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

TRI-MET 6
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
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
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

- **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 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 & VULNERABILITY 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
Collision Data Analysis

Bus Collision Types

- 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: 383 (100%)

14-Hawthorne Map
Safety Dashboard

REM

Employee Injuries by Location
(By Quarter)

Corrective Actions by Originating Record

Open Corrective Actions by Days
Coming Due/Overdue

Nature of Injuries

Injury or Illness Events

Average Time Lag in Reporting

Days Without a Lost Time Incident

Average Time Lag in Reporting

Days Without a Lost Time Incident

Number of Missed Days

Number of Restricted Duty Days

Number of Missed Days

Number of Restricted Duty Days

TRIOMET
Safety Outreach

• Messages/safety prompts across the entire system everyday

• Targeted efforts via campaigns, advertising and events
Safety Education Advisory Committee (SEAC)

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

**Reactive** (Past)
- Responds to events that already happened, such as incidents and mishaps.

**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
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