

# OSH/ADA Working Group Meeting

September 15, 2008

West Dining Room

James Madison Memorial Building



[www.compliance.gov](http://www.compliance.gov)

# ***Highlights from the ORC Study on the Value of Industrial Hygiene Funded By AIHA***

**Stephen Newell  
ORC Worldwide**

# About ORC Worldwide, Inc.

- ORC's Safety, Health and Environment networks include 120+ global (largely "Fortune 200") companies with strong commitment to SH&E excellence
- *Business value created from diversity, benchmarking, and best practices*
- Currently nine ORC's SH&E Networks:
  - OSH
  - WOSH
  - Executive Business Issues Forum (EBIF)
  - Lawyers Group
  - Physicians Group
  - Environmental Group
  - Intl. S&H Forum
  - EU S&H Forum
  - Asia-Pacific S&H Forum
- Consulting assistance also available
- [www.orc-dc.com](http://www.orc-dc.com)

# ORC SHE Services:

- **Network meetings**
- **Benchmarking Surveys**
- **Frequent topical updates**
- **Web services**
  - Web page
  - Web casts
- **Task Forces and work groups**
- **Access to ORC on-staff consultants**
  - Unlimited phone consultation
  - Remote training; web casts
  - Conferences and site visits
- **ORC Regional Updates and Country Profiles**
- **Ad hoc consulting**

# Selected ORC Member Companies

- 3M
- Abbott Laboratories
- Air Products and Chemicals, Inc.
- Alcoa
- Anheuser-Busch Companies
- AT&T
- BASF Corporation
- Baxter Healthcare Corporation
- Becton Dickinson and Company
- The Boeing Company
- Bombardier Inc.
- BP America Inc.
- Bristol-Myers Squibb Company
- Cargill, Inc.
- Caterpillar, Inc.
- Chevron Corporation
- CITGO Petroleum Corporation
- The Coca-Cola Company
- Colgate-Palmolive Company
- Coors Brewing Company
- Corning Incorporated
- Chrysler LLC
- The Dow Chemical Company
- Duke Energy
- E. I. DuPont de Nemours & Company, Inc.
- Eastman Chemical Company
- Eaton Corporation
- Eli Lilly and Company
- ExxonMobil Corporation
- Ford Motor Company
- General Electric Company
- General Motors Corporation
- Goodrich Corporation
- The Goodyear Tire & Rubber Company
- Hess Corporation
- Hewlett-Packard Company
- Honeywell International
- IBM Corporation
- Ingersoll-Rand Company
- International Paper Company
- International Truck and Engine Corporation
- ITT Corporation
- John Deere
- Johnson & Johnson
- Kimberly-Clark Corporation
- Kraft Foods Global, Inc.
- Lawrence Berkeley National Laboratory
- Lockheed Martin Corporation
- Marathon Oil Company
- Mars, Incorporated
- MeadWestvaco Corporation
- Merck & Company, Inc.
- Monsanto Company
- Northrop Grumman Corporation
- Novartis Corporation
- Pfizer, Inc.
- Philip Morris, USA
- Pitney Bowes Inc.
- PPG Industries, Inc.
- Praxair, Inc.
- The Procter & Gamble Company
- Raytheon Company
- Rohm and Haas Company
- Sanofi-aventis
- Schering-Plough Corporation
- The ServiceMaster Company
- Shell Chemical Company
- The Sherwin-Williams Company
- Siemens Power Generation, Inc.
- Sprint Nextel Corporation
- Sunoco, Inc.
- Toyota Motor Manufacturing North America, Inc.
- U. S. Steel Corporation
- United Parcel Service
- United Technologies Corporation
- Verizon Communications
- W. L. Gore & Associates
- W. R. Grace & Co.
- W. W. Grainger, Inc.
- Walt Disney Company



**The Industrial Hygiene Mission is Important...**



**Protecting the worker  
Protecting the business  
Protecting the community**

# Insight From ORC Metrics and Value Studies:

- But...to do your job the way it really needs to be done requires empowerment
- To be empowered in today's business world you must drive and demonstrate:
  - Performance
  - Value

*Industrial hygienists and safety professionals have difficulty doing both*

# **AIHA Value Study – New Way of Looking At Business Value**

- **Will cover highlights...**
  - **Methodology**
  - **Site visit and case study findings**
- **Much of information transferable to safety**
- **Detailed “turbo tax” like tools in final stages of development**



# Strategy Characteristics:

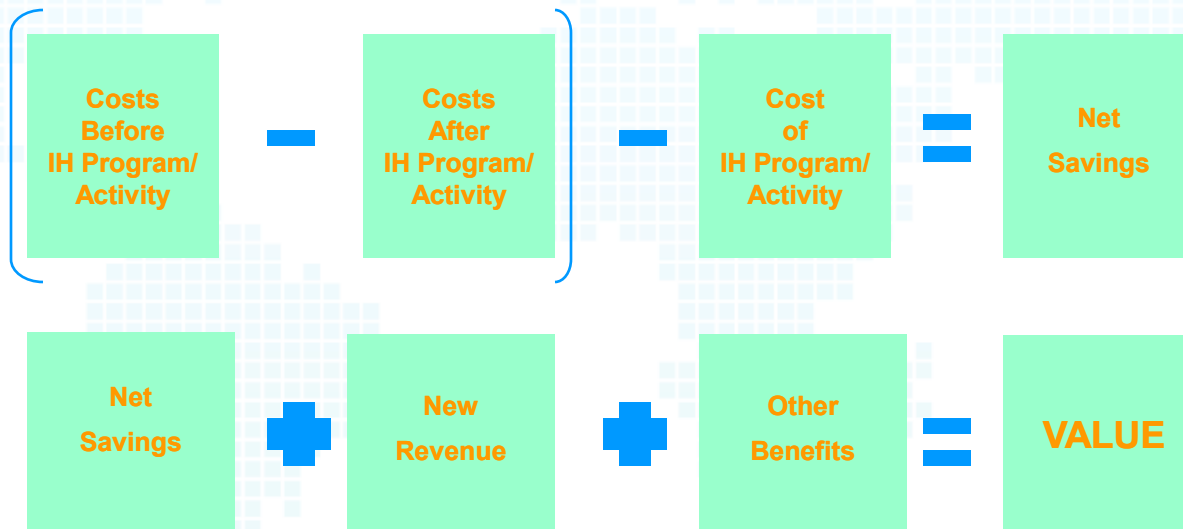
- Provides a *structured means* to identify and track detailed direct costs and benefits
- Captures IH impacts on *indirect costs and benefits*; soft numbers heretofore have discouraged use
- Measures hard-to-capture health-related IH benefits
- Captures IH-related data that may not be captured by existing financial systems
- *Increases understanding and utilization of key business data that traditionally has not been used by S&H staff*

# Creating A Comprehensive Value Framework

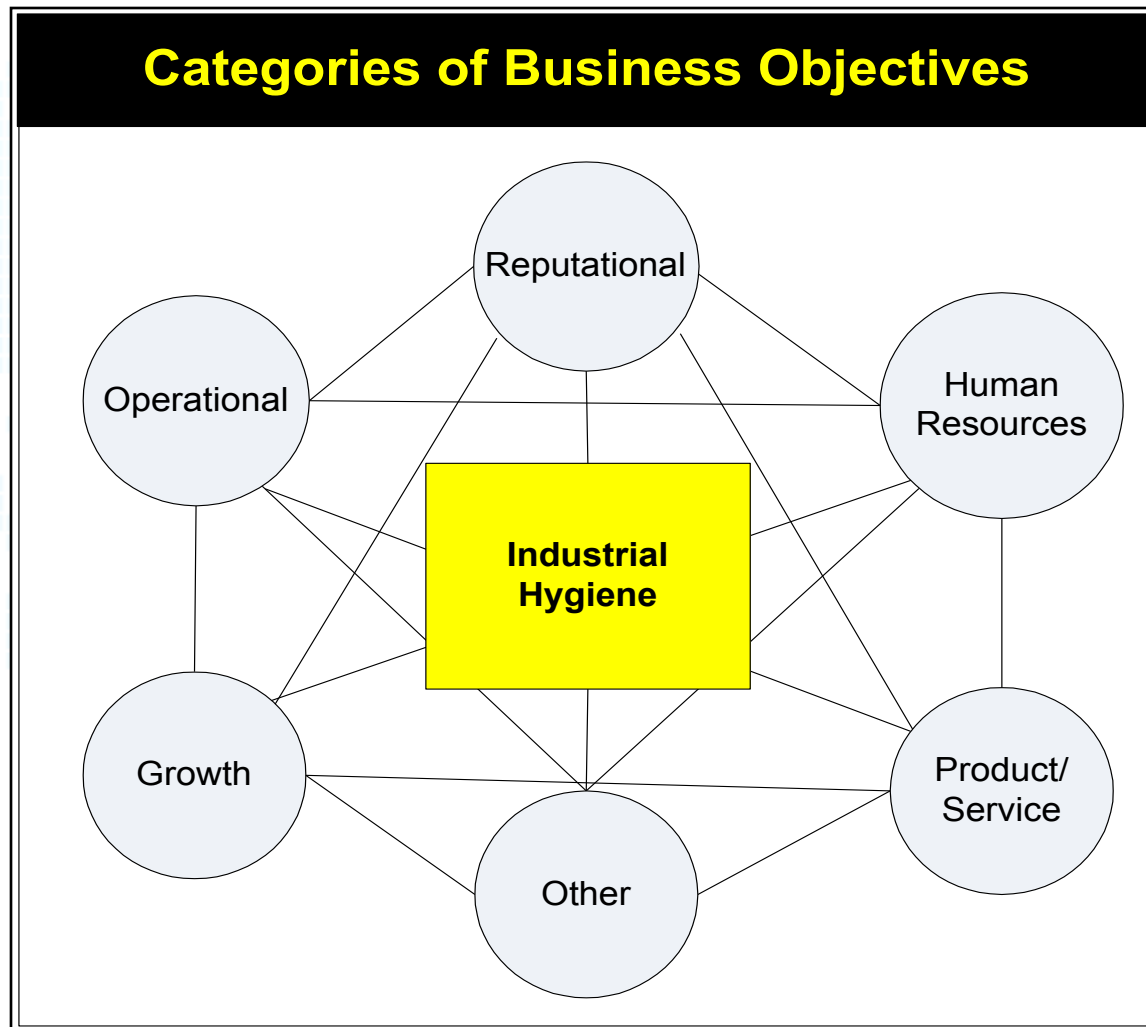
- **Phil Crosby's Economic Equation re. Quality**
  - **Cost of Quality = cost of conformance + cost of nonconformance**
- **Safety and Health Corollary**
  - **Cost of S&H = cost of injury and illness prevention + cost of injuries/ill health effects (loss)**

# Framework for Thinking About Value

One method for assessing the value of a S&H program, project, or intervention is to measure its impact on costs and identify (and isolate) other related benefits. Simply put:



# Business Objective Framework



# **The AIHA Strategy Makes the Value Proposition by Capturing:**

- 1. Traditional cost reduction (cost/benefit) analysis**
- 2. Revenue generation**
- 3. Positive impacts on business objectives**

# **Value Captured For Impacts On:**

- 1. Health**
- 2. The risk reduction process**
- 3. The business process**

# How Can I Demonstrate Value?

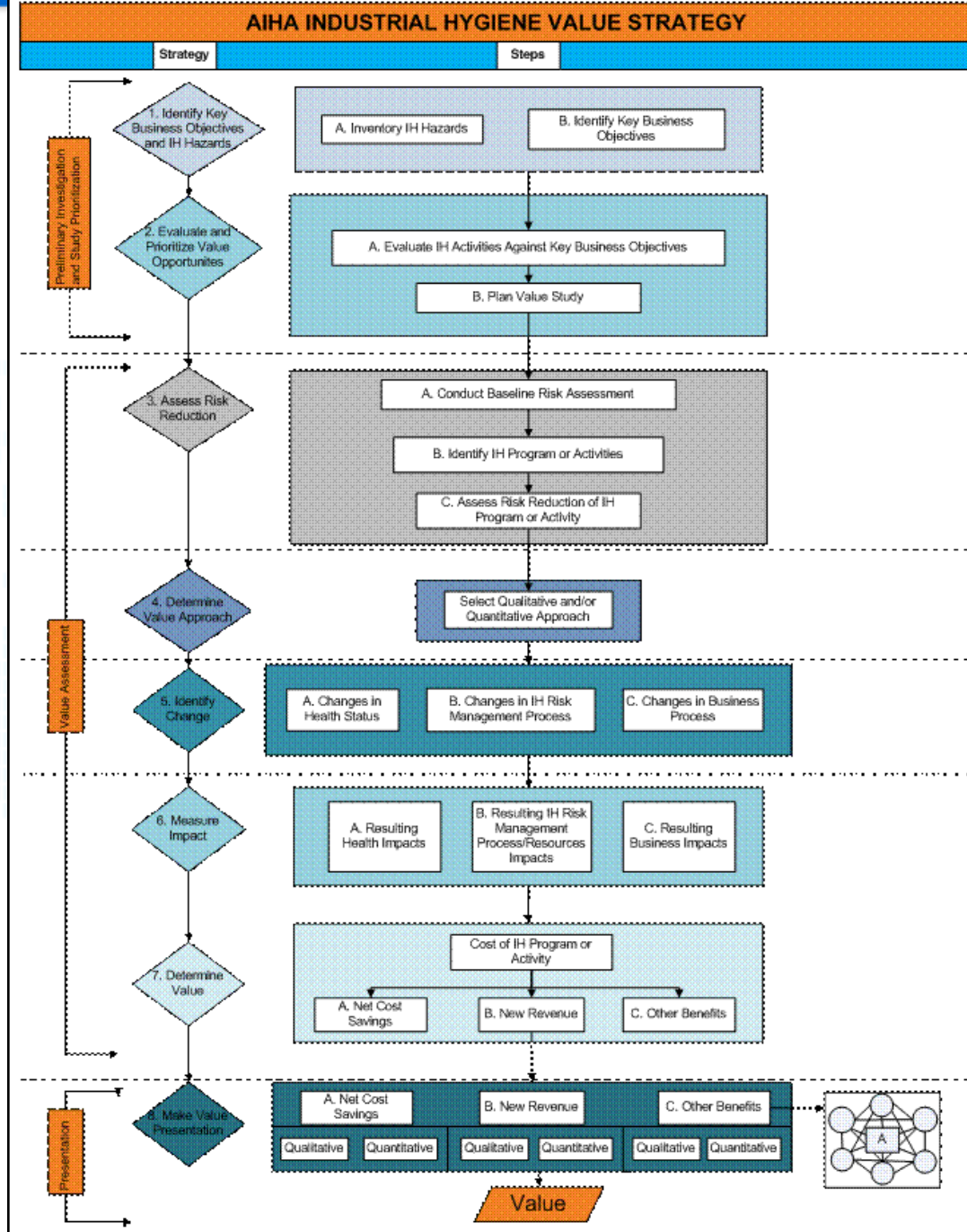
**Problem Statement:** Is there a practical way to demonstrate the value of industrial hygiene activities and programs to the business? Can it be done with:

- Detailed cost data?
- In situations where the detailed data do not exist or are not accessible to the IH?

## AIHA IH VALUE STRATEGY



# AIHA Value Strategy





# Overarching Value Strategy

- **Steps 1 – 2: Identify and assess key IH hazards and key business objectives to structure study and set priorities for value investigation**
- **Step 3: Select program or activity and track impact on risk**
- **Step 4: Determine value assessment approach**
- **Steps 5 – 7: Apply either Quantitative or Qualitative approach, or a combination of both**
- **Step 8: Develop presentation package for target audience**
- **Strategy architecture ties different quantitative and qualitative approaches together and provides common framework for capturing and presenting benefits**

# Quantitative Approach Defined

- The **Quantitative Strategy** allows the user to calculate generally accepted financial business metrics:

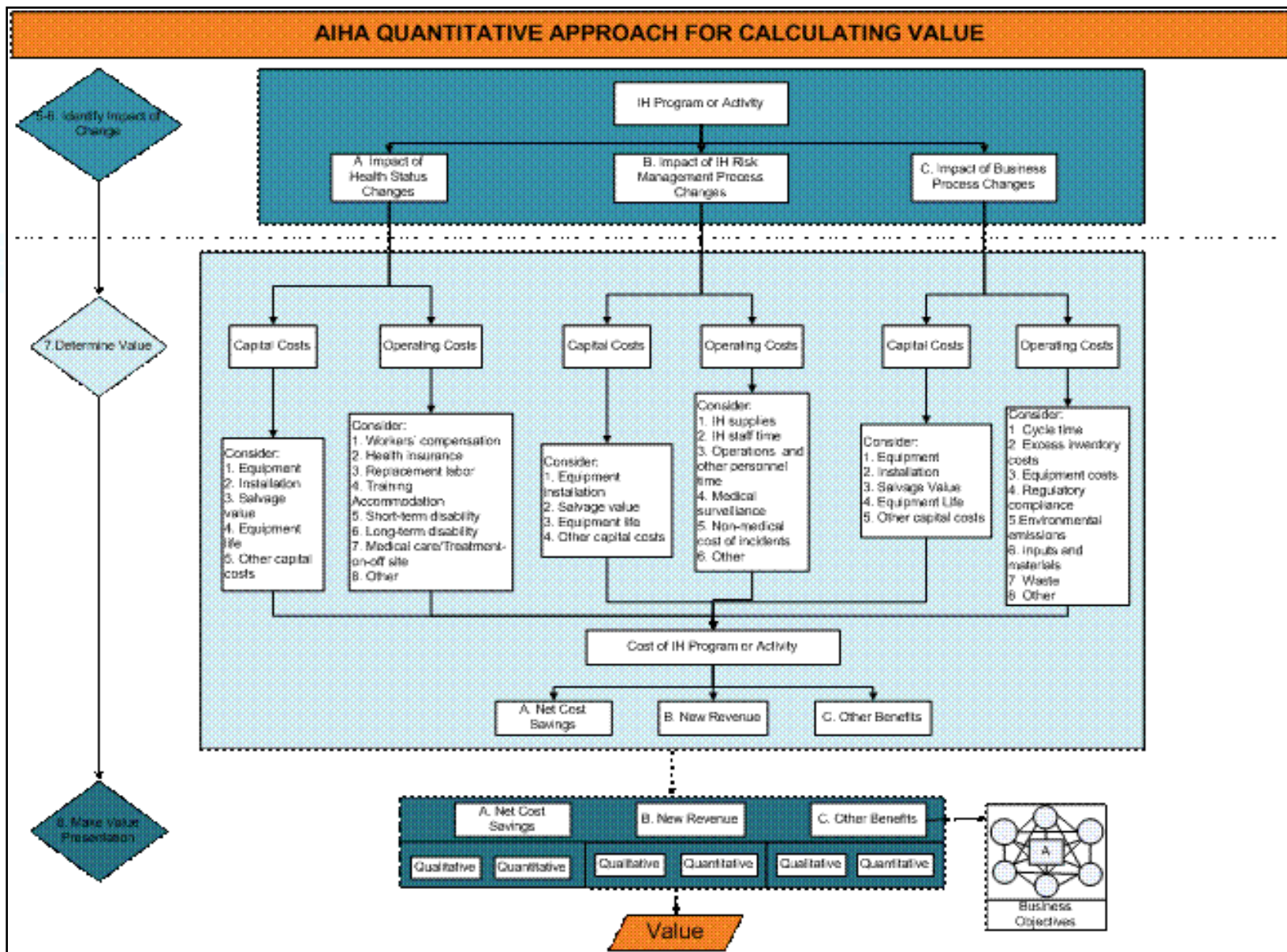
- return on investment (ROI)
- net present value (NPV)

by capturing detailed data on the IH impact on cost savings revenue generation, and other strategic aspects of the business.

# Quantitative Approach

- Starts with assessing the IH program/activity to control or eliminate risk
- Captures the resulting changes in health, the IH risk management process, and the business process, while isolating possible confounding factors
- Analyzes the costs (capital and operating) and benefits of those changes
- Enables IHs to express cost and benefit of programs or activities *in terms of financial value (ROI, NPV, etc)*

# AIHA Quantitative Approach for Determining Value



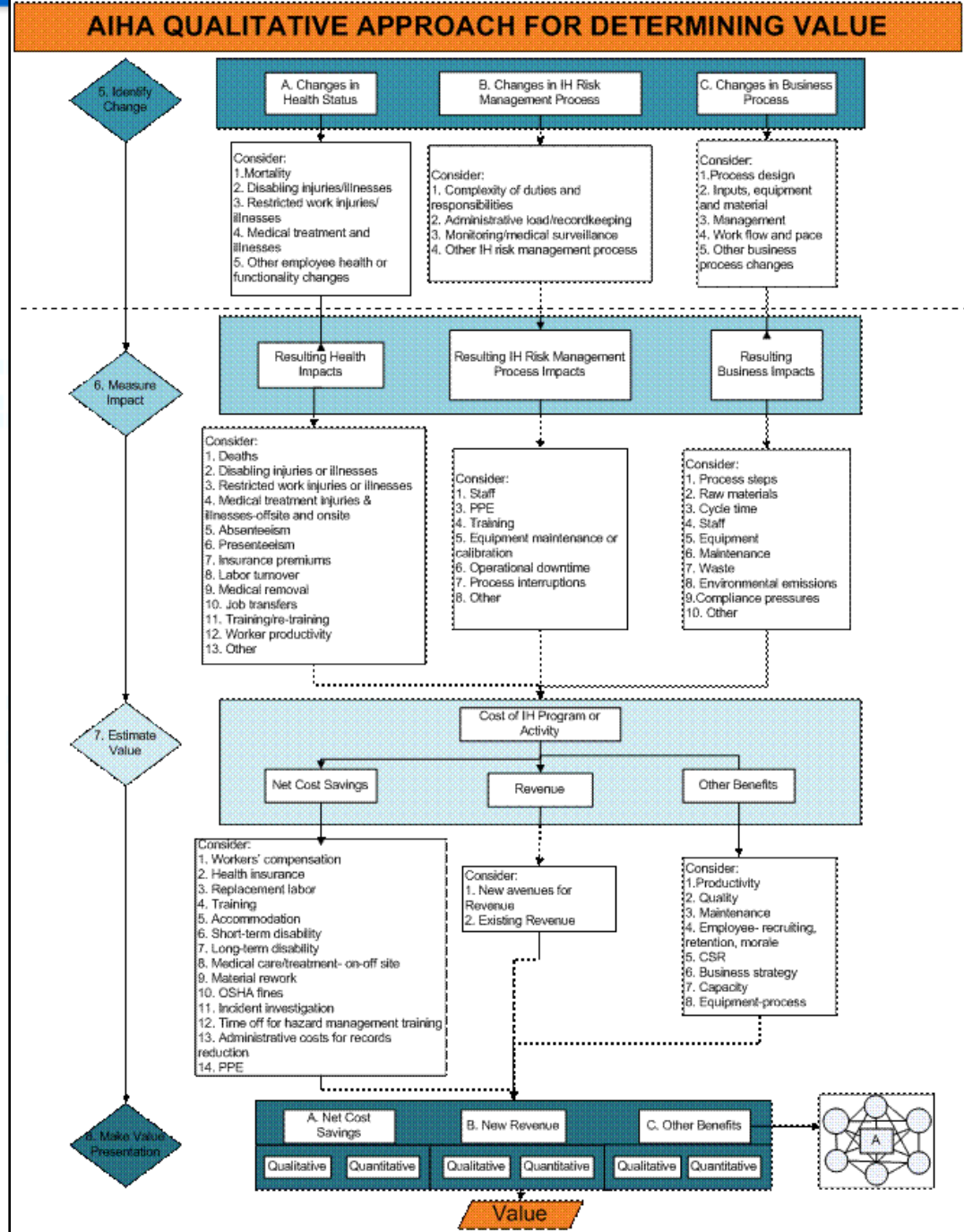
# Qualitative Approach Defined

- The **Qualitative Strategy** allows the user to estimate the value of the industrial hygiene contribution by tracking its impact on health, the IH risk management process, and the business process through an evidentiary cause and effect analysis that isolates and extracts other factors that could have produced the same effects.

# Qualitative Approach

- Not an algorithm, but a new way of thinking
- For situations where quantitative data are not available; time is limited; etc.
- Historic approach: no hard data = no value proposition
- Tracks value creation through thru a series of steps; a sequential “cause and effect” analyses that demonstrate the links between risk reduction, intermediate outcomes, and business value
- Tool helps users isolate and extract confounding factors at each phase
- **Analogy = evidentiary trail in legal proceeding where case is made by a preponderance of the evidence**

# AIHA Qualitative Approach for Determining Value



# Value Strategy Summary

- **Allows the user to clearly work through:**
  - **Key Business Objectives and IH Influence**
  - **Risk Reductions**
  - **Changes and Impacts in Health Status, IH Risk Assessment Process and Business Process**
  - **Value Proposition (Quantitative & Qualitative)**
    - Net Cost Savings
    - New Revenue
    - Other Benefits
  - **User has option of producing detailed financial metrics**



## **Condensed Study Highlights re:**

- **Scope and nature of IH business contribution**
- **Ability to identify, isolate, and capture the full IH value proposition**
- **Ways to capture IH value**
- **The Hierarchy of Controls**

# Uniqueness of IH Value Contribution

- Industrial hygiene principles and practices can achieve reductions in the potential for both employee and community exposures to potentially hazardous substances
- IH adds intellectual capital to the business by providing the ability to solve problems that cannot be addressed by other professions
- IHS can provide technical knowledge and advice that keeps a business process running, thus preserving revenue

# Uniqueness of IH Value Contribution

- **Importance:** IHs can be viewed as *problem-solvers* and *enablers* instead of barriers and constraints
- **Opportunity:** The IH can begin to leverage stakeholders within the business and cultivate *understanding of the nature of the IH contribution*

# Impacting the Business Process

- The most significant IH value contributions *did not come from the traditional S&H sources*:
  - Lower worker's compensation premiums
  - Reduced fines and penalties
  - Even health-related costs
- IH impacts on the overall business process were often the most significant
- Sometimes contributions to business objectives are the hardest to quantify re. traditional cost accounting (hence the need for a new approach)

# Impacting the Business Process

- **Importance:** Company leadership focuses on key business objectives, the business process, and value generation. *IH impacts on the business process align with these interests.*
  
- **Opportunity:** Create partnerships with stakeholders to position IH as a *full business partner.*

# The Hierarchy of Controls

Contrary to popular belief, movement up the IH hierarchy of controls *generally increases business value*:

- The greatest cost savings and other benefits were associated with eliminating the hazard
- Engineering controls are usually better financially than PPE. Where financial benefit cannot be shown, other benefits often make them preferable
- Material substitution can have very large pay-offs
- Containment projects can result in improvements with little incremental capital investment

# Study Findings: The Hierarchy of Controls

- **Importance:** Many business leaders seem to believe that exposure controls are cost-prohibitive and that placing protection on the employee makes the most business sense. As industrial hygienists we know better. *It's now possible to demonstrate that our preferred approach often creates the greatest business value.*
- **Opportunity:** IHS can make a stronger case for choosing the most protective control methods.

# Interested?

- Check out the ORC web site at [www.orc-dc.com](http://www.orc-dc.com) or the AIHA web site @ [www.aiha.org/votp/AIHA\\_training.html](http://www.aiha.org/votp/AIHA_training.html).
- Contact Steve.Newell, Dee.Woodhull, or Reepa.Shroff @ [orcww.com](mailto:orcww.com) or 202-293-2980
- Tools and services under development for fall offering; analogies
  - “turbo tax”
  - full service







# Safety, Health and Return-to-Employment (SHARE) Initiative

**Francis Yebesi, Director**  
**OSHA's Office of Federal Agency Programs**  
*September 15, 2007*



# SHARE Initiative

## Establishes 4 goals

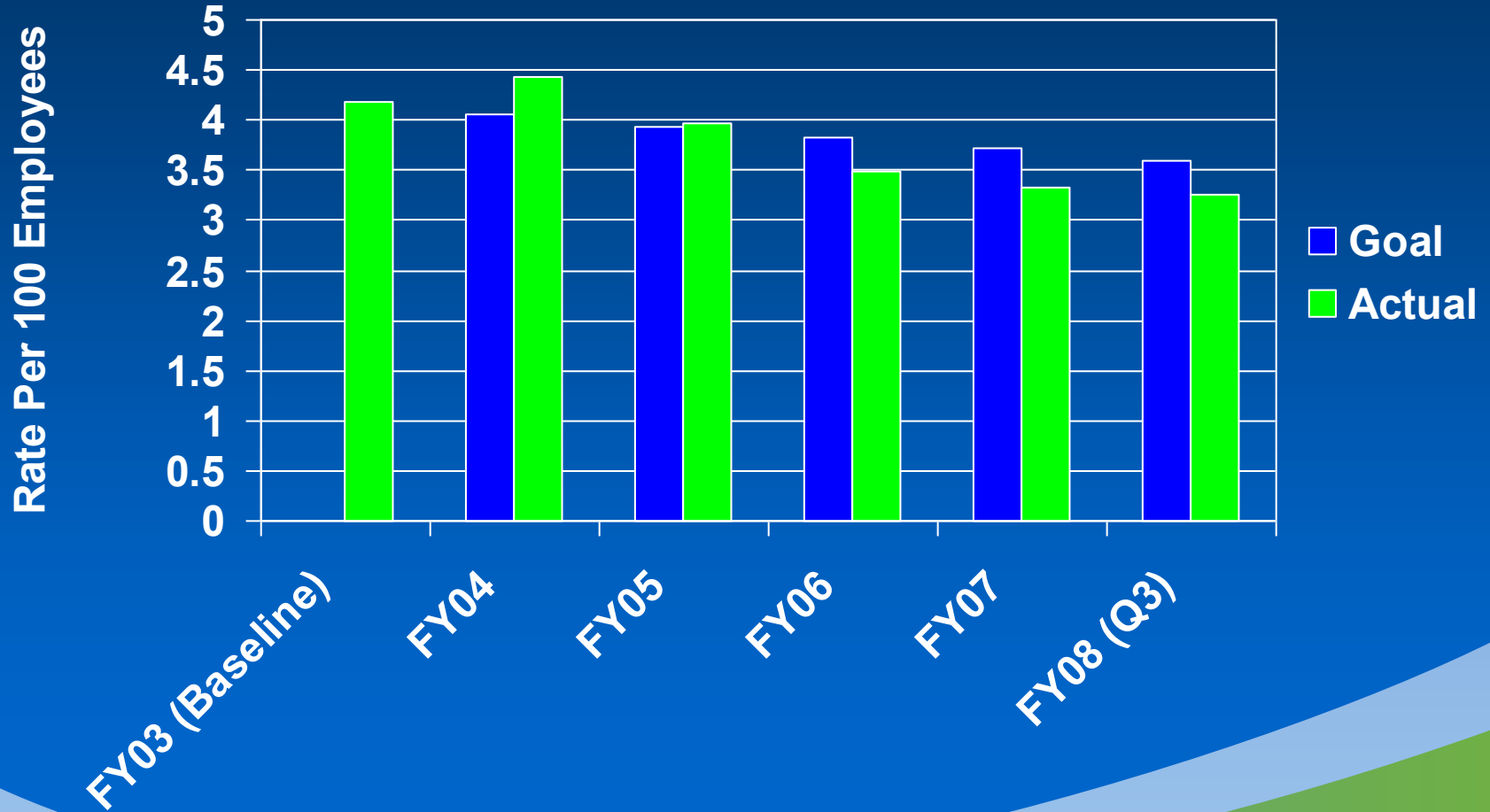
1. To reduce Total Case Rates by at least 3% per year
2. To reduce Lost Time Case Rates by at least 3% per year
3. To improve the timely filing of injury and illness notices by at least 5% per year
4. To reduce the rates of lost production days due to injuries and illnesses by at least 1% per year

# SHARE – Extension

- Extended through FY 2009 on September 29, 2006.
- Reaffirms the President's commitment to Federal worker safety and health
- Maintains FY 2003 baseline for first three goals
- Makes minor modifications to goal setting methodology for timely filing of injury notices and reducing lost production day rates

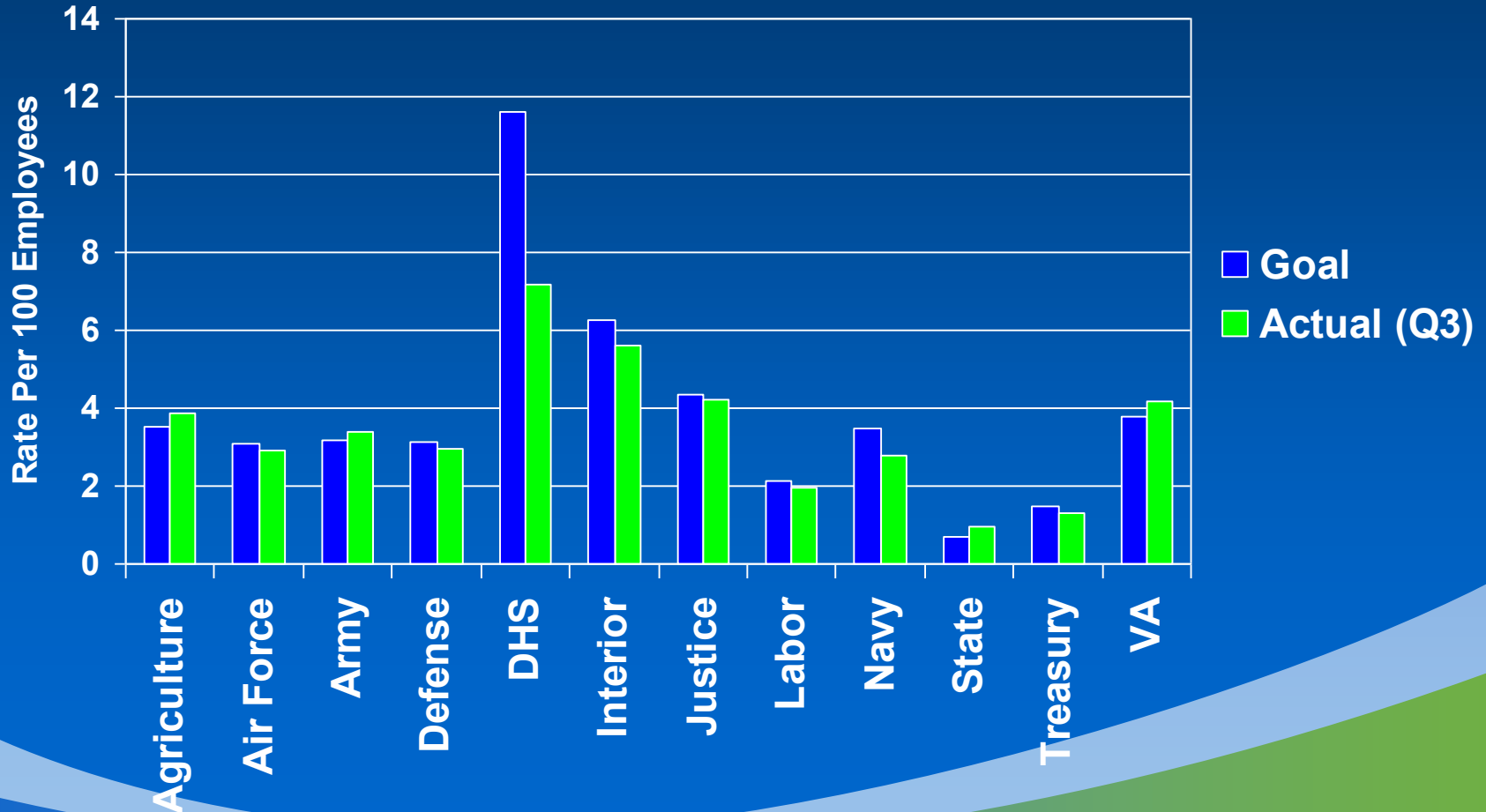
# Total Case Rates -- Goal #1

*Federal Government (less USPS)*

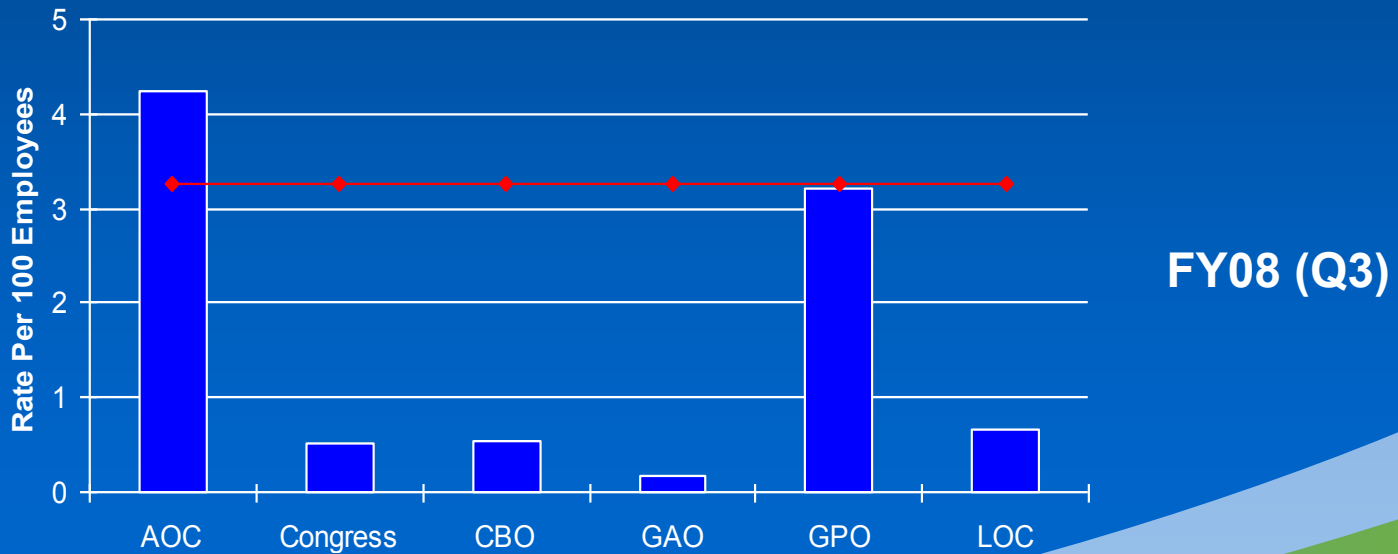
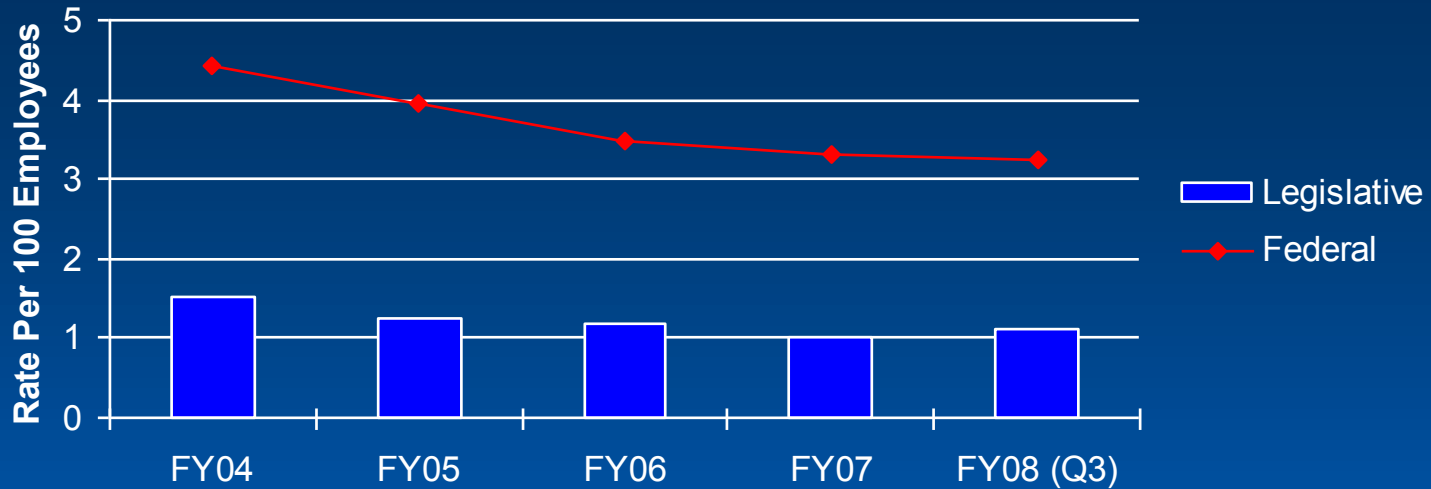


# Total Case Rate -- Goal #1

*Major Agency—FY08 Goal vs. Actual*

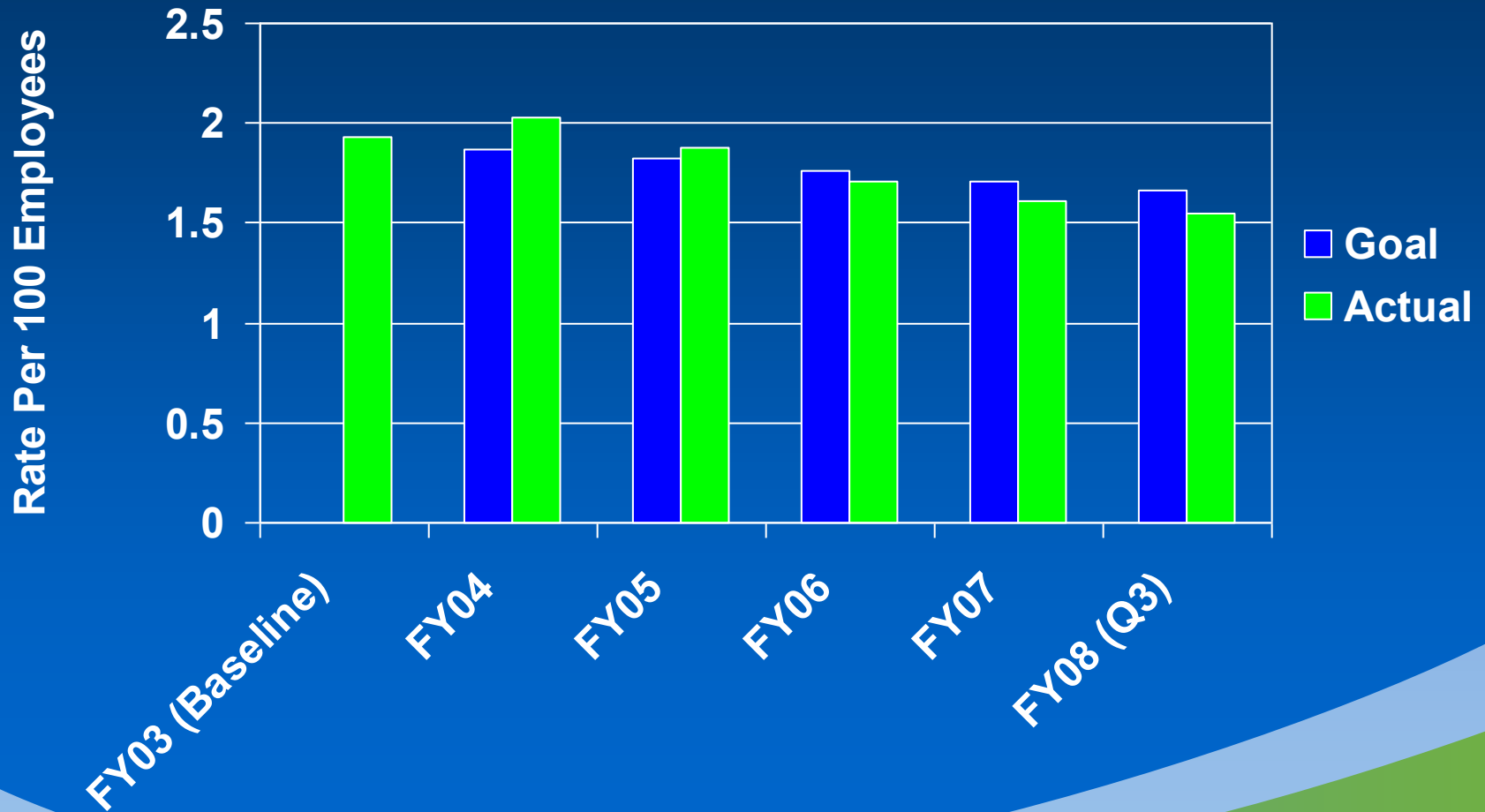


# Legislative Branch Total Case Rates



# Lost Time Case Rates -- Goal #2

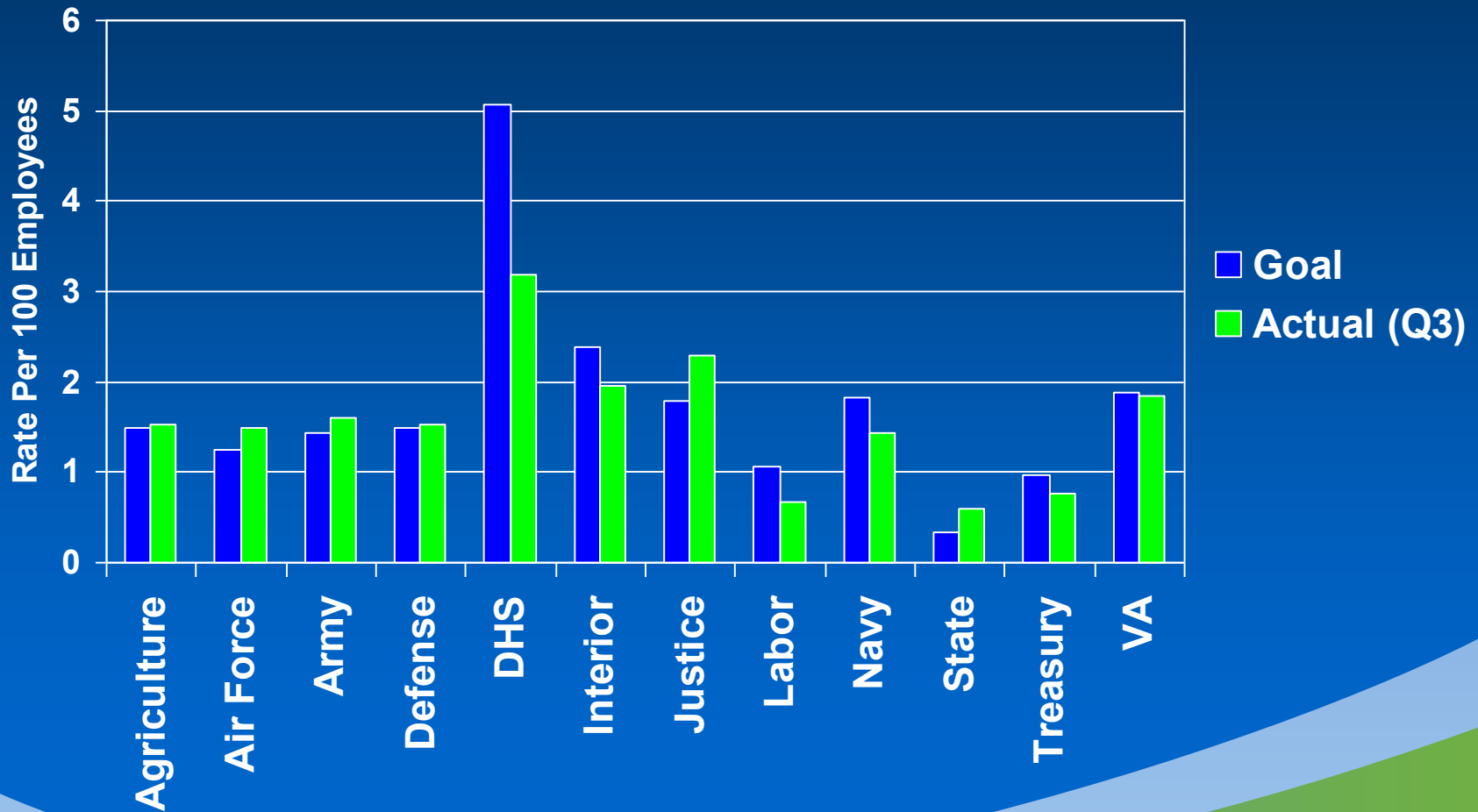
## *Federal Government (less USPS)*





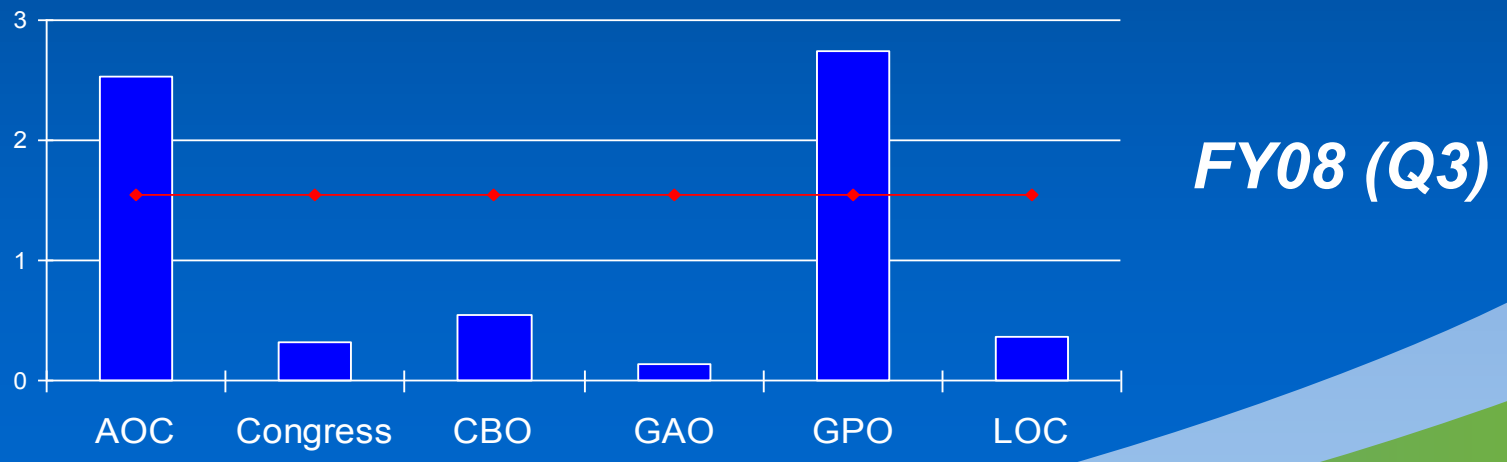
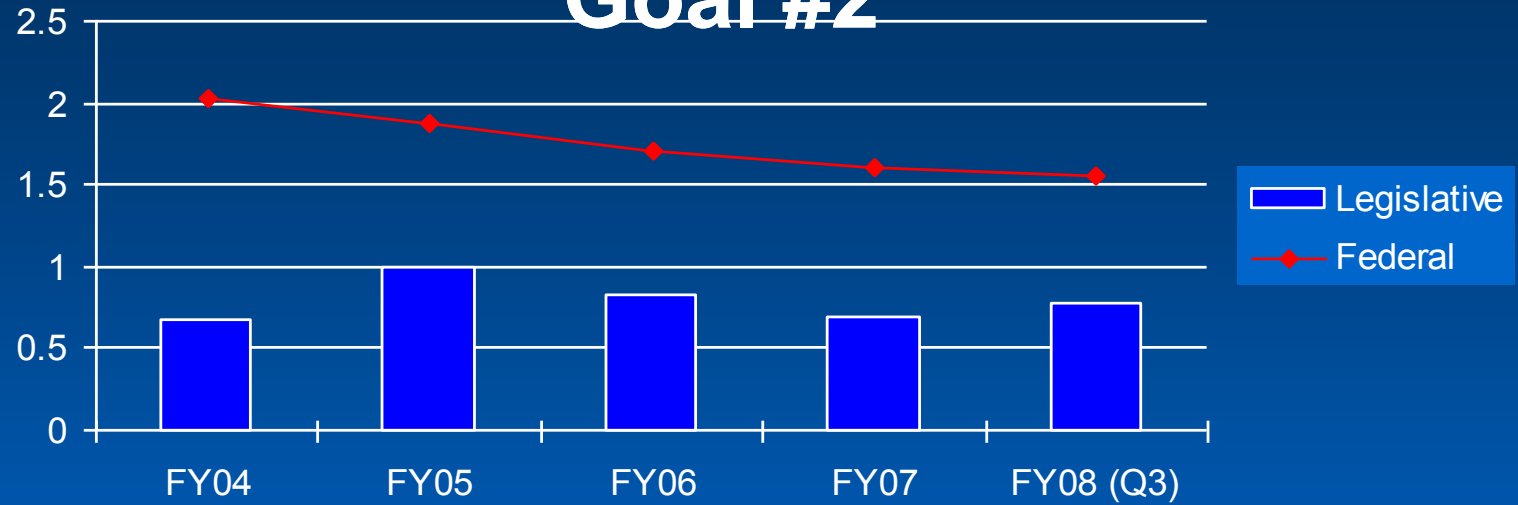
# Lost Time Case Rate – Goal #2

*Major Agency—FY08 Goal vs. Actual*



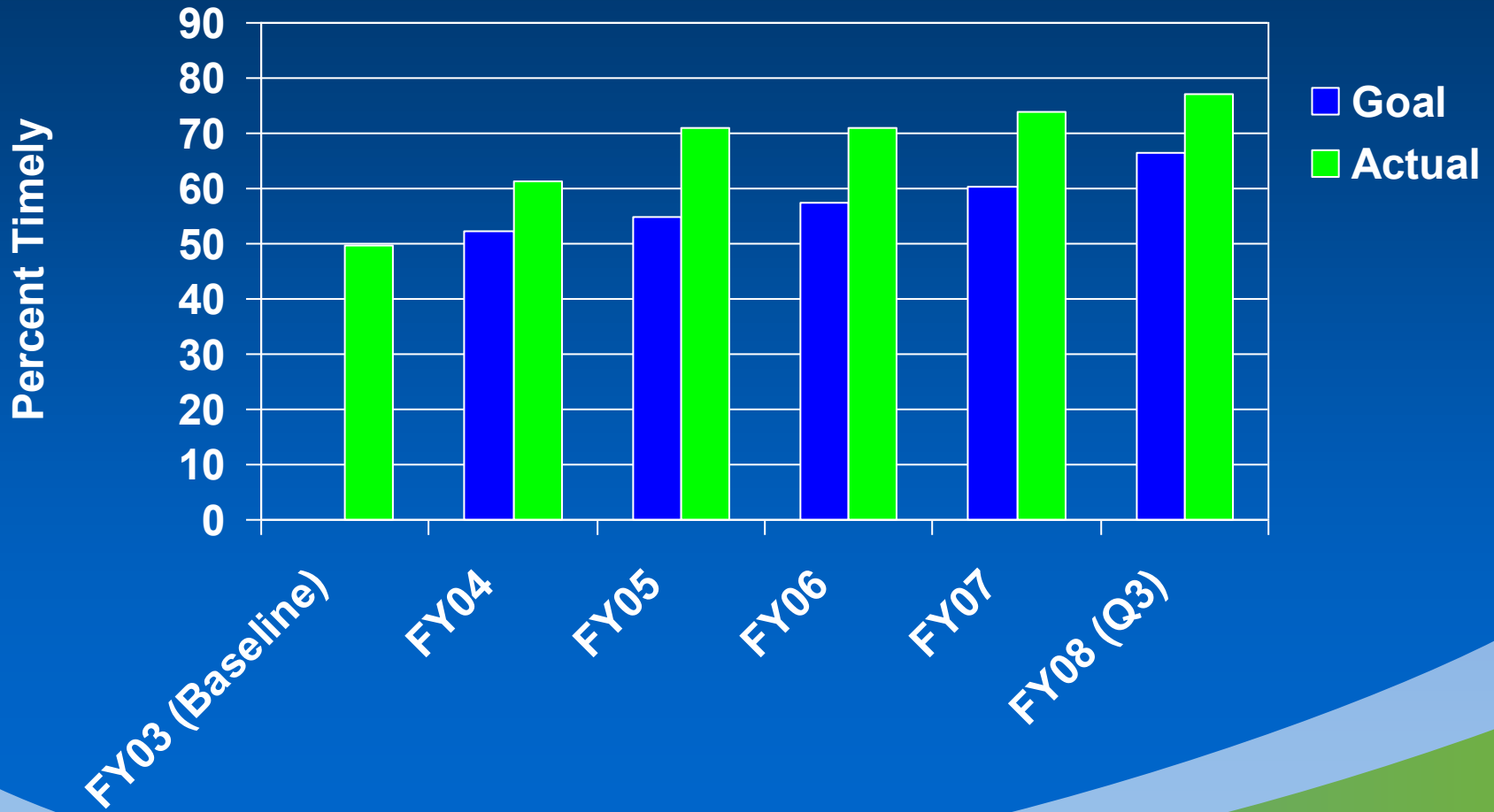
# Legislative Branch Lost Time Case Rates

## Goal #2



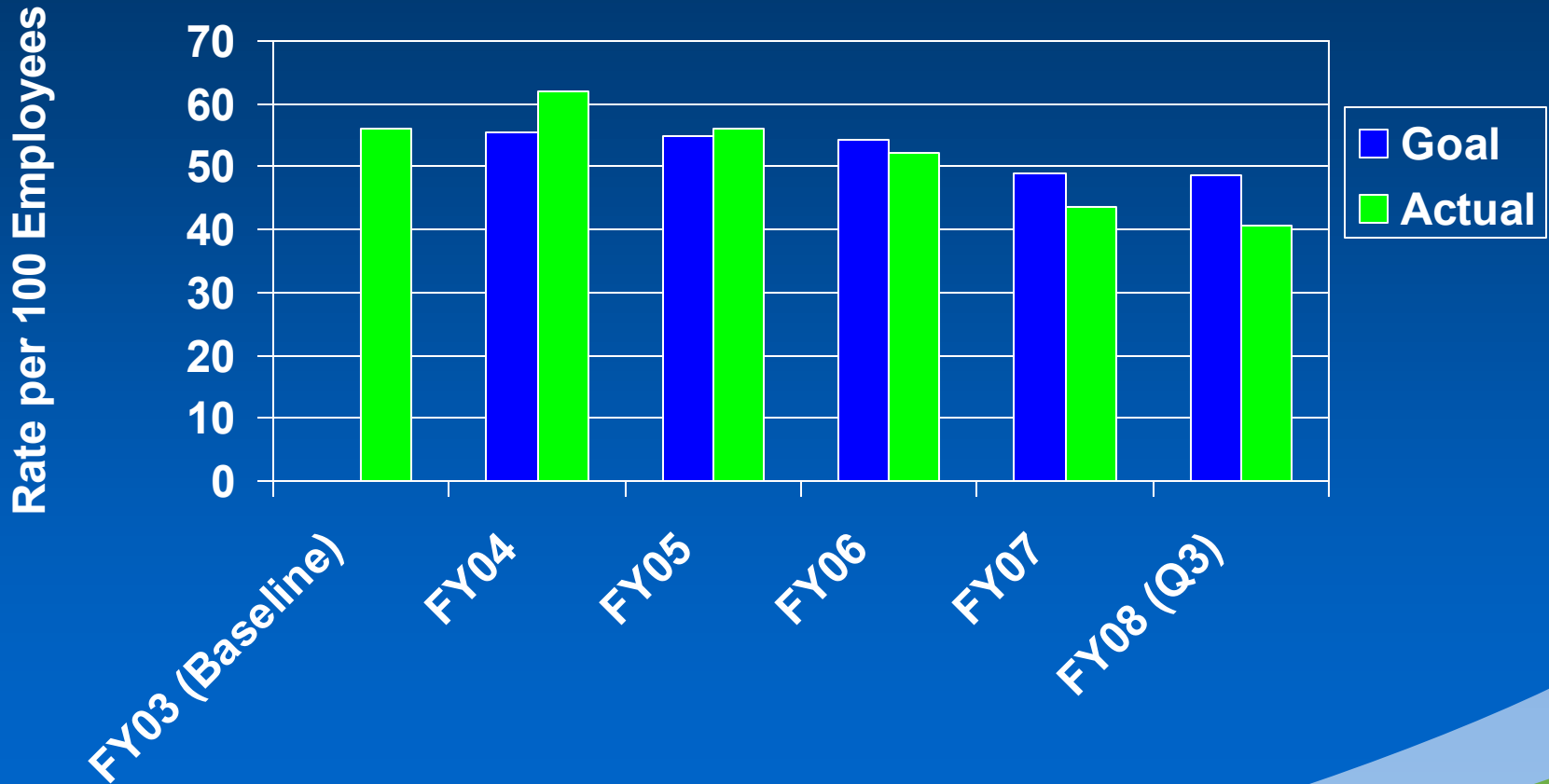
# Timeliness -- Goal #3

*Federal Government (less USPS)*



# Lost Production Days -- Goal #4

*Federal Government (less USPS)*



# SHARE – DOL's Role

- Lead the Initiative
- Provide assistance to agencies
- Measure the performance of each department and agency against their goals
- Report annually to the President

# SHARE

---

*Questions & Answers*



**OFFICE OF COMPLIANCE**

**QUARTERLY MEETING**

**SEPTEMBER 15, 2008**

**Investing in Safety & Health Produces  
Savings**

**By Stephen Mallinger, CIH**

---

# OOO MONITORING INJURIES

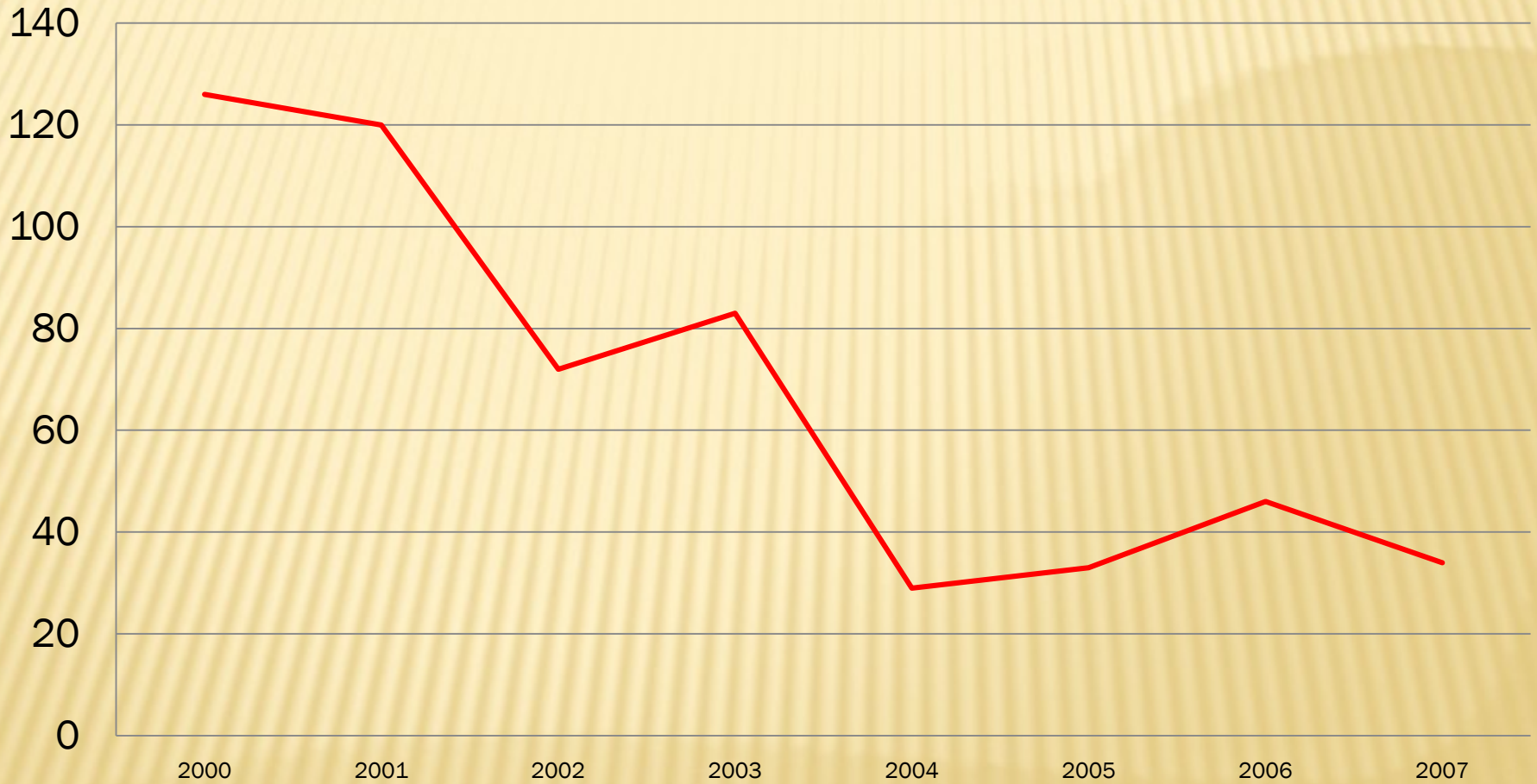
---

- ✘ Getting Summary Data From OWCP
- ✘ Number of Cases & Rate From OSHA
- ✘ All But One Leg. Branch Office Has Decreased Injury Rates
- ✘ Will Be Monitoring Rates More In-Depth
- ✘ We Picked One Office [LOC] for Today
- ✘ Injury Numbers Do Not Tell Entire Story



# NEW LOC INJURY CASES PER FISCAL YEAR

---



# LOC'S LOST PRODUCTION DAYS



# OSHA INJURY RECORDING FORMS

---

- ✘ OWCP Does Not Collect Cause of Injury
- ✘ 300 Forms Contain This Information
- ✘ Forms Standardize Recorded Info
- ✘ Private Sector & Exec. Branch Use 300 Forms
- ✘ 300 Forms Used to Develop Interventions
- ✘ Leg. Branch Not Required to Use 300 Forms

# **OSHA INJURY RECORDING FORMS** (CONTINUED)

- ✘ **Light Duty** Not Counted in Lost Production Days (appears to reduce costs)
- ✘ **OWCP** Does Not Collect All Injury Costs
- ✘ **Accidents** Need to be Investigated
- ✘ **Results of Investigations** Indicate Interventions Developed & Implemented



# LOC EMPLOYEE COMMENTS

---

- ✘ No One Discouraging Employees From Filing
- ✘ Easier to Resolve NLT Injuries Another Way
- ✘ Some Employees Avoid the Hassle of Filing
- ✘ Workplace Today is Safer
- ✘ Observed Less Accidents Occurring

# DEFINITION OF INJURY RATE

---

## ✘ Injury Rate is Defined as:

- + The number of recordable injuries for every 100 full time employees.
- + A Recordable Injury is One That Requires Medical Attention Beyond First Aid
- + In Private Sector, VP Must Sign That 300 Forms Contain Complete Listing
- + Employees Not Required to File With OWCP

# TYPES OF INJURIES

---

## ✘ Lost-time (LT) Injury

- + Employee Unable to Return to Work Next Day
- + More Serious Injury
- + Higher Costs

## ✘ Non Lost-time (NLT) Injury

- + Employee Returns to Work Next Day
- + Less Serious Injury
- + Lower Costs

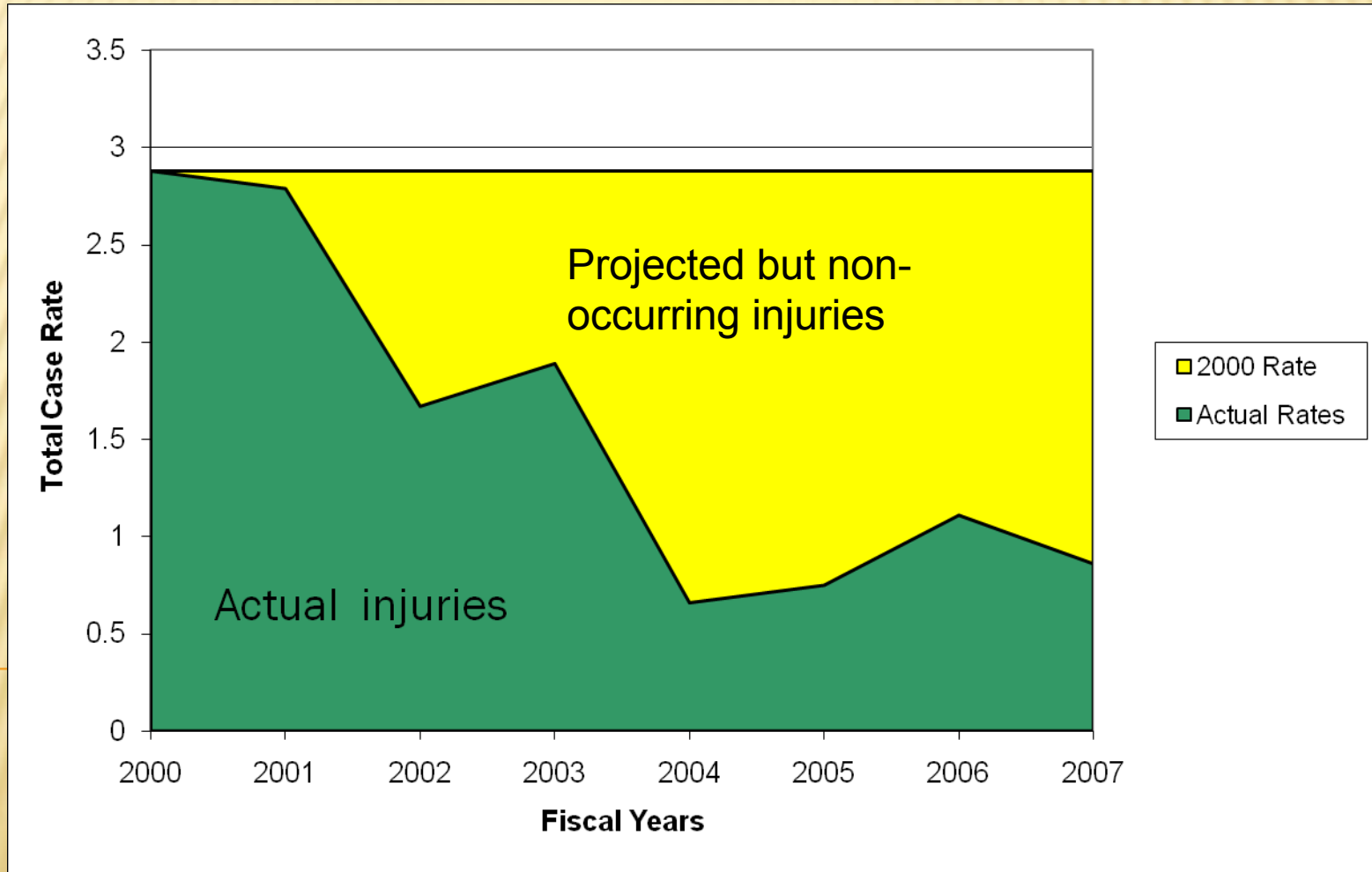
# LOC INFORMATION FROM OSHA WEB SITE

TABLE 1

Year	Employment	Total Cases	Rate for Total Cases/100 Employees	Lost Time Cases	Rate for Lost Time Cases
2000	4371	126	2.88	75	1.72
2001	4304	120	2.79	54	1.25
2002	4306	72	1.67	31	0.72
2003	4390	83	1.89	33	0.75
2004	4410	29	0.66	17	0.39
2005	4420	33	0.75	14	0.32
2006	4151	46	1.11	31	0.75
2007	3967	34	0.86	19	0.48



# LOC'S INJURY RATE (LT AND NLT)



# QUANTIFYING PREVENTED INJURIES

TABLE 2

Year	Projected Injuries (# of employees times 2.88 rate)	Actual Injuries	Employees Not Injured (Projected minus Actual)	Estimating NLT Injuries Not Occurring (Using Yearly Ratios)	Estimating LT Injuries Not Occurring (Using Yearly Ratios)
2000	-		-	-	-
2001	124	120	4	55% 2	45% 2
2002	124	72	52	57% 30	43% 22
2003	126	83	43	60% 26	40% 17
2004	127	29	98	42% 38	58% 54
2005	127	33	94	58% 54	42% 40
2006	120	46	74	33% 24	67% 50
2007	114	34	80	44% 35	56% 45
Total	862	417	445	209	230

# DETERMINING INJURY COSTS

---

## ✘ Direct Costs

- + Medical Expenses
- + Salary
- + Lost Production

## ✘ Indirect Costs

- + Replacement Worker
- + Training Replacement Worker
- + Administration

# DIRECT COSTS

---

- ✘ Can Be Determined
- ✘ Employing Office Costs (COP)
- ✘ Add OWCP's Charge Back Amounts
  - + OWCP Picks up Medical Costs
  - + OWCP Picks up Salary After 45 Days
- ✘ Add Lost Production Costs

# INDIRECT/TOTAL COSTS

---

- ✘ Most Organizations Do Not Track Indirect Costs
- ✘ Liberty Mutual Did Study of Indirect Costs in 2001
  - + Managers Say Indirect = 3 x Direct Costs
- ✘ OOC Asks OSHA & OWCP For Costs
- ✘ Total Costs = Direct + Indirect Costs



# BASIS OF COST FIGURES

---

- ✘ Do Not Have Indirect Cost Amounts
- ✘ OSHA Recommends Using National Safety Council (NSC) Averages
  - + NSC Injury Facts 2008 Says LT Average Injuries Costs = \$39K
  - + 1998 NLT Cost Estimate is NLT Injuries = \$7K
    - ✘ Updated \$7K to 2008 Dollars = \$8.9K
- ✘ OOC Study Uses \$39K and \$8.9K Averages

# TOO HIGH OR TOO LOW

---

## ✘ Is \$39K Too High?

- + Library is Not Heavy Industry
- + But Back Injuries Are Expensive

## ✘ Is \$8.9K Too High?

- + Medical Treatment is Not Negotiated Lower Insurance Rates
- ## ✘ More Expensive Injuries Greater Likelihood of being Recorded

# ESTIMATED COST AVOIDANCE

Year	LOC #Not Occurring LT Injuries X \$39k	LOC # Not Occurring NLT Injuries X \$8.9k	Total
2000	-	-	
2001	\$78,000	\$18,000	\$ 98,000
2002	\$858,000	\$267,000	\$1,125,000
2003	\$663,000	\$231,000	\$894,000
2004	\$2,106,000	\$338,000	\$2,444,000
2005	\$1,560,000	\$480,000	\$2,040,000
2006	\$1,950,000	\$213,000	\$2,163,000
2007	\$1,755,000	\$311,000	\$2,860,000
Totals	\$8,970,000	\$1,858,000	\$11,624,000



# LOC INJURY PREVENTION PROGRAMS

---

## × 1999

Received annual funding and contracted for professional ergonomic consultants.

## × 2000

Employed a full time, Certified Industrial Hygienist for the agency.

Workplace Ergonomics Program (WEP) Web site transferred to Safety Services.

## × 2003

Request and received funding from Congress for a full time safety specialist and environmental engineer. Also received funds in the base budget for agency safety and health.

Position Converted to S & H in 02 & Funded in 03.

# LOC INJURY PREVENTION PROGRAMS

---

## × 2004

Completed and released an automated hazard abatement program (AHAP) to identify and track safety and health hazards until corrected.

## × 2005

Acquired ESS Health & Safety Incident Management Software to evaluate and classify injuries.

Implemented formal, targeted self inspections, by health and safety professionals, of areas of the Library with the potential for elevated hazards.

# LOC Injury Prevention Programs

---

## × 2005

- + Formal Life Safety Classes for Designers Begins.

## × 2006

Released improved version of AHAP which included the ability to track Office of Compliance identified hazards by their tracking number and formulate progress reports.

## × 2007

Added a full time, permanent safety and health manager to the staff of the National Audio-Visual Conservation Center in Culpeper, VA.



# ARE SAVINGS REAL?

---

- ✘ Are Injuries Still Occurring But Not Being Recorded?
- ✘ Is OWCP Rate a Good Indicator of Injuries?
- ✘ No Evidence of LOC Employees Being Discouraged to File Claims.
- ✘ In the Case of LOC, OOC Believes Savings Are Real

# RETURN ON INVESTMENT

---

- ✘ Safety Program Interventions Cause Injury Declines
- ✘ Safety Program Interventions Cost \$ and Take Time
- ✘ Savings Quickly Realized in Private Sector
  - + Large Companies With Large Savings Have Employees Studying Interventions
- ✘ Government Savings Are Delayed

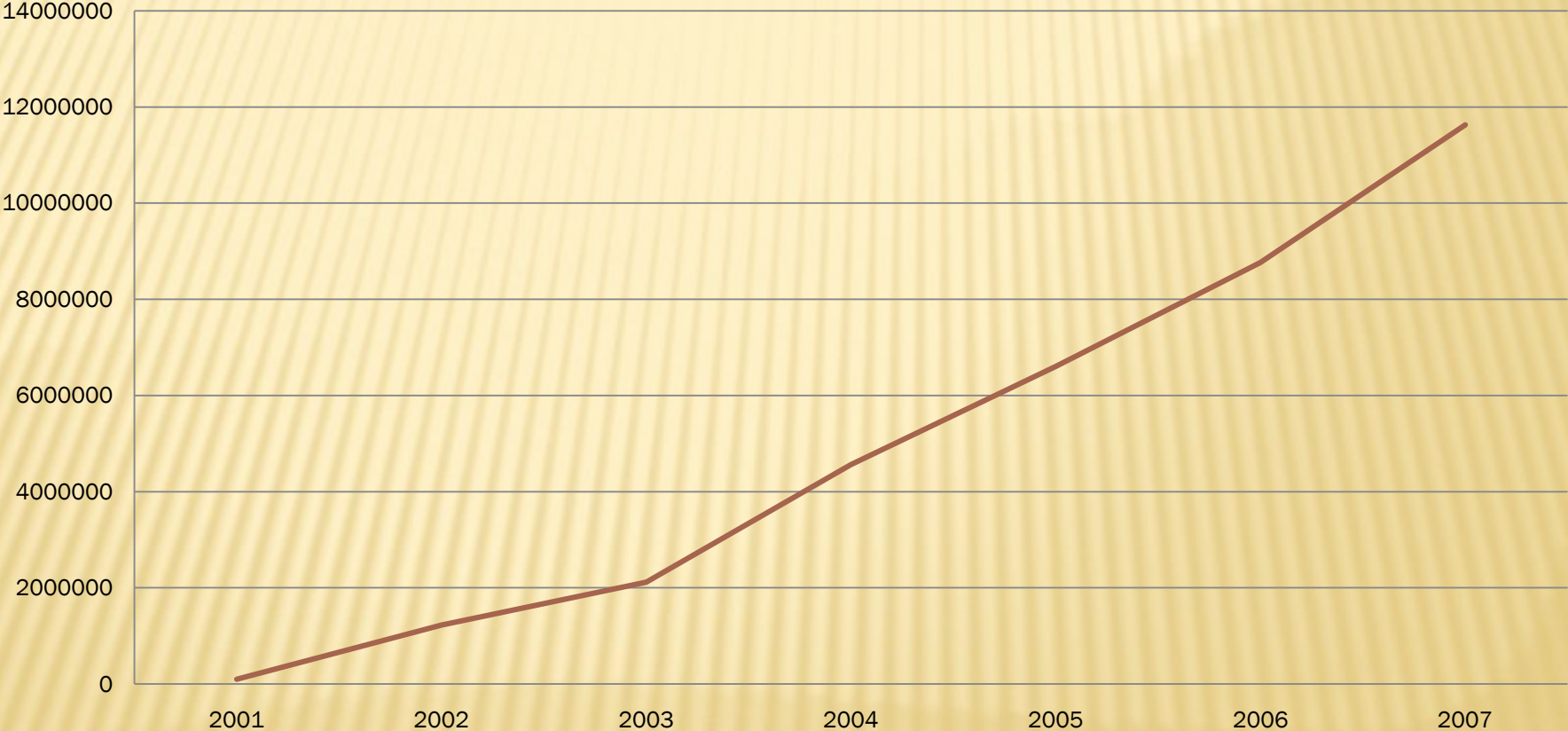
# RETURN ON INVESTMENT

---

- ✘ Need to Make a Case for Investment in Safety Programs.
- ✘ Frequently Huge Return on Investment.
- ✘ 10 to 1 Return on Costs.
- ✘ Are There Other Factors That Influence Injury Rate Decline?

# LOC CUMULATIVE COSTS AVOIDED

Cumulative Costs Avoided





# REASONS INJURY CLAIMS NOT FILED WITH OWCP

---

- ✘ Medical Expenses Covered Under Employees Own Insurance
- ✘ COP – Employee’s Pay Will Continue
- ✘ Pressure from Supervisor, Not the Whiner
- ✘ Hassle of Filling Out Forms
- ✘ See J. Paul Leigh, et al., “An Estimate of the U.S. Government’s Undercount of Nonfatal Occupational Injuries,” 46 Journal of Occupational and Environmental Medicine, 10, 11 (Jan. 2000) (discussing incentives to under reporting and over reporting worker compensation claims)



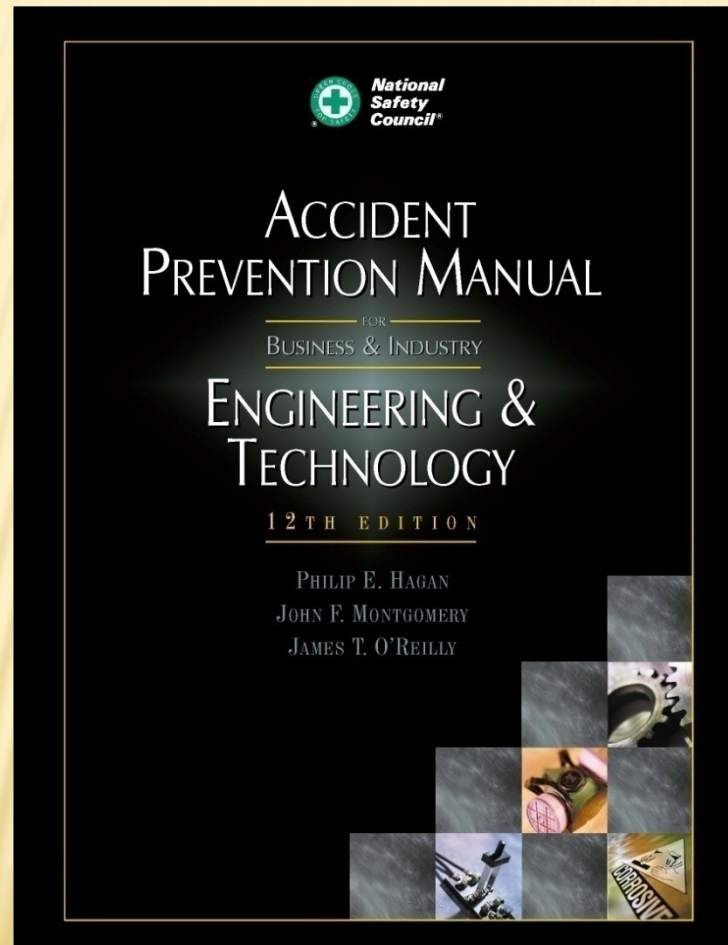
# LOC'S SUCCESS

---

- ✘ Savings Are Real and Significant
- ✘ Interviewed Employees Say Workplace is Safer
- ✘ Return on Investment is Significant
- ✘ Improvement Comes From Many LOC Employees & Organizations
  - + JOSH Committee
  - + Safety & Health Professionals

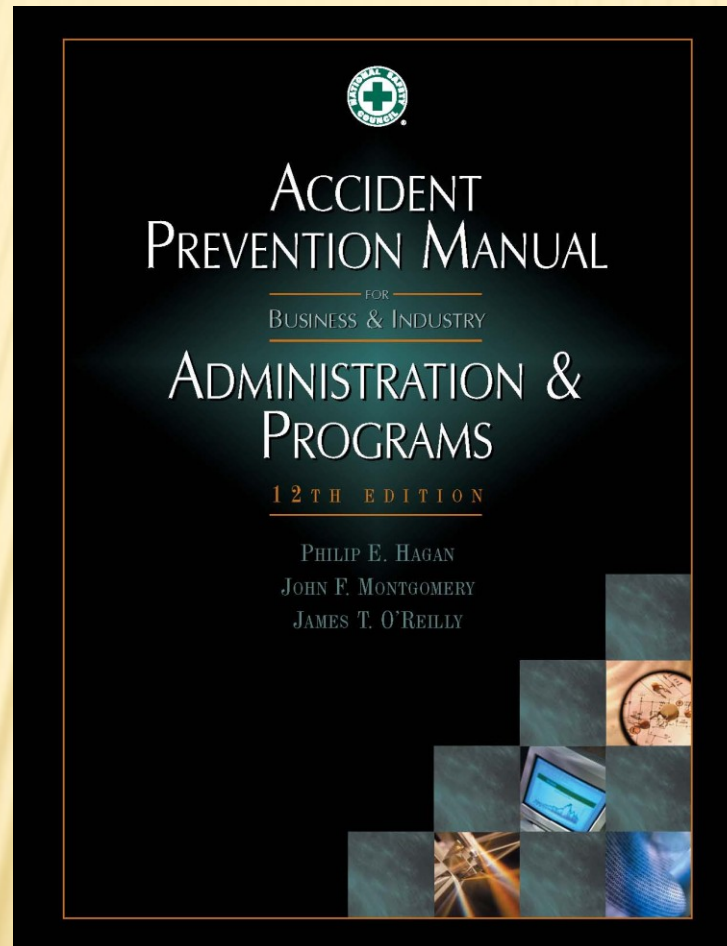
# REFERENCES

AVAILABLE ON CD



# REFERENCES

AVAILABLE ON CD



**ANY QUESTIONS**

---

**End**

**Thank You**

**Work Safely – It Saves**