

Pasadena Citizens' Advisory Council



**22nd Annual
Worker Safety Report**
promoting continuous improvement
2000-2023

Presentation FINAL 3-29-24

The report is about **PCAC** plants

- ❑ Refineries that refine crude oil into gasoline and other fuels
- ❑ Chemical plants that make basic chemicals, organic chemicals, and plastics
- ❑ A plant that treats wastewater for industry and others.
- ❑ Terminals that store liquids until shipment
- ❑ Next Wave Energy Partners under construction in 2023

Safety Report is about *People* Even Though We Talk about Numbers

□ ***Workers***

- Employees *and* contractors
- In 18 PCAC plants

□ ***Workplace injuries and illnesses***

- As defined by OSHA

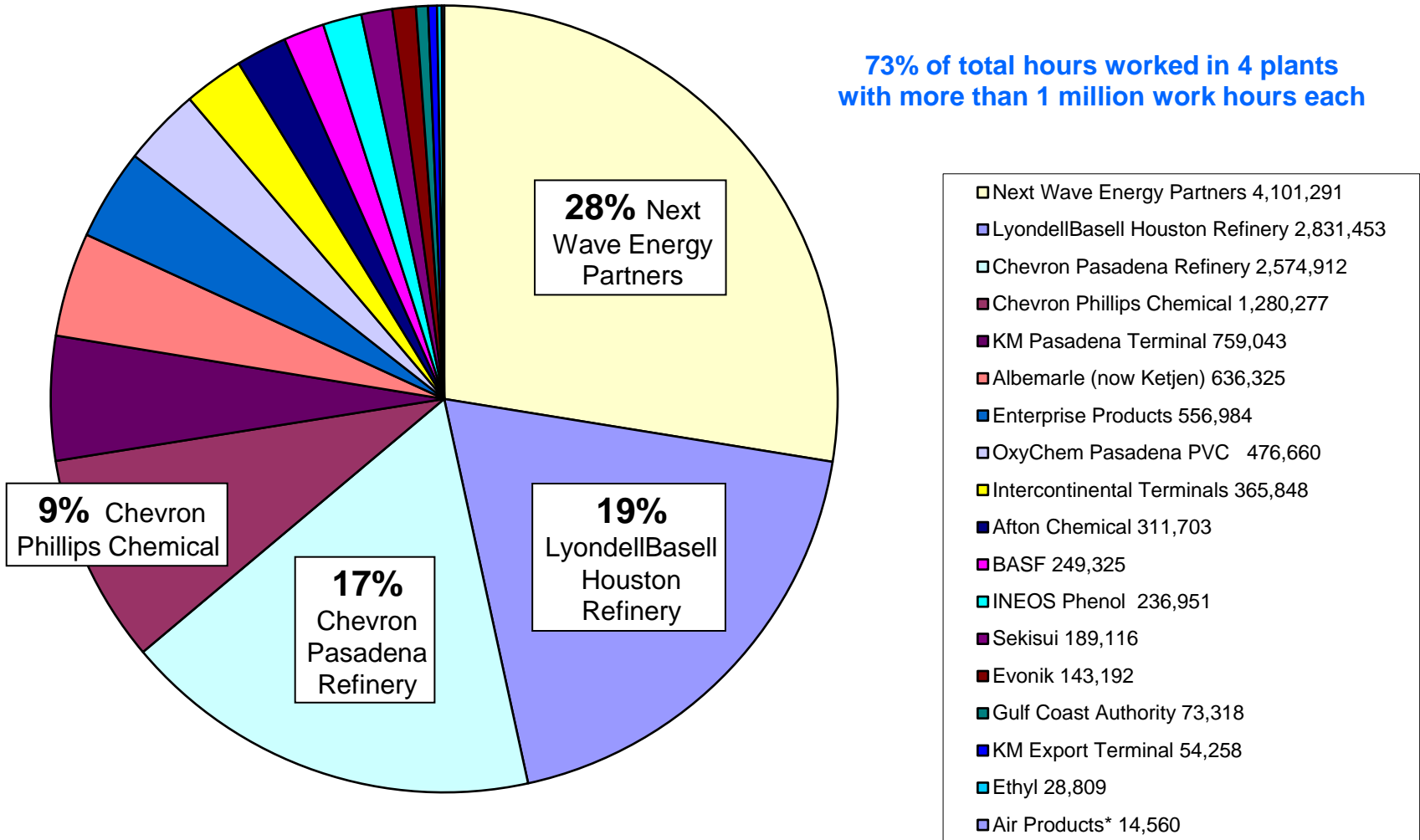
□ ***Recordable Rate***

- *How many workers per 100* had a work-related injury or illness that required a doctor's intervention -- in a year
- 0.00 = best

Plant Size by Work Hours in 2023

14,884,025 Total Work Hours

73% of total hours worked in 4 plants with more than 1 million work hours each



In 2023

- **14,884,025** work hours
 - ~ 2,647 employees
 - ~ 4,509 contractors
- **18** workplace injuries or illnesses
- **2,622,051 more** work hours than 2022
- **4 fewer** injuries than in 2022

Zeroes are Heroes!

7 Superheroes with no employee or contractor recordables in **2023**



1. Air Products* *No contractors
2. Enterprise Products
3. Ethyl
4. Evonik
5. Intercontinental Terminals
6. OxyChem
7. Sekisui

Zeroes are Heroes!

10 heroes with no employee recordables in 2023

Companies in bold had *contractor* recordables

1. Air Products (no contractors)
2. **BASF**
3. Enterprise Products
4. Ethyl
5. Evonik
6. **INEOS Phenol**
7. Intercontinental Terminals
8. **Next Wave Energy**
9. OxyChem
10. Sekisui



Zeroes are Heroes!

12 heroes with no contractor recordables in 2023

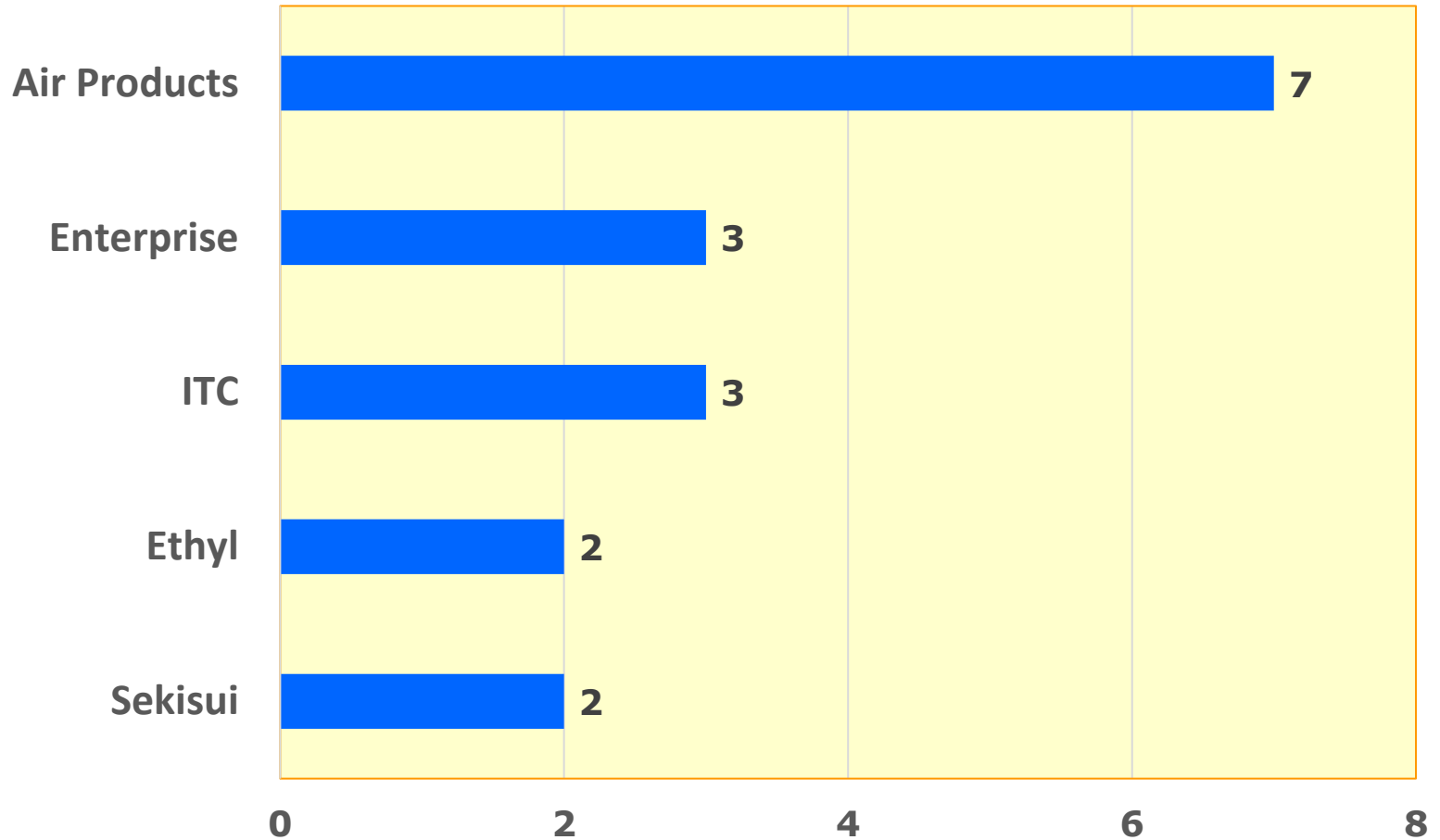
In 2023, Air Products had no contractors.
Companies in bold had *employee* recordables

1. **Afton Chemical**
2. **Albemarle** (now Ketjen)
3. Enterprise Products
4. Ethyl
5. Evonik
6. **Gulf Coast Authority**
7. Intercontinental Terminals
8. **Kinder Morgan Export Terminal**
9. **Kinder Morgan Pasadena Terminal**
10. **LyondellBasell Houston Refinery**
11. OxyChem
12. Sekisui

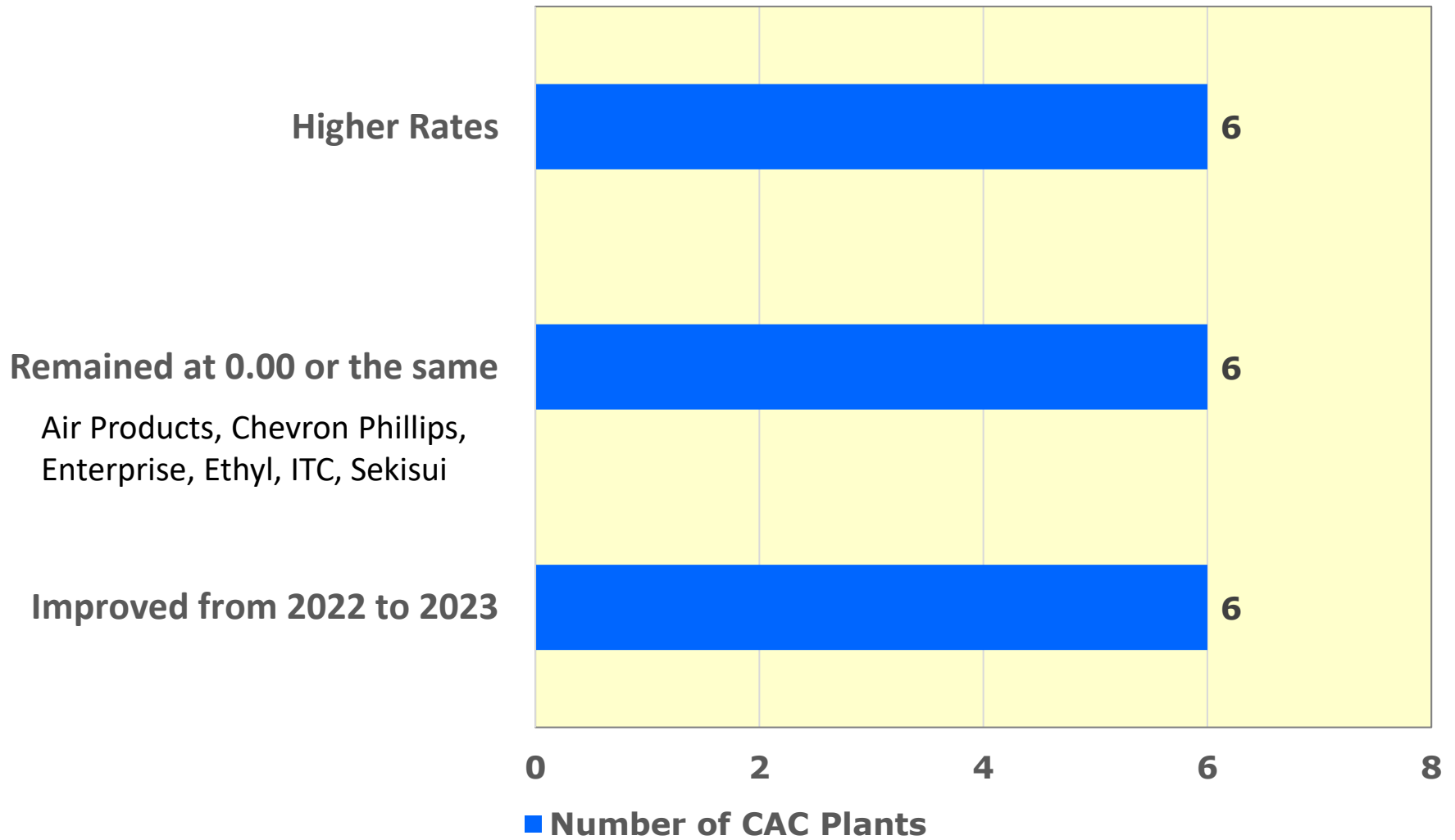


Zeroes are Heroes!

Years in a row that CAC plant had a 0.00 Recordable Rate



Comparison to Prior Year



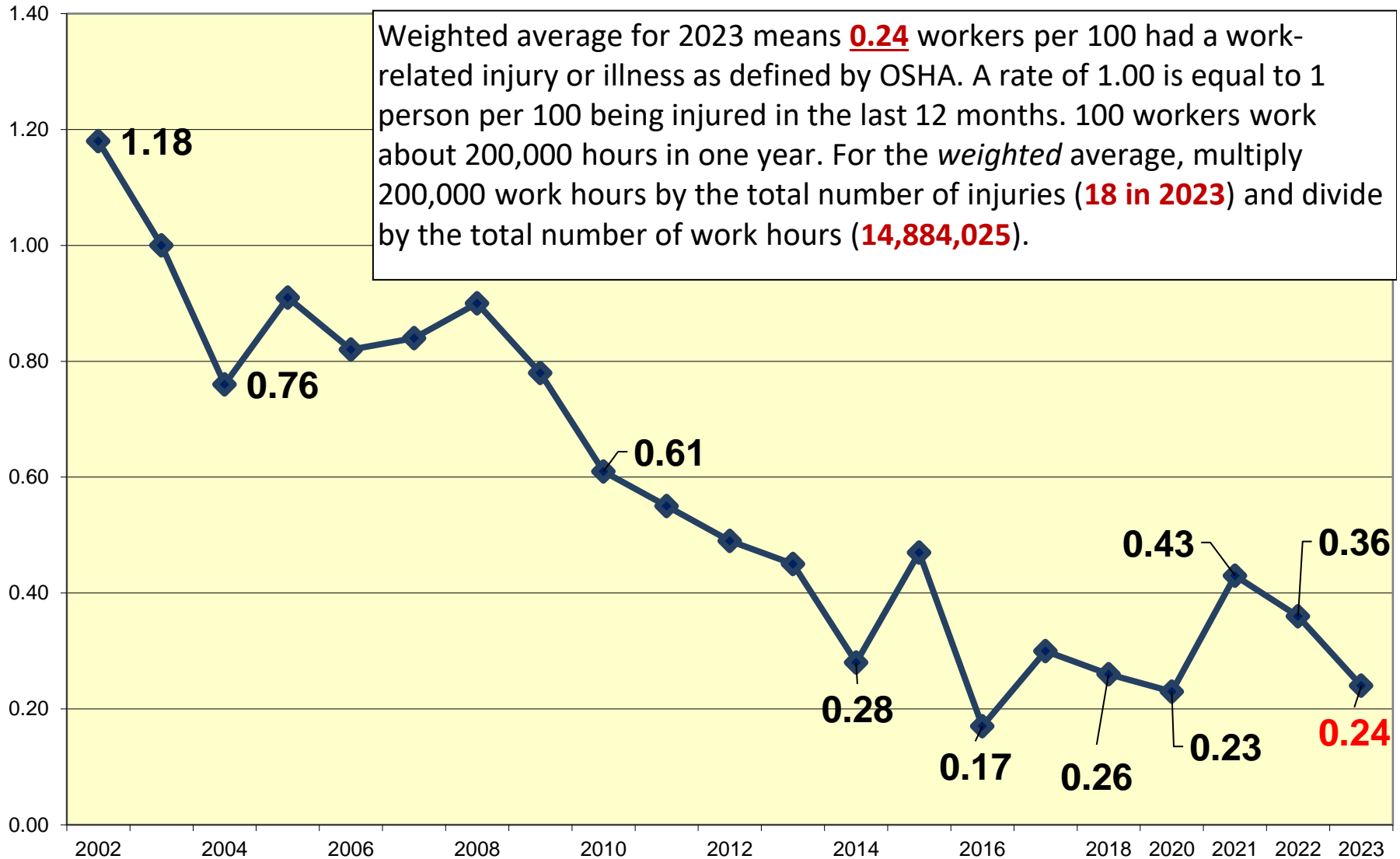
OSHA Voluntary Protection Program (VPP)

- 2 VPP plants:
 - OxyChem Pasadena PVC (1991)
 - Chevron Phillips Chemical (2015)
- Intercontinental Terminals working toward VPP and Challenge (since 2017)

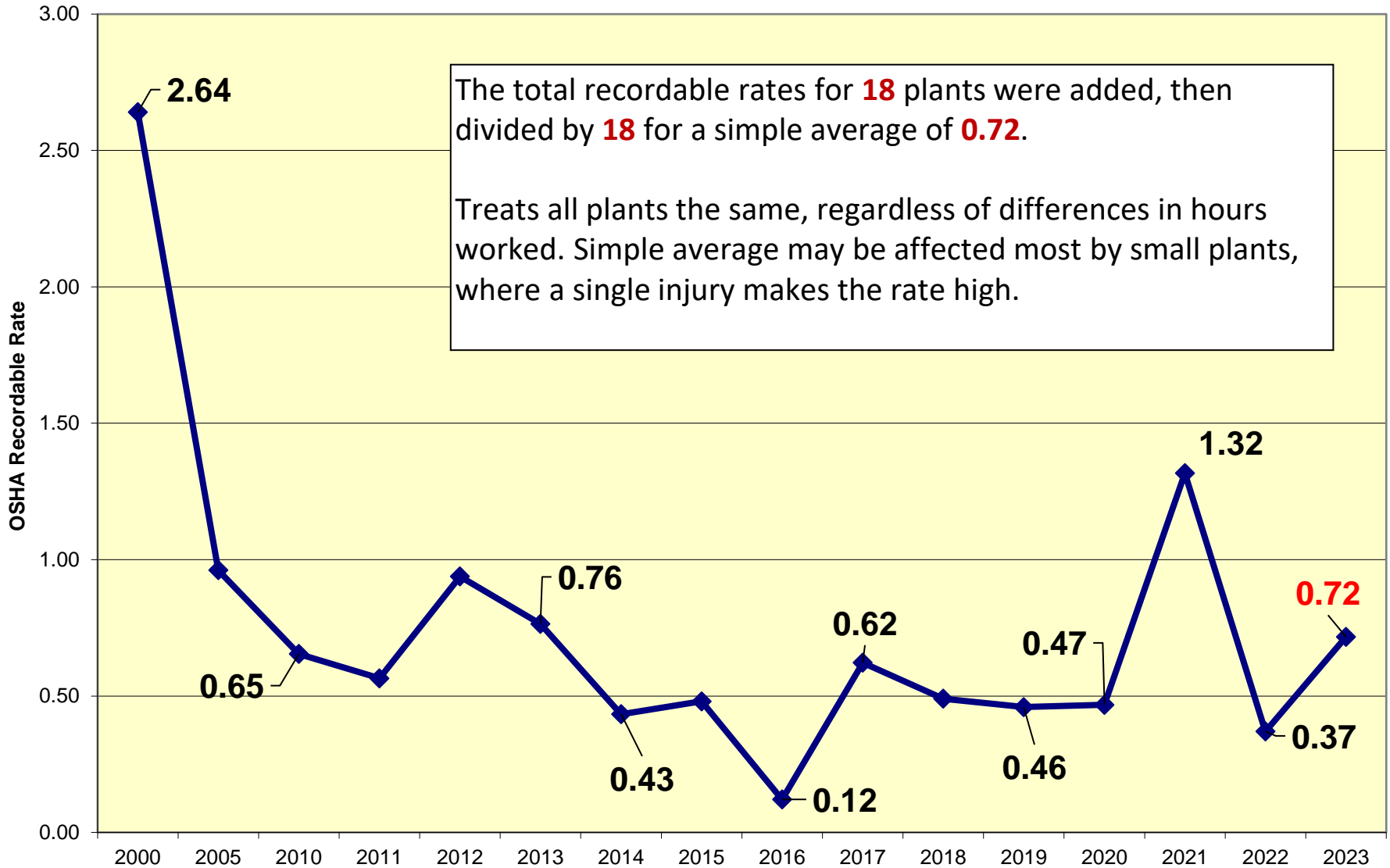
STATISTICS

averages, median, range

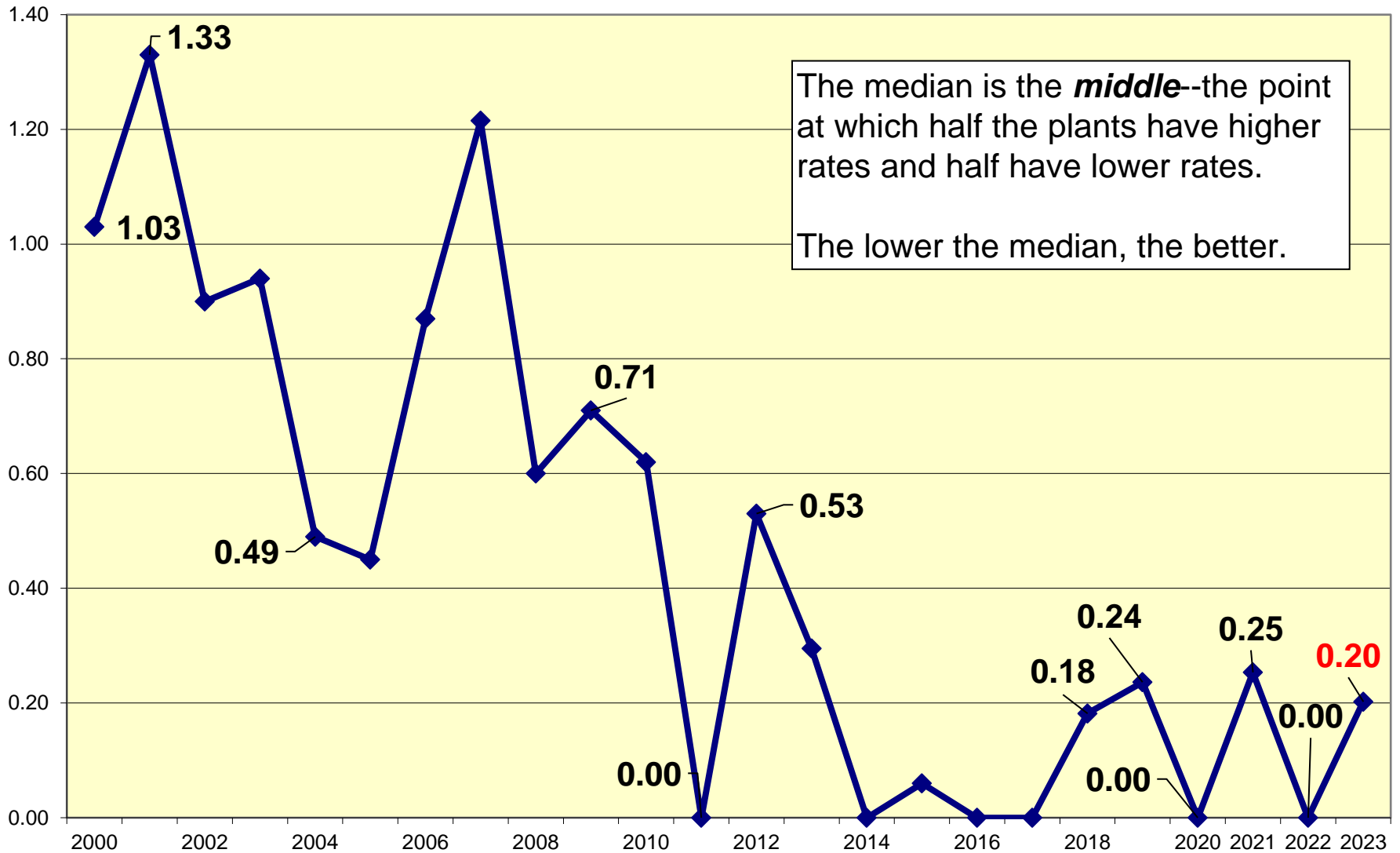
Trend in Weighted Averages 2002-2023



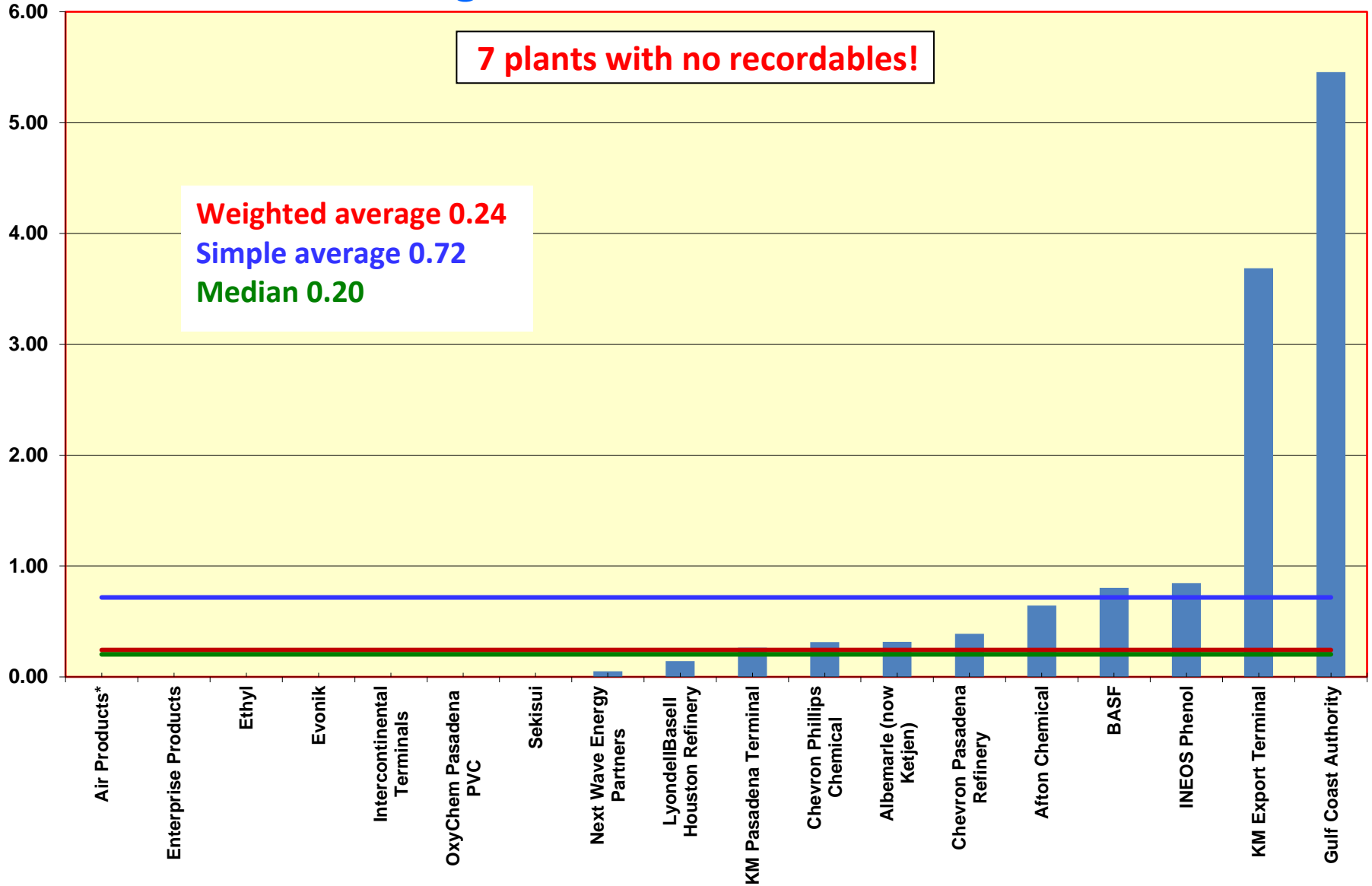
Trend in Simple Average 2002-2023



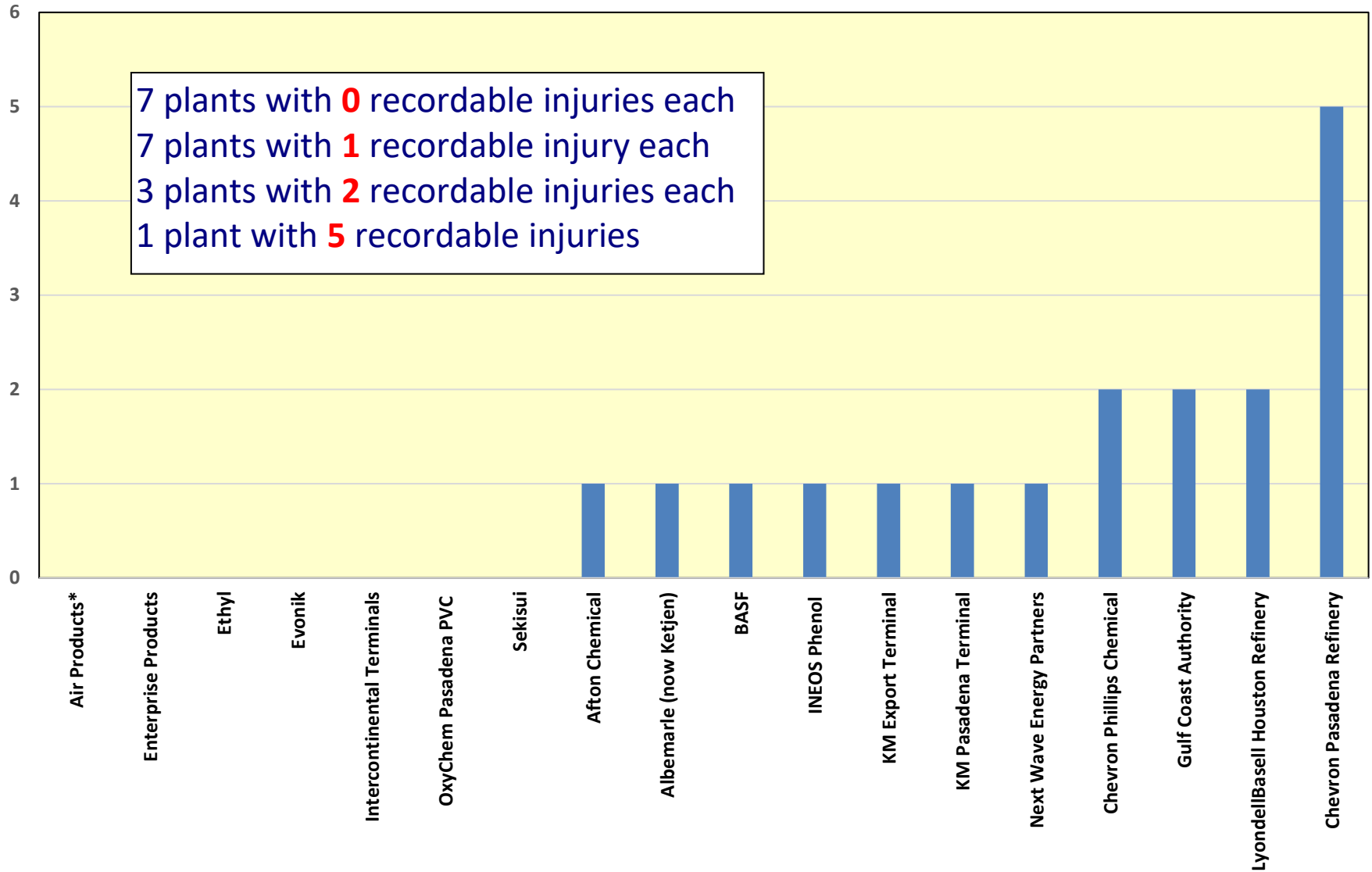
Trend in Median 2000-2023



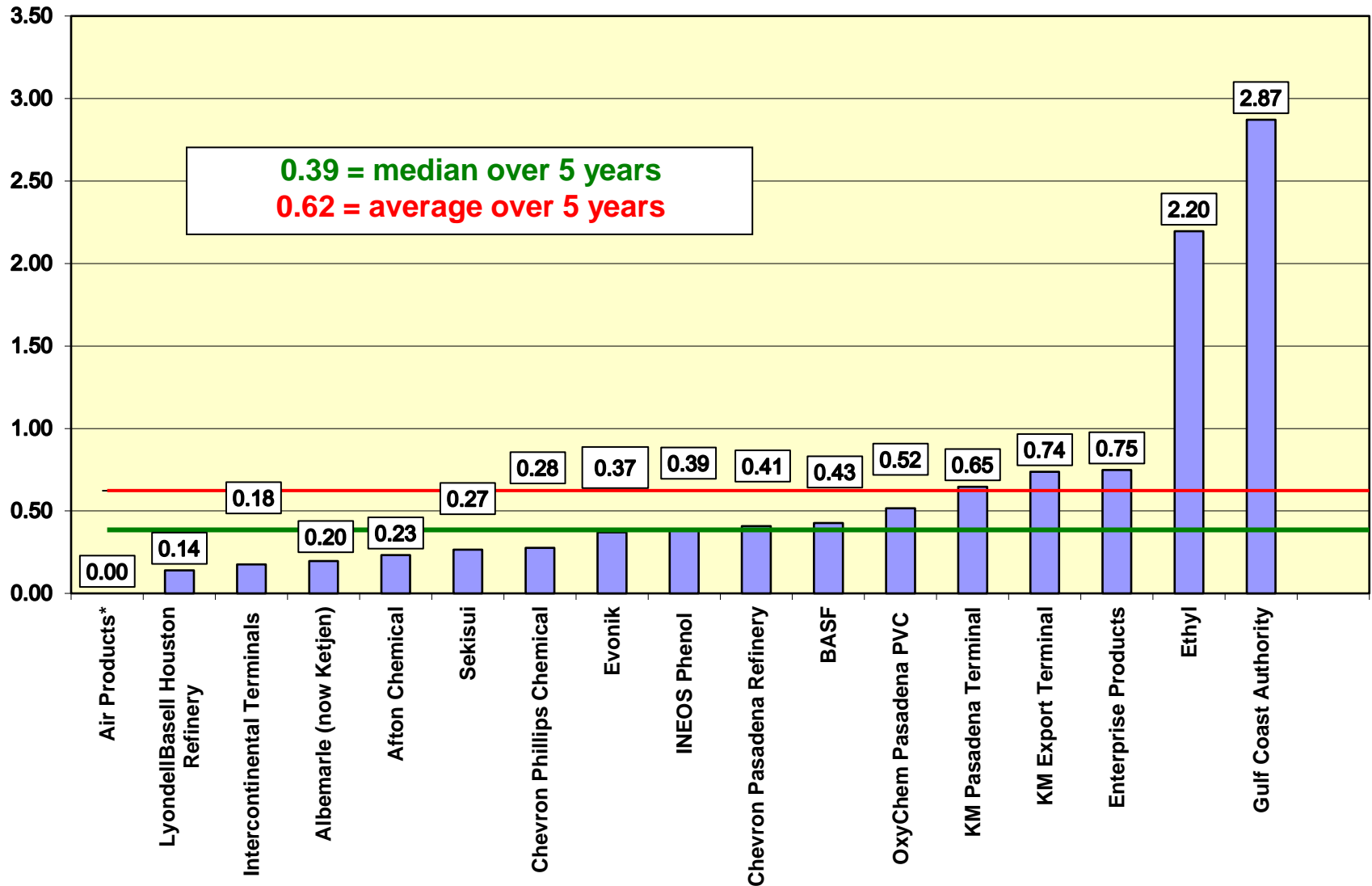
Plant Rankings 2023 Based on Recordable Rates



Plant Rankings by *Number* of Recordables - 2023



5-Year Plant Ranking by Average Recordable *Rates* 2019-2023 for plants in PCAC for 5 or more years



SEVERITY

fatalities, lost-time, restricted duty,
others

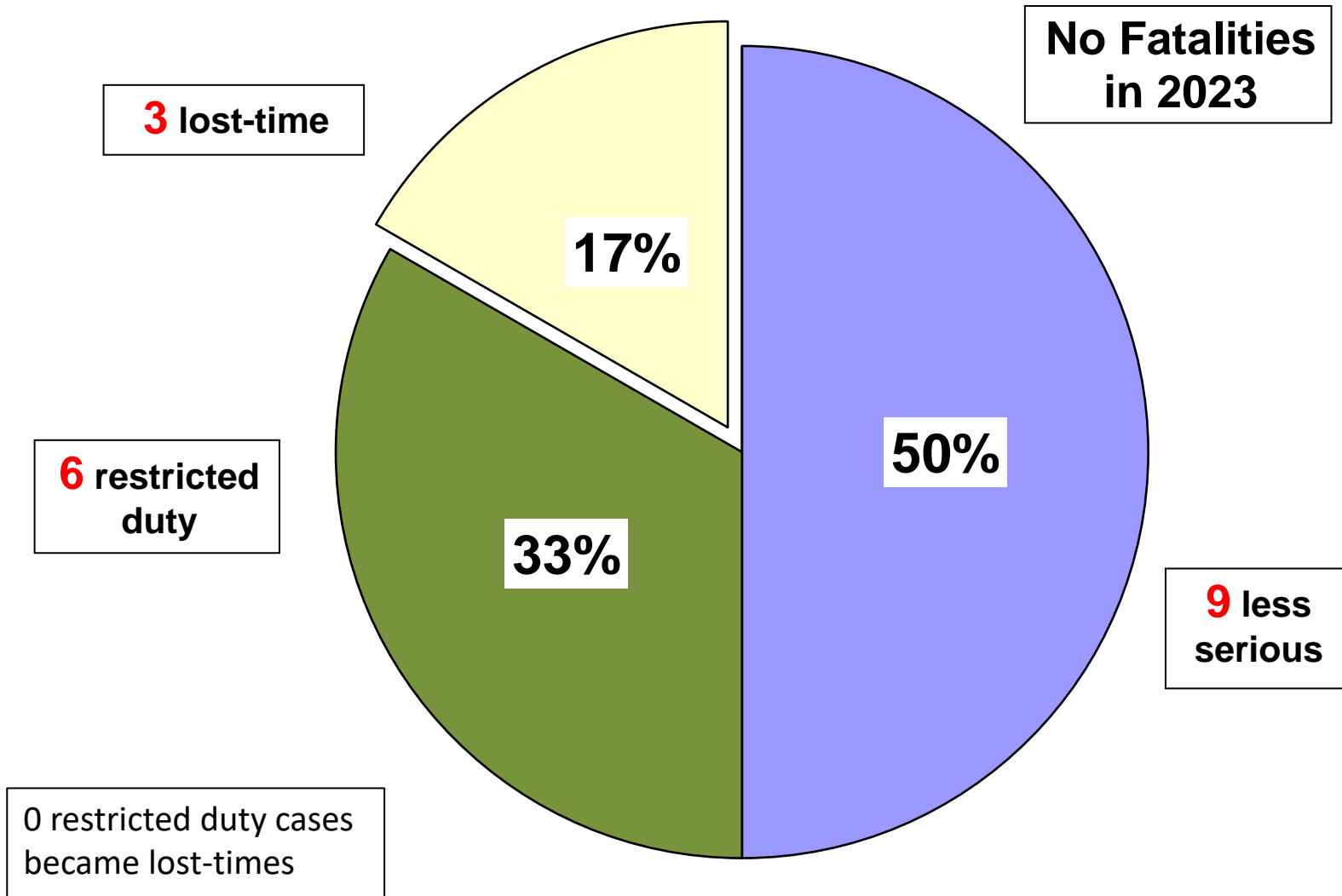
Severity varies

- ❑ **0 fatalities in PCAC plants in 2023**
- ❑ **Lost time** (unable to come to work)
 - ❖ Such as rolled ankle without broken bones
- ❑ **Restricted duty** (at work but unable to do usual job)
 - ❖ Such as burn while cleaning a heater
- ❑ **Others** (also required doctor's intervention)
 - ❖ Such as stitches
 - ❖ Such as hand laceration

*1 more restricted duty case than in 2022 – 6 vs 5
5 fewer lost-time cases than in 2022 – 3 vs 8*

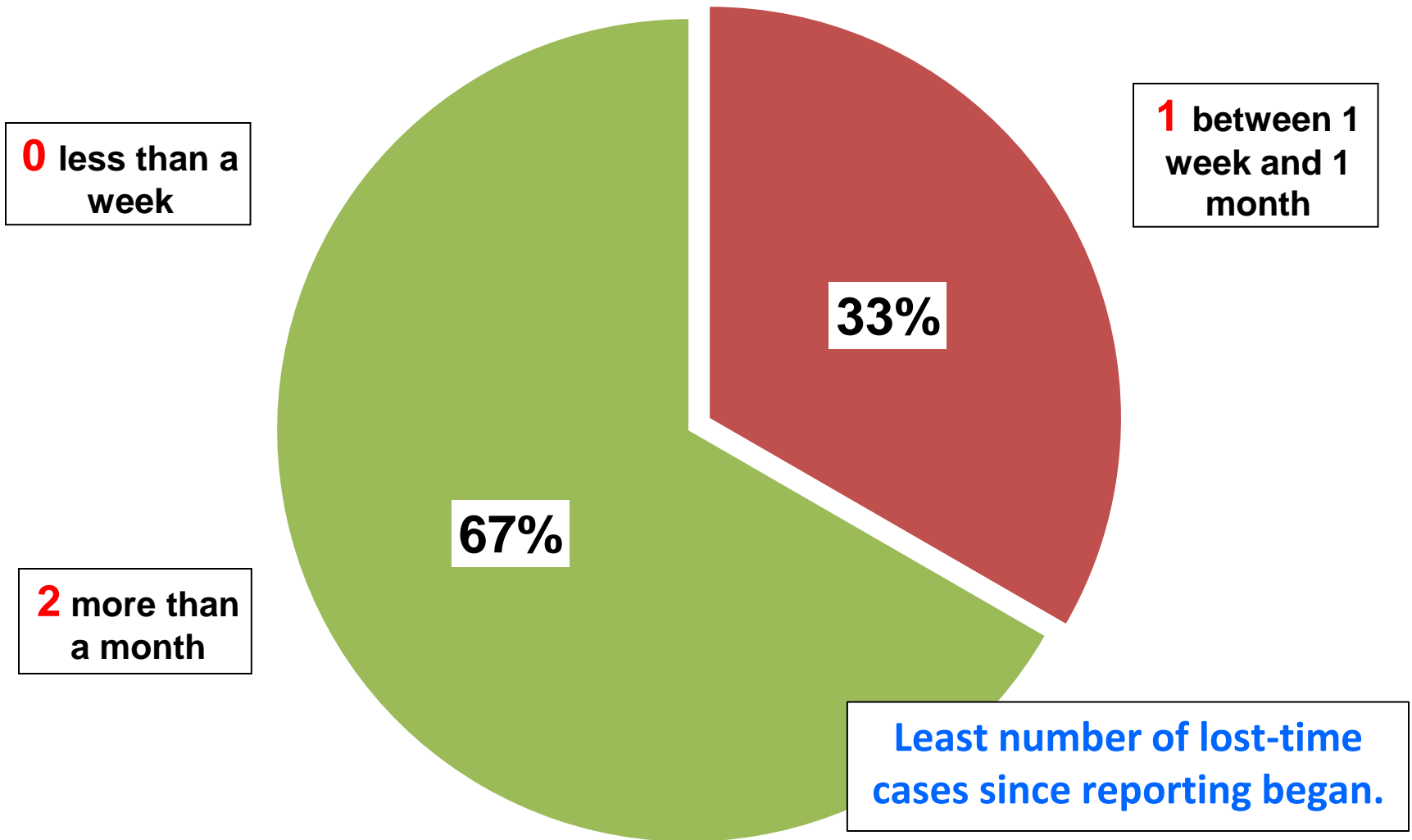
50% (9 of 18 total) were either lost time or restricted duty

Severity of Injury or Illness in 2023



Severity of the 3 Lost-Time Cases in 2023

based on number of days away from work



INJURY CAUSES AND TYPES

most common, causes, types,
chemical exposure

Most common recordables in 2023

Slips, Trips, Falls, or Walking into Something Resulted in:

- ❑ Twisted knee
- ❑ Trip with no broken bones
- ❑ Hand laceration
- ❑ Rolled ankle, no broken bones

Falling Objects or Being Struck by Something:

- ❑ Fractured thumb
- ❑ Stitches near eye

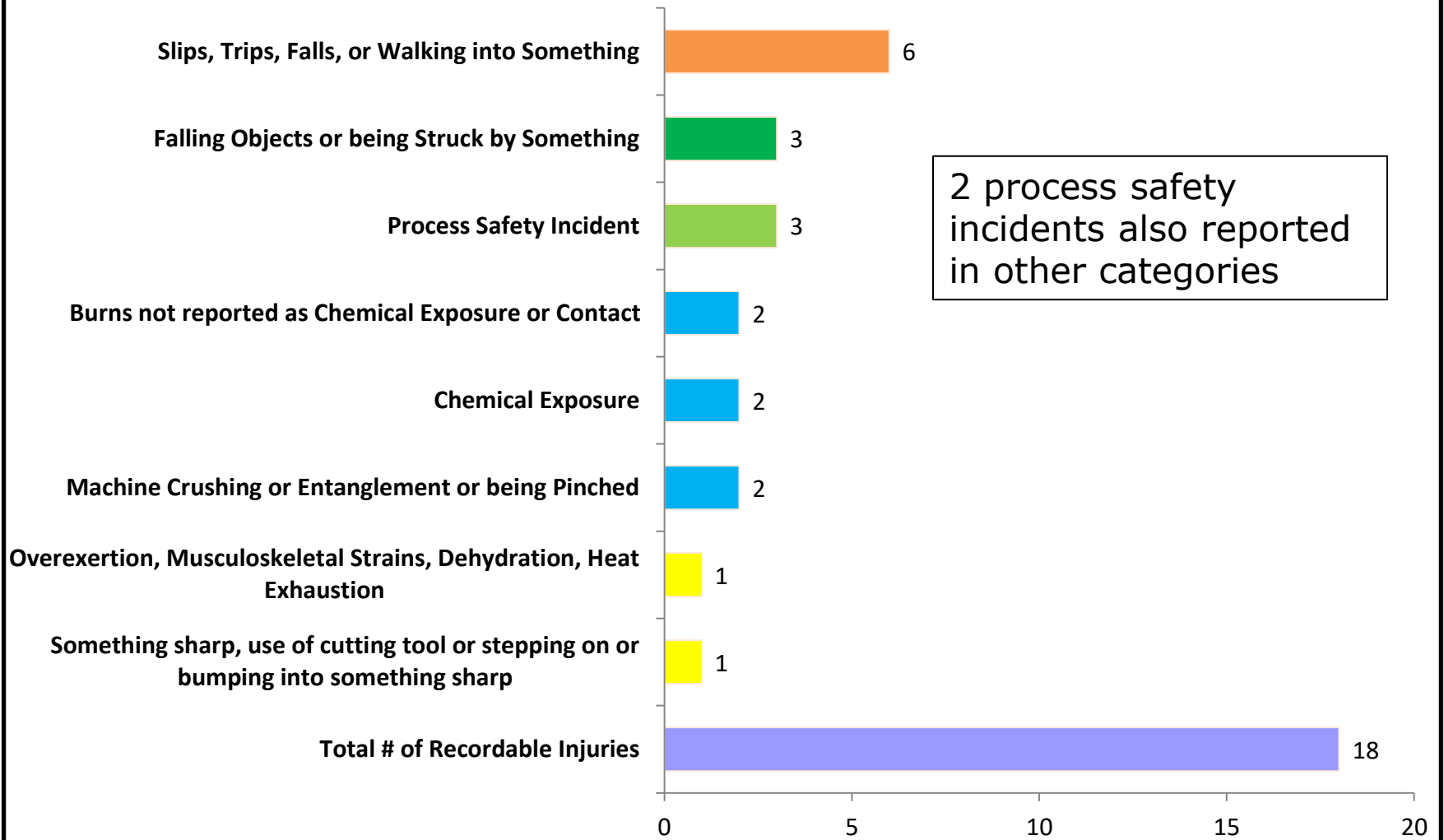
Chemical and Non-Chemical Burns:

- ❑ 2nd-degree burns on back of legs from hot water
- ❑ Burns to face from vacuum residue

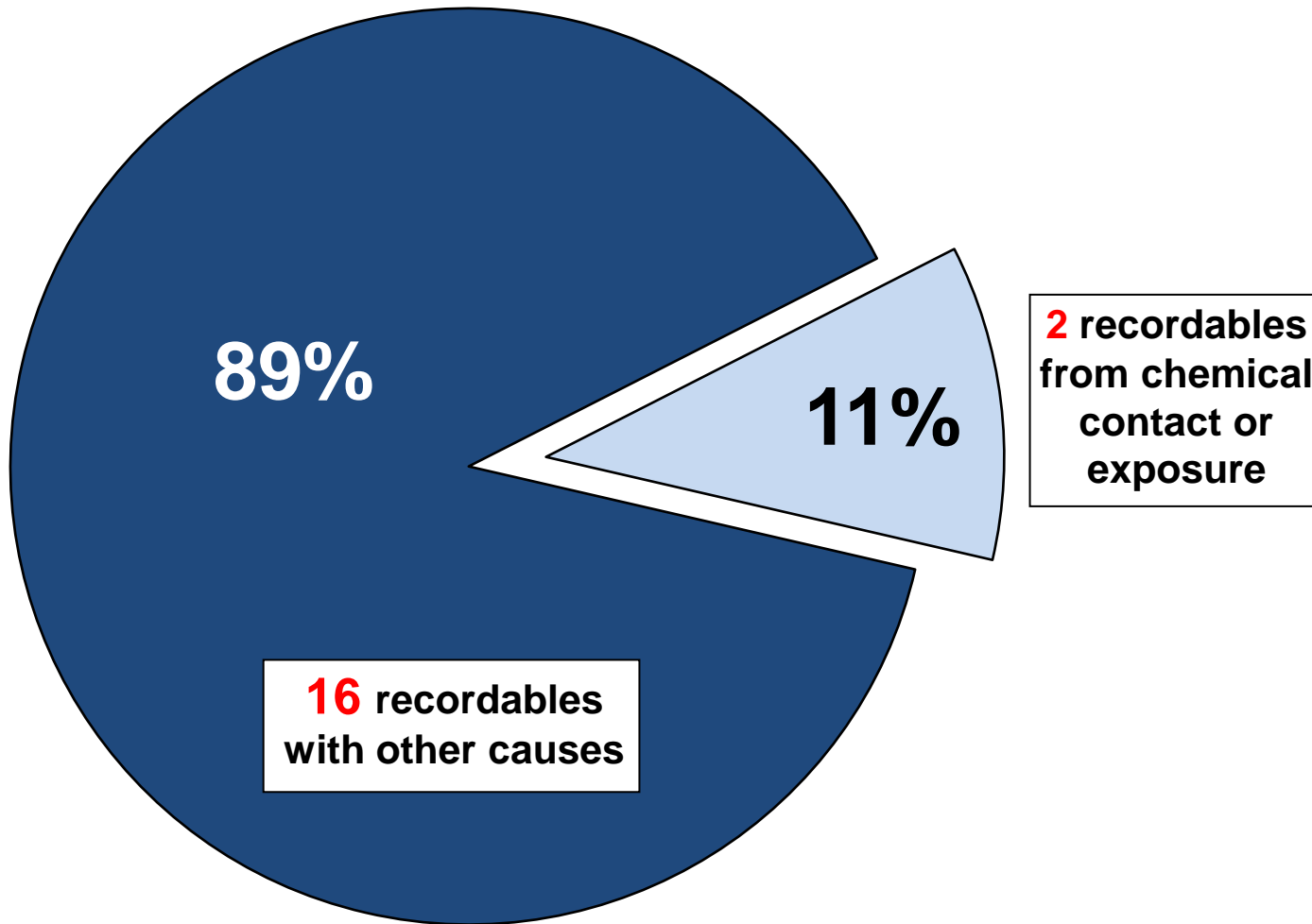
Causes of the 18 Recordables in 2023

- **3** were caused by a process safety incident. (Process safety incidents typically are fire, explosion, or major toxic release.)
- **1** was caused by mechanical/equipment failure or inadequate design

Recordable Injuries in 2023 Resulted From:



Recordables from Chemical Contact or Exposure in 2023



Causes of the 2 Chemical Exposures in 2023

- **1** employee exposed to residual powder of partially hydrolyzed aluminum alkyls, resulting in 2nd-degree burns and corneal abrasion
- **1** operator's face burned when vacuum residue was released during replacement of a pressure gauge

COMPARISONS

Comparing:

- ❖ PCAC employees to PCAC contractors
- ❖ PCAC to similar manufacturing, chemical manufacturing, other kinds of workplaces
- ❖ PCAC to other CACs

Employees -- 2023 -- Contractors

5.5 million work hours

10 of 18 plants with 0.00s

0.40 weighted avg.

0.00 median (middle)

6.77 highest rate (2 injuries)

9.4 million work hours

12 of 17 plants with 0.00s*

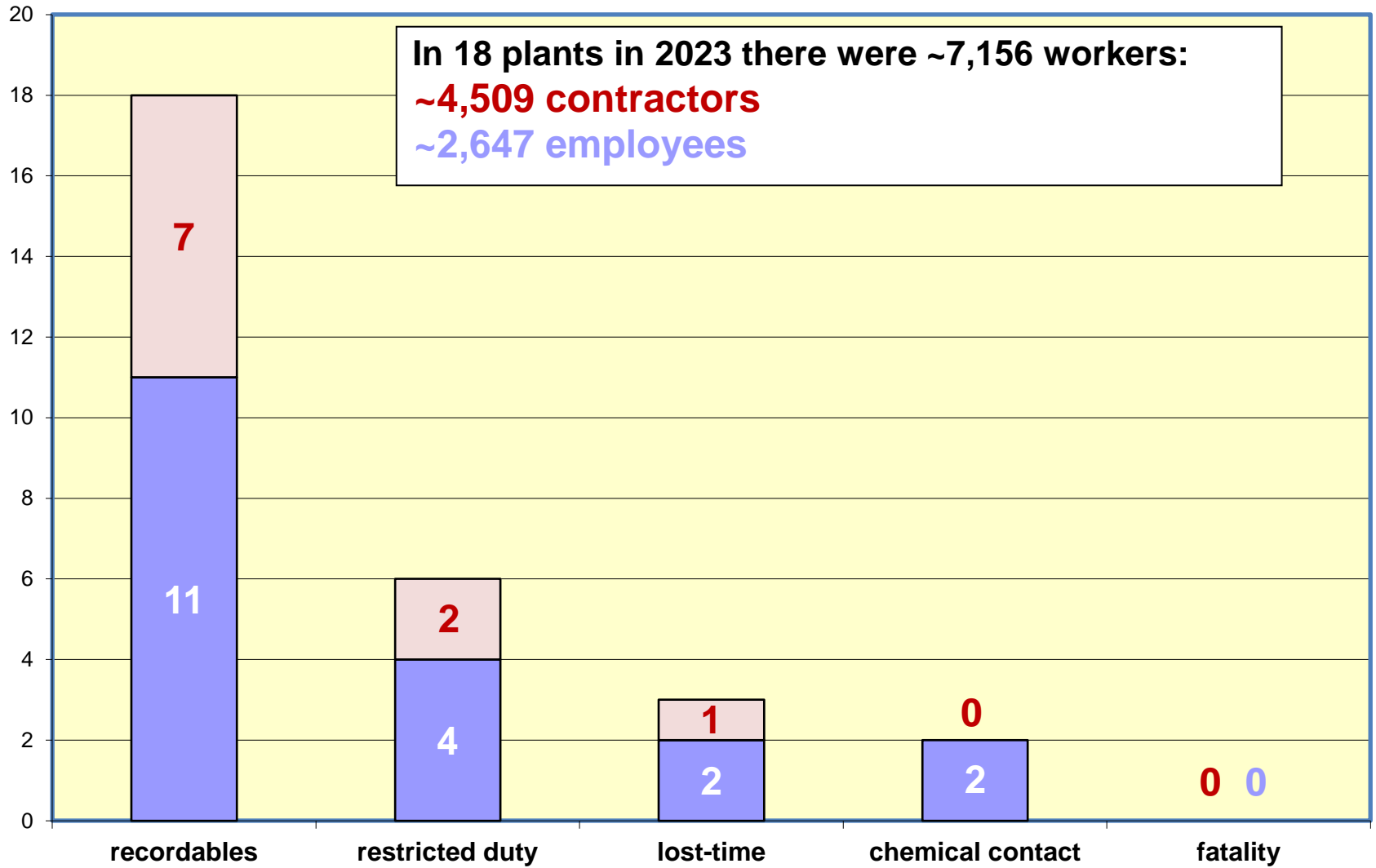
0.15 weighted avg.

0.00 median (middle)

2.03 highest rate (1 injury)

*Air Products did not have contractor hours

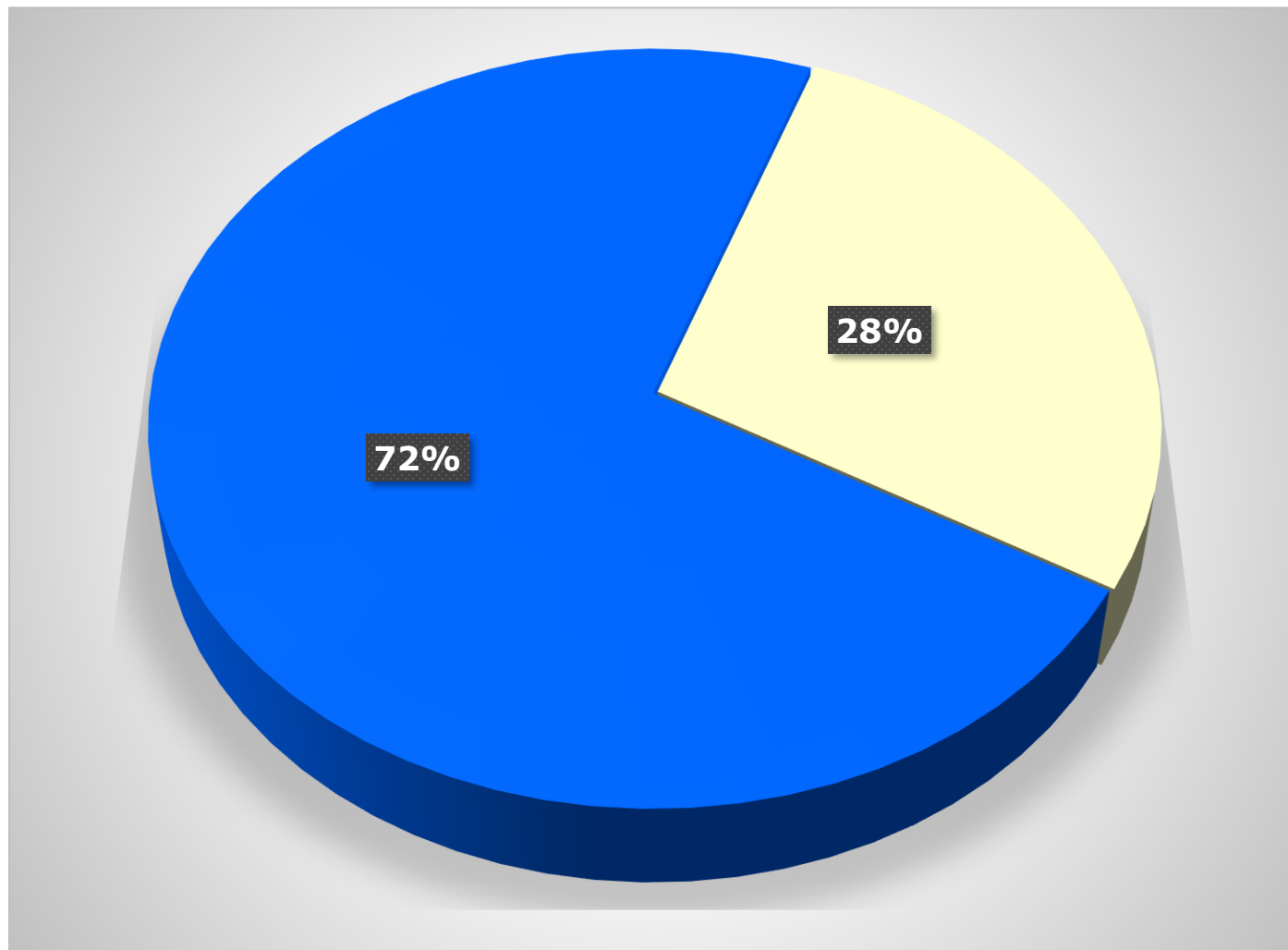
Employee-Contractor Comparisons in 2023



National Industry Comparisons

In 2023, **13 of 18** PCAC plants had recordable rates better than 2022 rates of companies nationwide in their NAICS code.

(In 2022, 15 plants did better.)



Comparing Recordable Rates within OSHA's Nationwide Industry Groups

2022 NATIONAL DATA	NAICS CODE	INDUSTRY GROUP	2023 Total Plant Recordable Rate	2022 Total Plant Recordable Rate	2022 NAICS group rate
Gulf Coast Authority	2213	Water, Sewage, and Other Systems	5.46	0.00	5.40
Chevron Pasadena Refinery	324110	Petroleum Refineries	0.39	0.54	0.06
LyondellBasell Houston Refinery	324110	Petroleum Refineries	0.14	0.00	
Next Wave Energy Partners	325110	Basic Chemical Manufacturing	0.05	0.85	0.20
INEOS Phenol	325110	Basic Chemical Manufacturing	0.84	1.09	
Air Products*	325120	Industrial Gas Manufacturing	0.00	0.00	1.70
Afton Chemical	325199	All Other Basic Organic Chemical Manufacturing	0.64	0.00	2.10
Albemarle (now Ketjen)	325199	All Other Basic Organic Chemical Manufacturing	0.31	0.00	
BASF	325199	All Other Basic Organic Chemical Manufacturing	0.80	0.59	
Ethyl	325199	All Other Basic Organic Chemical Manufacturing	0.00	0.00	
Evonik	325199	All Other Basic Organic Chemical Manufacturing	0.00	1.85	
Chevron Phillips Chemical	325211	Plastics Material and Resin Manufacturing	0.31	0.31	1.90
OxyChem Pasadena PVC	325211	Plastics Material and Resin Manufacturing	0.00	0.85	
Sekisui	325211	Plastics Material and Resin Manufacturing	0.00	0.00	
Enterprise Products	4247	Petroleum Products Merchant Wholesalers	0.00	0.00	1.90
Intercontinental Terminals	49319	Other Warehousing and Storage	0.00	0.00	3.60
KM Export Terminal	493190	Other Warehousing and Storage	3.69	0.00	
KM Pasadena Terminal	493190	Other Warehousing and Storage	0.26	0.57	

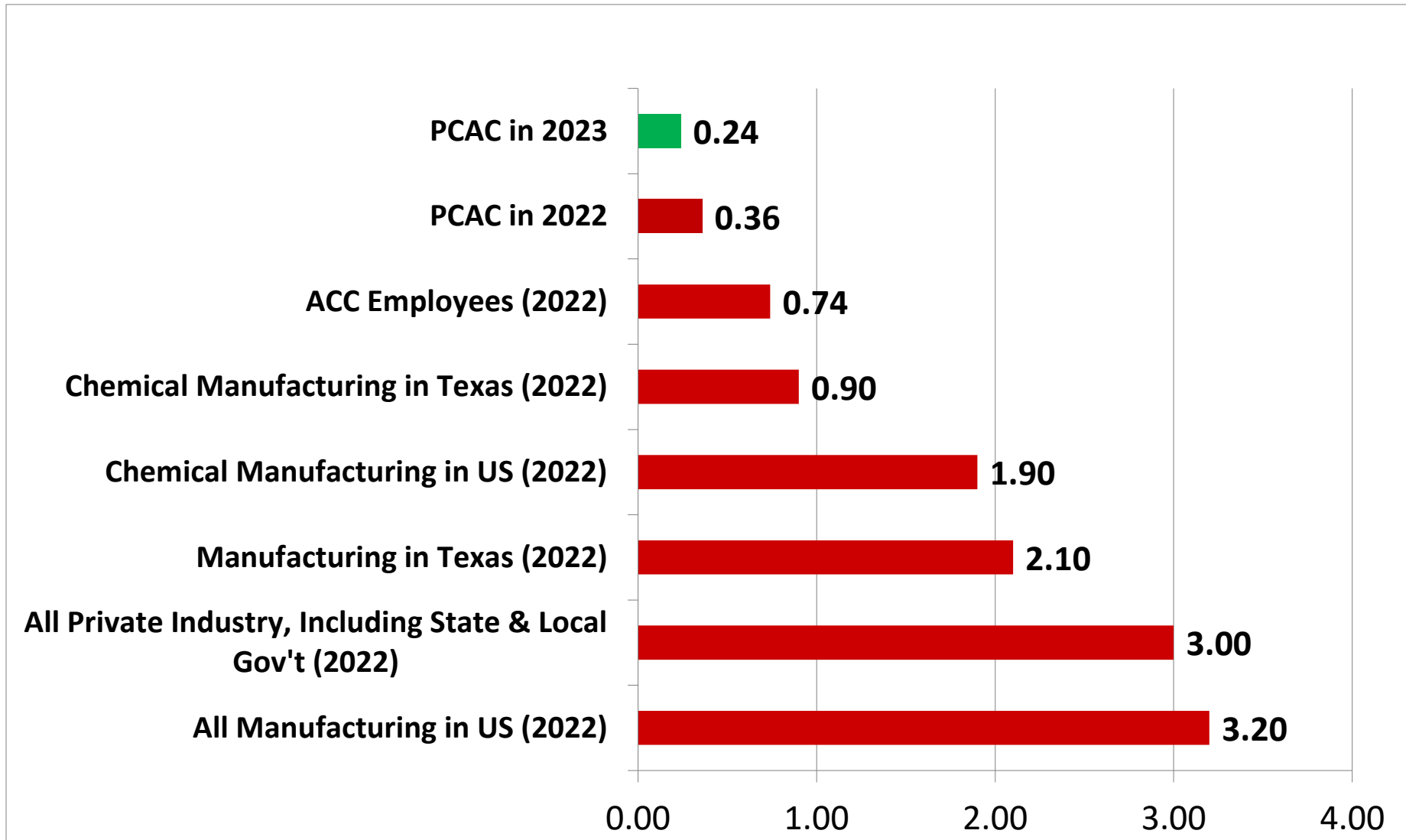
After the passage of North American Free Trade Agreement (NAFTA), the North American Industry Classification System (NAICS) replaced the former Standard Industrial Code (SIC) system as a way to classify 20 major industrial sectors and the businesses within each.

Based on 2022 OSHA data, all but 3 PCAC plants performed better than those in the same industry code group in 2022 and all but 5 in 2023.

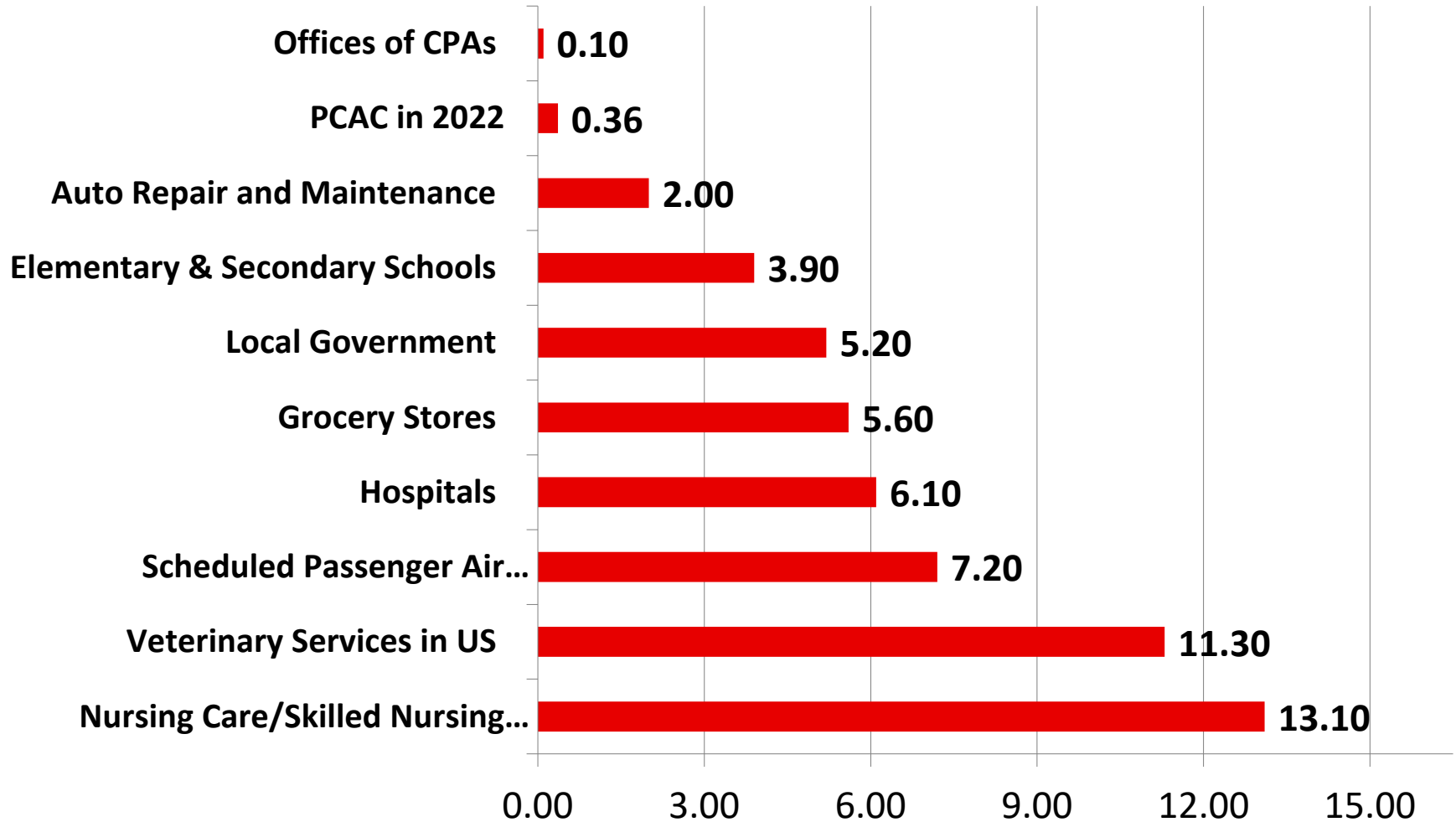
Source of OSHA data is US Bureau of Labor Statistics nonfatal workplace injuries and illnesses found at www.bls.gov

* no contractor hours

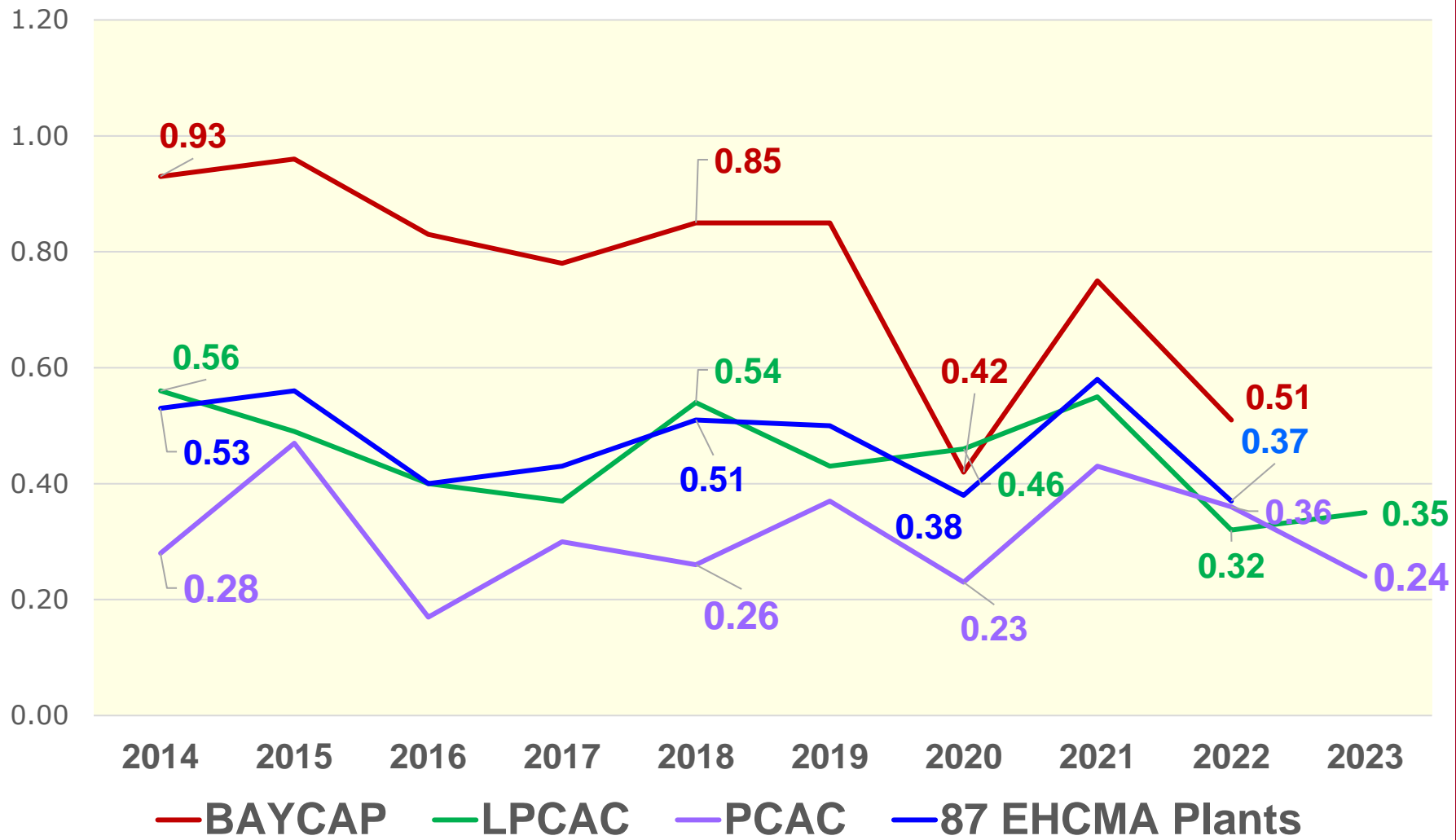
Comparisons on Manufacturing Recordable Rates



Comparisons of Weighted Recordable Rates



CAC Weighted Average Comparison 2014-2022



Comparisons of employees & contractors

ACC and BAYCAP Data from 2022

PCAC and LPCAC Data from 2023

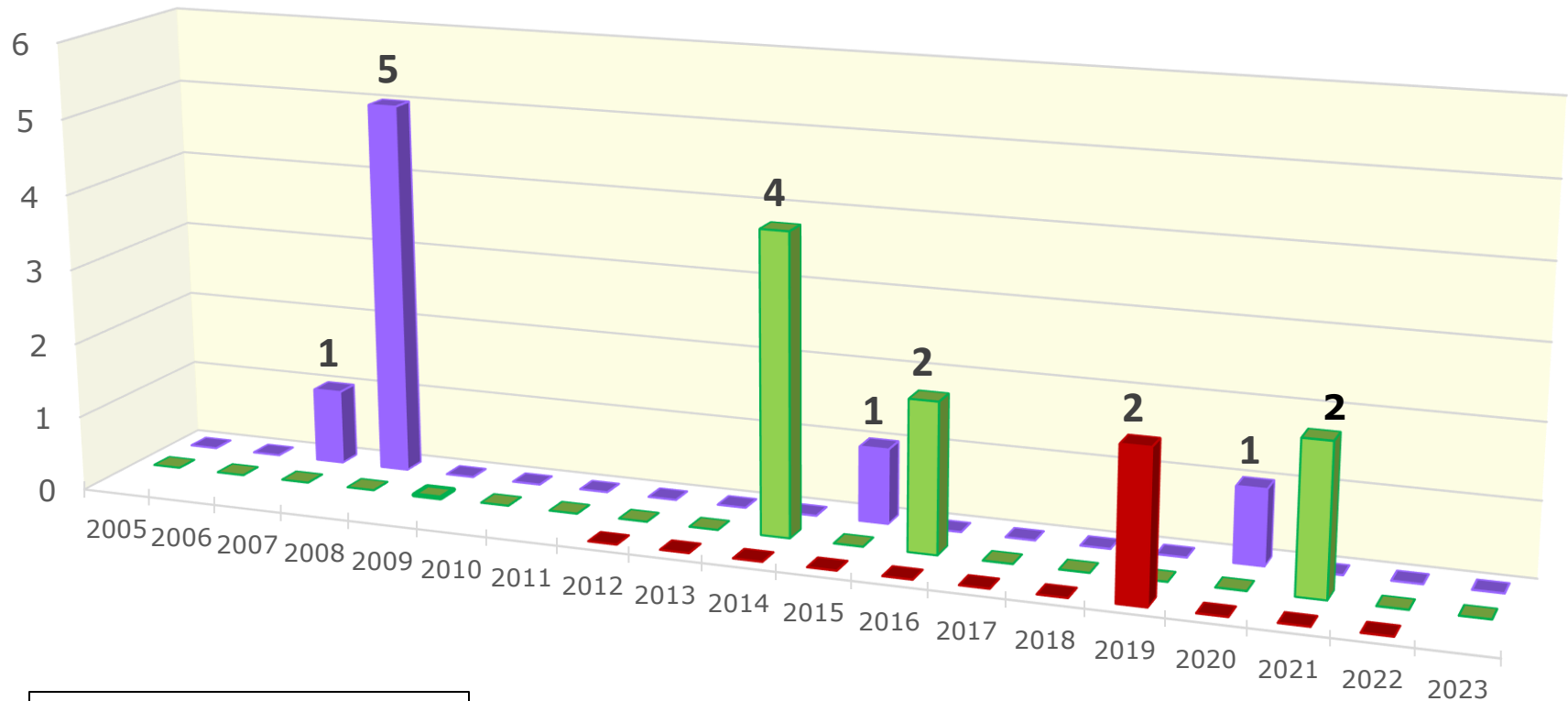
Employees

- 0.40 PCAC plant *employees*
- 0.50 LPCAC plant *employees*
- 0.74 American Chemistry Council (ACC) member-company *employees*
- 0.74 BAYCAP plant *employees*

Contractors

- 0.07 BAYCAP plant *contractors*
- 0.15 PCAC plant *contractors*
- 0.15 LPCAC plant *contractors*
- 0.31 American Chemistry Council (ACC) member-company *contractors*

CAC Fatality Comparison 2005-2023



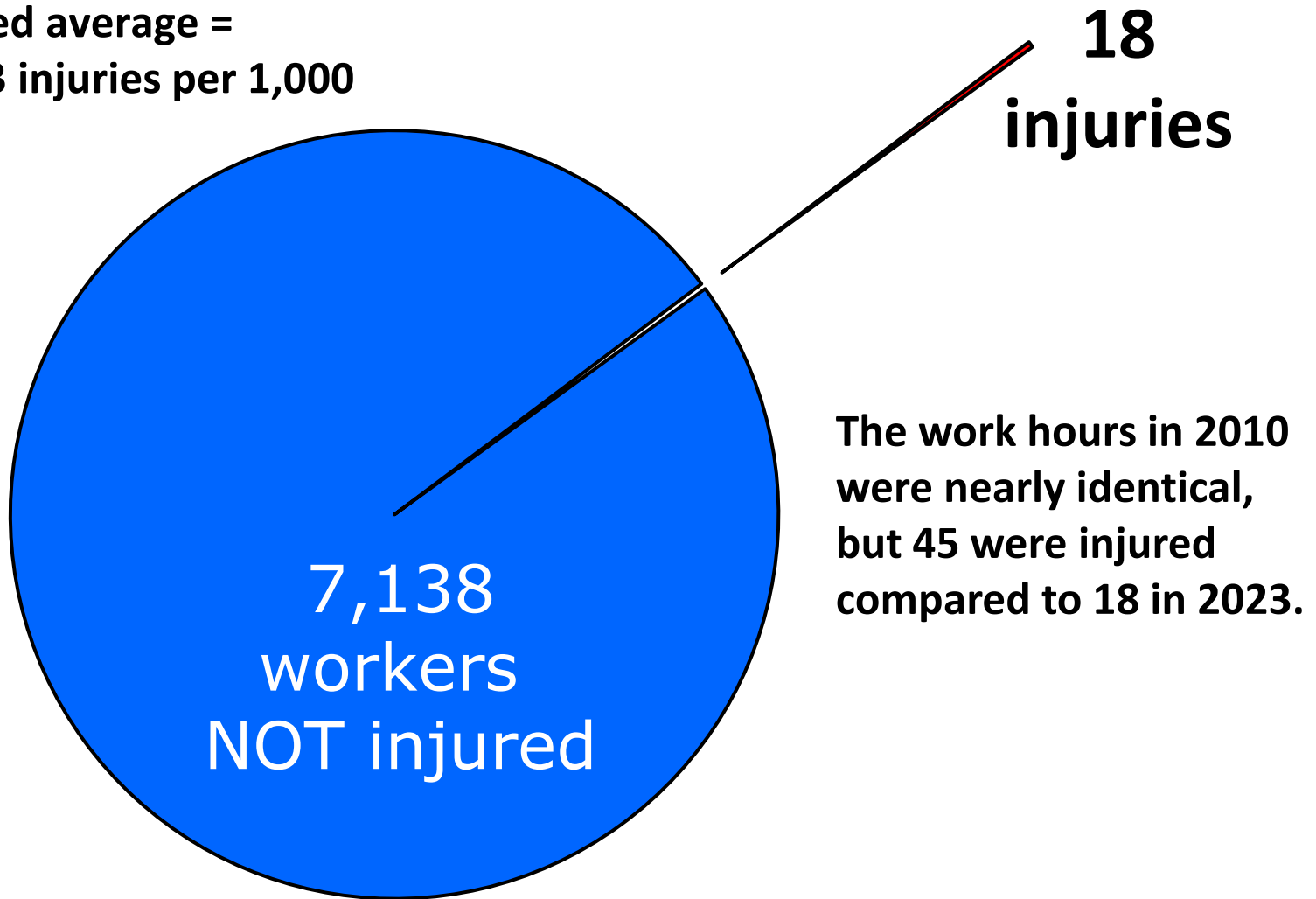
LPCAC and PCAC started asking for fatality data for 2005.

BAYCAP started its safety report in 2012

■ BAYCAP ■ LPCAC ■ PCAC

Safety Report Is about **People**

0.24 weighted average =
fewer than 3 injuries per 1,000



The work hours in 2010 were nearly identical, but 45 were injured compared to 18 in 2023.

Questions?

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- dbsfacilitator@gmail.com