# Atlantic Alliance Meeting

# April 20, 2007

# State of the Industry in the United States

## Industry Perspective

**William C. Ford, P.E.**

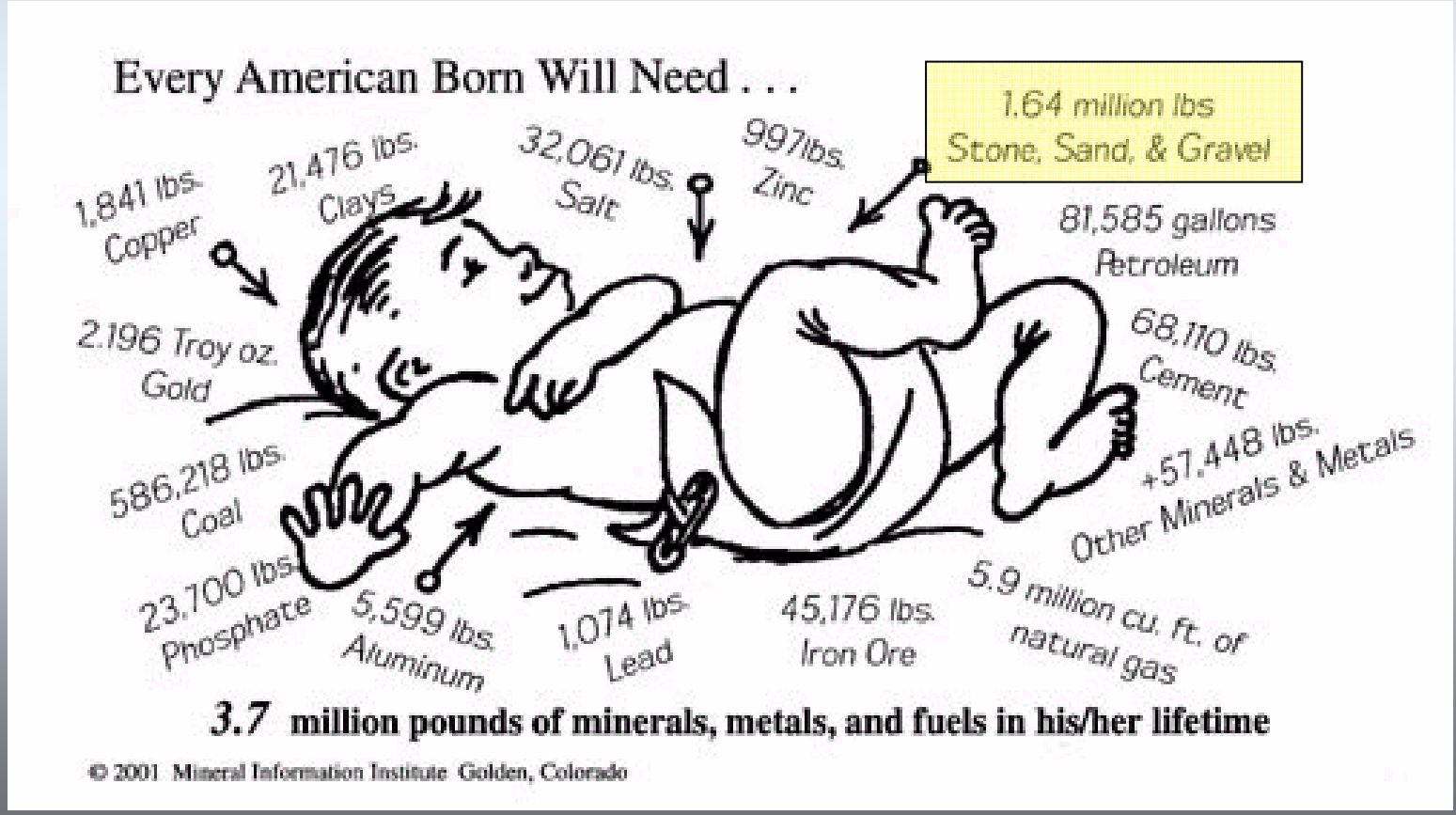
*Senior Vice President*

*National Stone, Sand & Gravel Association*

*Alexandria, VA USA*

Session 1

# The Impact of the Aggregates Industry on the American Public



# The Impact of Aggregates on the American Public

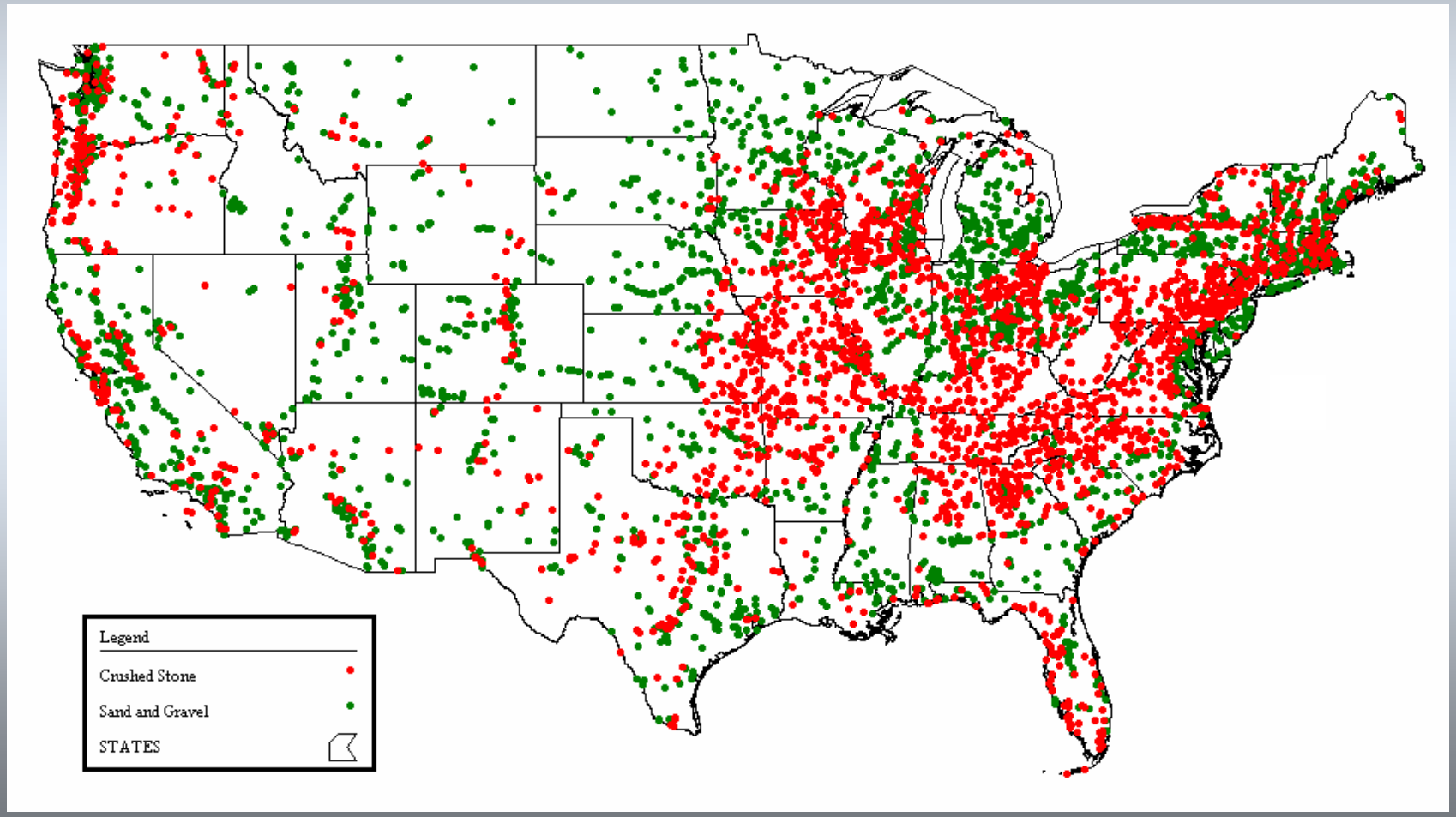
- Aggregates account for over 2/3 of the non-fuel minerals mined in the United States. (1/2 if coal is included.).
- The aggregates industry employs approximately 117,000 people.
- 3,100 quarries, 70 underground mines & 6,500 sand & gravel operations

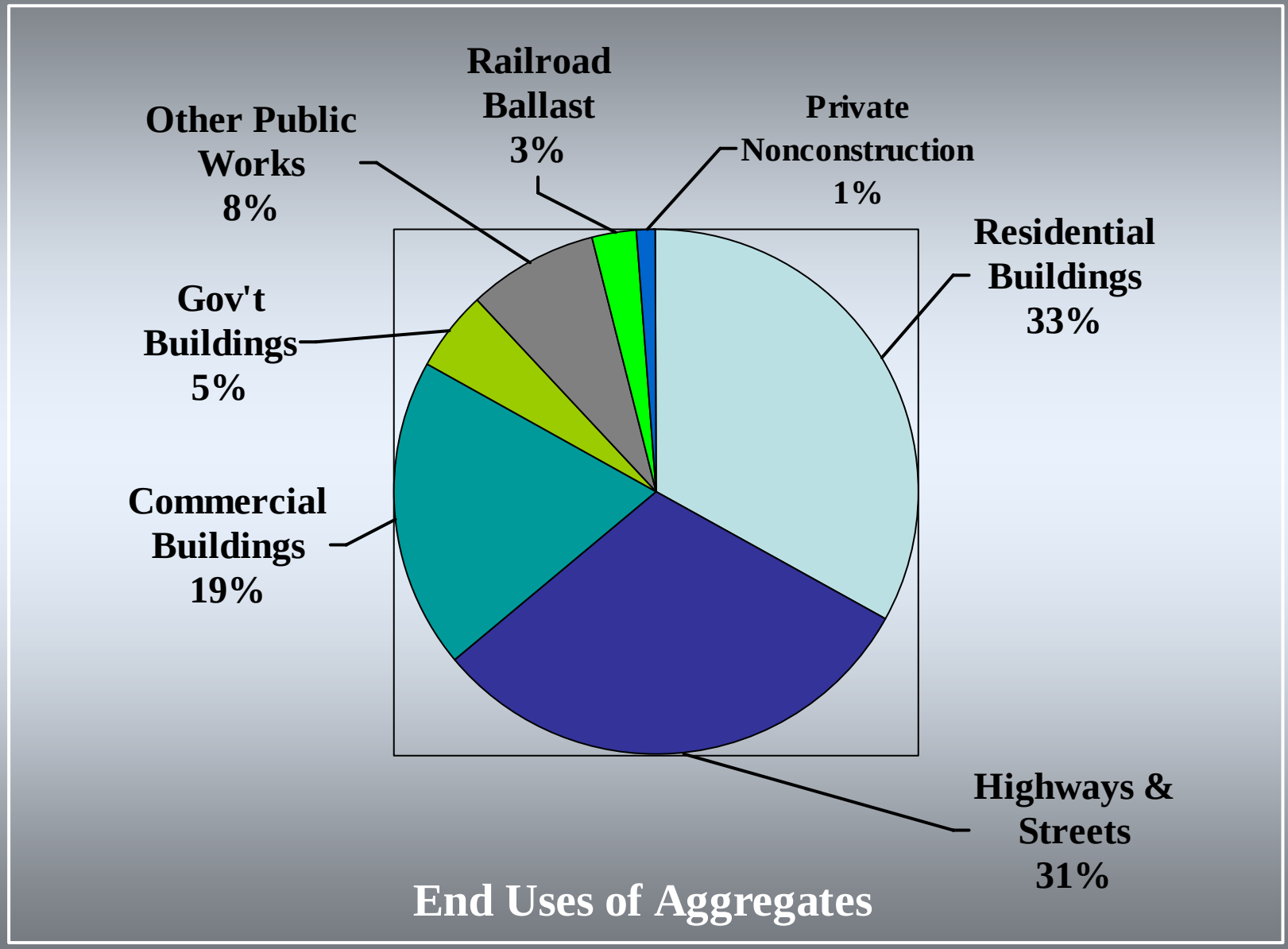
# We need aggregates close to where we live

- Aggregate operations must be located where deposits exist.
- Operations must be located near population areas whenever possible
  - 70% of local U.S. jurisdictions contain an aggregate operation
  - Hauling distances of 20-30 miles can more than double the delivered cost of aggregates.

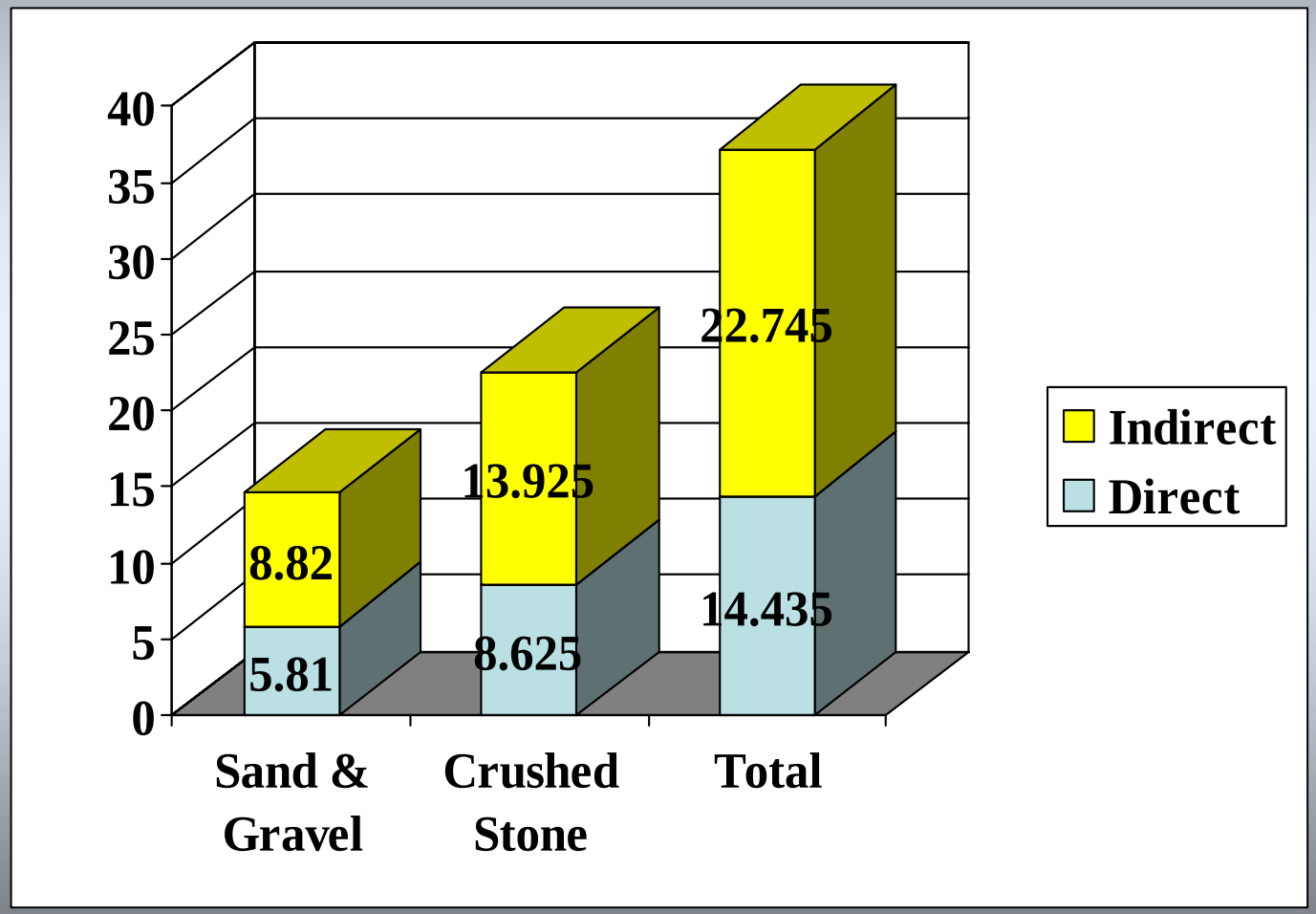
# Aggregate Operations in the United States

## In all 50 states and 70% gov't jurisdictions




Railroad Ballast 3%
Private Nonconstruction 1%
Other Public Works 8%
Residential Buildings 33%
Gov't Buildings 5%
Commercial Buildings 19%
Highways & Streets 31%
End Uses of Aggregates

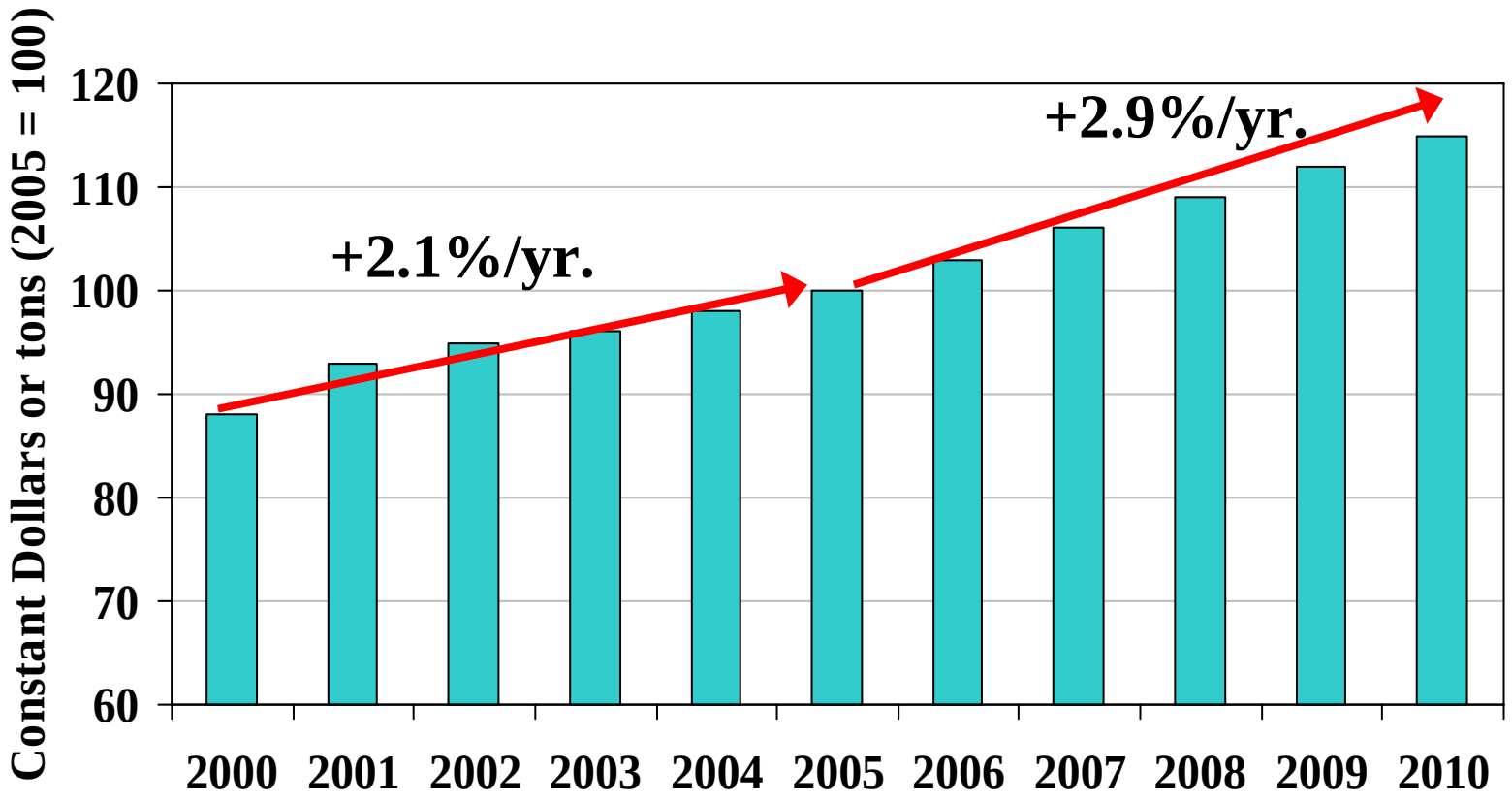
# Economic Impact of the Aggregates Industry, 2003 (in $billions)



# Economic Impact

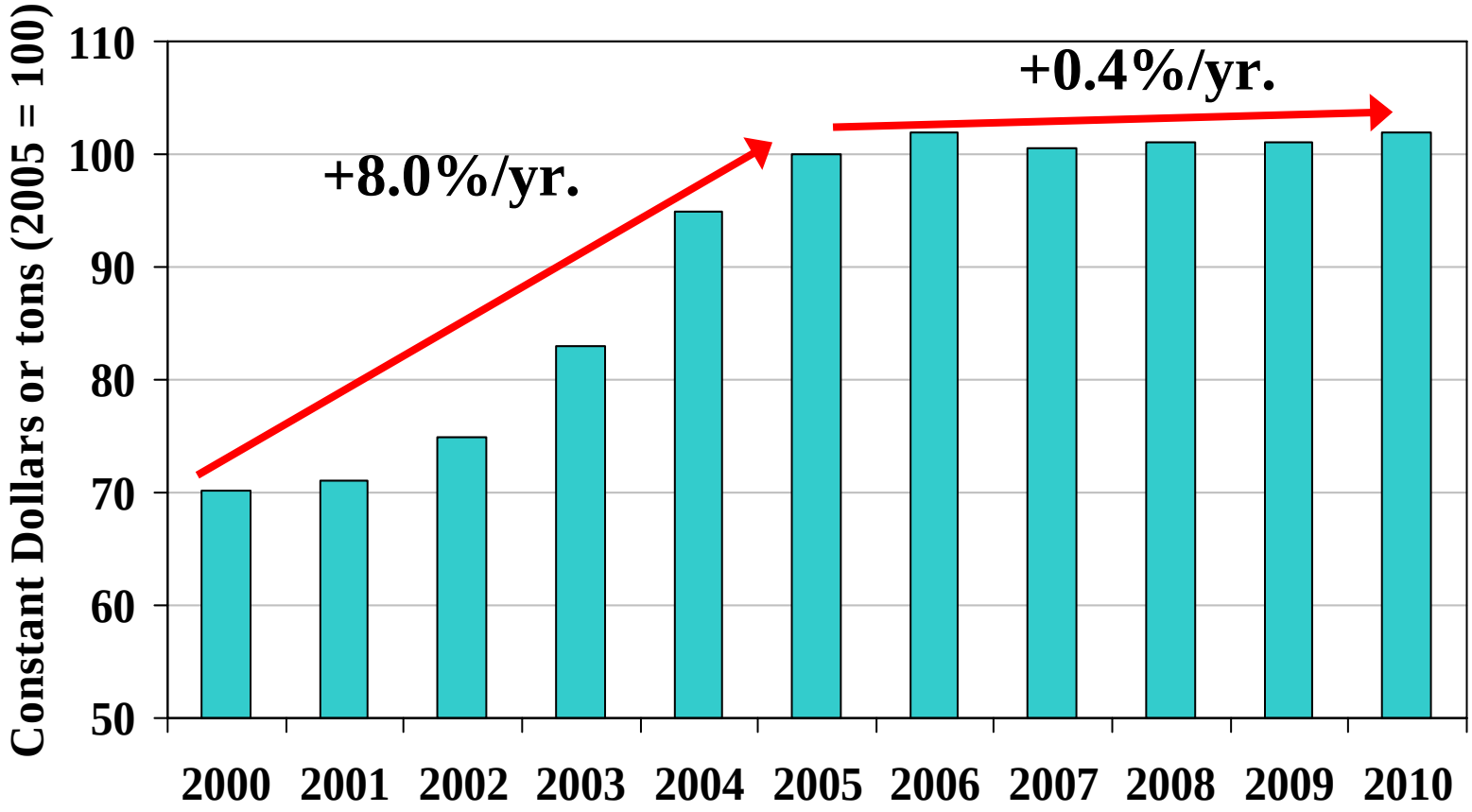
- For every new dollar of output in the aggregates industry, an additional $1.58 is generated in the U.S. economy.
- For each $1,000,000 in output produced by the industry 19.5 jobs are created.

## Demand For Aggregates: Highway & Other Public Uses of Aggregates



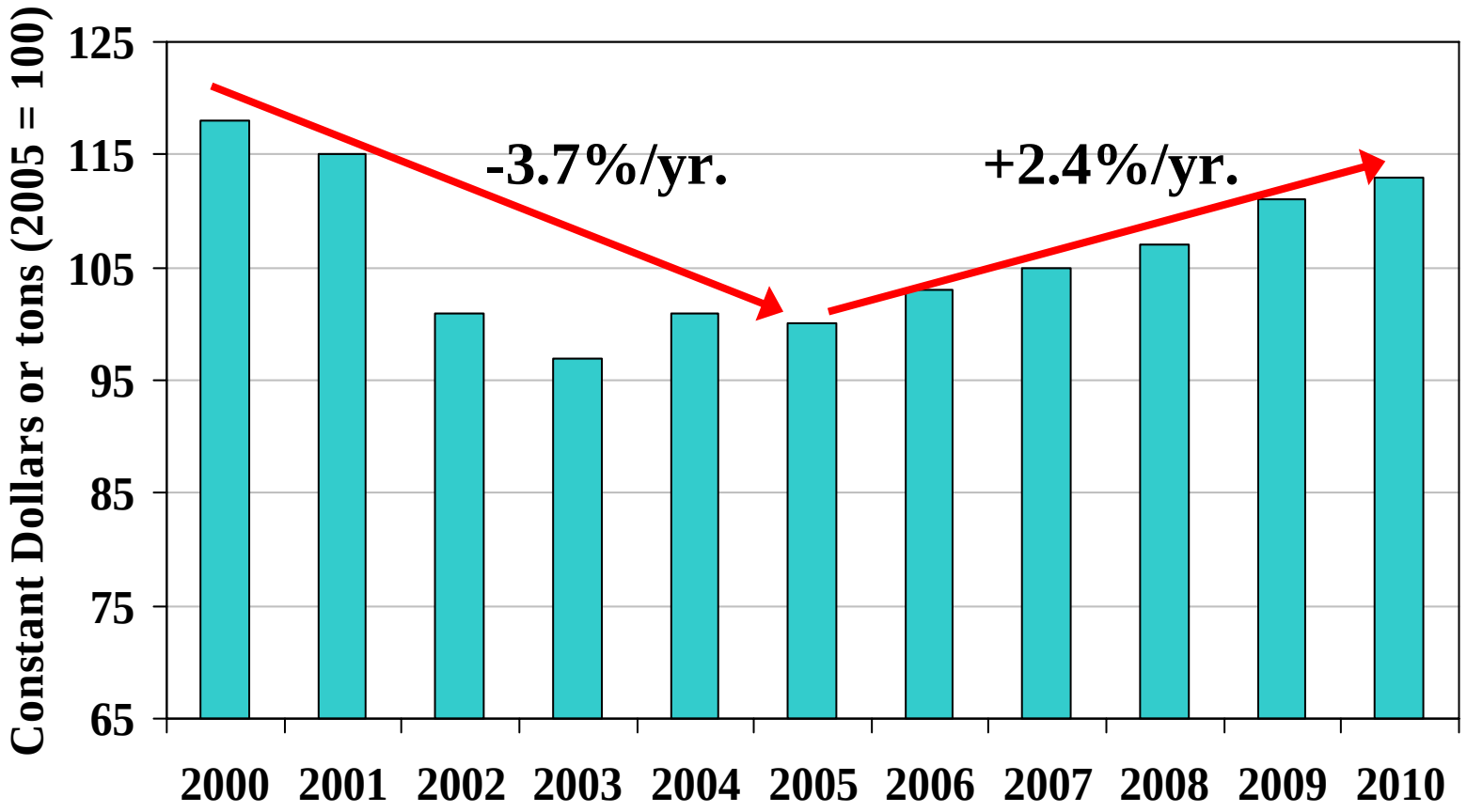

*Source: Nelson, Tom. “Aggregates Industry Forecast”, Aggregates Manager, April 2006. Pp 24-26.

# Demand for Aggregates: Housing




*Source: Nelson, Tom. “Aggregates Industry Forecast”, Aggregates Manager, April 2006. Pp 24-26.

## Demand For Aggregates: Non-Residential Building

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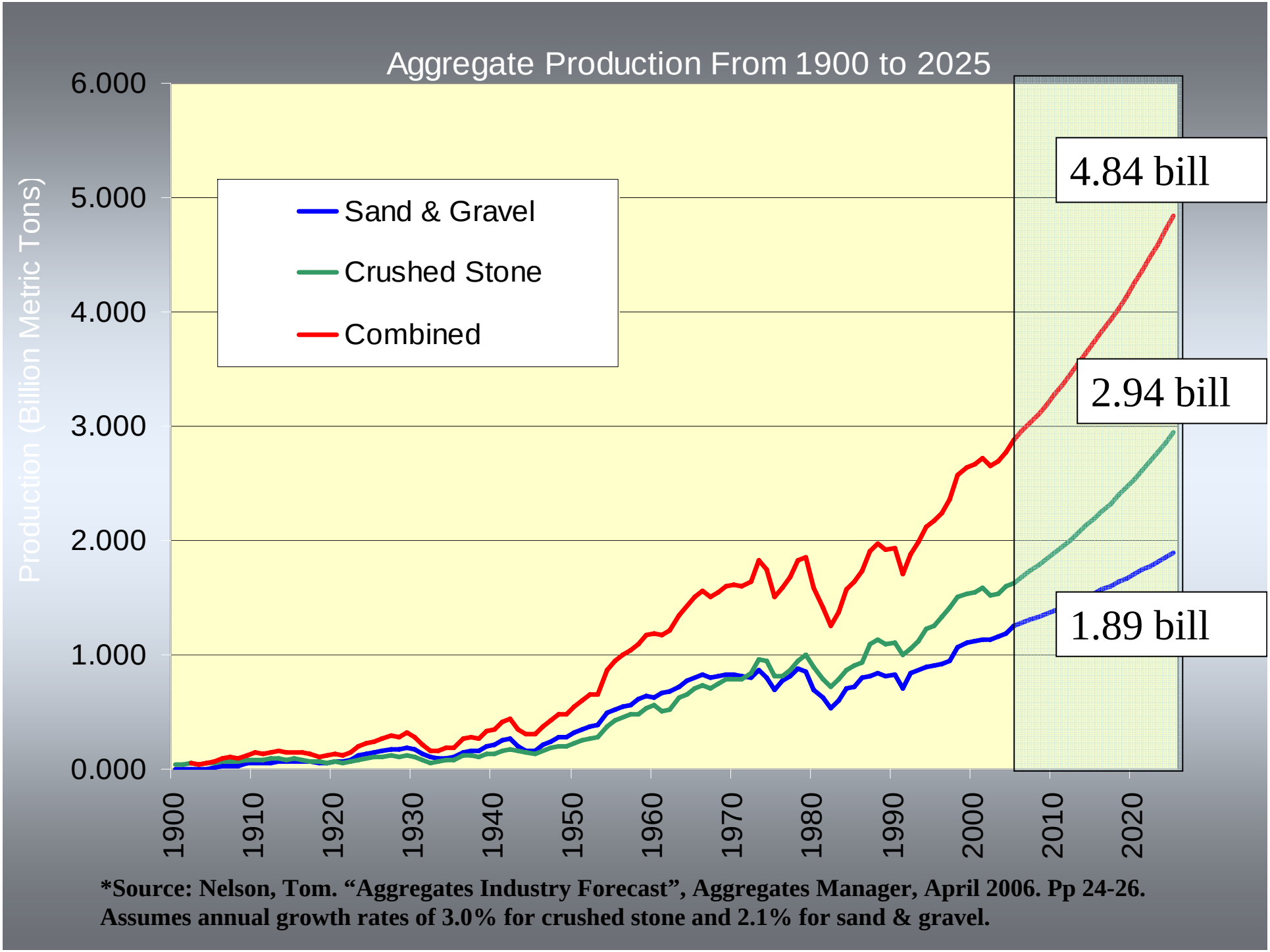
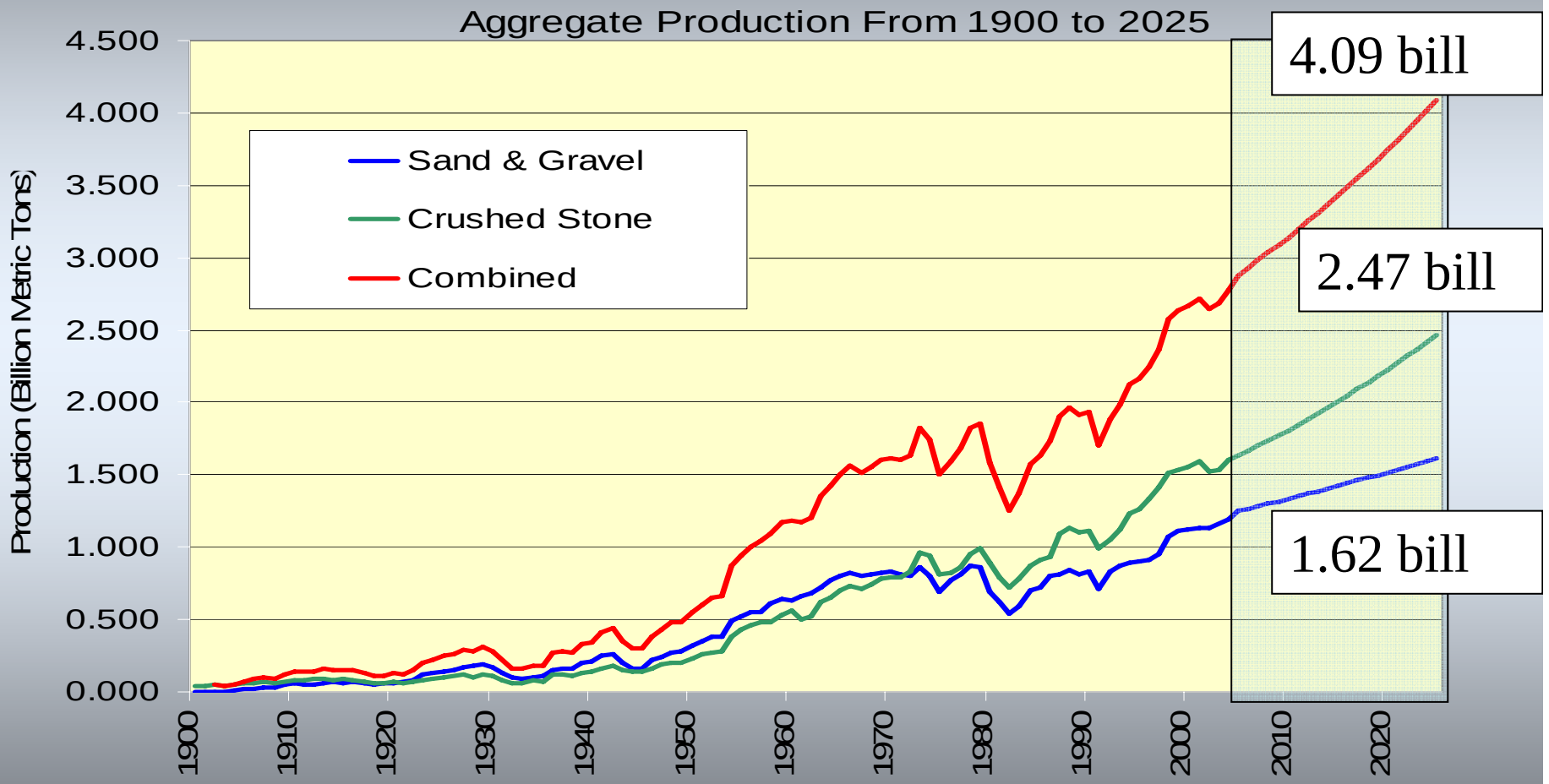



***Source: Nelson, Tom. "Aggregates Industry Forecast", Aggregates Manager, April 2006. Pp 24-26. Assumes annual growth rates of 3.0% for crushed stone and 2.1% for sand & gravel.**




*Based on USGS estimates. Assumes 2.1 percent annual increase for crushed stone production and 1.3 percent increase in sand & gravel production.

**Where will this aggregate come from and who will produce it?**

**Rinker Materials Florida**

**FEC Quarry**

**Miami, Florida**

**Largest Quarry in the US**

**L.C. Curtis & Son, Inc.**

**Watkinsville, GA**

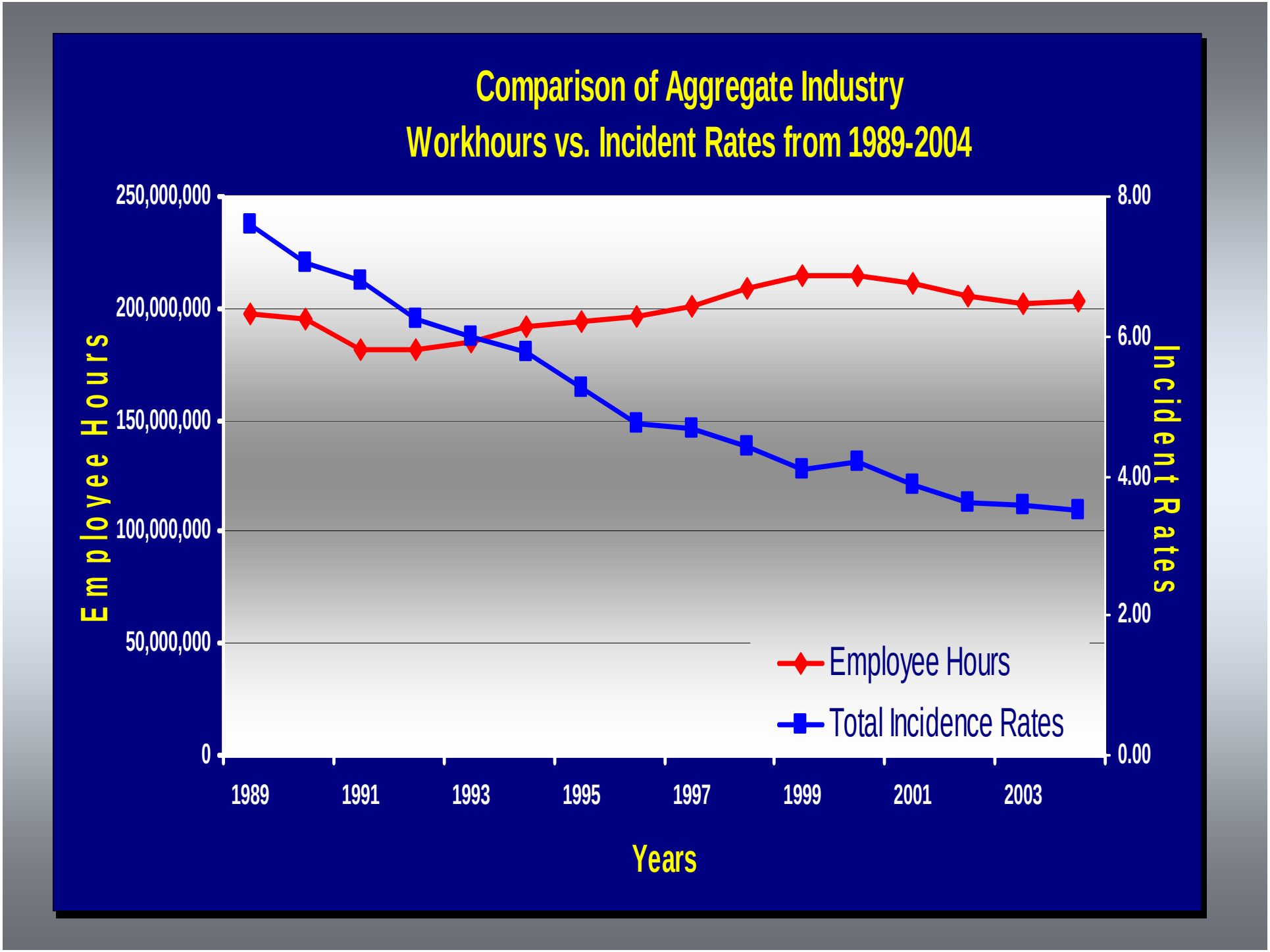
# U.S. Production of Aggregates by Size of Company's Tonnage Production

| Rank | Number of Companies | % of all Companies | Production/Company (Millions of metric tons) | Total Production (Millions of metric tons) | % of U.S. Production |
|---|---|---|---|---|---|
| 1-13 | 13 | 0.3 | ➢25 | 1,070 | 37.9 |
| 14-30 | 18 | 0.4 | 10 – 25 | 273 | 9.6 |
| 31-58 | 28 | 0.6 | 5 – 10 | 204 | 7.2 |
| 59-356 | 297 | 6.2 | 1 -5 | 581 | 20.5 |
| 357-1282 | 926 | 19.4 | 0.25 – 1 | 455 | 16.1 |
| 1283-2235 | 954 | 20.0 | 0.1 – 0.25 | 151 | 5.3 |
| 223-4777 | 2541 | 53.1 | < 0.1 | 96.3 | 3.4 |
| Total | 4777 | 100.0 | NA | 2,830 | 100.0 |

*Based on USGS data.

# Who will produce aggregates?

- Most companies are small companies (85%+), many family-owned businesses (still true)
- Most aggregate produced by largest producers (The top 30 produce close to 50% of the aggregates.)
- Consolidation is increasing; the number of small companies is decreasing.
- The number of people in the workforce has not increased over the past 15 years


Comparison of Aggregate Industry
Workhours vs. Incident Rates from 1989-2004
Employee Hours
250,000,000
200,000,000
150,000,000
100,000,000
50,000,000
0
Incident Rates
8.00
6.00
4.00
2.00
0.00
1989
1991
1993
1995
1997
1999
2001
2003
Years
Employee Hours
Total Incidence Rates

# Atlantic Alliance Meeting

# April 20, 2007

# State of the Industry in the United States

## Government Perspective

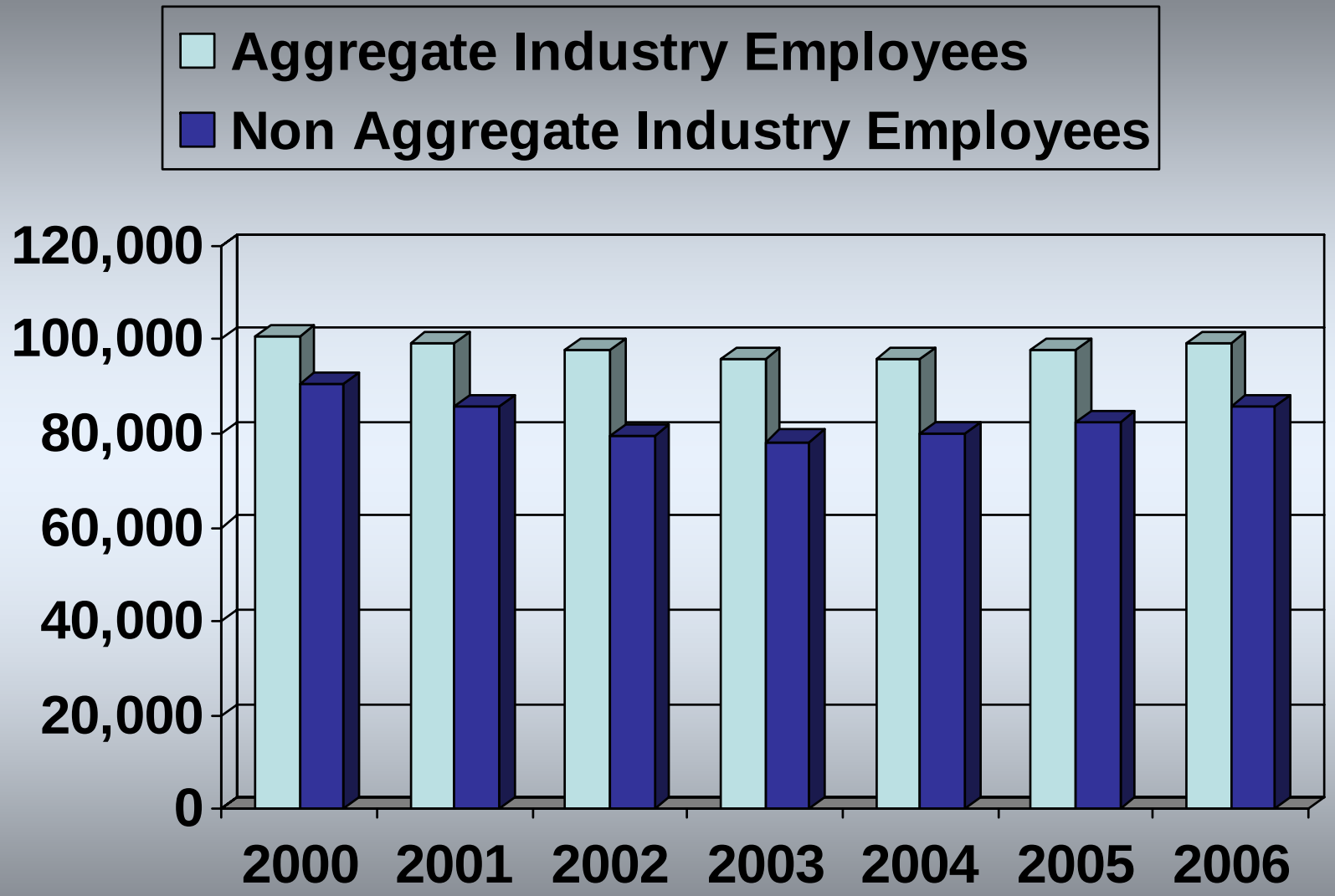
**Robert M. Friend**

*Deputy Assistant Secretary for*

*Mine Safety and Health*

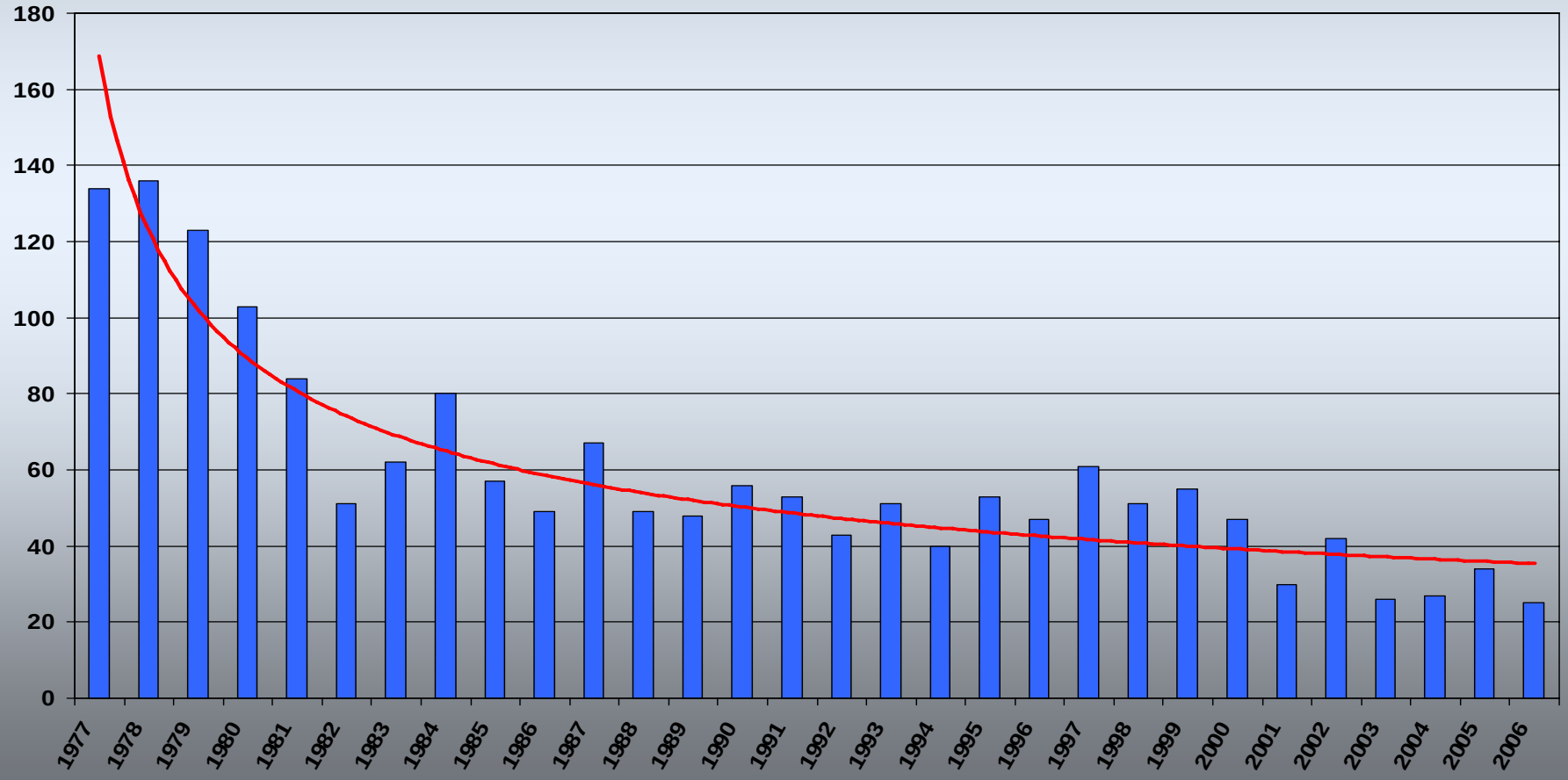
*Arlington, VA USA*

# State of the Industry

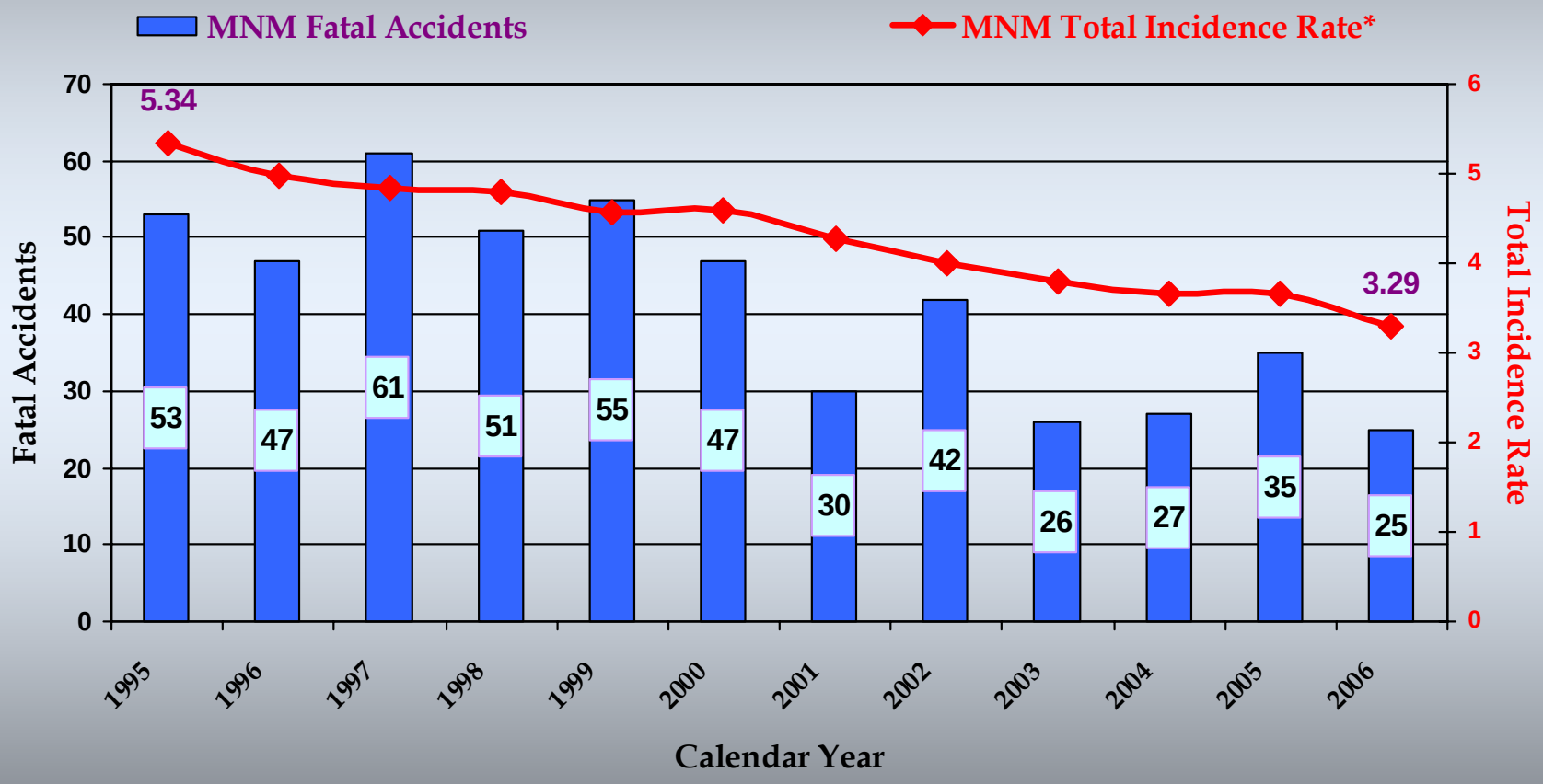

Aggregate Industry Employees
Non Aggregate Industry Employees
120,000
100,000
80,000
60,000
40,000
20,000
0
2000
2001
2002
2003
2004
2005
2006

# Metal and Nonmetal Fatalities

MNM fatalities have dropped sharply since the Mine Act of 1977--from 134 in 1977 to 25 in 2006.

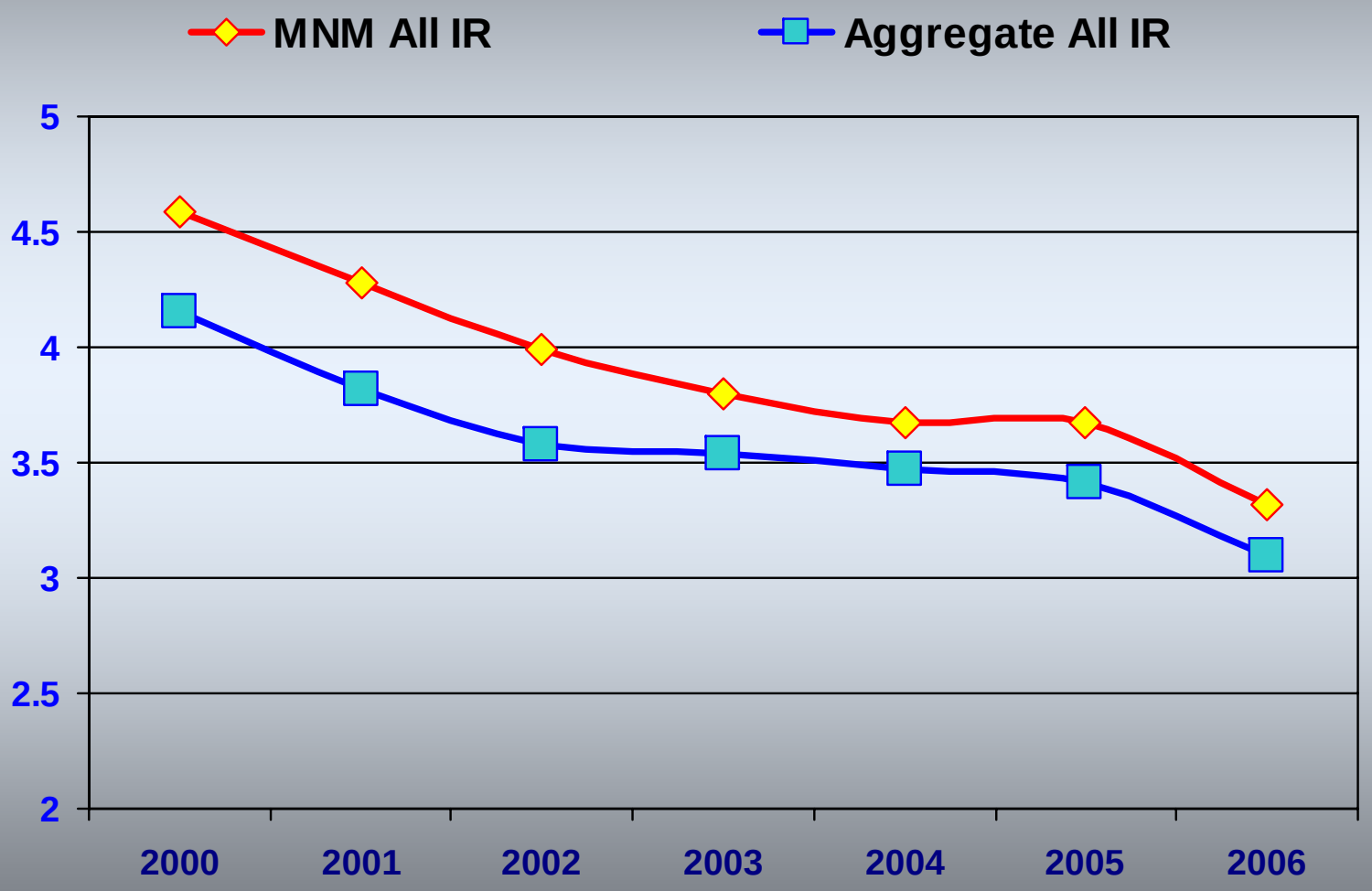


# MNM Fatalities and Incidence Rates
## CY 1995 through 2006

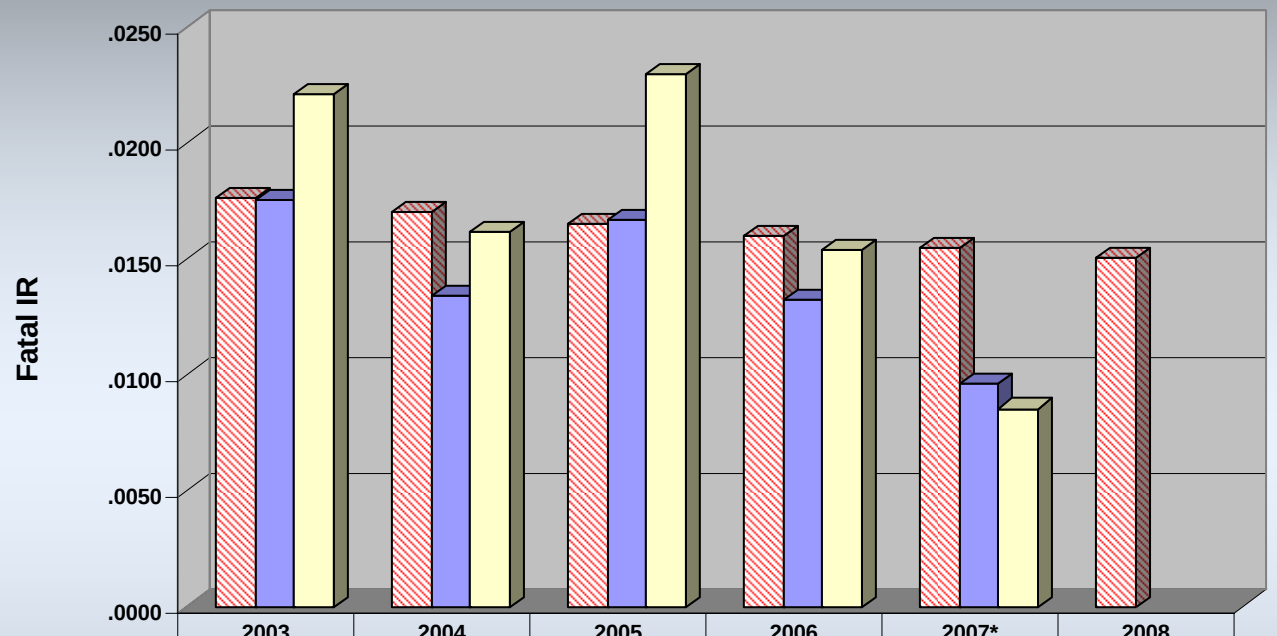



**IR= (# Incidents x 200,000) / Hours Worked**

# MNM All Incidence Rate vs. Aggregate All Incidence Rate



## M/NM and Aggregates Fatal IR vs. M/NM's Fatal IR GPRA Goals



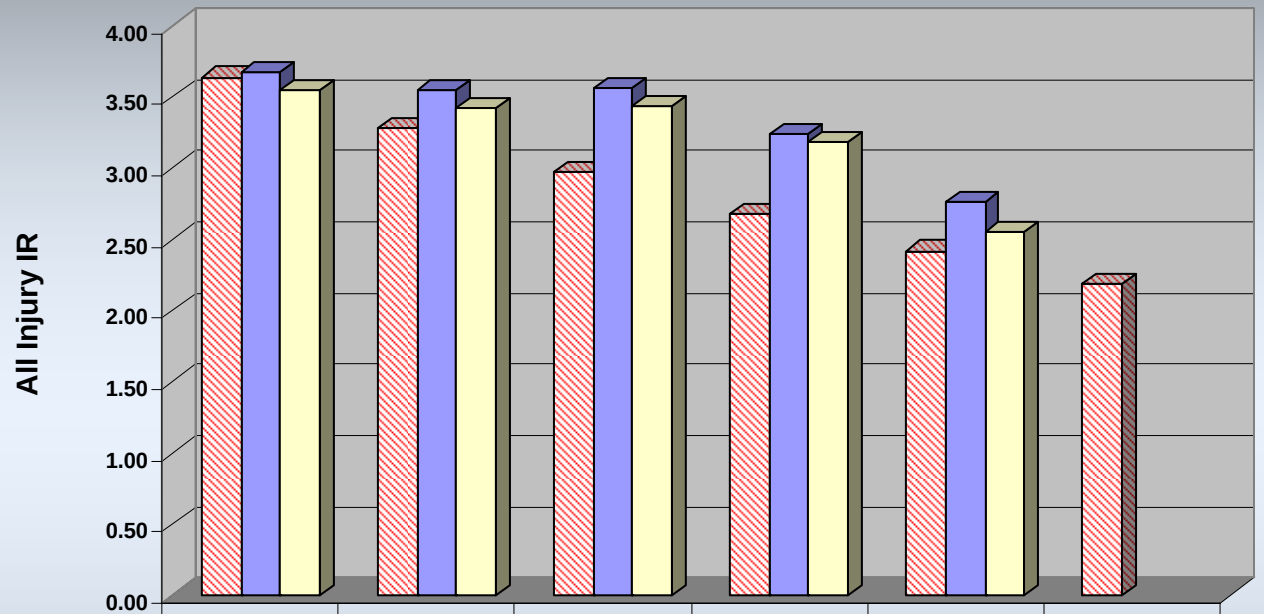

| | 2003 | 2004 | 2005 | 2006 | 2007* | 2008 |
|---|---|---|---|---|---|---|
| M/NM Fatal IR Target | .0176 | .0170 | .0165 | .0160 | .0155 | .0150 |
| M/NM Fatal IR | .0176 | .0134 | .0167 | .0132 | .0096 | |
| Aggregates Fatal IR | .0221 | .0161 | .0229 | .0154 | .0085 | |

*1st Qtr. Preliminary Data

**The M/NM Fatal IR Target and M/NM Fatal IR Actual include contractors while the Aggregates Fatal IR excludes contractors.

Fiscal Year

## M/NM and Aggregates All Injury IR vs. M/NM's All Injury IR GPRA Goals




| | 2003 | 2004 | 2005 | 2006 | 2007* | 2008 |
|---|---|---|---|---|---|---|
| M/NM All Injury IR Target | 3.64 | 3.29 | 2.97 | 2.68 | 2.42 | 2.19 |
| M/NM All Injury IR | 3.68 | 3.55 | 3.56 | 3.24 | 2.77 | |
| Aggregates All Injury IR | 3.55 | 3.42 | 3.44 | 3.19 | 2.56 | |

*1st Qtr. Preliminary Data

**The M/NM All Injury IR Target and M/NM All Injury IR Actual include contractors while the Aggregates All Injury IR excludes contractors.

**Fiscal Year**

# MNM Fatalities Since 2001

| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|---|
| Powered Haulage | 16 | 15 | 6 | 7 | 16 | 7 |
| Machinery | 2 | 15 | 8 | 6 | 10 | 4 |
| Electrical | 1 | 2 | 2 | 1 | 2 | 5 |
| Fall of Material / Highwall | 0 | 3 | 3 | 5 | 3 | 6 |
| Fall of Roof / Back | 4 | 0 | 0 | 0 | 0 | 0 |
| Slip / Fall of Person | 4 | 2 | 3 | 6 | 3 | 3 |
| Other | 3 | 5 | 4 | 2 | 1 | 0 |
| Totals | 30 | 42 | 26 | 27 | 35 | 25 |

# Powered Haulage

| Year | ‘01 | ‘02 | ‘03 | ‘04 | ‘05 | ’06 |
|---|---|---|---|---|---|---|
| Fatalities | **16** | **15** | **6** | **7** | **16** | **7** |

- Mobile equipment and conveyors
- Issues…
  - Seat belt use
  - Conveyor guarding, esp. return idlers and tail pulleys
  - Human factors
  - Training

# Machinery

| Year | ‘01 | ‘02 | ‘03 | ‘04 | ‘05 | ’06 |
|---|---|---|---|---|---|---|
| Fatalities | **2** | **15** | **8** | **6** | **10** | **4** |

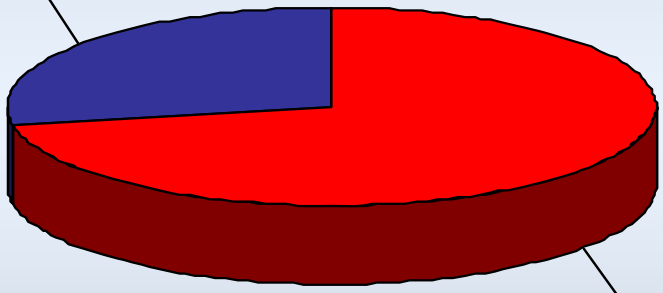
- Lower after 4 yrs of high fatalities

# MNM Fatalities - 2006

**Non Agg Fatal Acc, 28%**

(7)

2,363 Mines (19%)



**Aggregate Fatal Acc, 72%**

(18)

10,378 Mines (81%)

# Root Causes

- No Risk Assessment Conducted
- No/Inadequate Policy or Procedures
- Did not use Personal Protective Equipment
- Lack of Pre-operation Checks
- Equipment not Maintained
- Training Inadequate
- Failure to Conduct Examinations

# Most Frequently Cited Standards
## All Operations, FY 2006

| Standard | Description | No. C/O | % |
|---|---|---|---|
| 56/57.14107(a) | Guarding Machine Moving Parts | 6769 | 10.4 |
| 56/57.14100(b) | Mobile Equipment Safety Defects | 3857 | 6.0 |
| 56/57.14132(a) | Mobile Equipment Horns & Back Up Alarms | 3345 | 5.2 |
| 56/57.12004 | Electrical Conductors | 2441 | 3.8 |
| 56/57.20003(a) | Housekeeping | 2158 | 3.3 |
| 56/57.12032 | Electrical Inspection & Cover Plates | 1862 | 2.9 |
| 56/57.14112(b) | Construction & Maintenance of Guards | 1850 | 2.9 |
| 56/57.14101(a)(2) | Parking Brakes on Mobile Equipment | 1477 | 2.3 |
| 56/57.11001 | Safe Access | 1389 | 2.1 |
| 56/57.12008 | Insulation & Fittings for Power Wires & Cables | 1359 | 2.1 |
| 56/57.9300(a) | Berms or Guardrails | 1258 | 1.9 |
| 50.30(a) | Prepare & Submit Form 7000-2, Qrtrly Employment | 1115 | 1.7 |
| 56/57.12028 | Testing Grounding Systems | 1084 | 1.7 |
| 56/57.12030 | Correct Dangerous Conditions Before Energizing | 829 | 1.3 |
| 56/57.11002 | Handrails & Toeboards | 800 | 1.2 |
| 56/57.14112(a)(1) | Construction & Maintenance of Guards | 703 | 1.1 |
| **These standards accounted for 50% of all citations issued.** | | 32,296 | |