

Number-Crunching: Fact or Fiction?

National Tanks Conference
September 11, 2018

Carol R. Eighmey, MO Petroleum Storage Tank Insurance Fund

Missouri's First (1990) Actuarial Opinion...

- “...an insurance fund (as opposed to a cleanup fund)...lowers the [expected claim] frequency...”
- “...expected number of insured releases in 1991 is 31.90...”
- “Loss severity” (i.e., average cost of cleanup) projected to be \$48,000-\$69,000
- “Recommended rates....Rate manual....”
- “Financial projections”

“...immature experience....”

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Nobody really knows!

Start-up...And *Lots* of Changes!

1991	Coverage and structural changes.
1994	Allowed to insure operating sites with known, prior releases; lowered deductible.
1995	Created “Cleanup Fund” for past releases; raised cap on fund balance.
1996	Provided insurance (FR) to ASTs and expanded Cleanup Fund to include AST sites; moved management to Board.
1998	Extended ‘sunset date’ from 1998 to 2003.
1999	Made more sites eligible for Cleanup Fund.

As a result....

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***A “fund soundness” crisis
in 2000!***

Time for Action!

- The Legislature
 - Extended 'sunset date' from 2003 to 2010;
 - ***Gave Board authority to raise and lower petroleum fee, within limits; and***
 - ***Required biannual actuarial report.***
- The Board raised the petroleum fee to generate more revenue.

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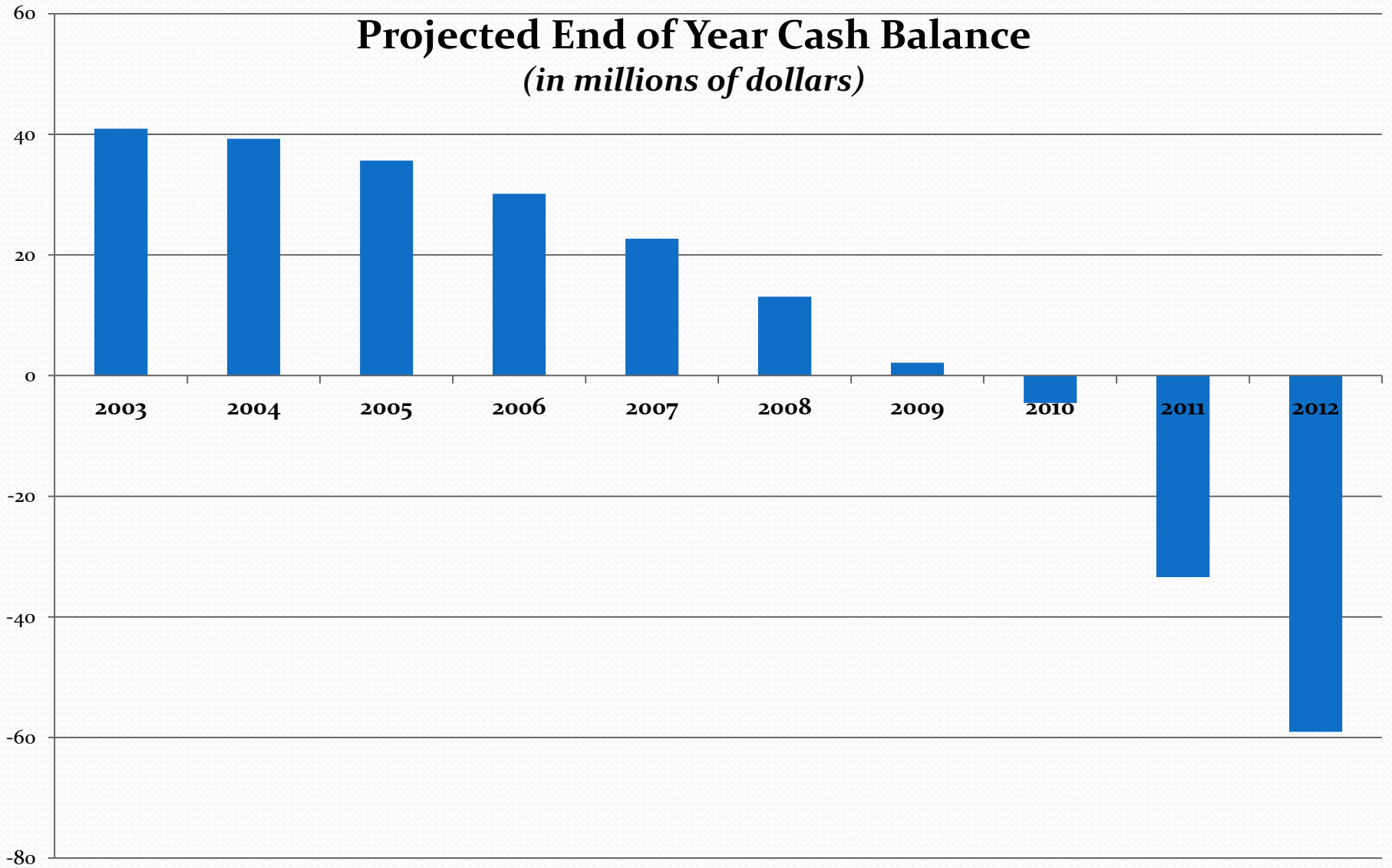
- “Current fund balance of over \$40 million...”

BUT...

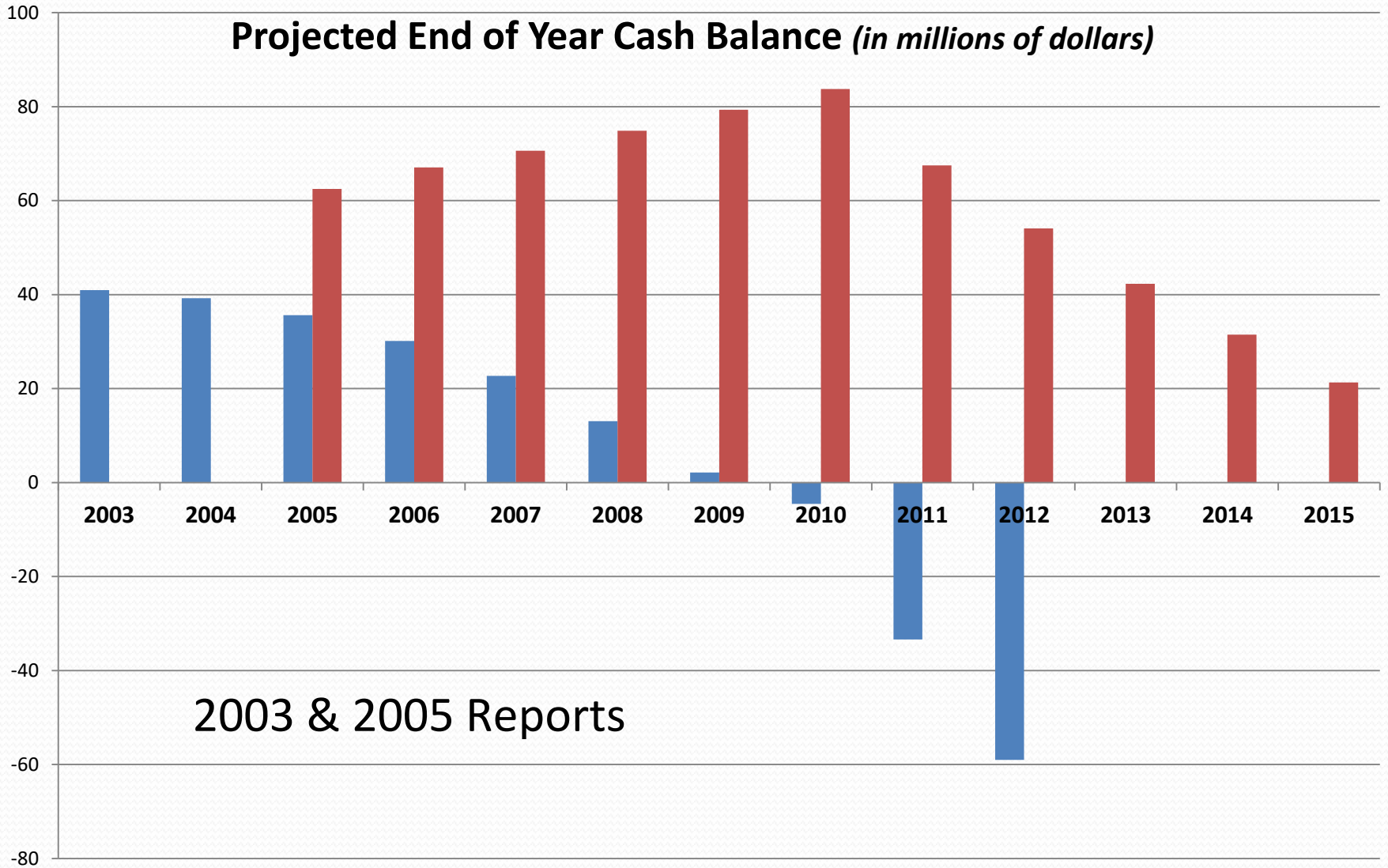
- “We expect the fund balance to be depleted in 2010.”

Projected End of Year Cash Balance

(in millions of dollars)



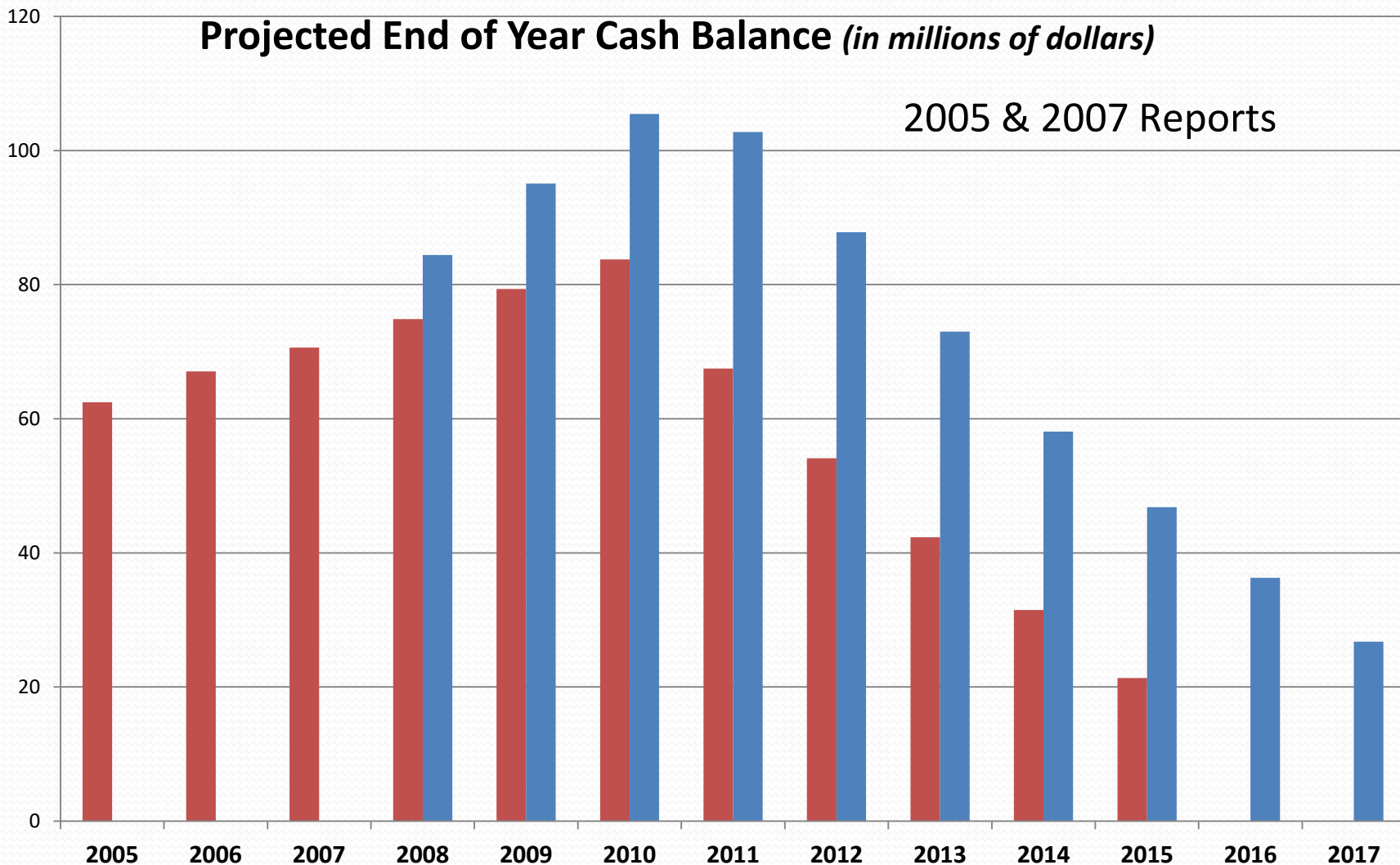
Projected End of Year Cash Balance *(in millions of dollars)*



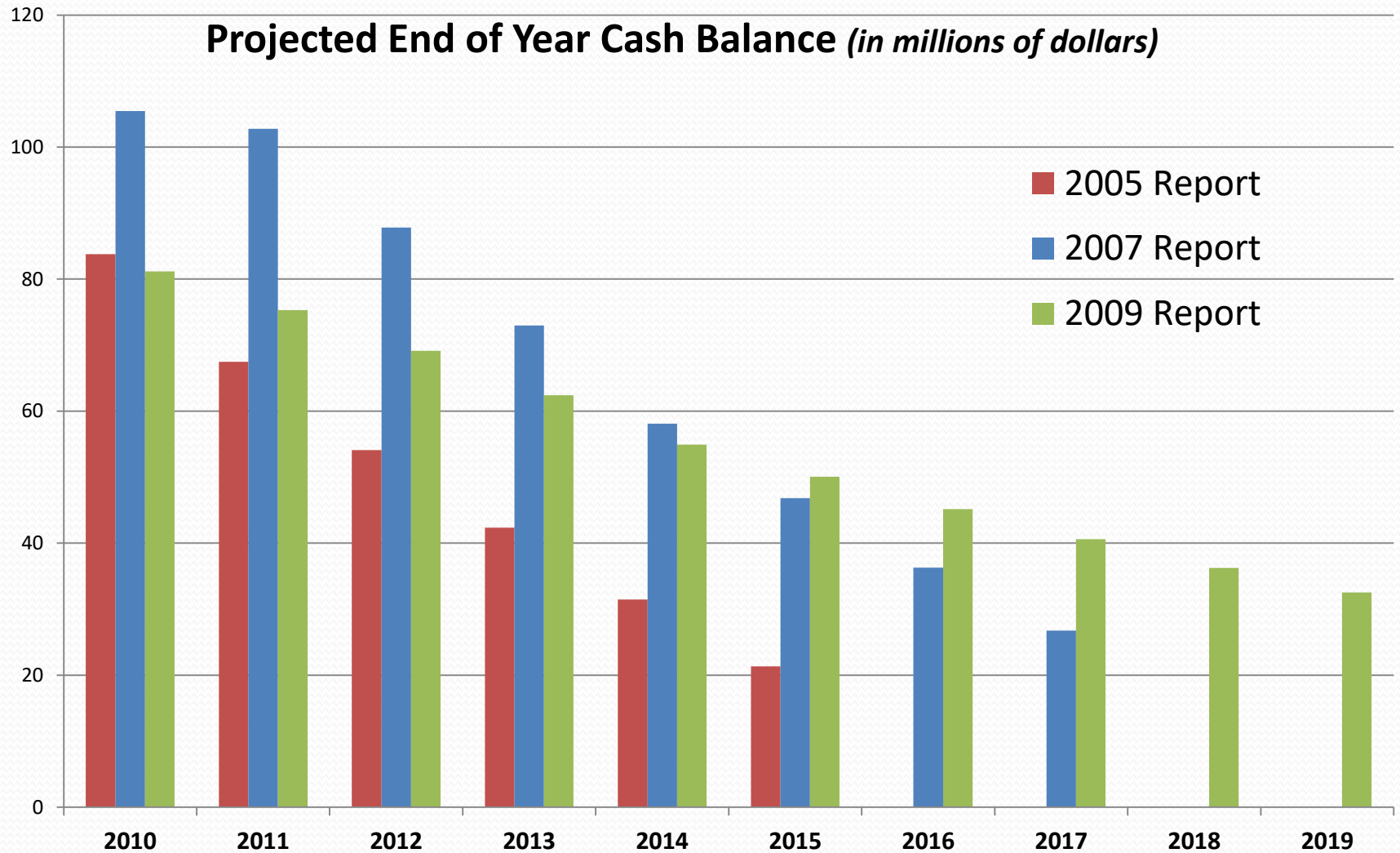
2003 & 2005 Reports

Projected End of Year Cash Balance *(in millions of dollars)*

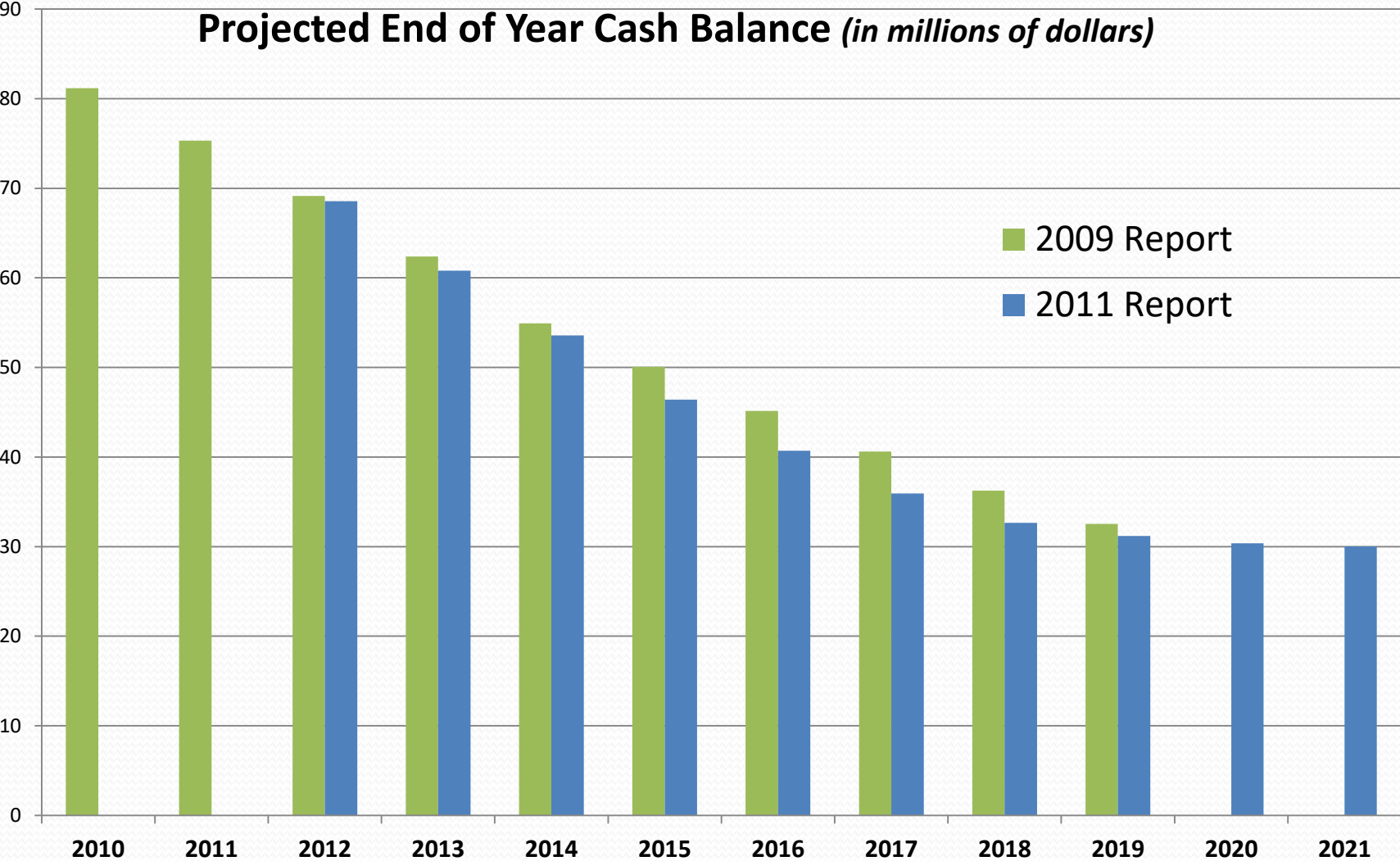
2005 & 2007 Reports



Projected End of Year Cash Balance *(in millions of dollars)*

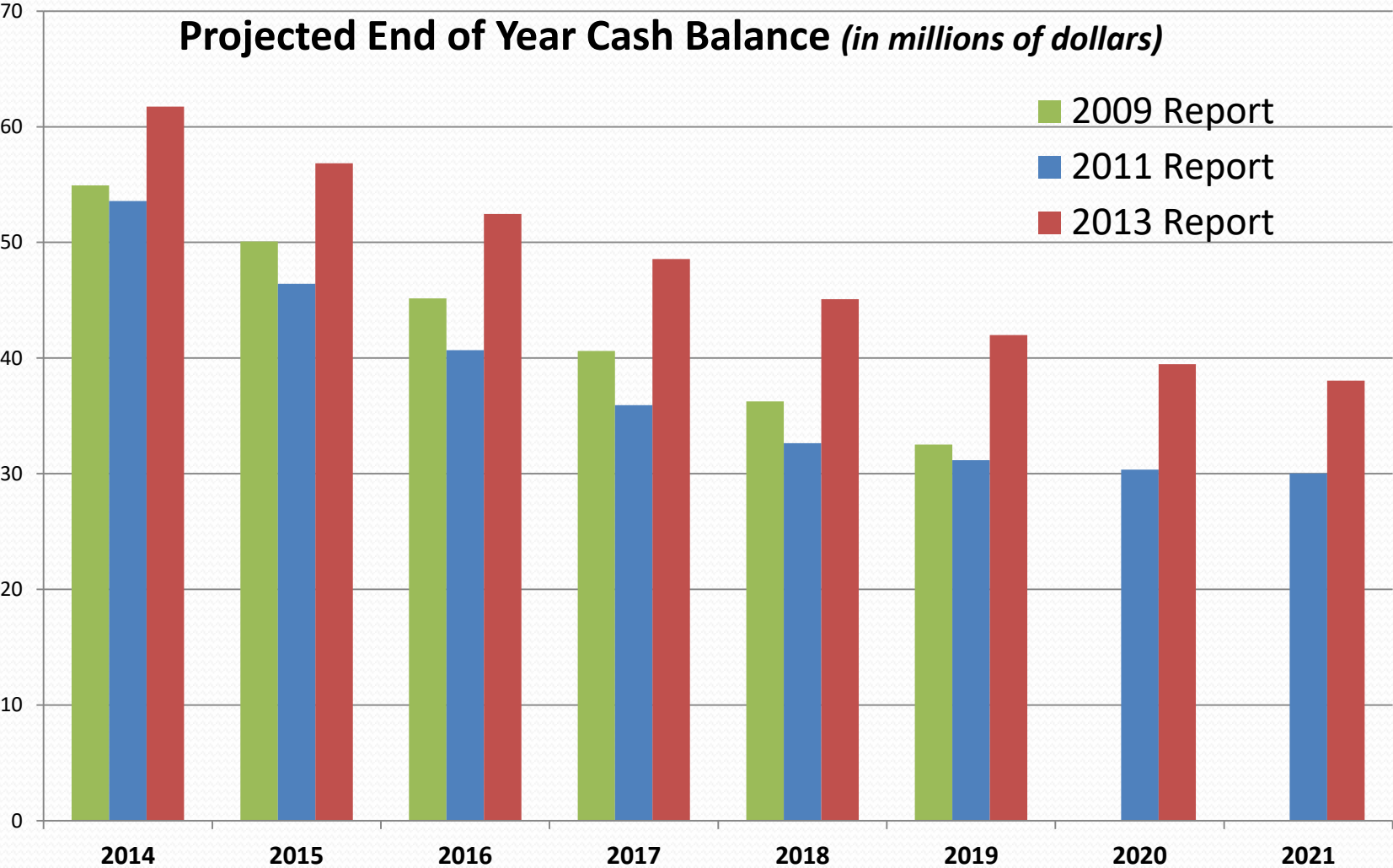


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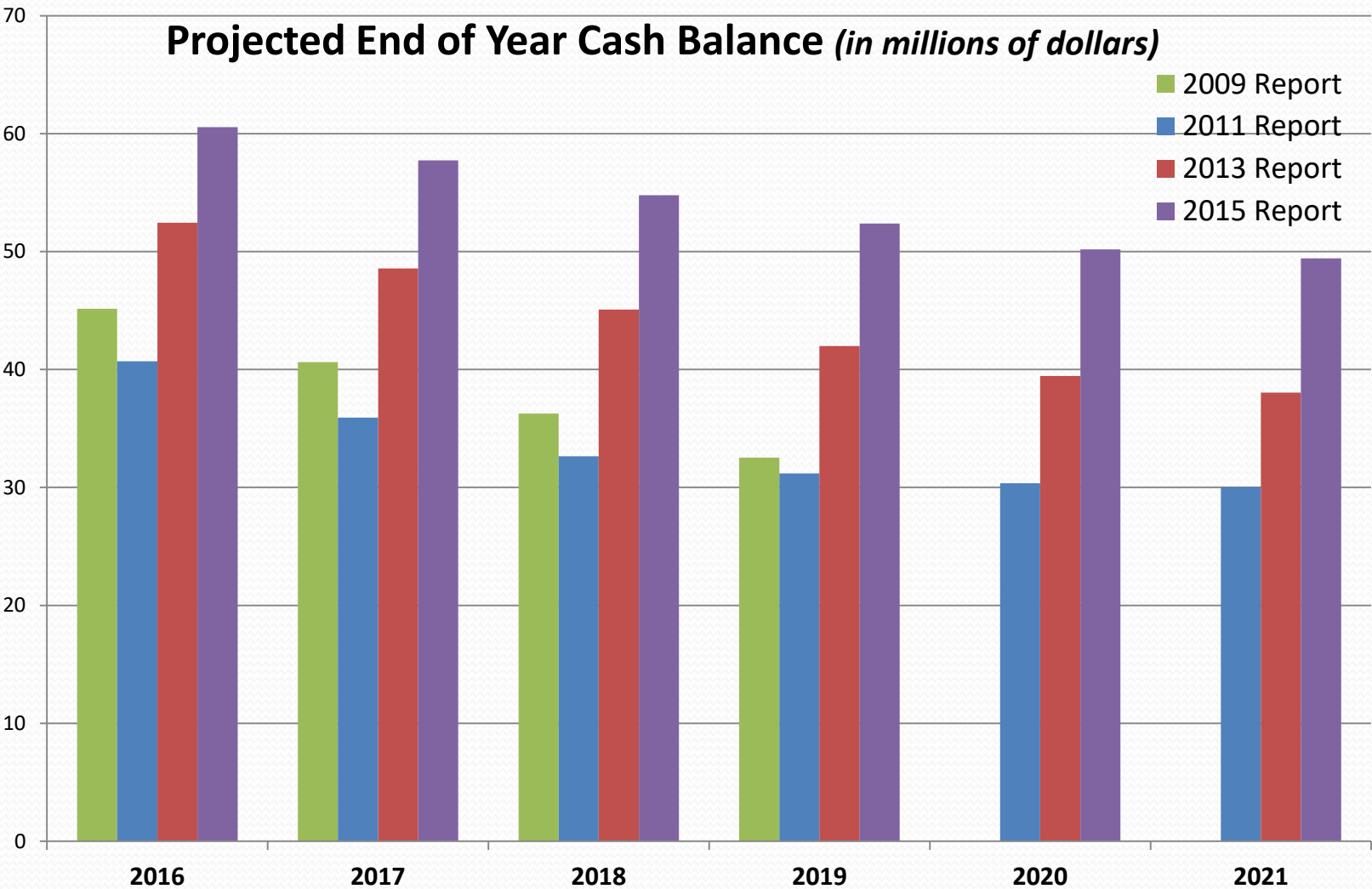
Projected End of Year Cash Balance *(in millions of dollars)*

- 2009 Report
- 2011 Report
- 2013 Report



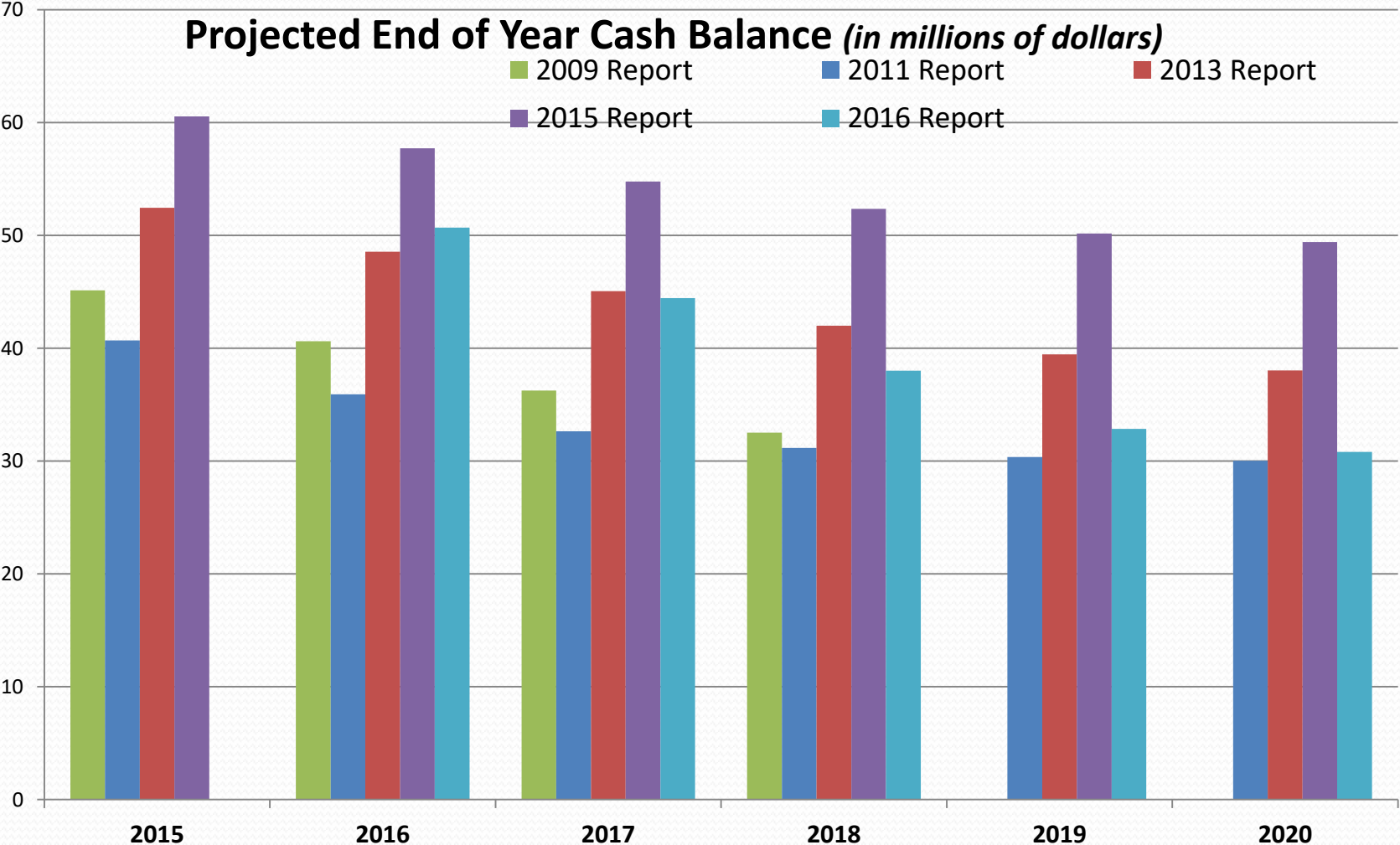
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- 2009 Report
- 2011 Report
- 2013 Report
- 2015 Report



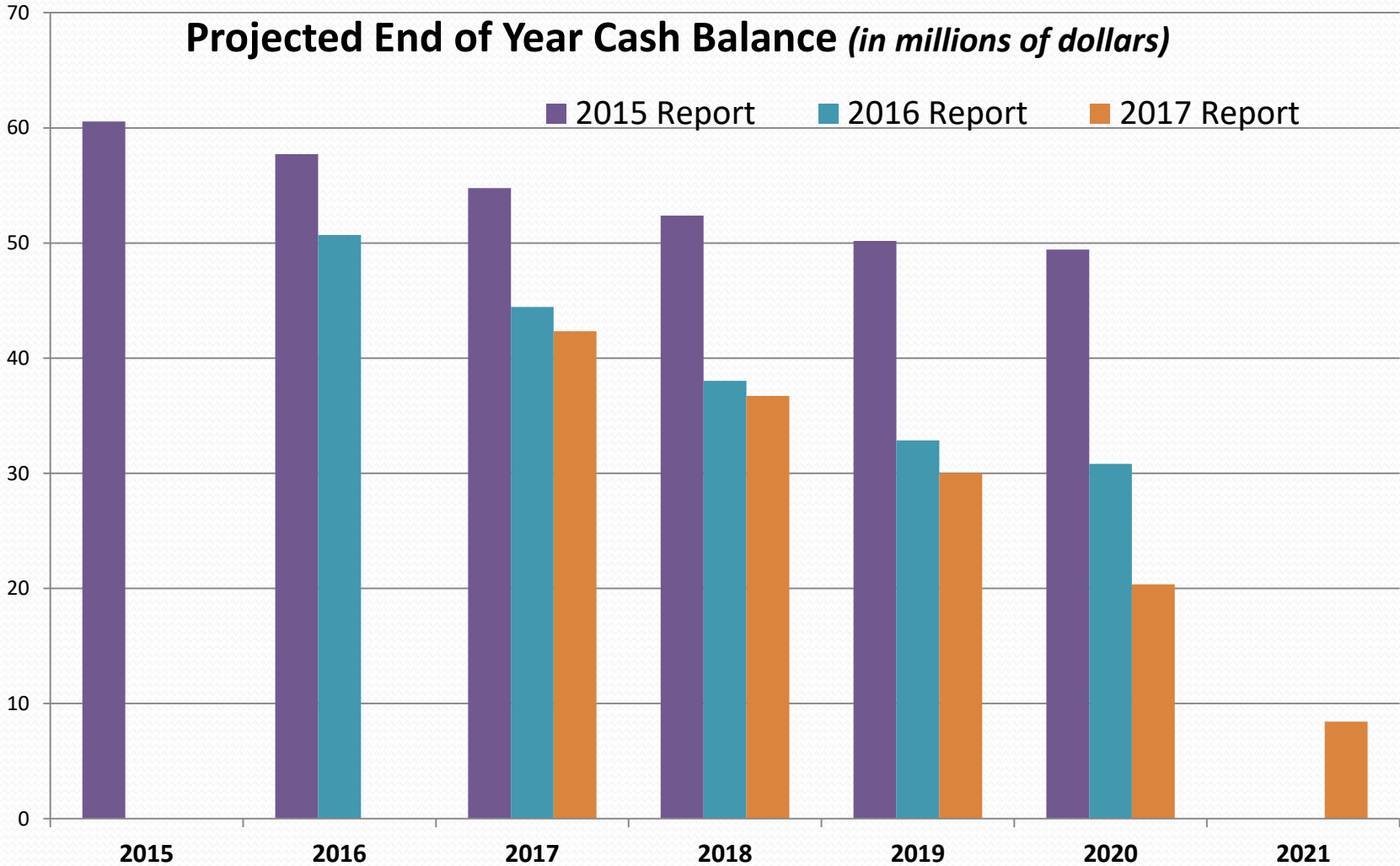
Projected End of Year Cash Balance *(in millions of dollars)*

2009 Report 2011 Report 2013 Report
2015 Report 2016 Report

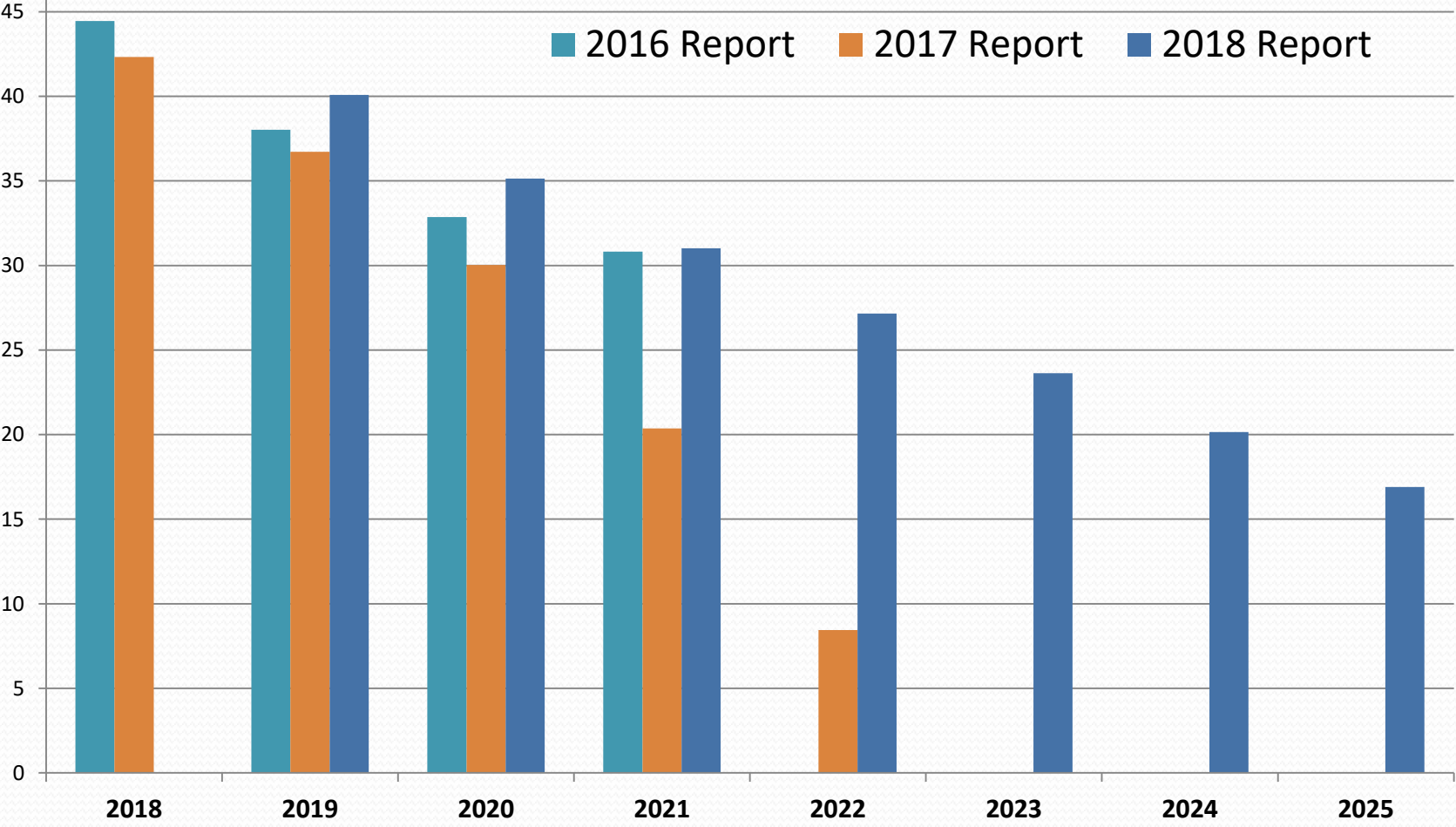


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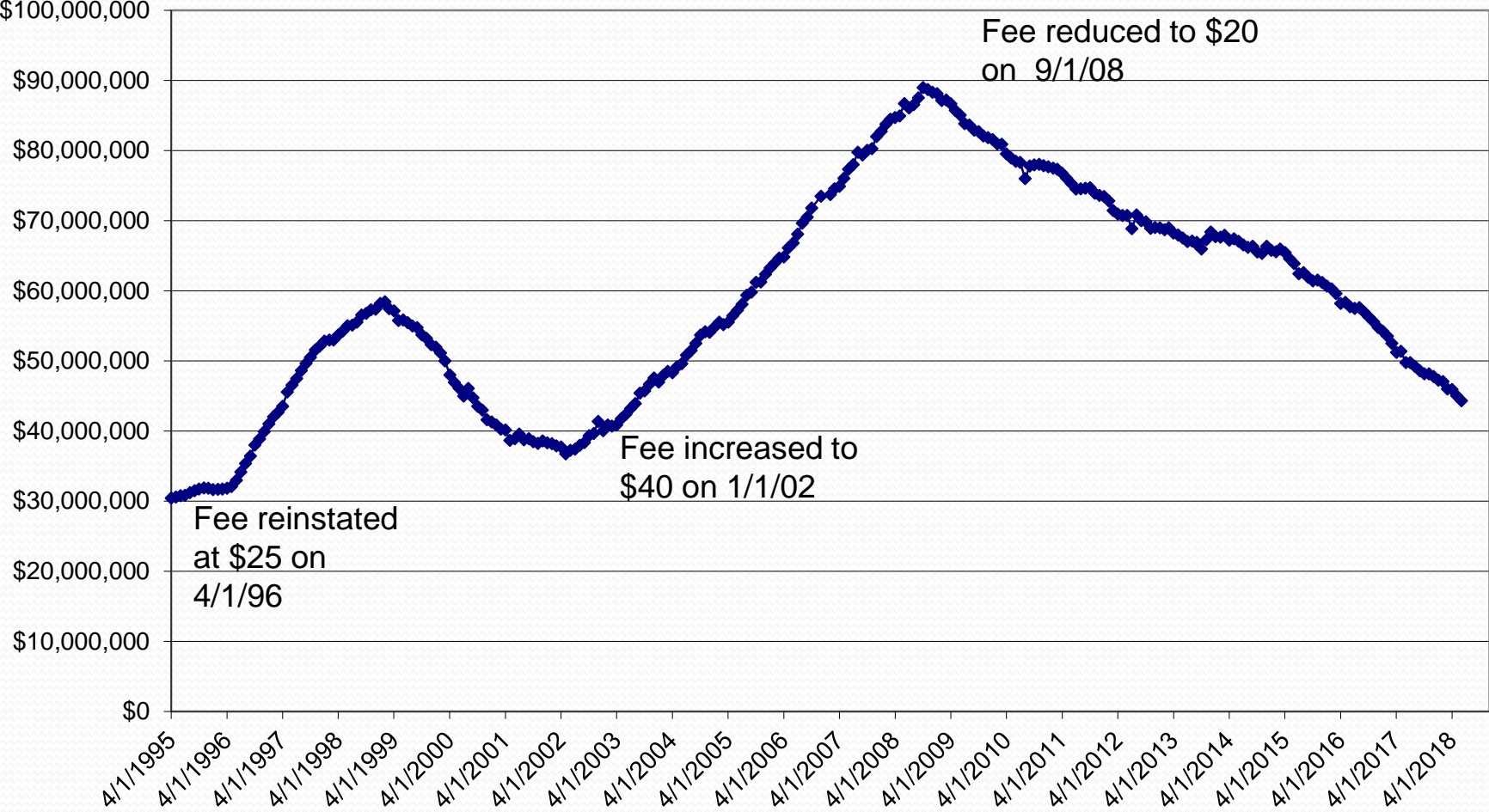
2015 Report 2016 Report 2017 Report



Projected End of Year Cash Balance *(in millions of dollars)*



MONTHLY CASH BALANCE



“Case reserves”

“IBNR”

“Pro Forma”

“ULAE”

“Loss”

“Stochastic Simulations”

“Claim frequency”

“Claim severity”

Other Useful Insights...

- UST removals cost an average of ~\$50,000, and this average is decreasing over time.
- UST leaks cost an average of ~\$150,000.
- How many UST and AST leaks (from in-use tanks) will occur (on average) every year.
- How many claims we can expect annually from Phase II Assessments and tank system closures or replacements.

Other Useful Insights...

- Fewer claims will be filled annually in future years.
- We closed claims, (i.e., completed cleanups), quicker in the last eight years than previously.
- The number of “old sites” that will access our “Cleanup Fund” annually is shrinking.
- \$45 million will be needed for those “old sites.”

“Take Home Message”

1. Database design is critical - Think about what you're going to want to know in the future, then “work backward.”
2. Maintain consistent data fields and data entry practices over time.
3. QA/QC is necessary.
4. Calculate and analyze the same things over time.

“Take Home Message”

5. Trends are far more important than any one year's analysis.
6. Hire an expert to predict the future!
7. Understand the expert's assumptions; challenge them if need be.
8. Share info – even with folks who don't know they want it!

“If we have data, let’s look at data. If all we have are opinions, let’s go with mine.”

-- Jim Barksdale