

Behavior-Based Safety

October 9, 2017

Discussion Overview

- Preliminaries: Set the table for our conversation (10 Minutes)
 - Review of SMS
 - Key Terms & Concepts
 - Why Behavior Matters
- 3 Keys to Next-Level Safety Performance (10 Minutes)
 - Appropriate Level of Oversight (feat. 'Near Miss' Reporting)
 - Actionable Insights (Secondary Move: Artic, Positioning for Ramp Deployment, 'Stale Green')
 - Efficient Work Flow
- Reporting, Promotion, Benefits (5 Minutes)

PRELIMINARIES

QUICK SMS REVIEW



What is SMS?

- **APTA definition of SMS**: *organized set of programs, principles, processes and procedures for allocation of resources to achieve the condition where safety risks are managed to acceptable levels*
- **FTA definition of SMS**: *formal, top-down, **organization-wide, data-driven approach to managing safety risk and assuring the effectiveness of safety mitigations.** It includes systematic policies, procedures, and practices for the management of safety risk*

Pillars of SMS

Pillar 1 – This is your plan.

Pillar 2 – Application of the plan.

Pillar 3 – CIP-Monitor-Correct.

Pillar 4 – Impact of the plan.



SMS Seeks to Answer these Questions

SMS provides processes to assist the transit agency in answering the following:

1. **What is likely to be the cause of the transit agency's next collision?**
2. How does the transit agency know the likely cause of the next incident?
3. What is the transit agency doing to mitigate the risk?
4. Is the strategy or action working?
5. How do you know it is working?

PRELIMINARIES

KEY TERMS AND CONCEPTS

What is Safety?

- Paying Attention
- Accepting Responsibility
- Limiting Reckless Actions
- Taking Your Time
- Doing Things Right
- Following our SOPs
- Priority #1



Safety is
Freedom
from Risk



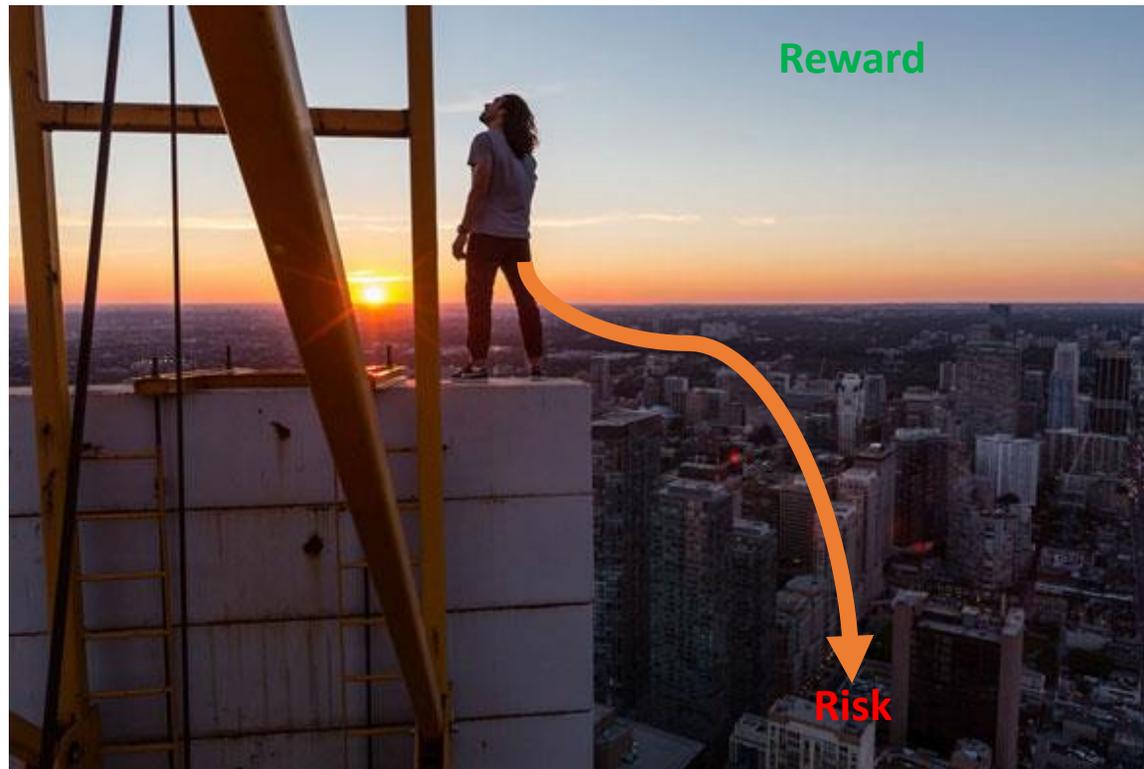
What is Risk?

- The possibility of loss or injury.
- Risk represents the potential of losing something of value.



What is Risk-Taking?

- Our tendency to engage in behaviors that have the potential to be **harmful** or **dangerous**, yet at the same time provide the opportunity for some kind of **outcome** that can be perceived as **positive**.



kes Risk?

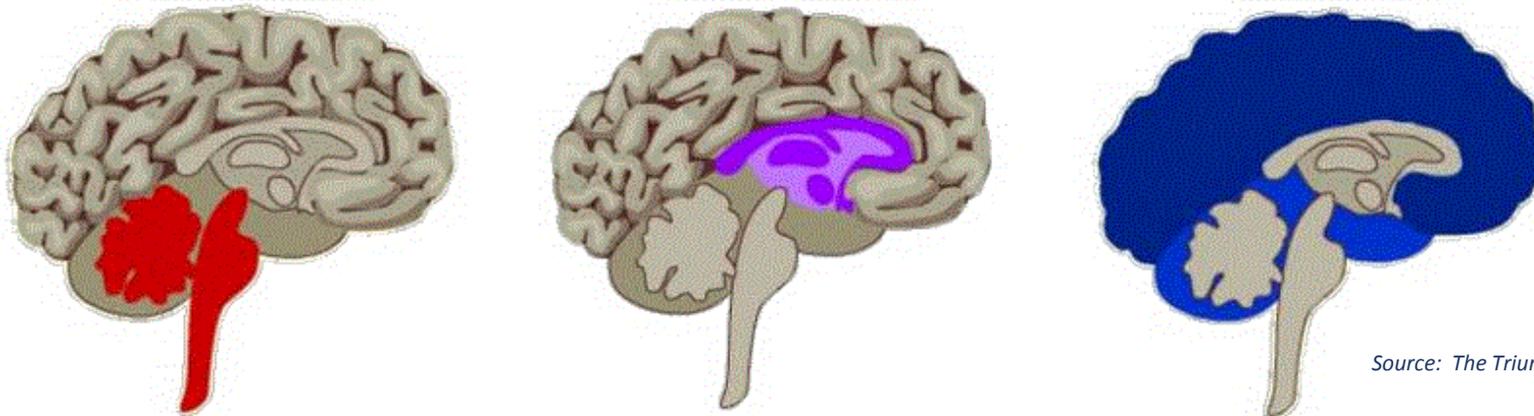


Everyone Takes Risks, But Why?



Why? What's In It For Me?

- Our **lizard brain** tries to protect us from harm, but our brains like to conserve energy and can be very lazy at times.
- Sometimes our **mammal brain** harbors desires that are very powerful and entice us to make poor decisions.
- Our **human brain** allows us to rationalize poor decisions with reasons and excuses to justify our behavior.



Source: *The Triune Brain in Evolution*, Paul MacLean, 1960.

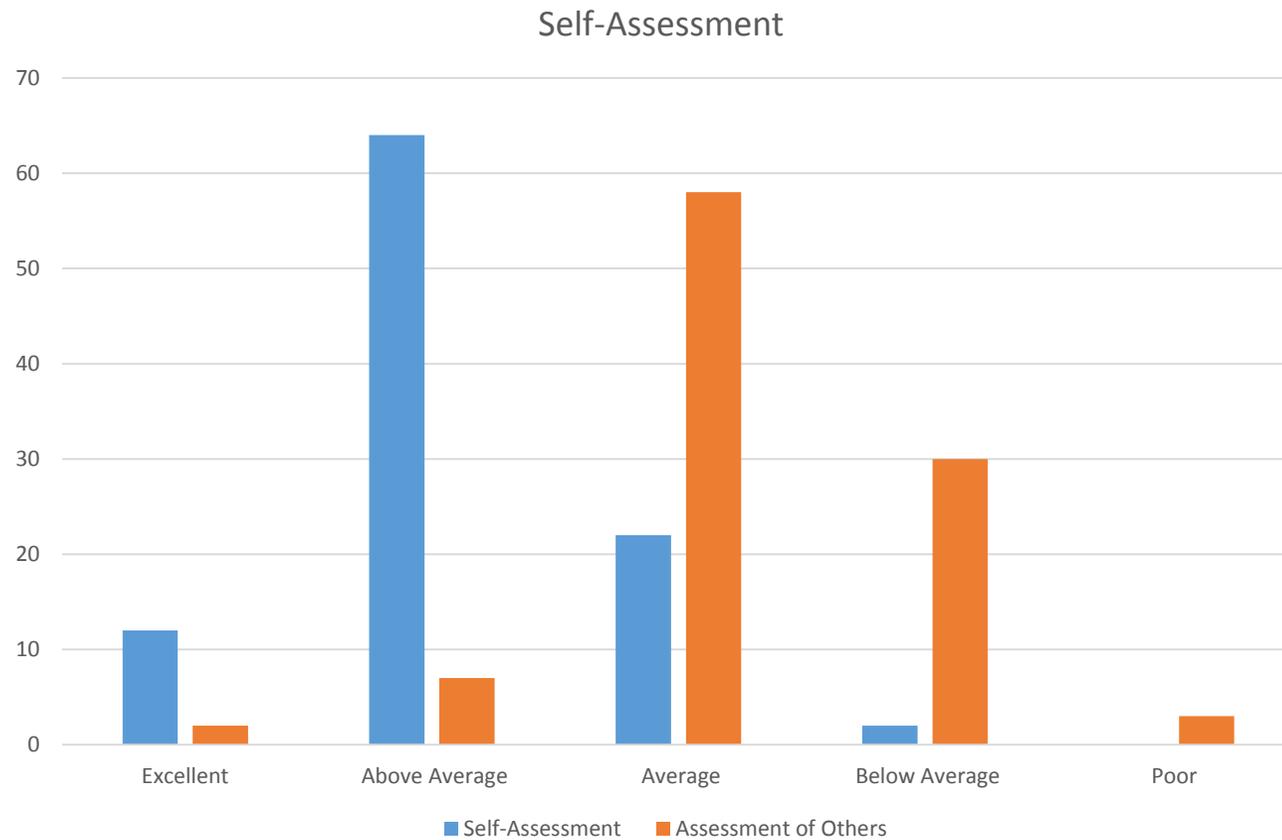
Reasons or Excuses?

- **Excuses** exist because if we didn't try to explain our behavior we would seem to be reckless or unreasonable to other people.
- **Excuses** prevent us from taking full responsibility for our behavior.
- **Accountability** – taking responsibility for our actions – is critical for promoting a safe organization.

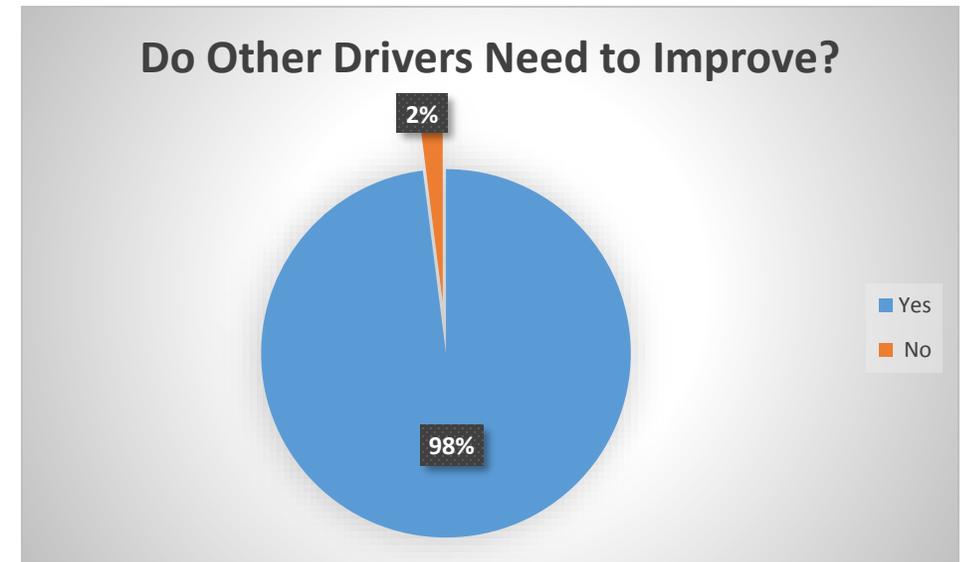


Source: Tim Autrey, 6-Hour Safety Culture.

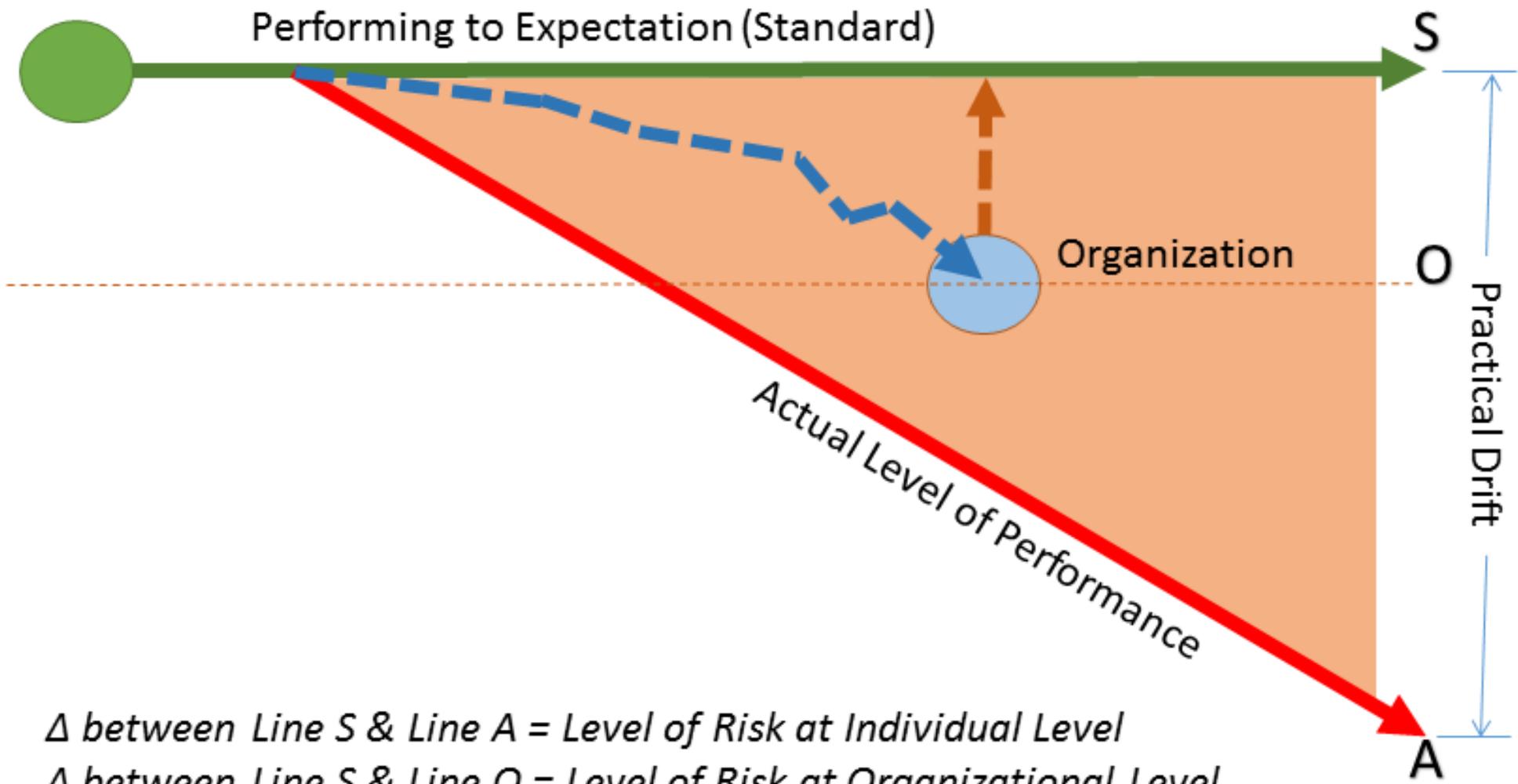
Self-Bias



Source: Lytx, DriveCam, Results from Informal Poll.



Practical Drift



Δ between Line S & Line A = Level of Risk at Individual Level
Δ between Line S & Line O = Level of Risk at Organizational Level

WHY BEHAVIOR MATTERS

Why Focus on Behavior?

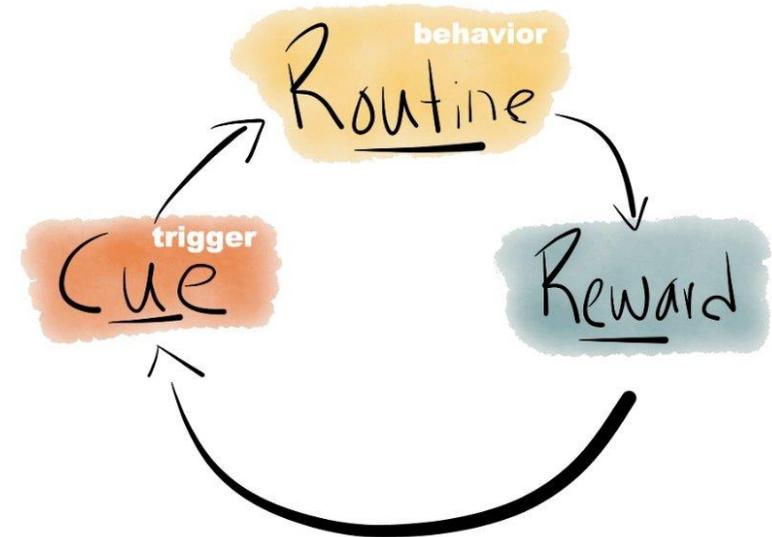


Behavior defines how we do what we do.
Our behavior determines the daily results we produce.

Habits

- A **behavior** repeated frequently soon becomes a habit.
- Habits form to ease the strain on our brains.
- **Behavior** is largely a function of our habits.
- Therefore, our habits determine how we perform at our jobs.

It can take **66 days*** to wean yourself off of a habit that you wish to change.



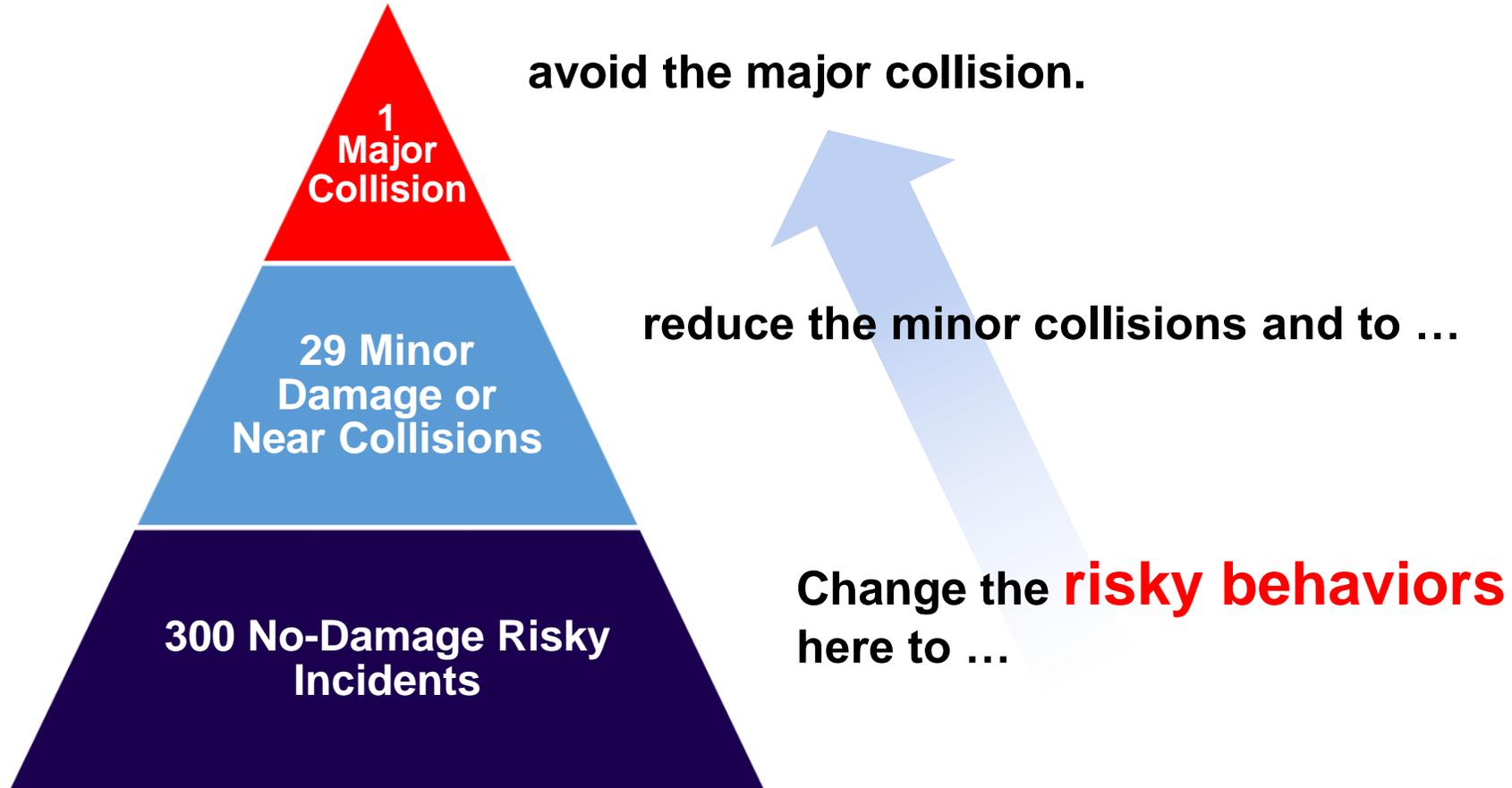
**According to a study conducted by the University of London*

Skill or Behavior?



A FOUNDATION OF SAFETY – COLLISION AVOIDANCE

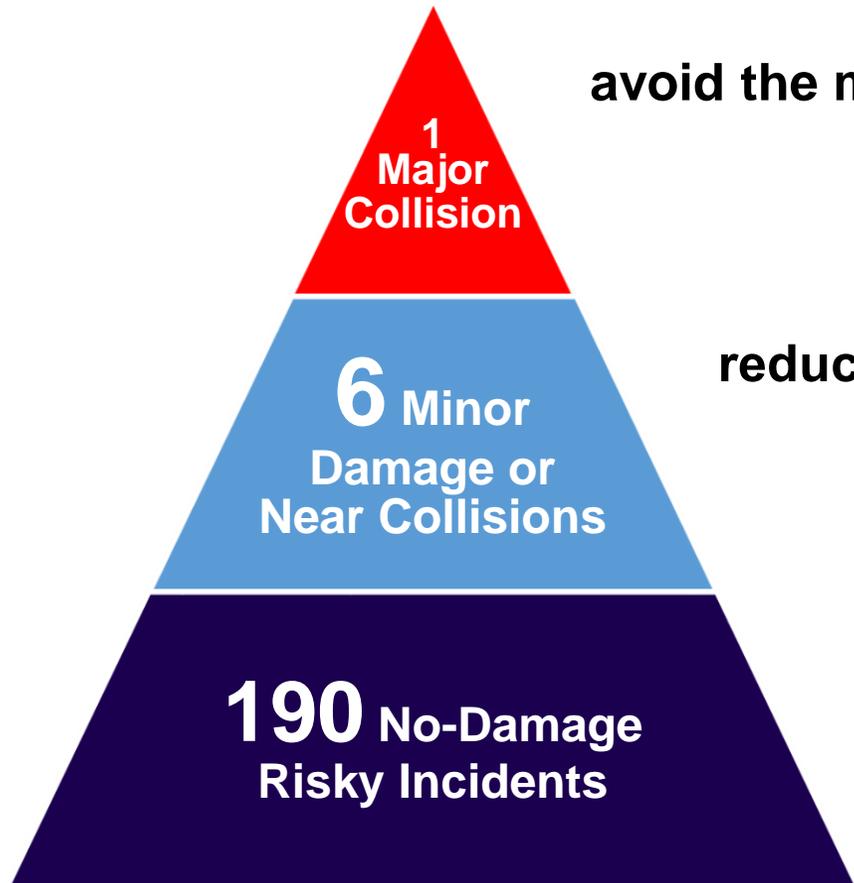
MODIFYING DRIVER BEHAVIOR BEFORE THE MAJOR INCIDENT



Source: H.W. Heinrich, Industrial Accident Prevention: A Scientific Approach.

A FOUNDATION OF SAFETY – COLLISION AVOIDANCE

MODIFYING DRIVER BEHAVIOR BEFORE THE MAJOR INCIDENT



avoid the major collision.

reduce the minor collisions and to ...

Change the **risky behaviors** here to ...

Video reveals the need to change.

Behavior Matters

Source: H.W. Heinrich, *Industrial Accident Prevention: A Scientific Approach*.

KEYS TO NEXT LEVEL SAFETY PERFORMANCE

**Next-level safety
performance results from a
commitment to continuous
improvement.**



How do we prevent the next collision?

Most organizations have mature safety programs and dedicated people that truly want to do a good job.

However, it remains very difficult to manage problems that you aren't aware of.

Biggest challenges that must be overcome:

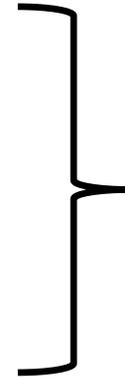
- 1) Providing the appropriate level of oversight
- 2) Gaining insight into the unreported data (**Behaviors**)
- 3) Taking action



How do we provide oversight?

Monitor Behavior - Evaluate for Risk - Act to Mitigate

- Ride Alongs
- Customer Feedback aka Complaints
- Safety Blitz
- Self-Assessment



Batch Process



These data collection methods are limited by our personal bandwidth



GAINING ACTIONABLE INSIGHT

IDENTIFY RISKY AND SAFE DRIVERS FOR COACHING & REWARD



Analytics and standard reports allow you to identify concentrations of risk

Score & Risk, 6 Months

- More than 36 = 2.5x
- More than 56 = 3.0x
- More than 91 = 3.5x

Driver Name	Region	Location	Coach-able Events	Total Score	Driving Profile - 13 Weeks (3 Mo)				
					Collisions/Avold Near Collis	FTC and NLFA	Traffic Violation	Cell Phone	Seatbelt (All)
Marucci, Tom	North East Region	Breinigsville, PA	11	37	1	4	2	4	5
Rhoden, Rrobert	North East Region	Mechanicsburg, PA	11	28	1	3	3	3	6
Trapanotto, John	North East Region	Mechanicsburg, PA	7	27	0	4	1	0	4
Chambers, Nelson	North East Region	Mechanicsburg, PA	11	26	0	5	2	3	12
Leverette, Robert	North East Region	Breinigsville, PA	8	19	1	1	0	4	10
Eshleman, Lori	North East Region	Mechanicsburg, PA	7	14	0	5	0	0	5
Brandenberg, Greg	North East Region	Mechanicsburg, PA	3	13	0	3	0	1	6
Monroe, Tom	North East Region	Mechanicsburg, PA	3	13	0	3	0	0	0
Johnson, Don	North East Region	Mechanicsburg, PA	8	12	0	4	0	0	8
Clouser, Craig	North East Region	Mechanicsburg, PA	2	10	0	3	0	0	0
Reinhart, Dave	North East Region	Mechanicsburg, PA	9	9	0	2	1	1	8
Donlan, Mke	North East Region	Mechanicsburg, PA	4	8	0	0	1	0	4
Graham, Levi	North East Region	Mechanicsburg, PA	2	8	0	2	0	0	4
Boyer, William	North East Region	Mechanicsburg, PA	6	4	0	1	0	0	7
Fisher, Carl	North East Region	Mechanicsburg, PA	2	2	0	1	0	0	2
Hurt, Gary	North East Region	Mechanicsburg, PA	2	2	0	1	0	0	1
Potter, Merrill	North East Region	Mechanicsburg, PA	2	0	0	0	0	1	4
Priest, Ron	North East Region	Mechanicsburg, PA	1	0	0	0	0	0	2
Singh, Gupreet	North East Region	Mechanicsburg, PA	1	0	0	0	0	0	1
Patton, Daniel	North East Region	Mechanicsburg, PA	0	0	0	0	0	0	1
Fulcher, John	North East Region	Mechanicsburg, PA	0	0	0	0	0	0	0
Gessner, Ralph	North East Region	Mechanicsburg, PA	0	0	0	0	0	0	0
Hitchcock, Judson	North East Region	Mechanicsburg, PA	0	0	0	0	0	0	0

Top 10% (5) Drivers represented 68% of the total Risk

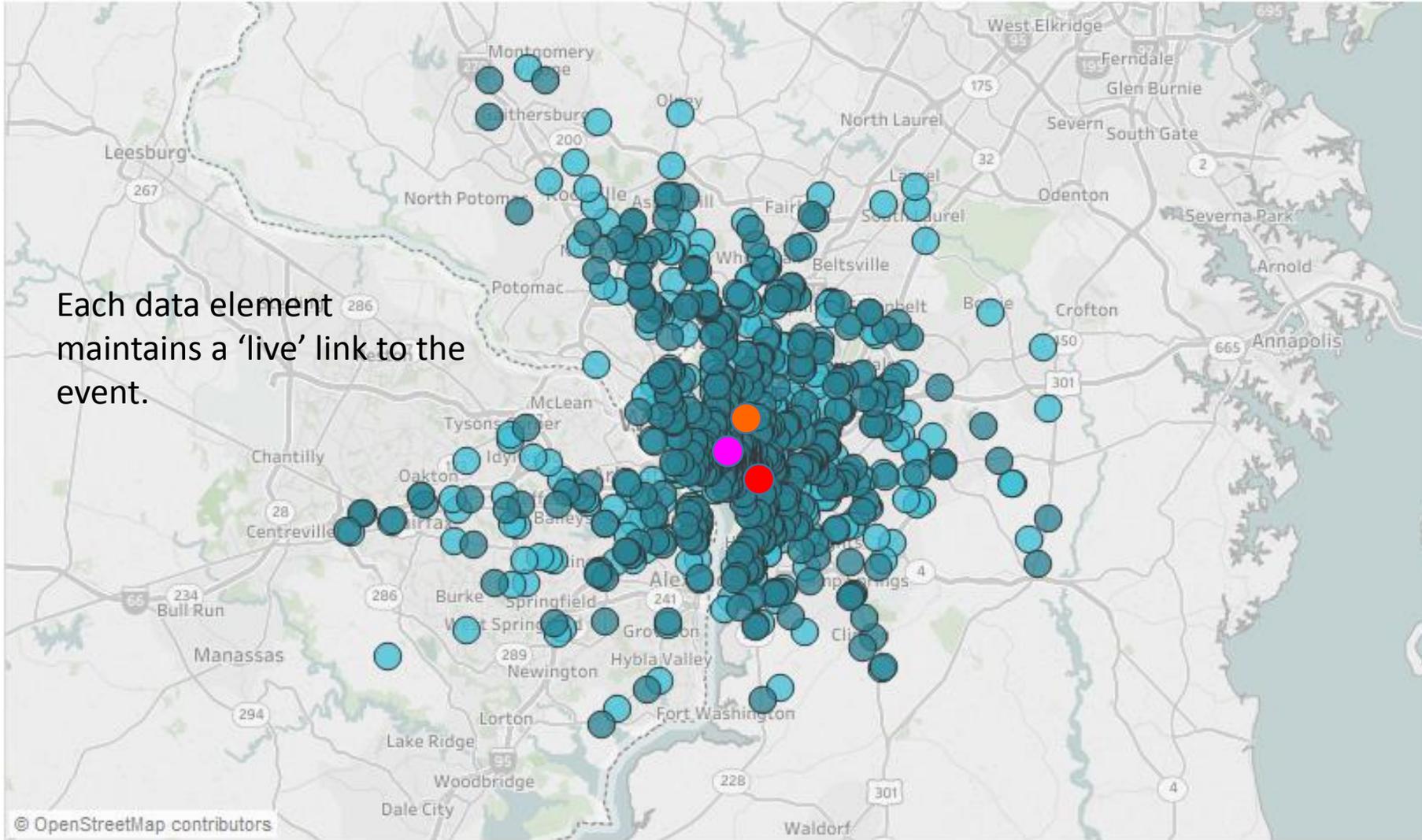


REPORTING, RECOGNITION, RESULTS

Data Visualizations

Navigation and Action Buttons:

- What is Happening?
- When is it Happening?
- Who is Involved?
- Where is it happening?**
- New Blank Point
- Duplicate



Each data element maintains a 'live' link to the event.

Company Name: [Dropdown]

Start Date: 6/1/2016 | End Date: 10/31/2016

Event Outcome: (Multiple values) [Dropdown]

Hierarchy Level: Group Name [Dropdown]

Group Filter: (All) [Dropdown]

Driver Months in Program: 6 [Input]

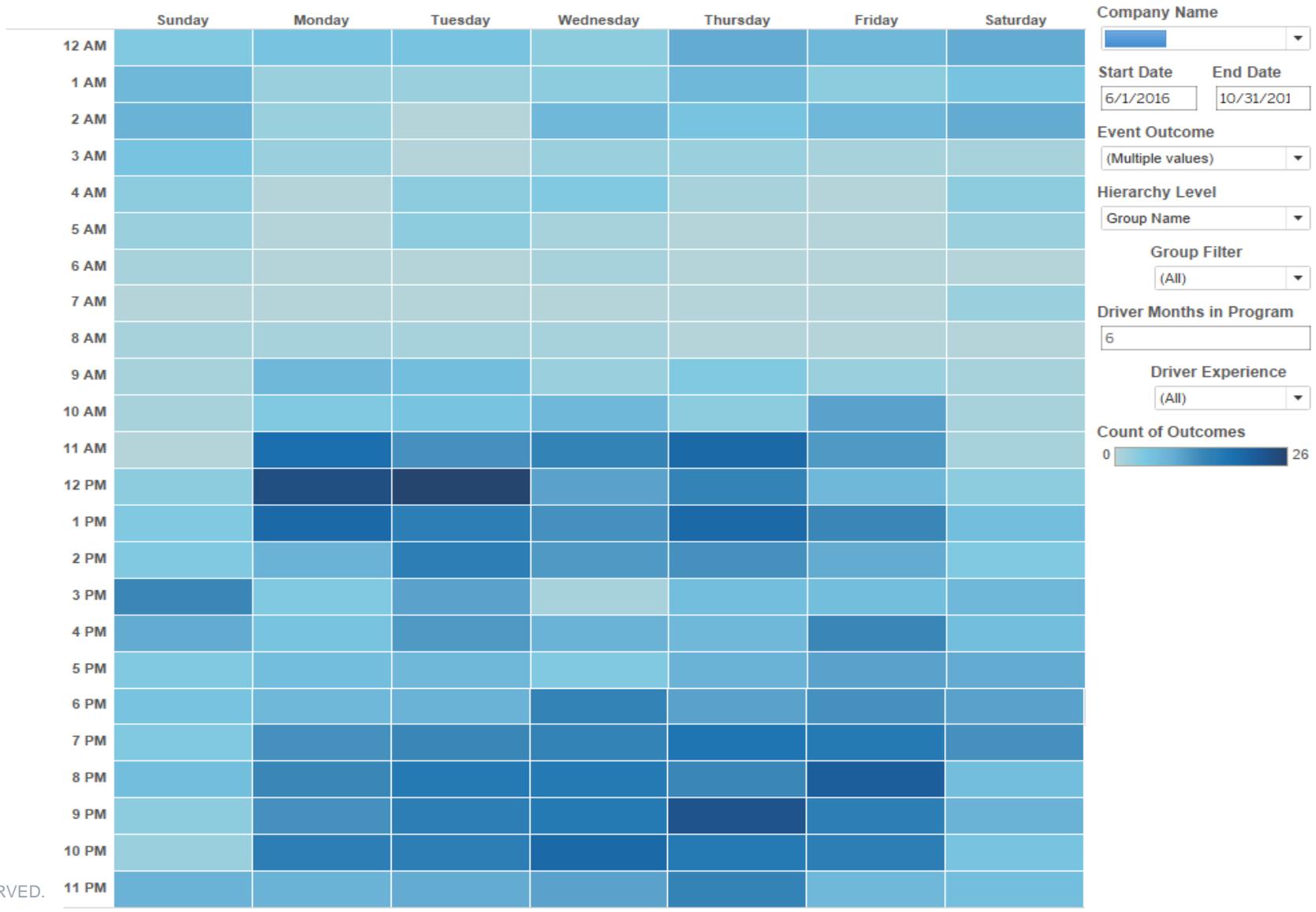
Driver Experience: (All) [Dropdown]

Behavior Group: (All) [Dropdown]

Click Legend Below to Highlight Event Outcomes

- Near Collision
- Near Collision - Unavoidable

When is it Happening?



Company Name

Start Date
End Date

Event Outcome

Hierarchy Level

Group Filter

Driver Months in Program

Driver Experience

Count of Outcomes
 0 26

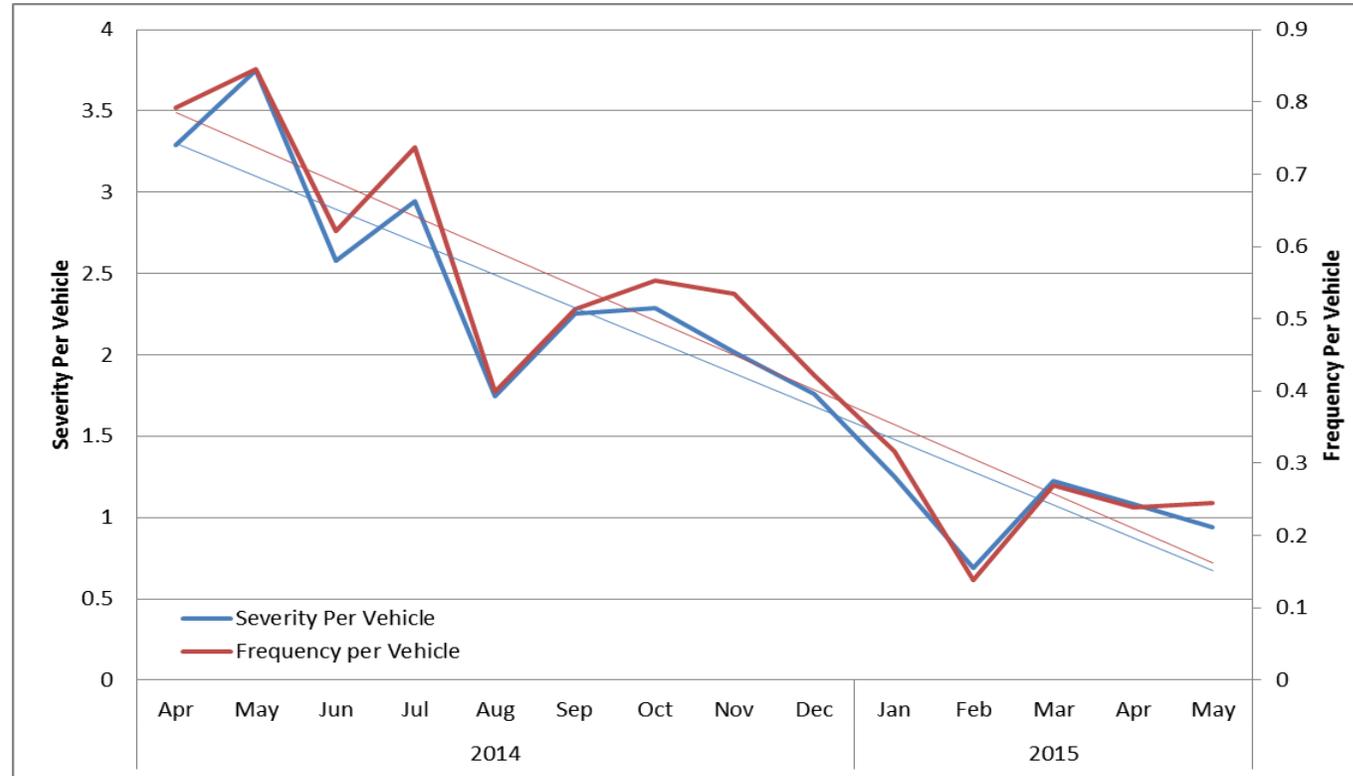
Overview of Program Performance

Risk Reduction Results

Initial 14 Months

KPIs *Collisions*

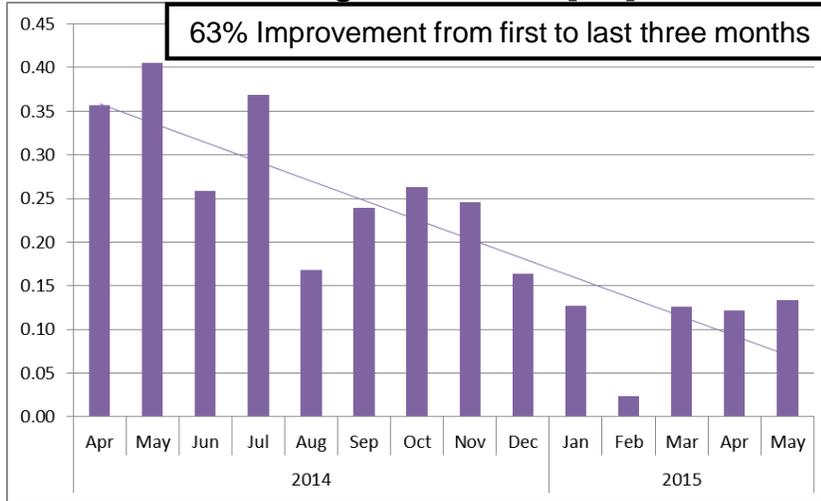
67% Reduction in
Frequency
66% Reduction in
Severity from
Apr '14 to May '15



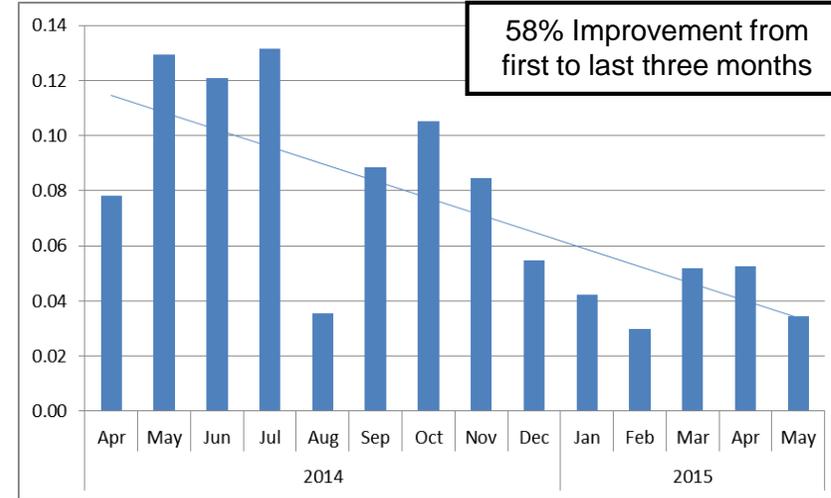
Overview of Program Performance

Behavior Leading Indicators

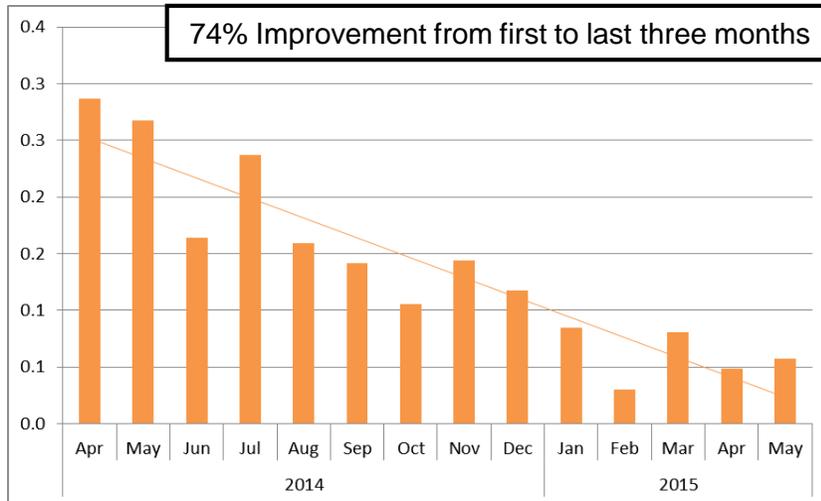
Following Too Close [All]



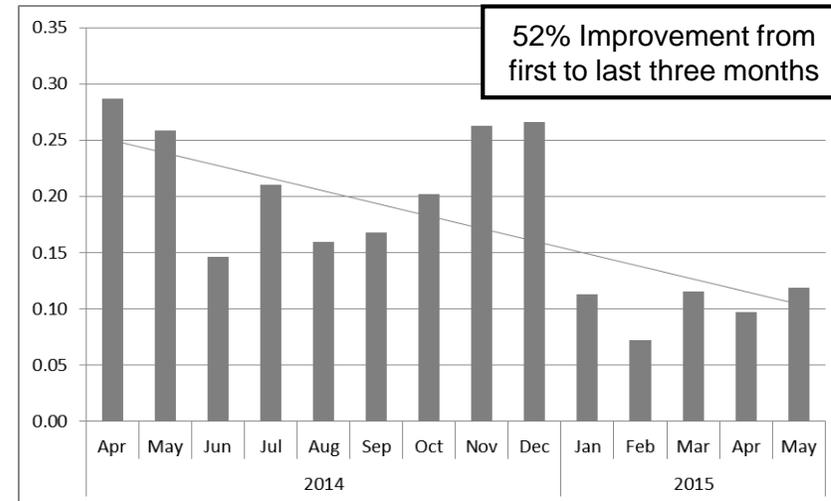
Not Looking Far Ahead



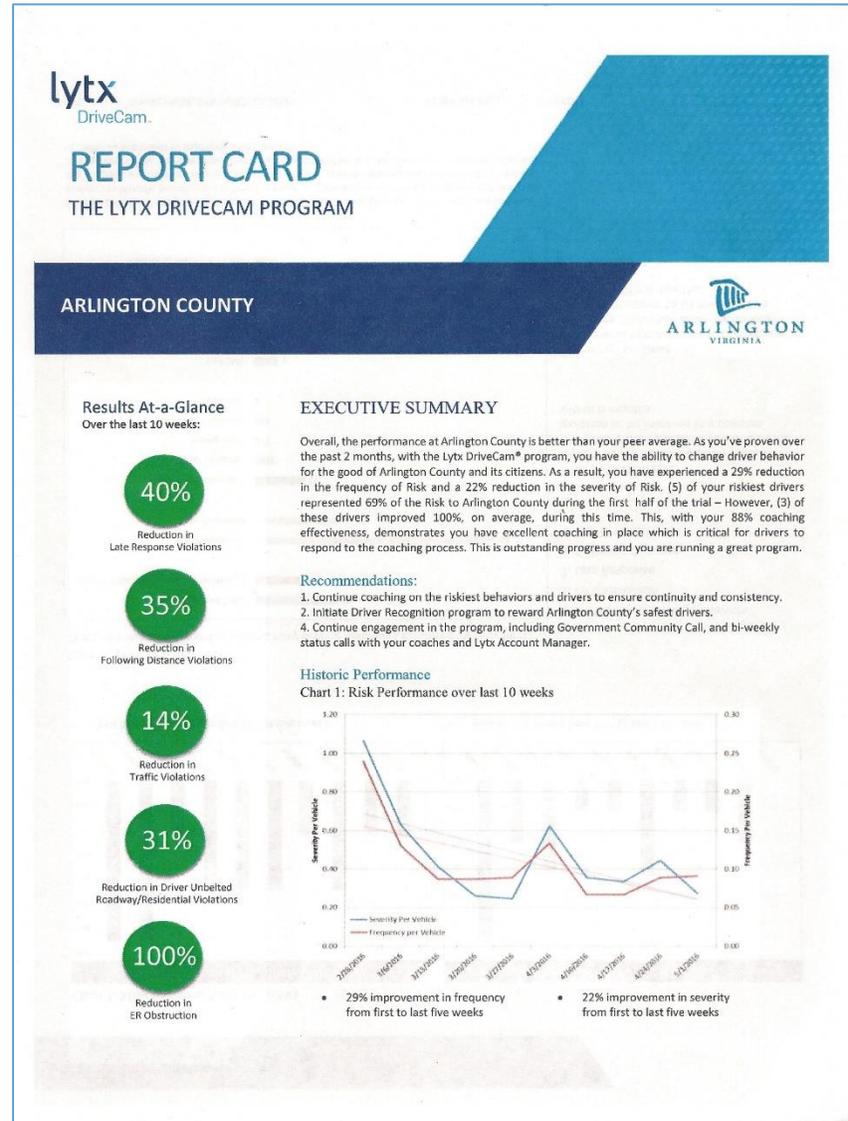
Traffic Violations



Cell Phone



Report Progress to Stakeholders



Driver Recognition → Positive Safety Culture



Promote friendly competition
b/w Regional Depots

In Review

- It's difficult to solve problems you don't know you have
- SMS provides the framework for transit operators to achieve next-level safety performance.
- Continuous Improvement is driven by three things:
 1. Appropriate level of oversight
 2. Actionable Insight
 3. Effective Coaching
- Video Analytics allows operators to focus on eliminating risky behaviors

You may now unleash the power of data to move safety from a reactive function to a proactive game changer for your organization.

THANK YOU

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Safety is a commitment to continuous improvement.

http://www.metro-magazine.com/search?f_Author=Steve%20+Mentzer