



# AGENDA

Work Session  
 September 29, 2016  
 Holiday Inn ~ Everett

**8:00 am MEMBER REPRESENTATIVE MEETINGS** (find your Member Rep for meeting location)

**9:00 am Executive Committee Meeting**

**12:00 pm LUNCH**

**1:00 pm WELCOME – Jerry Spears**

1. Introduction of Work Session Participants & Guests

Sign-in sheet

Page # \*WP #

**DISCUSSION ITEMS**

1:05 pm 1. Preliminary Results of Collision Avoidance Study featuring Rosco and Mobile Eye – Jerry Lutin, Dr. Wang, Eric , Steve Clancy, Janet Gates

**2:30 pm Break**

2:45 pm 2. Actuary 101 and Actuarial Results to Establish 2017 Loss Fund and Rates – Kevin Wick

**3:30 pm Break**

3:45 pm 3. Preliminary Reinsurance and Excess Renewal Indicators - Brian White, Alliant

**4:15 pm Break**

4:25 pm 4. 2017 Operations Budget – Tracey Christianson

**5:00 pm ADJOURN**

**5:30 pm Social**  
**6:00 pm Dinner**

\*WP = Work Plan Item #

**Ben Englander** is the Vice President of Engineering at Rosco, Inc., an automotive vision safety, engineering and manufacturing company located in Queens, NY. Ben completed his Bachelors and Masters in Mechanical Engineering at Columbia University and has been part of the Rosco organization for over 30 years. As the VP of Engineering, Ben is heavily involved with Rosco's day-to-day operations, sales and product R&D. In the past Ben has held positions in the New York City Regional Sector Coordinating Council for Critical Manufacturing Sector of Homeland Security, as well as leadership positions within the Supplier Council of the National Association of State Directors of Pupil Transportation. Ben has been a speaker at numerous events on the issues of Pedestrian and Cyclist Safety, including at the Intelligent Transportation Systems Expo in Pittsburgh, the Vision Zero Forum hosted by NYC DCAS in New York City and the Vision Zero Cities Conference at NYU.

**Jerome M. Lutin** has 50 years of experience in transportation planning and engineering. Jerry retired from positions as Distinguished Research Professor at New Jersey Institute of Technology and 20 years as Senior Director at New Jersey Transit. He has a PhD in Architecture and Urban Planning from Princeton University.

#### **Jeff Myers**

- Graduate of University of California at Santa Barbara
- Insurance designations: CPCU (Chartered Property & Casualty Underwriter) and ARe (Associate in Reinsurance)
- Underwriter for the past 39 years (only job since leaving college)
- Underwriter for Munich Re – 24 years
- The last 14 years with Munich Re - Specialty Markets – working exclusively with Public Entities and Non-Profits.

**Dr. Yinhai Wang** is a professor in transportation engineering and the founding director of the Smart Transportation Applications and Research Laboratory (STAR Lab) at the University of Washington (UW). He also serves as director for Pacific Northwest Transportation Consortium (PacTrans), USDOT University Transportation Center for Federal Region 10. He has a Ph.D. in transportation engineering from the University of Tokyo (1998) and a master's degree in computer science from the UW. Dr. Wang's active research fields include traffic sensing, e-science of transportation, transportation safety, etc. He has published over 110 peer reviewed journal articles and delivered more than 120 invited talks and nearly 200 other academic presentations.

Dr. Wang serves as a member of the Transportation Information Systems and Technology Committee and Highway Capacity and Quality of Service Committee of the Transportation Research Board (TRB). He is currently a member of the steering committee for the IEEE Smart Cities and an elected governor for the American Society of Civil Engineers (ASCE) Transportation and Development Institute (T&DI), scheduled to serve as president of ASCE T&DI in 2018. He was an elected member of the Board of Governors for the IEEE ITS Society from 2010 to 2013. Additionally, Dr. Wang is associate editor for three journals: Journal of ITS, Journal of Computing in Civil Engineering, and Journal of Transportation

Engineering. He was the winner of the ASCE Journal of Transportation Engineering Best Paper Award for 2003.

**Uri Tamir** is the Director of Strategic Initiatives at Mobileye Inc. Uri manages Mobileye's public transportation and law enforcement business units as well as Mobileye's US government relations. Uri holds an M.B.A. in Finance and a B.A. in Statistics and Economics, both from Tel Aviv University in Israel.

## **Kevin Wick, FCAS, MAAA**

### **Managing Director**



**Office:**  
(206) 398-3518

**E-mail:**  
kevin.l.wick@  
pwc.com

Over 28 years of  
experience

Kevin is a managing director with PwC's P&C actuarial practice in Seattle. He has been consulting with governmental insurers, self-insured organizations, and insurance companies since 1988.

#### **Relevant experience and responsibilities**

- Directed reserving and rating studies for numerous governmental insurers, insurance companies and corporate self-insurers over the last 28 years; experience involved workers' compensation exposures
- Worked with clients to develop meaningful actuarial information packages to the relevant stakeholders focused on the cost drivers of their programs
- Directed reviews and facilitated board sessions to discuss the appropriate capital requirements for a governmental insurer, taking into consideration the underlying risks, various rate options, relevant benchmarks and context, unique operating environment, and associated public policy implications
- Developed an effective communication approach to present observations to a non-actuarial audience through his experience of presenting at well over 200 board meetings of governmental insurers in his career.

#### **Education & professional affiliations**

Kevin is a Fellow of the Casualty Actuarial Society and a Member of the American Academy of Actuaries. He authored a paper entitled *Have Pool Expectations Surpassed their Solvency Measures?* that examines and challenges the common financial metrics currently used by insurance pools.

He is very active with pooling nationally and is a frequent speaker at national industry meetings.

- AGRiP 2012 Spring Meeting – “Have Pool Expectations Surpassed their Solvency Measures?”
- National League of Cities Risk Consortium May 2012 – “Have Pool Expectations Surpassed their Solvency Measures?”
- AGRiP Leadership Institute August 2012 – “Funding Framework for Maturing Pools”
- AGRiP 2013 Spring Meeting – “Addressing the Surplus Question for Pools”
- National League of Cities Risk Consortium May 2013 – “Long Range Capital Planning for Pools”
- AGRiP 2014 Fall Meeting – “Capital Modeling for Reinsurance Decision Making”
- AGRiP 2015 Fall Meeting – “Experience Rating Revisited”

Kevin holds a bachelor's degree in Mathematics/Economics from Seattle Pacific University.

*Washington State  
Transit Insurance Pool*  
Actuarial Review  
September 2016

# *What does the actuary review and how?*

## Historical Losses

- Organize data
- Use historical patterns to project ultimate loss costs

## Future Losses

- Use historical loss rates to project future loss rates

## Capital Adequacy

- Aggregate risk of program
- Pool's funding objectives

## Cost Allocation

- Based on quantification of individual member risk
- Experience rating

# ***Organization of Data***

## ***Automobile Liability - Cumulative Paid Losses (\$000s)***

<b>Accident Year</b>	<b>06/2010</b>	<b>06/2011</b>	<b>06/2012</b>	<b>06/2013</b>	<b>06/2014</b>	<b>06/2015</b>	<b>06/2016</b>
2010	164	1,129	2,474	3,162	3,774	4,964	4,973
2011		239	1,045	2,627	3,110	5,001	6,009
2012			206	1,112	1,541	2,395	3,504
2013				293	1,470	2,211	2,864
2014					239	1,244	2,882
2015						232	891
2016							224

# ***Triangle Form***

## ***Automobile Liability - Cumulative Paid Losses (\$000s)***

<b>Accident Year</b>	<b>6</b>	<b>18</b>	<b>30</b>	<b>42</b>	<b>54</b>	<b>66</b>	<b>78</b>
2010	164	1,129	2,474	3,162	3,774	4,964	4,973
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# ***Paid Loss Development***

## ***Automobile Liability - Cumulative Paid Losses (000s)***

<b>Accident Year</b>	<b>6</b>	<b>18</b>	<b>30</b>	<b>42</b>	<b>54</b>	<b>66</b>	<b>78</b>	<b>Ultimate</b>
2010	164	1,129	2,474	3,162	3,774	4,964	4,973	<b>5,023</b>
2011	239	1,045	2,627	3,110	5,001	6,009		<b>7,322</b>
2012	206	1,112	1,541	2,395	3,504			<b>3,696</b>
2013	293	1,470	2,211	2,863				<b>4,772</b>
2014	239	1,244	2,882					<b>6,359</b>
2015	232	891						<b>4,250</b>
2015	224							<b>4,738</b>

Unpaid Claims

# Organization of Data

## Automobile Liability - Cumulative Incurred Losses (000s)

Accident Year	06/2010	06/2011	06/2012	06/2013	06/2014	06/2015	06/2016
2010	1,078	2,980	3,976	4,969	5,361	4,991	5,023
2011		1,010	3,527	5,103	7,166	7,316	7,232
2012			786	2,110	2,798	3,331	3,584
2013				1,252	2,907	3,097	4,531
2014					813	3,974	5,644
2015						669	2,551
2016							581

# ***Triangle Form***

## ***Automobile Liability - Cumulative Incurred Losses (000s)***

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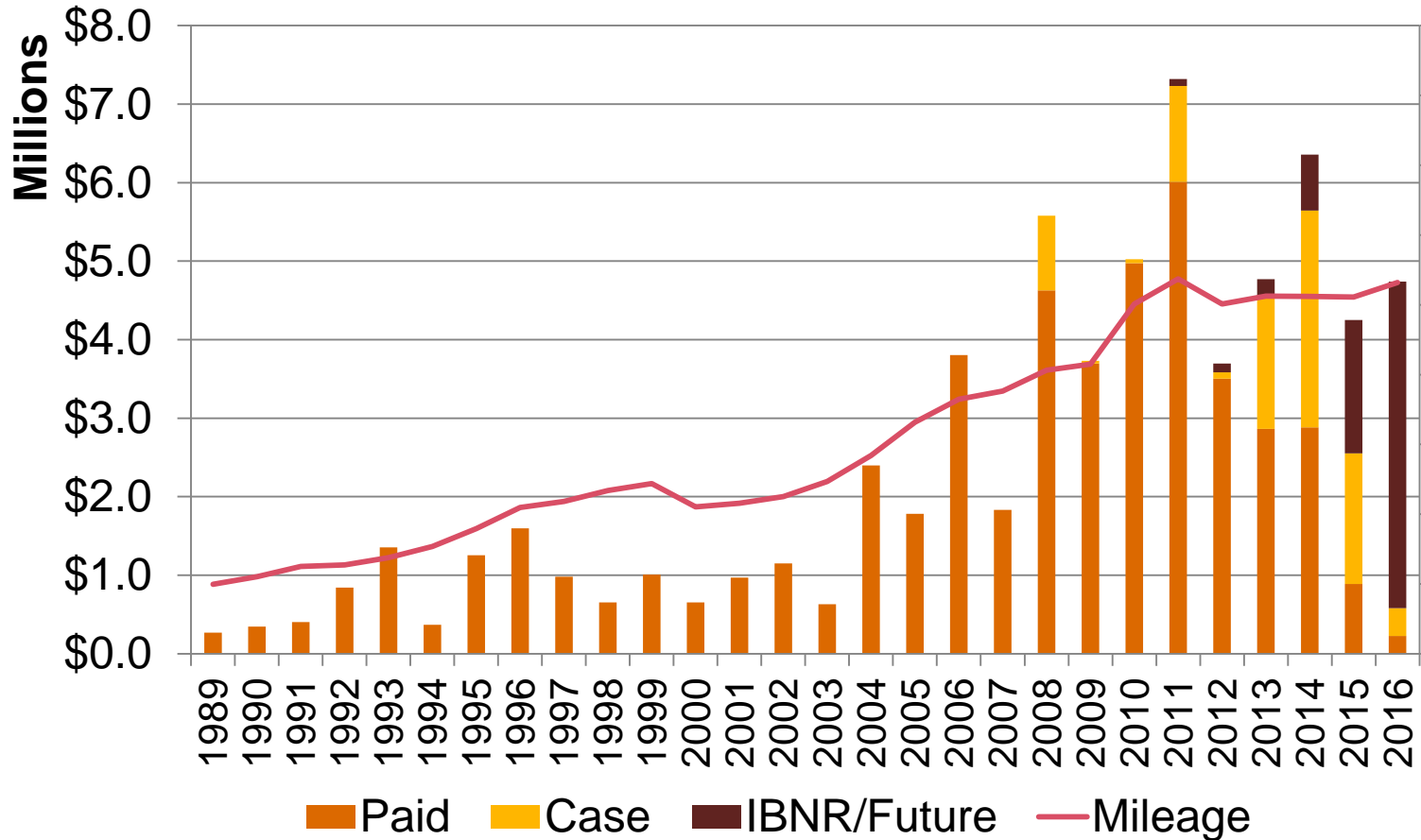
# *Incurring Loss Development*

## *Automobile Liability - Cumulative Incurred Losses (000s)*

<b>Accident Year</b>	<b>6</b>	<b>18</b>	<b>30</b>	<b>42</b>	<b>54</b>	<b>66</b>	<b>78</b>	<b>Ultimate</b>
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2011	1,010	3,527	5,103	7,166	7,316	7,232		<b>7,322</b>
2012	786	2,110	2,798	3,331	3,584			<b>3,696</b>
2013	1,252	2,907	3,097	4,531				<b>4,772</b>
2014	813	3,974	5,644		<b>IBNR</b>			<b>6,359</b>
2015	669	2,551						<b>4,250</b>
2016	581							<b>4,738</b>

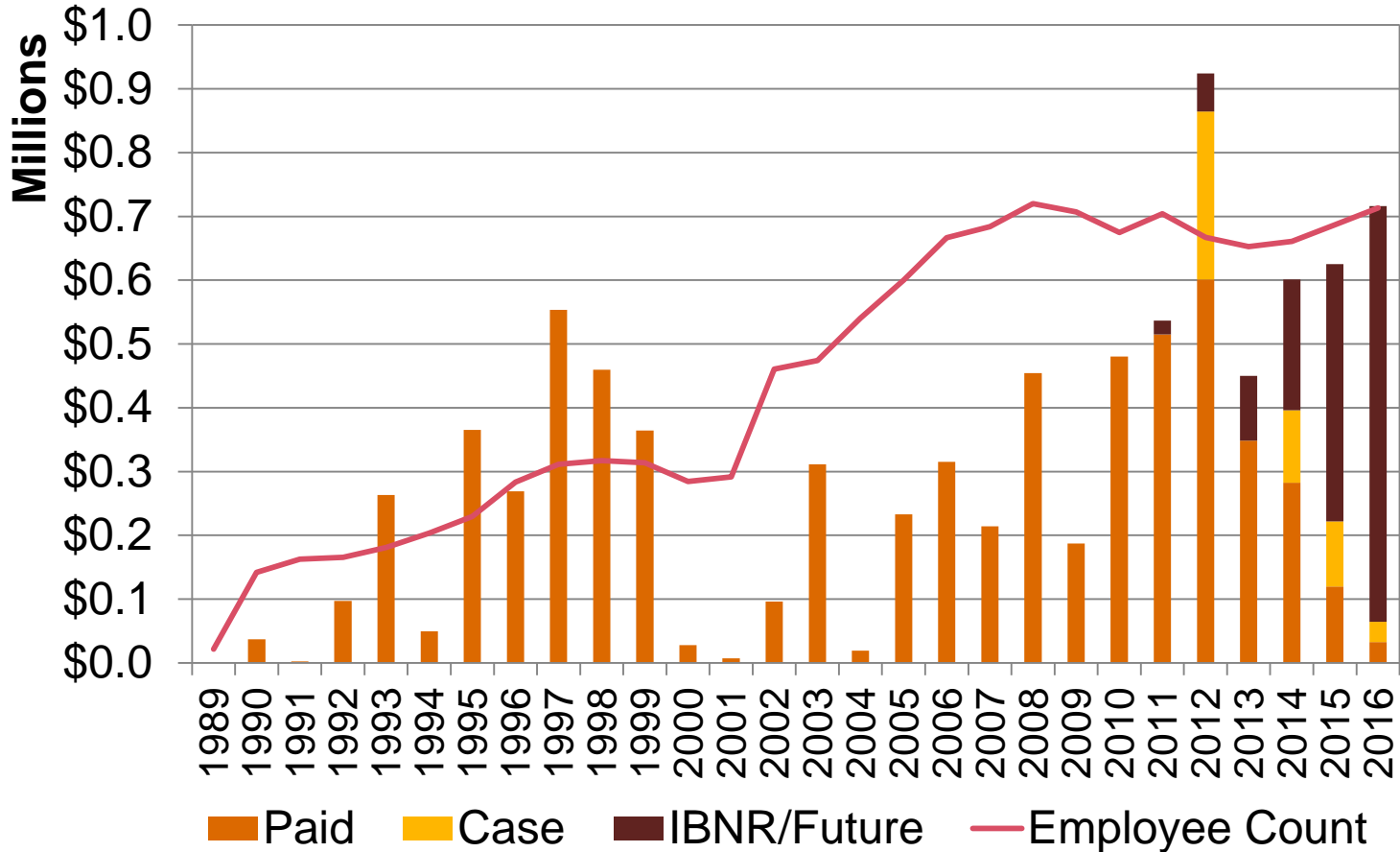
# Automobile Liability

## June 30, 2016



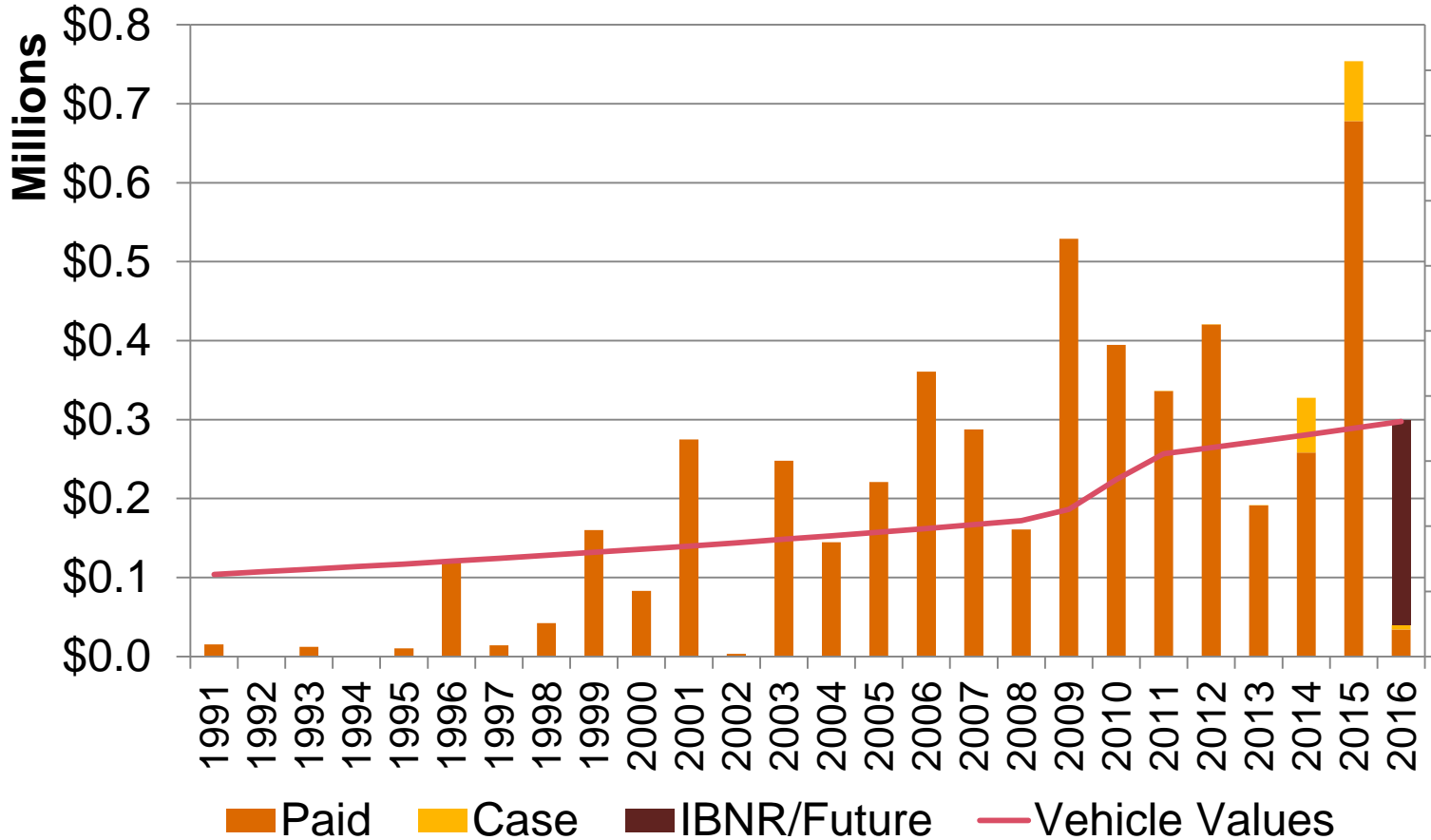
# General Liability

## June 30, 2016



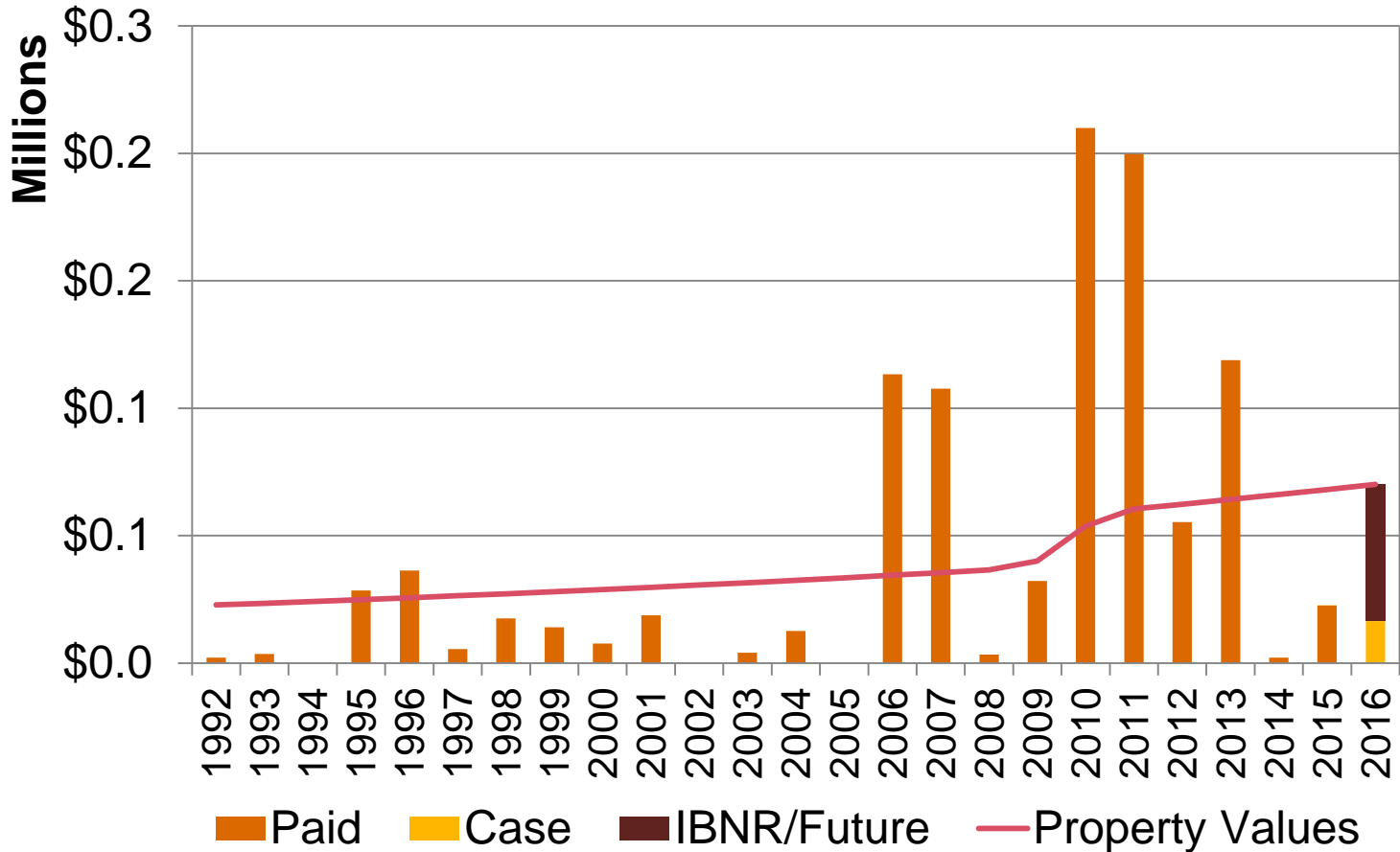
# Auto Physical Damage

## June 30, 2016



# Property

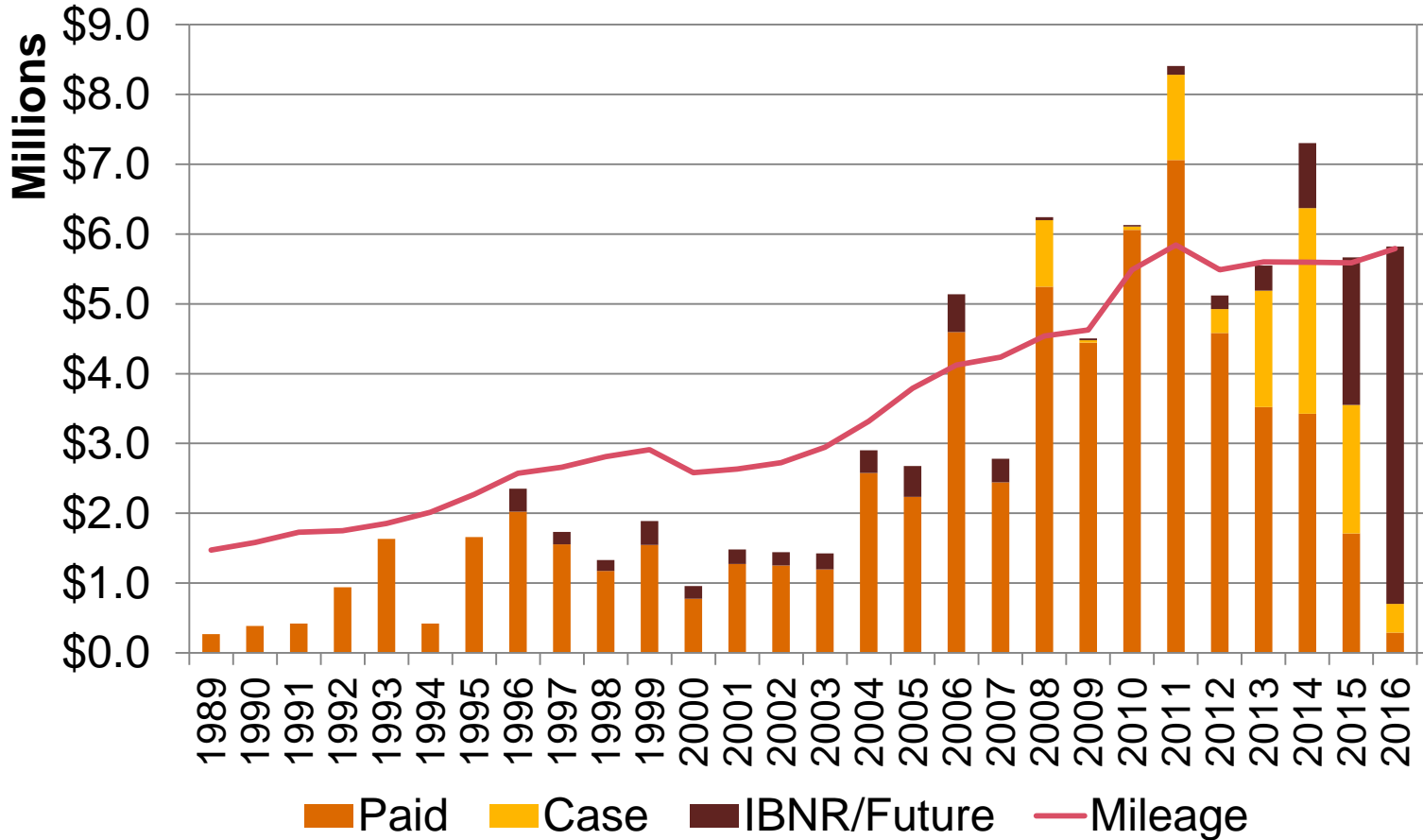
## June 30, 2016





# All Coverages

## June 30, 2016

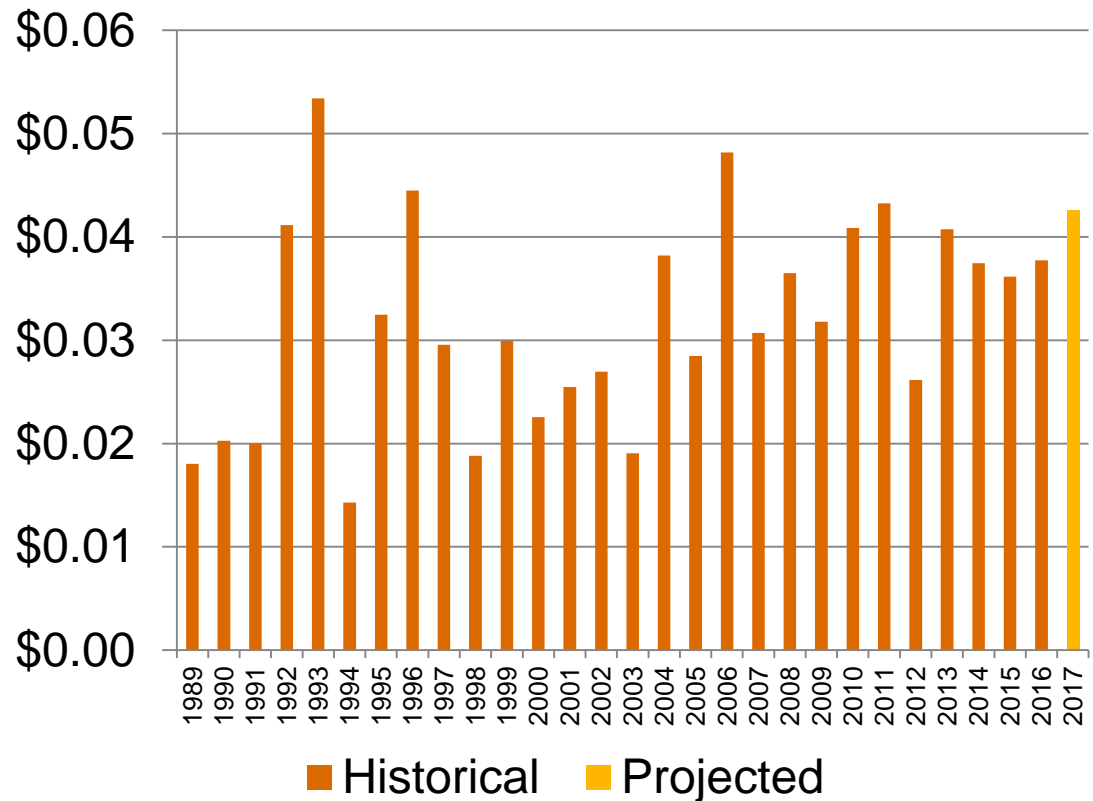


# *Future Cost Projections*

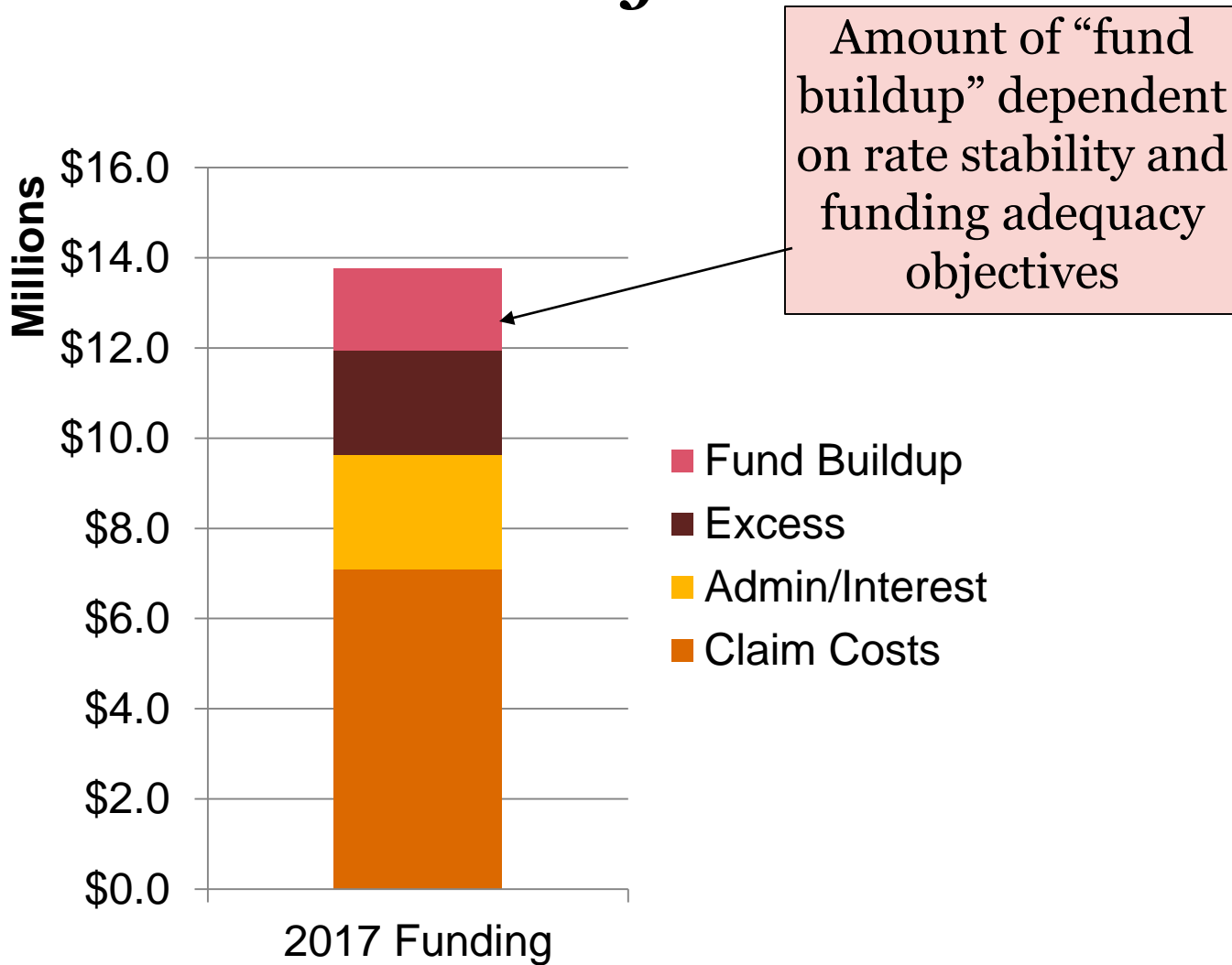
## *Automobile Liability Example*

*Projected loss rate applied to projected mileage*

### Loss Rates at \$250k Retention



# Program Costs and Funding



# ***Risk Categories (Demands on Fund Balance)***

## **Reserving**

- Actual unpaid claims may be higher than current estimates

## **Underwriting**

- Next year's losses may come in higher than projected

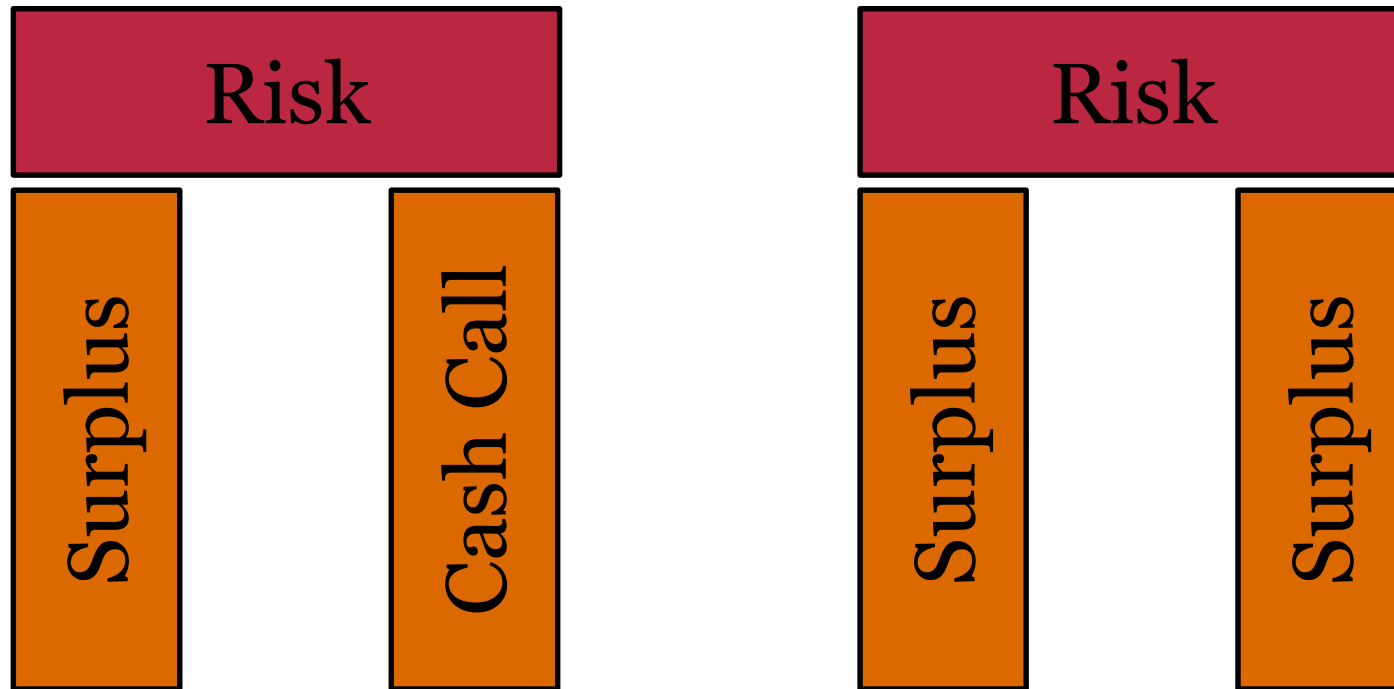
## **Asset/Credit**

- Interest rates may go up which result in bond holdings decreasing in value
- Excess carrier may default

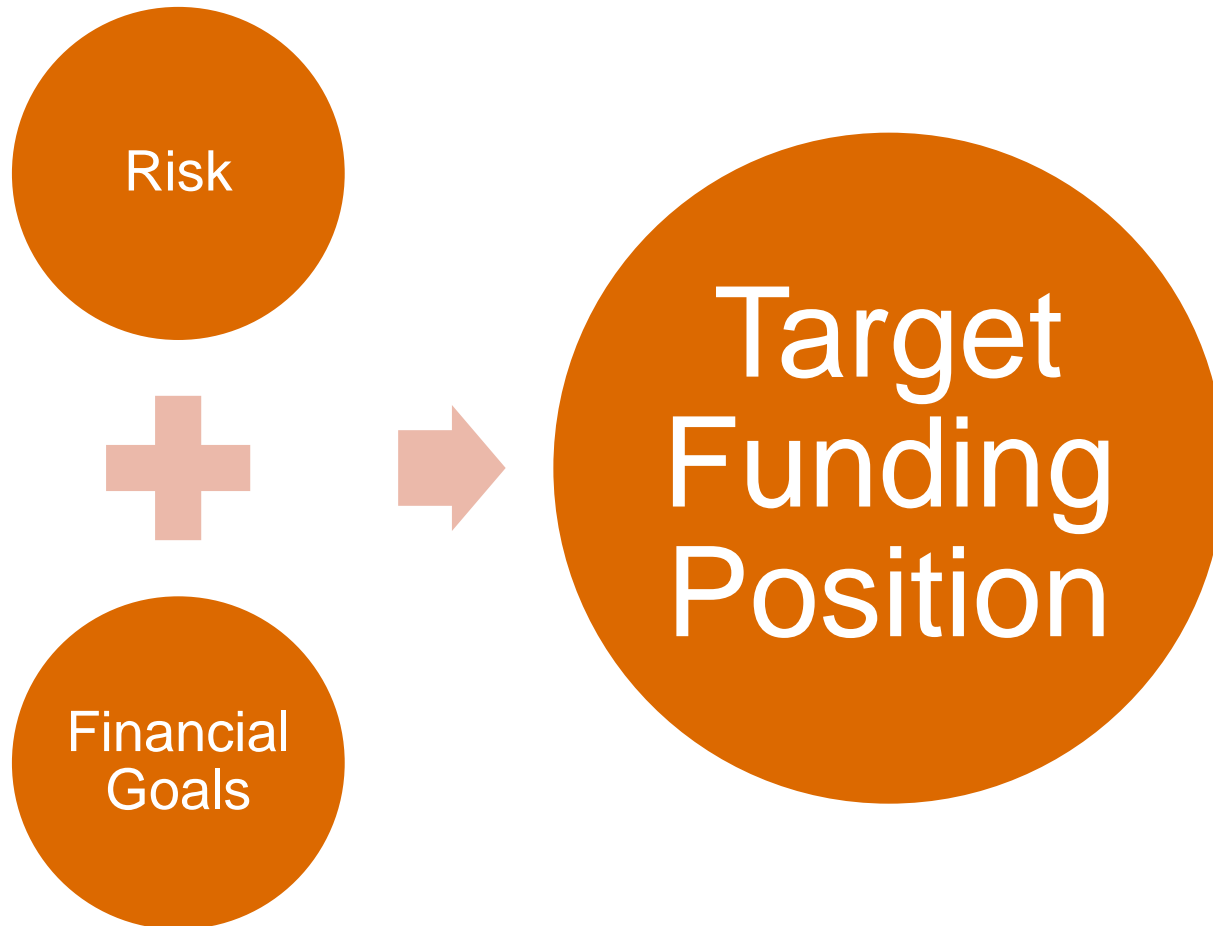
## **Operational**

- Next year's administrative budget may be exceeded do to an unforeseen event

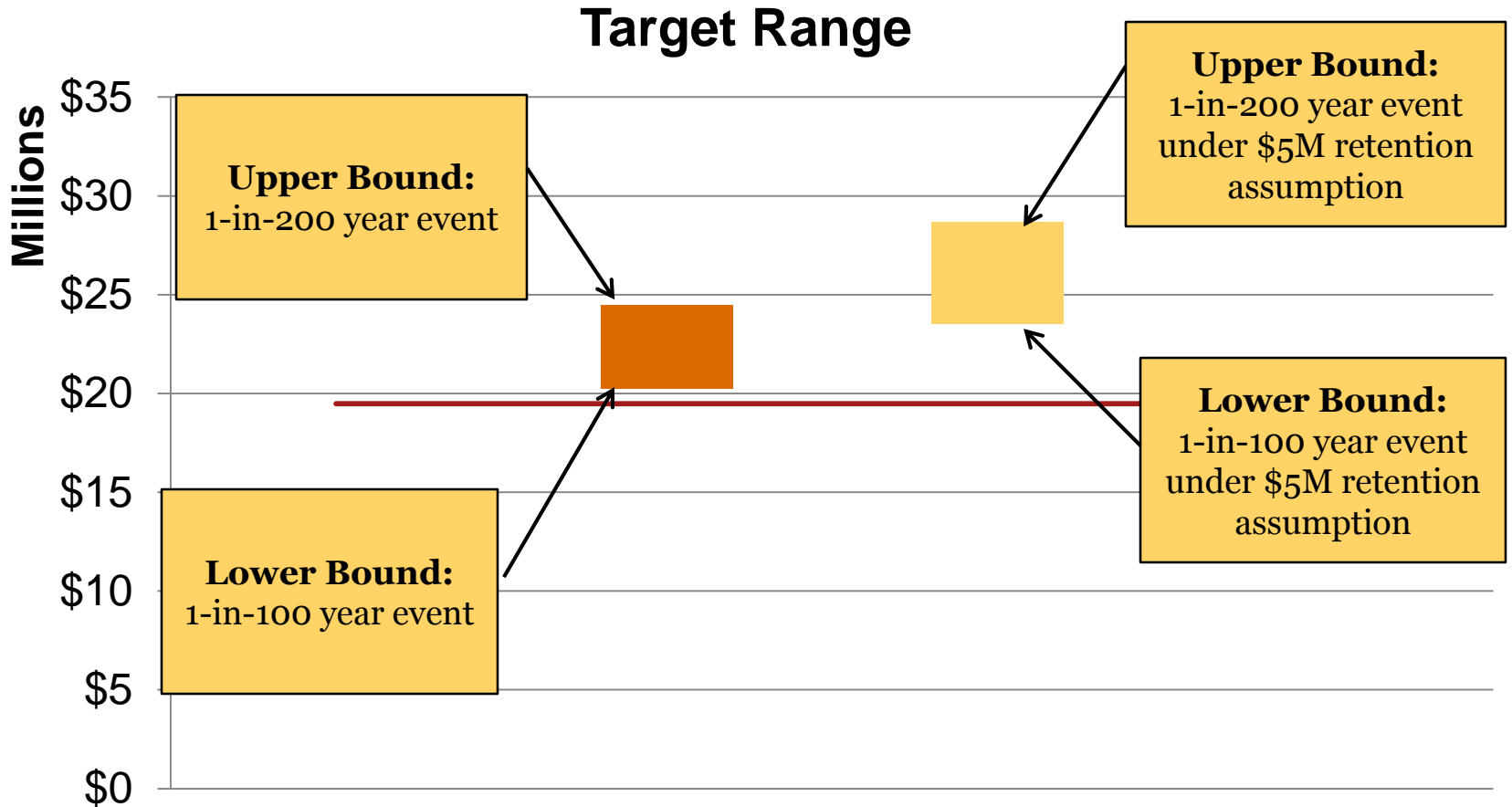
# *Pooling Business/Capital Models*



# *Determining Appropriate Capital*



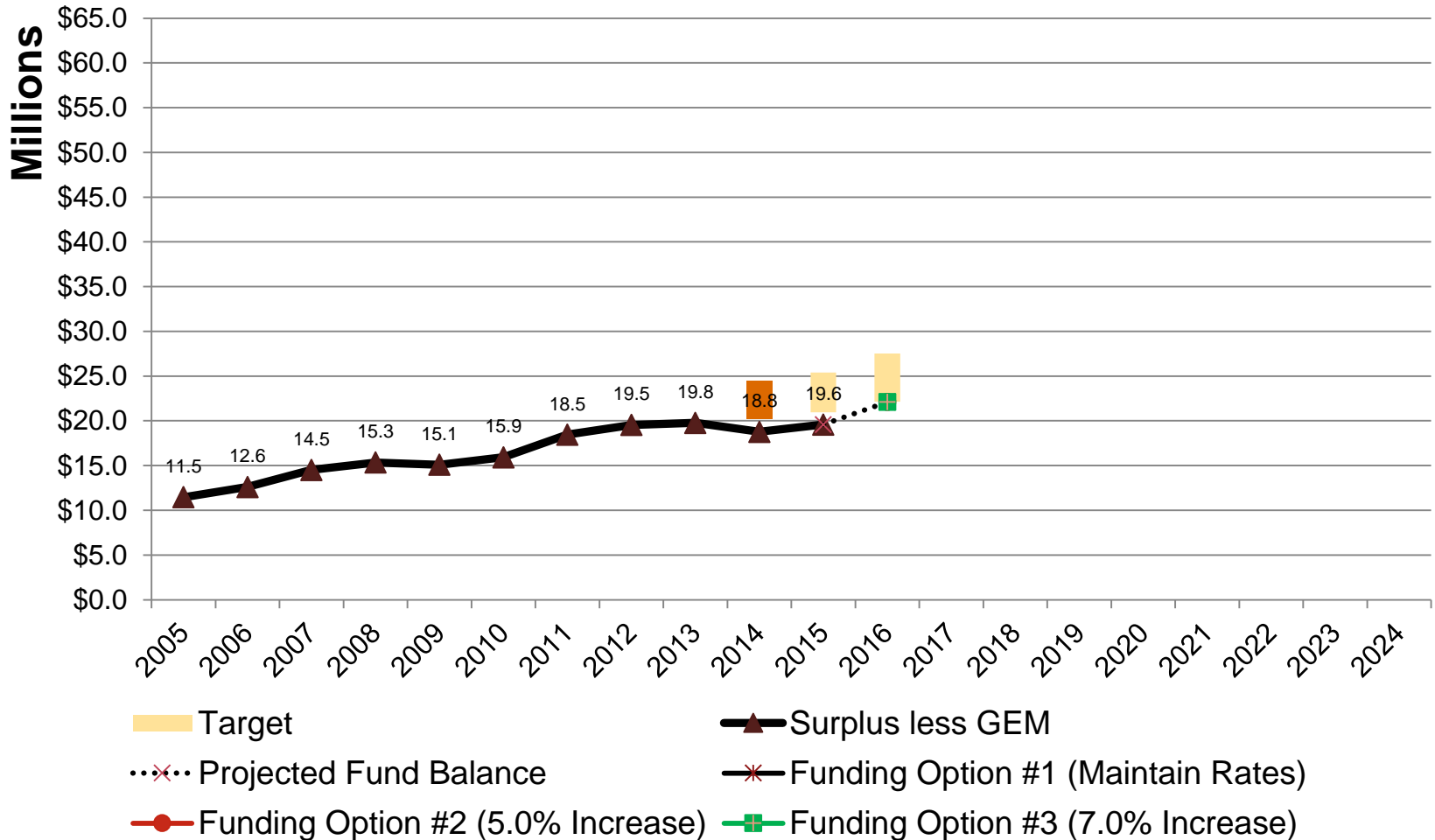
# Funding Adequacy as of December 2014



# 2017 Rating Decision

## Funding Position Relative to Target Fund Level

Assumes current risk profile (\$2 million liability SIR)

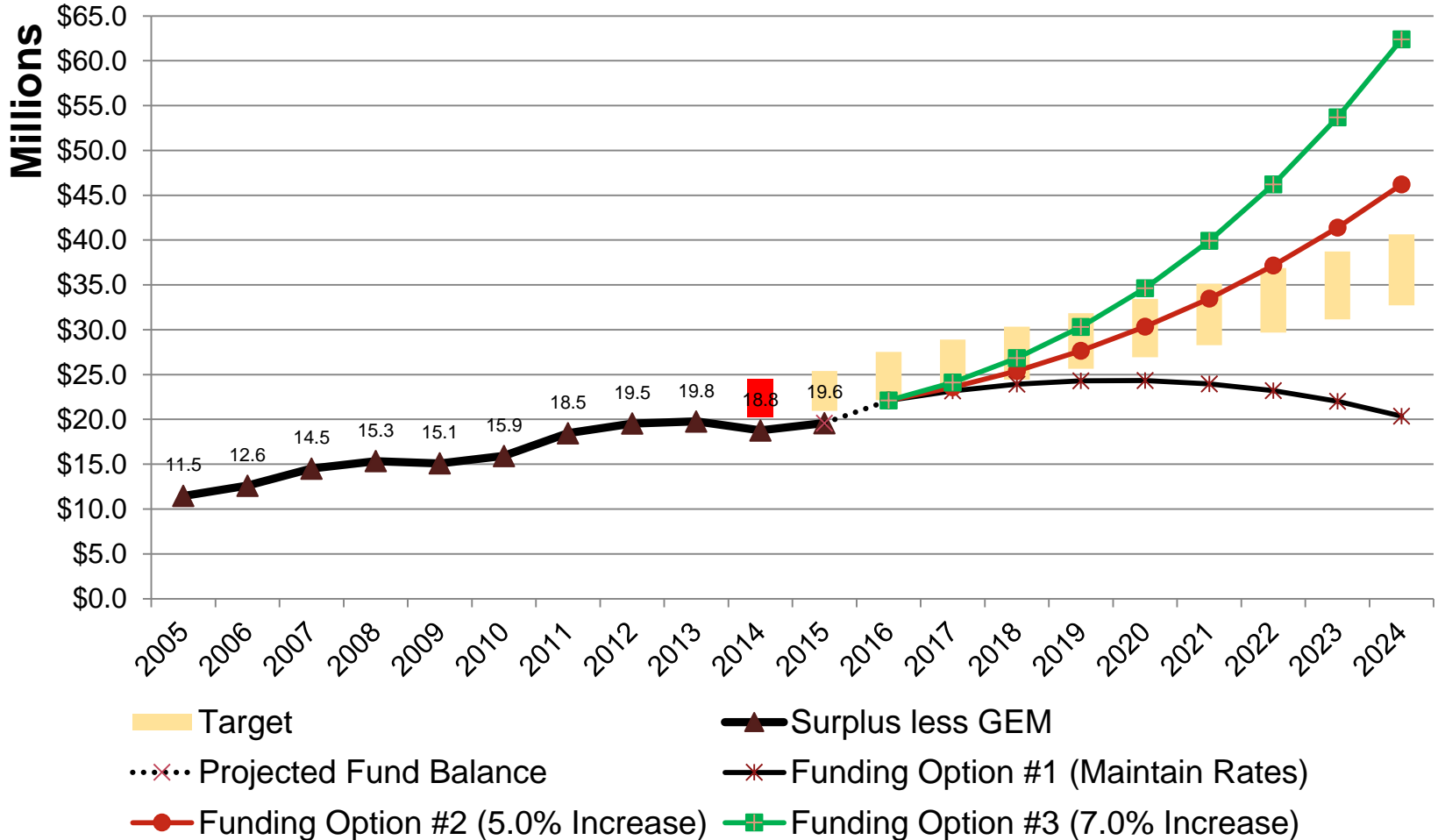




# 2017 Rating Decision

## Funding Position Relative to Target Fund Level

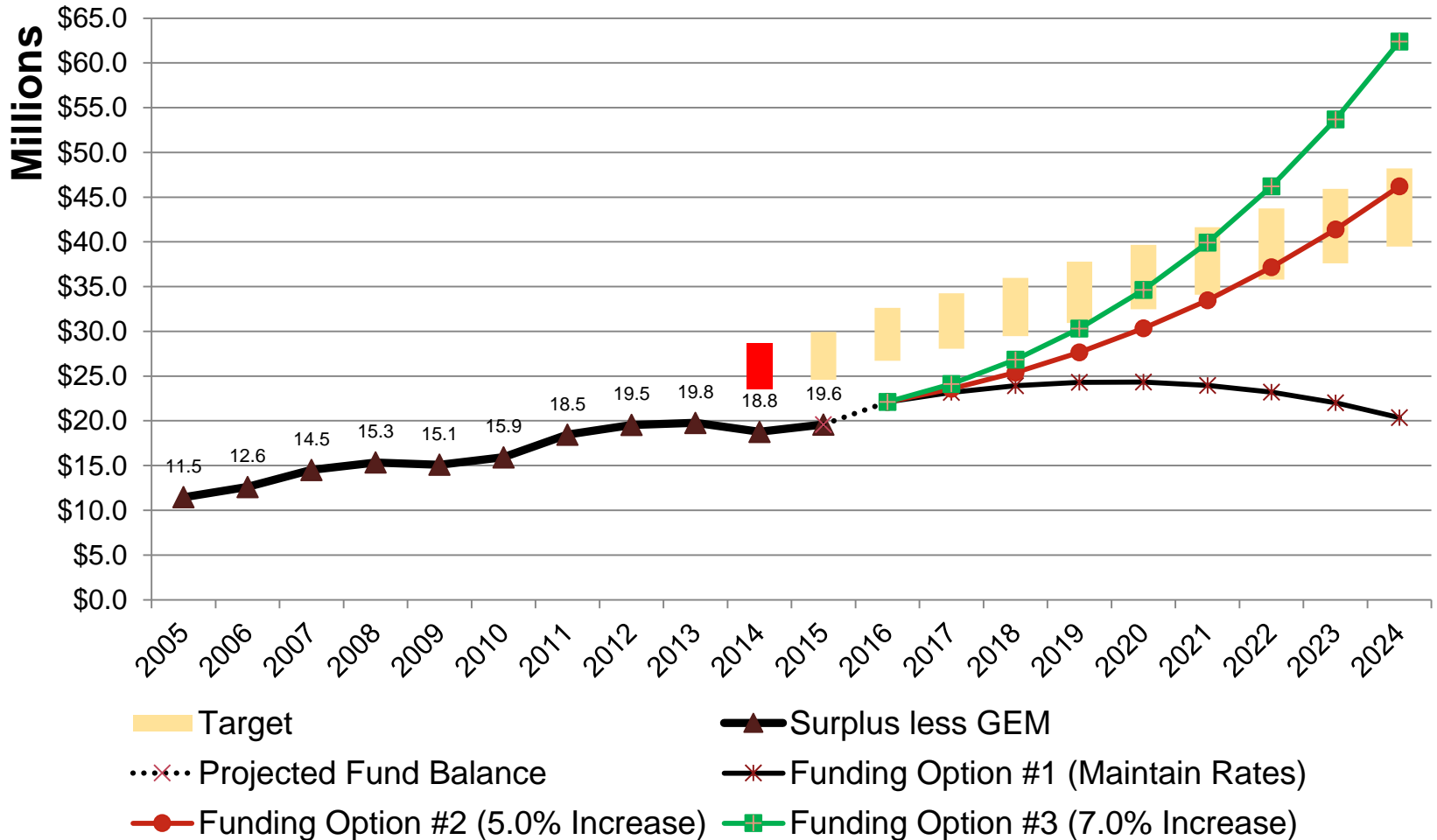
Assumes current risk profile (\$2 million liability SIR)



# 2017 Rating Decision

## Funding Position Relative to Target Fund Level

Assumes \$5 million liability SIR



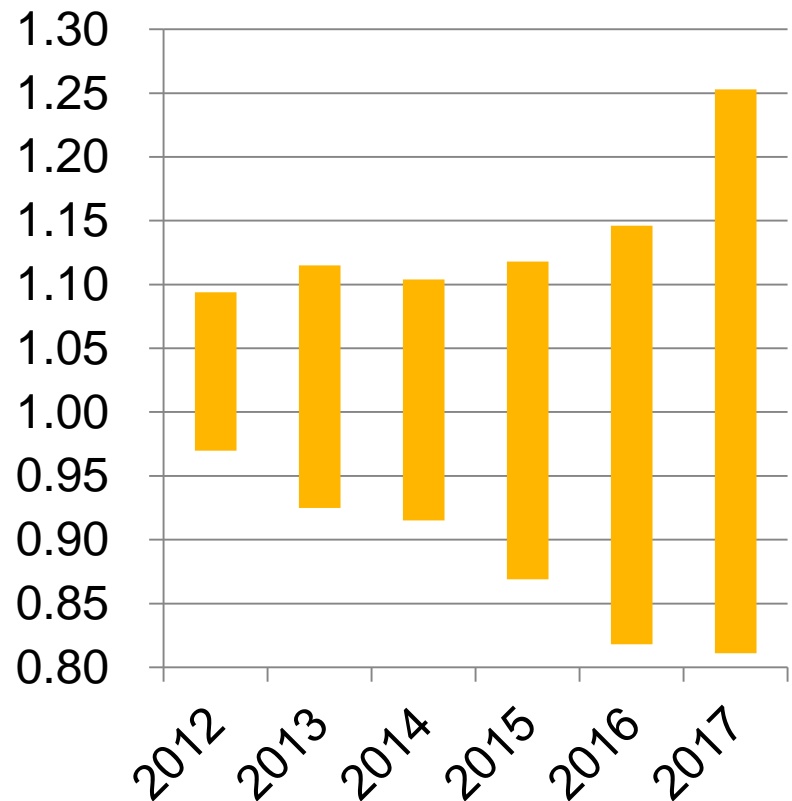
# Member Rating/Experience Rating

Contribution =  
Exposure Units x  
Base Rates x  
Experience Mod

## Experience Rating

- Benchmark (or expected) member losses determined
  - Based on proportion of mileage/counts
- Compared to actual losses
- Results in experience modification factor

## Exp. Mod Range



## *Calculation of base rate for automobile liability*

1.	2017 ultimate loss estimate (gross of deductibles)	\$5,643,869
2.	Liability excess premium	
-	Premium for layer \$3M excess \$2M	853,216
-	Premium for layer \$10M excess \$5M	349,168
-	Premium for layer \$5M excess \$15M	123,066
3.	Property excess premium	
4.	Administrative costs	2,164,923
5.	Interest and other income	(262,488)
6.	Equity contribution	1,368,689
7.	Estimated UIM portion of APD cost	
8.	2017 cost with UIM adjustment [sum of (1) through (7)]	10,223,180
9.	Estimated 2017 exposures	101,037,744
10.	Indicated base rates with UIM adjustment [(8)/(9)]	<b>0.1012</b>

# Calculation of relative loss experience

<u>Loss Year</u>	<u>Expected Member Losses</u> (1)	<u>Actual Member Losses</u> (2)	<u>Relative Loss Experience</u> <u>(2) / (1)</u> (3)
2006	379,045	437,635	1.155
2007	312,658	160,327	0.513
2008	316,167	122,796	0.388
2009	206,447	165,408	0.801
2010	196,161	58,163	0.297
2011	188,306	217,356	1.154
2012	133,318	106,158	0.796
2013	159,150	224,768	1.412
2014	135,406	161,055	1.189
2015	102,022	189,976	1.862
<b>Total</b>	<b>2,128,680</b>	<b>1,843,642</b>	<b>0.866</b>
<b>Latest 3 Years</b>	<b>396,578</b>	<b>575,799</b>	<b>1.452</b>

# *Experience mod calculation*

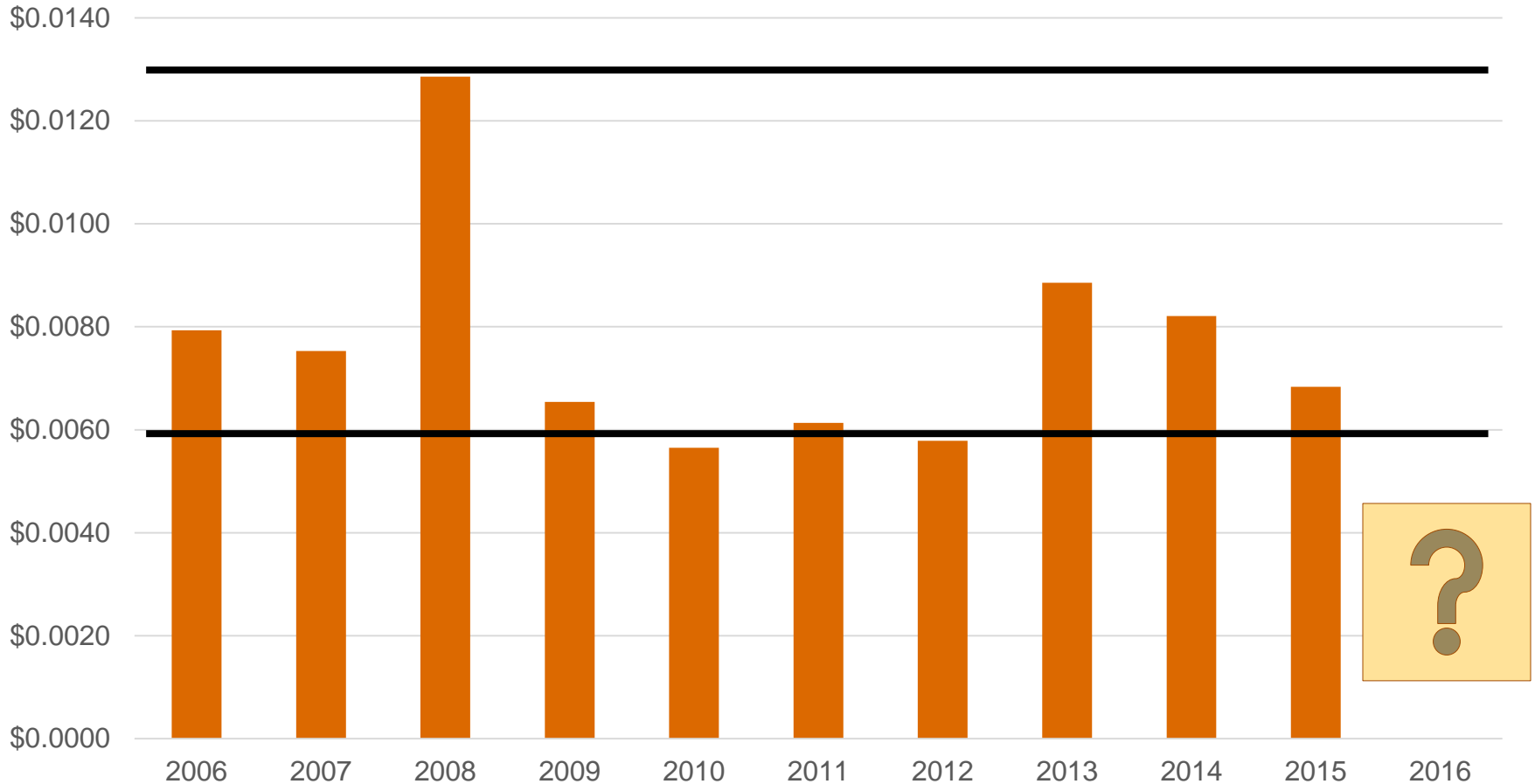
<u>Description</u>	<u>Calculation Component</u>	<u>Explanation</u>
(1) Latest relative loss experience	1.452	Loss experience from latest 3 year period
(2) Prior mod factor	1.008	Mod factor from prior study
(3) Weight given to latest relative loss experience	7.6%	Based on size; larger members are more self-rated
(4) Weight given to prior mod factor	92.4%	1-(3)
(5) Off-balance adjustment	1.027	This factor ensures full cost of program is allocated
(6) Experience Mod Factor	1.070	$[(1) \times (3) + (2) \times (4)] \times (5)$

# Assessment calculation

<u>Rating Unit</u>	<u>Number of Exposure Units</u> (1)	<u>Base Rate</u> (2)	<u>Mod Factor</u> (3)	<u>Deductible Factor</u> (4)	<u>Indicated Assessment</u> <u>(1) x (2) x (3) x (4)</u> (5)
Fixed Route miles	2,567,000	0.1012	1.070	1.000	277,965
Paratransit miles	1,416,000	0.1012	1.070	1.000	153,330
Vanpool miles	1,000,000	0.1012	1.070	1.000	108,284
Admin miles	423,000	0.1012	1.070	1.000	45,804
Number of employees	375	296.09	1.070	1.000	118,806
Vehicle values (hundreds)	75,406	0.3663	1.000	0.848	23,423
Property values (hundreds)	350,825	0.1720	1.000	0.967	58,351
Other rating cost components					61,559
Audit adjustment (from prior member contribution)					(1,863)
<b>Total Indicated Assessment</b>					<b>845,659</b>

# *Evaluating success of loss control initiative*

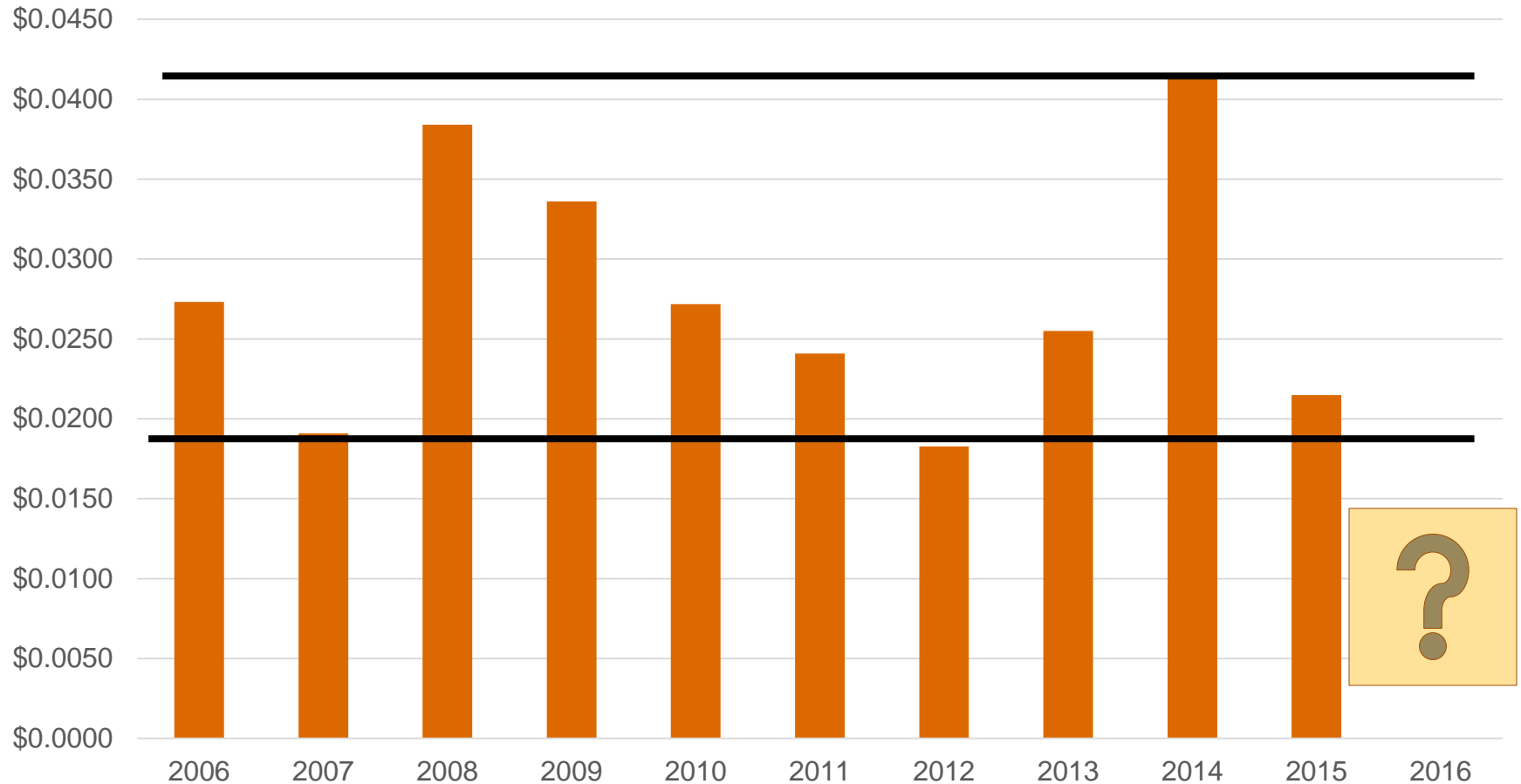
## *Paid loss per mile at twelve months of development*





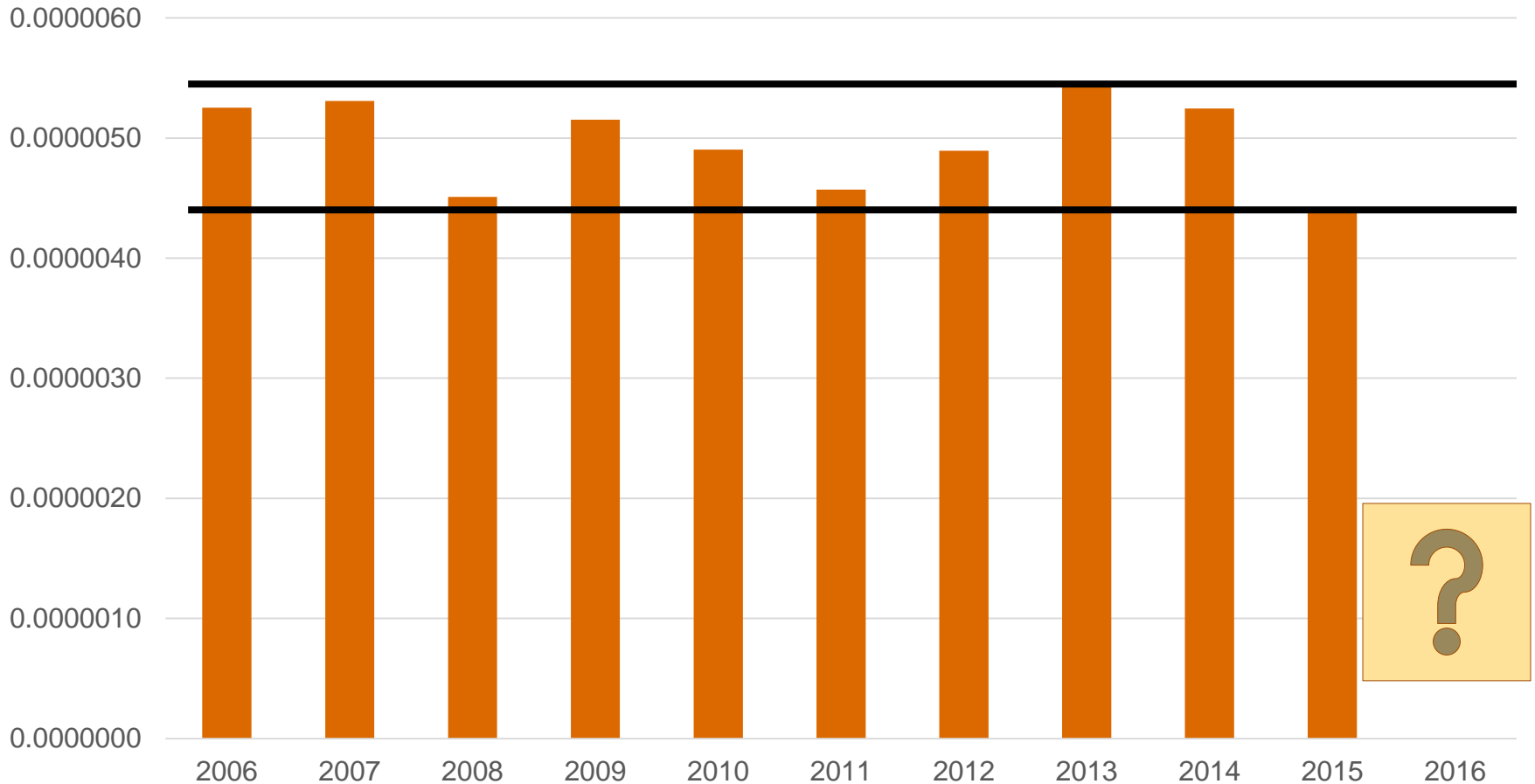
# *Evaluating success of loss control initiative*

## *Incurred loss per mile at twelve months of development*



# *Evaluating success of loss control initiative*

## *Reported claims per mile at twelve months of development*



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# *Questions*

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## **Brian White**

First Vice President  
Public Entity Group  
Alliant Insurance Services, Inc.

### ***Service Philosophy:***

"Achieving client satisfaction is an ongoing effort, and the result of listening, learning, and crafting dynamic solutions to address evolving needs."

### **Accomplishments and Areas of Expertise:**

Brian joined Alliant Insurance Services in 2001, and has worked exclusively with Public Entities since then. His placement knowledge includes Public Entity Liability, Property, and Excess Workers' Compensation. Beyond brokerage and placement activities, Brian regularly provides his clients with: advice pertaining to insurance & indemnification requirements, claims resolution support, and general consulting services on any number of insurance & risk management related topics that may arise in the normal course of daily business.

He was recently selected by Risk and Insurance Magazine as "Power Broker" in the Public Sector "Under 40" category.

### **Experience:**

Brian is First Vice President for the Public Entity Group. His clients include municipalities, counties, and state governments, self-insured pools, and special districts. He also works several large public transit systems in the Western US.

### **Education, Professional, and Personal Interests:**

Brian earned a Bachelor of Science in Finance degree from the University of Arizona. He is a licensed Property & Casualty retail broker in Washington, California, and a handful of other states. Well rounded, Brian is finishing his coursework towards the completion of the Chartered Property & Casualty Underwriter (CPCU) and Associate in Risk Management (ARM) designations. Brian is an active member in numerous industry associations including the Public Risk Management Association, American Public Transportation Association's Risk Management Committee, and the Public Agency of Risk Management Association.

Outside of his profession, Brian enjoys spending time with his wife and son, as well as a variety of outdoor activities in the greater Seattle area.