Changing How the World Builds

2019

CII Safety Summary Report

SUMMARY OF CII 2018 SAFETY RATES

CONSTRUCTION INDUSTRY INSTITUTE (CII)

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1. Introduction

CII has collected annual corporate safety performance data from its member organizations since 1990 as part of its long-term commitment to improving safety in the construction industry. Starting in 2018, the CII and CURT jointly collect safety data through the CII/CURT Safety Portal. **While the new CII/CURT Safety Portal combines data from CII members and non-members, this report summarizes safety rates reported by CII members only.**

Survey Instrument

The CII/CURT safety survey gathers data by industry sector, location, and employee type. The main data entry fields include:

- Total Work Hours
- Total Recordable Incident Cases
- Days Away and Restricted or Transferred (DART) Cases
- Days Away (DA) Cases
- Total Number of Days Associated with Days Away (DA) Cases
- Total Number of Days Associated with Job Restriction or Transfer (RT) Cases
- Number of Fatalities

In addition, the survey includes questions regarding near misses, first aid cases, and fatalities. All the rates presented in this report follow OSHA's definitions, which are available in the OSHA 300 form.

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Survey Scope and Potential Limitations

Respondents (both owners and contractors) were asked to provide safety data for both their direct-hire employees and their contractors' employees. However, because contractors were not uniquely identified in the owner responses, some double reporting of contractor data is possible. This overlap often presents itself in two ways:

- Owners reporting on their contractors' employees
- Contractors reporting on their direct-hire employees.

Readers should use caution when comparing results across different industry sectors, since some sectors have relatively small sample sizes. (This is reflected in the number of companies and work hours associated with each sector reported in the charts.)

CII uses definitions for its industry groups that are different from both the system OSHA currently uses, the 2002 North American Industrial Classification System (NAICS); and the Standard Industrial Classification (SIC) system that OSHA used prior to 2003. The construction industry divisions of the NAICS and the SIC system consist of three major groups:

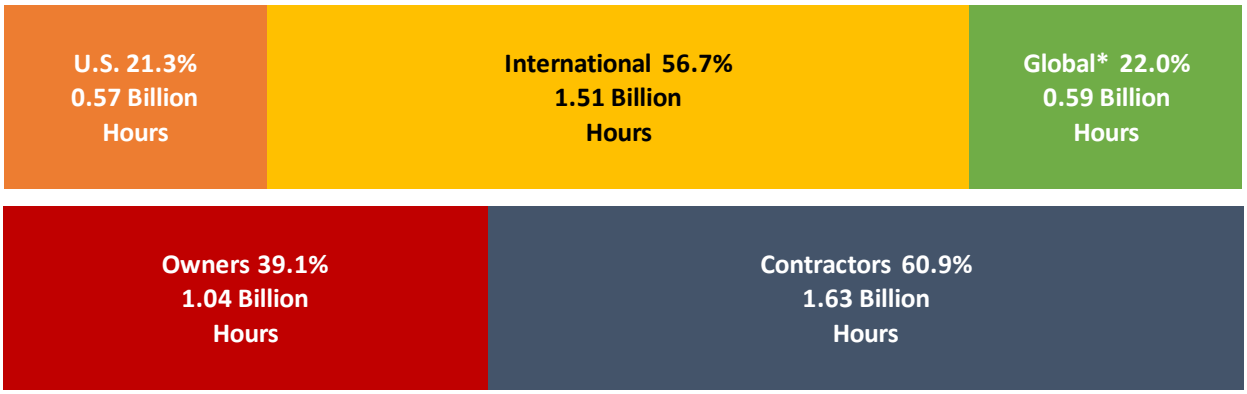
1. General Building (NAICS 236 and SIC 15)
2. Heavy Construction except for Buildings (NAICS 237 and SIC 16)
3. Special Trade Contractors (NAICS 238 and SIC 17).

CII data do not include residential construction, which is included in OSHA's "General Building" category.

CII collects safety data related (only) to capital projects, excluding operations and maintenance (this is particularly important for owners reporting their safety data).

2. CII 2018 Safety Data Summary

From CII's membership, 57 organizations submitted their corporate safety statistics for the 2018 calendar year. These data represent a total of 2.67 billion work hours.



*Global: responses that did not break down the data into U.S. (domestic) and international hours.

Figure 1. Summary of Work Hours by Project Location and Organization Type

The table below summarizes the data by the severity of incidents. Some respondents could not provide all of the requested data or provide details for all categories. For instance, an organization may report the total recordable incidents but not be able to report the DART cases, in which case the aggregated amount of work hours for DART cases will be smaller. For this reason, the total overall work hours reported differs from many of the categories presented in Table 1. In particular, some owners had difficulty reporting information related to job restriction or transfer (RT) cases due to the short durations of the work tasks involved.

Table 1. Summary of Reported Safety Data

	Owner	Contractor and Service Provider	Total
TRIR Cases	897	2,293	3,190
TRIR Work Hours	1,043,981,726	1,627,173,949	2,671,155,675
DART Cases	318	949	1,267
DART Work Hours	986,756,622	1,627,173,949	2,613,930,571
Fatality Cases	9	15	24
Fatality Work Hours	1,043,235,422	1,617,445,488	2,660,680,910

3. Historical TRIR and DART Rates

Figures 2 and 3 below display the trends of TRIR and DART rates for survey respondents and for the U.S. construction industry as reported by OSHA. **Both CII rates increased slightly from 2017 to 2018. They are both very low and the rates are steady since 2016. This indicates that we have hit another plateau in our effort to reduce safety incidents to zero.**

OSHA changed its record-keeping rules on January 1, 2002, and altered some of the criteria that determine which injuries and illnesses are recorded. As a result, OSHA suggests that readers should use reasonable caution when comparing data prior to and after this change, which is indicated by the vertical green line.

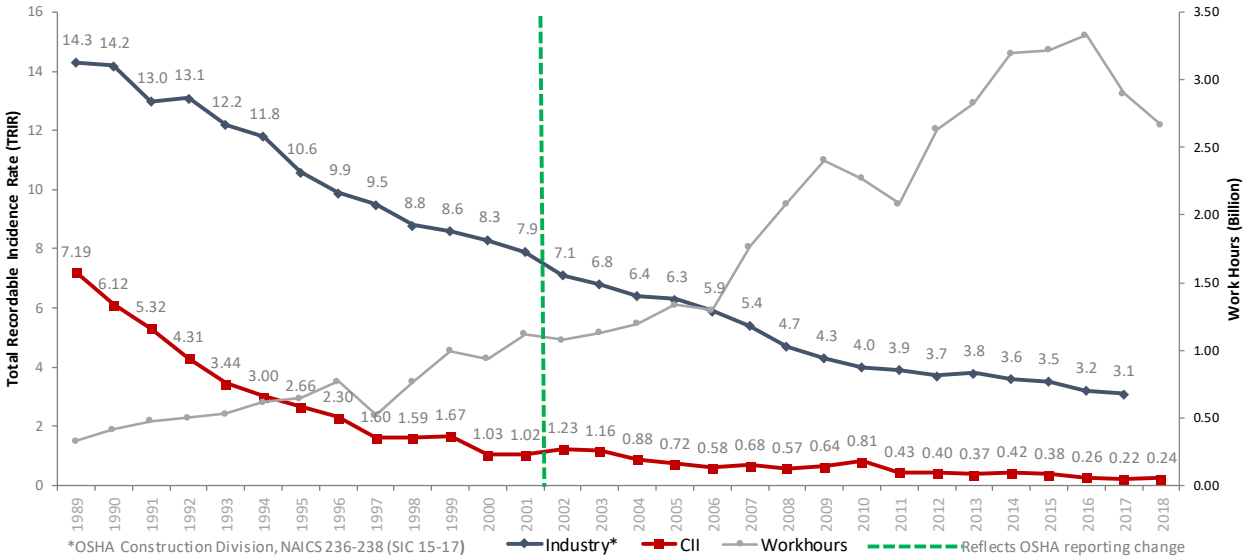


Figure 2. CII Members Reported TRIR (RIR) Rate, 1989-2018

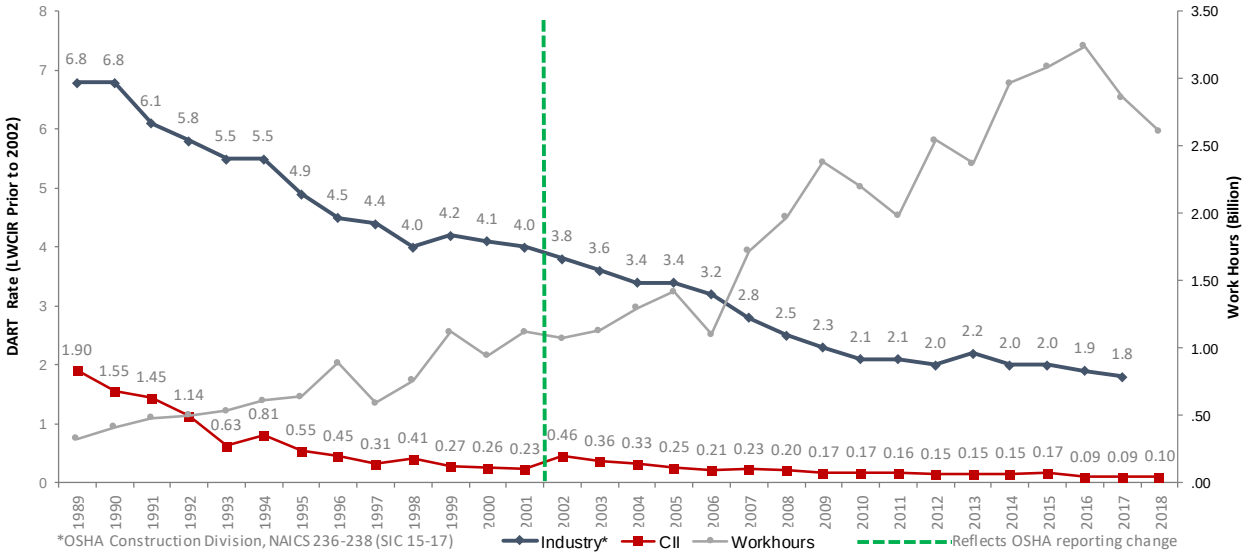


Figure 3. CII Members Reported DART (LWCIR) Rate, 1989-2018

4. Comparison of 2017-2018 Safety Performance

The table below shows the change in safety rates from last year's survey.

Table 2. Comparison of 2017-2018 Performance

	Rate	2017	2018	Change
All	TRIR	0.22	0.24	9% ↑
	DART Rate	0.09	0.10	8% ↑
	DA Rate	0.05	0.06	21% ↑
	Fatality Rate	1.25	1.80	44% ↑
Owner	TRIR	0.14	0.17	23% ↑
	DART Rate	0.06	0.06	7% ↑
	DA Rate	0.04	0.04	2% ↑
	Fatality Rate	1.25	1.73	38% ↑
Contractor and Service Provider	TRIR	0.27	0.28	4% ↑
	DART Rate	0.11	0.12	6% ↑
	DA Rate	0.06	0.07	21% ↑
	Fatality Rate	1.25	1.85	48% ↑

5. Safety Data by Industry Group

The safety survey collects data from four industry groups: Heavy Industrial, Light Industrial, Buildings and Infrastructure. The figures below summarize the TRIR and DART rates for each group, and by respondent type. The N values indicate the number of companies that submitted data, and the "Total" (green) bars represent the combined data including both owners, contractors and service providers.

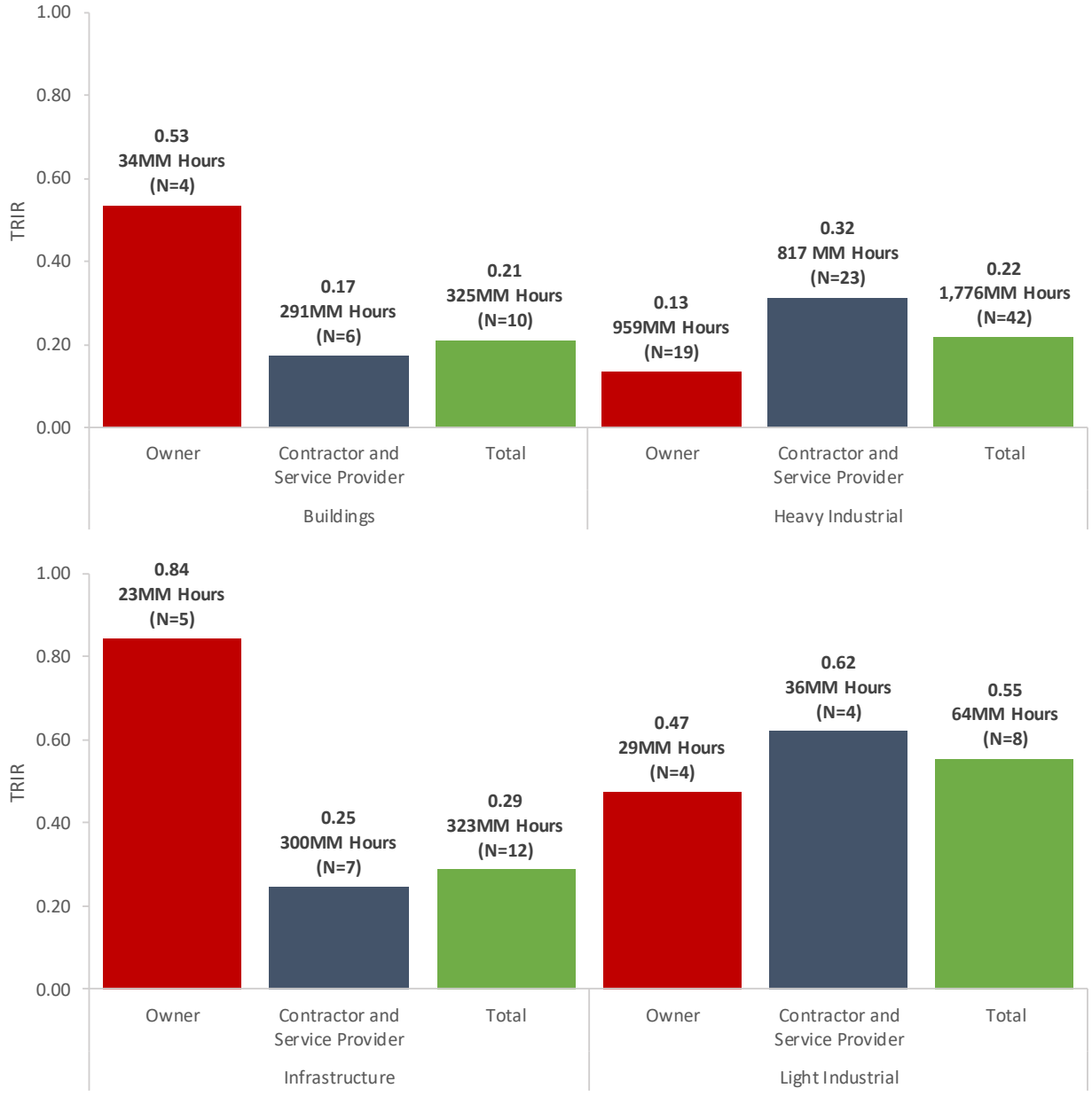


Figure 4. 2018 TRIR by Industry Group

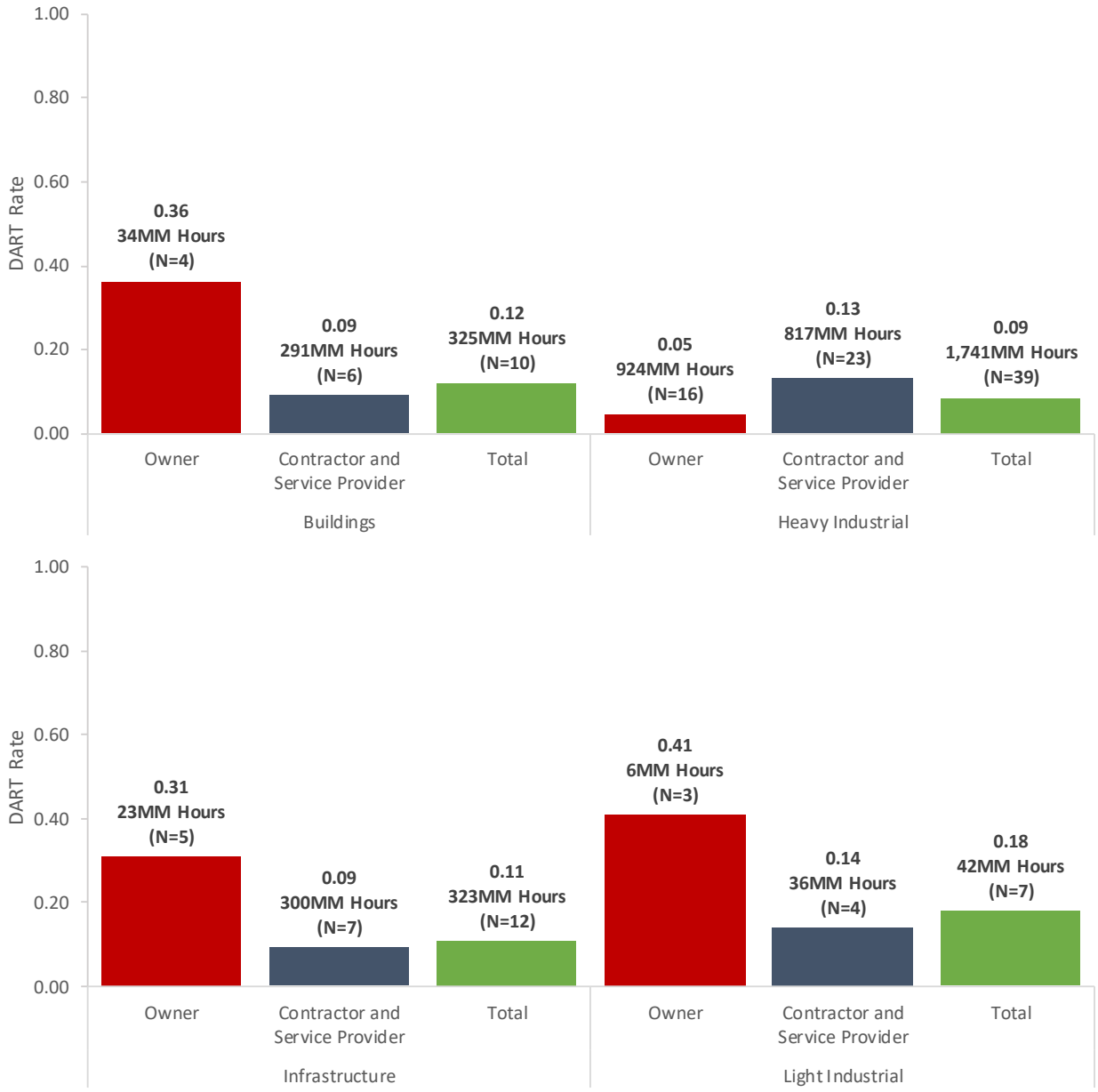


Figure 5. 2018 DART Rates by Industry Group

6. Safety Data by Location

Survey respondents are involved in capital projects around the world. This chapter compares data from U.S. and non-U.S. projects. Note that, ideally, the non-U.S. number should be further broken down by geographic region. But the availability of data is limited to most regions and, therefore, this document aggregated all non-U.S. data into one group. The N values indicate the number of companies that submitted data, and the "Total" (green) bars represent all of the data.

Previous years' surveys showed that international projects experienced better TRIR and DART rates than did U.S. projects. Figure 6 shows that the same overall pattern is still present in the data.

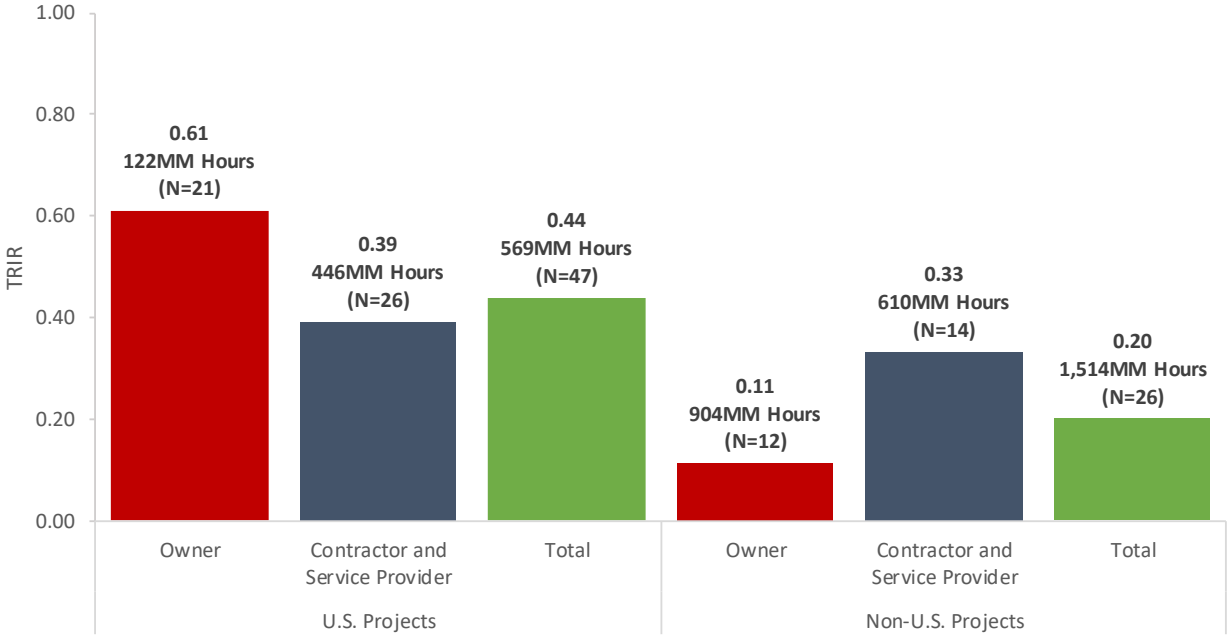


Figure 6. 2018 TRIR by Project Location

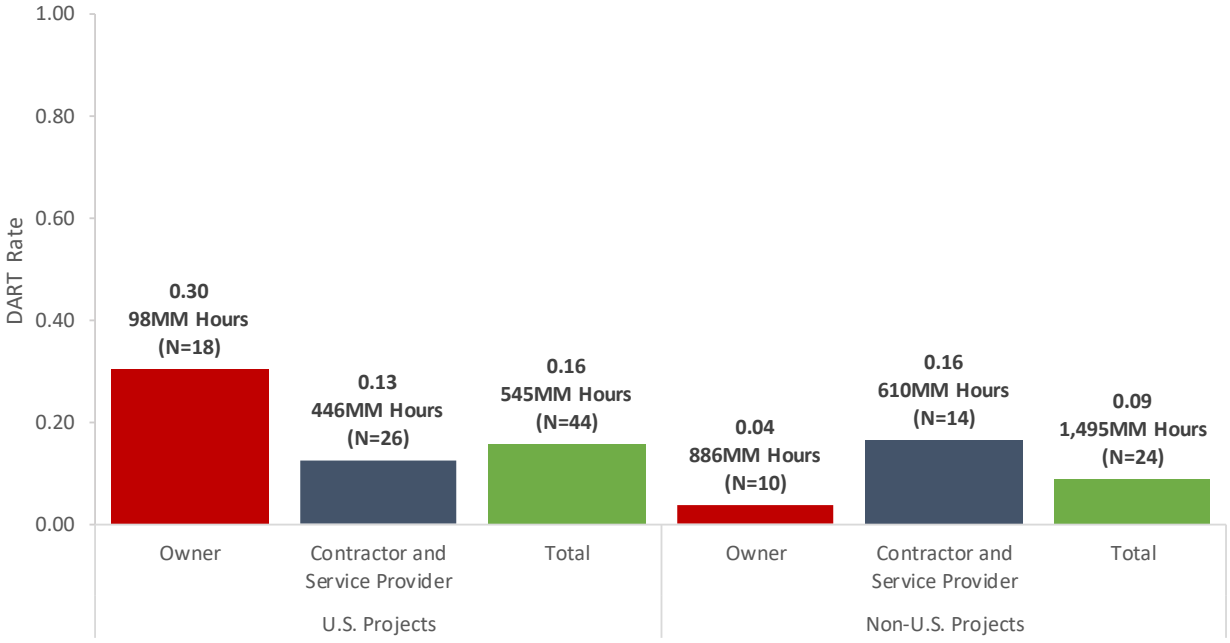


Figure 7. 2018 DART Rates by Project Location

7. Fatalities

As shown in the figure below, the overall fatality rate of CII members increased in 2018 to 1.80 from 1.25 reported in 2017. The 3-year average for 2016-2018 is also 1.80.

Figure 8. Yearly and 3-year Average Fatality Rates (2001 – 2018)

In 2018, 24 fatalities were reported by CII members. Figure 9 shows that the leading cause was the contact with objects and equipment, followed by falls. No fatalities were reported in the categories of "Fires and Explosions," and "Assault and Violent Acts."

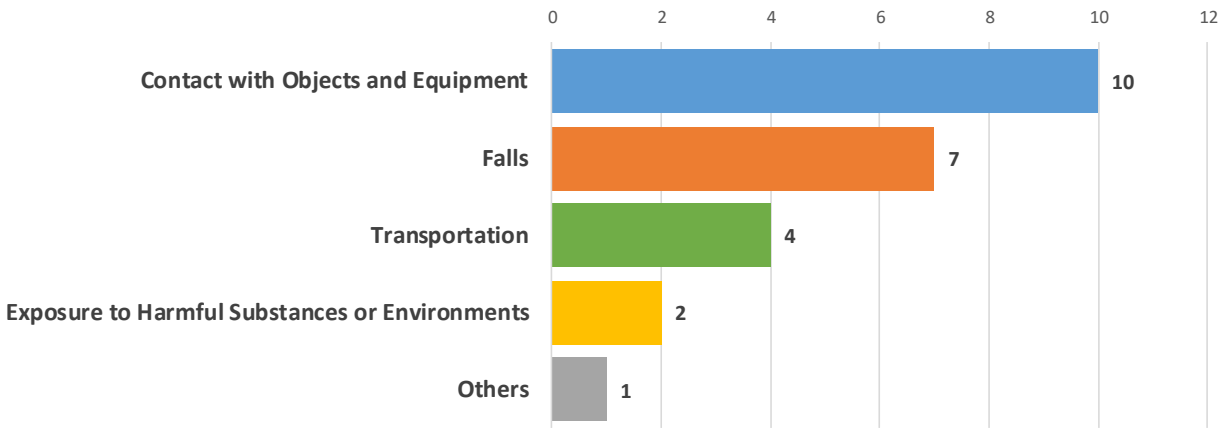


Figure 9. Fatality Causes in 2018

8. Safety Data by CII Industry Sector Committee

CII also reports safety performance to its industry sector committees, as shown below. Note that many companies belong to more than one sector committee, so some data are reported more than once. This is why the sum of the fatalities in each sector is greater than the true numbers in the "CII" rows.

Table 3. CII Sector Committee Safety Statistics

	Companies Reporting	Possible Reporting	Response Rate	Work Hours (Billion)	TRIR	DART Rate	Number of Fatalities	Fatality Rate
2016 CII				**3.33**	**0.26**	**0.09**	**29**	**1.75**
2016 DCC	19			1.26	0.21	0.06	19	3.02
2016 FHC	4			0.03	1.19	0.46	0	0.00
2016 MLS	8			0.06	0.37	0.14	1	3.34
2016 PUIC	17			0.90	0.43	0.16	15	3.38
2016 UMM	14			0.51	0.32	0.10	7	2.79
2017 CII	**71**	**147**	**47%**	**2.90**	**0.22**	**0.09**	**18**	**1.25**
2017 DCC	24	44	55%	0.92	0.19	0.09	4	0.87
2017 FHC	4	19	21%	0.05	0.66	0.43	0	0.00
2017 MLS	9	23	39%	0.05	0.49	0.20	0	0.00
2017 PUIC	21	33	64%	0.87	0.32	0.12	6	1.40
2017 UMM	23	35	66%	0.90	0.18	0.08	2	0.45
2018 CII	**55**	**112**	**49%**	**2.67**	**0.24**	**0.10**	**24**	**1.80**
2018 DCC	22	43	51%	1.64	0.21	0.08	15	1.83
2018 FHC	3	17	18%	0.05	0.50	0.29	0	0.00
2018 MLS	9	20	45%	0.21	0.38	0.21	1	0.93
2018 PUIC	20	30	67%	0.95	0.38	0.15	9	1.89
2018 UMM	24	38	63%	1.70	0.22	0.09	17	2.00

Appendix: Glossary of Terms

DART — Days Away, Restricted or Transferred (replaced LWCIR in 2002). The DART rate is the number of DART cases occurring annually among 100 full-time workers (i.e., 2,000 hours per worker per year).

$$DART\ Rate = \frac{(\#\ of\ DART\ Cases) \times 200{,}000}{(Total\ Work\ Hours\ by\ All\ Employees)}$$

DCC — CII Downstream and Chemicals Industry Sector Committee

FR — Fatality Rate. The number of fatal work injuries occurring annually among 100,000 full-time workers (i.e., each worker works 40 hours per week for 50 weeks per year, or 200,000,000 hours per year).

$$Fatality\ Rate = \frac{(\#\ of\ Fatalities) \times 200{,}000{,}000}{(Total\ Work\ Hours\ by\ All\ Employees)}$$

FHC — CII Facilities and Healthcare Industry Sector Committee

LWCIR — Lost Workday Case Incident Rate (replaced by DART in 2002)

MLS — CII Manufacturing and Life Sciences Industry Sector Committee

PUIC — CII Power, Utilities, and Infrastructure Industry Sector Committee

RIR — Recordable Incident Rate (replaced by TRIR in 2002)

TRIR — Total Recordable Incident Rate (replaced RIR in 2002). The number of recordable injuries occurring annually among 100 full-time workers (i.e., 2,000 hours per worker per year).

$$TRIR = \frac{(\#\ of\ Recordable\ Cases) \times 200{,}000}{(Total\ Work\ Hours\ by\ All\ Employees)}$$

UMM — CII Upstream, Midstream, and Mining Industry Sector Committee

Prepared by Construction Industry Institute (CII)
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