

# Alabama's Safety Performance Measures Target Setting

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U.S. Department of Transportation  
Federal Highway Administration



**Safe Roads for a Safer Future**  
*Investment in roadway safety saves lives*

<http://safety.fhwa.dot.gov>

# Workshop Agenda

- 9:00 – 9:30** Welcome and Introductions
- 9:30 – 9:45** Training Video Recap/React Q & A
- 9:45 – 11:30** Performance Based Safety Target Setting
- 11:30 – 12:45** Lunch
- 12:45 – 2:00** State Safety Target Setting Methods
- 2:00 – 2:15** Break
- 2:15 – 3:30** MPO and State Safety Target Setting Coordination
- 3:30 – 4:15** Next Steps in Safety Target Setting by State and MPOs
- 4:15 – 4:30** Wrap up and Conclusion

# Welcome & Introductions



# Target Setting Framework



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**Federal Highway Administration**



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# Purpose

- List commonly used methods for setting safety targets
- Define evidence-based targets
- List steps of evidence-based target setting process
- Apply process to set evidence-based targets

# 5 Safety Performance Measures

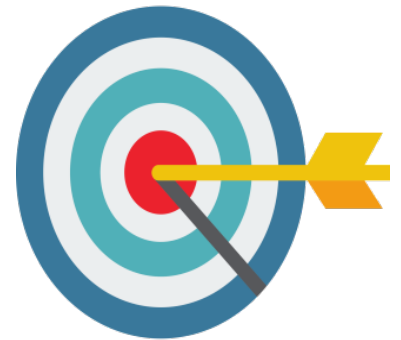
- Number of Fatalities
- Rate of Fatalities
- Number of Serious Injuries
- Rate of Serious Injuries
- Number of Non-motorized Fatalities plus Serious Injuries

# Types of Target Setting

- Evidence-Based Target Setting
  - Estimate of achievements for a specific set of investments, policies, and strategies
  - Achievable
  - Relatively short timeframe (5 to 10 years)
- Aspirational or Vision-Based Target Setting
  - Long-term vision for future performance
  - Vision for zero fatalities (Vision Zero, TZD, Target Zero)

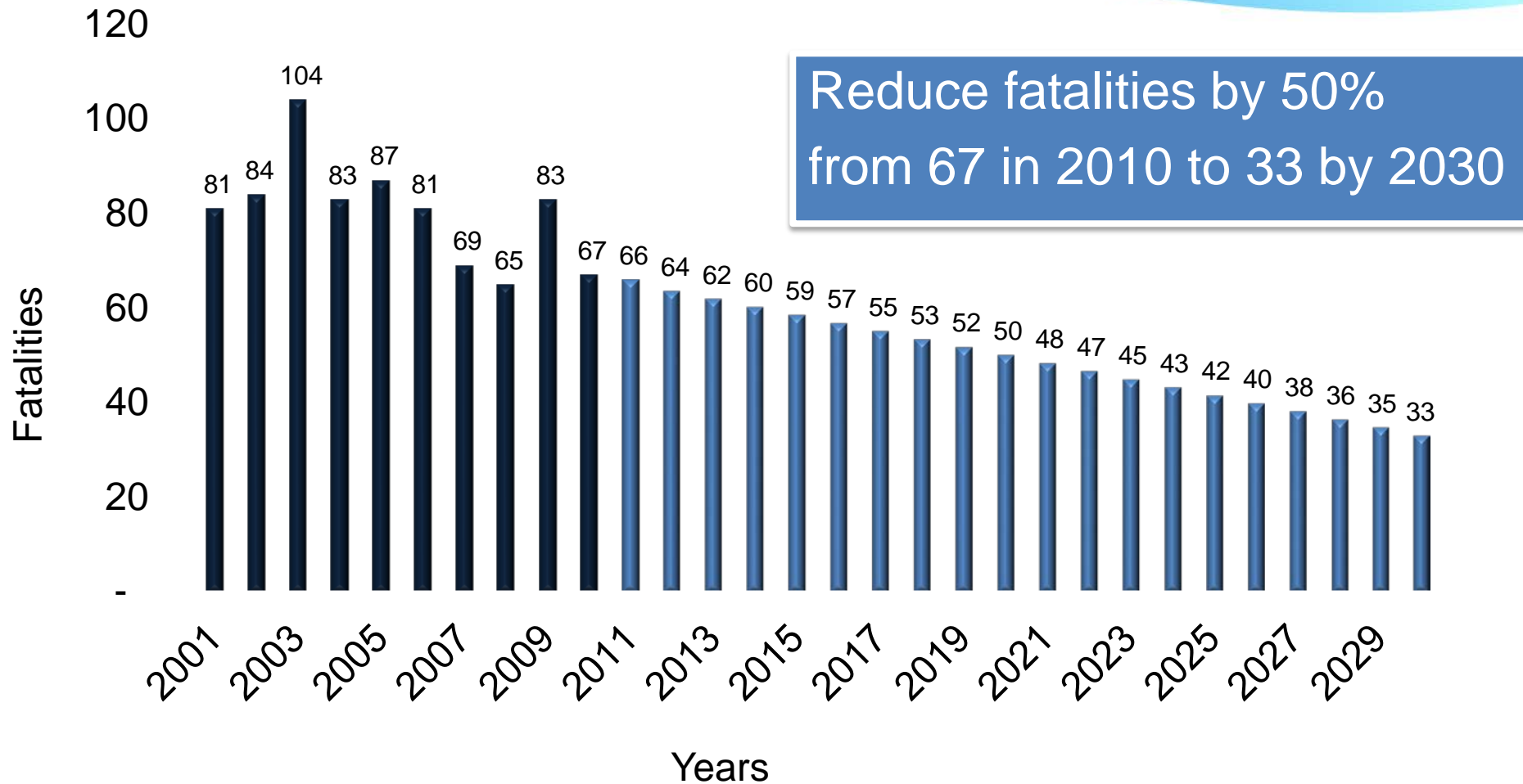
# Benefits of Evidence-Based Targets

- Promote accountability for specific planning efforts
- Support considerations of investment tradeoffs across different program areas
- Based on data and research





# Example: Halve Fatalities by 2030



# Factors Affecting Target Setting Process

Internal Factors

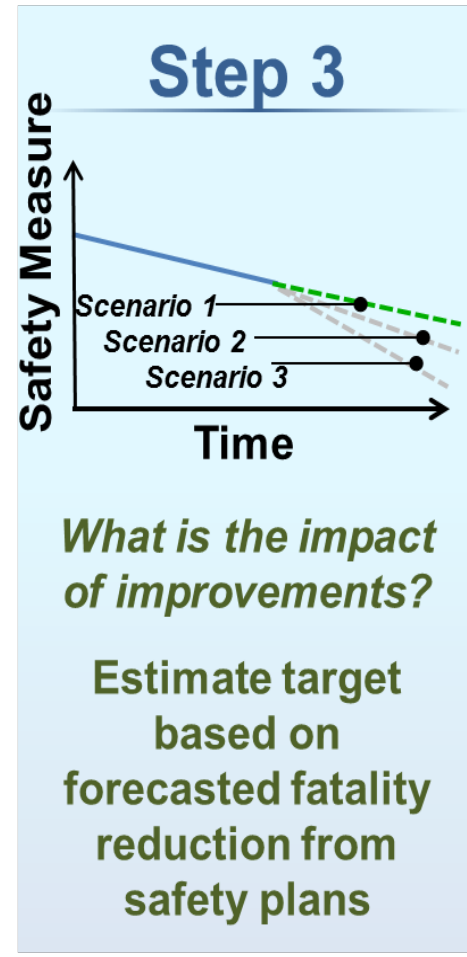
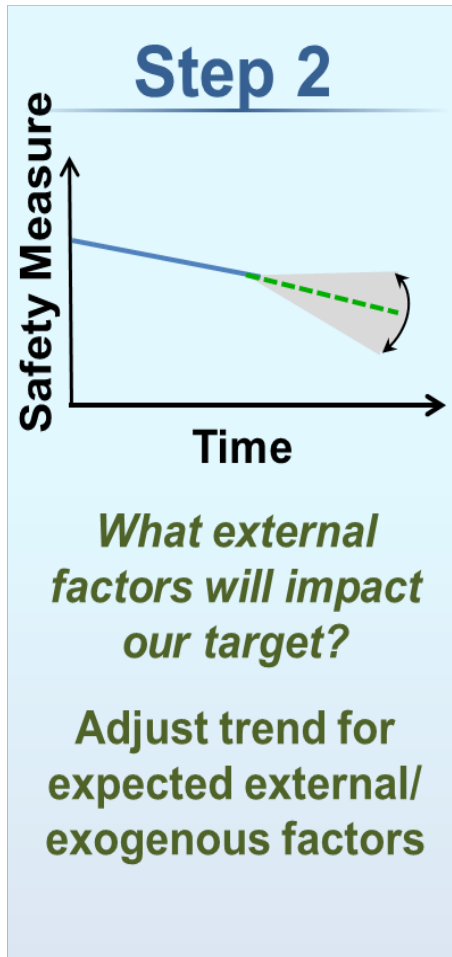
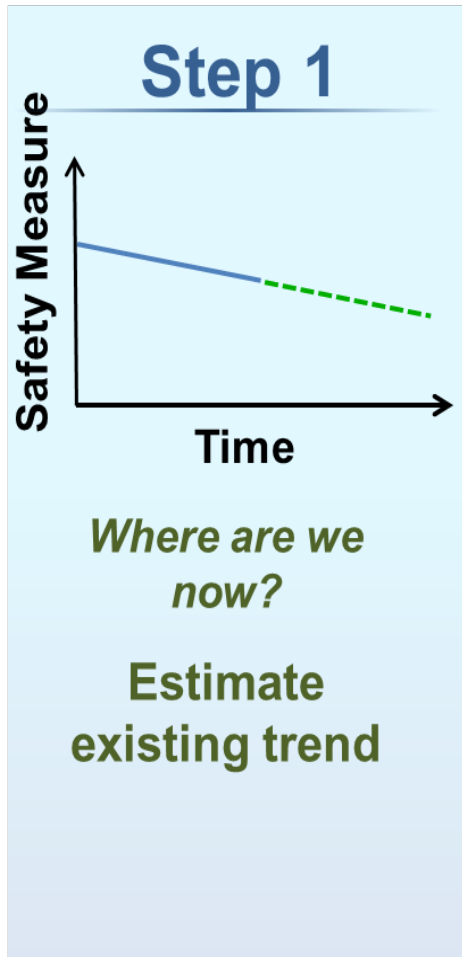
versus

External Factors

# Factors Affecting Target Setting Process

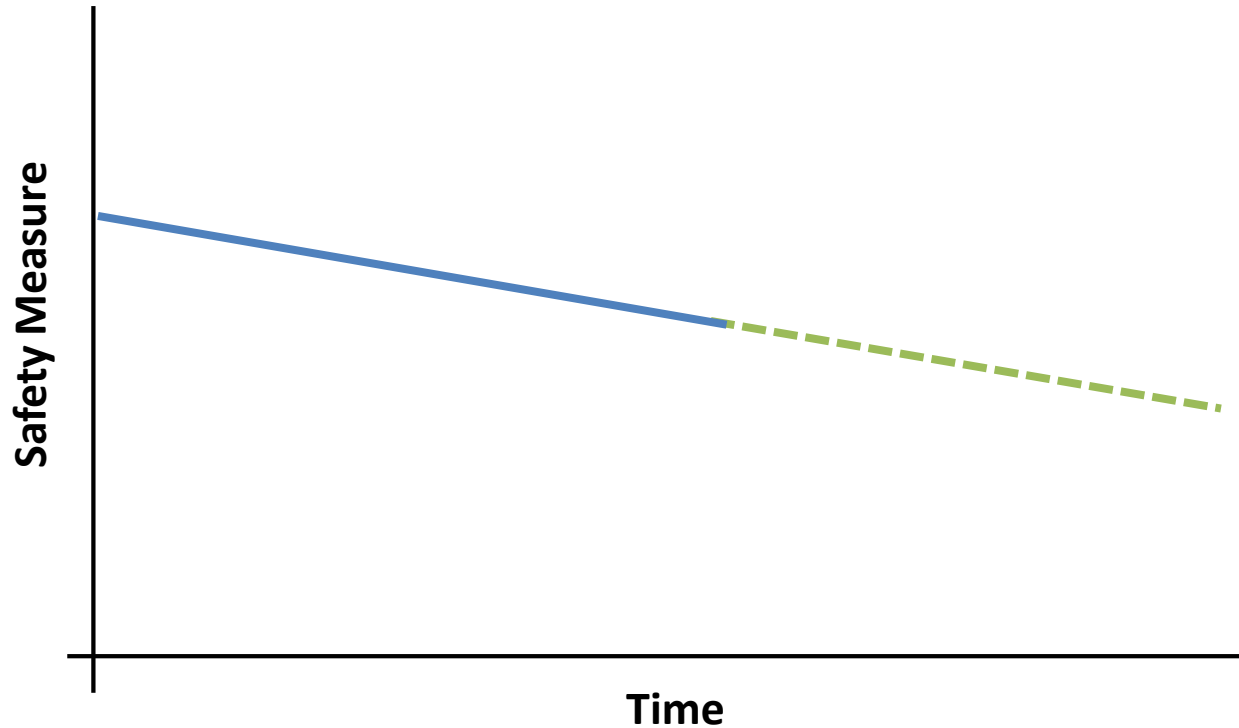
- Span of control/agency jurisdiction
- Performance-based resource allocation history/evolution of state-of-the-practice
- Financial resources
- Technical resources/planning and forecasting capability
- Timeframe
- Political influence
- Legislative influence
- Organizational structure
- Internal support/culture

# Safety Target Setting Framework



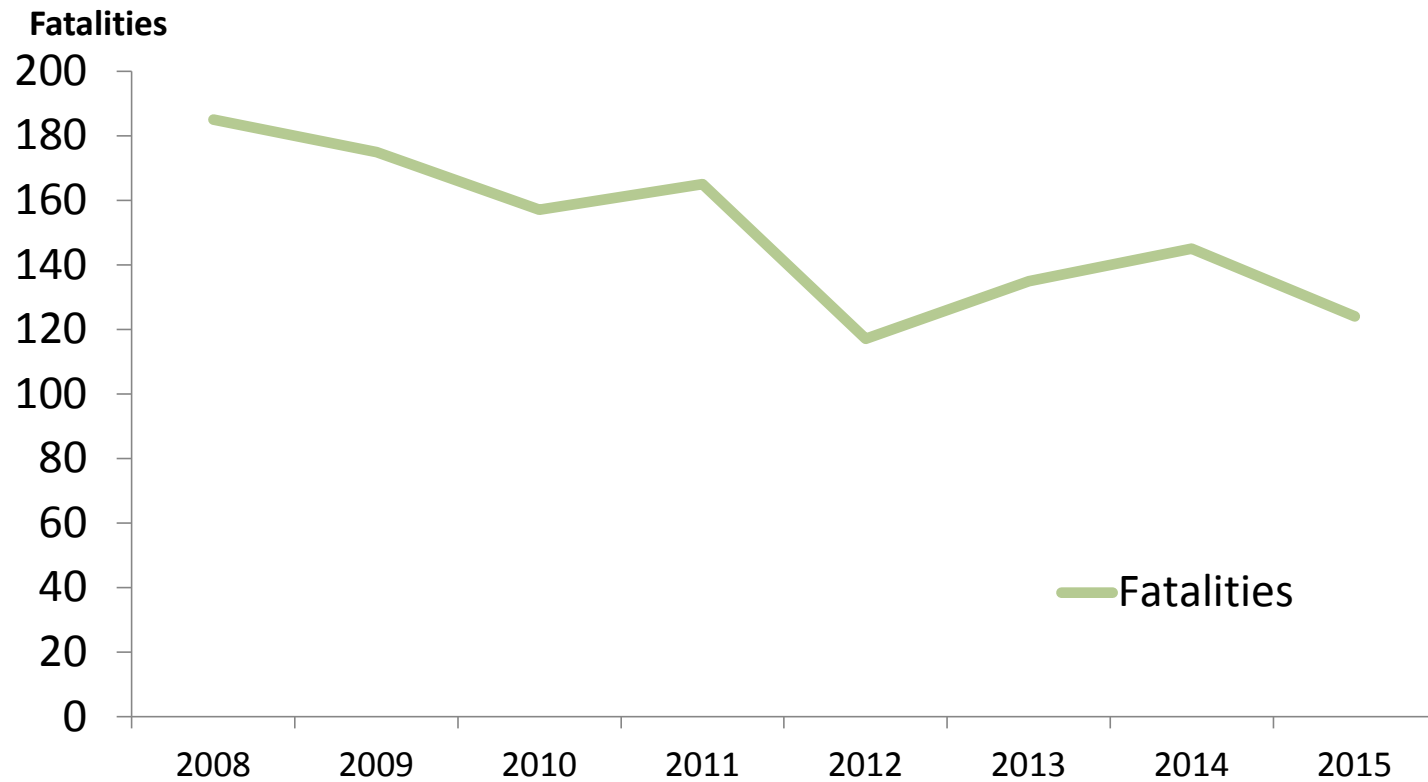
# Evidence-Based Target Setting

## Step 1

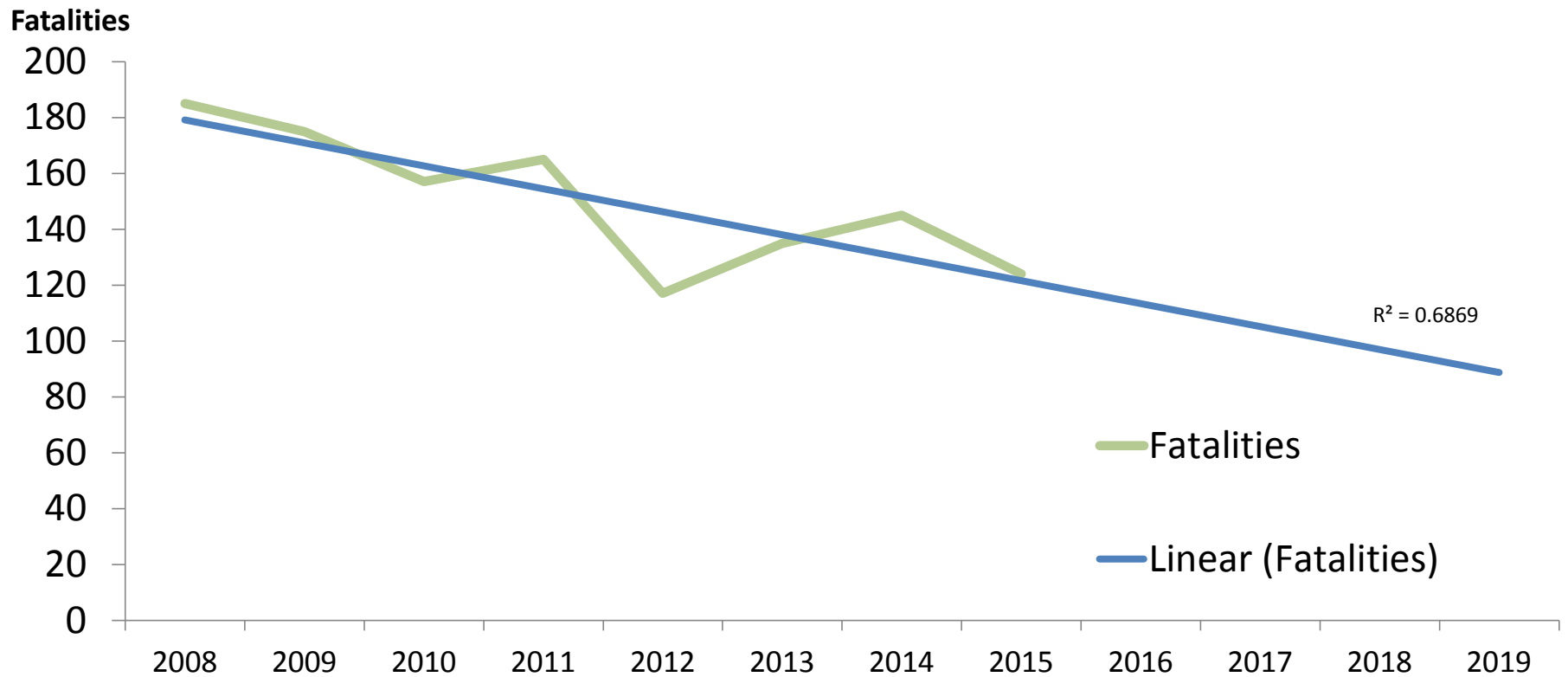


*Where are we now?*  
Estimate existing trend

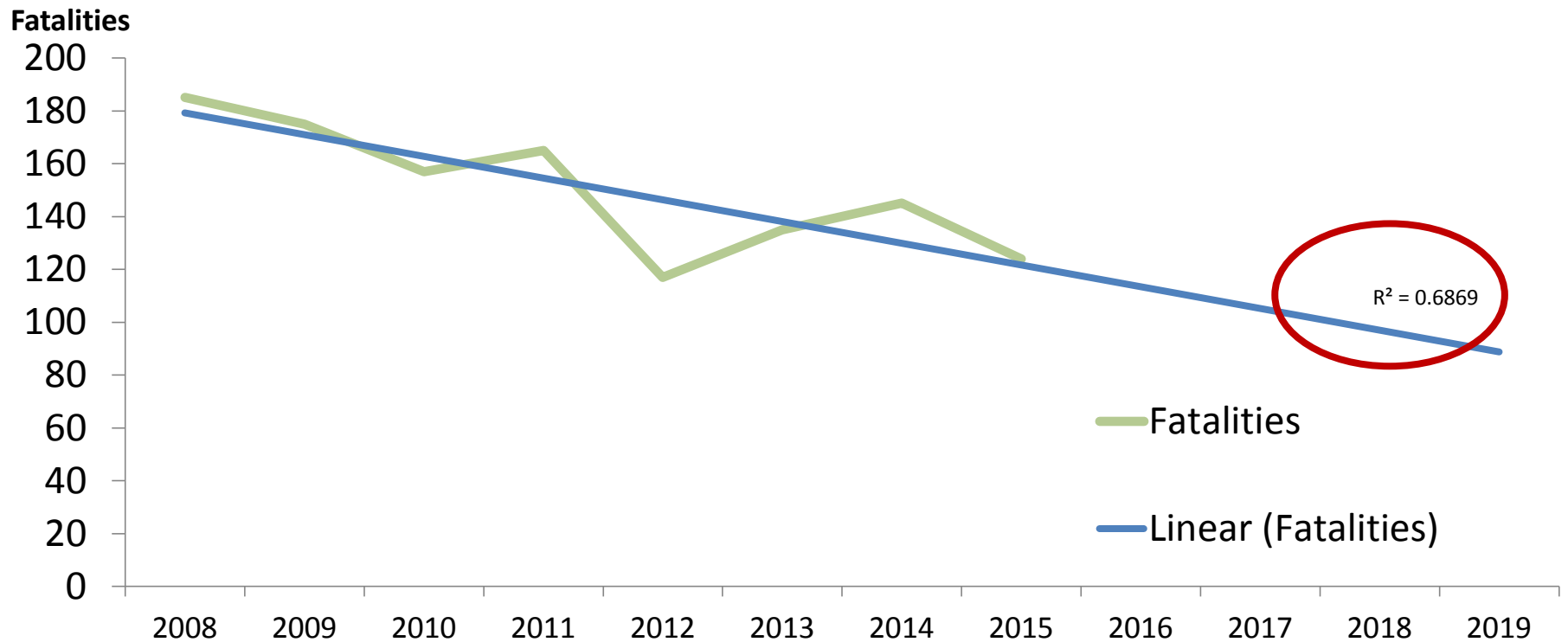
# Trend Analysis Methods



# Trend Analysis Methods



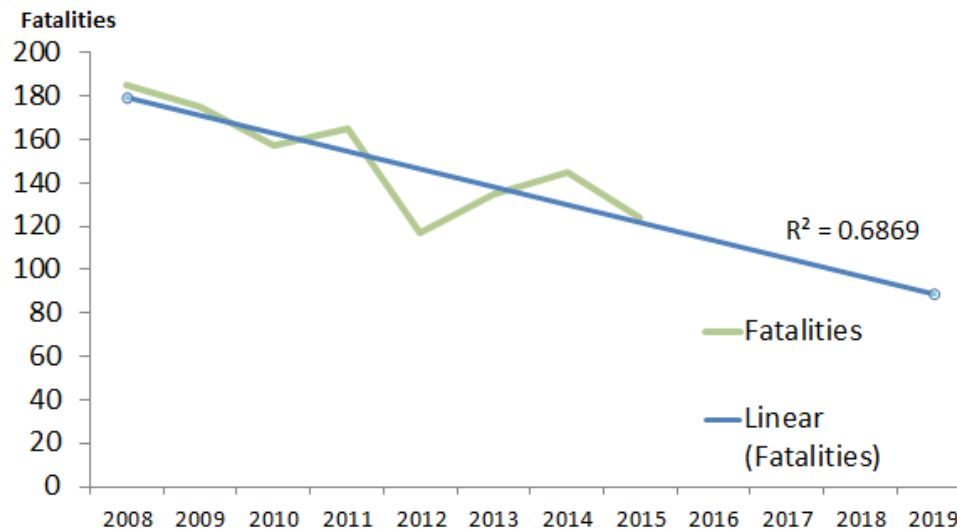
# Trend Analysis Methods





# Trend Analysis Methods

Year	Fatalities
2008	185
2009	175
2010	157
2011	165
2012	117
2013	135
2014	145
2015	124



Format Trendline

Trendline Options

Line Color

Line Style

Shadow

Glow and Soft Edges

Trend/Regression Type

☐ Exponential

☒ Linear

☐ Logarithmic

☐ Polynomial Order: 2

☐ Power

☐ Moving Average Period: 2

Trendline Name

☒ Automatic: Linear (Fatalities)

☐ Custom:

Forecast

Forward: 4.0 periods

Backward: 0.0 periods

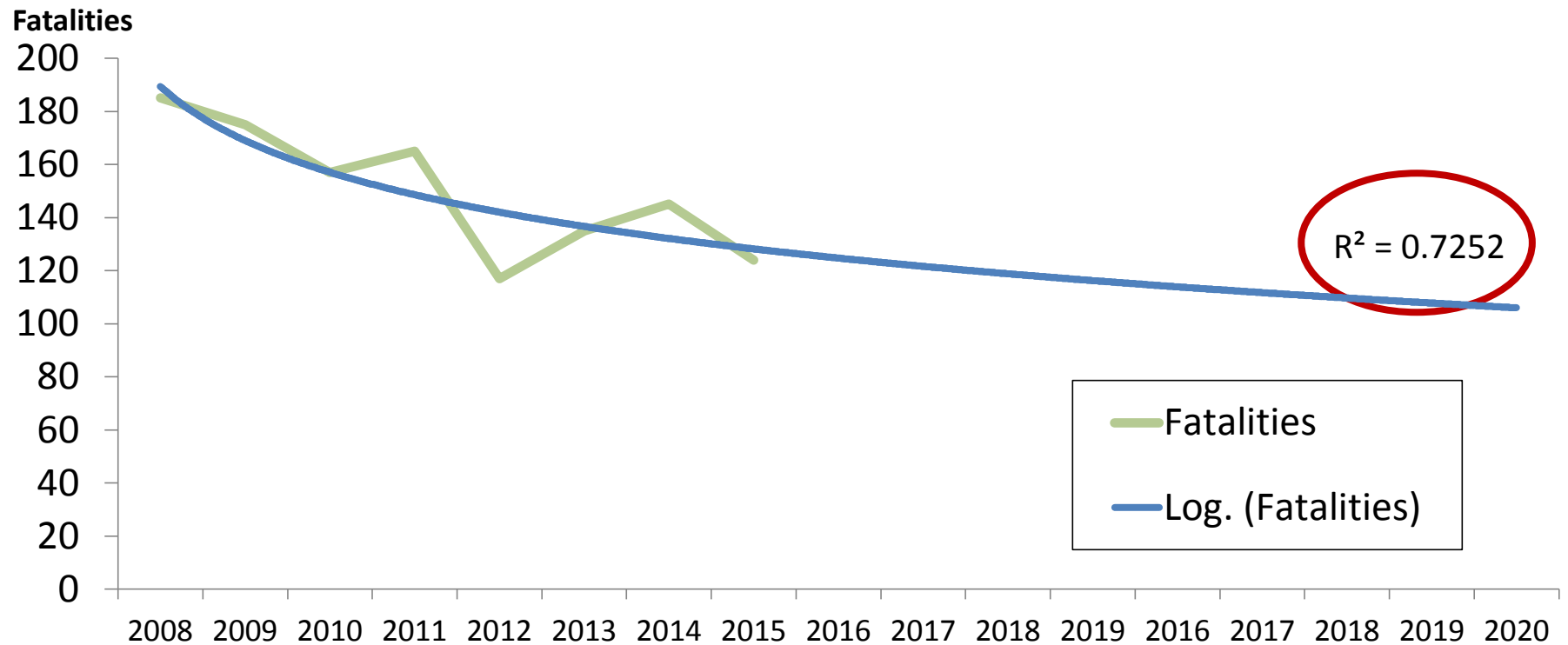
☐ Set Intercept = 0.0

☐ Display Equation on chart

☒ Display R-squared value on chart

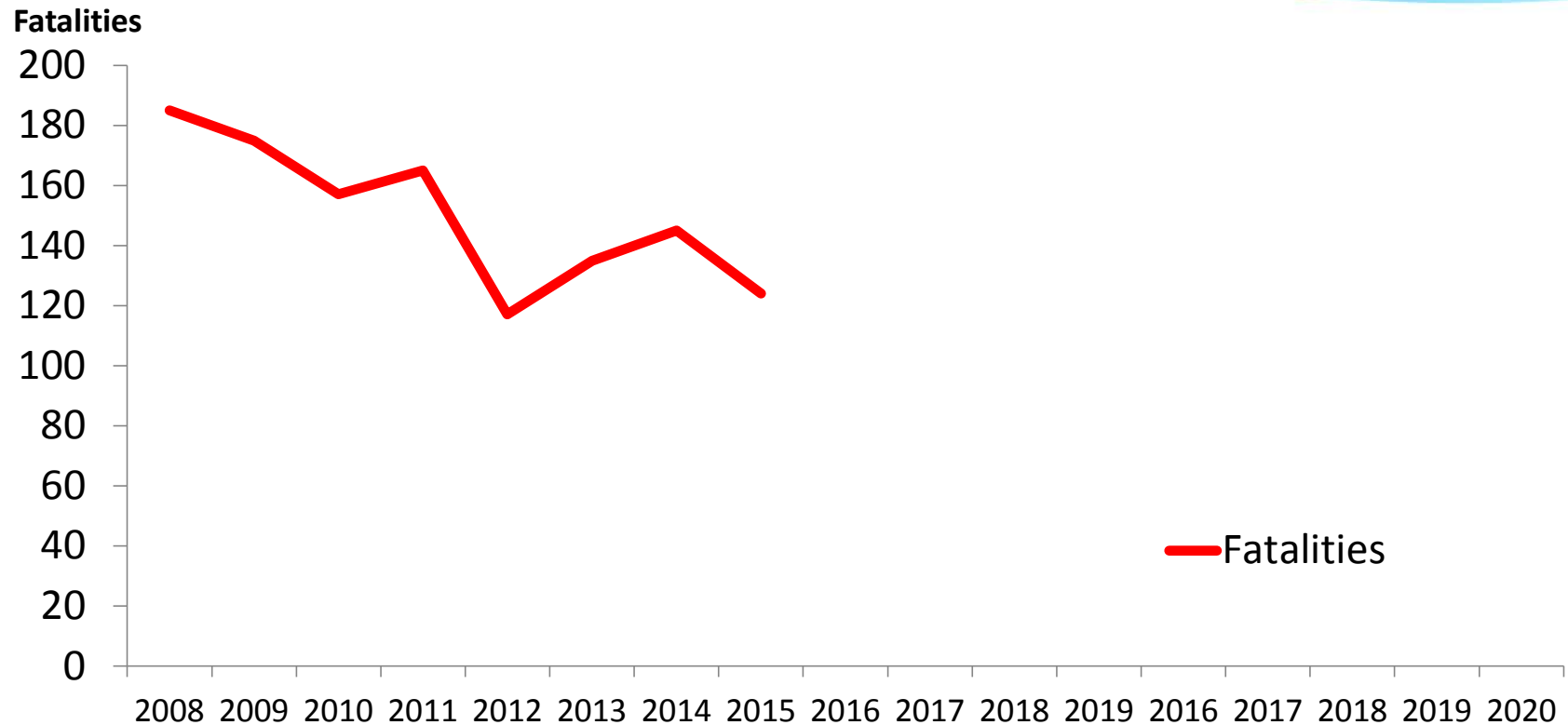
Close

# Trend Analysis Methods



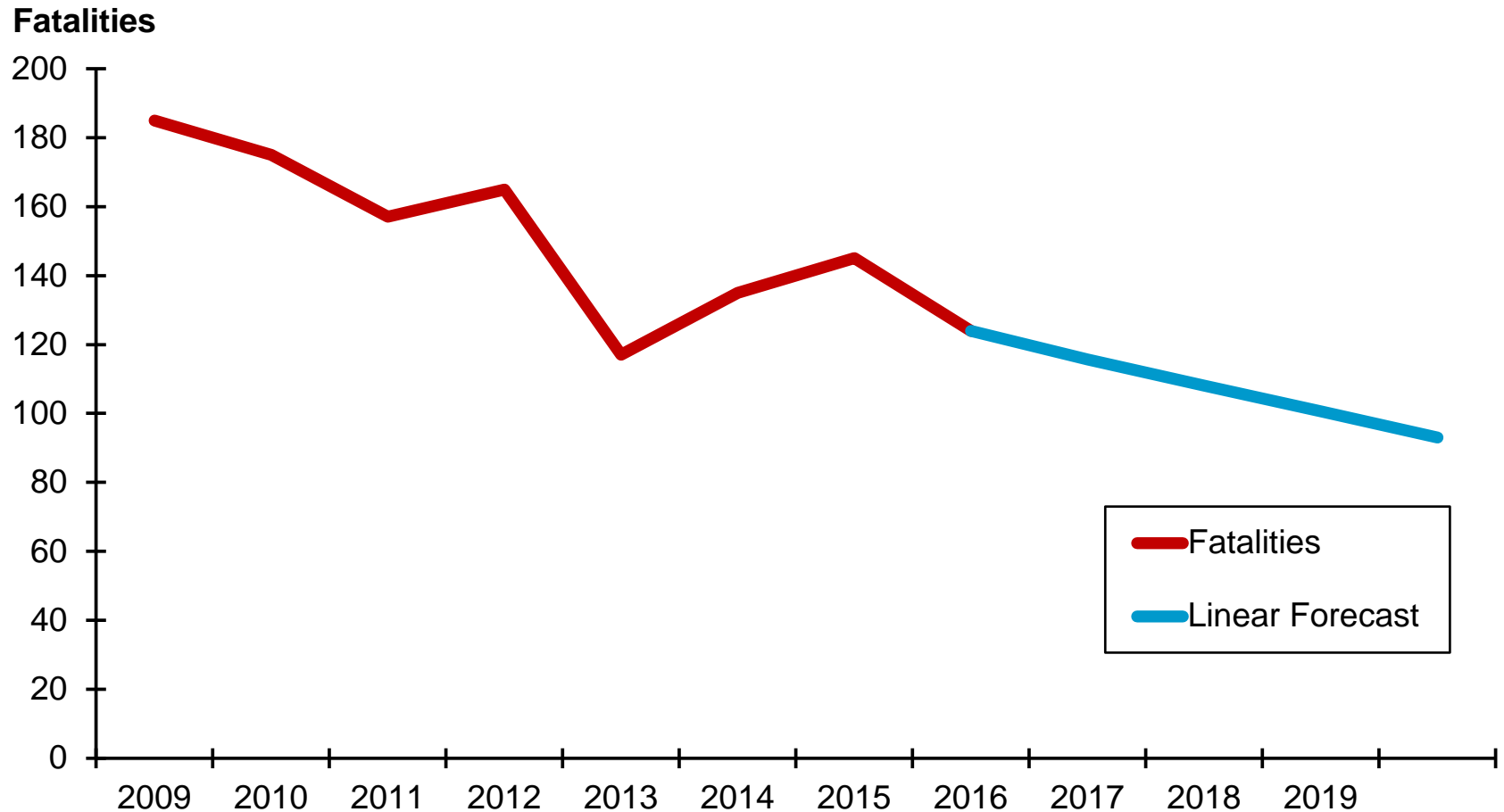
# Trend Analysis Methods

## *Exponential Smoothing*



# Trend Analysis Methods

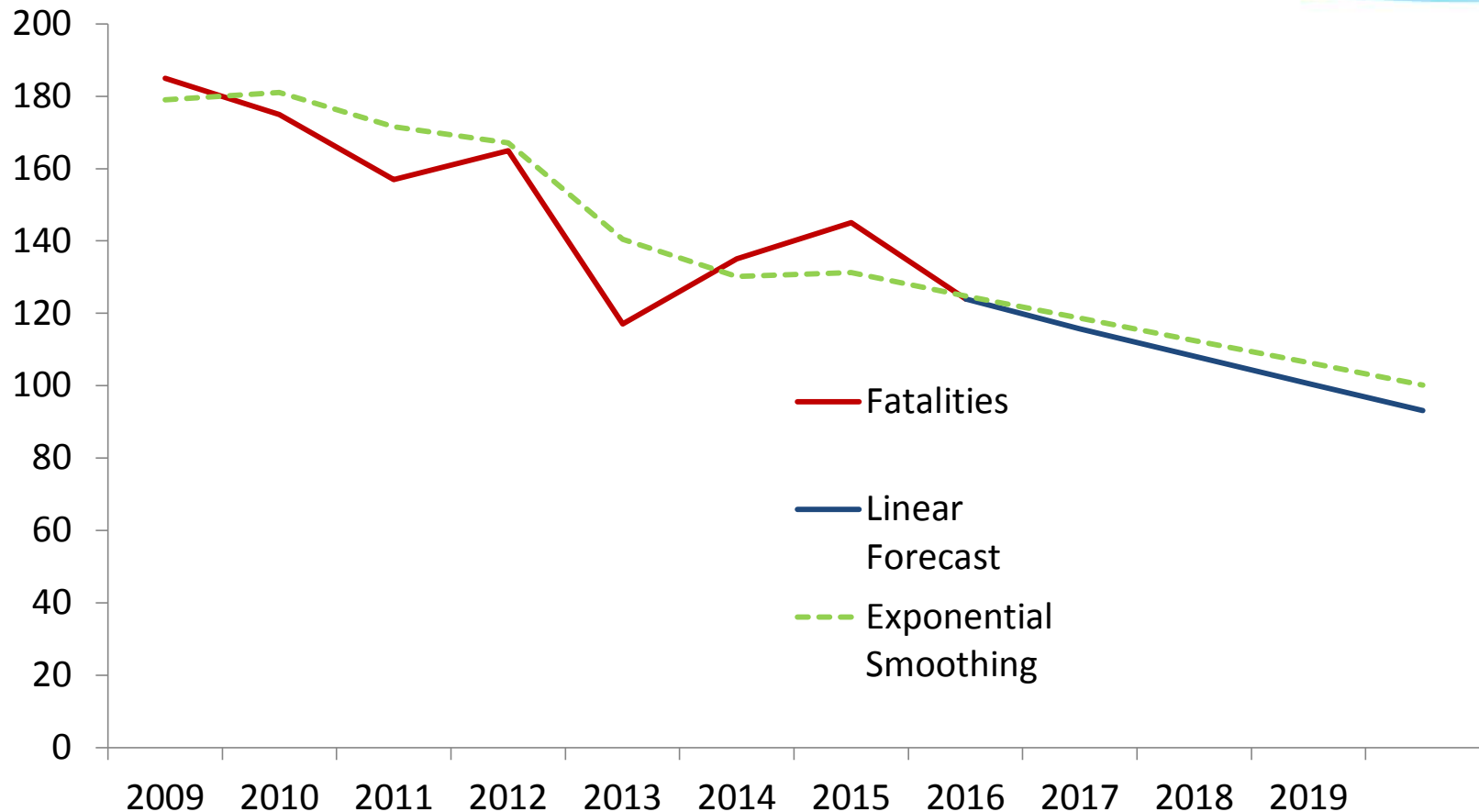
## *Exponential Smoothing*



# Trend Analysis Methods

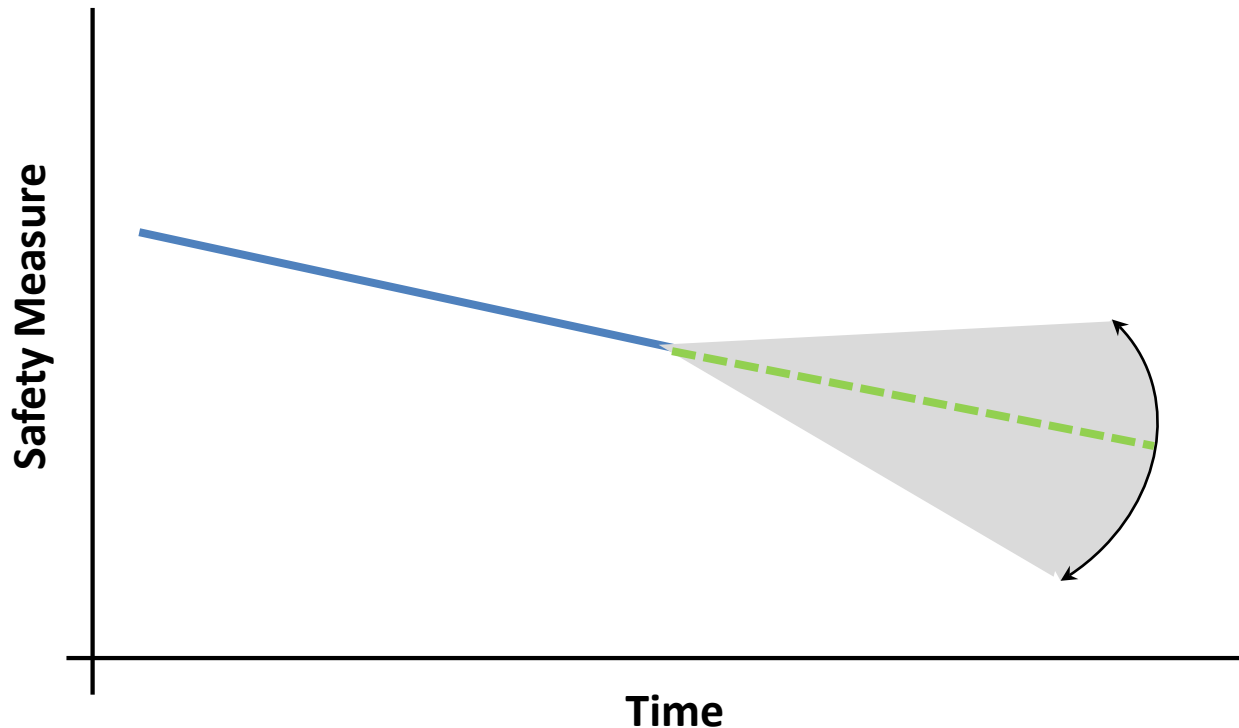
## *Exponential Smoothing*

Fatalities



# Evidence-Based Target Setting

## Step 2

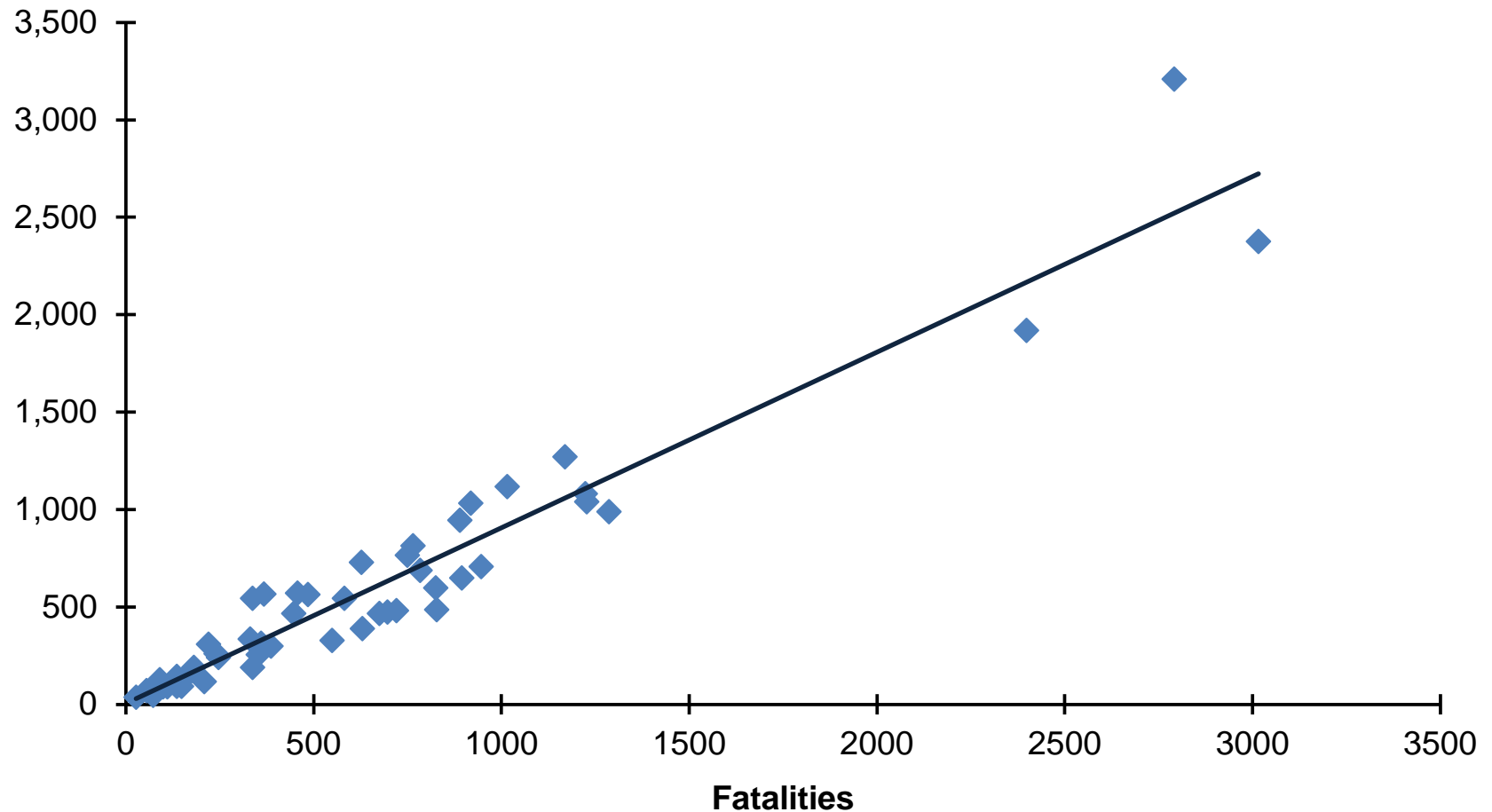


*What external factors will impact our target?*

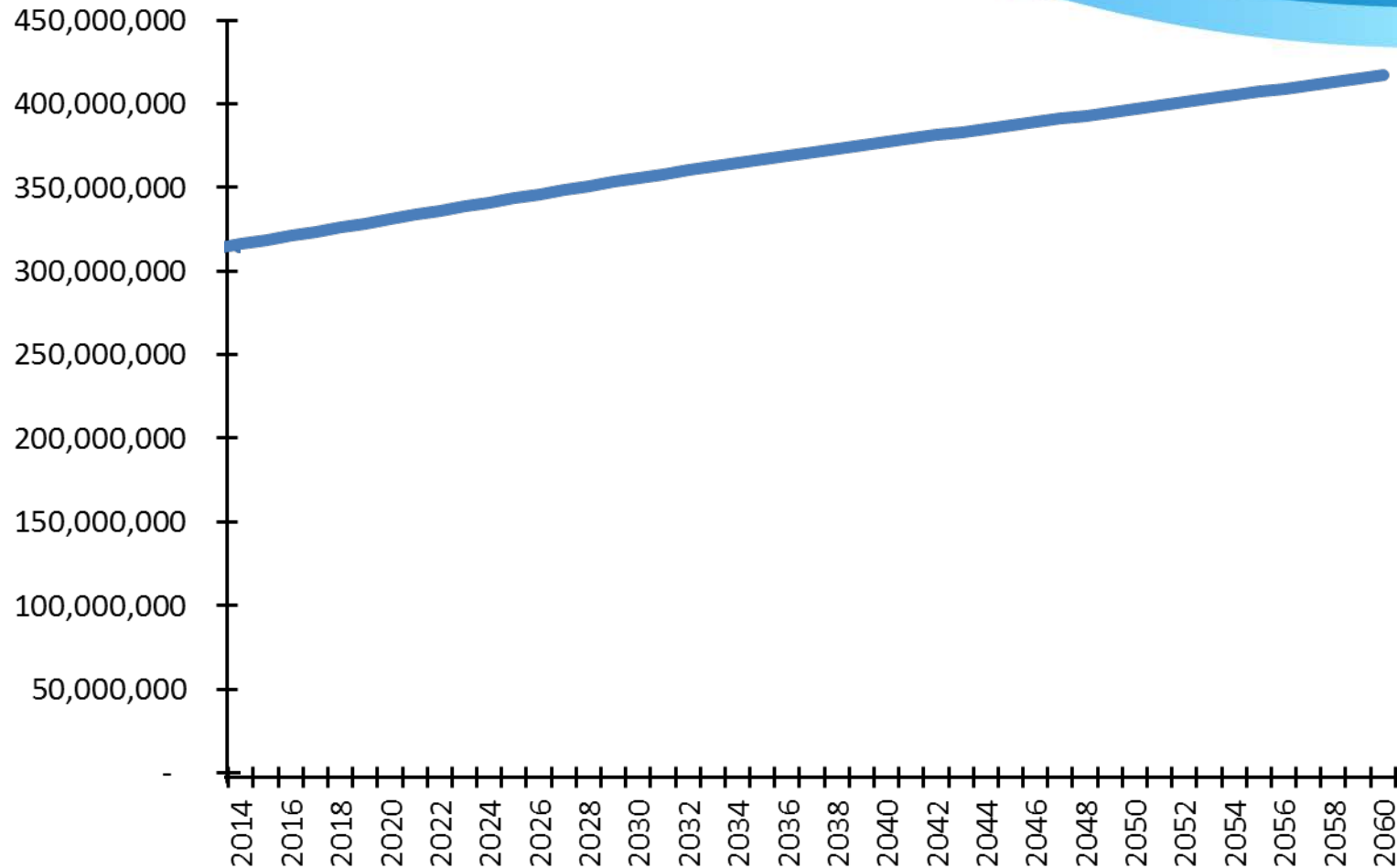
Adjust trend for expected demographic and socioeconomic changes

# Adjust Target Using Exogenous Factors

Millions of Vehicle Miles of Travel



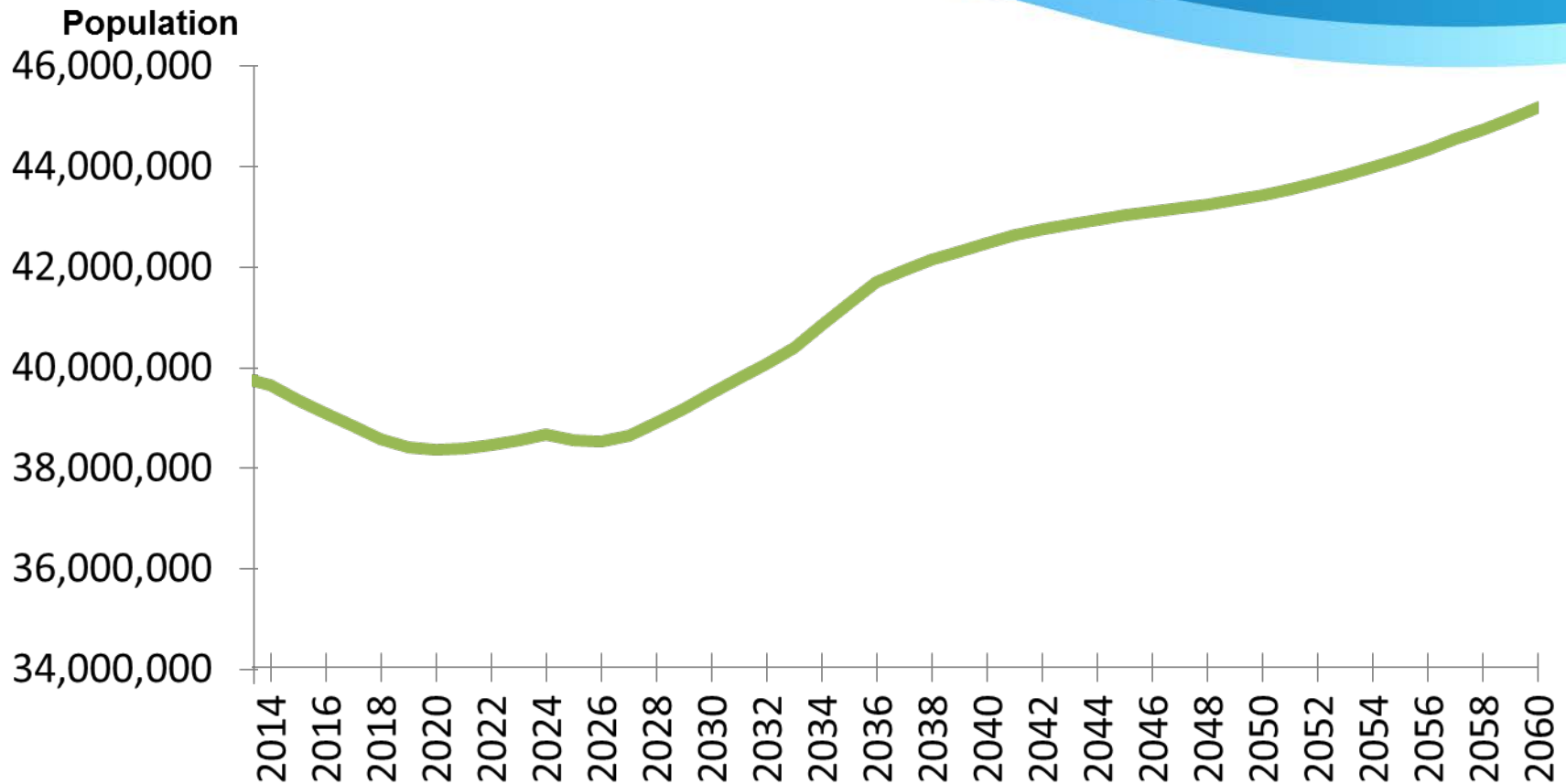
# Total U.S. Population Projection



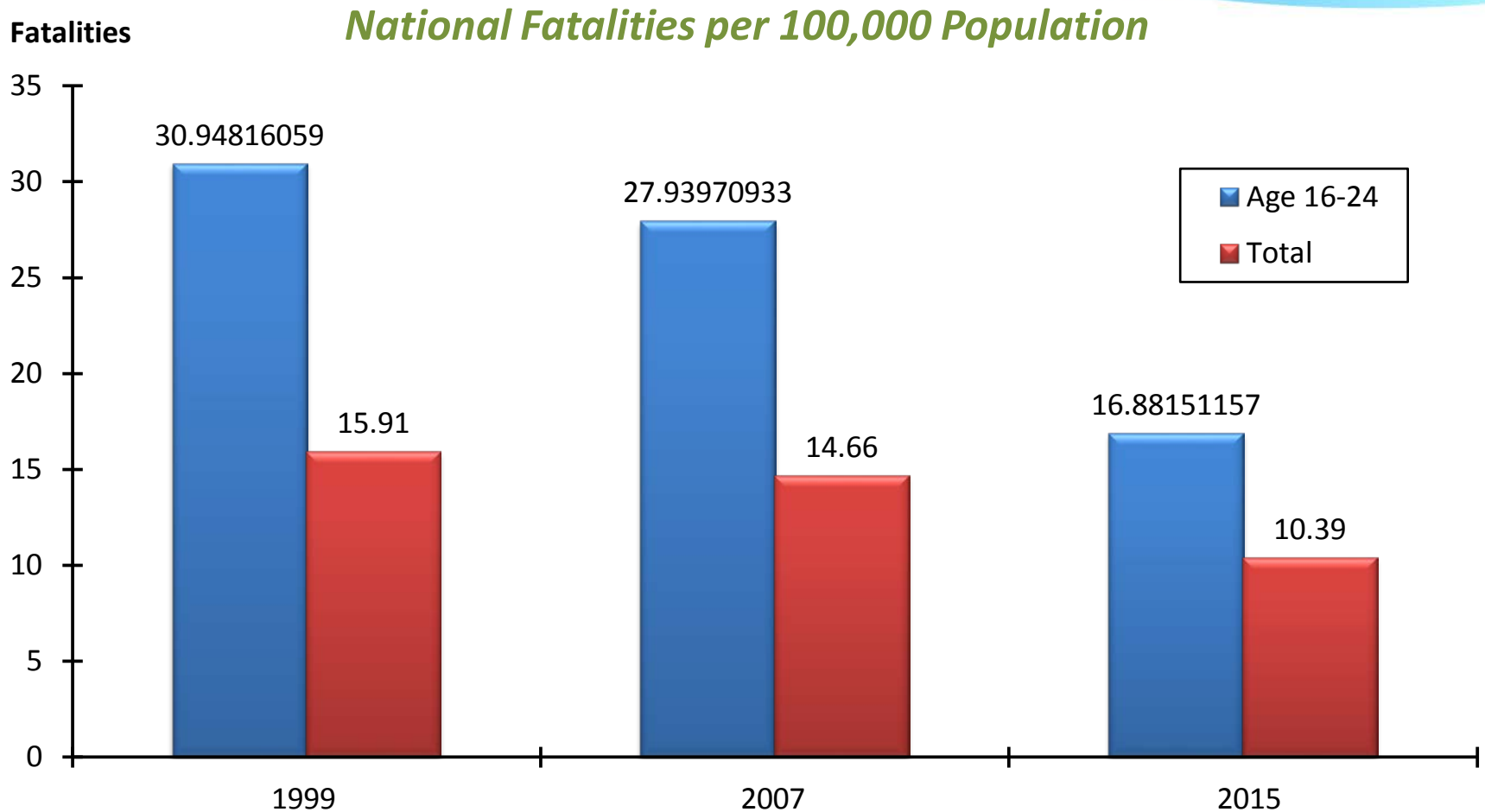


# National Projection of Population

*Age 16-24*



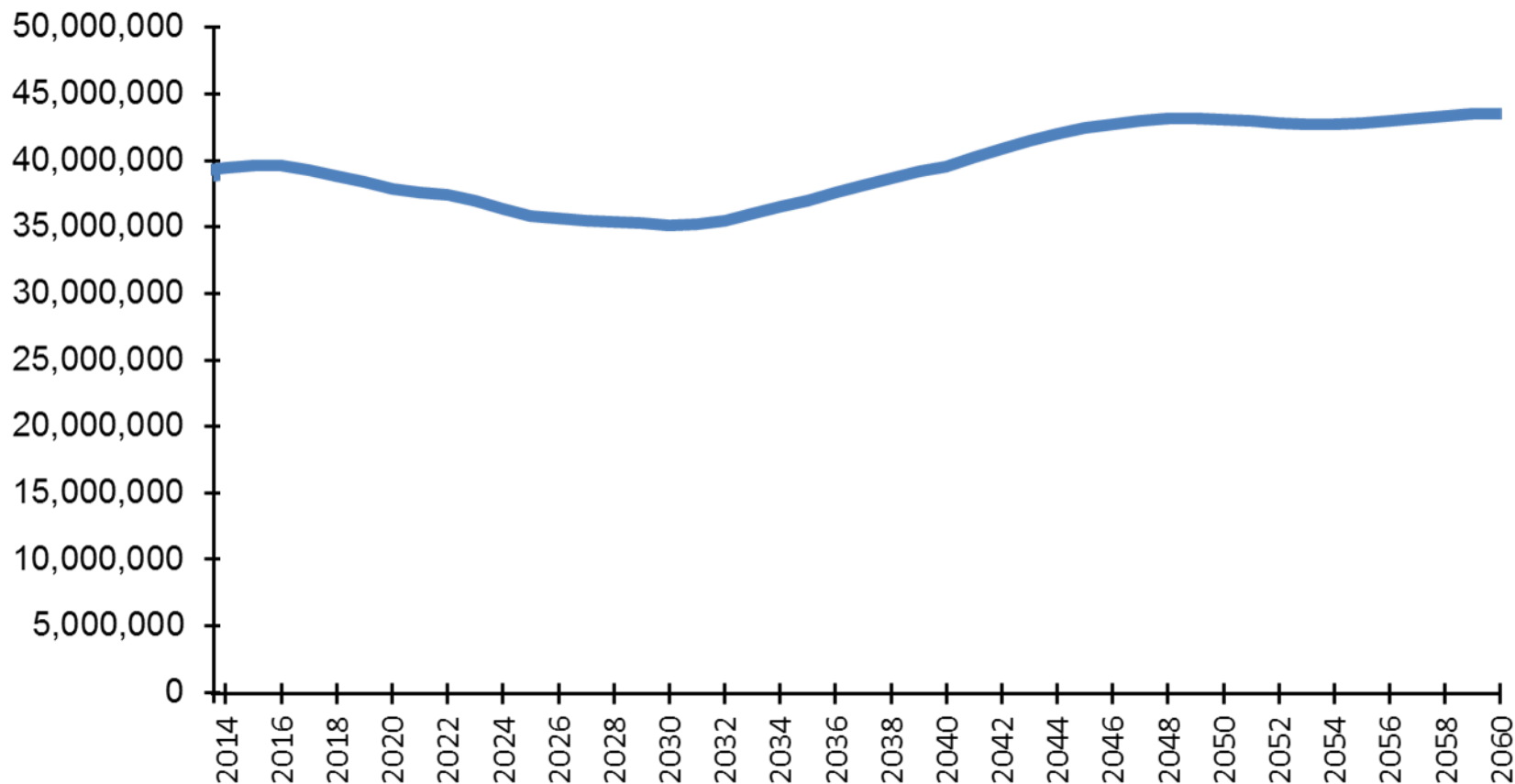
# Adjust Target Based on Exogenous Factors



# National Projection of Population

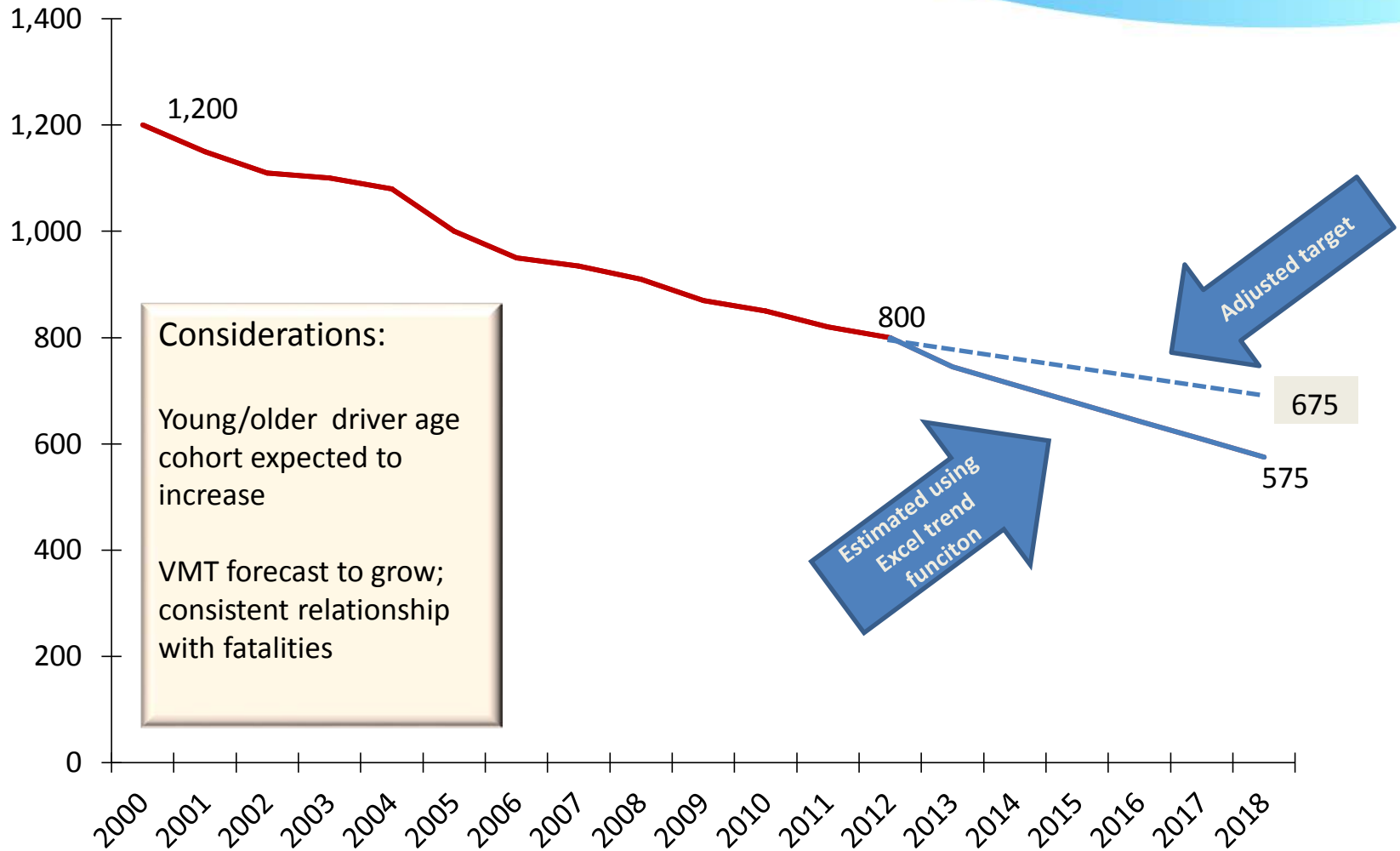
*Age 50-59*

**Population**



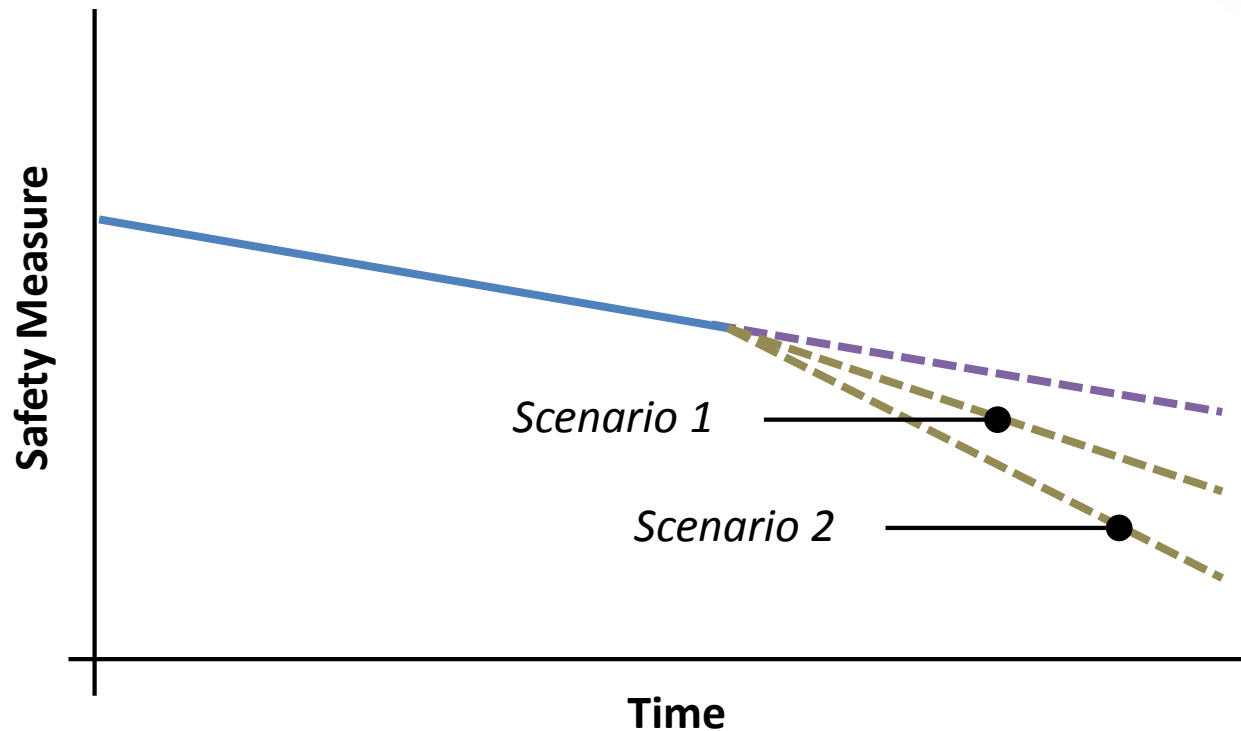
# Adjust Target Based on Exogenous Factors

*Example*



# Evidence-Based Target Setting

## Step 3



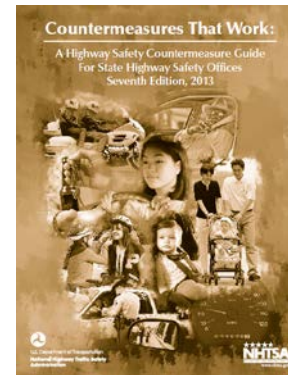
*What is the impact of improvements?*

Estimate target based on forecasted fatality reduction from safety plans

# Adjust Target Using Countermeasure Impact Data

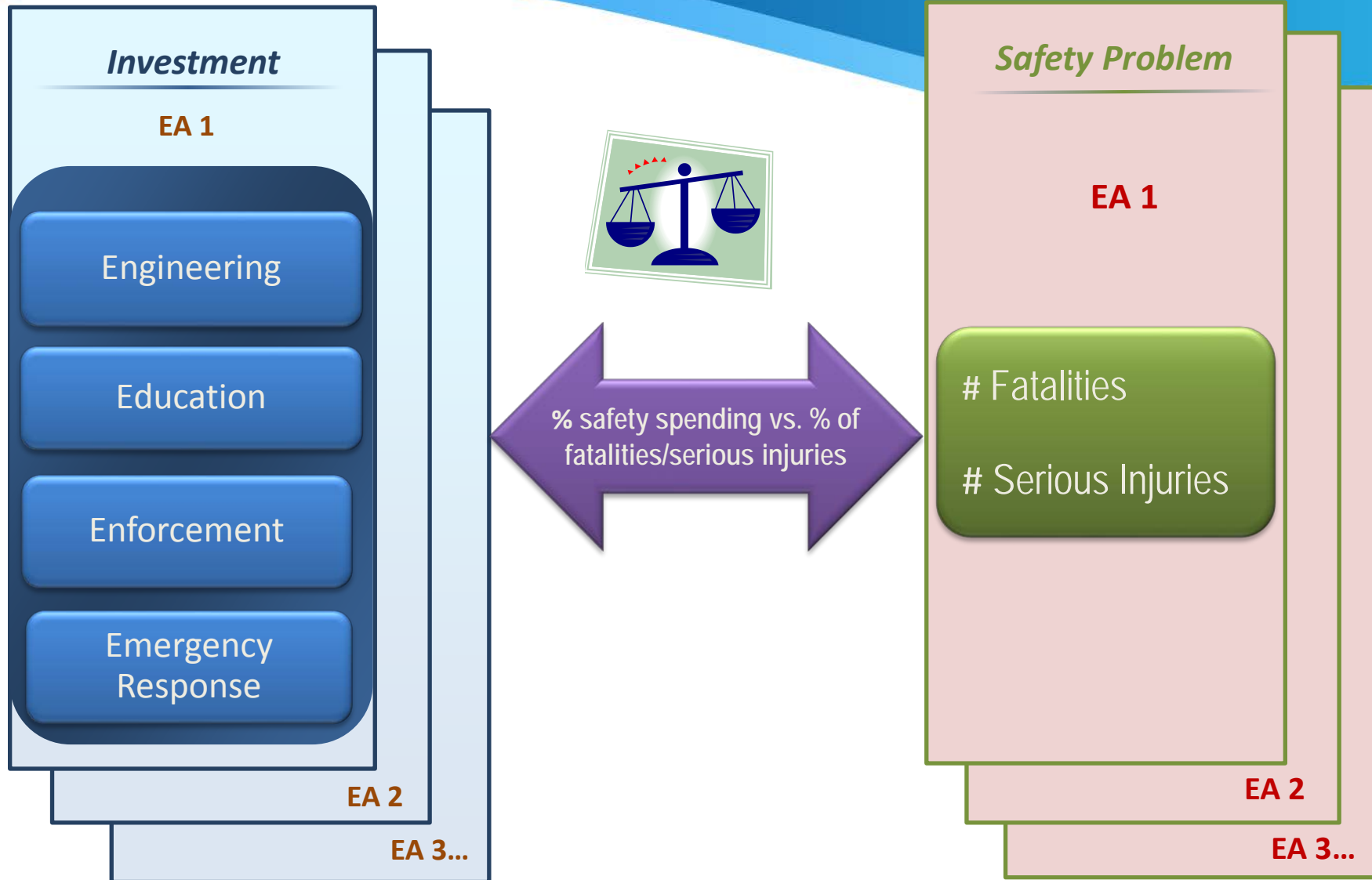
- Safety Analysis Tools

- Interactive Highway Safety Design Model (IHSDM)
- SafetyAnalyst
- Highway Safety Improvement Program Manual
- Highway Safety Manual
- Crash Modification Factors Clearinghouse Countermeasures That Work



**IHSDM**

# Adjust Target Using Resource Allocation Data



# SHSP Target Setting Methods

- What methods does your State use?
- What data are important to consider?
- Merit in replicating for HSIP, HSP, and MPO goals?

**SHSP**



# Target Achievement

- Best Practices

- Integrate Target into Communications
- Institutionalize Safety Targets
- Practice Substantive Safety



# Target Setting Coordination



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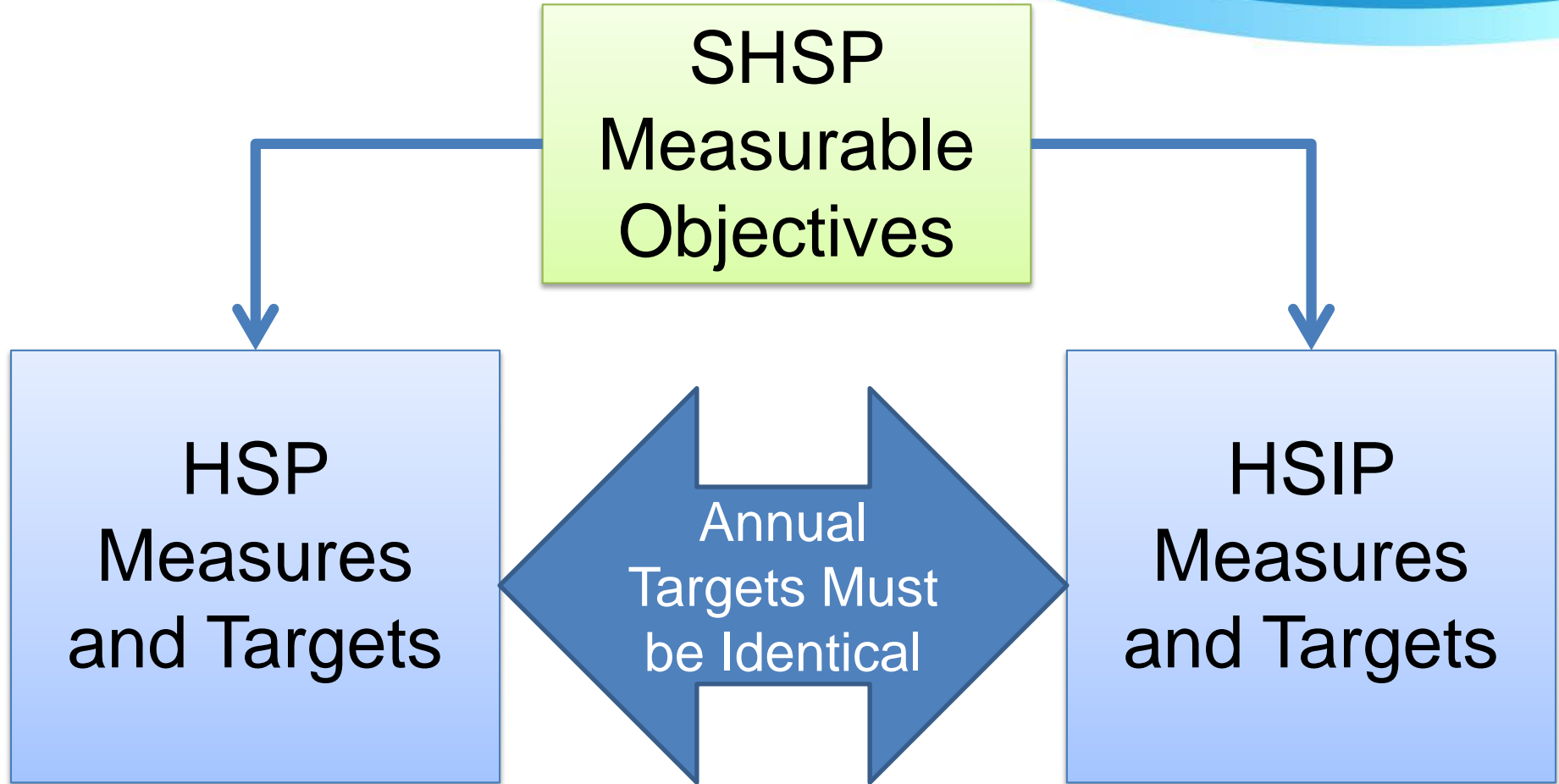
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# 5 Safety Performance Measures

- Number of Fatalities
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- Rate of Serious Injuries
- Number of Non-motorized Fatalities plus Serious Injuries

# Aligning Safety Targets in a State



# Coordination Cycle for 2018 Targets

## Target Setting Coordination

- By Spring, begin engaging DOT, SHSO, and MPO stakeholders
- Set targets for CY 2018

## Target Approval

By June, secure CY 2018 target approval from DOT/SHSO leadership



2017

**July 1**

SHSO submits HSP to NHTSA including 3 identical safety targets

**August 31**

State DOT submits HSIP Annual Report to FHWA, including safety targets

2018

**By February 27**  
MPOs establish safety targets

2019 - 2020

**December 2019**

Data available to evaluate targets

**March 2020**

States notified whether they met or made significant progress toward CY 2018 targets

# Coordinating Safety Targets Between State DOT and SHSO

- Ensure annual safety targets are identical in reporting documents

HSP – due July 1

HSIP– due August 31



# Coordinating Safety Targets Between State DOT and SHSO

- Ensure key members of State DOT and SHSO teams work together with input from both engineering and behavioral programs throughout the process
- Outline process and prepare a schedule
  - Conduct coordination meetings in the spring before HSP and HSIP Annual report deadlines
  - Target must be decided in time for HSP submission

# Coordination of Safety Targets Between State DOT and MPOs

- Ensure MPOs are engaged in State target setting discussions
- Ensure mechanisms are in place for State DOT to share crash data with MPOs and provide support on interpretation
- Account for how MPO safety trends compare to State trends
- Identify how MPO transportation program can contribute to safety improvements and target achievement

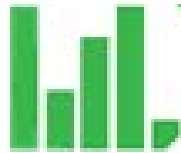




# MPO Safety Target Requirements

- MPOs establish targets for each of the five measures within 180 days after the State DOT reports targets
- MPOs have two options when setting targets for each measure:
  - Establish a numerical target for each performance measure specific to the MPO planning area
  - Agree to support the State DOT target

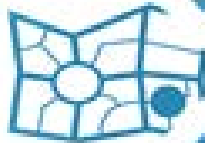
# Safety Target Coordination Process



1. Review Crash Trends



2. Define Target Setting Method



3. Review Scenarios

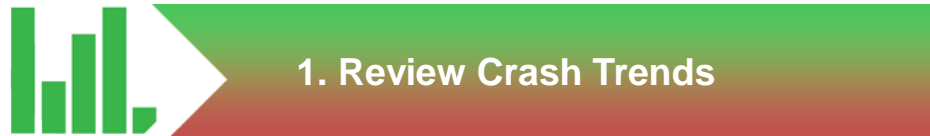


4. Select Targets



5. Secure Approval of Targets

# Safety Target Coordination Process



- Review historical crash data trends
- Discuss data considerations that affect understanding of trends
- Consider success of achieving previous targets

# Safety Target Coordination Process



## 2. Define Target Setting Method

- Flexibility to use any data-driven methodology to set targets
- Test several technical approaches to setting targets
- All stakeholders should understand and agree on the method

# Safety Target Coordination Process



## 3. Review Scenarios

- Determine if there are external factors or improvements that will impact the target
- Test different potential scenarios
- Evaluate scenarios using known data

# Safety Target Coordination Process



- Reach consensus on method and assumptions for the preferred scenario
- All stakeholders agree upon final targets that are realistic and data-driven

# Safety Target Coordination Process



## 5. Secure Approval of Targets

- Agreement on common safety targets
- Approval of targets signifies State leaders' commitment to safety
  - DOT leadership
  - SHSO leadership
  - MPO Policy Boards

# Forums for Coordination

- Strategic Highway Safety Plan Collaboration Structures
  - Technical Committee
  - Executive Committee
- Performance-Based Planning and Programming (PBPP) Collaboration Structures
- Highway Safety Plan Development Structures
- Traffic Safety Summits



# Resources

- Agenda Items for Meetings on Safety Target Setting Collaboration
- Checklist of Safety Target Development

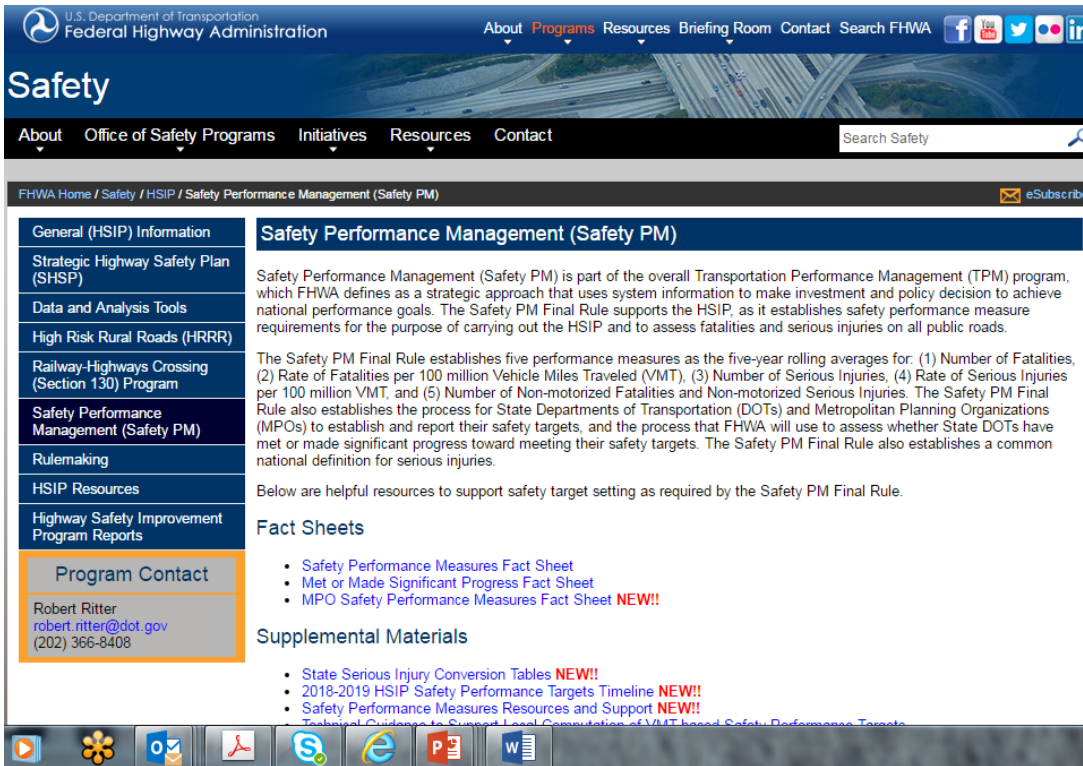
## CHECKLIST FOR SAFETY TARGET DEVELOPMENT

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- ☐ Identify who will lead data analysis (e.g., statistician, data analyst in SHSO, State DOT staff in charge of crash database, member of traffic records coordinating committee).
- ☐ Define mutually agreeable method for MPOs to report targets to State, or express support of State targets.
- ☐ If MPOs support the State targets, define how State will review MPO support of safety by through planning and programming.
- ☐ Compile fatality, injury and VMT data.
- ☐ Identify all stakeholders who need to be involved in target setting process.

# Safety Target Coordination Report

<http://safety.fhwa.dot.gov/hsip/spm/>



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## Safety

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FHWA Home / Safety / HSIP / Safety Performance Management (Safety PM)

**General (HSIP) Information**

- Strategic Highway Safety Plan (SHSP)
- Data and Analysis Tools
- High Risk Rural Roads (HRRR)
- Railway-Highways Crossing (Section 130) Program
- Safety Performance Management (Safety PM)**
- Rulemaking
- HSIP Resources
- Highway Safety Improvement Program Reports

**Program Contact**

Robert Ritter  
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(202) 366-8408

### Safety Performance Management (Safety PM)

Safety Performance Management (Safety PM) is part of the overall Transportation Performance Management (TPM) program, which FHWA defines as a strategic approach that uses system information to make investment and policy decision to achieve national performance goals. The Safety PM Final Rule supports the HSIP, as it establishes safety performance measure requirements for the purpose of carrying out the HSIP and to assess fatalities and serious injuries on all public roads.

The Safety PM Final Rule establishes five performance measures as the five-year rolling averages for: (1) Number of Fatalities, (2) Rate of Fatalities per 100 million Vehicle Miles Traveled (VMT), (3) Number of Serious Injuries, (4) Rate of Serious Injuries per 100 million VMT, and (5) Number of Non-motorized Fatalities and Non-motorized Serious Injuries. The Safety PM Final Rule also establishes the process for State Departments of Transportation (DOTs) and Metropolitan Planning Organizations (MPOs) to establish and report their safety targets, and the process that FHWA will use to assess whether State DOTs have met or made significant progress toward meeting their safety targets. The Safety PM Final Rule also establishes a common national definition for serious injuries.

Below are helpful resources to support safety target setting as required by the Safety PM Final Rule.

#### Fact Sheets

- Safety Performance Measures Fact Sheet
- Met or Made Significant Progress Fact Sheet
- MPO Safety Performance Measures Fact Sheet **NEW!!**

#### Supplemental Materials

- State Serious Injury Conversion Tables **NEW!!**
- 2018-2019 HSIP Safety Performance Targets Timeline **NEW!!**
- Safety Performance Measures Resources and Support **NEW!!**
- Technical Guidance to Support Local Computation of VMT-based Safety Performance Targets



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## Safety Target Coordination Report

September 2016

# Questions?

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