

Washington Metropolitan Area Transit Authority
Board Action/Information Summary

Action Information

MEAD Number:
200845

Resolution:
 Yes No

TITLE:

Safety Quarterly Report

PRESENTATION SUMMARY:

The Department of Safety & Environmental Management (SAFE) Quarterly Report publicly communicates safety-related information and statistics.

PURPOSE:

The Metro SAFE Quarterly Report informs the Safety and Security Committee regarding the ongoing safety culture in the Metro system through established performance measurements in accordance with Authority goals. Further, the public report increases communication to enhance safety of our employees, customers and surrounding Washington metropolitan area community. The Quarterly Safety Report will provide data for the period of January – March 2014, with the same period of time in 2013 and against the 2014 targets; in addition to summary status of Corrective Action Plans (CAPs). In addition, an update will be provided on the implementation of Fatigue Risk Management System (FRMS).

DESCRIPTION:

Two key measures of a safety culture are the customer and employee injury rates. As such, both performance measures are included as part of Metro's Strategic Plan. The 2014 targets have been set for both, with the Customer Injury Rate (CIR) at less than 1.8 injuries per million Passenger Trips and the Employee Injury Rate (EIR) at less than 4.8 injuries per 200,000 work hours.

Key Highlights:

- Customer Injury Rate (CIR) – For the Quarter and YTD, the CIR is 2.12, currently exceeding the target of <1.8. The top two injury types for the Quarter are Slips/Trips/Falls (61%) and Vehicle Collision-related injuries (30%). Review of the first quarter data shows no significant trends; however there are groupings of multiple injuries per incident. Actions underway or in development to reduce all injuries and meet the Authority's target are listed further in this document.
- Employee Injury Rate (EIR) – For the Quarter and YTD, the EIR is 4.55. Both Quarterly/YTD EIR is below the target of <4.8. The top two injury types are Slips/Trips/Falls (31%) and collision-related (19%). Again, the data analysis does not reveal any singular significant trends except that single incidents are resulting in multiple injuries. Actions underway or in development to reduce all injuries and meet the

Authority's target are listed further in this document.

- Corrective Action Plans (CAPs) – Currently, 30 CAPs have been closed with 81 remaining open and in-progress, of which two are rated by Metro as “unacceptable” based on Metro’s hazard management rating and stem from the Fort Totten accident. Both of the “unacceptable” CAPs are long term items related to the safety analysis of automatic train control and the design changes.
- Implementation of the FRMS continues on-track and is one of the primary goals and focus of Metro with progress being made since last Safety Committee briefing of January 2014. Specific actions are addressed further in the document.

Background and History:

Key Performance Indicators (KPIs)

The Department of Safety & Environmental Management utilizes two KPIs, the CIR and EIR, as overall indicators of improving the safety culture among employees and the riding public. Daily review of incidents, systematic inspections of facilities and regulatory programs, and employee/contractor training are effective uses of resources which ensure a safer workplace and environment for our employees and passengers. The EIR measures are based on the OSHA Recordable Injury Criteria and the CIR measures are based on National Transit Database (NTD) Reporting Criteria. The data in the attachments support the two KPIs.

Fatigue Risk Management System (FRMS)

Historically, the risk associated with fatigue was largely managed by limiting the number of hours worked. However, there is increasing understanding that hours-of-service limitations by themselves may not achieve the objective of managing risk from fatigue. This together with the restrictive impact on operations has led industry and regulators to move away from using rules based solely on hours of work, and instead adopt a more comprehensive approach to fatigue risk management using Fatigue Risk Management Systems (FRMS).

There is no question that well-rested, alert employees are critical to safe and productive operations. Virtually everyone experiences some level of fatigue from time to time. Because of its potential impact on health and safety, any organization in which individuals work extended hours or hours during which people typically sleep can benefit by directly addressing fatigue in the workplace. This is especially true for those in a safety sensitive/safety critical function.

Discussion:

KPIs

For employee injuries, Bus Operators and Mechanics (e.g., Car Maintenance, Bus Maintenance, and Elevator & Escalator) are the top two employee groups reporting injuries. Based on an initial review of injury reports, the leading injury causal factors were: (1) inattentive actions where the employee was distracted, pre-occupied, or unfocused on their surroundings and (2) actions where prescribed techniques and

procedures were not followed. Specific implemented actions to reduce injuries in these groups include: retraining of individual employees and/or groups found to be in violation of safety-related rules; increased facility inspections that focus on conditions that contribute to injuries (e.g., slippery floors, tripping hazards, housekeeping issues); improved process and procedures for mechanical activities (e.g., team lifting, tool usage, ergonomic evaluations), Bus Operator pre-trip safety reviews, and injury review committees that focus on the injury contributing factors.

The Authority is also taking a multifaceted approach to injury prevention that includes a renewed focus on performing thorough investigations of incidents and near misses; training personnel on the OSHA 10-Hour certification program; and providing tailored safety data packages to operational groups. The safety data packages provide additional trending and analysis to front-line Supervisors and Managers. To sustainably address the issues leading to injuries, Root Cause Refresher Workshops have been conducted with multiple operational groups, such as the Transit Police and Bus Service Operations Managers. In January, Metro hosted and provided feedback on a pilot course offered by the U.S. Department of Transportation's Transit Safety Institute on Safety Management Systems. To directly address the ongoing issue with collision-related injuries, Metro has National Safety Council (NSC) certified staff instructing NSC's Defensive Driving Course for non-revenue/support vehicles, both classroom-based and in the field. The Transit Police are utilizing a supervisor ride-along program to monitor officer driving habits and are actively marketing fitness activities to reduce pursuit and arrest-related injuries, which are typically strains and sprains. We are also using safety data analysis to identify and target hotspots for employee injuries across the system.

For customer injuries, the number of rail-on board, rail-facility and bus collision-related injuries have increased when compared to the same time period last year; escalator, and bus non-collision-related injuries have decreased. Overall, customer injuries are trending downward. To address bus passenger injuries, we continued to review DriveCam to identify safety incident hotspots and unsafe behaviors. Improved data collection and analysis has allowed for safety blitzes in areas that have high safety incident occurrences. For example, Shepherd Parkway Division has been identified as an area for improvement and resources have been allocated towards passenger outreach, evaluating bus stops/routes and developing corrective actions. Metro continues to provide targeted safety messages throughout the system, in print media as well as in-station and onboard. A preliminary review of customer injury data, such as the decrease in escalator slips/trips/falls, indicate that the targeted announcements, along with targeted maintenance and rehabilitation efforts, are contributing factors to improved customer safety.

FRMS

The Fatigue Risk Management System (FRMS) includes a number of individual initiatives, each designed to reduce the risk of fatigue-related impairment in the workplace. Implemented initiatives remain subject to continuous review and improvement via the FRMS Steering Committees, as defined in the FRMS Policy Instruction. Program elements are currently in various stages of maturity and include the expansion of Hours of Service (HOS) Rules, development of an improved incident investigation protocol for fatigue-related factors, a FRMS Dashboard and a secondary employment policy.

Hours of Service Rules

Hours of Service Rules are an important part of a comprehensive fatigue risk management approach and are intended to limit the risk of fatigue-related impairment. The HOS policy development process is science-based and informed by the scientific peer-reviewed literature, industry best practices, and bio-mathematical analysis of fatigue risk associated with actual and planned schedules for safety-sensitive and safety critical positions. HOS guidelines for Transportation and Bus Maintenance that take effect in summer 2014 are defined in a Policy/Instruction. Full HOS compliance is anticipated for these groups by the end of 2014. HOS Rules for Transportation Infrastructure and Engineering Services (TIES), MetroAccess and Metro Transit Police Department are currently in development.

FRM Dashboard

The FRM Dashboard is a web-based display of fatigue-related metrics designed to assist with tracking and managing schedule-induced fatigue risk exposure, as well as hours of service rule violations. The Dashboard is intended to enhance tracking and decision-making related to schedule-induced fatigue risk exposure as well as hours of service rule violations. Reported metrics will include estimations of fatigue risk derived from biomathematical modeling of work schedules via the SAFTE-FAST model and software. In Phase I of the Dashboard development, metrics indicative of fatigue-risk will be based on as-worked schedule information available from Trapeze. The Dashboard will integrate organizational information so that fatigue-related risk can be assessed within workgroups of interest. Phase I of the Dashboard is ongoing and will be complete in the third quarter of calendar year 2014.

Investigating the Role of Fatigue in Incidents

Current incident data collection tools are being modified to enable investigators to capture additional information pertaining to signs of fatigue and work and sleep schedules. Investigators, WMATA employees such as Street Operations Managers, Rail Superintendents, Safety personnel, will receive additional specialized training on fatigue in incidents, to include biomathematical modeling of accidents. Updated tools and procedures will be piloted with investigators in the summer and fall of 2014. Feedback from the pilot will be reviewed by the FRMS Steering Committees and will inform revisions to tools and procedures.

Recuperative Breaks and Quiet Room Pilot

The Recuperative Break program is based on evidence that supplemental sleep can effectively limit the risk of fatigue-induced impairment and help sustain performance levels. This initiative establishes procedures that would enable off-duty personnel to sleep in designated "quiet rooms". Two Quiet Rooms have been designed as test sites for the Recuperative Break program. Beginning in the summer of 2014, bus transportation personnel will be invited to make use of Quiet Rooms during off-duty hours (this program will not supersede any existing codes of conduct for personnel). Personnel using the room for recuperative breaks will be invited to provide feedback to be reviewed by FRMS Steering Committees. Improvements to the program and Quiet Rooms will be based on feedback from personnel.

Education and Awareness Initiatives

Activities to promote individual FRMS initiatives within the organization are ongoing, and include the distribution of fatigue and FRMS-related safety contacts, and a presence at events for safety-sensitive personnel. Activities to promote awareness will continue to

be tailored to the initiative and target group.

Content for revised computer-based fatigue management training has been developed. Training has been developed for investigating the role of fatigue in incidents. Testing of delivery and tracking platforms for the computer-based training is ongoing.

Secondary Employment

The goal of the Secondary Employment Policy is primarily to generate awareness about how scheduled non-work activities can impair an individual’s ability to get sufficient rest and be prepared for work. This initiative is distinct from existing conflict of interest policies as it is meant to address fatigue risk. A first phase of the policy development is ongoing and will, at a minimum, require safety sensitive personnel to declare an understanding of this risk.

FUNDING IMPACT:

Funding for FRMS is within the approved SAFE operating budget.	
Project Manager:	James Dougherty
Project Department/Office:	SAFE

TIMELINE:

Previous Actions	<ul style="list-style-type: none"> • Briefed Safety & Security Committee on FMRS status in January 2014 • Briefed Safety & Security Committee on Safety Report status in March 2014
Anticipated actions after presentation	<ul style="list-style-type: none"> • Plans for HOS guidance to other safety critical jobs during the 2nd quarter of 2014 • Roll out FRMS dashboard for Supervisors during the 3rd quarter of 2014 • Continue to be proactive in mitigating and alleviating employee and customer hazards that may lead to injury/incident

RECOMMENDATION:

Informational item only.

Table 1: Rail Passenger Injury Rates

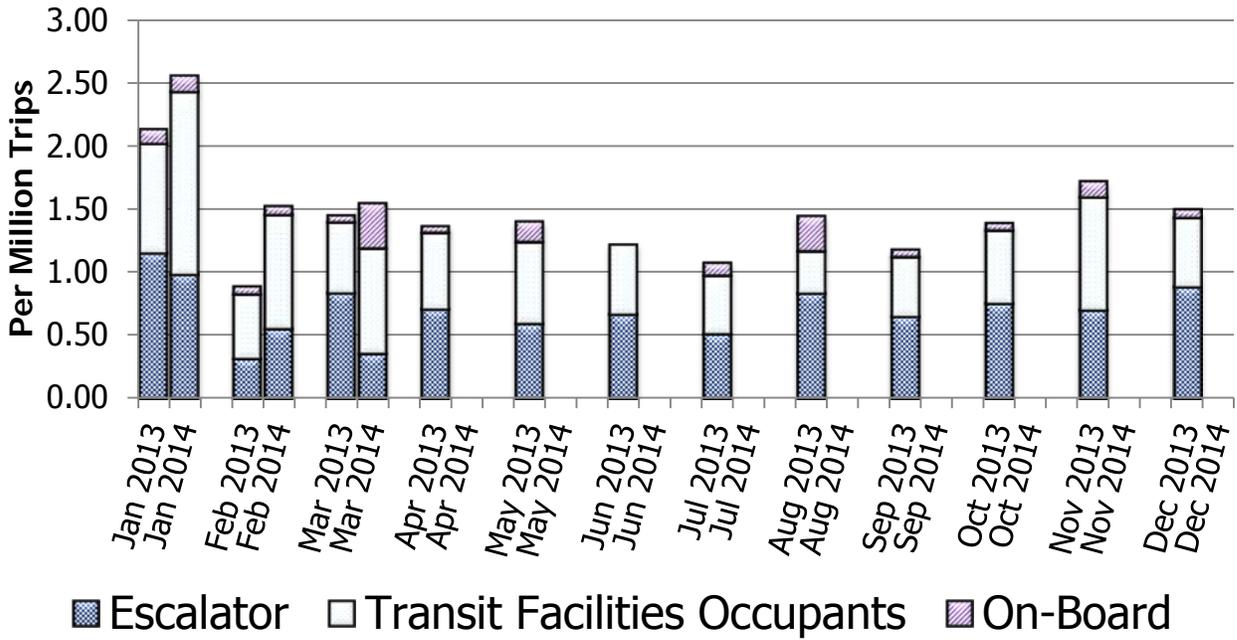


Table 2: Bus Passenger Injury Rates

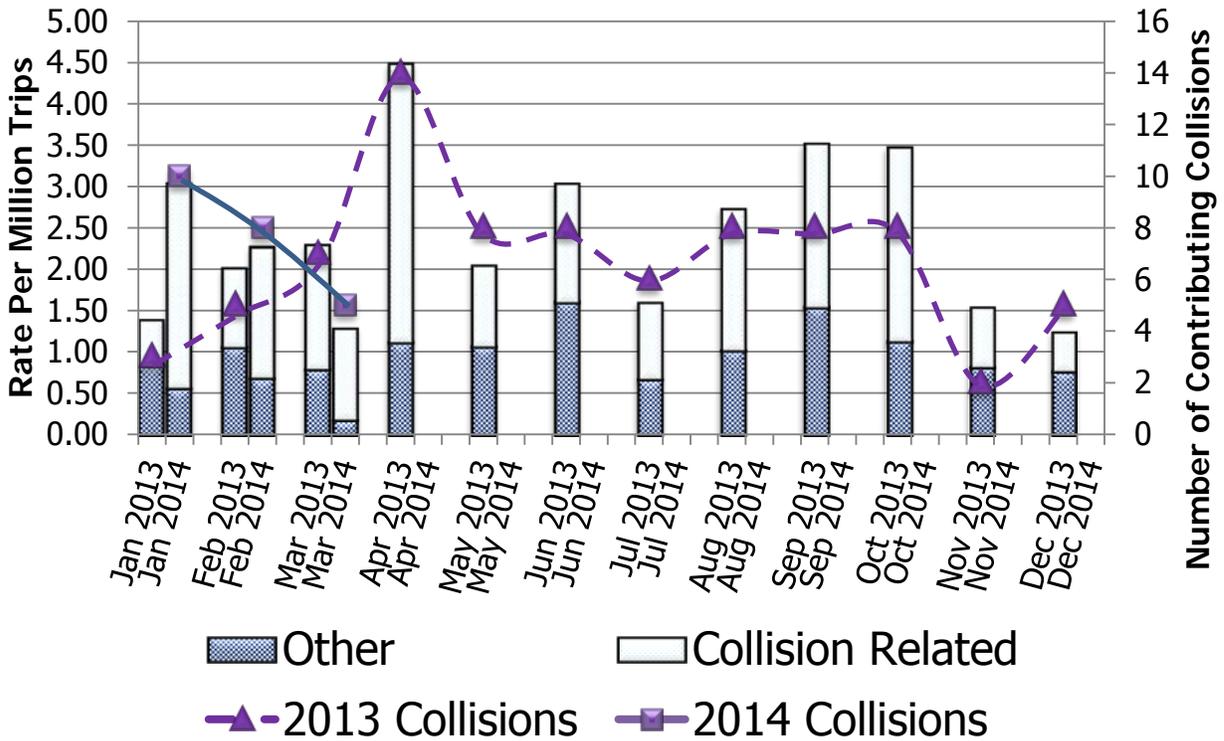


Table 3: MetroAccess Passenger Injury Rates

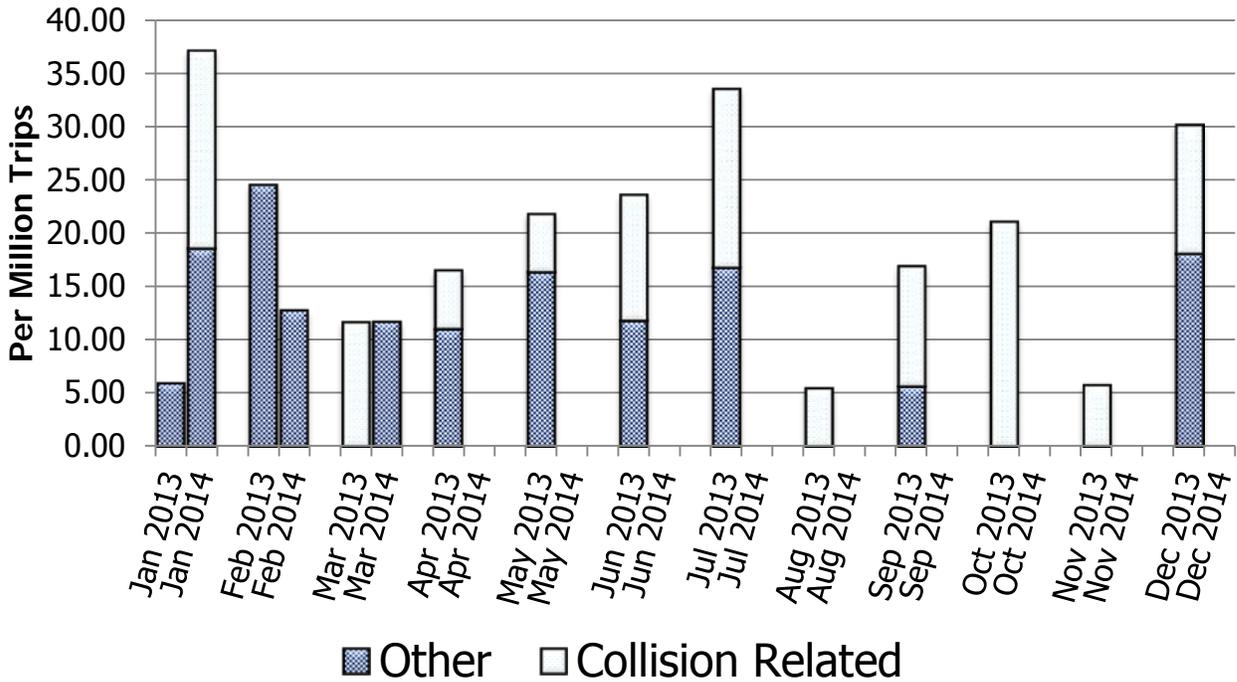


Table 4: Bus Collision Rates

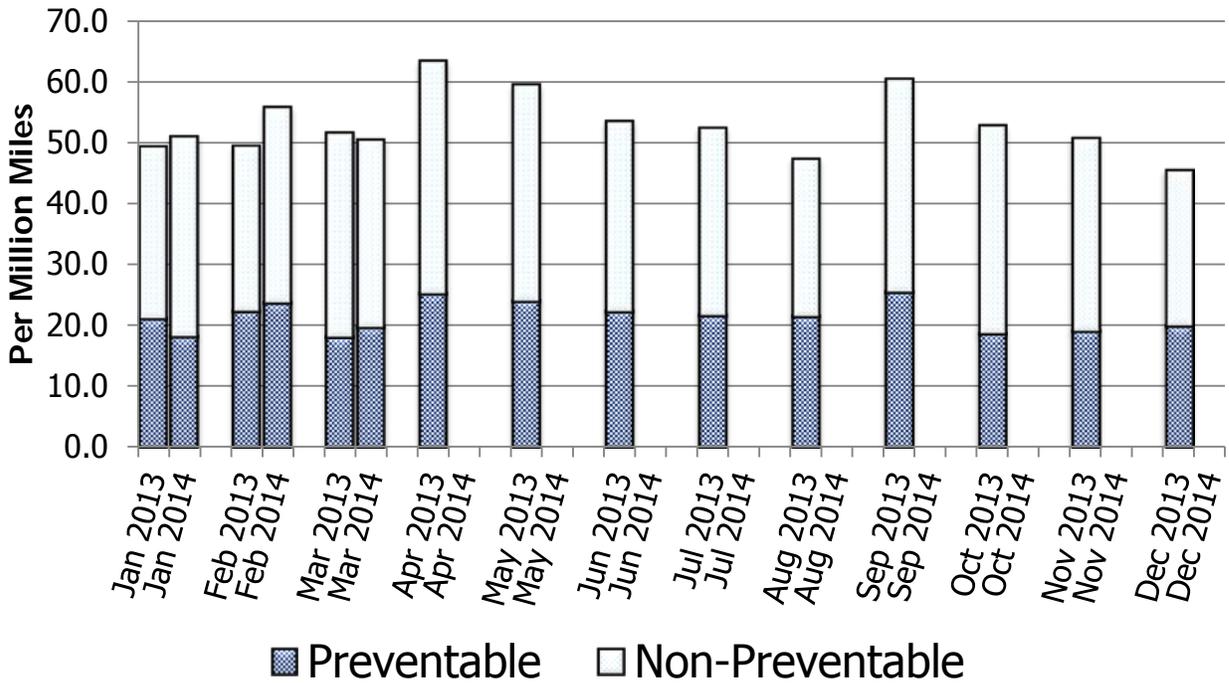


Table 5: MetroAccess Collision Rates

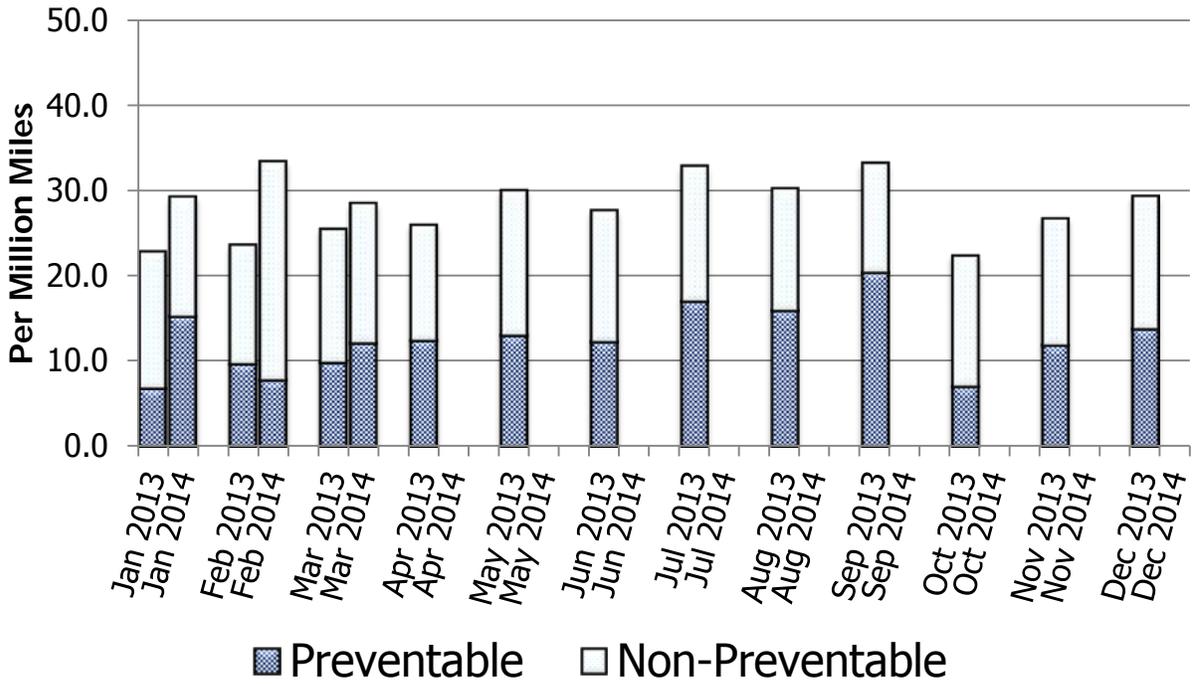


Table 6: Bus Pedestrian/Cyclist Incidents (NTD Criteria - Transported From Scene)

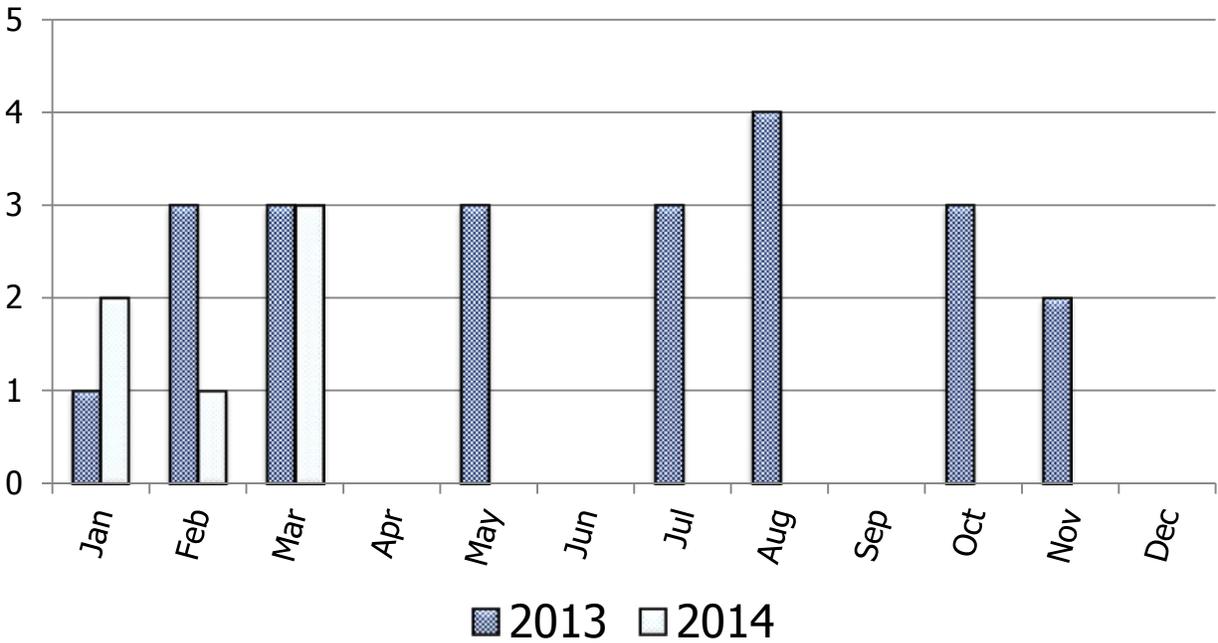
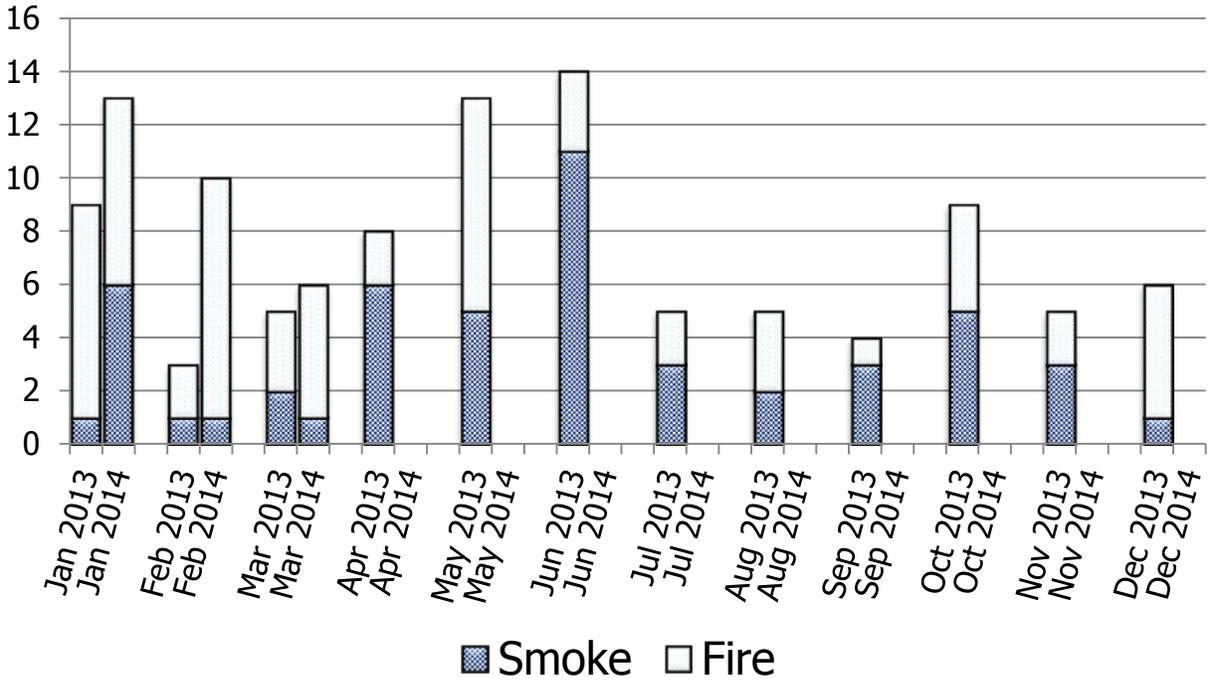
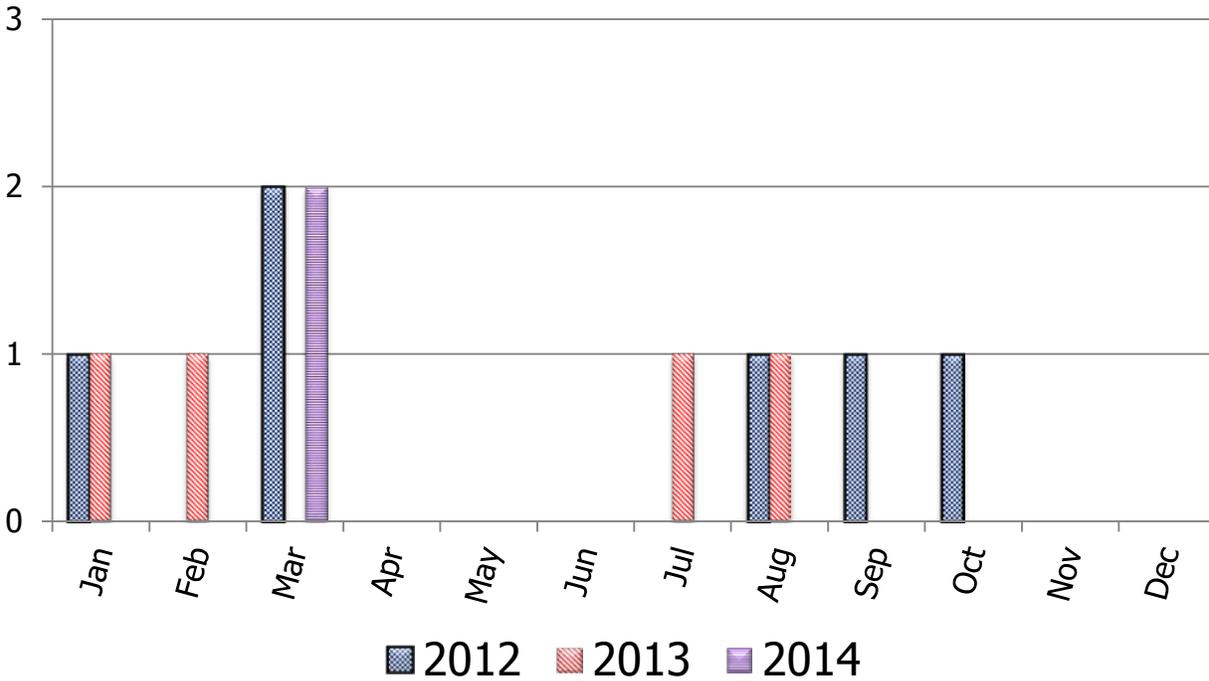


Table 7: Smoke and Fire Incidents - Rail



■ Smoke □ Fire

Table 8: Suicides

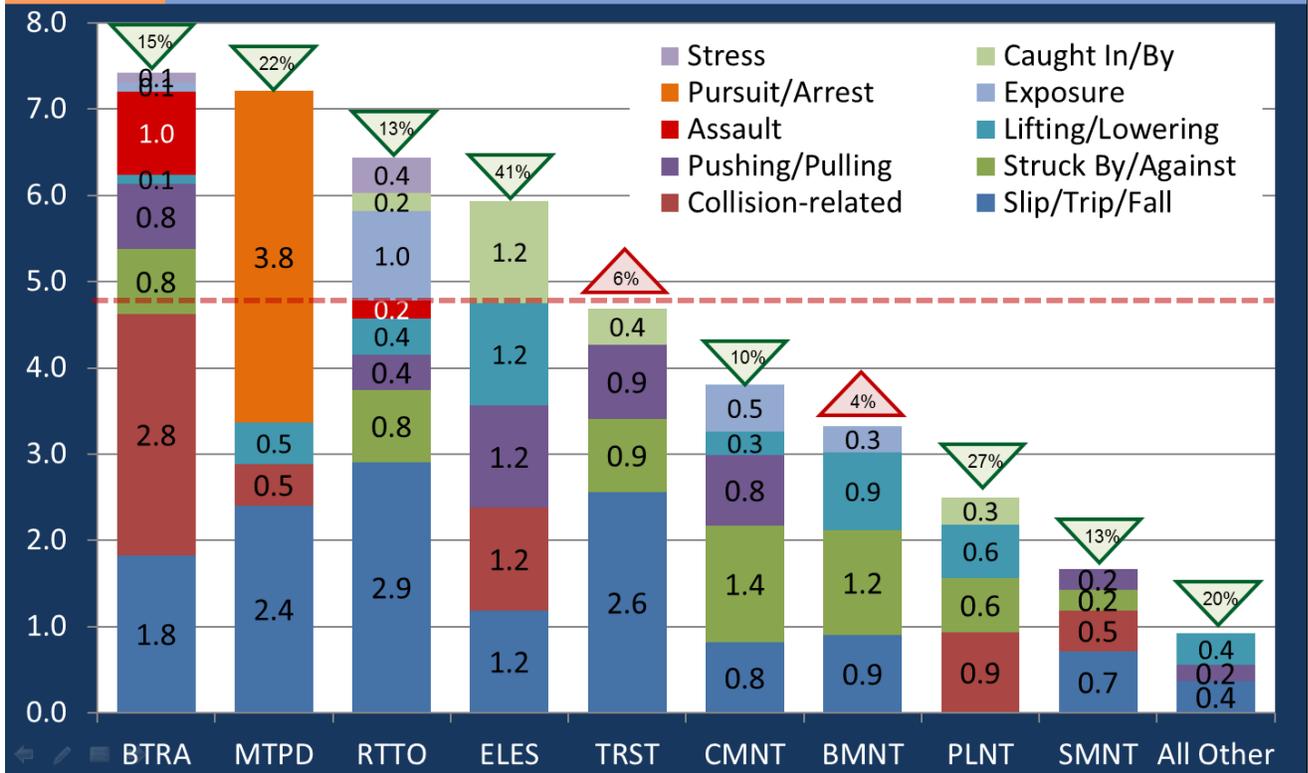


■ 2012 ■ 2013 ■ 2014



Statistical Review Employee Injury Rate

Injuries per 200k Hours Worked, January – April



NOTE: Triangle above bar indicates percentage comparison when compared to same period last year.



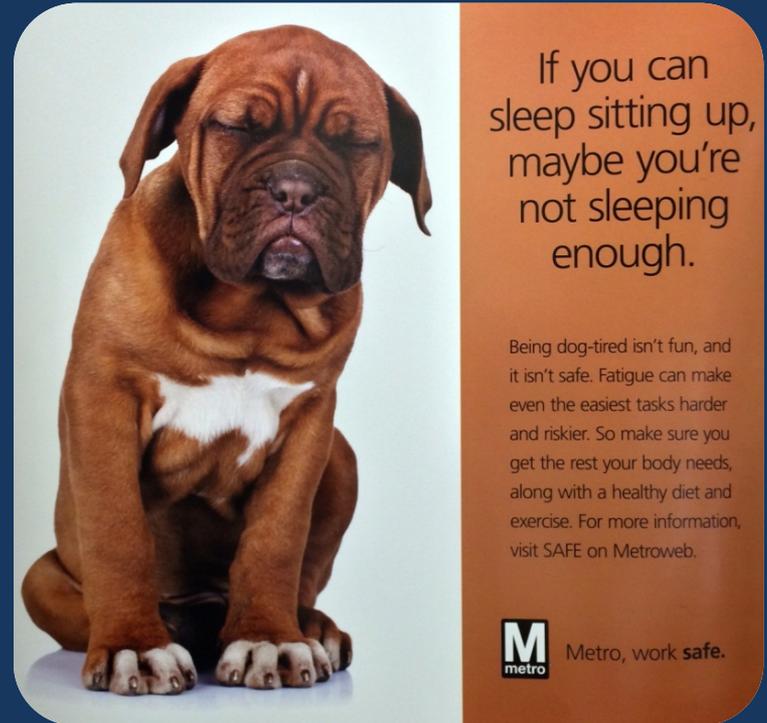
Washington Metropolitan Area Transit Authority

Safety Report

Moving Metro Forward **Safely**

Safety and Security Committee
June 26, 2014

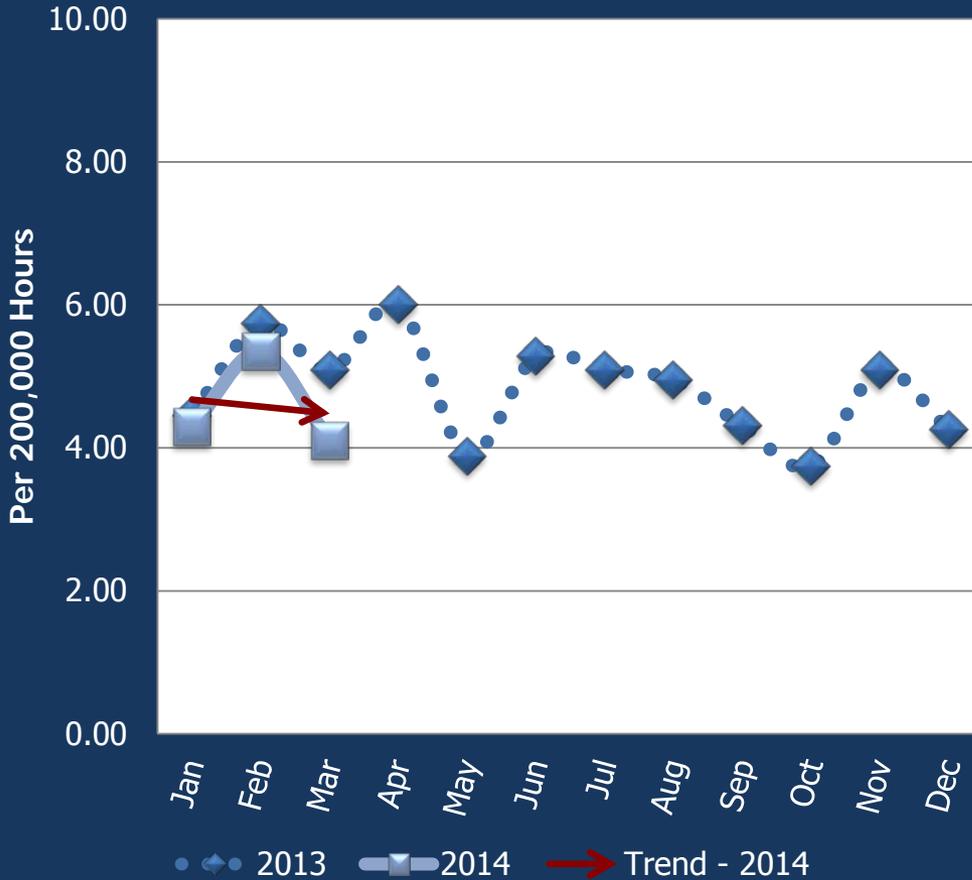
- Brief the Committee on quarterly safety progress and provide update on fatigue risk management system



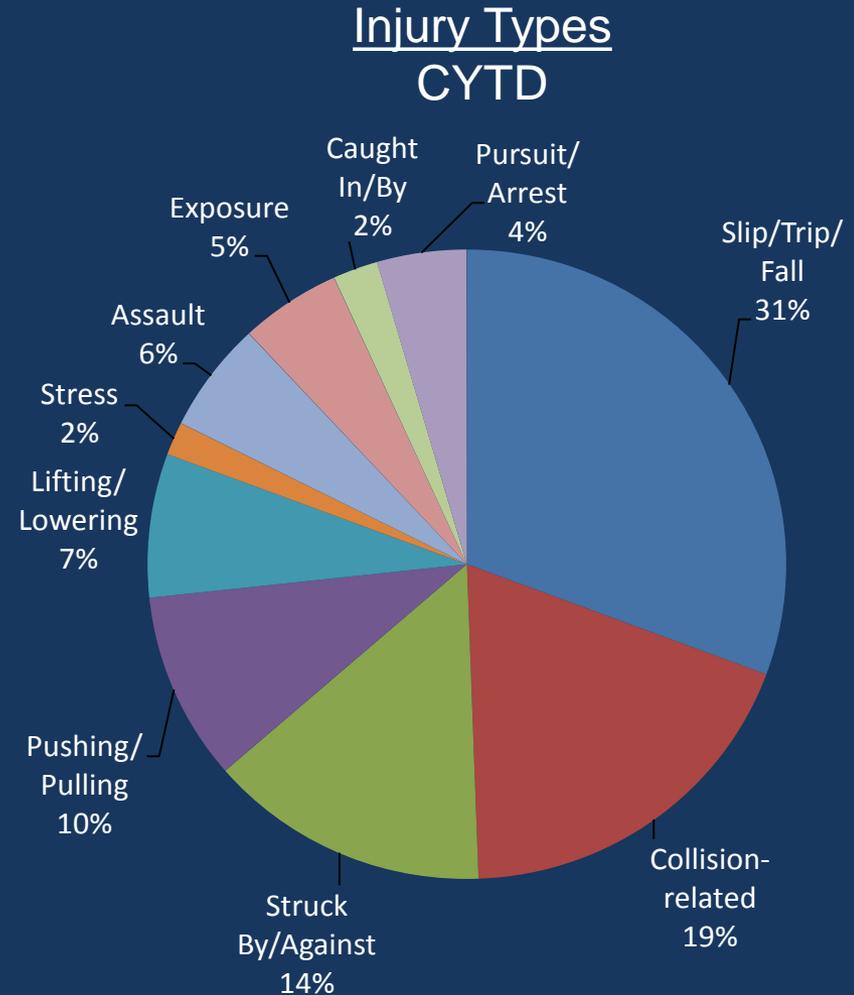


Statistical Review

Employee Injury Rate – *per 100 Employees*



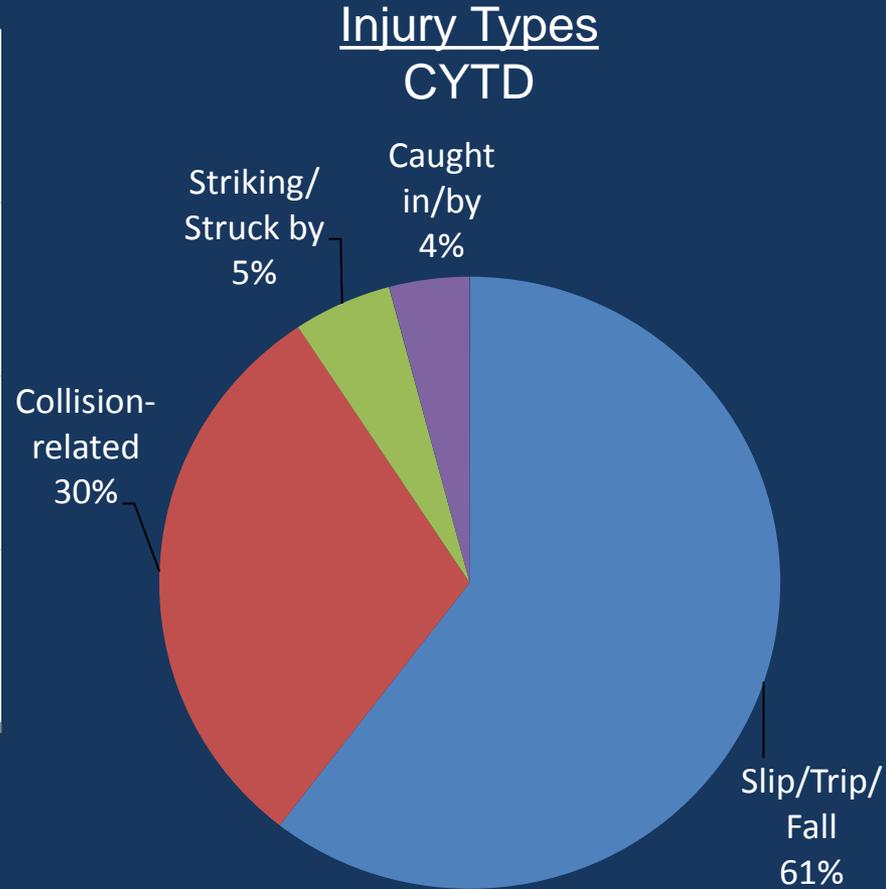
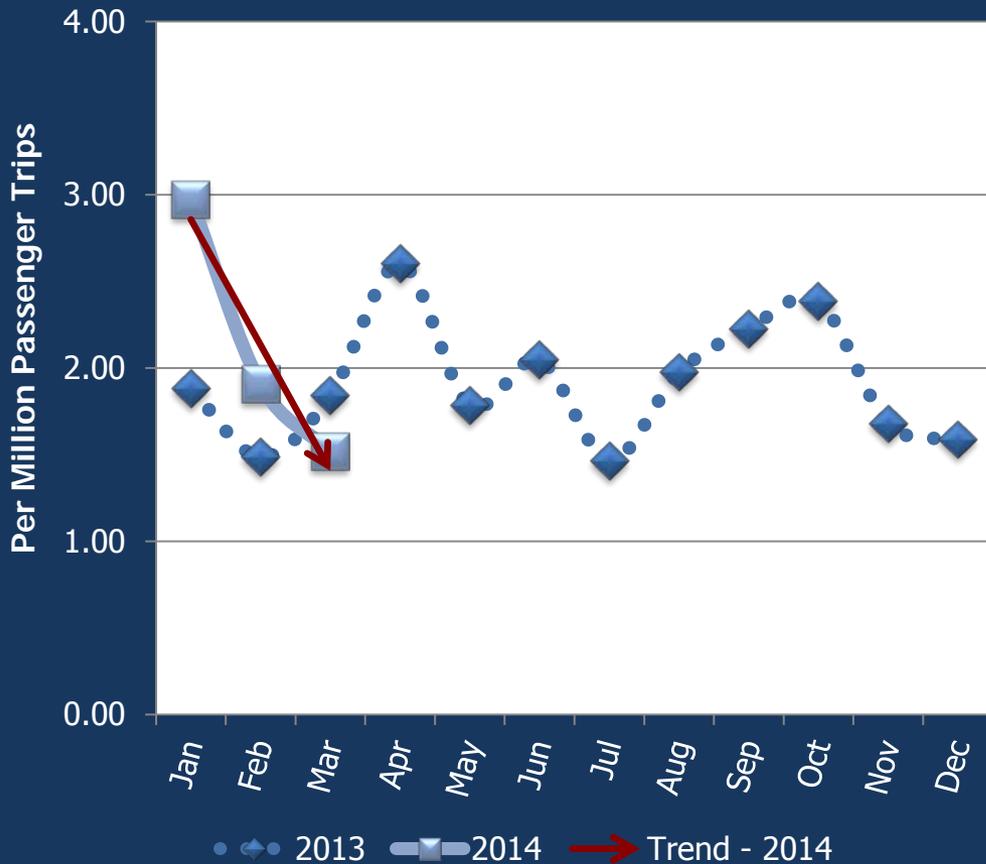
JAN	FEB	MAR	CYTD	TARGET
4.29	5.34	4.10	4.55	<4.8





Statistical Review

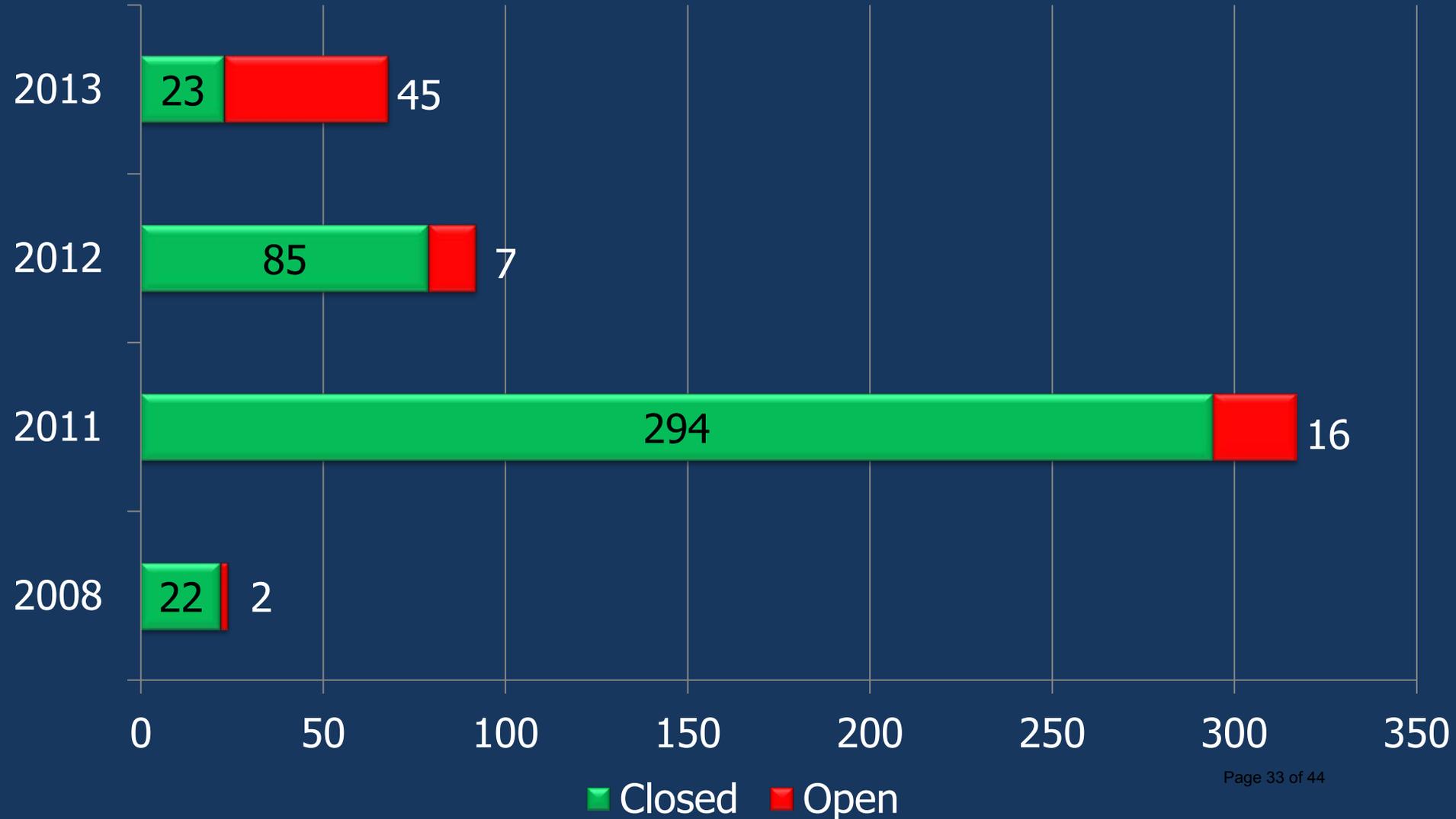
Customer Injury Rate - *per million trips*



JAN	FEB	MAR	CYTD	TARGET
2.97	1.90	1.52	2.12	<1.8



Corrective Action Plans





Hazard Resolution Matrix of Open Corrective Action Plans

Frequency of Occurrence	Hazard Categories			
	Catastrophic 1	Critical 2	Marginal 3	Negligible 4
A = Frequent	0 1A	0 2A	0 3A	5 4A
B = Probable	1 1B	0 2B	0 3B	1 4B
C = Occasional	1 1C	6 2C	11 3C	4 4C
D = Remote	3 1D	12 2D	15 3D	7 4D
E = Improbable	0 1E	0 2E	4 3E	0 4E

1A, 1B, 1C, 2A, 2B, 3A	2	Unacceptable – Executive Leadership with Chief Safety Officer
1D, 2C, 2D, 3B, 3C	32	Undesirable - Executive Safety Committee decision required
1E, 2E, 3D, 3E, 4A, 4B	25	Acceptable with review by Executive Safety Committee
4C, 4D, 4E	11	Acceptable without review



Update on Fatigue Risk Management System (FRMS)



Active Initiatives

- Hours of Service (HOS) Rules
- Fatigue Risk Management Dashboard
- Investigating the role of fatigue in incidents
- Recuperative breaks & quiet room
- Education and Awareness
- Secondary employment

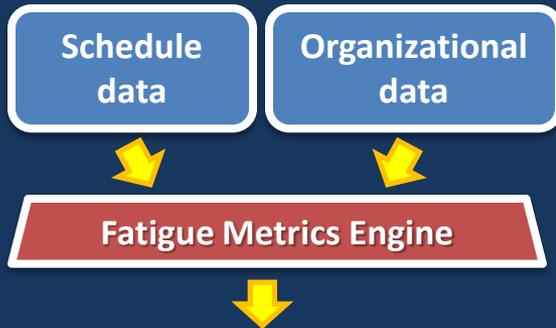




Hours of Service Rules

- Policy development based on science
 - Peer-reviewed workplace studies
 - Benchmarking in transportation
 - Biomathematical modeling of fatigue risk
 - Planned & actual schedules
- Address known contributors to fatigue risk
 - Limit fatigue accumulation on duty
 - Opportunity for sufficient rest off-duty
- Transportation
 - In effect 6/28/2014
 - Full compliance 12/31

Fatigue Risk Management Dashboard



- Strategic tool
 - HOS and model-based metrics
 - User-specific authorizations
- Phase I
 - Trapeze-based, transportation
- Launch end of summer 2014



Incident Investigation

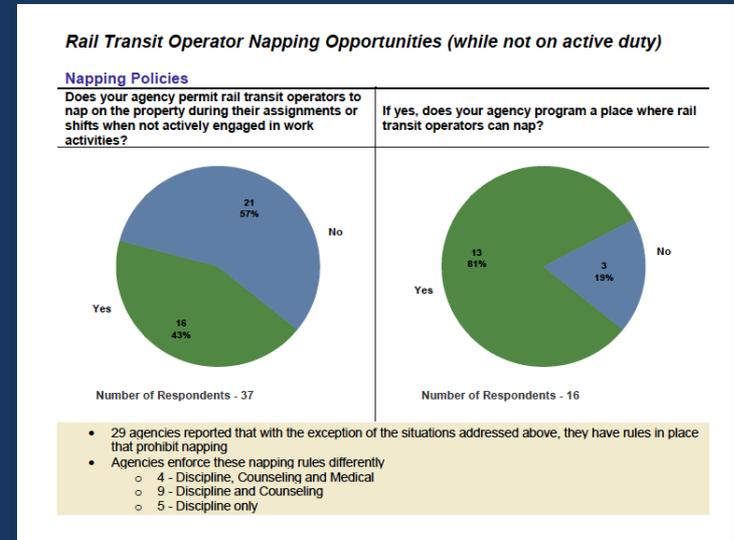
- Capture contribution of fatigue
- Tools for investigators
 - Data collection
 - Analysis
 - Education
- Pilot end Fall 2014





Quiet Room

- Off-duty use
- Pilot end Fall 2014
 - Landover, Shepherds Parkway
- Steering Committee review





Secondary Employment

- Outside activities can compromise sleep opportunities
 - Distinct from conflict of interest
- Education
- Declaration of awareness

Education and Awareness

- Awareness
 - Program information, resources
 - Safety Contacts
- Customized Fatigue Risk Management Education

