

# Overview of FMCSA Data Quality Programs

**CSA 2010 Listening Session  
October 16, 2008**



## Motor Carrier Safety Assistance Program (MCSAP)

- Federal grant program for all States, Territories and the District of Columbia.
- To reduce the number commercial vehicle related fatalities and injuries on our nations highways.



# Purpose

- Authorized by the STAA of 1982 as a discretionary grant-in-aid program to the States initially for roadside inspections only.
- Purpose:
  - eliminate the “patchwork quilt” of State regulations
  - establish a uniform and reciprocal system for enforcing the Federal Motor Carrier Safety Regulations (FMCSRs) & Federal Hazardous Materials Regulations (FHMRS)

# History

- Started in 1984 with only four States
- Presently includes all 50 States, DC, Puerto Rico, the U.S. possessions, and several local agencies as direct recipients of MCSAP funding.
- In addition, many county and municipal agencies (funded or not) perform FMCSA-approved inspection activities in support of their overall State safety program.

# Basic Grants

- State Eligibility Requirements
  - Adopt State laws compatible with the FMCSRs & FHMRs
  - Prepare a Commercial Vehicle Safety Plan (CVSP)
  - Agree to meet certain conditions to receive funding
    - Coordination of CVSP, data collection and information systems, with State highway safety programs
    - Participation in SAFETYNET and other data systems
    - Establish program to ensure accurate, complete, and timely motor carrier safety data collection and reporting
    - Participate in national motor carrier safety data correction program
    - Promote activities in support of MCSAP National Program Elements
- National Program Elements
  - Driver/Vehicle Inspections
  - Traffic enforcement
  - Compliance reviews
  - Public education and awareness
  - Data collection

# Incentive Grants

- Distributed by “Shares” earned in 5 performance areas:
  - Reduction in the # of fatal accidents involving CMVs (5 shares)
  - Reduction in the CMV-involved fatal accident rate (4 shares)
  - Verification of CDLs during roadside inspections (2 shares)
  - Upload CMV roadside inspection data within FMCSA policy guidelines (2 shares)
  - Upload CMV accident data within FMCSA policy guidelines (2 shares)

# High Priority Grants

- Provided to States and Localities to support national priorities for CMV safety and compliance
- Eligibility
  - Must address identified data quality issues before other HP projects will be considered for funding



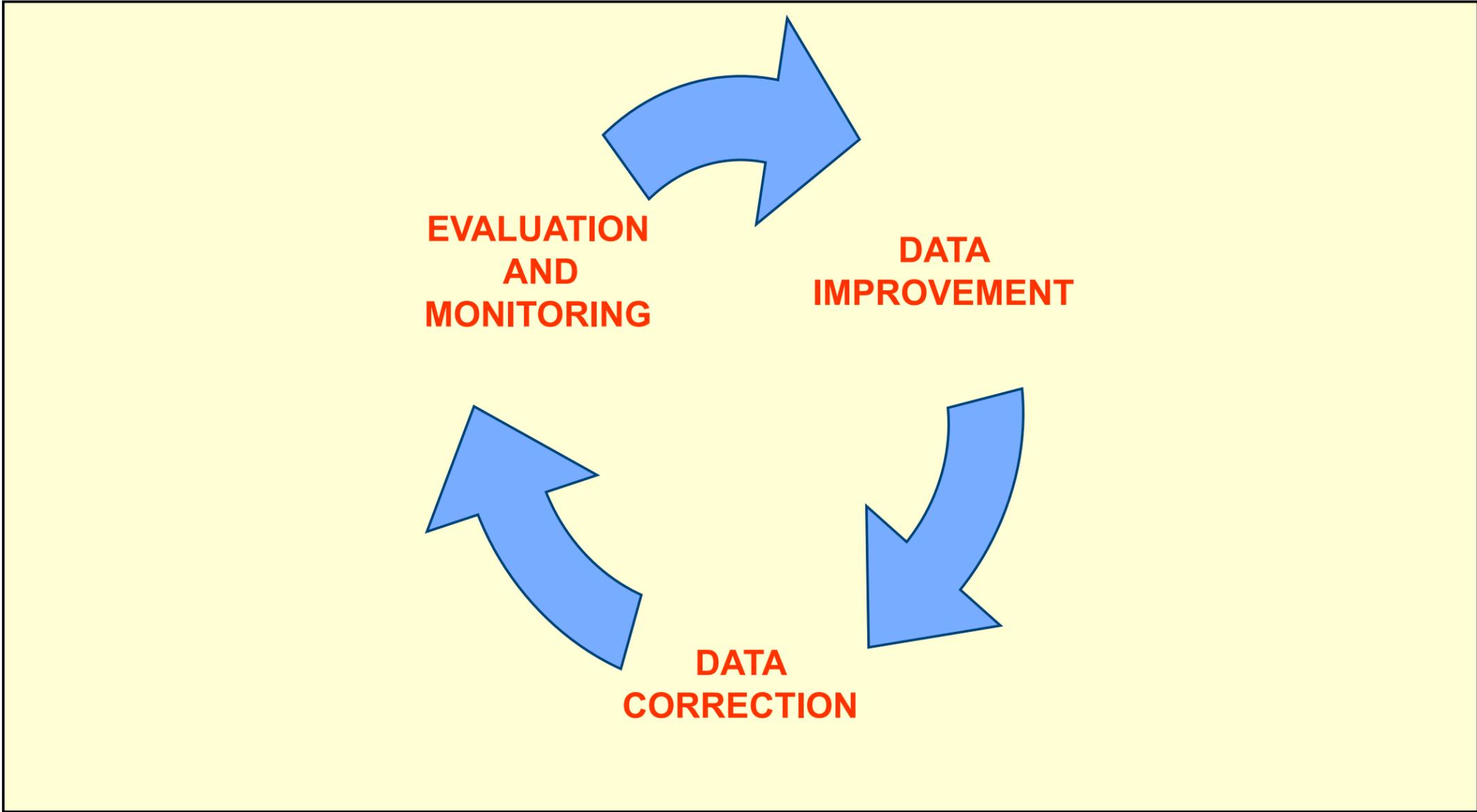
# MCSAP Supported Activities

- MCSAP funds support...
  - 9,000 roadside inspectors; 3M roadside inspections in '07
  - CMV traffic enforcement
  - State-conducted CRs
  - New Entrant Safety Audits
  - Uniform application of safety regulations
  - More consistent penalties State to State
  - Improved driver/vehicle compliance
  - Maintenance of national safety databases (e.g., vehicle inspection and CMV accident databases)

# Data Quality Program

- **DQ Evaluation and Monitoring**
  - State Safety Data Quality (SSDQ)
  - State Crash Data Analysis
- **DQ Improvement**
  - State Reviews
  - Technical Assistance
  - Analysis and Improvement of State Police Accident Reporting (PAR)
  - Training
  - Funding
- **Data Correction**
  - DataQs
  - FARS/MCMIS Matching Tool

# Data Quality Program



# DQ Evaluation

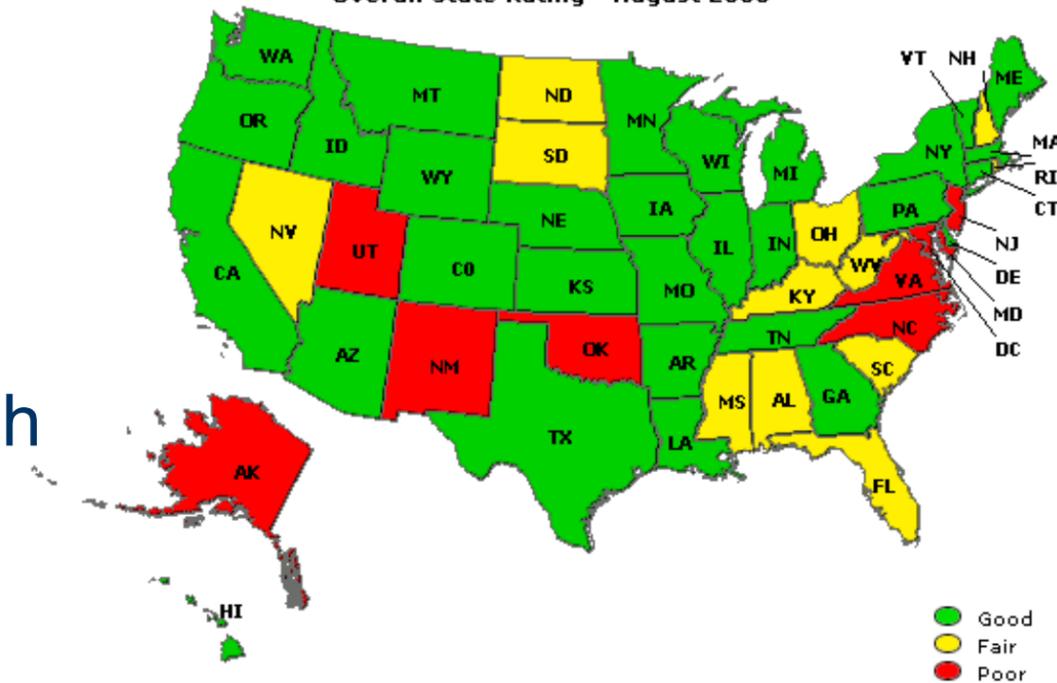
## State Safety Data Quality (SSDQ)

- State data evaluation results – evaluates the completeness, timeliness, accuracy and consistency of State-reported crash and inspection data in MCMIS
  - 7 performance measures
  - 1 overriding indicator

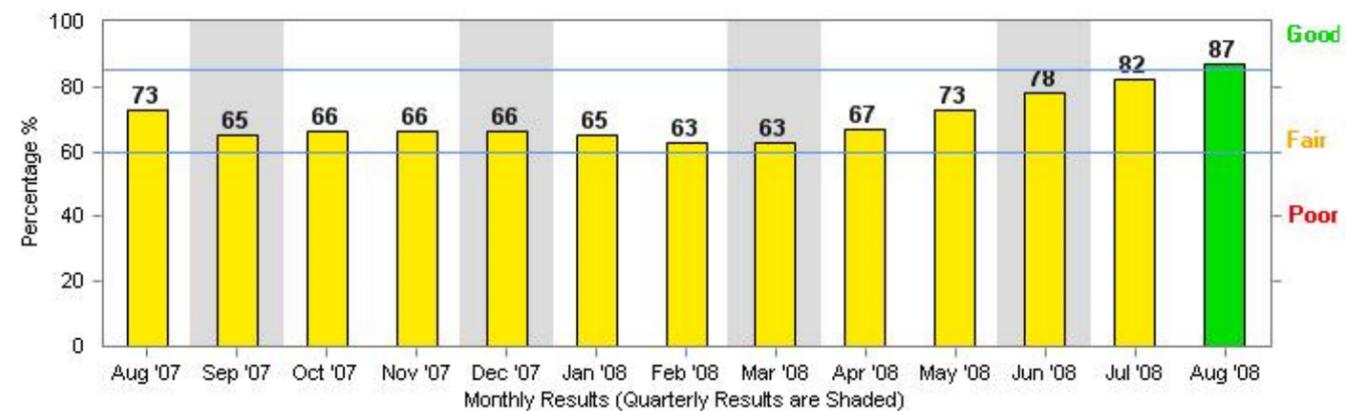
- Monthly evaluation updates
- Historical perspective

### August 2008 Evaluation Results

Overall State Rating - August 2008

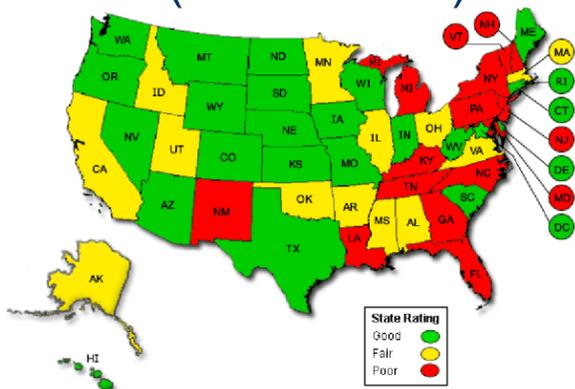


Missouri: Crash Timeliness Measure

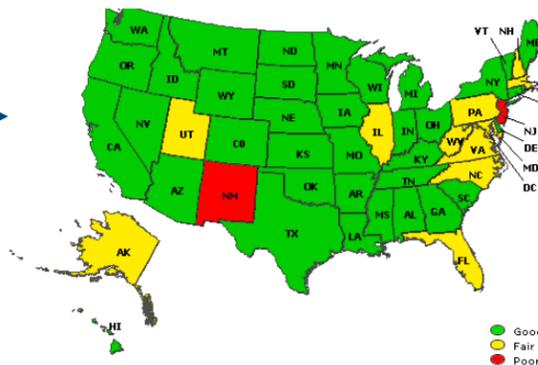


# DQ Evaluation Impact...State Safety Data Quality Evaluation

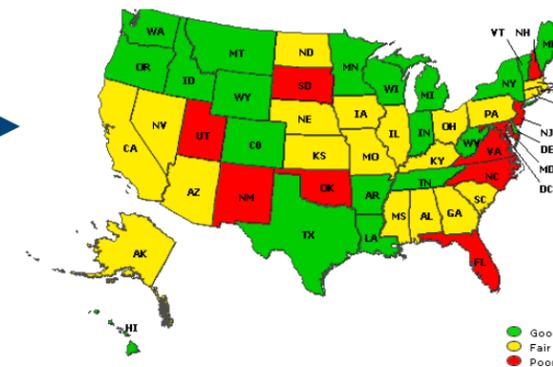
SSDQ Implemented  
(March 2004)



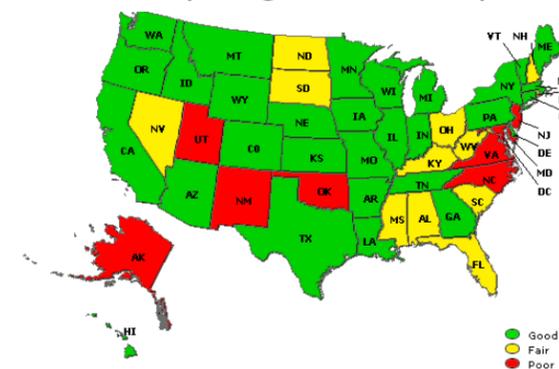
3-yr Improvement  
(June 2007)



New Measures  
(September 2007)



11-month Improvement  
(August 2008)



	# States			
	Mar 2004	Jun 2007	Sep 2007	Aug 2008
<b>Good</b>	24	38	27	30
<b>Fair</b>	13	10	16	12
<b>Poor</b>	14	3	8	9

# DQ Evaluation

## State Crash Data Analysis

- Evaluation of State Crash Reporting
- Reports available online

27 States

SC, ME, KY, ID, GA, CT, AL, IN, PA, AZ, TN, SD,  
NE, LA, OH, MO, IA, MD, WA, IL, NC, NJ, FL, MI, AR

EVALUATION OF IOWA CRASH DATA  
REPORTED TO MCMIS CRASH FILE

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DANIEL BLOWER  
ANNE MATTESON

# Data Improvements State Reviews



## The State Review Process



# Data Improvements State Reviews

NH, NC, PA, NJ, TN, LA,  
IN, MA, NM, IL, MD, WI,

## Recommendation Categories

- Crash Form Improvements
- Electronic Collection at the Scene
- Extract Logic/Coding
- Criteria Applied for Hand-Selecting Crashes
- Tracking Reports Throughout the Process
- SAFETYNET Practices
- Empty Fields Research
- Organizational Coordination



# Data Improvements Technical Assistance



- Monitor SSDQ Evaluation Reports.
  - Review SSDQ Measures for improvement
  - Create/Analyze Custom Crash & Inspection Analysis Reports
  - Provide Information/Training to help improve SSDQ
  - Facilitate solutions to identified data quality improvement areas

# Data Improvements

## Analysis and Improvement of State Police Accident Reports (PARs)

### Crash Data Collection Training

- On-site
- Online

The screenshot shows the FMCSA Crash Data Collection Resource website. At the top right, there is a "HOME PAGE" link and the text "FMCSA Crash Data Collection Resource". Below this is a navigation bar with five tabs: "Lesson 1", "Lesson 2", "Lesson 3", "Lesson 4", and "Lesson 5". The main content area is divided into two columns. The left column contains introductory text: "These web-based materials are intended to be an educational resource for law enforcement officers, CMV inspection authorities, accident investigation trainers, and State department of transportation accident records developers and users. This resource defines and provides examples for FMCSA related crash data collected and reported to SAFETYNET. To return to this page to enter another selection at anytime, use the 'Home Page' bar at the top right of each page." Below this is a red italicized note: "NOTE: The companies and carriers shown in any photographs on this site are included for illustrative purposes only. These images in NO WAY indicate or imply unsafe or improper operating practices by those pictured." The right column lists the lessons: "Lesson 1: Selection Criteria", "Lesson 2: Motor Carrier Identification", "Lesson 3: Vehicle Configuration / Cargo Body Type", "Lesson 4: Crash Events", and "Lesson 5: Hazardous Materials". Below the text is a row of five small images showing various truck accidents. Underneath the images is a section titled "Links to Hot Topics" with five links: "Carrier Identification" (with a sub-link "IMPORTANT"), "PAR Guidance", "GCWR Details", "Government Vehicles", and "Rental Vehicles". Each link has a small representative image below it.

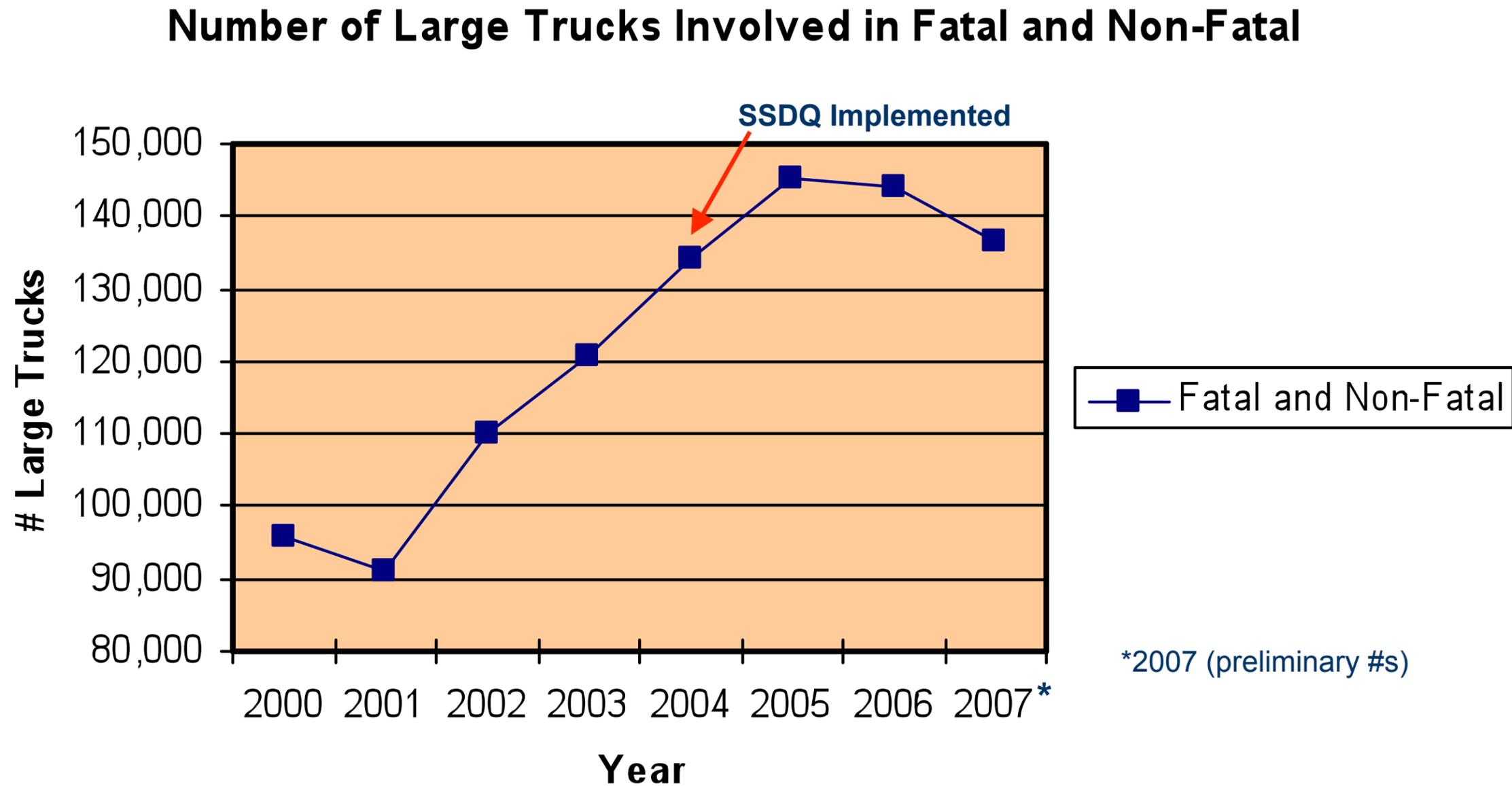
# Data Improvements Funding

## Safety Data Improvement Program (SaDIP) Grant Funding

42 States



# DQ Evaluation Impact...Comprehensive Data Quality Program

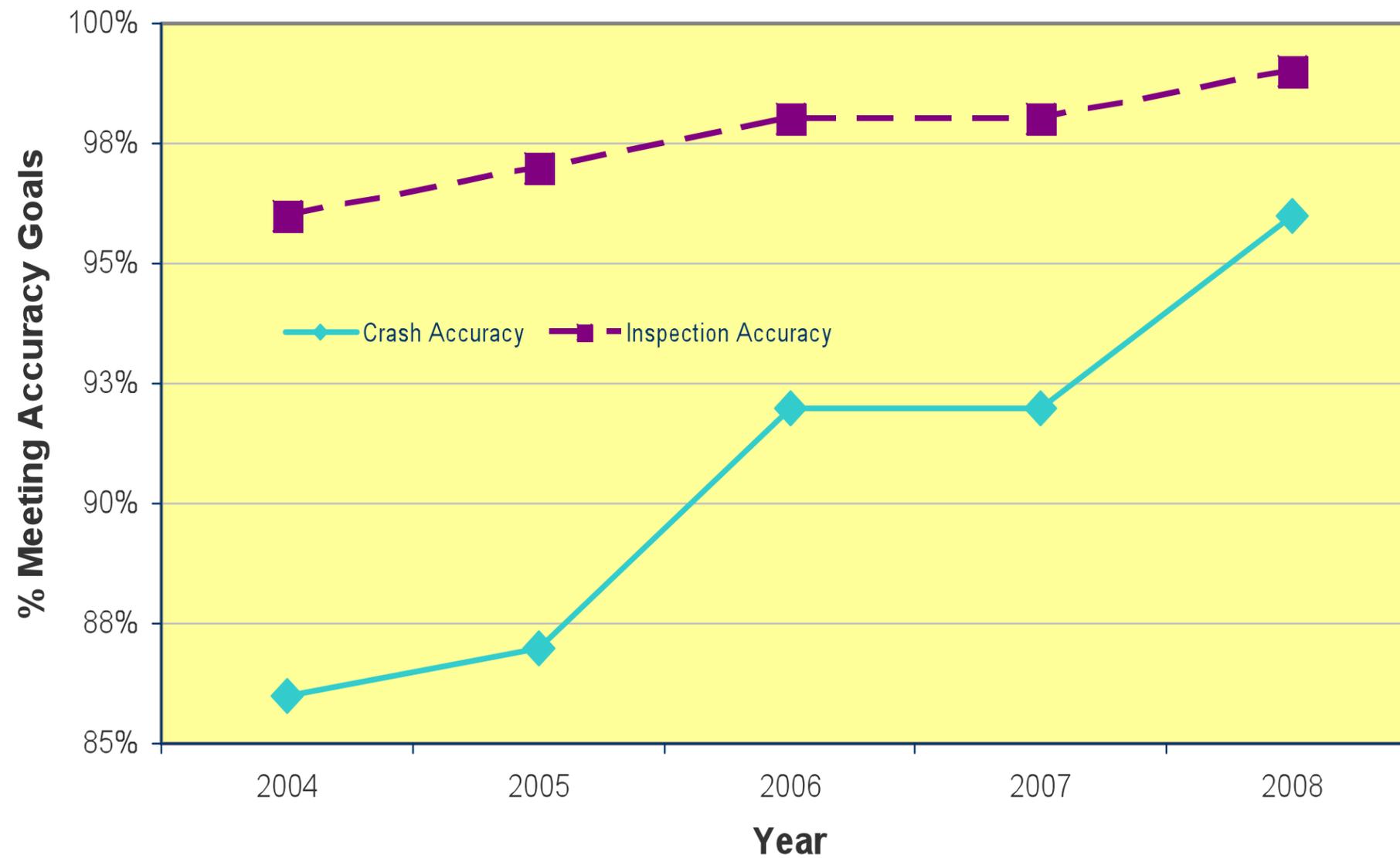


Federal Motor Carrier Safety Administration

# DQ Evaluation

## Impact...Comprehensive Data Quality Program

Crash and Inspection Reporting Accuracy Measure

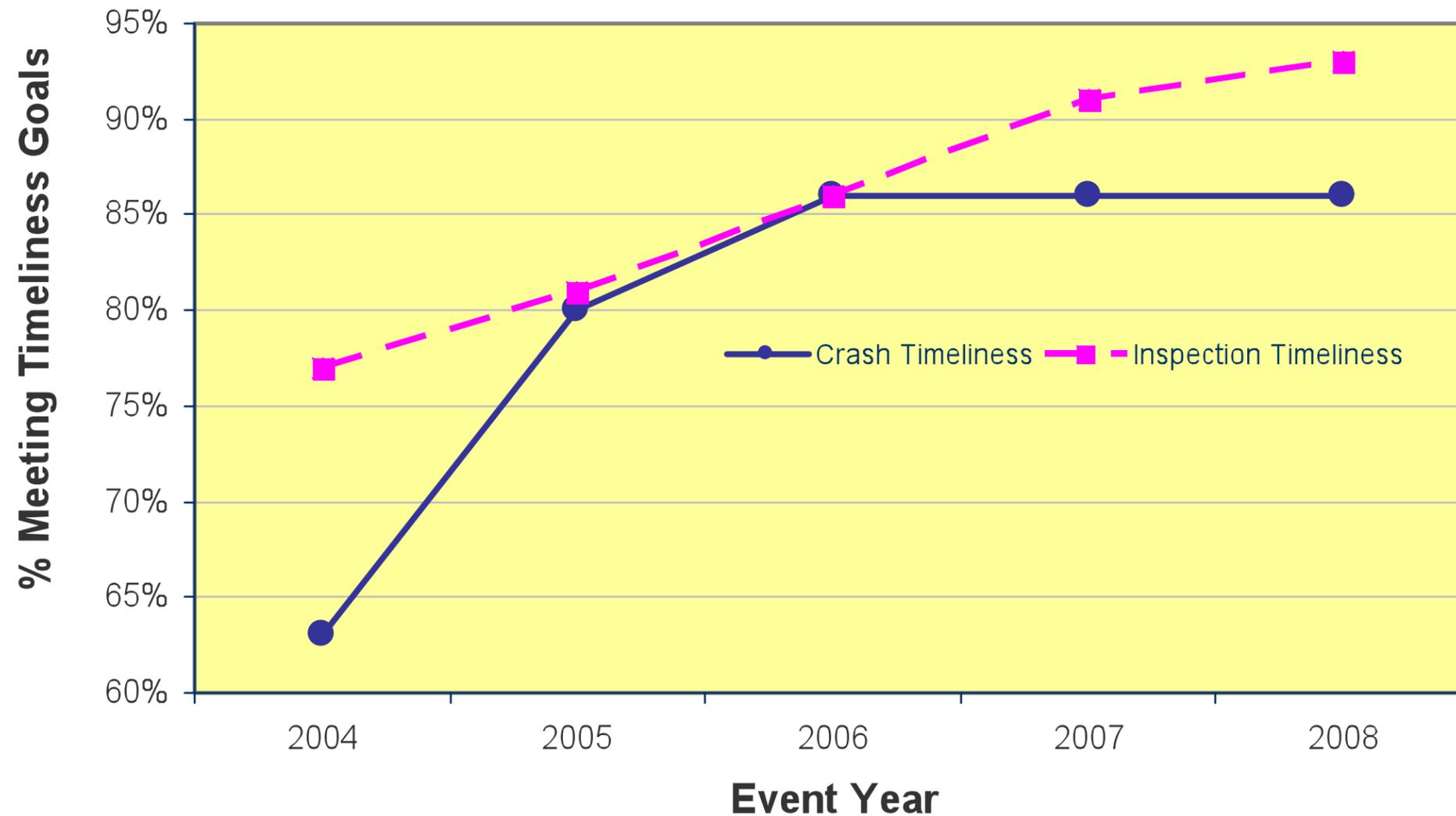


Federal Motor Carrier Safety Administration

# DQ Evaluation

## Impact...Comprehensive Data Quality Program

### Crash and Inspection Reporting Timeliness Measure

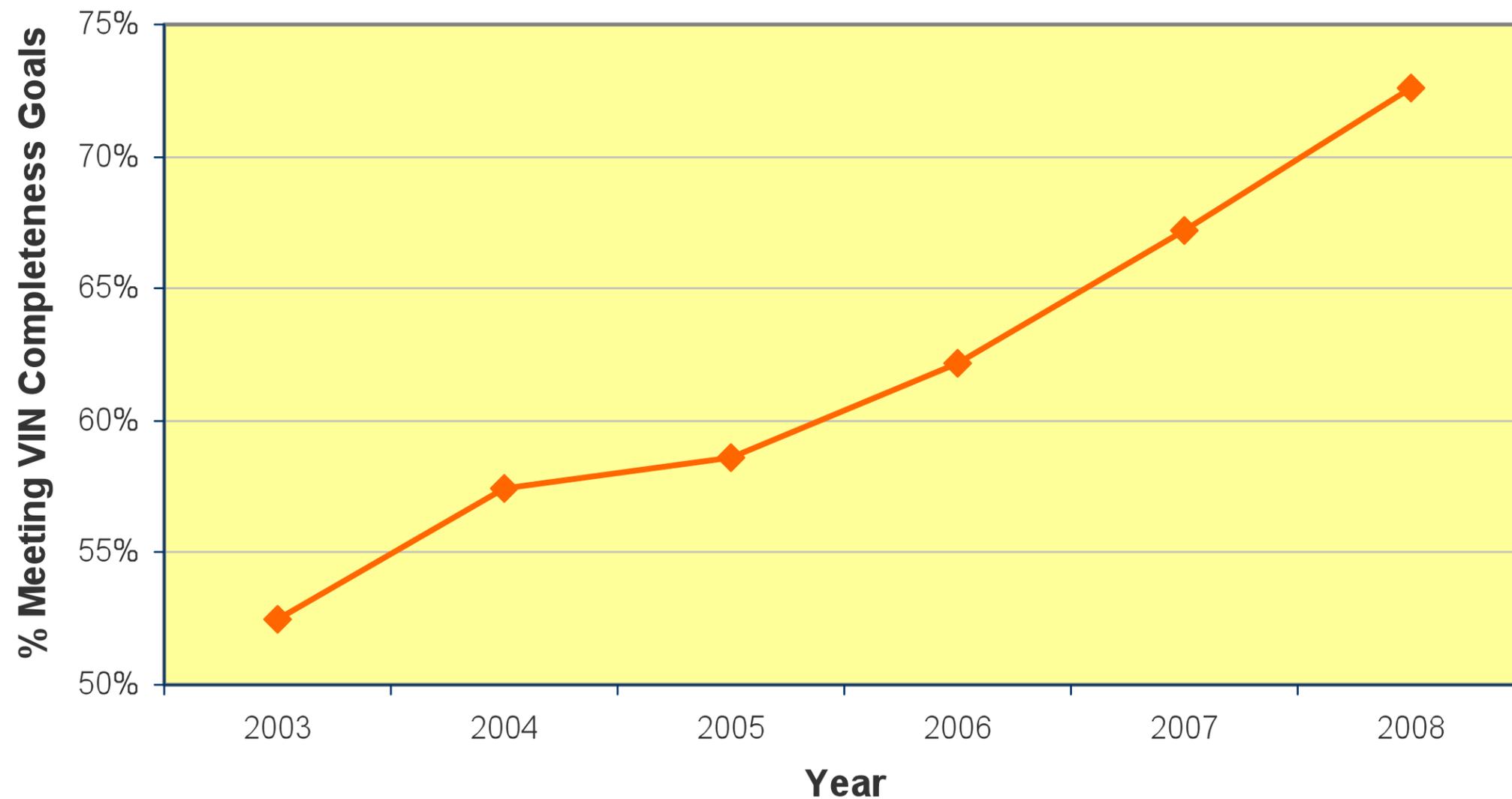


Federal Motor Carrier Safety Administration

# DQ Evaluation

## Impact...Comprehensive Data Quality Program

### Completeness of Vehicle Identification Number (VIN)



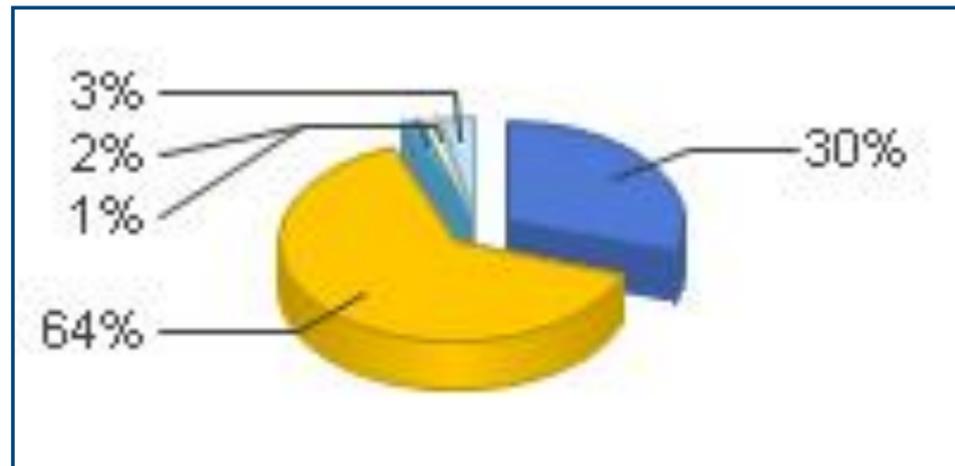
Federal Motor Carrier Safety Administration



# Data Corrections DataQs



## DataQs Data Challenges Feb 2004 – Sep 2008



- Total Crash
- HHG Complaint - Duplicate (Two identical complaints)
- Carrier Information (MCS-150)
- Operating Authority (OP-1, OP-2)
- Insurance Information
- Interstate Carrier - Unregistered (No US DOT #)
- Inspection - Report Request
- HHG Complaint - Fraudulent (Did not do business)
- Total Inspection
- Compliance Review
- Safety Audit
- Enforcement Action
- Other

~41,000 data challenges filed (66% resulting in data updates)  
~1,200 new challenges per month  
~15,000 general public/motor carrier registrations  
~350 new general public/motor carrier registrations per month

# Data Corrections

## FARS/MCMIS Fatal Crash Record Matching Tool

A tool designed to help reconcile differences between the number of fatal crash records in the FARS and MCMIS databases.

- "match" fatal large truck and bus crash records
- records must contain the same information in several key fields (e.g., county, date, time, VIN, DOT #, etc.).



**National Results**   
Provides FARS to MCMIS (fatal crash records) matched counts across all States

**Individual State Results**   
Provides FARS to MCMIS (fatal crash records) matched, potentially matched, and not matched records for each State

## Future Program Improvements

- DQ Evaluation and Monitoring
  - Enhance SSDQ Evaluation
  - Release New Evaluation Reports
  - Continue State Crash Data Analysis
- DQ Improvement
  - Conduct more State Reviews
  - Expand Technical Assistance
  - Continue PAR Analysis and Training

# For More Information on the State Safety Data Quality Program

[WWW.FMCSA.DOT.GOV](http://WWW.FMCSA.DOT.GOV)

Safety Data Analysis (A&I Online)

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