

# **TCRP Synthesis Report 126: Successful Practices and Training Initiatives to Reduce Bus Accidents and Incidents**

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# Key Presentation Take-Aways

- The tenants of SMS drive successful programs
- Successful programs - **multifaceted coordinated** efforts
- **Recurring refresher training** cannot be overstated
- **Technology applications/tools** contribute to a better understanding of past events and behaviors that could be **causal or contributing** in future events
- **Incentive programs can be successful** in improving the safety of the system, morale, and employee-employer relationships

# Outline

- Research methods
- Summary of survey results
- Selected case study agencies
- Common threads & lessons learned

# Background

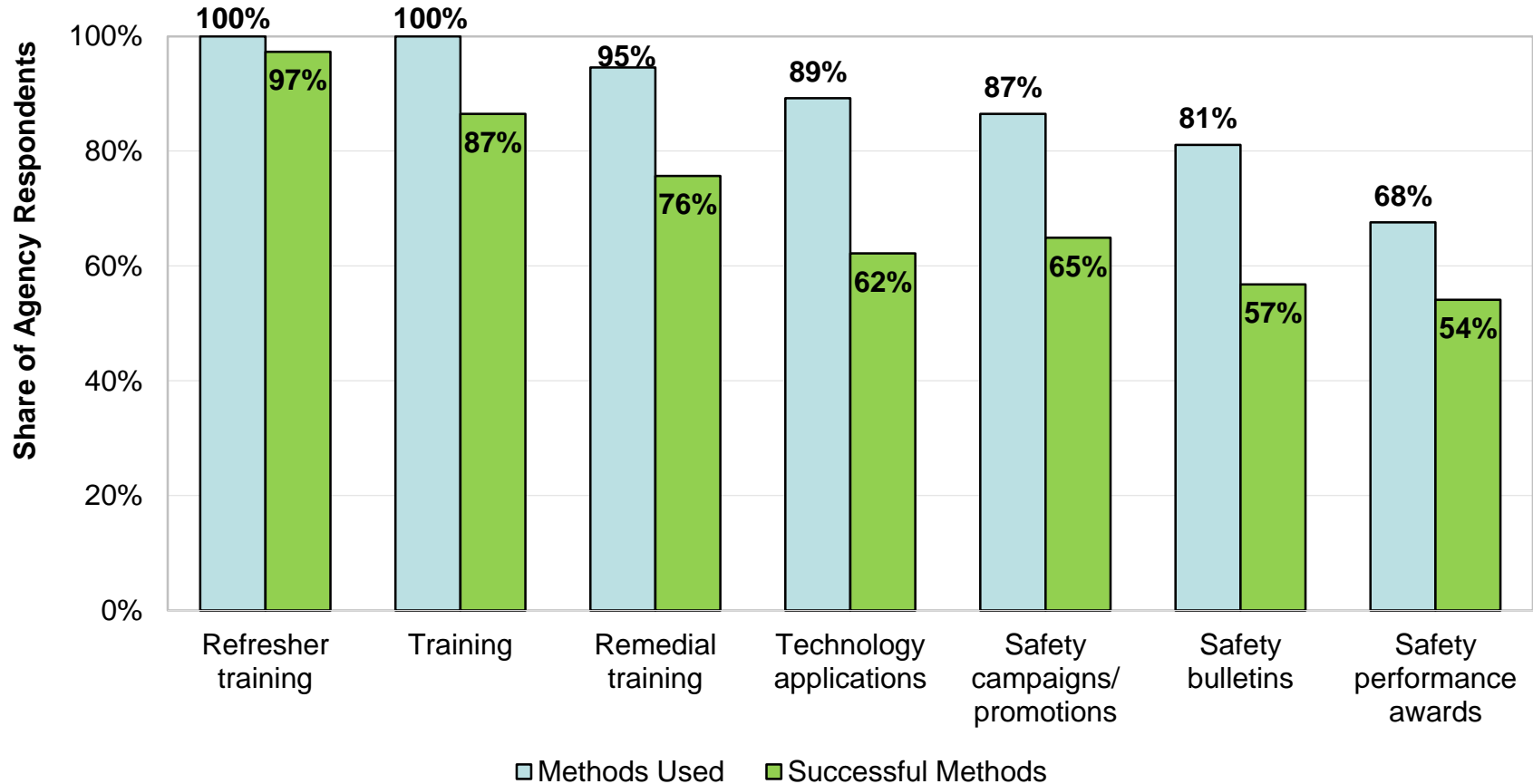
MAP-21 and FAST Act have been the basis of FTA's evolving regulatory narrative for transit agencies. Of specific relevance to this study:

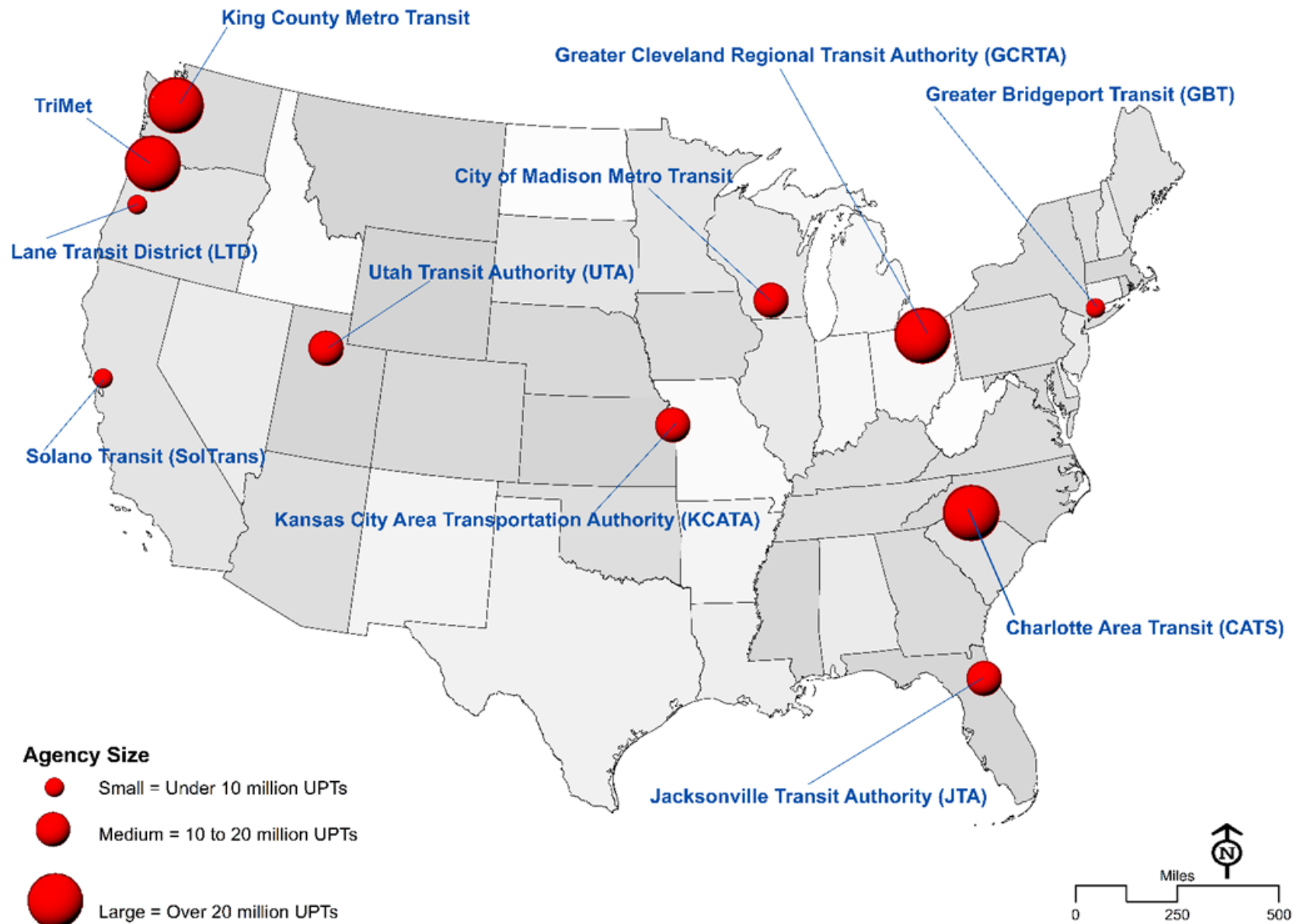
1. **SMS framework** – which will be enforced by FTA through safety oversight responsibilities
2. **PTSCP** – the Public Transportation Safety Certification Training Program – currently voluntary for bus only systems

# Research Methods

- Literature review
- Twenty-eight question survey disseminated to 42 transit agencies
  - 88% response rate (37 responses) achieved
- Interviews with 11 case study sites began on March 17, 2016 and concluded on May 2, 2016
- Final report issued by TRB – February 2017

# Survey Summary – Methods Used





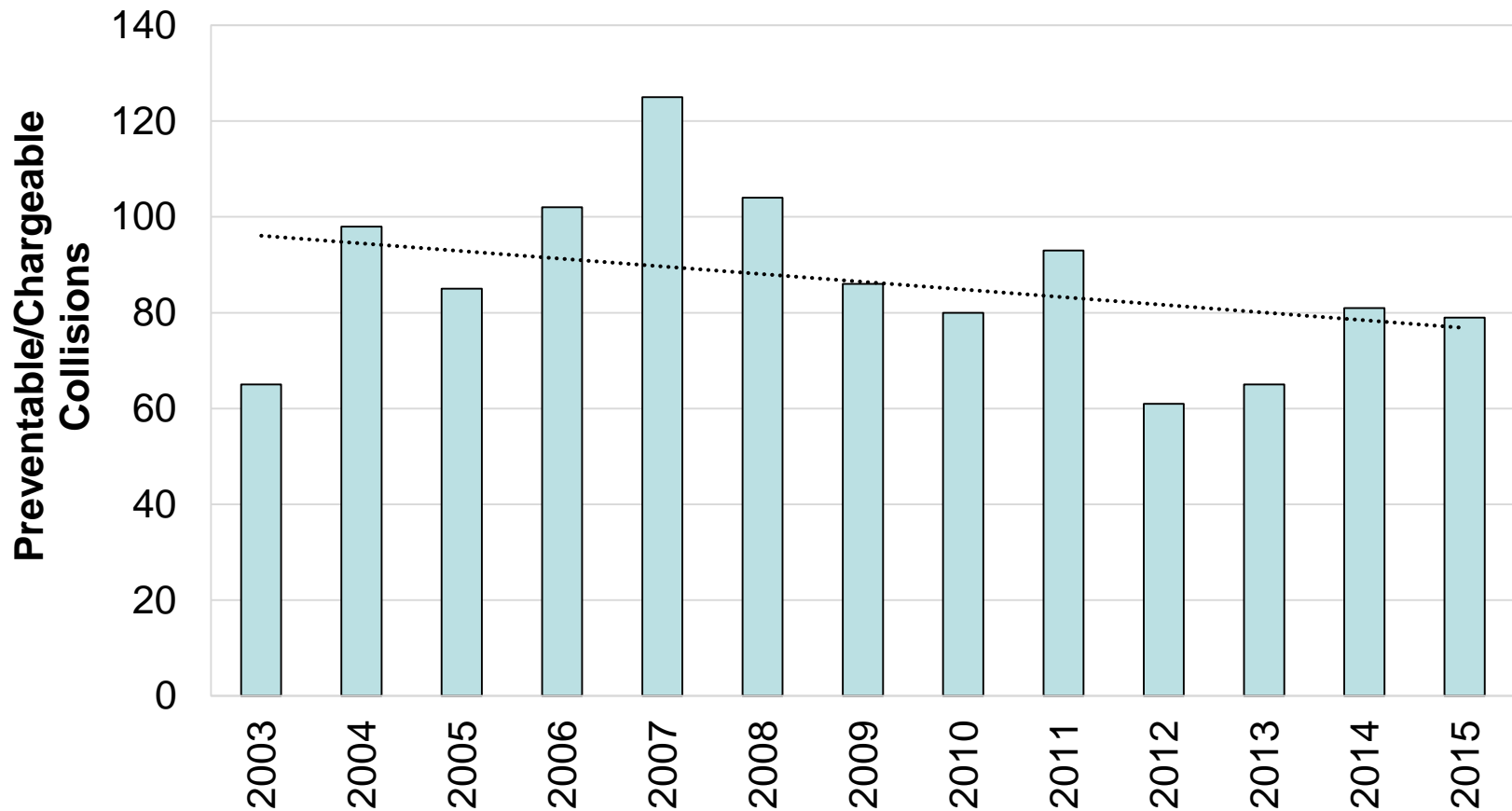
# Case Study Agencies

# City of Madison – Metro Transit



- Revamped **training**
  - Described benefits to having as few as **two trainees per instructor per bus**
- Annual **refresher** training
  - Roundtable discussion structure: “**Madison Metro Safety Roundabout**”
  - Safety concerns **directly from bus operators**
  - Focus **additional training** on these areas of concern
- All initiatives have resulted in a **24%** reduction in preventable collisions from 2008 - 2015

# City of Madison – Metro Transit

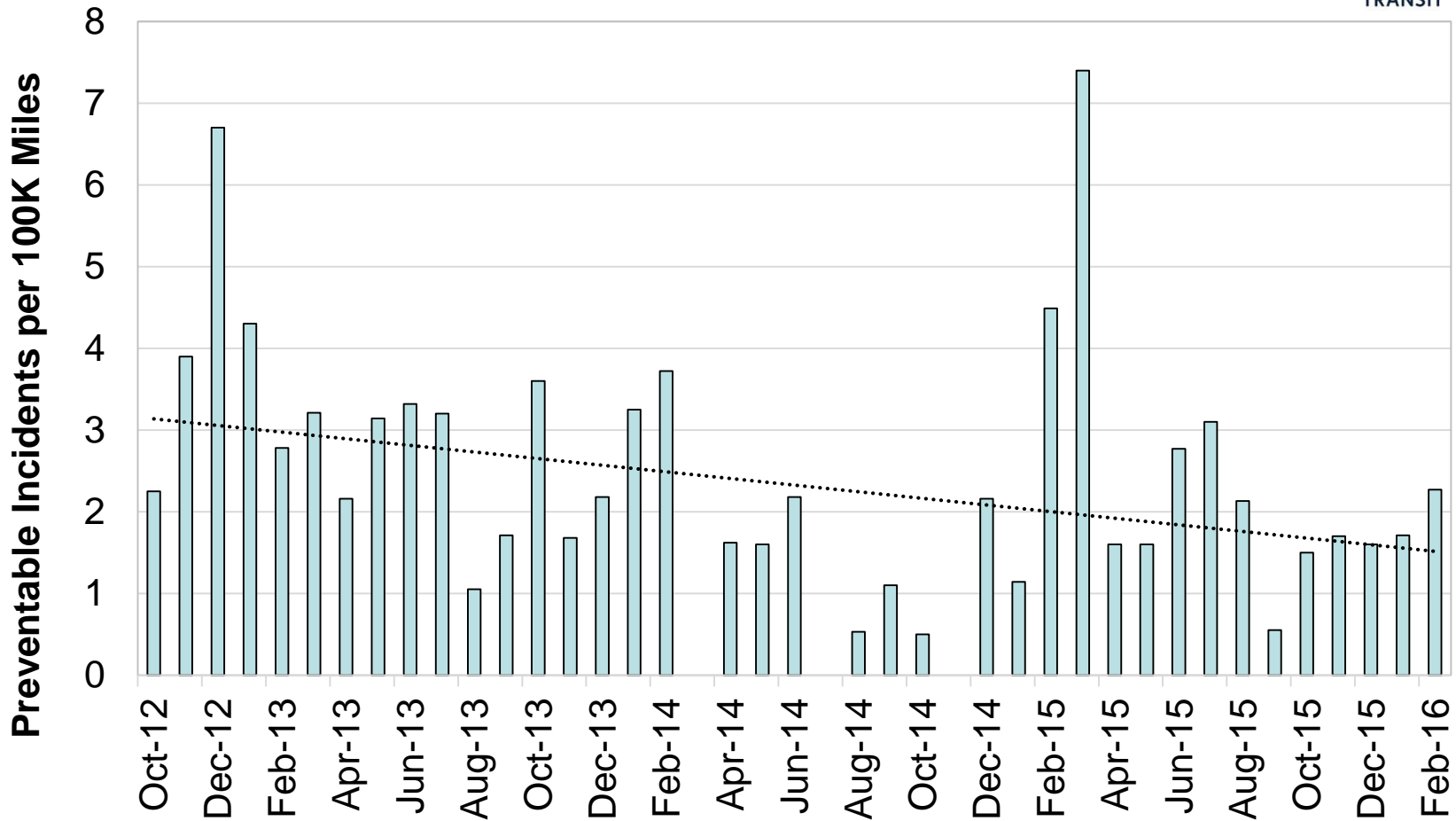


# Greater Bridgeport Transit



- Two **new safety positions**: Manager of Safety Training and Manager of Transportation Operations
- **Safety Vision** on-board surveillance coupled with **AVL** allows managers to fully understand safety events
- Most successful practice: “**teamwork**”
- **Combination** of many initiatives
- Improved preventable rate since initiation of restructuring in 2012

# Greater Bridgeport Transit



# Greater Cleveland RTA

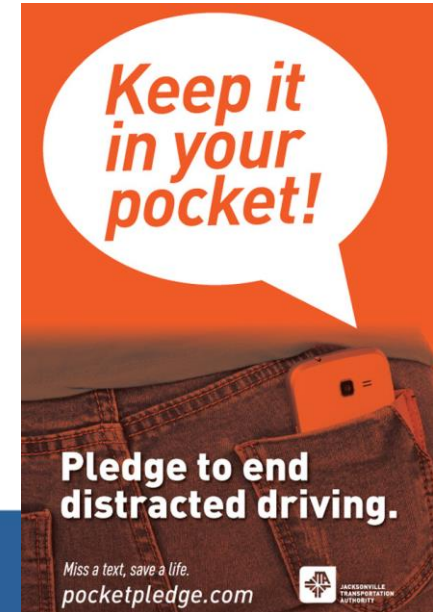


- LYTX DriveCam installed fleet-wide (2014)
  - Significant reductions in unsafe behaviors
  - Posted speed and red light violations
  - Improved seat belt usage\*
- Open and honest dialogue with employees
- “Relentless” pursuit of improvement
- Recognizing and rewarding employees for exceptional safety performance
- Teamwork between Safety and Operations
- Safety - consistent, agency-wide definition

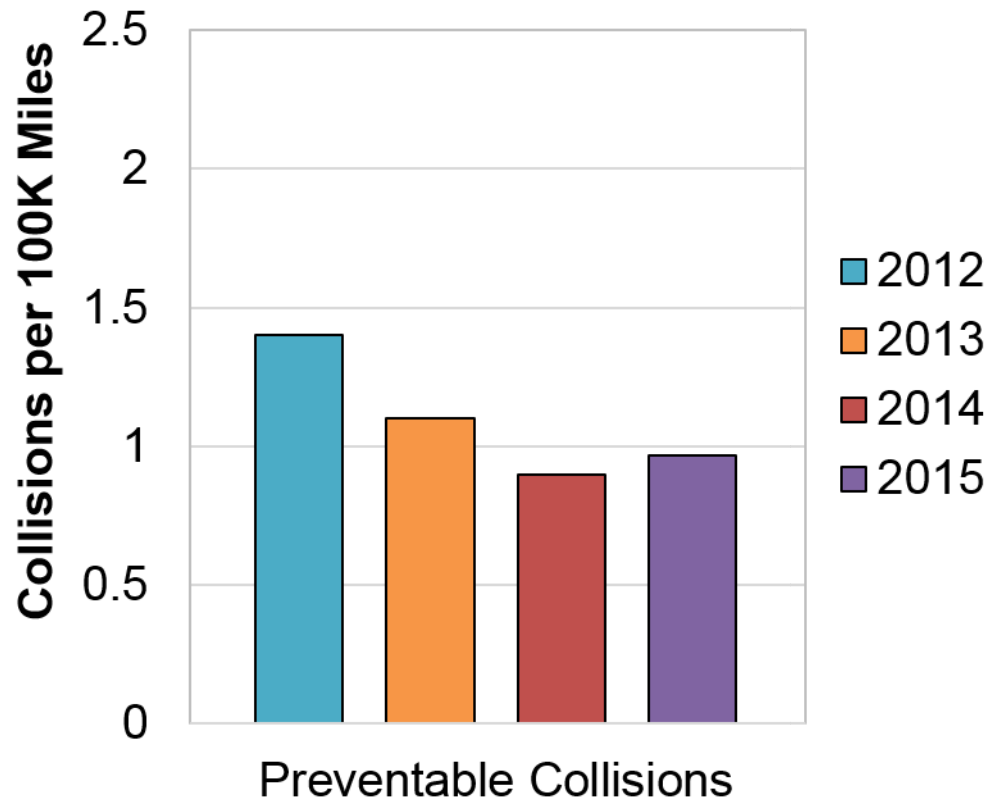
# Jacksonville Transportation Authority



- Installed DriveCam in 2015 – 50% reduction in unsafe decision making and 40% reduction in judgement errors and traffic violations
- 90% reduction in riskiest bus operator behaviors in first 9 months
- “Keep it in Your Pocket”
- Training simulator primarily for new bus operator training



# Jacksonville Transportation Authority

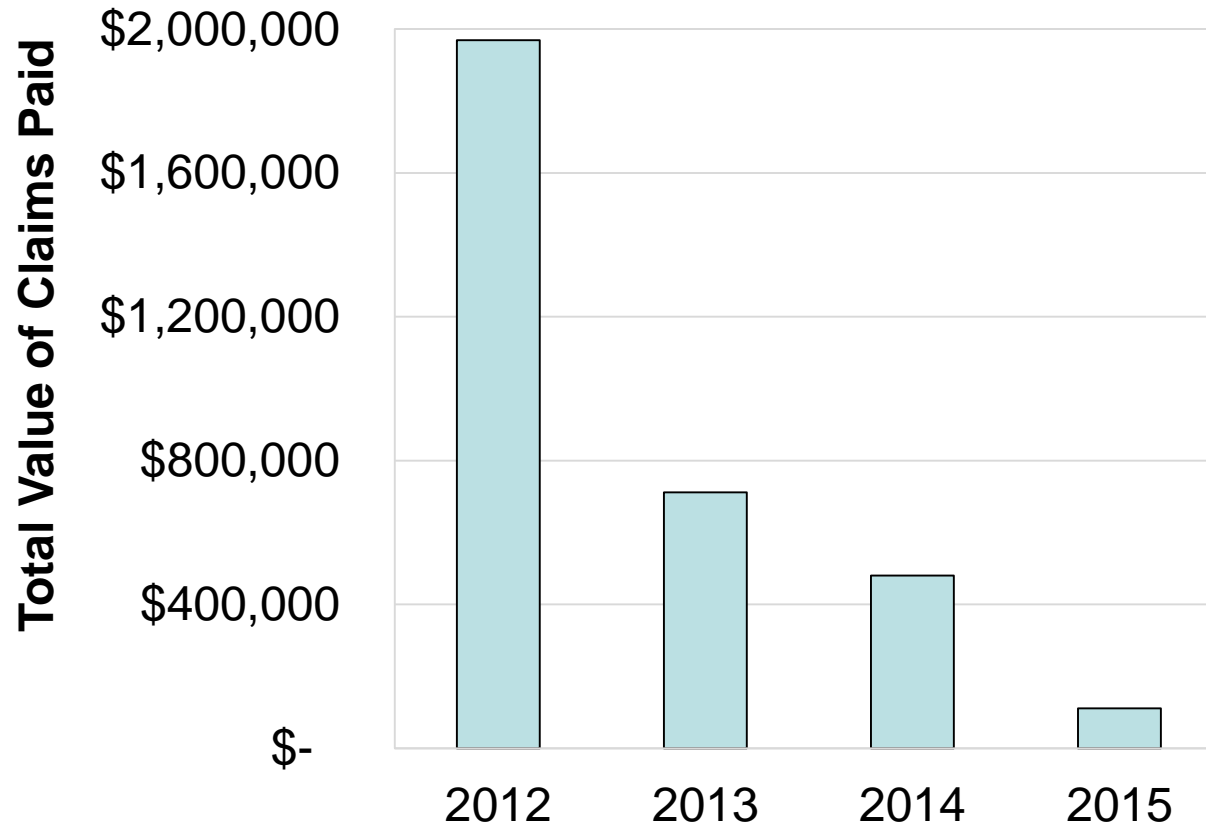


# Kansas City Area Transportation Authority



- Five point plan – the five “E”s – began in 2013
  - Eliminate pedestrian collisions
  - Reduce auto liability costs by 10%
  - Reduce on-board incidents by 15%
  - Reduce bus collisions by 10%
- Targeted focus on pedestrian awareness and hazards of blind spots – new and fresher training
- Use of simulator reported - “absolutely effective”
- Pedestrian Safety Week and Pedestrian Safety Tips communicated throughout the agency

# Kansas City Area Transportation Authority



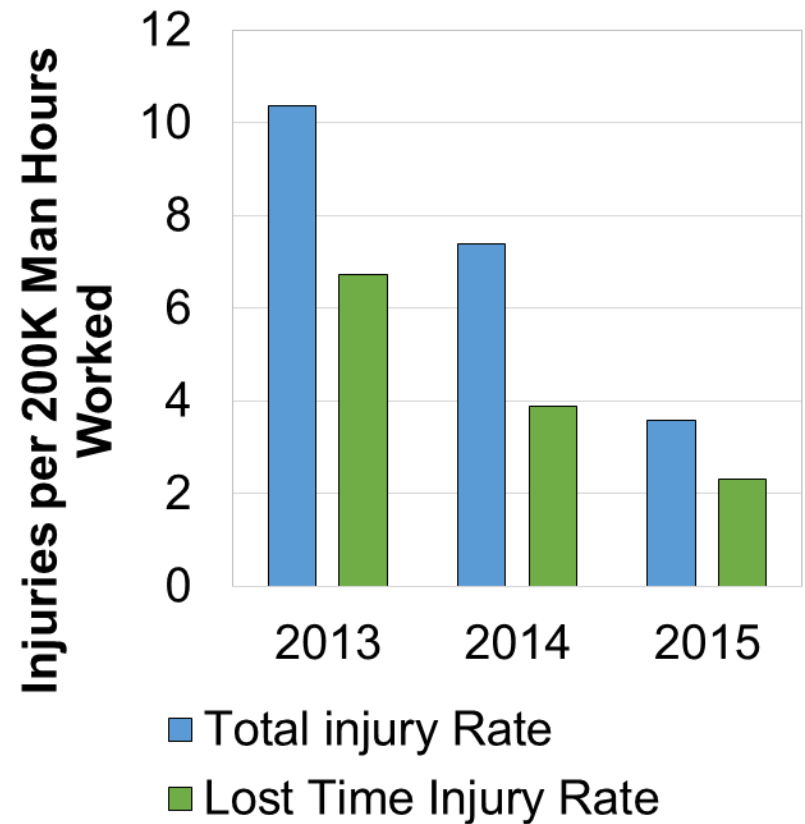
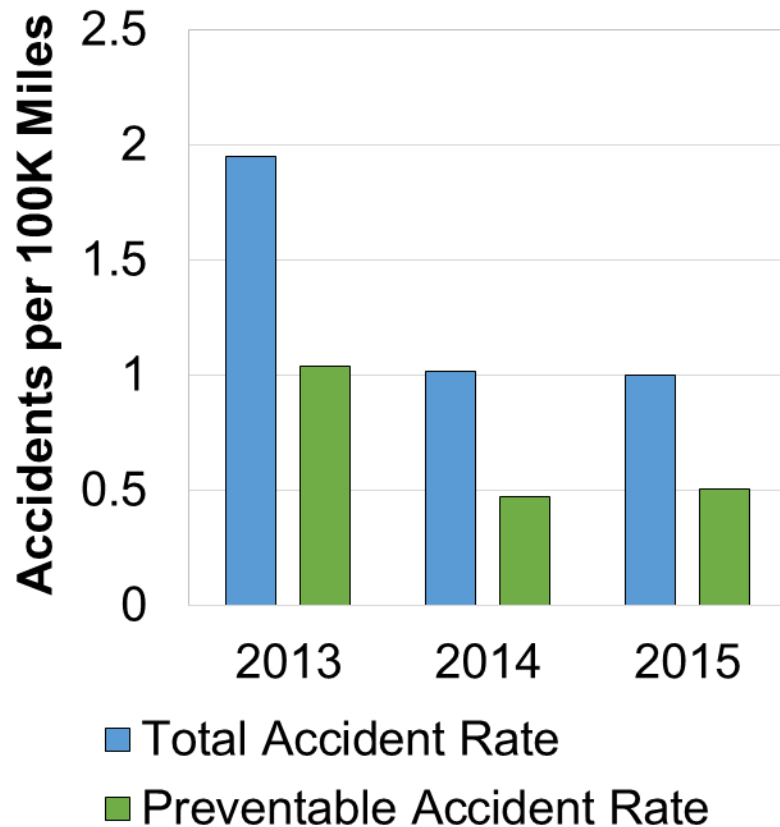
- **Mandatory** annual refresher training for all bus operators, with a focus on **pedestrian awareness** – includes **distracted driving** and **left turn** movements (squared left turn)
- An **upgraded ride check** program to ensure operators are using proper safety practices
- Statistical analysis focusing on the times and locations of accidents, so operators know when and where to **expect the greatest risk**
- **Outhouse Journals**
- **Operator Assaults Reduction Initiative**

- **Reduction** in both preventable and non-preventables
- Significant **reduction** in pedestrian incidents (**35%** from 2013 to 2014)
- Liability claims **reduced**
- Credits success to vigorous and focused **safety meetings, training, and follow-up** on safety issues; open **communications** policy; ability to **contribute** through committees and **working groups**

# SolTrans (by National Express)

- **Smith Driving System** was reported as very useful
- Mixing time **BTW** with classroom each day described as increasing retention
- Suggested national standard of 20 hours BTW training required for new operators (SolTrans **requires 25 hours**)
- Focus on treating employees as **internal customers**
- **71%** decrease in incidents from first six months of 2013 to end of 2013 – passenger falls and employee injuries also decreased
- Safety trends continue to **improve**

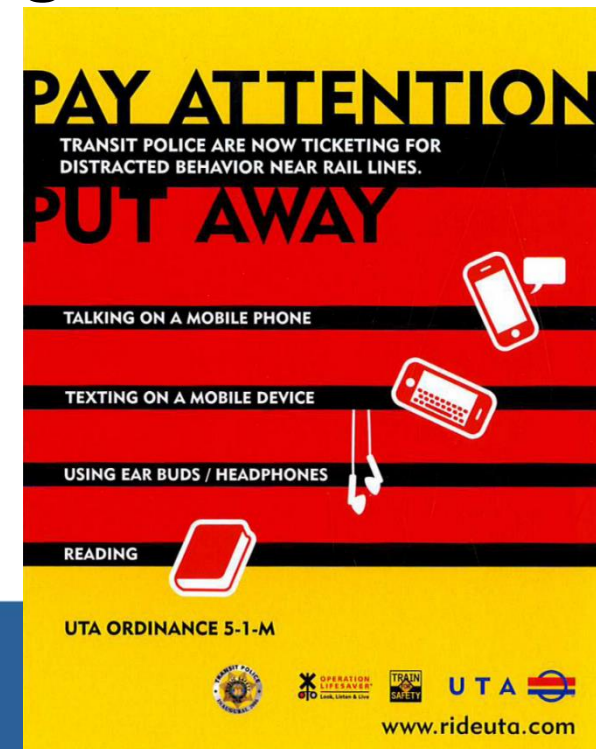
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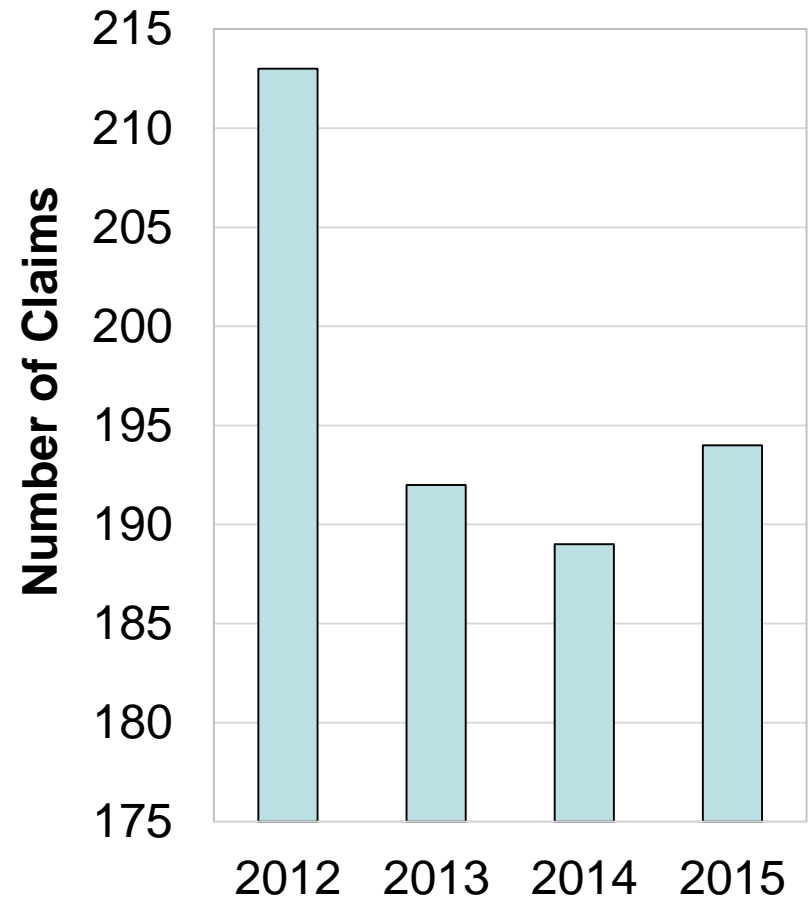
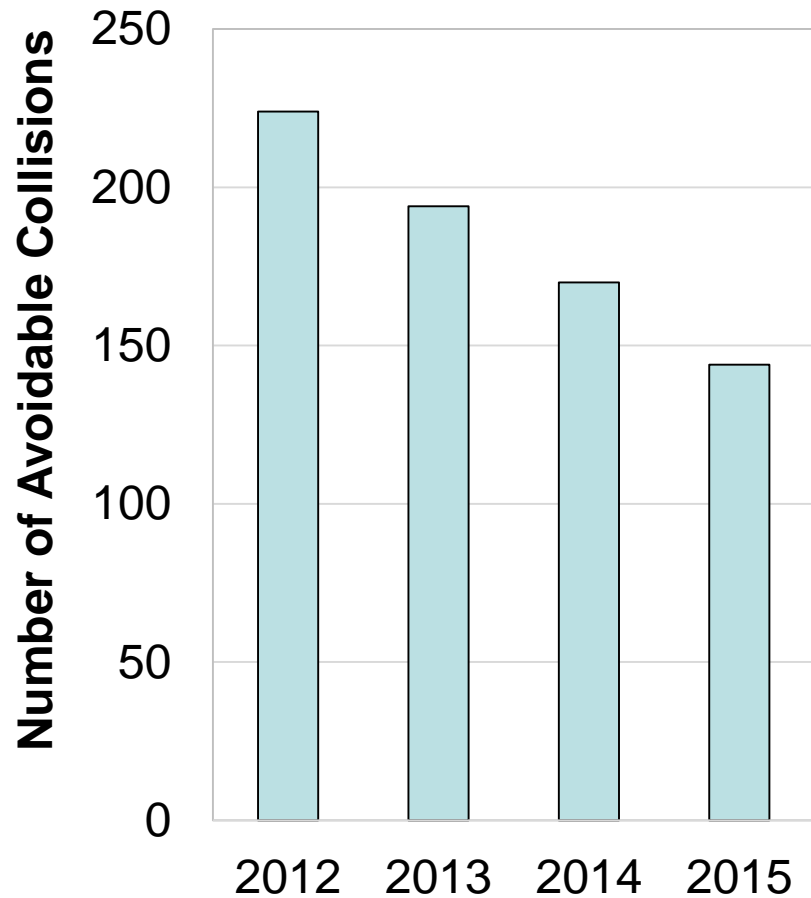
# Utah Transit Authority



- Training – new hire and annual recertification consistently **evaluated and modified**
- **16 hours of annual refresher training**
- **SmartDrive** identified as impactful



# Utah Transit Authority



# Common Threads – SMS Connection

- All agencies have a structured process for **data collection, analysis, and review**
- All agencies apply **multiple approaches** in addressing areas of critical safety concern
- All case studies **work across teams** to improve transit safety and this process is supported by and the culture is set by their **CEO/GM**
- All case studies perform **holistic** accident and **incident investigation** and **utilize audio/video** recordings in their examination

# Common Threads

- Each agency recognizes the **value of their employees** to their organizations
- Each provides bus operators **opportunities for input and engagement** with transit agencies leadership
- The four case study locations that use **telemetric monitoring systems** discussed the value of these systems for modifying driver behavior and improving system safety



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