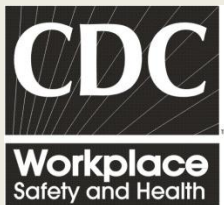


U.S. Waste Industry Occupational Injuries, Illnesses, and Fatalities 2003–2010

David F. Utterback

**National Institute for Occupational Safety and Health
Centers for Disease Control and Prevention
U.S. Department of Health and Human Services**



The findings and conclusions in this presentation are those of the author and do not necessarily represent the views of the National Institute for Occupational Safety and Health



NIOSH Mission

Provide national and world leadership to prevent work-related illness, injury, and death by gathering information, conducting scientific research, and translating the knowledge gained into products and services.



Surveillance Data Resources

U.S. Bureau of Labor Statistics (BLS)

- Survey of Occupational Injuries and Illnesses (SOII), Days-Away-from-Work (DAFW)
- Census of Fatal Occupational Injuries (CFOI)
- Occupational Employment Statistics (OES)

U.S. Census Bureau

- Statistics of U.S. Businesses (SUSB)



Solid Waste Industry

NAICS 562 Waste Management and Remediation

- NAICS 5621 Waste Collection
- NAICS 5622 Waste Treatment and Disposal
- NAICS 5629 Remediation and Other Waste Management Services



2010 Total Employees by Industry Group

• Private Collection	142,000
• Private Treatment and Disposal	96,000
• Private Remediation and Other	124,000
• Local Government	---

Source: BLS Occupational Employment
Statistics, 2010



Private Waste Management and Remediation Employment by Firm Size

Enterprise Employment Size	# Firms	# Establishments	# Employed	Annual Payroll \$1,000s
0-4	8,779	8,782	16,153	596,759
5-9	3,488	3,509	23,108	796,070
10-19	2,401	2,440	32,081	1,232,374
20-99	2,202	2,520	83,457	3,607,128
100-499	380	968	53,145	2,504,173
500+	156	3,494	159,319	8,165,247
Total	17,406	21,713	367,263	16,901,751

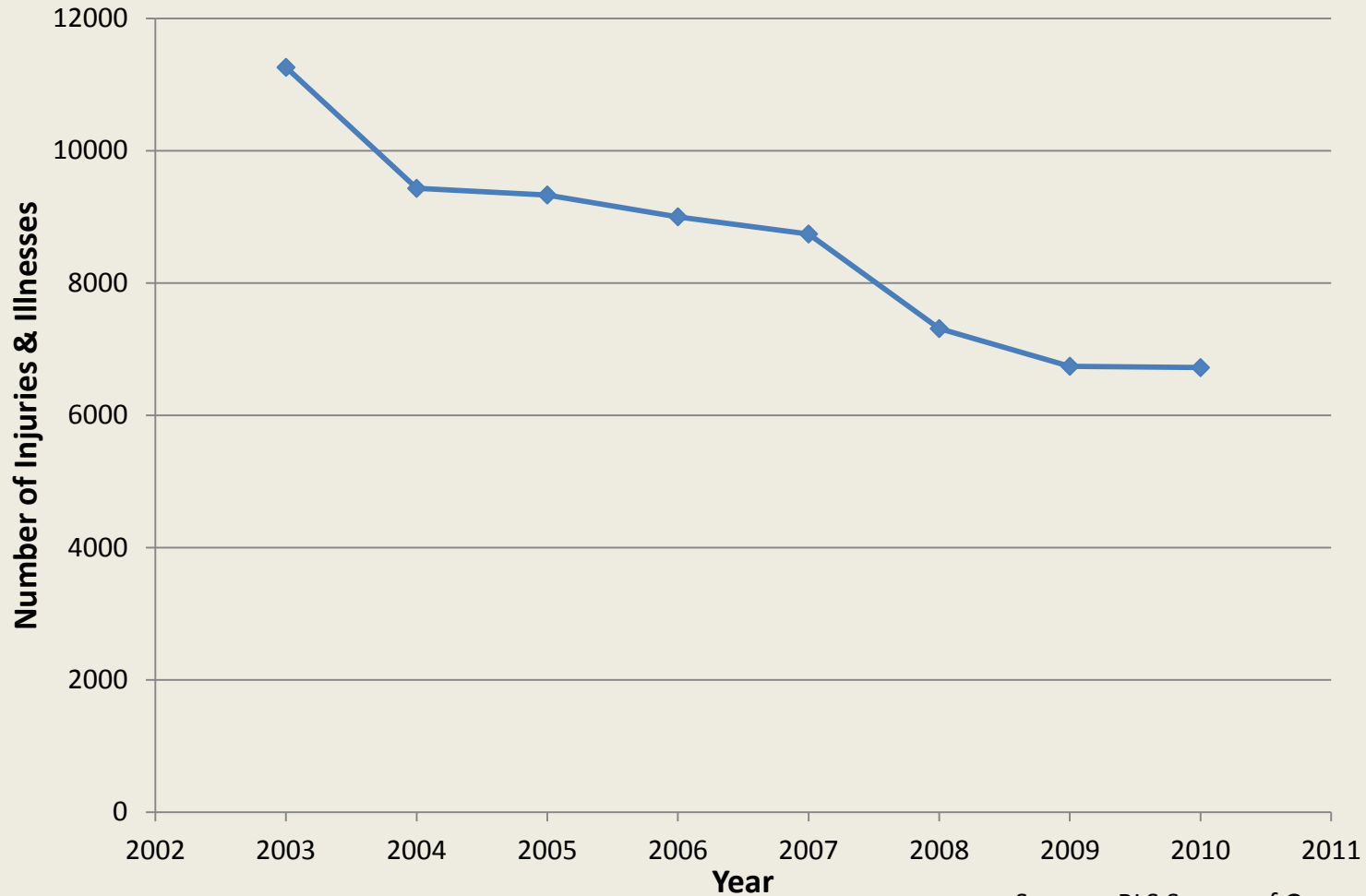
Occupational Injuries and Illnesses

Days-Away-from-Work (DAFW)

**NAICS 562, Waste Management and
Remediation Services**

Total DAFW Injuries and Illnesses

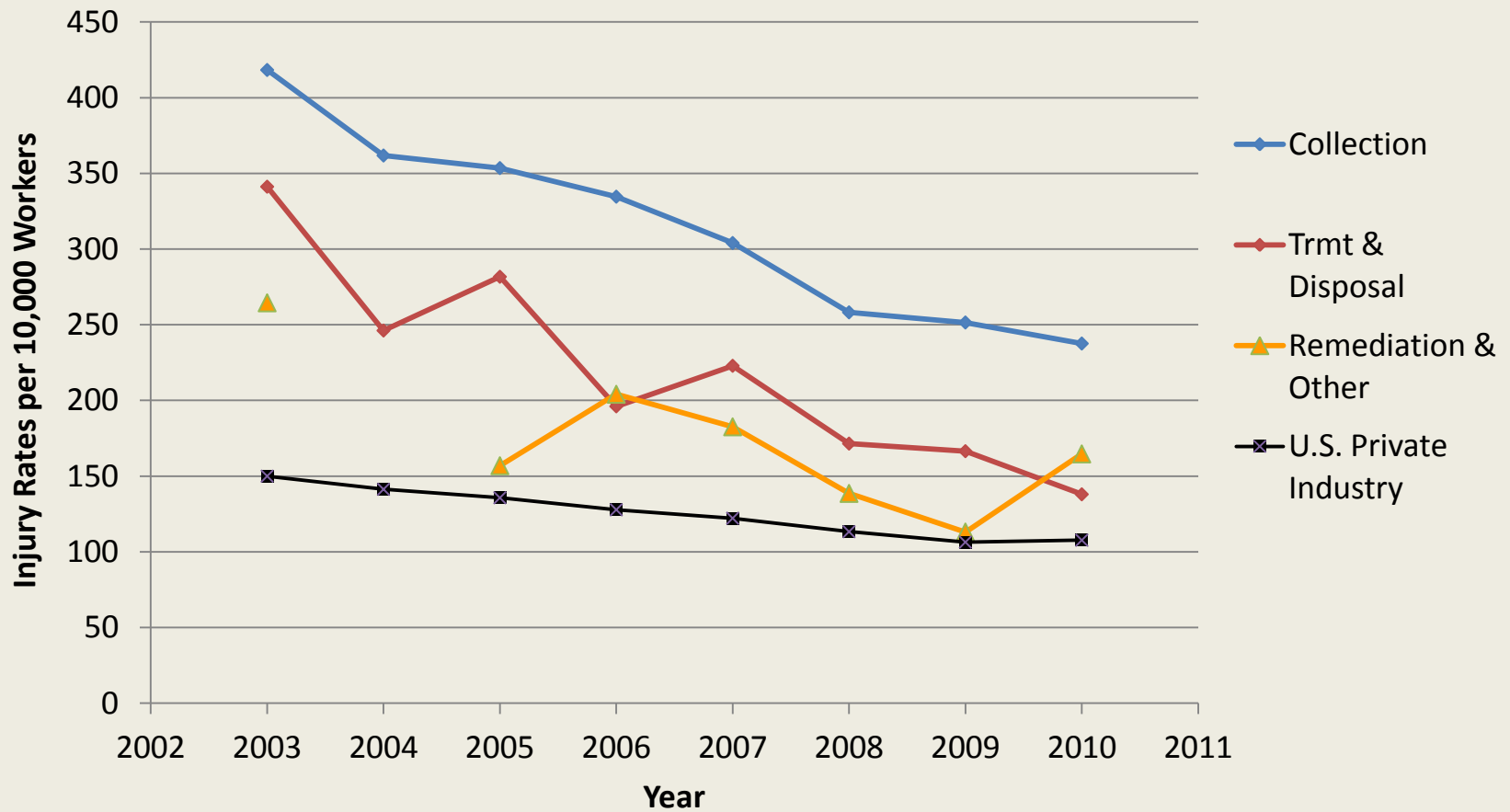
Private Waste Management & Remediation (562)



Source: BLS Survey of Occupational Injuries and Illnesses

DAFW Rates by Industry Group

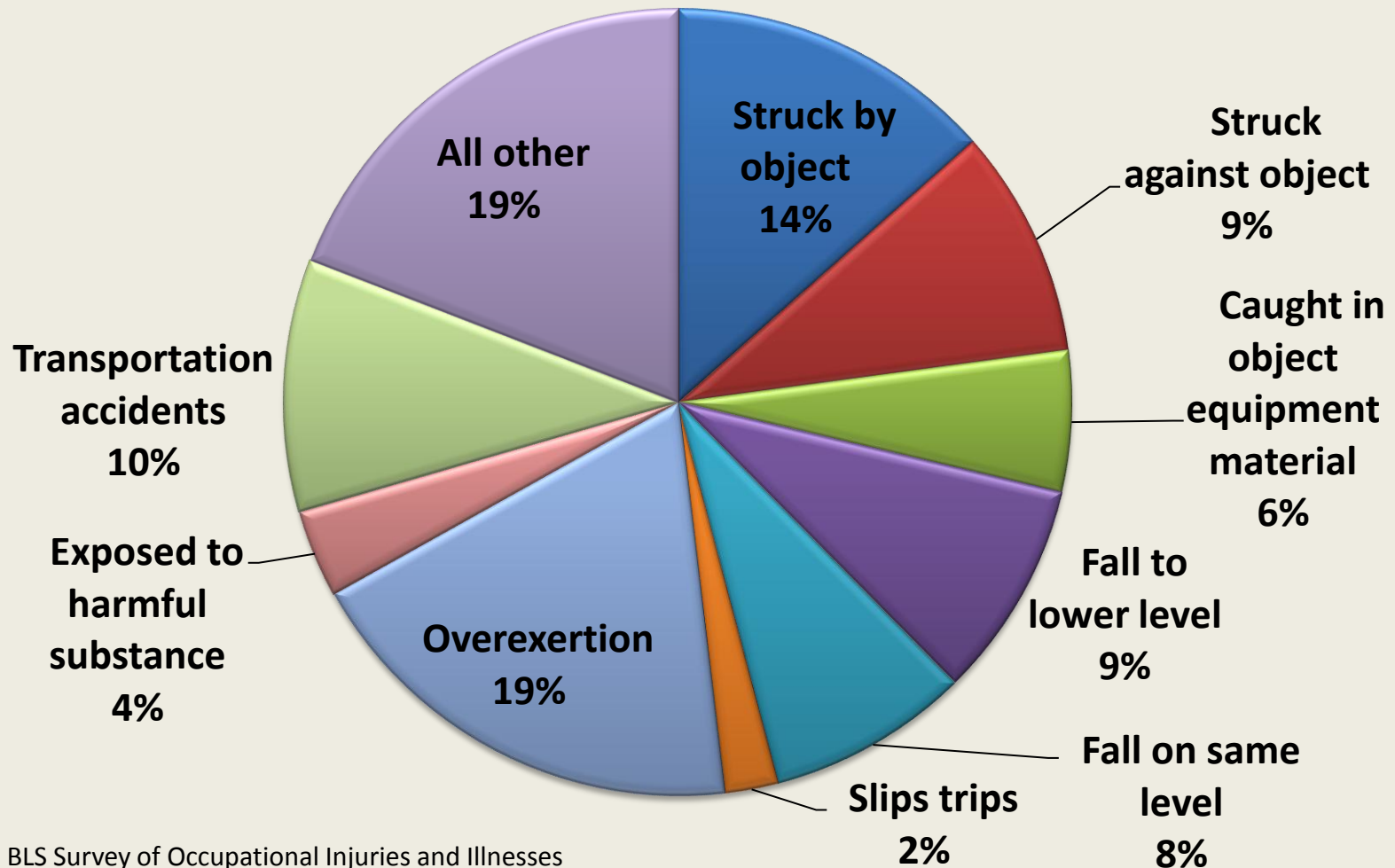
Private Waste Management & Remediation (562)



Source: BLS Survey of Occupational Injuries and Illnesses

2010 Events DAFW

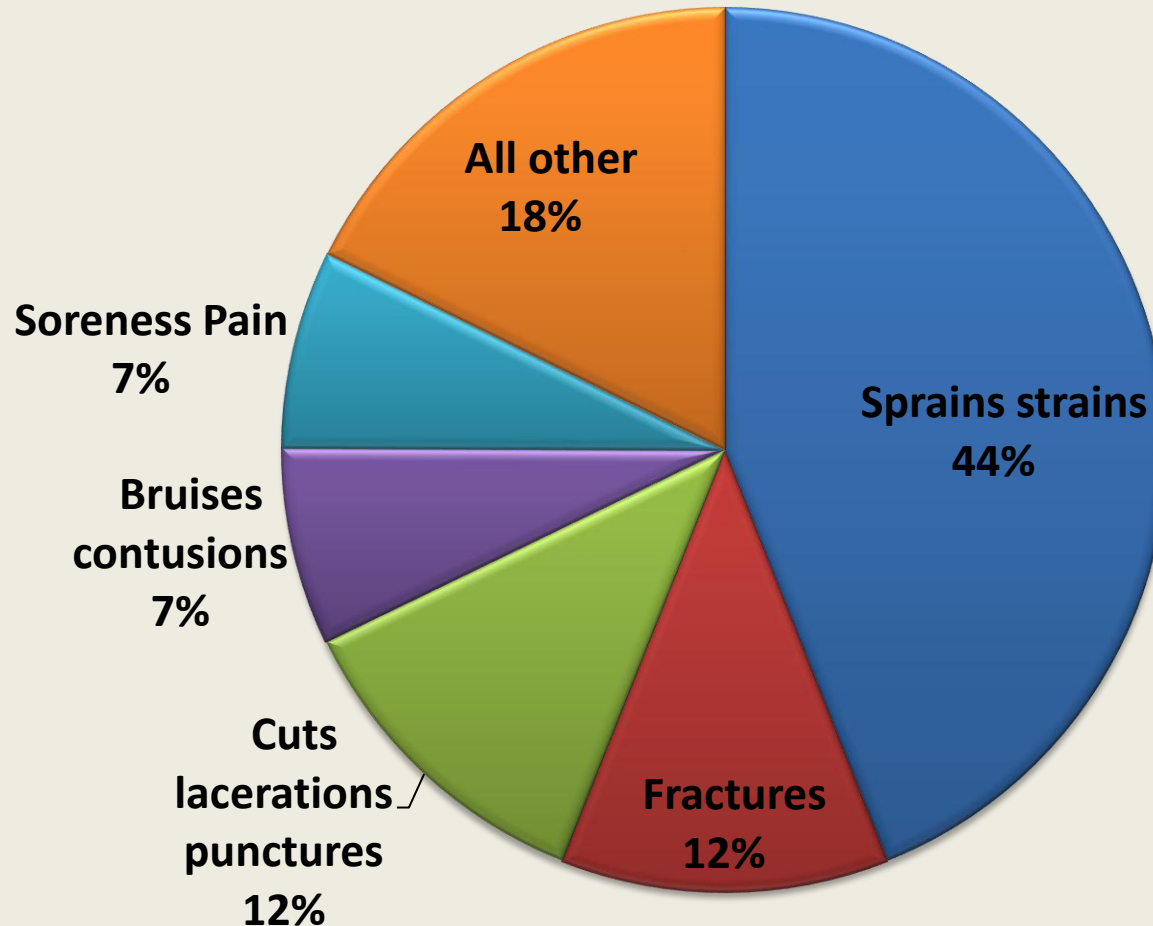
Private Waste Management & Remediation (562)



Source: BLS Survey of Occupational Injuries and Illnesses

2010 Part of Body DAFW

Private Waste Management & Remediation (562)



Source: BLS Survey of Occupational Injuries and Illnesses

DAFW Injuries and Illnesses, 2008–2010

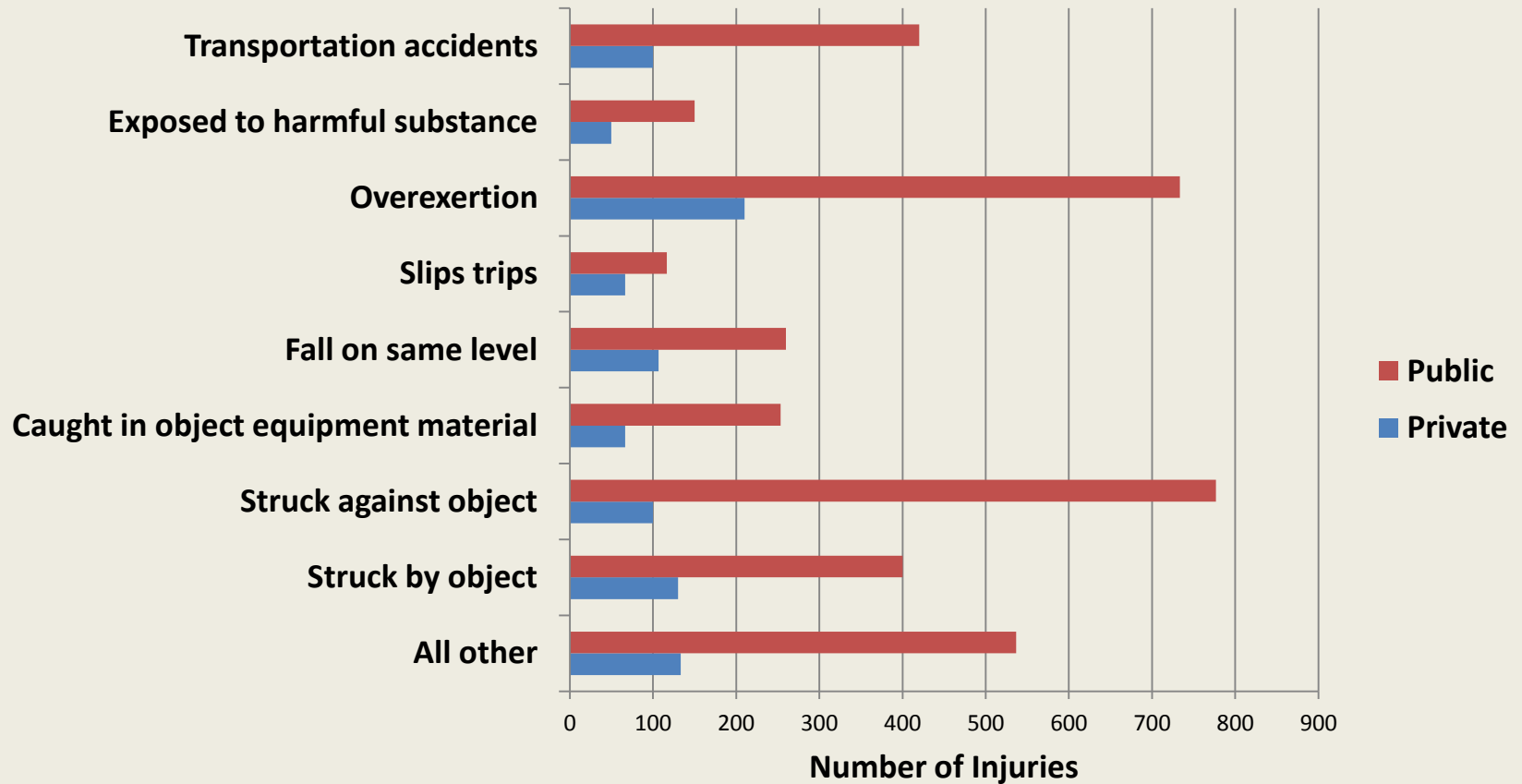
Refuse and Recyclable Materials Collectors (SOC 53-7081)

	Public Sector	Private Sector
Estimated No. Workers (2009)	50,010	70,950
Average Total DAFW Injuries and Illnesses	4,017	1,070

Source: BLS Survey of Occupational
Injuries and Illnesses and National
Employment Matrix

Average Number of Injury Events 2008–2010

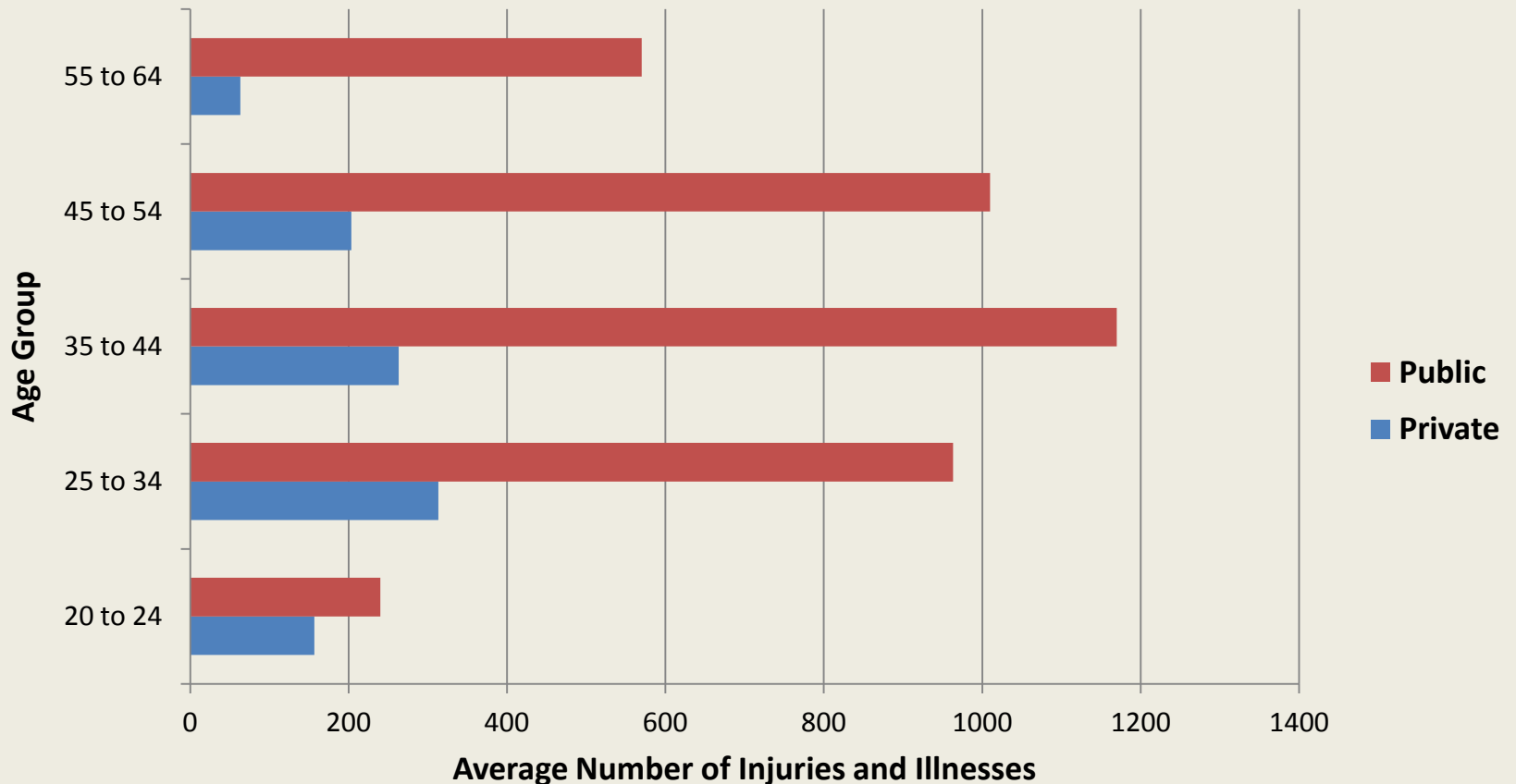
Public versus Private Collection Occupation



Source: BLS Survey of Occupational Injuries and Illnesses

Average Injuries by Age Class 2008–2010

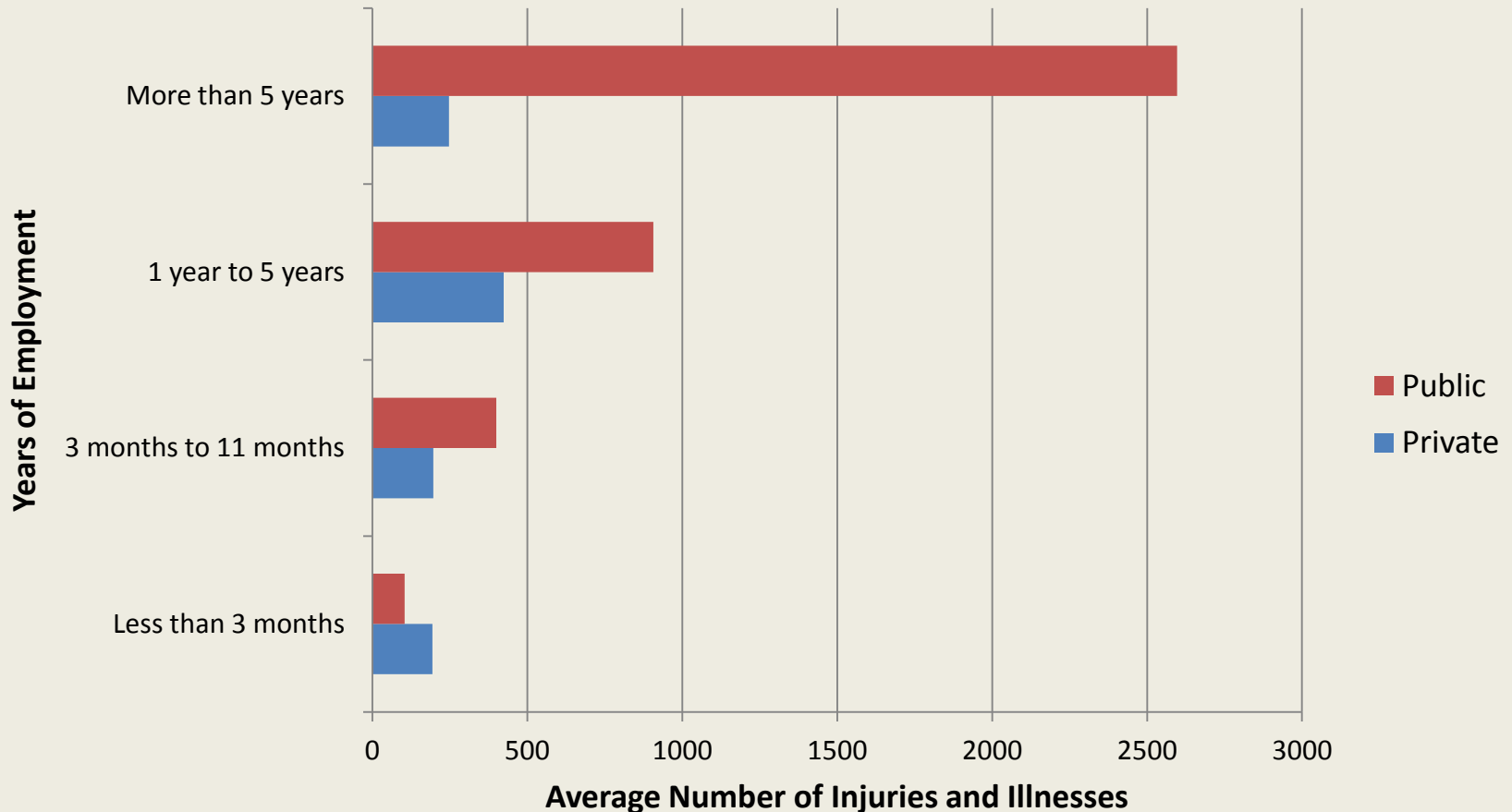
Private versus Public Collection Workers



Source: BLS Survey of Occupational Injuries and Illnesses

Average DAFW Injuries by Employment Tenure, 2008–2010

Private versus Public Collector Occupation



Source: BLS Survey of Occupational Injuries and Illnesses

Summary for Injuries

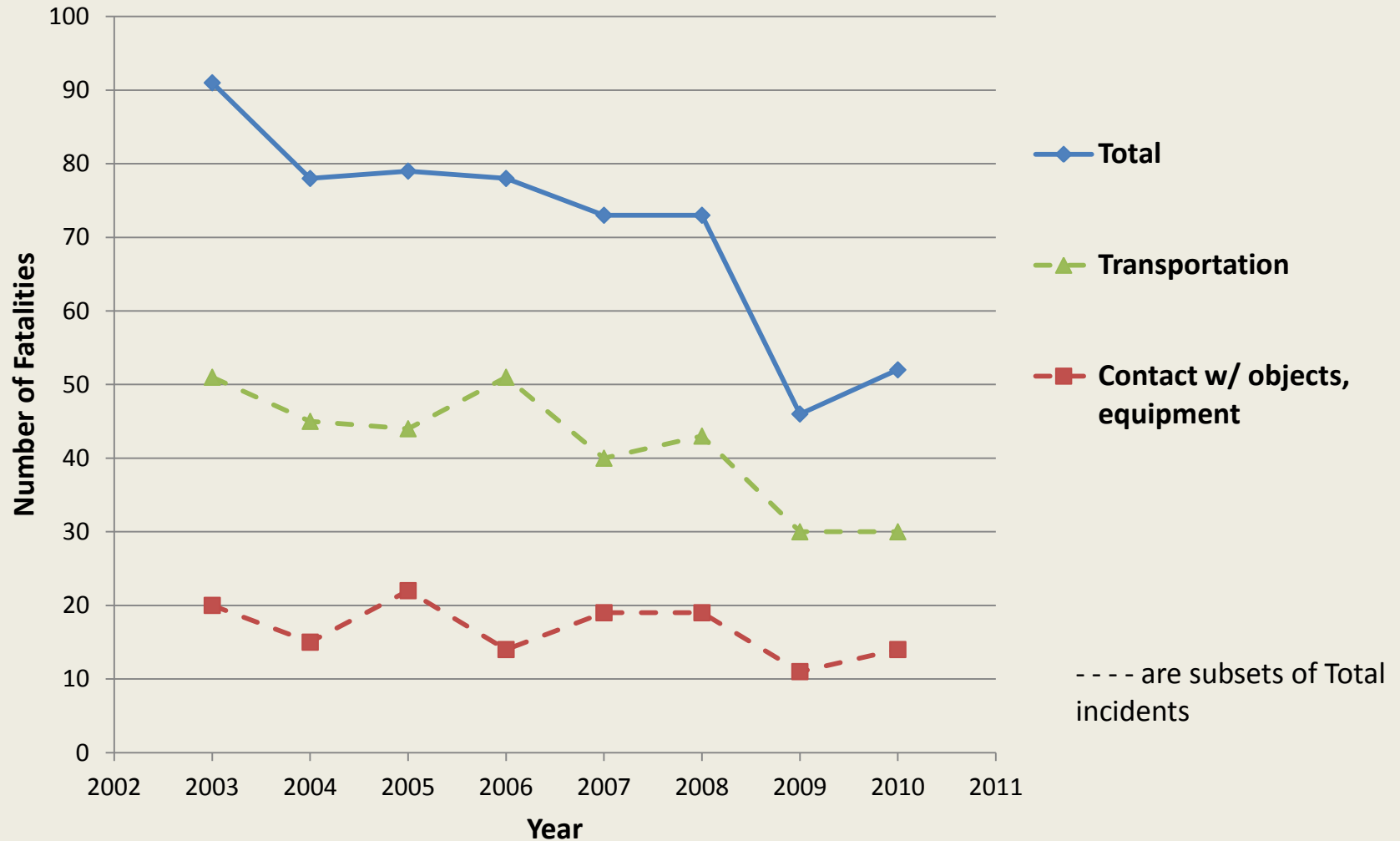
- Most common events are contact with objects and equipment, falls, overexertion, and transportation
- For public sector Refuse & Recyclable Materials Collectors, numbers and rates are greater
- Public sector workers experience DAFW injuries at older ages

Occupational Fatalities

**NAICS 562, Waste Management and
Remediation Services**

Occupational Fatalities 2003–2010

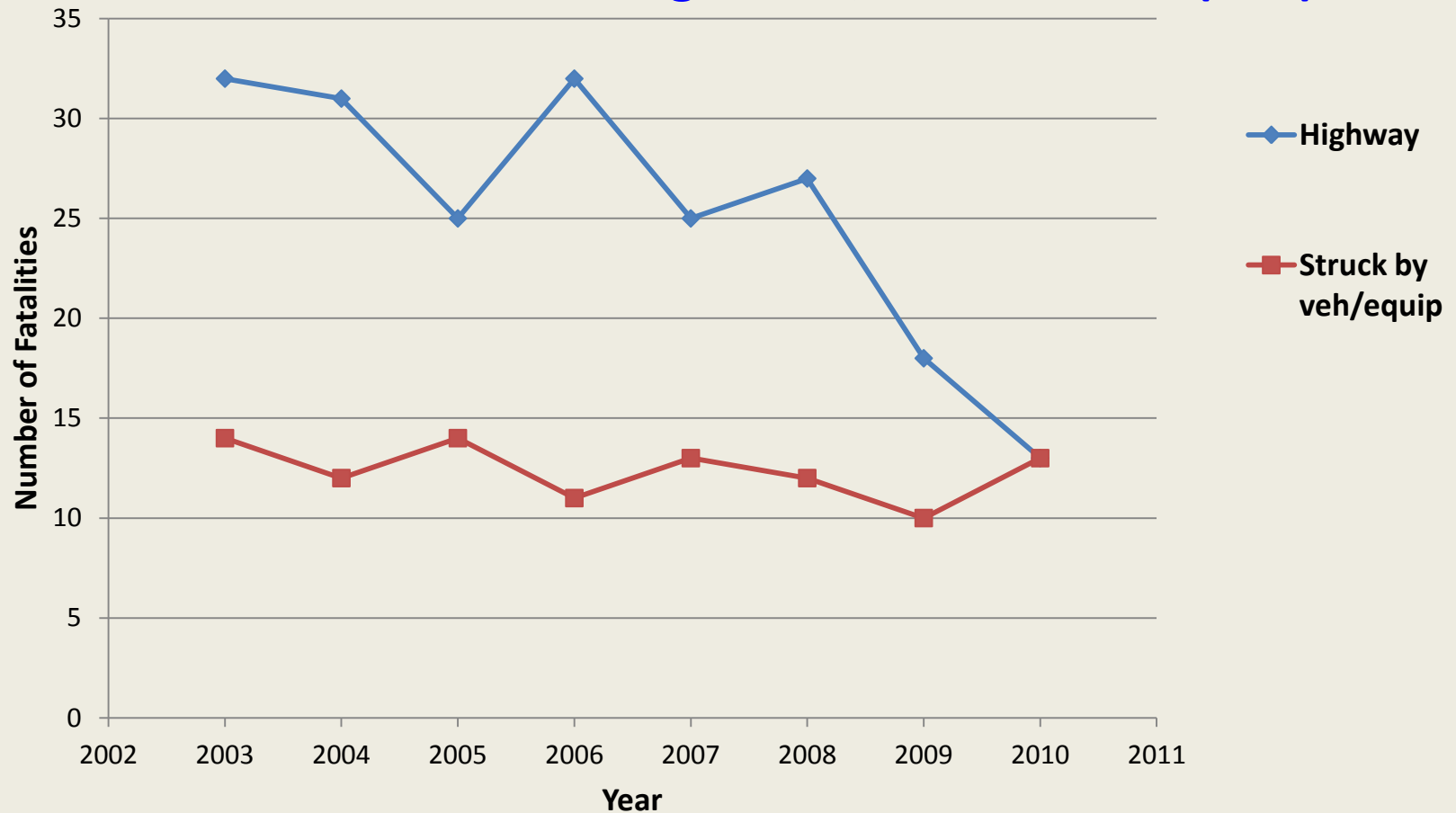
Private Waste Management/Remediation (562)



Source: BLS Census of Fatal Occupational Injuries

Transportation Occupational Fatalities 2003–2010

Private Waste Management/Remediation (562)

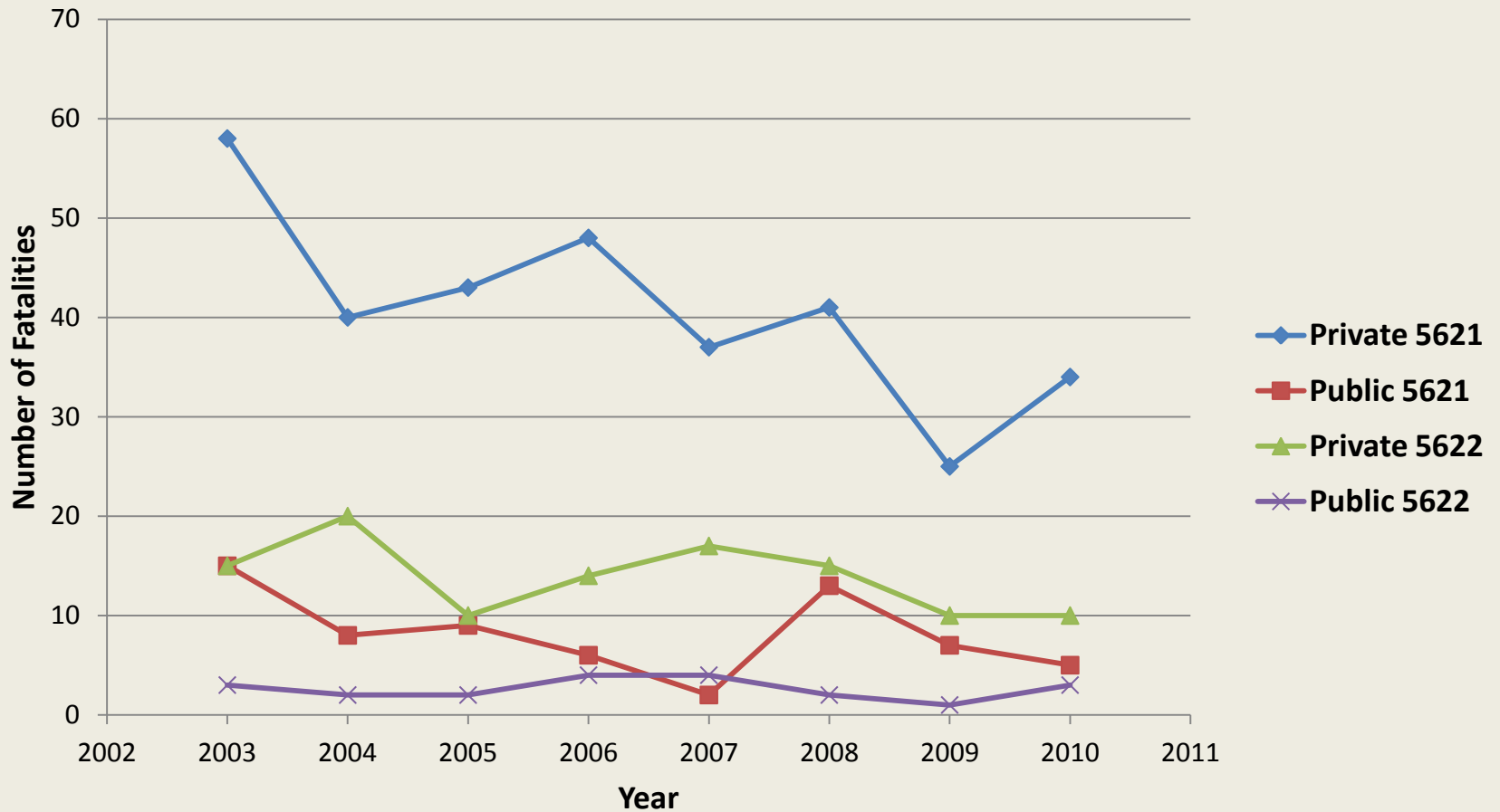


Source: BLS Census of Fatal Occupational Injuries

Total Fatalities

Waste Collection and Treatment and Disposal

2003–2010



Source: BLS Census of Fatal Occupational Injuries

Fatalities Occupations Other than Waste Collection Workers, 2003–2010

		Number	Percent of Total
Total fatalities		453	100%
Events	Transportation Incidents	232	51%
	Highway	156	34%
	Contact with Objects/Equipment	125	28%
	Struck by	60	13%
	Caught in/compressed	58	13%
	Falls	26	6%
	Exposure to substances/environments	38	8%
Source	Vehicles	272	60%
	Structures/Surfaces	25	6%
	Machinery	54	12%
	Parts & Materials	20	4%
	Chemicals & Products	21	5%
	Containers	19	4%

Source: BLS Census of Fatal Occupational Injuries

Fatalities Occupations Other than Waste Collection Workers, 2003–2010, cont'd

Worker Activity	Vehicular/transportation operations	240	53%
	Using, operating tools/machinery	28	6%
	Constructing, repairing, cleaning	107	24%
	Materials handling	37	8%
Location	Street or highway	210	46%
	Industrial place or premise	171	38%
	Other specified space	51	11%
Occupation	Management	15	3%
	Construction, extraction	49	11%
	Installation, maintenance, repair	27	6%
	Transportation and Material Moving	306	68%
	Supervisors	14	3%
	Vehicle operators	233	51%
	Truck drivers	222	49%
	Material moving workers	58	13%

Source: BLS Census of Fatal Occupational Injuries

Summary Fatalities

- **Transportation, contact with objects/equipment are most common fatal events for waste collection and for all other occupations combined.**
- **Number of fatalities for industry decreased substantially in 2009 but increased in 2010.**
- **Waste collection industry group continues to have greater traumatic injury fatality rates.**
- **All industry groups have fatality rates greater than U.S. average.**

Injury, Illness & Fatality Prevention

- **Comprehensive safety and health programs**
 - Safety culture established by top management
 - Safety climate where workers know their roles
 - Joint management/labor safety committees
 - Safety program orientation for new employees
 - Task specific training on prevention that is repeated over time
- **Safe vehicle operation and maintenance**
- **Lifting equipment to limit worker exposures**
- **Lock-out tag out enforcement**
- **Automated collection vehicles**

NIOSH Solid Waste Fact Sheet, March 2012



Photo: Thinkstock images

Solid Waste Industry

Background

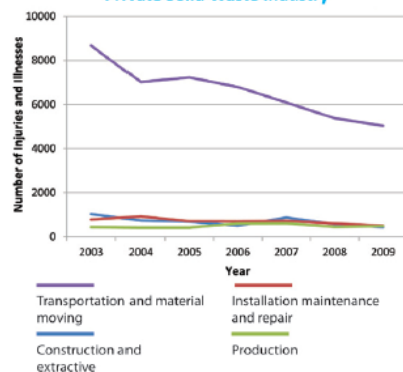
The solid waste industry (Waste Management and Remediation, NAICS 562) consists of 3 groups: Collection; Treatment and Disposal; and Other Waste Remediation Services.¹ In 2010, approximately 478,000 workers were employed in the solid waste industry with about 355,000 in private industry.² About 72,500 of the private waste industry employees are classified as Refuse and Recyclable Materials Collectors (SOC 53-708) and 49,000 collection workers are employed by local government agencies.³ Occupational traumatic injury fatality data for 2003 – 2009 have been published for public and private sector workers but occupational injury and illness data for this period are available only for private sector workers.^{4,5}

Injuries and Illnesses

Days-away-from-work (DAFW) injuries and illnesses are those that cause workers to be absent from work at least one day beyond the day of the event.⁵ The overall DAFW rate for the private solid waste industry declined by 48% between 2003 and 2009, from 347 per 10,000 workers to 184 per 10,000 workers. The comparable rate for all U.S. industries in 2009 was 106 per 10,000 workers. The median DAFW for the private waste industry varied between 6 and 11 days over the 2003 – 2009 period.

The largest number of occupational injuries in the private sector occurred among workers in the transportation and material moving job class which includes truck drivers and collection laborers. This job class consists of 162,000 (46%) workers² yet they recorded about 75% of the DAFW occupational injuries and illnesses in the waste industry sub sector since 2003 (Figure 1).

Figure 1. DAFW Injury and Illness by Job Class
Private Solid Waste Industry



Source: U.S. Bureau of Labor Statistics Survey of Occupational Injuries and Illnesses

The most common events associated with the injuries were contact with objects and equipment and overexertion (Figure 2). Being struck by objects and equipment and lifting, respectively, accounted for most of these injuries.

Solid Waste Industry Fact Sheet

Resources†

- Crushing Hazards Associated with Dumpsters and Rear-loading Trash Trucks <http://www.osha.gov/dts/shib/shib120903.html>
- Waste Disposal Worker Was Crushed Between a Waste Disposal Truck and a Dumpster – Oklahoma <http://www.cdc.gov/niosh/face/stateface/ok/03ok016.html>
- Municipal laborer dies after falling off the back of a forward moving refuse collection truck – Massachusetts <http://www.cdc.gov/niosh/face/stateface/ma/09MA020.html>
- 69-Year-old sanitation worker run over by refuse truck – New Jersey <http://www.cdc.gov/niosh/face/stateface/nj/08NJ079.html>
- City Engineer Killed in Landfill Manhole When Retrieving Flow Meter <http://www.health.ny.gov/environmental/investigations/face/03ny027.htm>
- Truck Driver Run Over by Trash Compactor at Municipal Landfill – New York <http://www.health.ny.gov/environmental/investigations/face/02ny007.htm>

- Sanitation Fatal Injury Facts (available in Spanish) <http://www.health.ny.gov/environmental/investigations/face/facts/sanitation.htm>
- Don't get hurt working around sanitation trucks (available in Spanish) http://www.state.nj.us/health/surv/documents/sanwk_en.pdf
- National Solid Waste Management Association – Making the Waste Industry Safer <http://www.environmentalistseveryday.org/solid-waste-management/environmental-waste-garbage-safety-first/index.php>
- American National Standard for Equipment Technology and Operations for Waste and Recyclable Materials. American National Standards Institute <http://www.environmentalistseveryday.org/about-wastec-solid-waste-equipment-technology/ANSI/subcommittee-structure-rosters-docs.php>

†Please note that mention of any company or product does not constitute endorsement by NIOSH.



Photograph courtesy of the City of Albany Department of General Services

- U.S. Bureau of Labor Statistics, Occupational Employment Statistics, http://www.bls.gov/oes/current/naics3_562000.htm
- U.S. Bureau of Labor Statistics, Current Population Survey, <http://www.bls.gov/cps/cpsaat18.pdf>
- U.S. Bureau of Labor Statistics, National Employment Matrix, ftp://ftp.bls.gov/pub/special.requests/ep/ind-occ.matrix/occ_xls/occ_53-7081.xls
- U.S. Bureau of Labor Statistics, Census of Fatal Occupational Injuries, <http://www.bls.gov/iif/oshcfoi1.htm>
- U.S. Bureau of Labor Statistics, Survey of Occupational Injuries and Illnesses, <http://www.bls.gov/iif/oshsum.htm>

To receive documents or other information about occupational safety and health topics, contact NIOSH at:
Telephone: 1-800-CDC-INFO (1-800-232-4636)
TTY: 1-888-232-6348
E-mail: cdcinfo@cdc.gov
or visit the NIOSH Web site at <http://www.cdc.gov/niosh>.

For a monthly update on news at NIOSH, subscribe to NIOSH eNews by visiting <http://www.cdc.gov/niosh/eNews>.

DHHS (NIOSH) Publication No. 2012-140

March 2012

Thank you !

David F. Utterback

National Institute for Occupational Safety and Health

4676 Columbia Parkway, R-12

Cincinnati, OH 45226

dutterback@cdc.gov

(513) 841 4492

