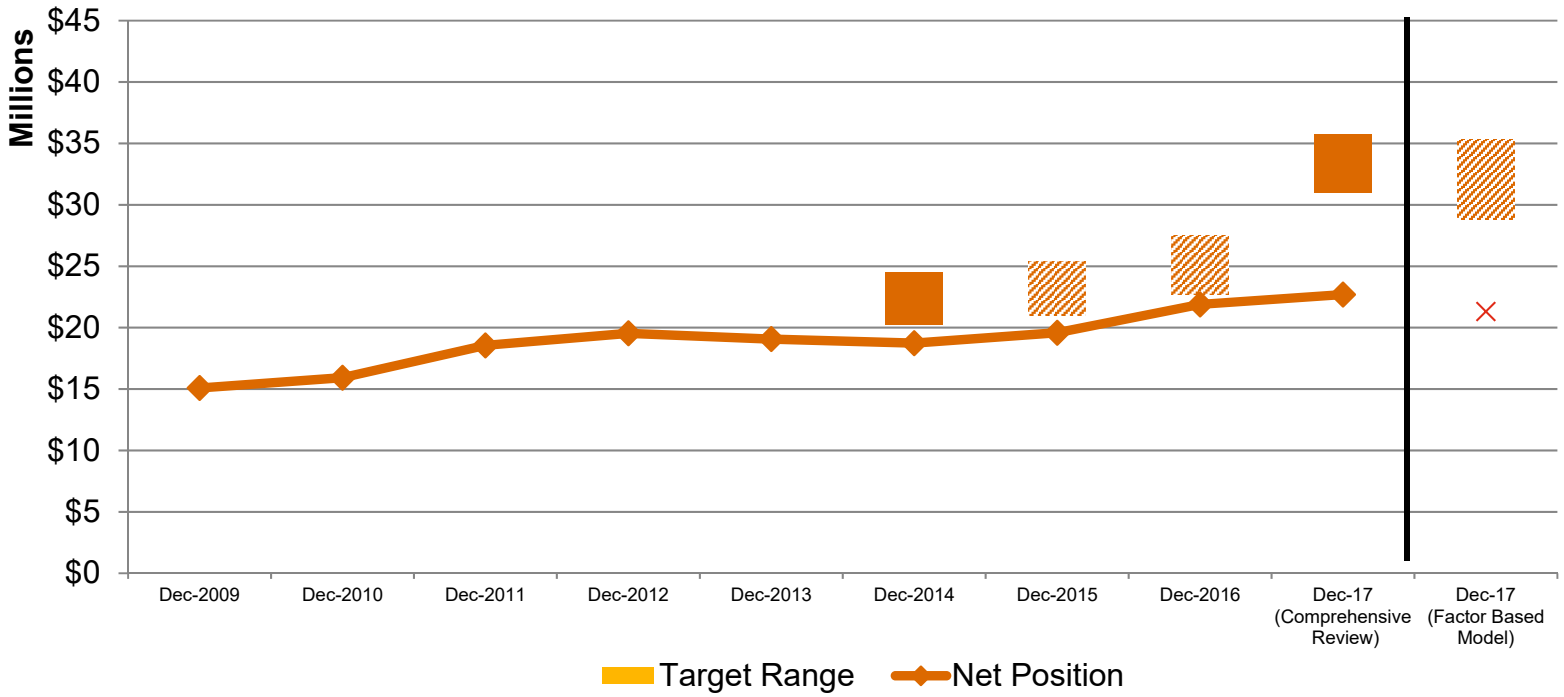

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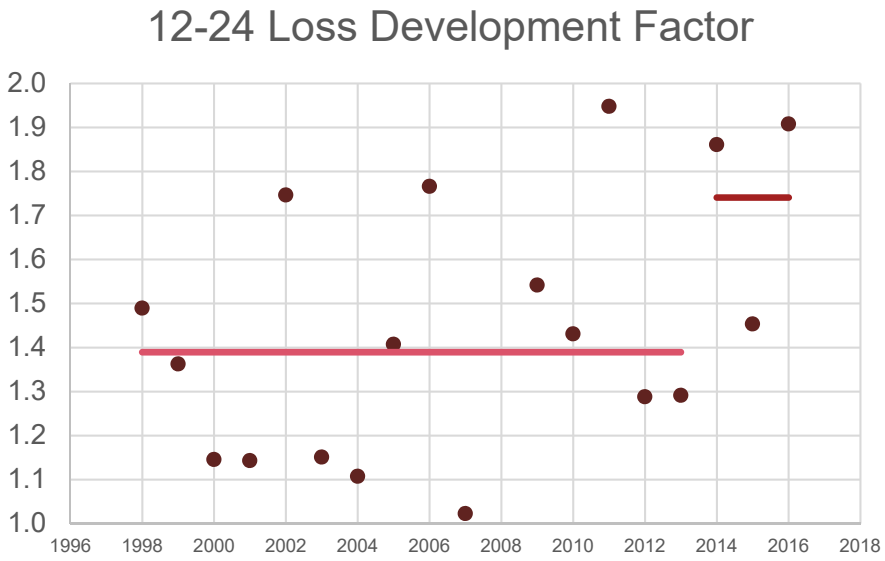

The loss development factor for AY 2008 is excluded from the simulation model

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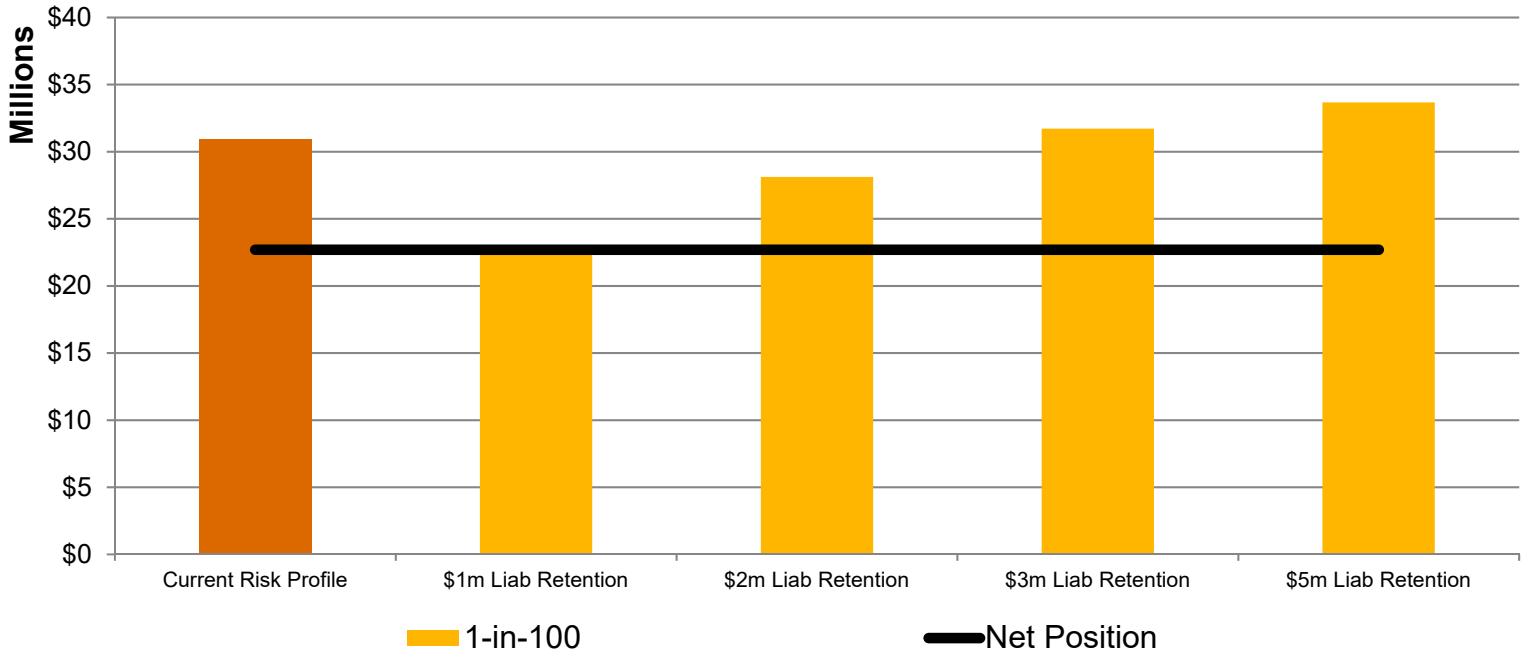

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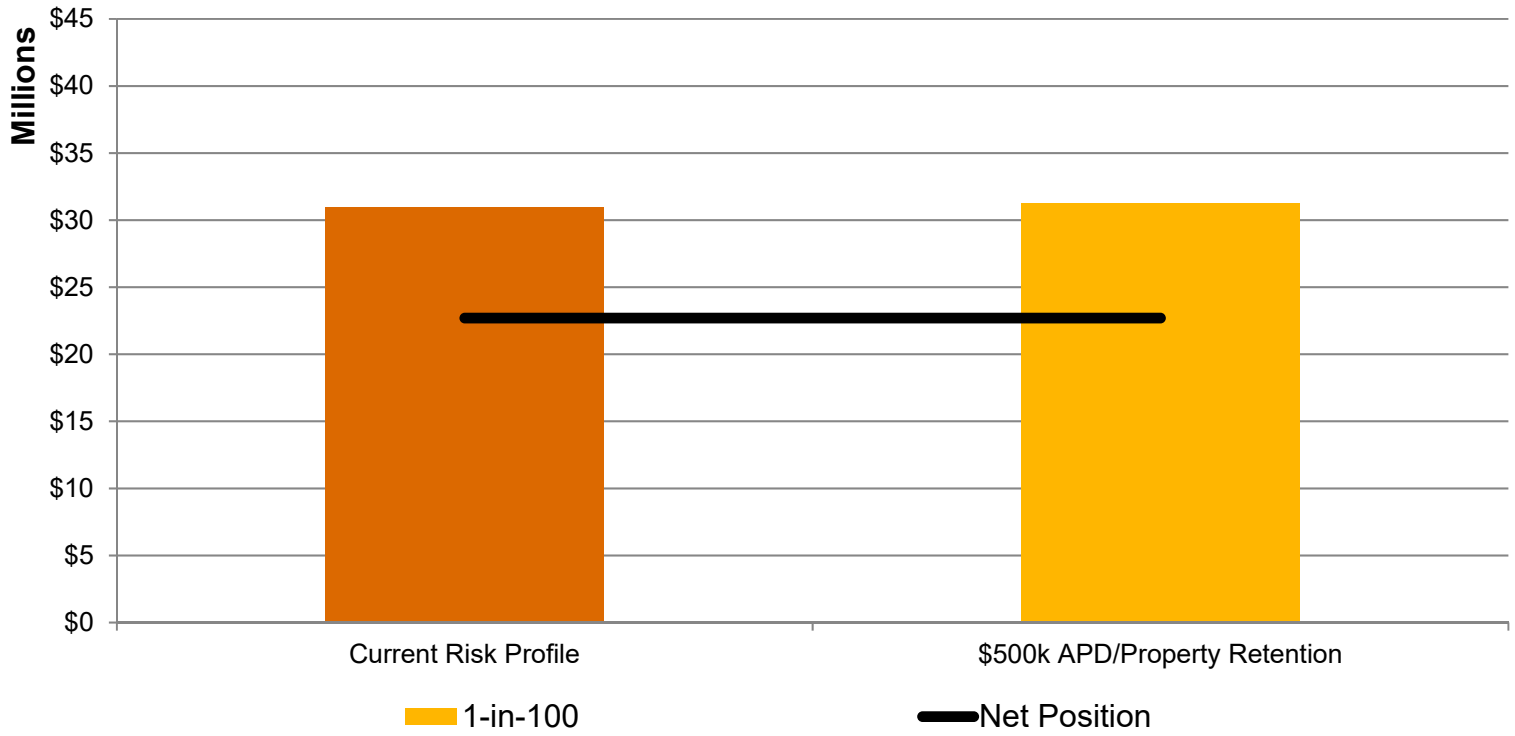

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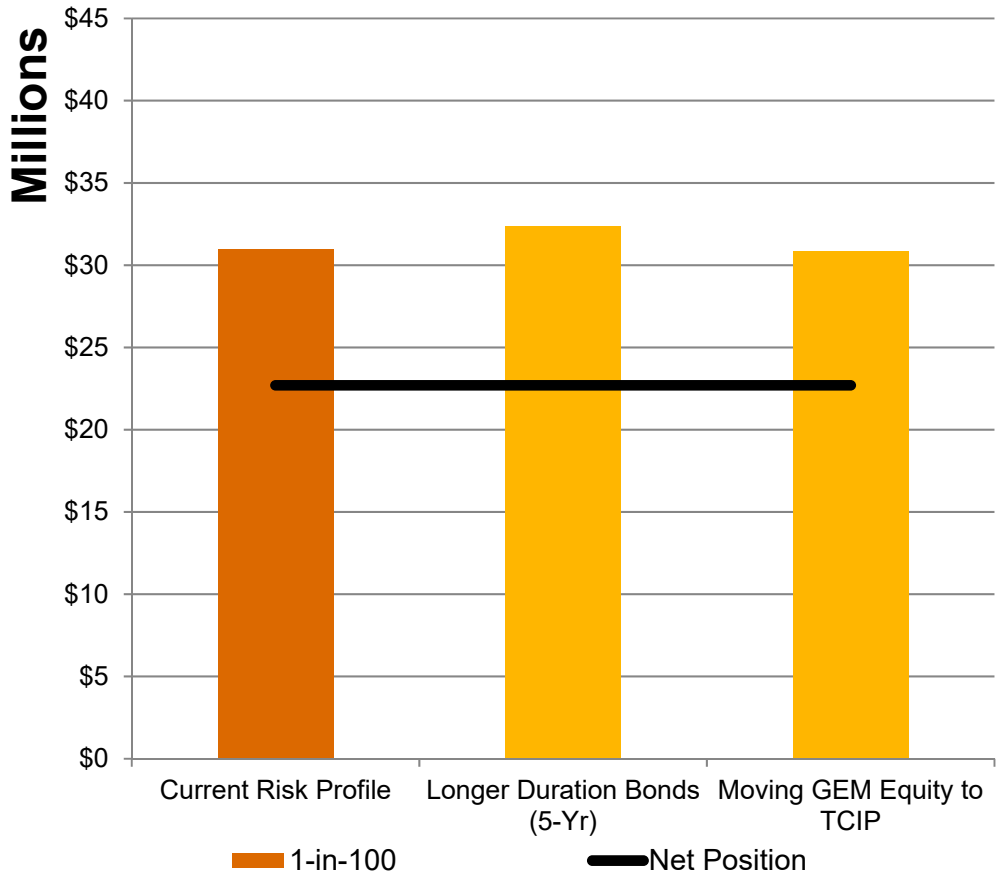

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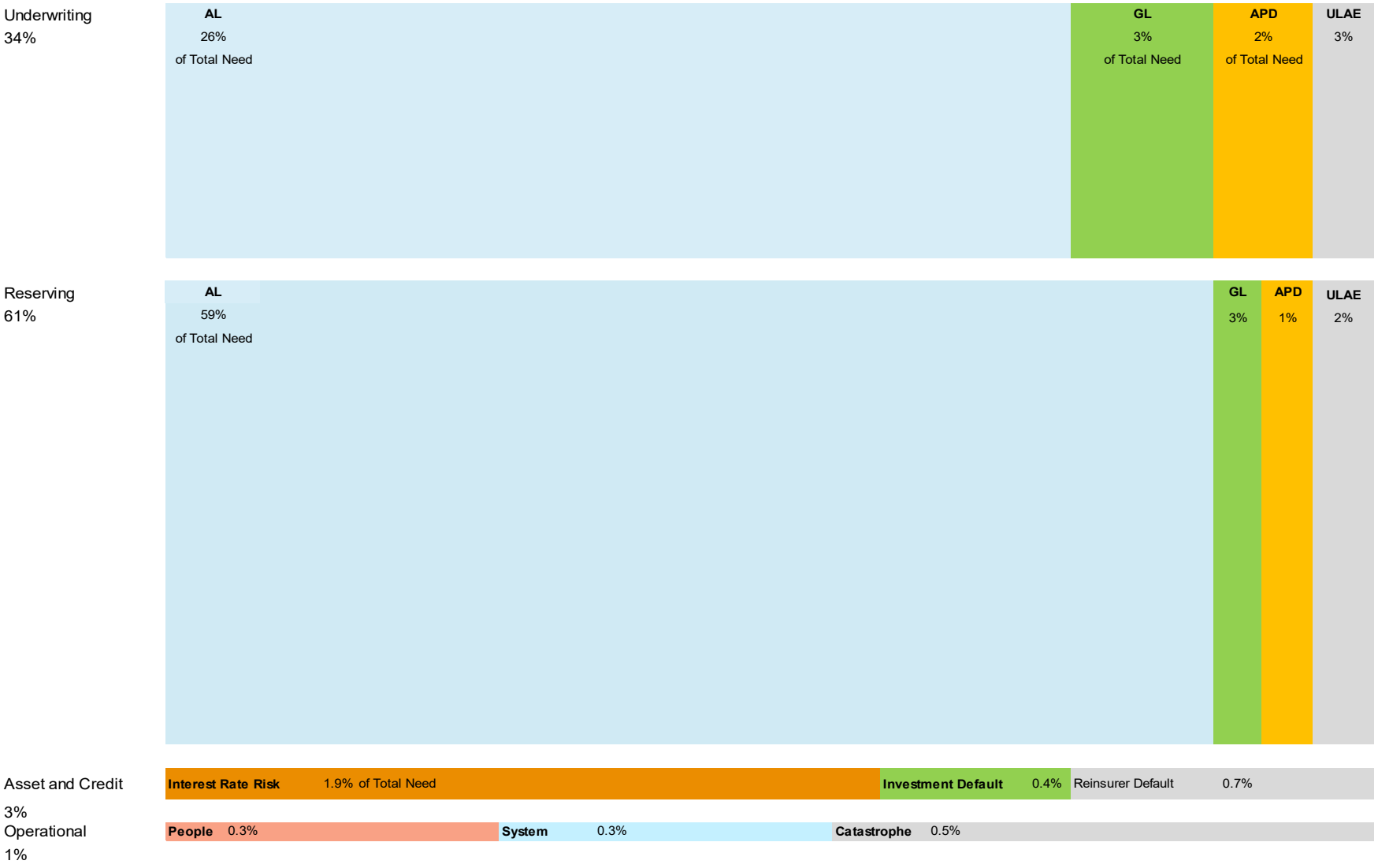

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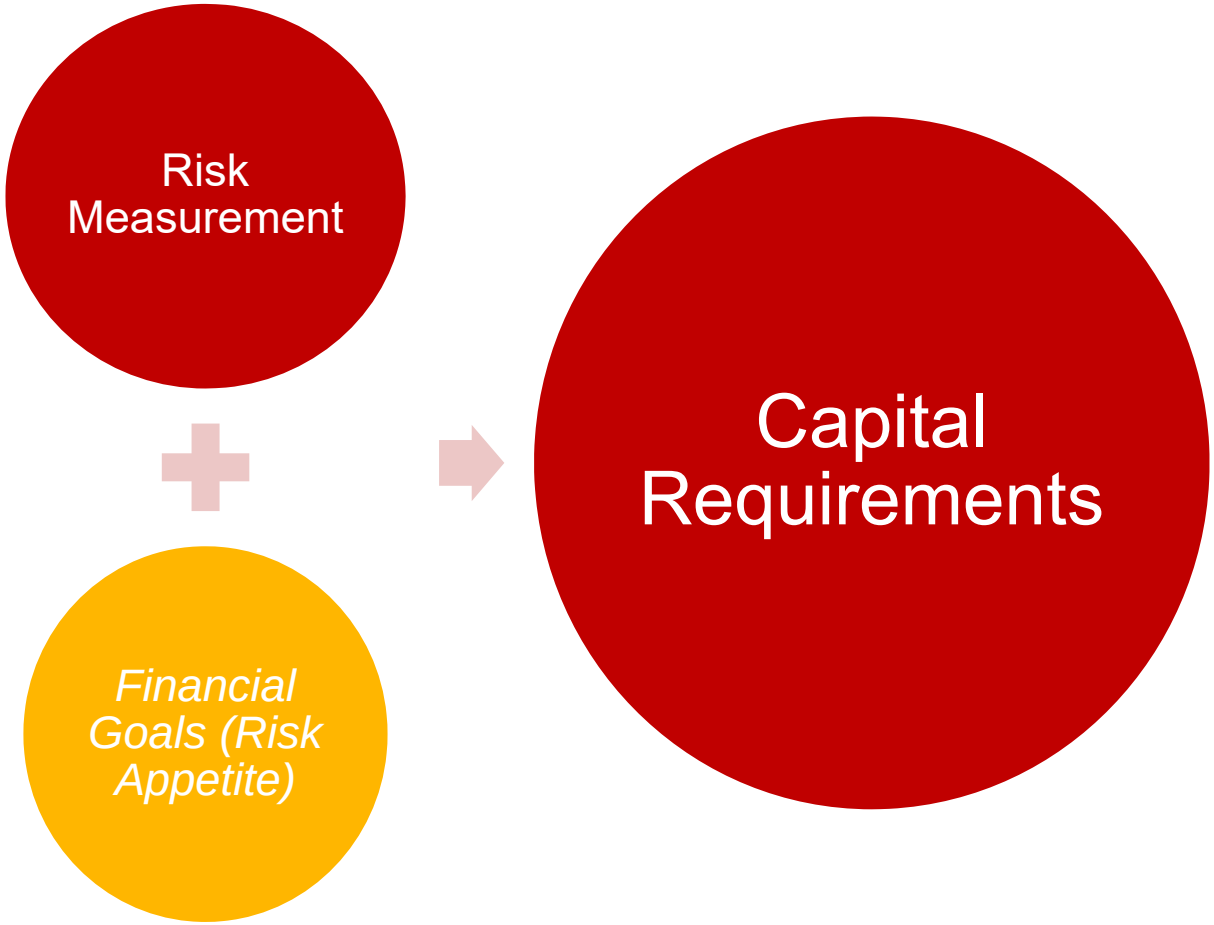

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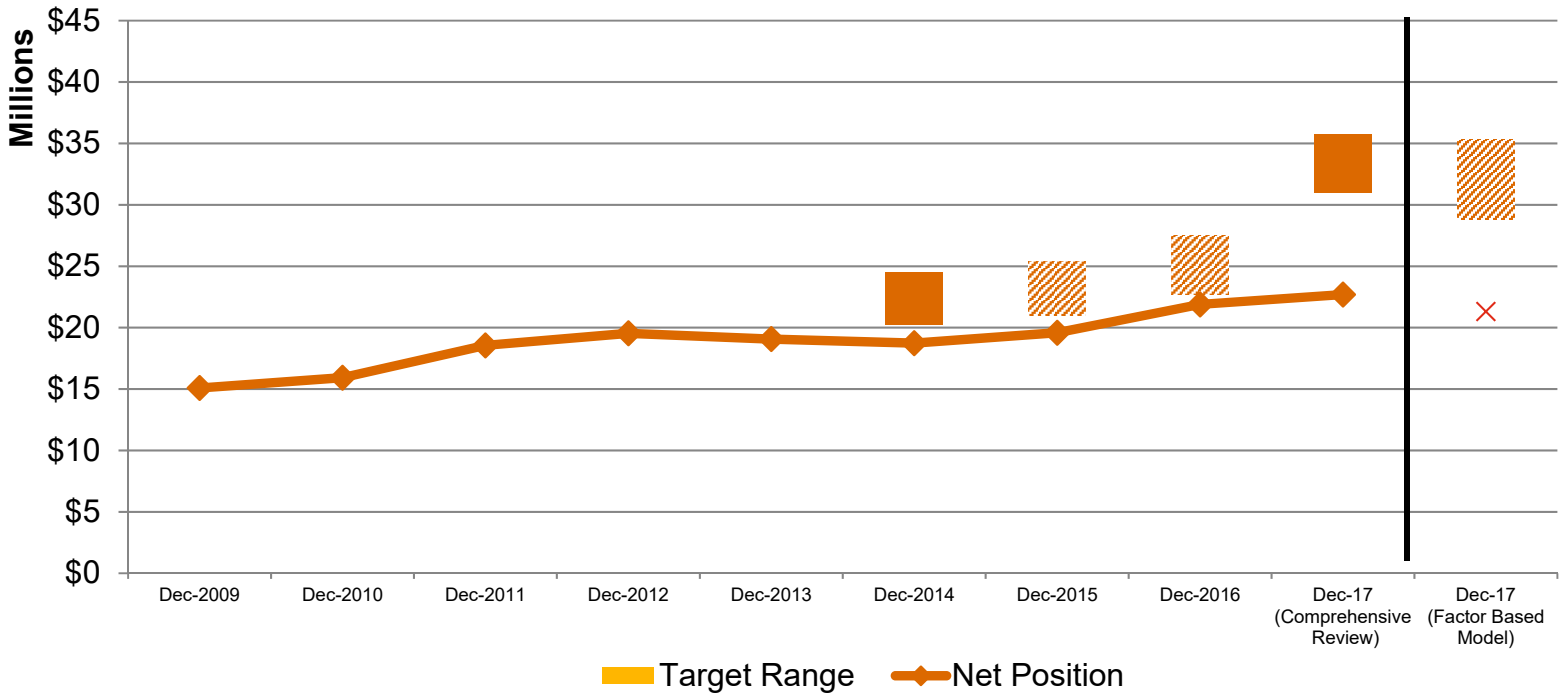

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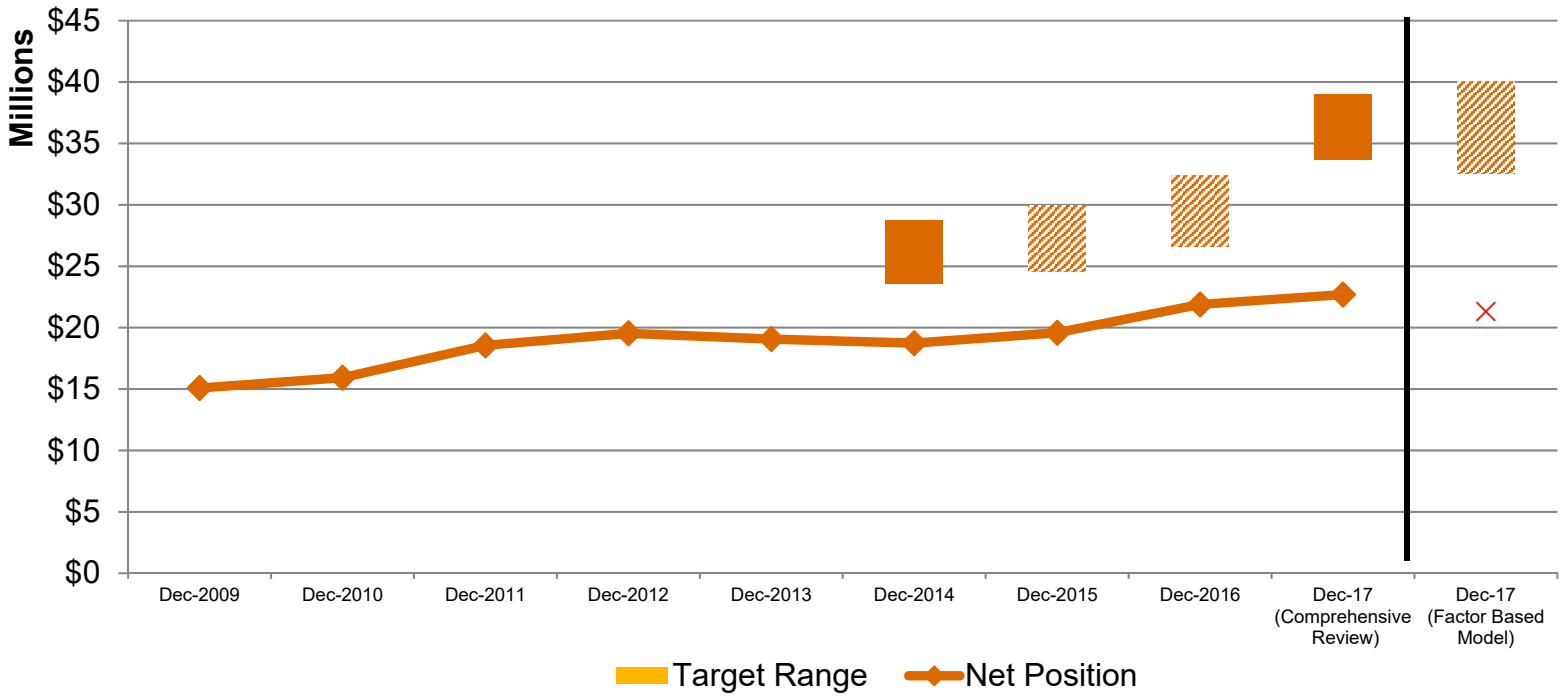

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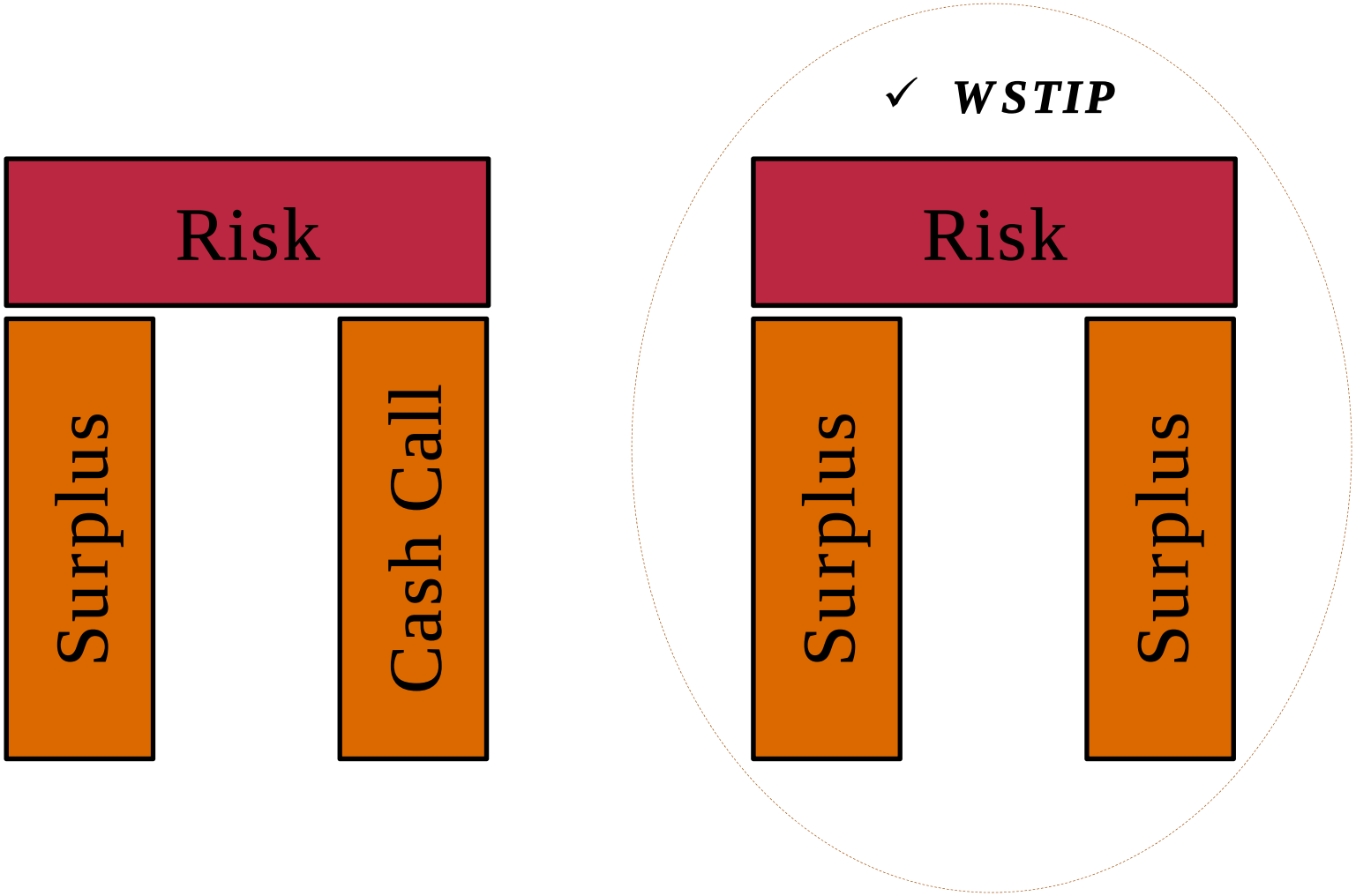

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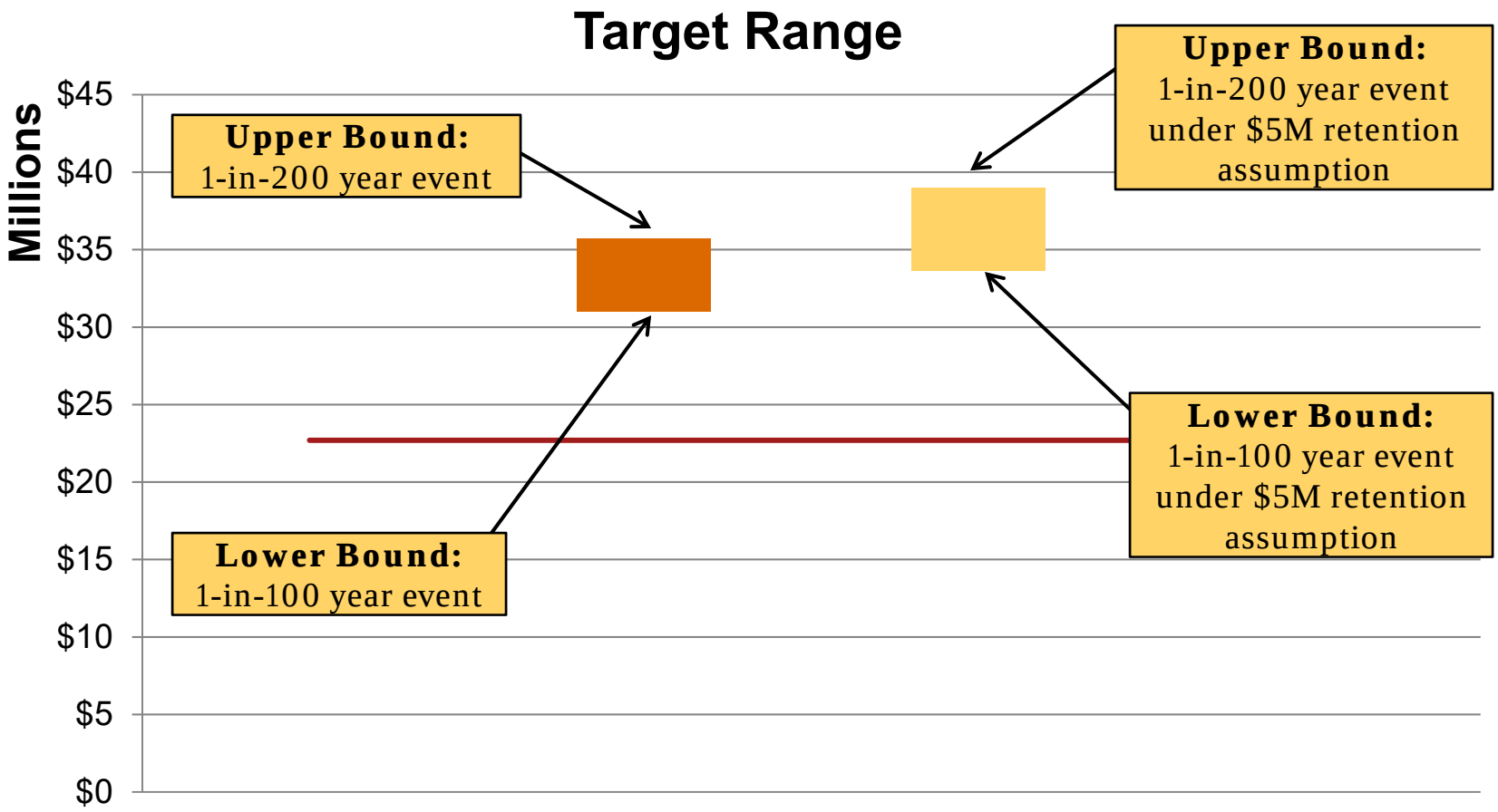

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