

# **Safety Leading Indicators: Overview of the Construction Industry Institute RT284 Research Team Findings July 2012**

**Presented By Billy Gibbons, JMJ Associates  
for the NWCCC Conference  
November 15, 2012**

# Agenda

- What is RT 284?
- Definition of leading indicators
- Passive leading indicators
  - Methods
  - Results
- Active leading indicators
  - Methods
  - Results
- Making leading indicators work in your company

# Research Team 284 Members



Steve Trickel –  
Lead  
Zachry



Dave Wulf –  
Co-Lead  
ConocoPhillips



Dr. Jimmie Hinze  
– Research  
U. of Florida



Dr. Matt Hallowell  
– Research  
U. of Colorado



David Burris  
Shaw Power  
Group



Ted Carew  
AZCO Inc.



Tim Chestnut  
Irving Oil



Debbie  
Cunningham  
ConocoPhillips



James Duncan  
Jacobs



Billy Gibbons  
JMJ Associates



John Grabowski  
CITGO



Larry Green  
DuPont



Bob Horvat  
Cargill



Paul Lee  
Lilly



Michael Mendoza  
Abbott



Roger Smith  
Zurich



Ron Spear  
AMEC



Mark Thompson  
Teck Resources  
Limited

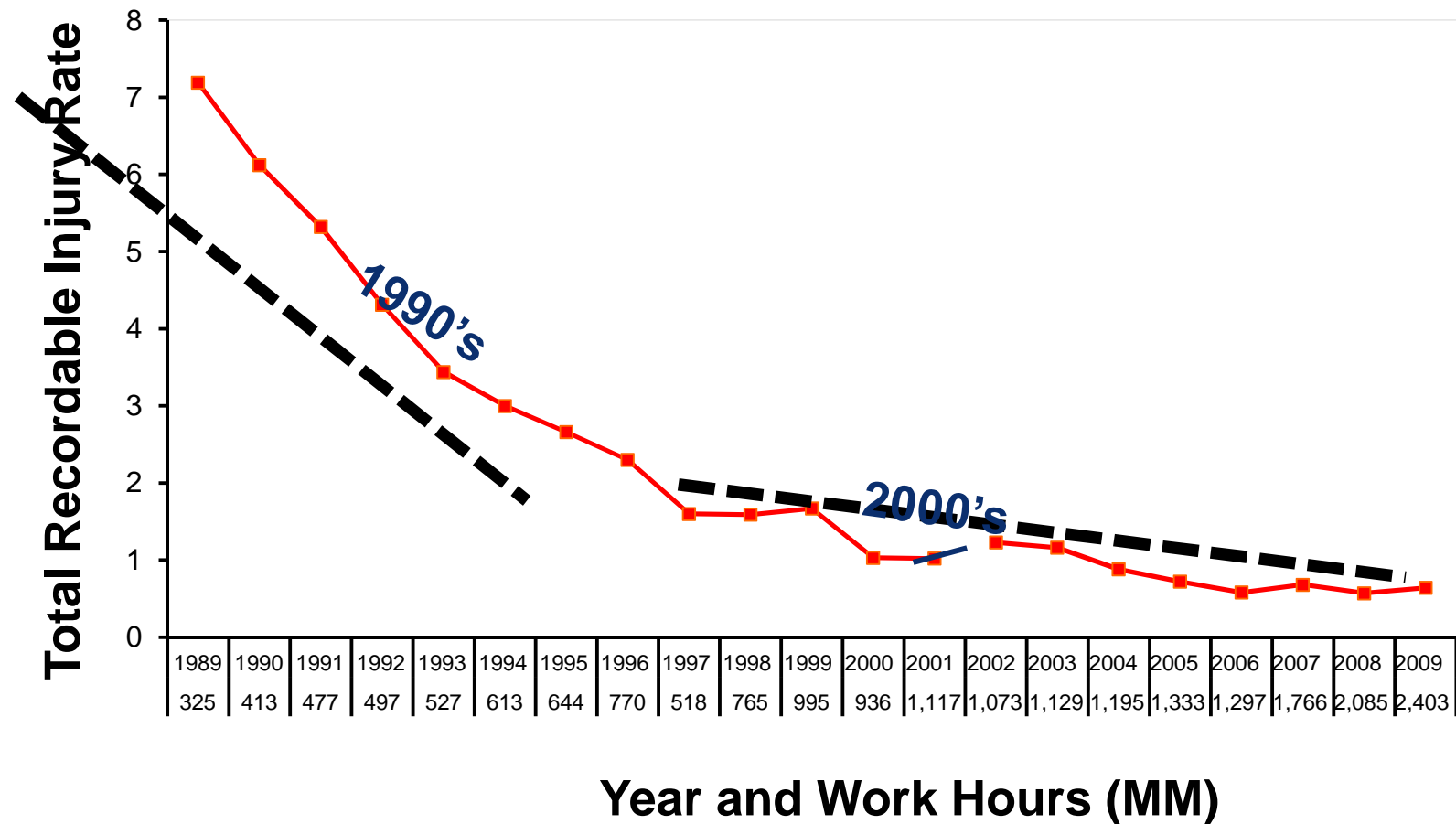


Sam Thurman  
Fluor



Elbe Watkins  
BIS Industrial  
Services

# CII TRIR Trends



**What can we do to accelerate improvement?**

# What are leading indicators?

Leading indicators pertain to *measures of attitudes, behaviors, practices, or conditions that influence construction safety performance.*

There are two types...

# Passive Safety Leading Indicators

*Safety strategies that are generally implemented **before** the construction phase begins, to set the project up for success*



# Active Safety Leading Indicators

*Measures of safety strategies made during the construction phase that can indicate the “health” of safety on the project and trigger adjustments*



# Studying passive safety leading indicators

What are the passive leading indicators?

- Past CII literature (best practices)
- Research Team
  - à Led to over 100 potential passive leading indicators!

How often are they implemented and which best predict strong safety performance?

- Team conducted interviews with representatives of 58 projects in the US



# Passive safety leading indicator results

- 22 of the strategies were used on every project studied (the foundation elements)



## Passive Leading Indicators on All Projects

1. **Health & safety (H&S) manual**
2. **Specific safety prequalification**
3. **Subs participation in GC's orientation and training**
4. **Subs safety standards compared to GC**
5. **Safety leadership training for foremen**
6. **Management review of craft worker training**
7. **Safety during constructability reviews**
8. **Safety in scheduling**
9. **Heavy eqpt inspection and approval program**
10. **Written site-safety plan**
11. **Lock-out tag-out policy**

Slide 10

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MRH1

Jimmie, is there a reason that each of these is in its own text box? Are you planning to use an animation? I am concerned that this slide will be difficult to discuss because of the volume and time that we are shooting for.

Matthew Ryan Hallowell, 6/19/2012

## **Passive <sup>MRH2</sup> Leading Indicators on All Projects**

- 12. 100% hard hat policy**
- 13. Stop work policy**
- 14. Emergency response plan for the project**
- 15. Job hazard analyses**
- 16. Workers involvement in hazard assessment**
- 17. Safety goals development and communication**
- 18. Safe behavior reward and recognition**
- 19. Near-misses investigation**
- 20. Foremen involvement in accident investigation**
- 21. Foremen involvement in hazard assessment**
- 22. Regular scheduled meetings for safety personnel**

Slide 11

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MRH2

Same comment as previous. I dont think this slide looks very nice and the LIs are not lined up.

Matthew Ryan Hallowell, 6/19/2012

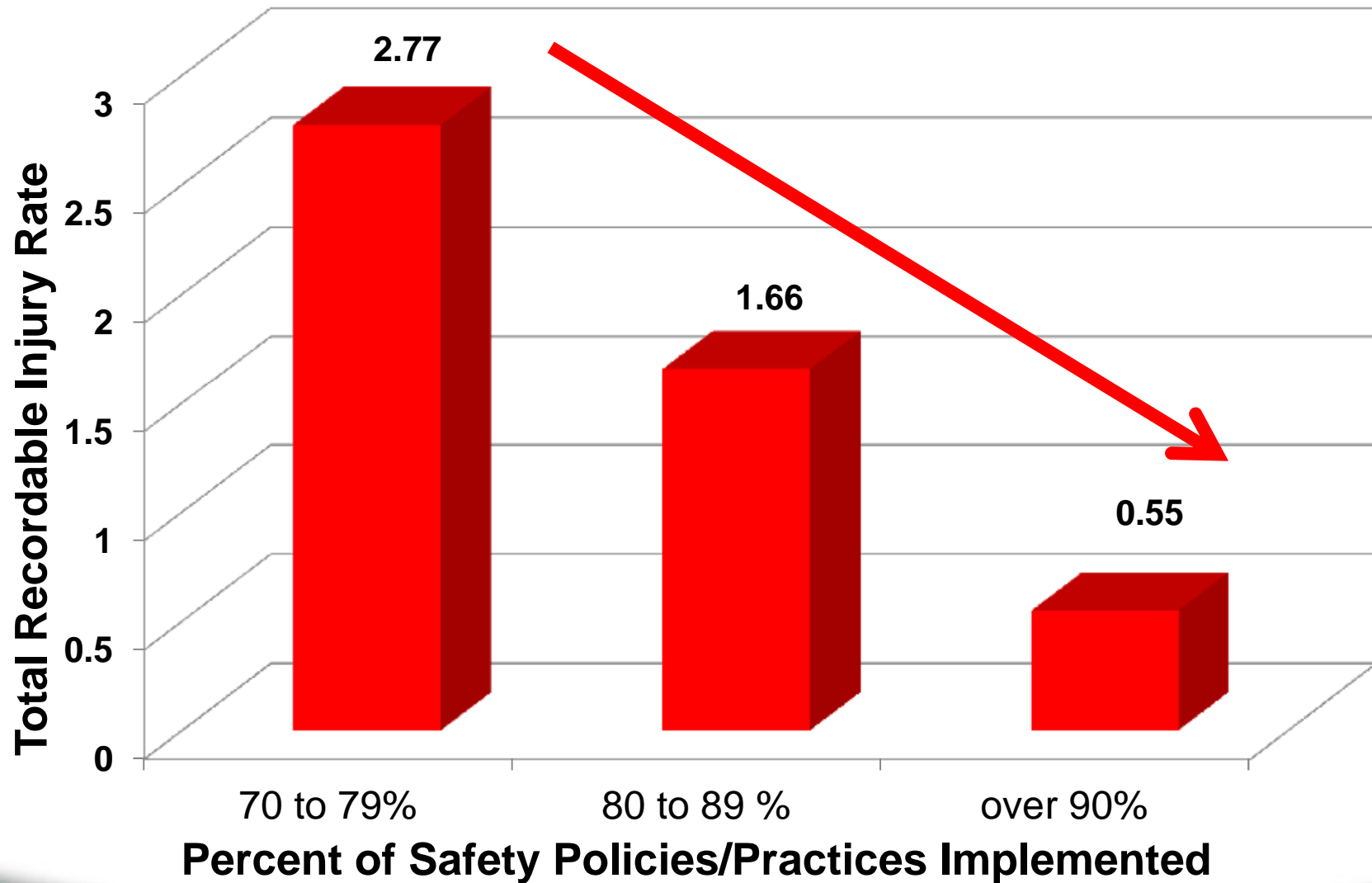
## **10 were identified that predicted particularly strong safety performance with high statistical significance**

- 1. Owner review and approval of CM and GC's project safety plan**
- 2. Participation of all contractors and subcontractors in safety meetings**
- 3. Site-specific safety orientation for all managers**
- 4. 100% steel-toed boots policy**
- 5. Medical facilities on-site**
- 6. First aid log**
- 7. Minimum ratio of safety professionals to workers**
- 8. Worker-to-worker observation program**
- 9. Workers involvement in perception surveys**
- 10. Foremen involvement in policy creation and implementation**

The research team identified 100 possible safety policies and practices that could be implemented.

How did the implementation of these policies and practices impact safety performance?

## Based on top 10 Safety Policies and Practices





That's what we know about  
setting a project up for success  
but what do we do once the  
project starts?

**The critical question: If you go onto a project  
and don't know the injury rate, how do you  
know whether it is safe or not?**

# Studying active safety leading indicators



19 case study projects

# Studying active safety leading indicators



14 award-winning  
project descriptions

# Studying active safety leading indicators



Research team  
brainstorming

# The concept

- Active safety leading indicators can be measured and can alert management about the need for a positive response **before** an injury occurs.
- Some are strategies most companies are already doing!
  - Site safety audits
  - Toolbox meetings
- A shift toward:
  - Measurement
  - Setting thresholds
  - Implementing an action plan if the values are not desirable

# Active Leading Indicators

## Examples:

- Housekeeping
- Vendor orientations
- Owner safety walkthroughs
- Stop work
- Safety audits
- Positive reinforcements

# Example: Safety Audits

- Almost all firms conduct safety audits BUT few measure, track, and respond in an organized fashion
- This may be a great place to start
- **Evaluate your auditing process (who, what, how often)**
- **What might you measure that would predict safety?**
- **What is your target?**
- **What if your measurements showed unacceptable results?**



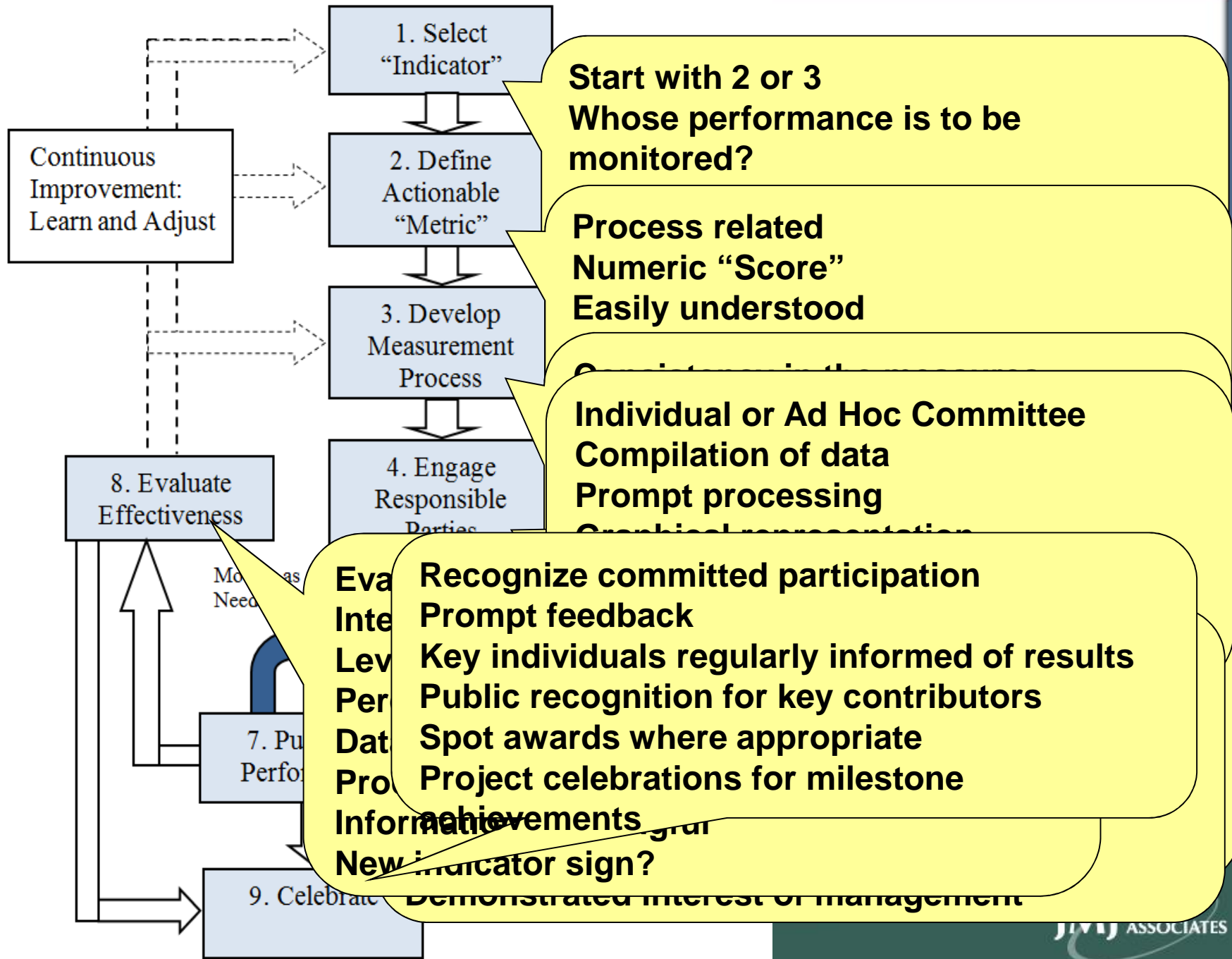
**Research  
Summary**

**Implementation  
Resource**

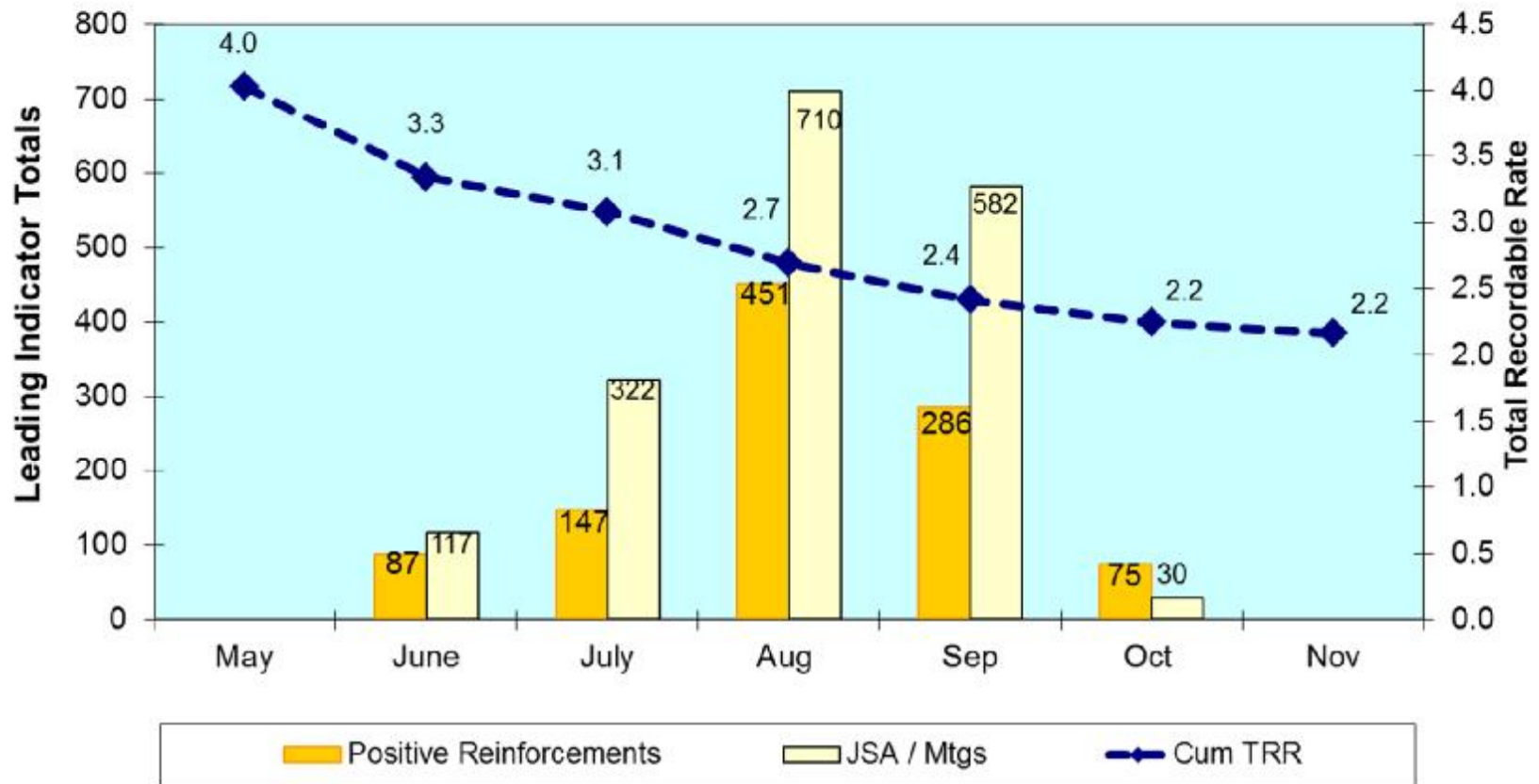
# What we learned about active safety leading indicators...

- Very few leading indicators are fully implemented by general industry
- Projects where leading indicators were measured and fully implemented had an average TRIR of 0.19!
- **Every** firm can benefit from active safety leading indicators.
- A strong foundation of safety is a **prerequisite**.
- A **champion** must be committed to success.
- The next step is to **carefully** select a few active safety leading indicators and implement them on your project





## Active Safety Leading Indicators versus Safety Performance



# In Summary

- Passive safety leading indicators: Tell you the extent to which you have set your project up for success.
- Active safety leading indicators: Tell you the safety potential of your project and provide signals when adjustments need to happen to keep the project on course for an incident and injury-free project.