TriMet Safety
A Five-Year Overview

Board Briefing

October 28, 2015

Background

- **Fatal bus collision in April 2010 prompted a top-to-bottom safety review**
  - Independent safety review
  - Creation of Taskforce on Safety and Service Excellence
- **General Manager charge**

"How to migrate TriMet to the highest level of safety performance, and thereby improve performance in all areas of its business"

Task Force on Safety and Service Excellence

- **Panel members**
  - Public safety
  - Traffic engineering
  - Professional drivers
  - Pedestrian/bicyclists groups
  - Private business

Task Force on Safety and Service Excellence

- **19 Task force recommendations**
  - 200 separate tasks
  - All completed
- **Recommendation categories**
  - TriMet Culture
    - Make safety a value, not a priority
  - Communication and Engagement
    - Empower employees to be active participants

Task Force on Safety and Service Excellence

- **Recommendation categories (cont'd)**
  - Accountability, Empowerment and Support
    - Elevate and expand Safety Department
    - Develop and implement comprehensive safety program
    - Enhance accountability for safety
  - Tools, systems and Process
    - Develop metrics
    - Use safety data for informed decision making

Safety Culture

- **The extent to which safety is emphasized, both formally and informally, by an organization and its members**
- **Safety culture impacts**
  - Safety performance
  - Injury rates
  - Incident rates
  - Customer safety

Safety Culture Study

- **Conducted by Washington State University**
  - Performed in 2012
- **Measured employee perception of**
  - Management’s concern for safety
  - Safety communication
  - Safety training
  - Supervisory safety influences (enforcement and behaviors)
  - Knowledge, motivation, behaviors, attitudes

Safety Culture Study

- **Three biggest factors employees said influenced employee safety**
  - Perception of safety as a value
  - Supervisor safety enforcement
  - Employee/supervisor communication

More than a word:
Safety
is the core value guiding our decisions
TRI MET
WORKPLACE FIRE SAFETY

Communication and Engagement

- Revised TriMet mission statement to include safety as an integral component in providing transit services

- Safety as a value incorporated explicitly into job descriptions of all TriMet employees

Communication and Engagement

- **Held a series of safety workshops for Leadership team and all Directors and Managers**
  - Develop an understanding of safety as a value
  - Promote positive safety culture traits
  - Safety performance measures

Communication and Engagement

- **Safety Exchanges**
  - Quarterly informal sessions with Transportation employees to share safety suggestions and concerns
- **Request for Safety Assessments**
  - Available to all employees
  - Formal process for employees to call attention to safety issues and concerns
  - Employees receive updates

RSA

Communication and Engagement

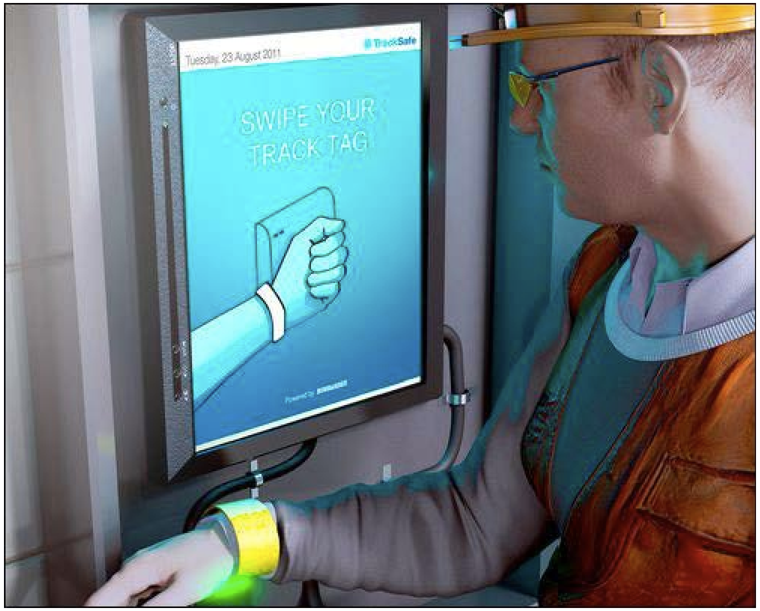
- **Continuous Improvement Teams**
  - Bus operator (BOCIT)
    - Recipient of Governor's Safety Award
  - Route schedules
  - Operator restrooms
  - Slips/Trips/Falls
  - Rail operator rulebook
  - Rail right-of-way safety
  - Rail reliability

Operational Safety Projects

- **Pedestrian Crossing Safety Upgrades**
  - Updated design criteria, including improved lighting
  - Additional audible/visual warning devices
  - Fencing for channelization
  - Swing gates/Bedstead barriers
- **Bus Pedestrian Safety**
  - Turn warning system
  - Mobile Eye – pedestrian detection system (under development)

Operational Safety Projects

- **Right-of-Way Worker Safety Enhancement demonstration project**
  - Enhances protection of workers from trains
  - Under design


Tuesday, 23 August 2011
TrackSafe
SWIPE YOUR TRACK TAG

- **Positive Train Control (PTC)**
  - Monitor and control of train movements to enhance safety of Wes operations

Hours of Service Policy

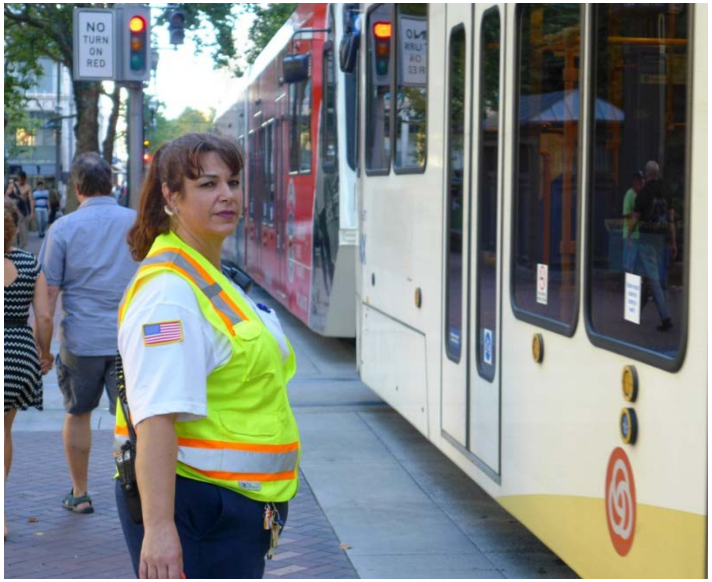
- **Fatigue**
  - *A physical and/or mental state resulting resulting from prolonged physical and/or mental exertion or insufficient quantity and/or quality of sleep or rest in which an individual's motor skills, coordination, reasoning, and/or reaction are degraded . . .*
- **Assists in management of fatigue**
- **Increases rest period requirement**
- **Reduces work-load induced fatigue**
- **Prevents fatigue-related incidents**

Operator Re-Certification

- **Annual 8-hour instruction**
- **Designed to**
  - Enhance operator defensive driving skills
  - Share safety risk information
  - Focus on prevention of slips, trips, and falls
  - Introduction to the Safety Management System

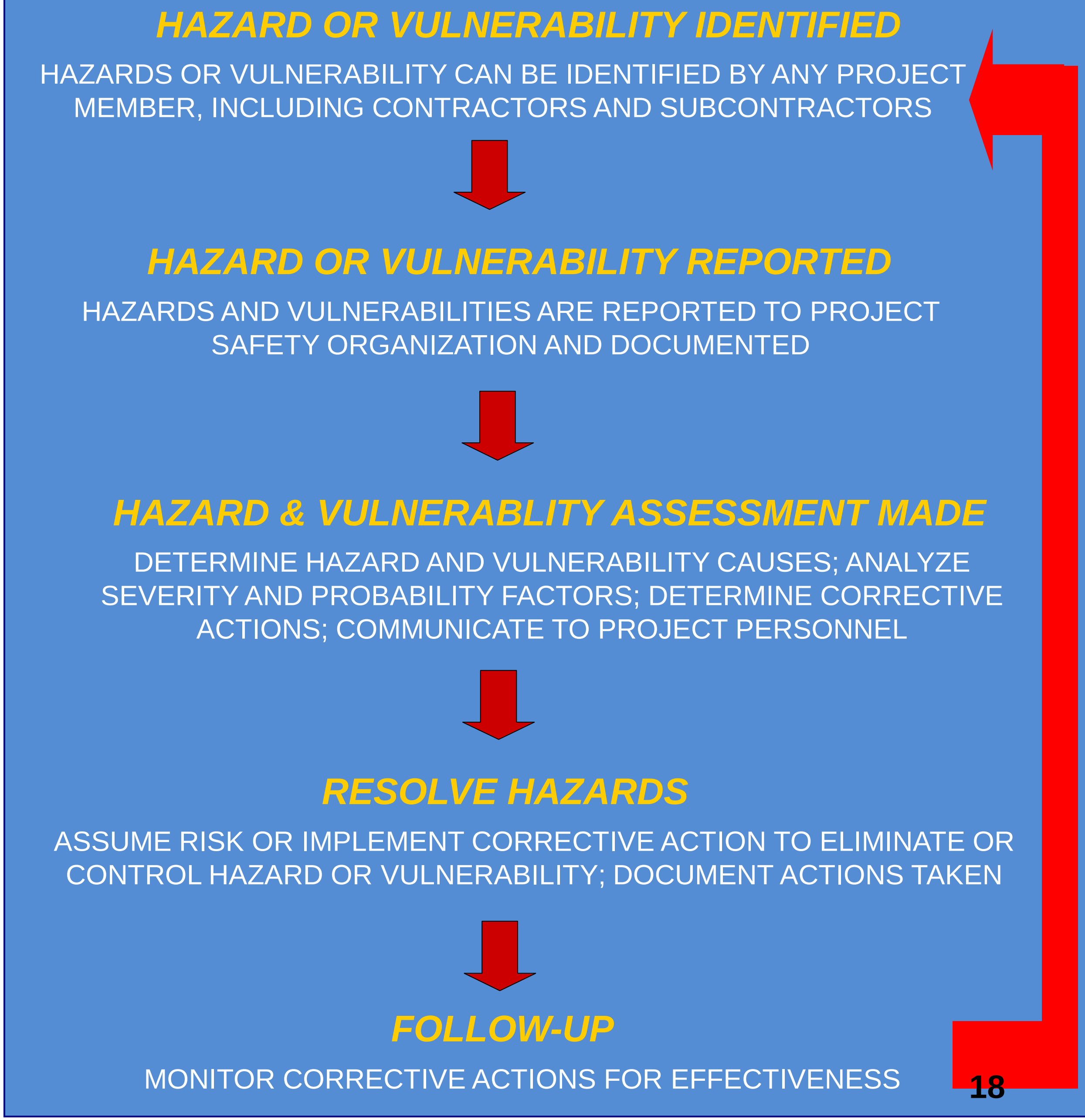
Supervisor Certification

- **Annual 8-hour instruction**
- **Designed to**
  - Enhance Supervisor skills
  - Share safety risk information
  - Introduction to the Safety Management System



Safety Risk Analysis

Hazard and Vulnerability Analysis Process



HAZARD OR VULNERABILITY IDENTIFIED

HAZARDS OR VULNERABILITY CAN BE IDENTIFIED BY ANY PROJECT MEMBER, INCLUDING CONTRACTORS AND SUBCONTRACTORS

HAZARD OR VULNERABILITY REPORTED

HAZARDS AND VULNERABILITIES ARE REPORTED TO PROJECT SAFETY ORGANIZATION AND DOCUMENTED

HAZARD & VULNERABLITY ASSESSMENT MADE

DETERMINE HAZARD AND VULNERABILITY CAUSES; ANALYZE SEVERITY AND PROBABILITY FACTORS; DETERMINE CORRECTIVE ACTIONS; COMMUNICATE TO PROJECT PERSONNEL

RESOLVE HAZARDS

ASSUME RISK OR IMPLEMENT CORRECTIVE ACTION TO ELIMINATE OR CONTROL HAZARD OR VULNERABILITY; DOCUMENT ACTIONS TAKEN

FOLLOW-UP

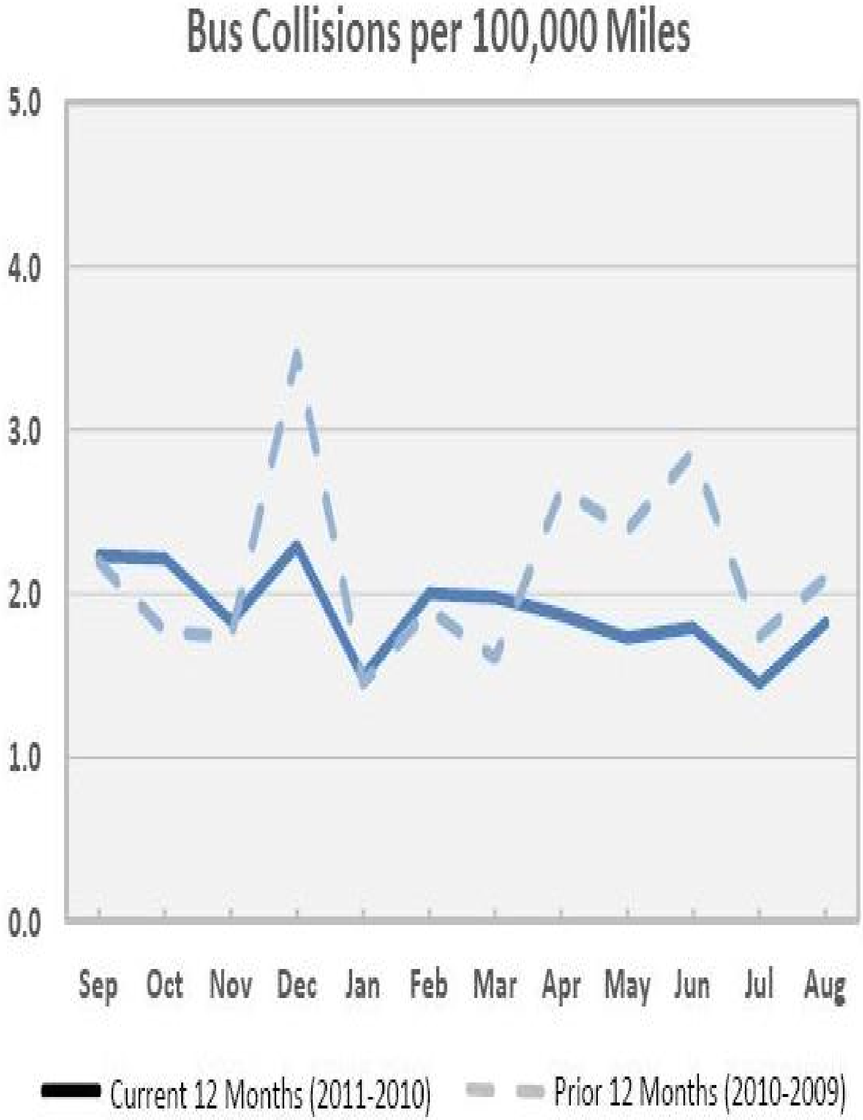
MONITOR CORRECTIVE ACTIONS FOR EFFECTIVENESS

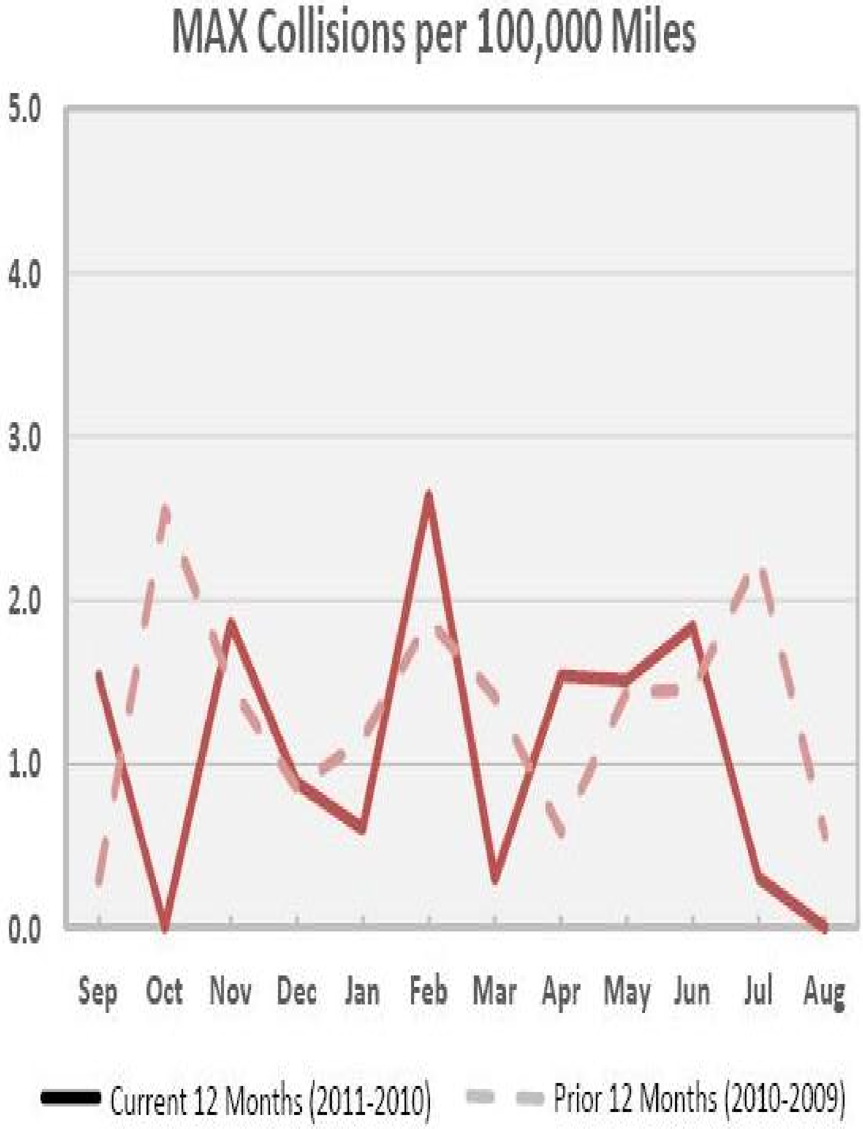
Hot Spot Reviews

- **Problem locations that require detailed analysis**
- **Identified through:**
    - Incident reports
    - Incident and collision data
    - Near miss reporting
    - Routine review of routes
- **Conducted by Safety staff**

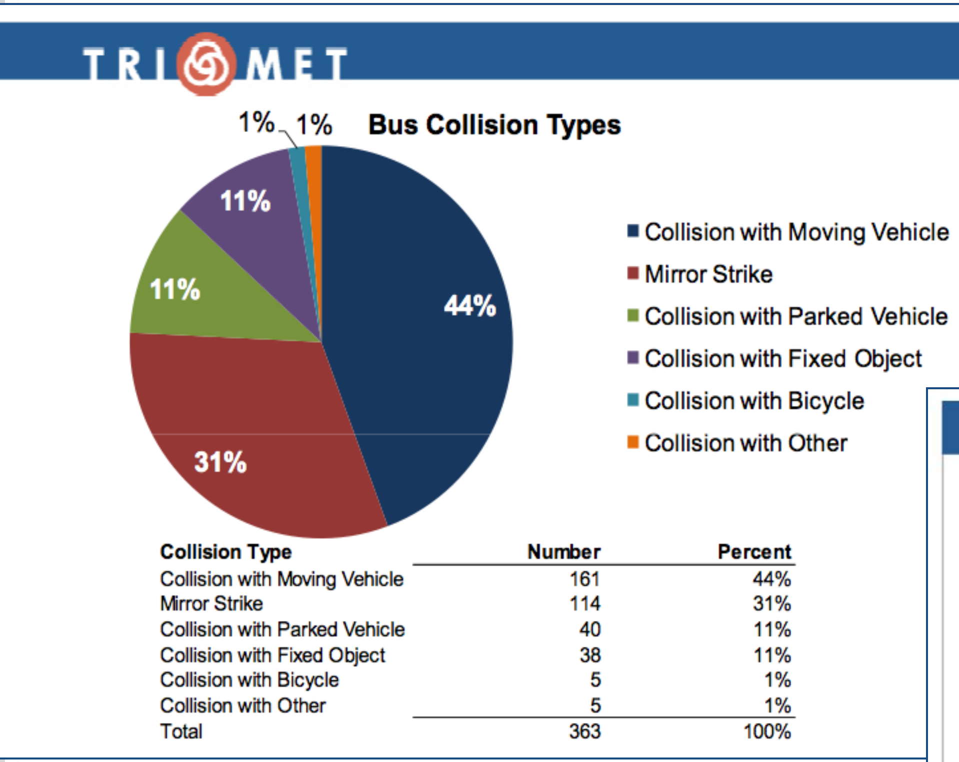
Strategic Data Sharing

- **Implemented Safety Management Information System SMIS)**
- **Designed to gather key performance indicators**
- **Identify safety risks**
- **Monitor corrective actions and control measures**


Bus Collisions per 100,000 Miles

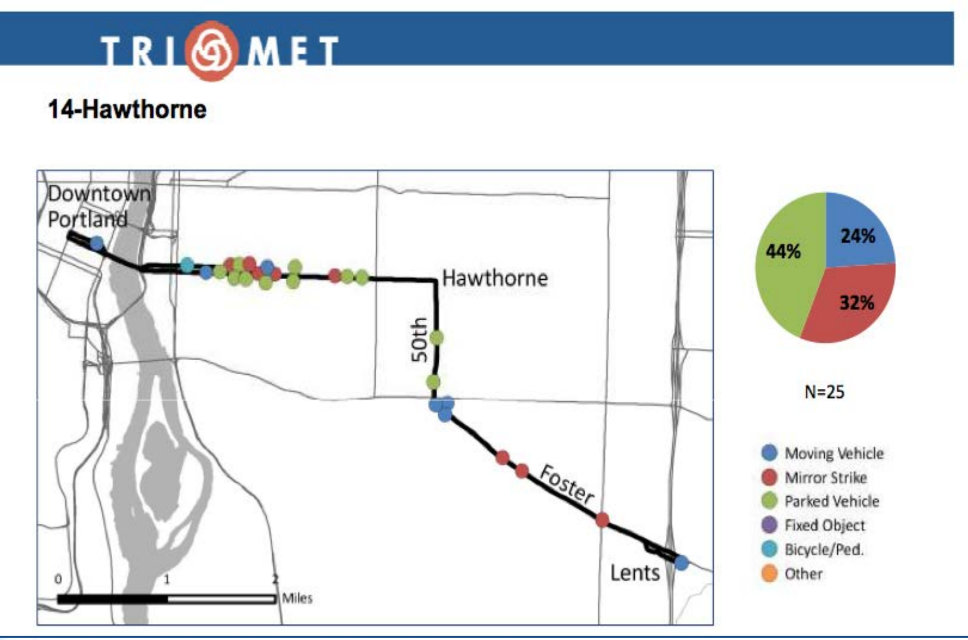

MAX Collisions per 100,000 Miles

Collision Data Analysis



Bus Collision Types

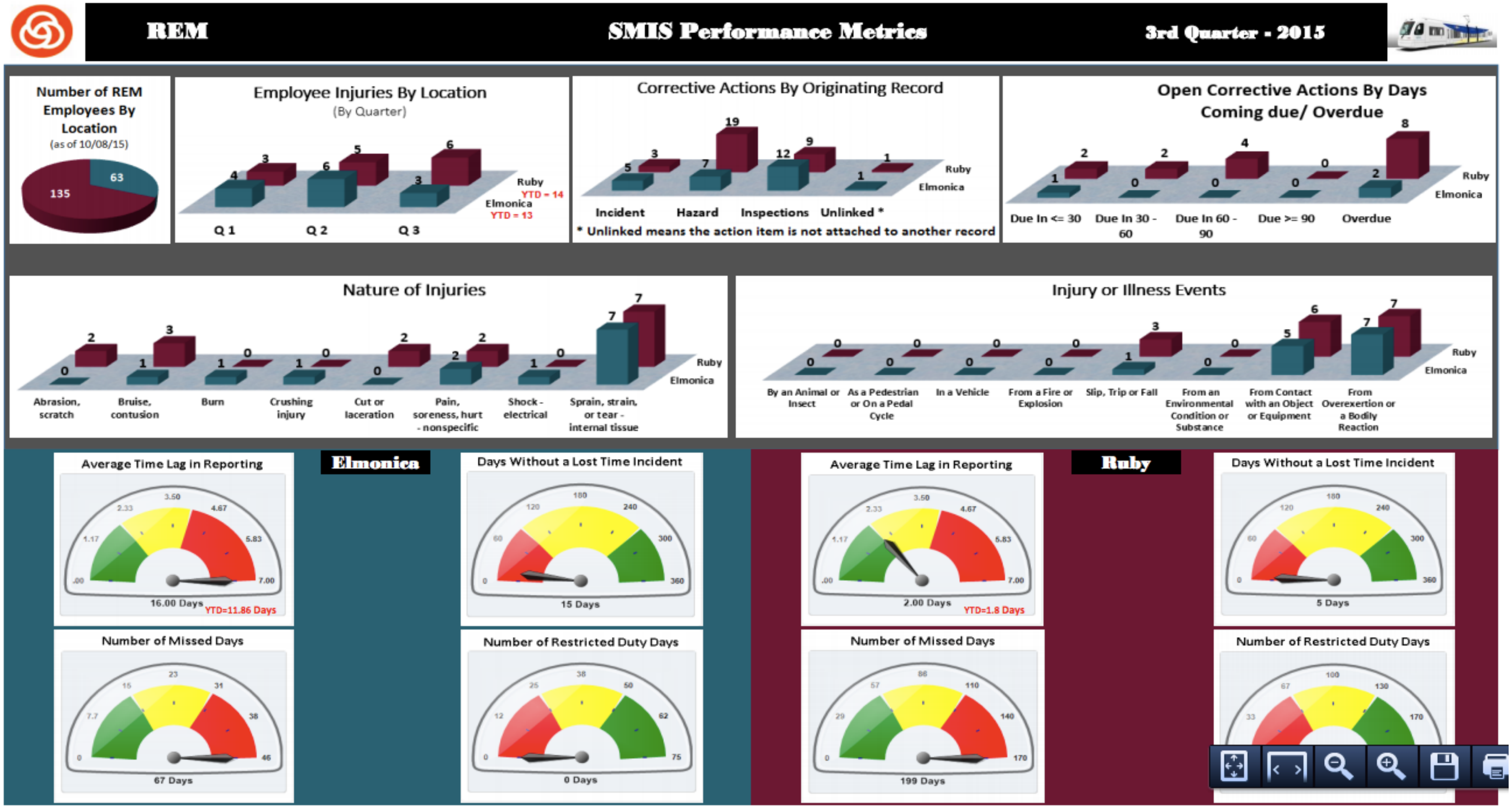
Collision Type	Number	Percent
Collision with Moving Vehicle	161	44%
Mirror Strike	114	31%
Collision with Parked Vehicle	40	11%
Collision with Fixed Object	38	11%
Collision with Bicycle	5	1%
Collision with Other	5	1%
Total	363	100%



14-Hawthorne

TRI MET
Downtown Portland
Hawthorne
50th
Foster
Lents
0
1
2
Miles
44%
24%
32%
N=25
● Moving Vehicle
● Mirror Strike
● Parked Vehicle
● Fixed Object
● Bicycle/Ped.
● Other

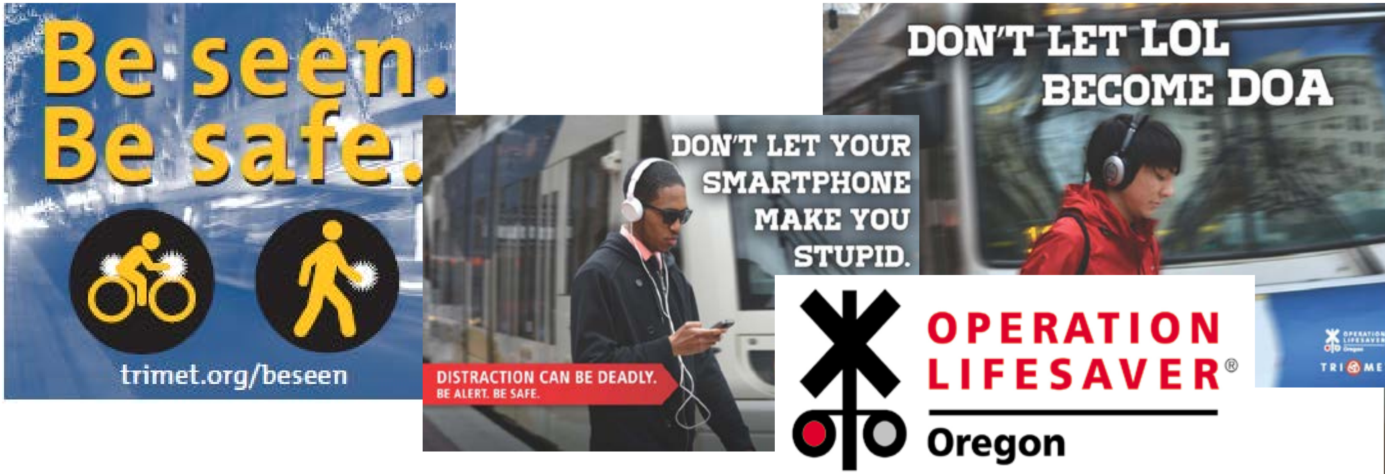
Safety Dashboard



REM — **SMIS Performance Metrics** — **3rd Quarter - 2015**

Safety Outreach

- Messages/safety prompts across the entire system everyday
- Targeted efforts via campaigns, advertising and events


Be seen.
Be safe.
trimet.org/beseen
DON'T LET YOUR SMARTPHONE MAKE YOU STUPID.
DISTRACTION CAN BE DEADLY.
BE ALERT. BE SAFE.
DON'T LET LOL BECOME DOA
OPERATION LIFESAVER®
Oregon
TRIMET

Safety Education Advisory Committee (SEAC)

- 8-member committee
- Collaborate to promote pedestrian and driving safety around buses and trains
- Meets quarterly

4 HAWTHORNE
Hillsboro AUTO WRECKING

Hot Spot Reviews

- Field reviews to better understand source of potential hazards
- Performed by Safety staff in collaboration with Training, Operations and Service Planning
- Frequently carried out with support from partner jurisdictions

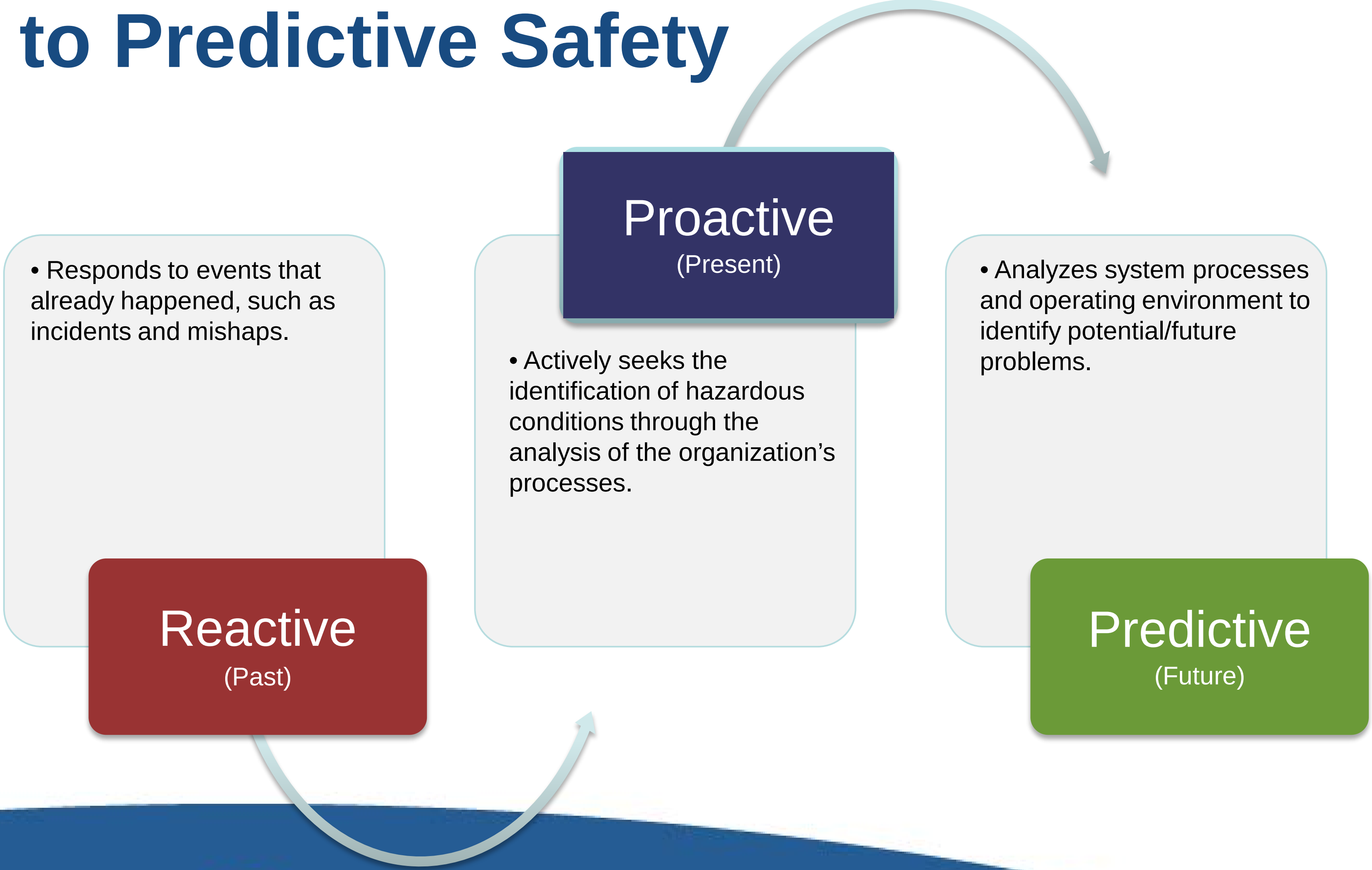
Safety Committees

- **Ambassadors to the workforce**
- **Committees established at all facilities, including administrative headquarters**
- **Safety Committee member training**
  - Problem solving
  - Meeting facilitation
  - Hazard identification and assessment
  - Safety Management System (SMS)

Transit Change and Review Committee (TCRC)

- **Comprised of all Operating and Engineering departments**
- **Review/approve policies, plans, procedures**
- **Incident investigation and review**
- **Review and evaluate safety risks**
  - Incident trends
  - Formal risk analyses

Transition from Reactive to Proactive to Predictive Safety



- Responds to events that already happened, such as incidents and mishaps.

Reactive
(Past)

Proactive
(Present)

- Actively seeks the identification of hazardous conditions through the analysis of the organization’s processes.

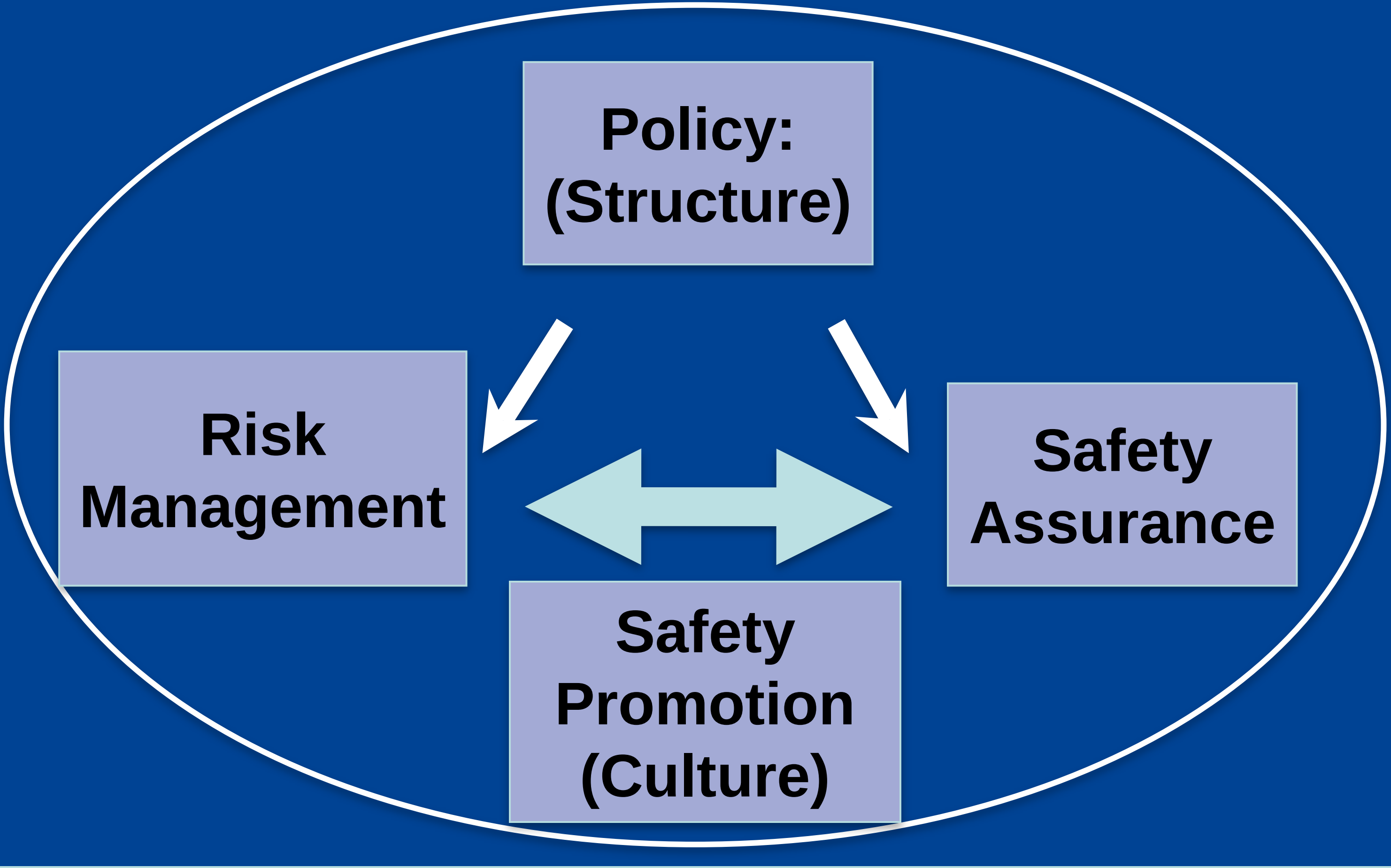
Predictive
(Future)

- Analyzes system processes and operating environment to identify potential/future problems.

Safety Management System (SMS)

- Decision-making process fully integrated into TriMet's business and operations
- Requires self examination (how we do business)
- Safety risk analysis and assessment
- Safety risk information sharing
- Promotes continuous safety improvement
- Leads to enhanced safety culture

Safety Management System



Policy:
(Structure)

Risk Management

Safety Assurance

Safety Promotion
(Culture)

Next Steps and Future Activities

- **Safety Management System development**
- **Improve safety communication**
- **Conduct Supervisor safety workshops**
- **Continue to build Safety Committee effectiveness**
- **Build upon safety metrics**
- **Develop close call reporting system**
- **Conduct Safety Culture Study**

If you do what you’ve always done, you’ll get what you always got!”

W. Edwards Deming