



The American
Waterways Operators

Safety Statistics Reporting Program

Annual Report 2022

December, 2022

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December 6, 2022

TO: AWO Member Representatives

FROM: Safety Leadership Advisory Panel
Michael Breslin

RE: Safety Statistics Reporting Program 2021 Annual Report

The American Waterways Operators is recognized and respected as the advocate, resource, and united voice for the tugboat, towboat, and barge industry and its reputation as a sustainable, innovative, and essential sector of the domestic supply chain and the American economy.

The data contained in this Safety Statistics Reporting Program (SSRP) second annual report represents our members' commitment to constant improvement and dedication to a culture of safety. By regularly collecting and reporting the key performance indicators contained in the SSRP program, our members can track progress and compare their safety program against similar operations in the maritime transportation industry. The SSRP is designed to be simple, secure, and confidential. Members gain access to this important tool with their membership in AWO and participation in the program. Using a simple online form each quarter, operators upload their data to a secure and confidential library. These entries are instantly organized into sets of information detailing individual company progress and added to the aggregate participant data to generate industry benchmarking and comparison reports and trends over time. Using insights gleaned from these KPIs, participants can take proactive steps to prevent incidents before they happen and help to raise the safety profile of the industry.

SSRP data points include vessel crew work hours, crew fatalities, recordable injuries, lost-time injuries, falls overboard, spills, and volume of spills. When inputting their data, AWO members select a sector – inland¹, inland fleeting² or coastal/coastal harbor³. Some companies who operate in multiple sectors make different entries for each sector while others input their data into the sector where they operate most of the time. AWO does not have access to the company-specific safety statistics that are submitted quarterly; this information is accessible only to authorized users. The data presented in the following charts is aggregated by sector and by participants as a whole.

¹ Inland includes those vessels and mariners transporting cargoes on inland river routes.

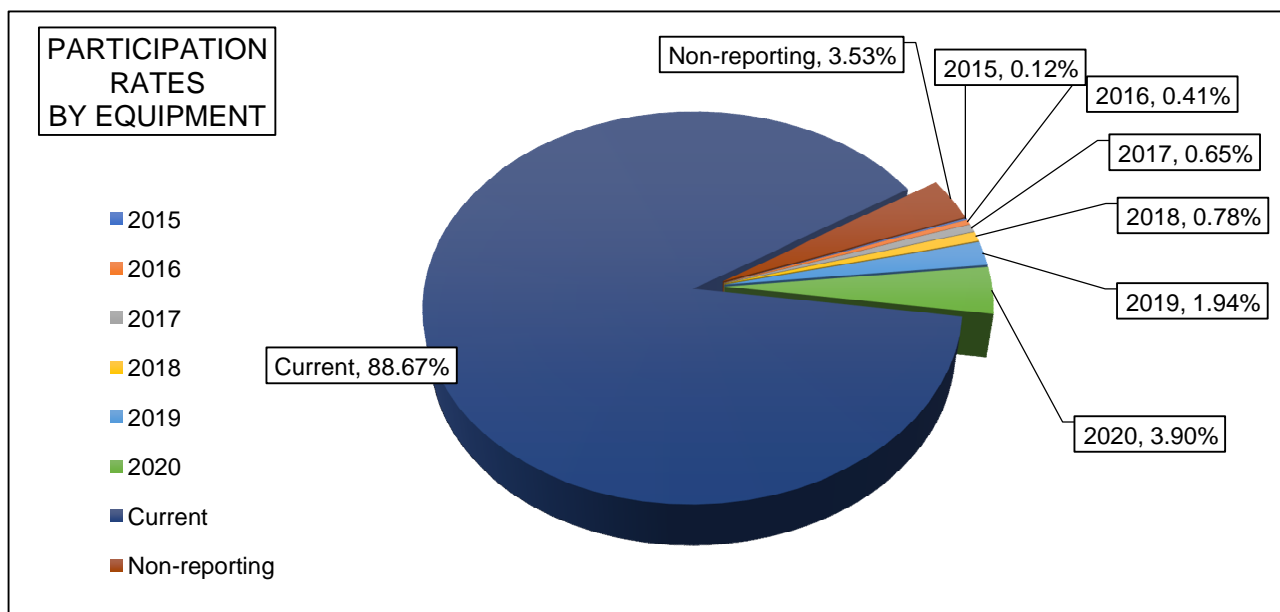
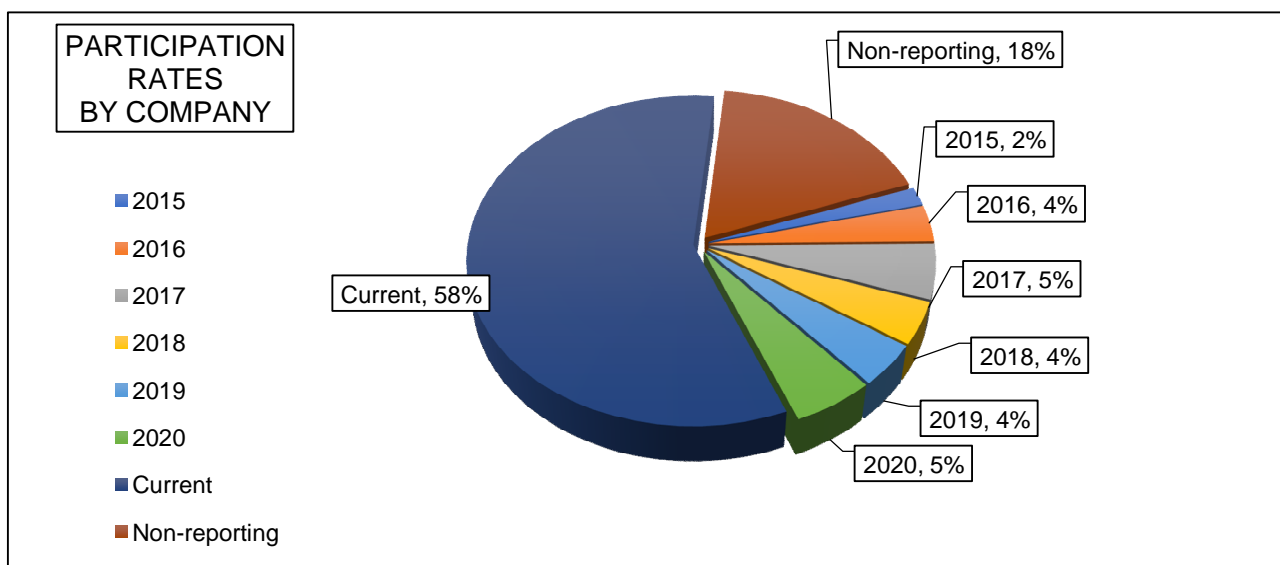
² Inland Fleeting, specifically, refers to those companies and mariners involved in fleeting operations where barges are moored, loaded, unloaded, built into a tow for delivery to a loading or unloading location, cleaned and/or repaired for use.

³ Coastal/Coastal Harbor denotes those companies and mariners navigating the Atlantic, Pacific and Gulf Coasts and operating in coastal harbor ports with many of these enterprises assisting with ships' mooring or berthing operations and transportation services.

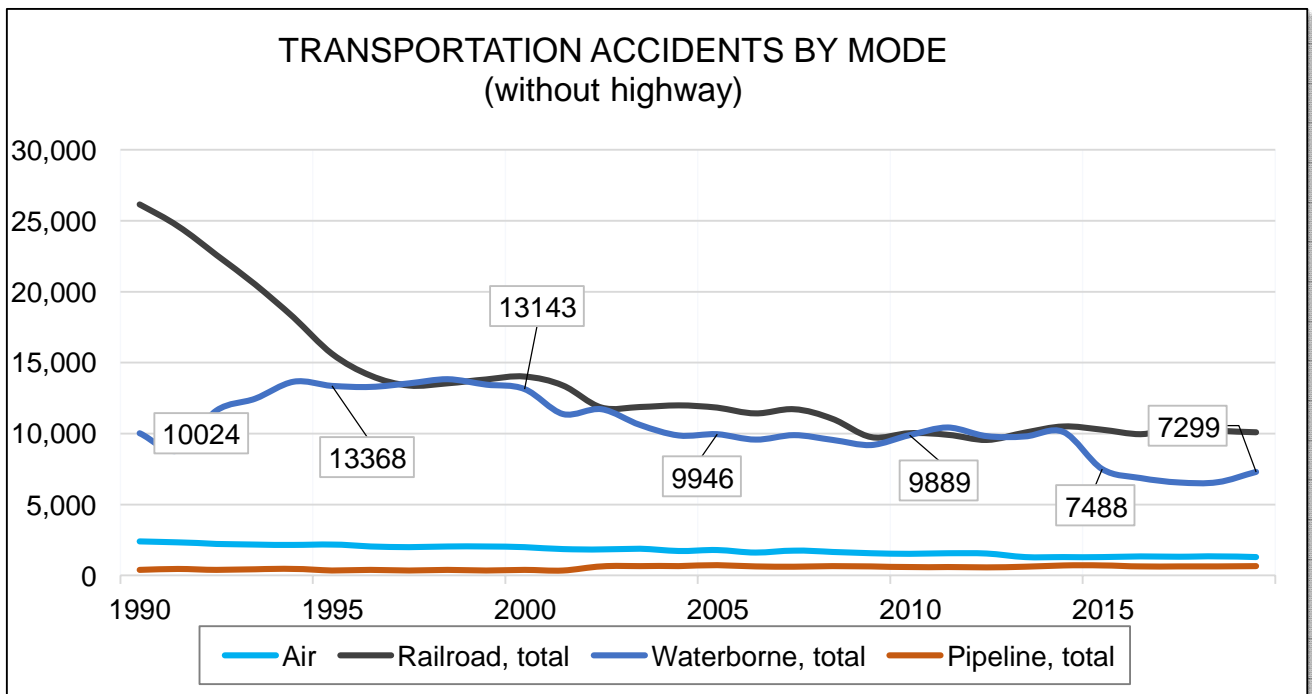
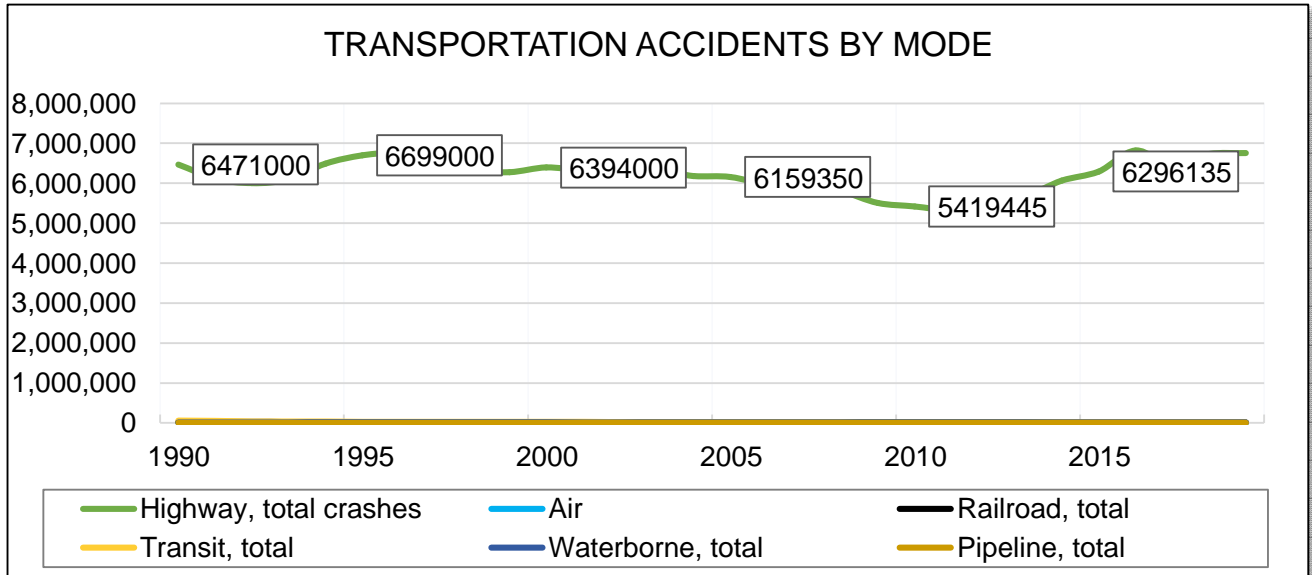
Members decided on these specific data sets in order to align with information utilized by existing tangential reporting programs, using the same man-hour formula as in reports from agencies such as the United States Coast Guard (USCG), the Bureau of Labor and Statistics (BLS), the Bureau of Transportation Statistics data (BTS), and numerous other domestic and international safety management programs to more easily compare results.

AWO strongly encourages participation in SSRP among our 180 + carrier members. Current participation has slightly decreased in the year 2021, which may be the result of equipment consolidations due to COVID-19 and the decommissioning of some vessels due to pending final implementation date of Subchapter M, though only anecdotal evidence is available for this theory. The rates below represent company participation counts and equipment percentages known to AWO on the dates indicated in this report.

Participation as of January 1, 2022, includes 82% of all eligible member companies, though a smaller 58% of these eligible companies are current as of January 1st, 2021. This 58% of companies represents 89% of all member-reported floating equipment.



AWO's purpose in presenting this data is to create a set of benchmarks for our members and the maritime community. To compare the maritime industry to other modes of transportation is a more difficult task, as the incident rates in maritime transportation are significantly lower than truck and train bulk cargo transport. It is with this in mind that we created the below chart that references accident rates across all American transportation modes, showing the safety of waterborne transit in comparison to alternatives⁴. Please note that the first graph below includes Highway (truck) incidents, which skews the data due to the much higher rate of trucking incidents. To allow better interpretation, a second graph is included without "Highway, total crashes" or "Transit, total" data.

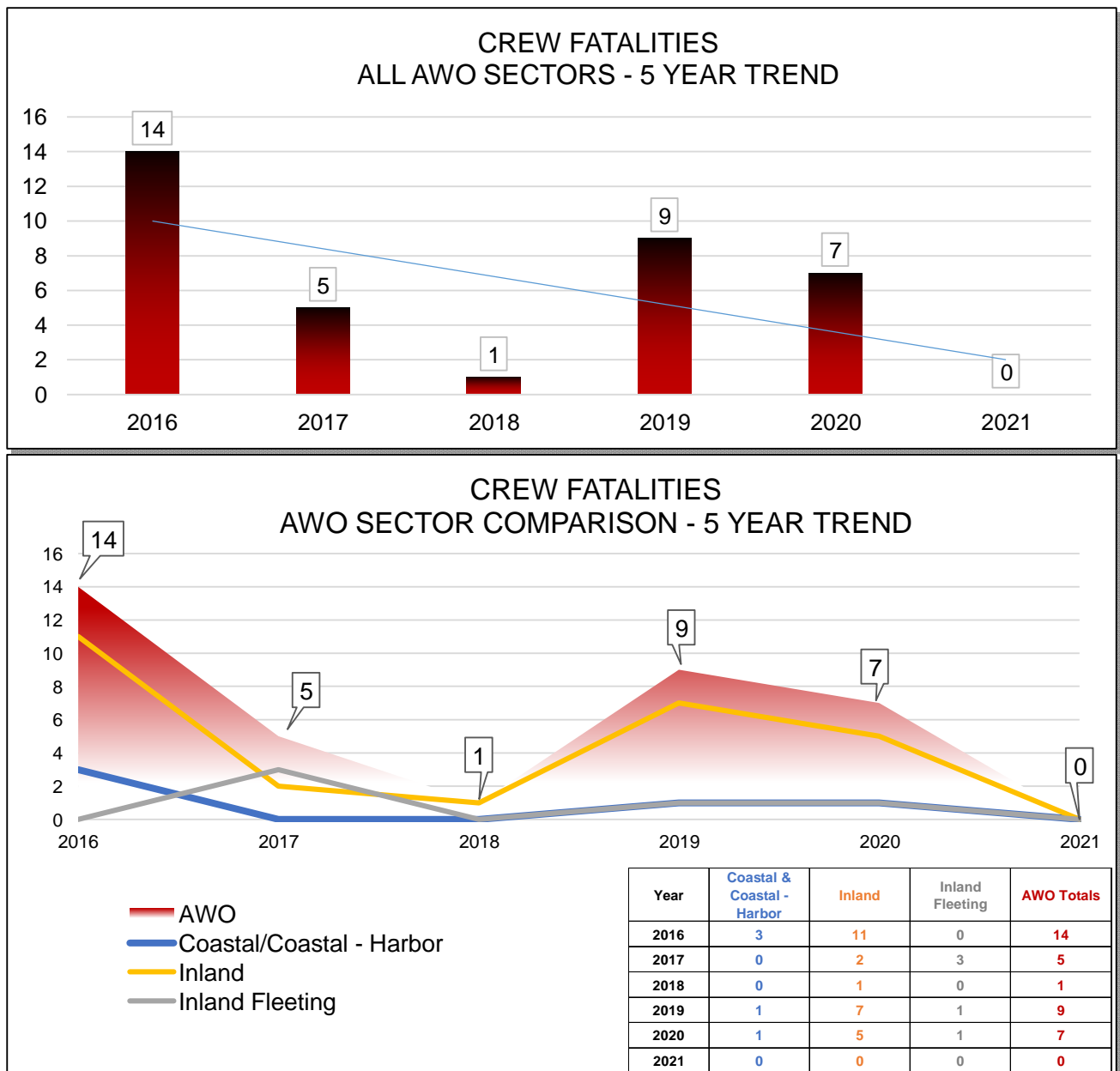


⁴ BLS – pulled 6/20/22 from link: <https://www.bts.gov/content/transportation-accidents-mode>

TOTAL CREW FATALITIES

Crew fatalities are defined as those accidents or incidents which result in death.⁵

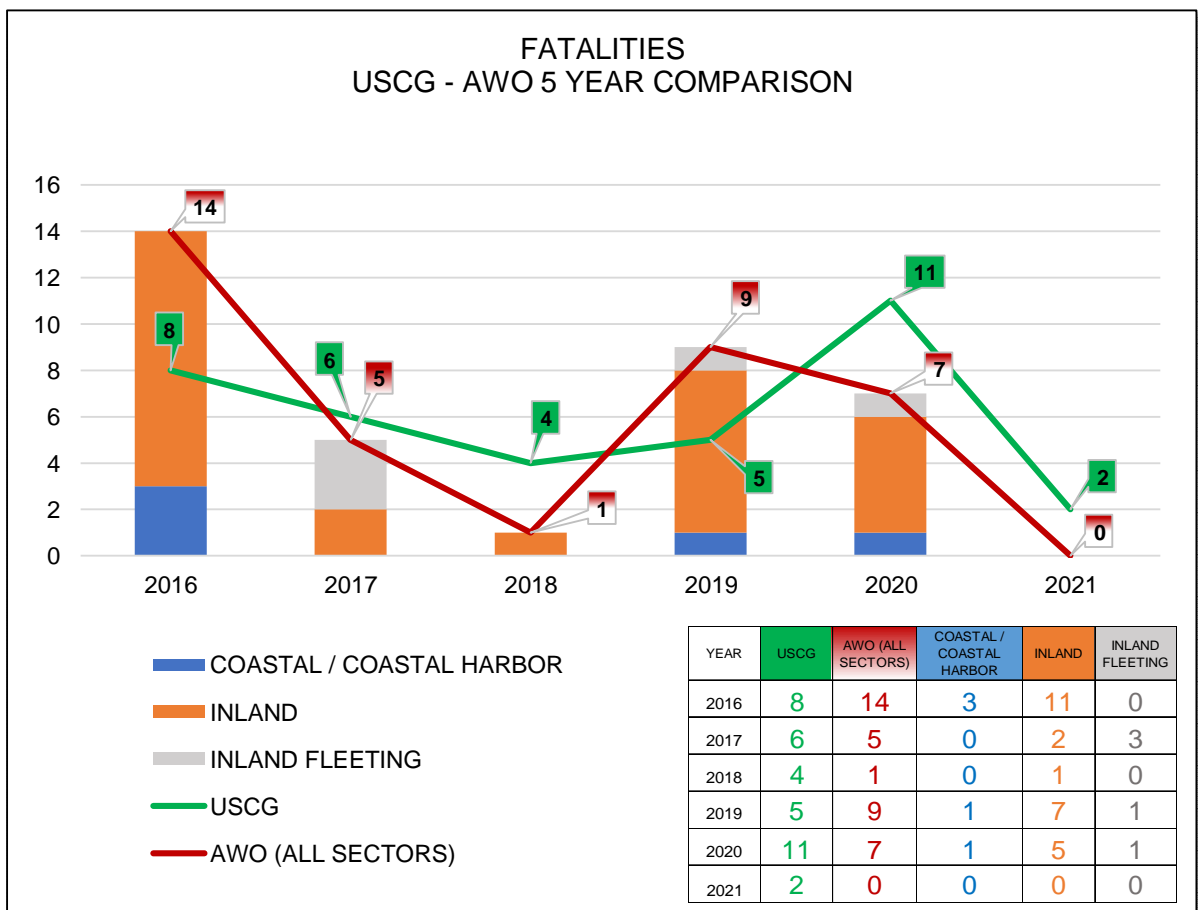
Drafters of this report strongly suspect that the implementation of 46 CFR Subchapter M, which began in 2018 and concluded on July 19, 2022, was a source of some confusion for the reporting agents employed by owners and operators in the maritime industry. It was not clear during some phases of implementation, and indeed remains in question, which reporting agency should receive data in the case of incidents, fatalities, property damage and environmental impact events that occur on a tugboat, pushboat, or barge in the Jones Act fleet. Therefore, comparison of AWO member data to government agencies and NGO's is somewhat incomplete. Further details on the changes to this year's report follow the "CREW FATALITIES ALL AWO SECTORS – 5 YEAR TREND," and "CREW FATALITIES AWO SECTOR COMPARISON - 5 YEAR TREND" charts illustrated below.



⁵ SSRP data pulled from Salix 6-2-22

Following AWO member trend data above, we also compared each AWO Sectors' crew fatalities with similar categories reported by the BTS⁶ and the USCG.⁷ In researching these fatality statistics, AWO noted that the USCG was the source for BTS' data related to marine incidents. For this reason, AWO used only data from our USCG – AWO Annual Safety Report⁸ and members' SSRP data in creating the graph included below.

To contextualize this graph, the USCG has reported complete fatality data each year through 2021, however, their numbers are sometimes lower and sometimes higher than AWO's reported fatality figures. The USCG considers only those fatalities directly attributable to towing vessel operations, and involving crewmembers, as reportable crew fatalities. AWO's crew fatality figures may include non-operational deaths caused by pre-existing medical conditions, drug overdoses, suicides, or other circumstances that have been scrubbed from the USCG data, resulting in a higher number reported by AWO. In contrast, USCG and BLS figures higher than those reported by AWO members may be the result of fatalities of crewmembers employed by AWO members who do not participate in the SSRP or non-AWO members.⁷



⁶ [BTS: Transit Safety Data](#) pulled December 2, 2021

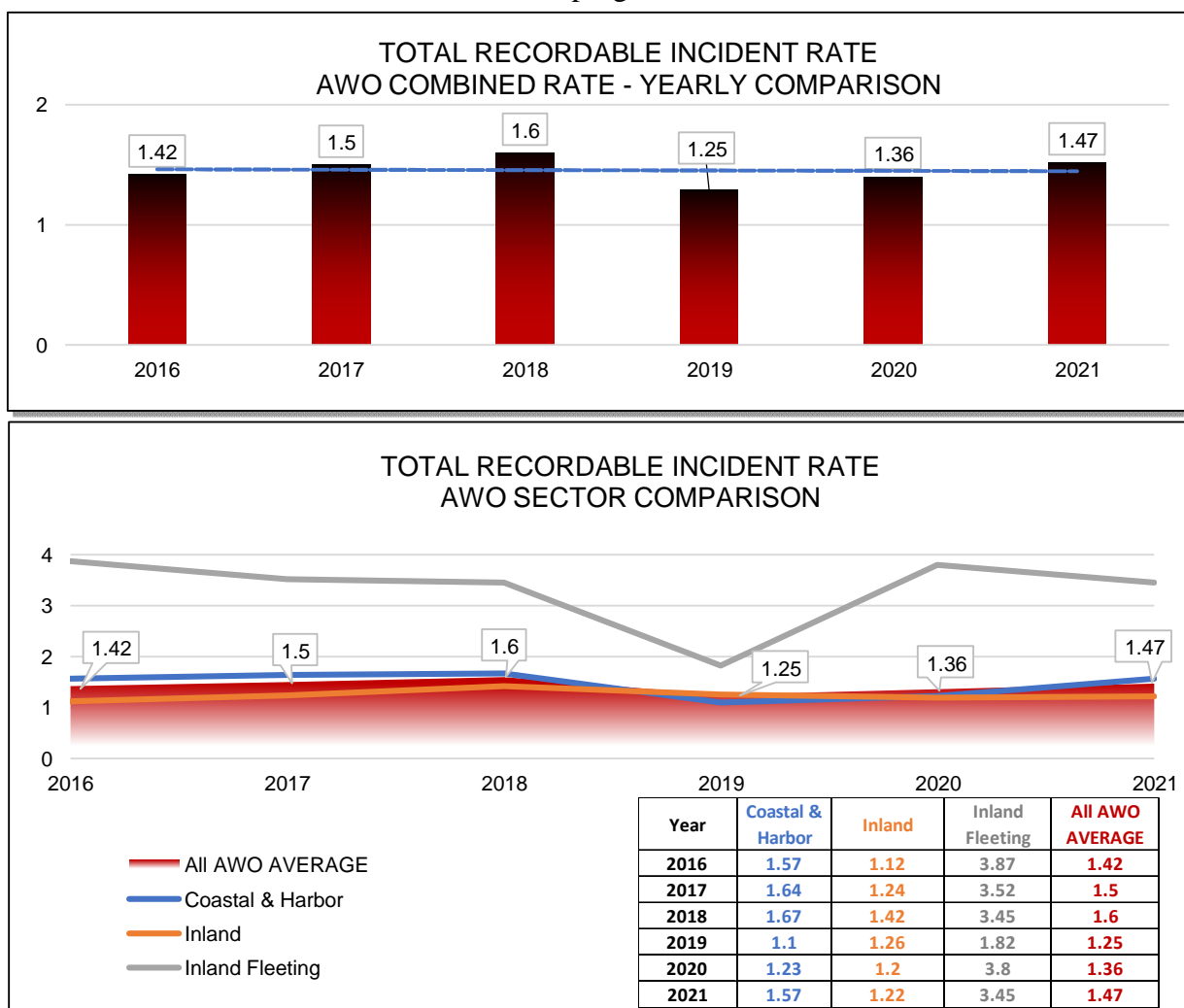
⁷ U.S. Coast Guard - American Waterways Operators Annual Safety Report: September, 2022

⁸ AWO compares data from the Coast Guard in this graph by combining all fatalities reported to the SSRP in a given year as "AWO (ALL SECTORS)", along with broken out sector numbers that include Inland, Inland Fleeting, and Coastal / Coastal Harbor sectors.

Total Number of Recordable Injuries

Recordable injuries are those which require more than first aid treatment and should be determined using Occupational Safety and Health Administration (OSHA) guidelines.⁹ The Total Recordable Injury Rate (TRIR) is defined as the number of work-related injuries per 100 full-time workers during a one-year period.¹⁰

OSHA uses the TRIR to monitor high-risk industries and provides for the tracking of injury rates to discover patterns or trends. AWO applies OSHA's TRIR rate formula to our member's SSRP submitted data to enable comparison across sectors. Below, we have illustrated member's SSRP data in both an "AWO COMBINED RATE – YEARLY COMPARISON" and a "AWO SECTOR COMPARISON," the latter being used to illustrate the difference in rates between AWO sectors within the SSRP program.

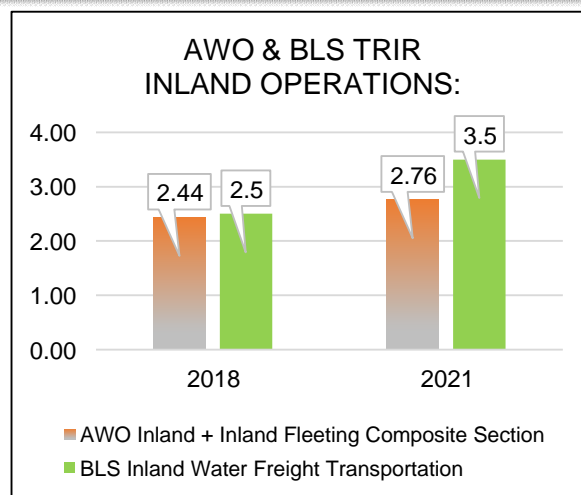
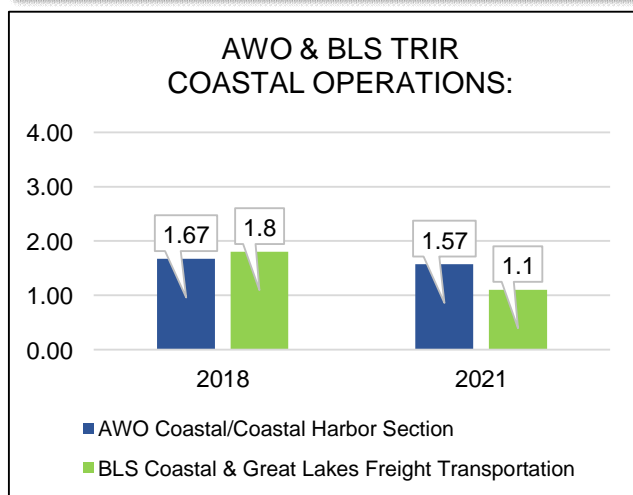
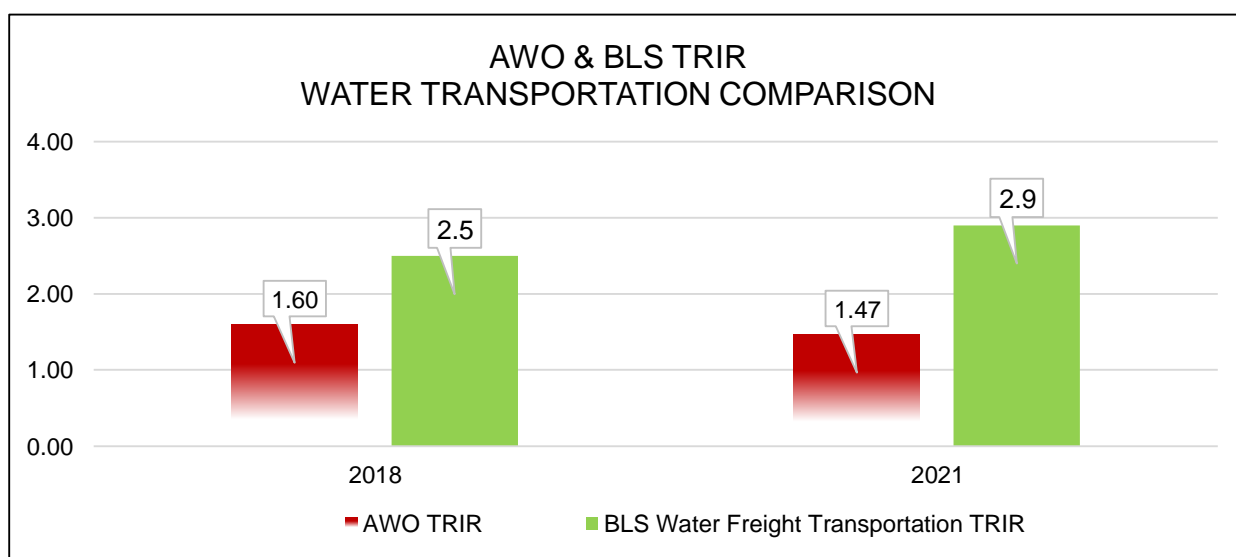


⁹ 29 CFR §1904.7(a)

¹⁰ To calculate the TRIR, the following OSHA formula is used: (Number of OSHA recordable injuries and illnesses X 200,000) / Employee total hours worked = Total Recordable Injury Rate). The 200,000 figures in the OSHA formula are the equivalent of 100 employees working 40 hours per week for 50 weeks per year and is used to give a standard base for the incidence rate. Since AWO members provide work hours when they are submitting data to the SSRP, shift length and rotation does not make a difference because the OSHA formula considers total work hours instead of length or number of employee shifts.

These tables include information supplied by AWO members using the SSRP program during the years 2016-2021. To gain context for these rates, AWO has compared our member submitted data to private industry data submitted to the BLS for the years 2018 and 2021. Please note that 2020 and 2019 data was incomplete at the time of this report and therefore AWO was unable to include these years in our comparison. The graphs below illustrate three key metrics:

- AWO & BLS TRIR WATER TRANSPORTATION COMPARISON: The “AWO Sector Totals” rate compared to the BLS Water Transportation rate,^{11 12}
- AWO & BLS TRIR COASTAL OPERATIONS: The “AWO Coastal/Coastal Harbor” rate and the BLS Coastal and Great Lakes Freight Transportation rate^{13 14}
- AWO & BLS TRIR INLAND OPERATIONS: The “AWO Inland Composite” rate compared to the BLS Inland Water Freight Transportation Total Rate.^{15 16}



¹¹ “AWO Sector Totals” rate is calculated by combining the Coastal/Coastal Harbor, Inland, and Inland Fleeting rates

¹² NAICS code for Water Transportation is 483

¹³ “AWO Coastal/Coastal Harbor Section” rate is drawn from member data submitted to the SSRP

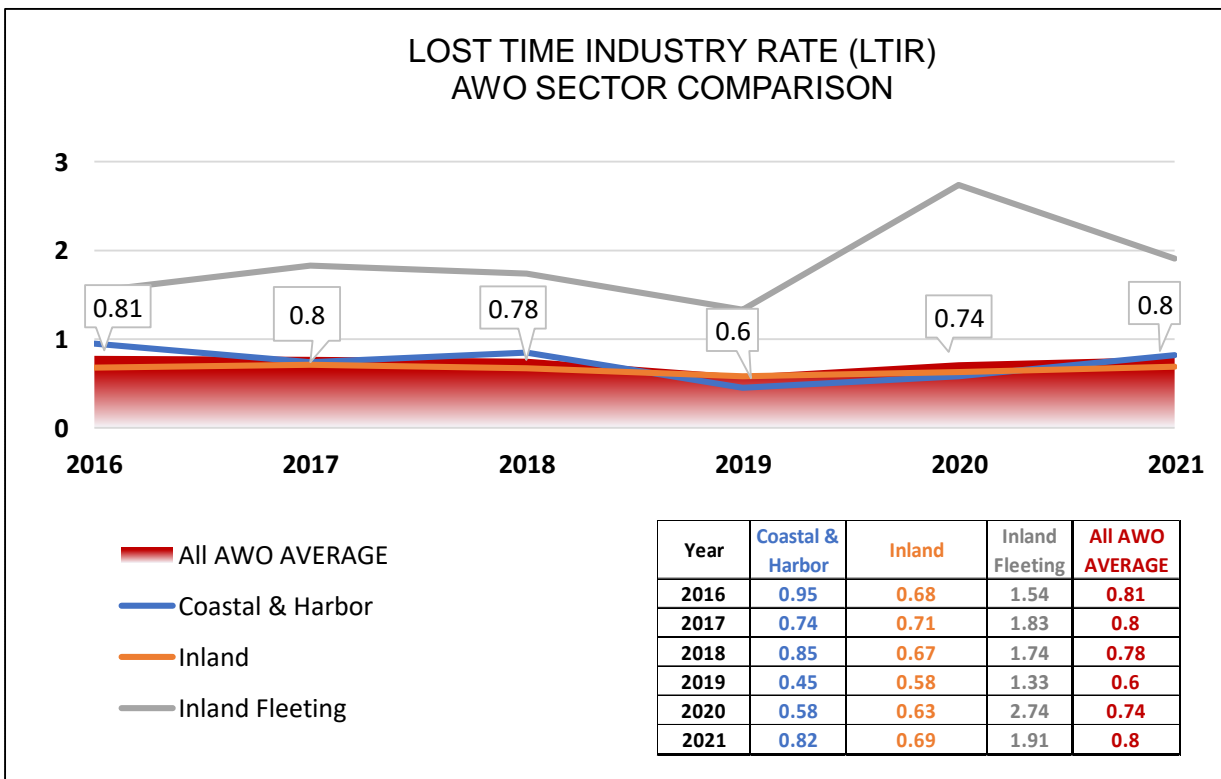
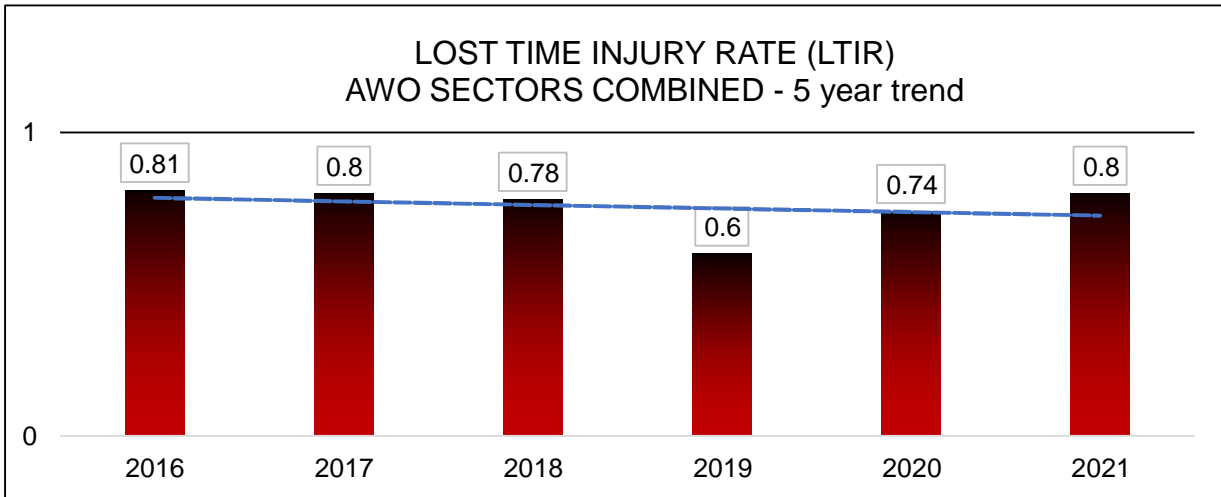
¹⁴ NAICS code for Coastal and Great Lakes Transportation it is 483113,

¹⁵ “AWO Inland Composite” rate is calculated by adding the total rates for Inland and Inland Fleeting (submitted to the SSRP) then divided that number by 2.

¹⁶ NAICS code for Inland Water Freight Transportation is 483211

Total Number of Lost-time Injuries

A Lost Time Injury refers to incidents that result in a disability or an employee missing work due to an injury. Only injuries deemed to be work-related are counted as a Lost Time Injury. The Lost Time Injury Rate (LTIR) is defined by OSHA as the number of work-related injuries per 100 full-time workers during a one-year period.¹⁷

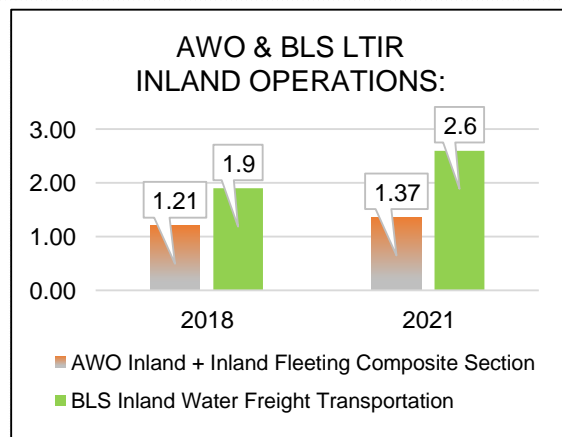
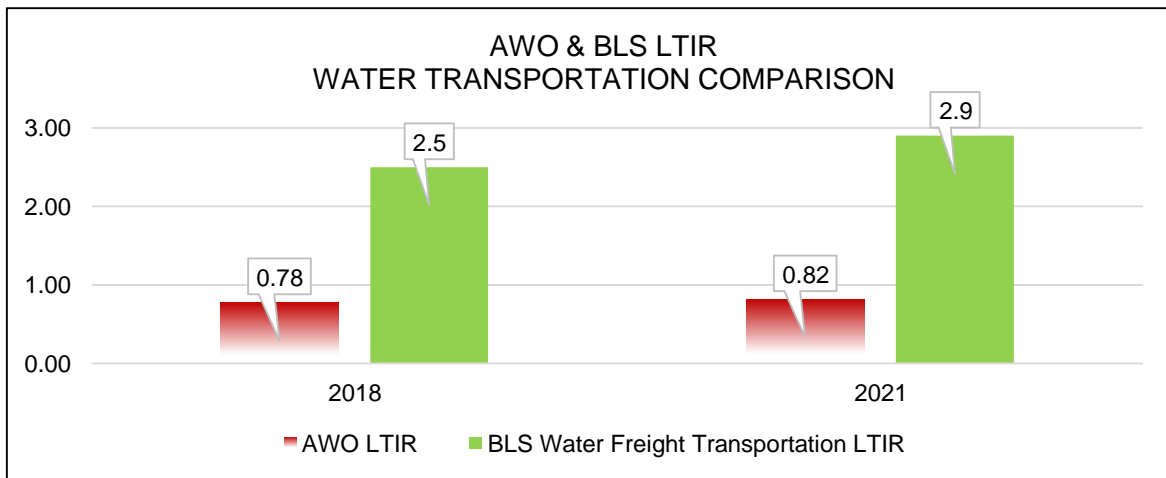


¹⁷ To calculate the LTIR, the following OSHA formula is used: (Number of OSHA Lost Time injuries X 200,000) / Employee total hours worked = Total Lost Time Injury Rate). See footnote 7 for more information.

To compare members' performance to the industry as a whole, AWO gathered information from the BLS and OSHA related to Lost Time Injury Rates, making similar comparisons as those depicted in the Recordable Injuries section of this report.

The table below compares Lost Time Incident Rates of AWO members submitting data in their respective sectors with similar categories of data represented by the BLS. The comparisons include:

- AWO & BLS LTIR WATER TRANSPORTATION COMPARISON: The "AWO Sector Totals" rate compared to the BLS Water Transportation rate,^{18 19}
- AWO & BLS LTIR COASTAL OPERATIONS: The "AWO Coastal/Coastal Harbor" rate and the BLS Coastal and Great Lakes Freight Transportation rate^{20 21}
- AWO & BLS LTIR INLAND OPERATIONS: The "AWO Inland Composite" rate compared to the BLS Inland Water Freight Transportation Total Rate^{22 23}



¹⁸ "AWO Sector Totals" rate is calculated by combining the Coastal/Coastal Harbor, Inland, and Inland Fleeting rates

¹⁹ NAICS code for Water Transportation is 483

²⁰ "AWO Coastal/Coastal Harbor Section" rate is drawn from member data submitted to the SSRP

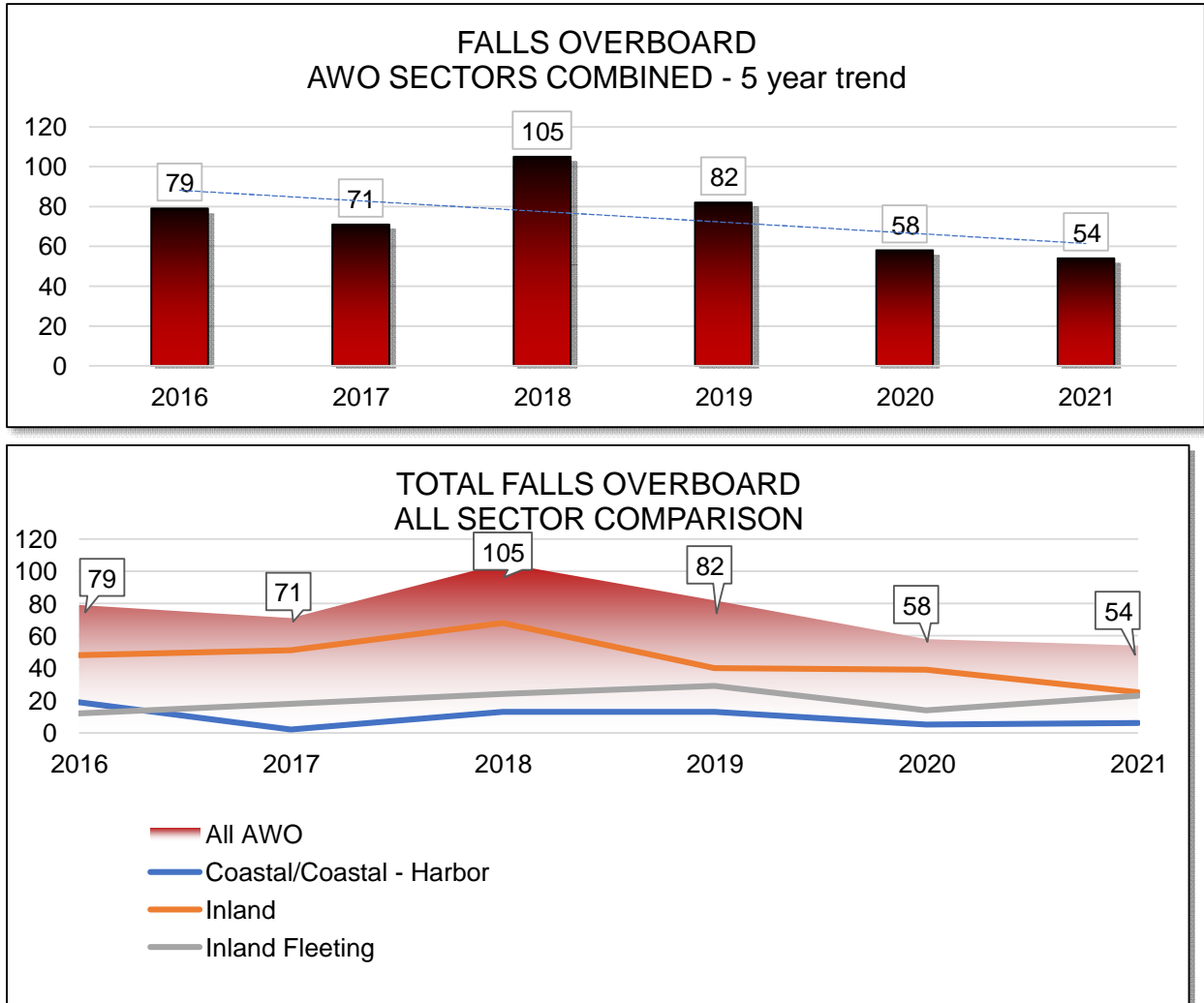
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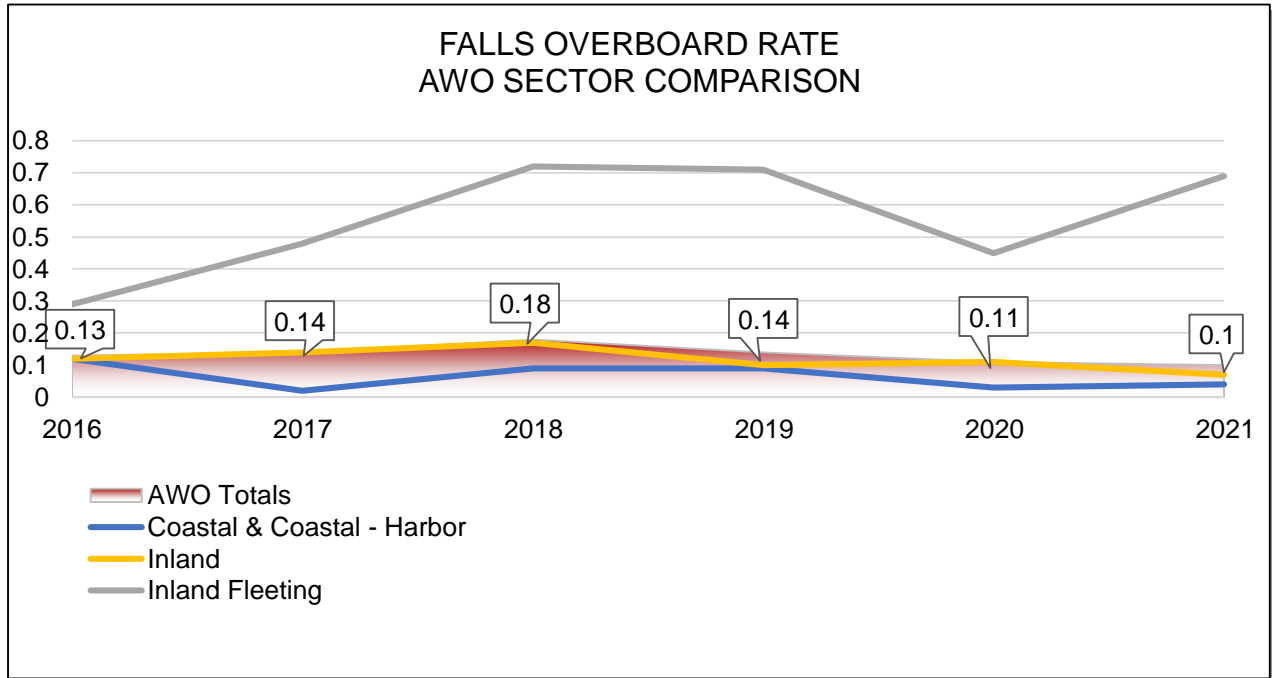
Total Number of Falls Overboard

Falls overboard remain a deadly risk for mariners, continually being cited as the most frequent contributing factor to maritime fatalities. In the most recent U.S.C.G. report, made in partnership with AWO, it was indicated that, “The largest number of crew fatalities is attributed to contact injuries sustained in falls overboard (83 of 183, 45%). The next largest group of fatalities is attributed to asphyxiation (34 of 183, 18%).”⁷

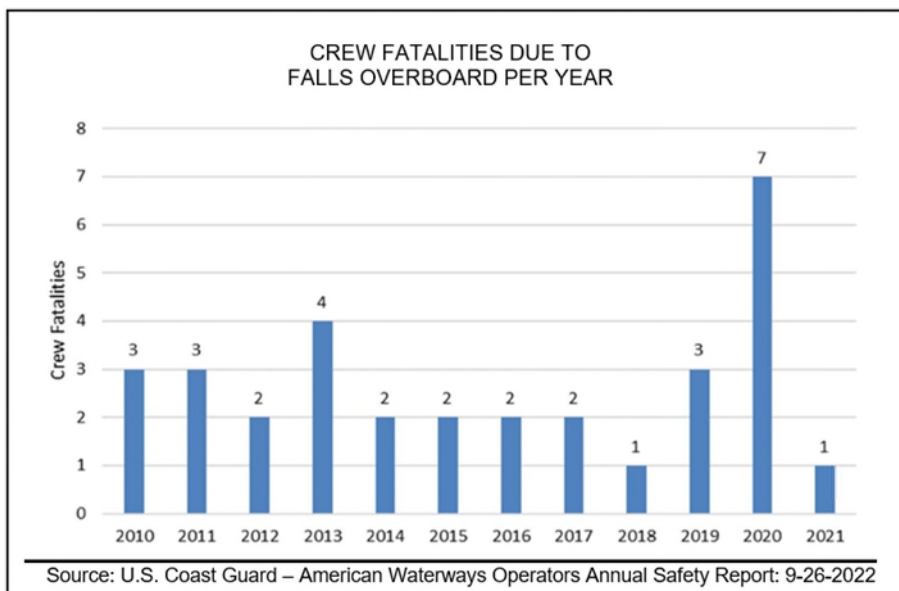


AWO is keenly aware of the grim fatality numbers and, with the support of our Executive Board and instruction from our strategic plan and member outreach, we have developed several programs aimed at eliminating and preventing access to unguarded edges on our boats and barges. Established in 2022, the Falls Overboard Subcommittee is leading the effort to develop industry-initiated controls aimed at lowering the chance of falls overboard through deployment of engineering controls including barriers and rail systems, development of personal fall arrest equipment used in conjunction with personal flotation devices, communication of administrative and controls, and partnership with stakeholders including operators and constructors. It is imperative that the industry tackle this problem, as we see fatality rates more than doubling in the Coast Guard’s data.

To further demonstrate the importance of AWO's SSRP program, and in support of AWO's strategic plan deliverable to *identify the safety statistics needed to support industry safety and advocacy goals*,²⁴ AWO has produced a Falls Overboard Rate, calculated using a formula based on manhours, detailed in the footnotes.²⁵



The SSRP program is extremely useful in our fight against falls overboard, as it is the only complete repository of information available for Falls Overboard, regardless of incident or outcome. The USCG does not presently track falls overboard as a stand-alone category. Falls



are recorded only when they result in a recordable marine casualty.²⁶ Those Falls that are recorded by the USCG are included in the annual USCG – AWO Safety Partnership report. The data from the most recent of these reports is included here, detailing the number of fatalities directly caused by falls overboard.

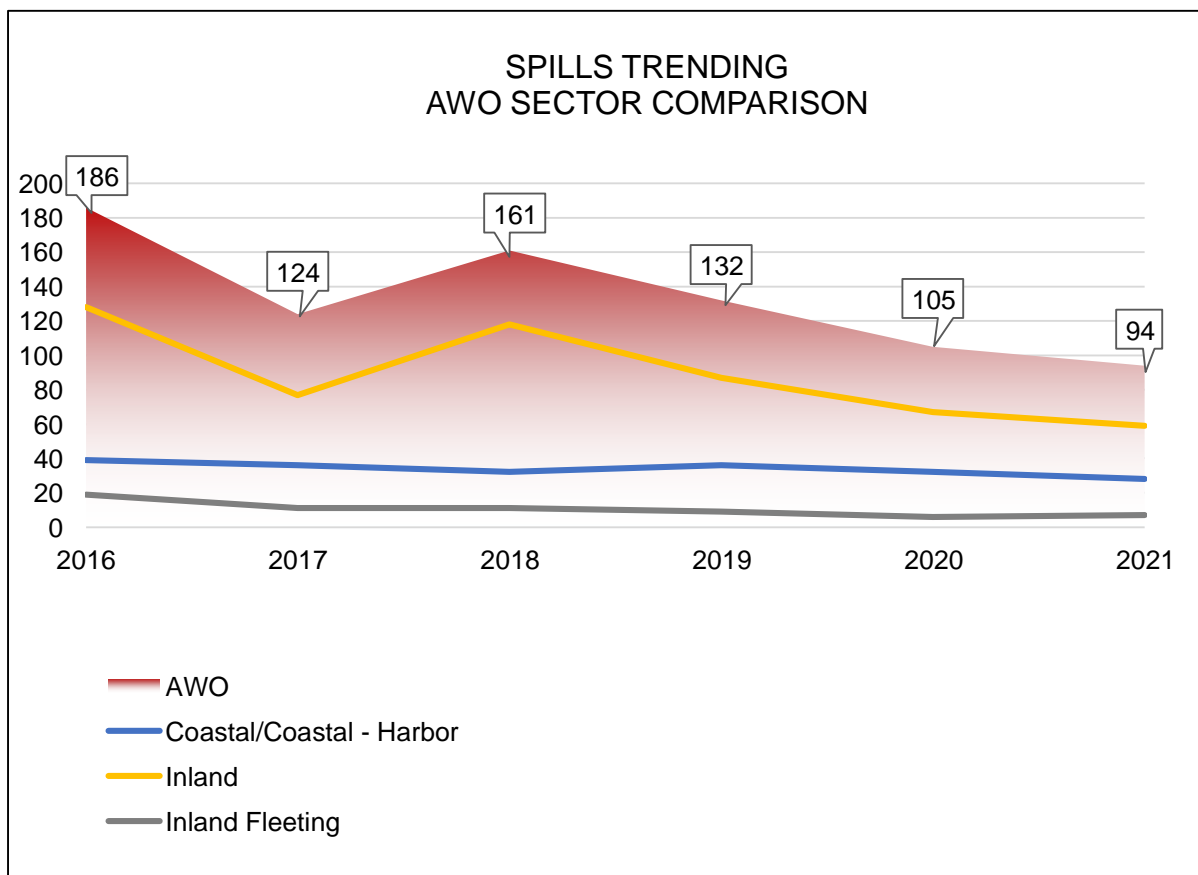
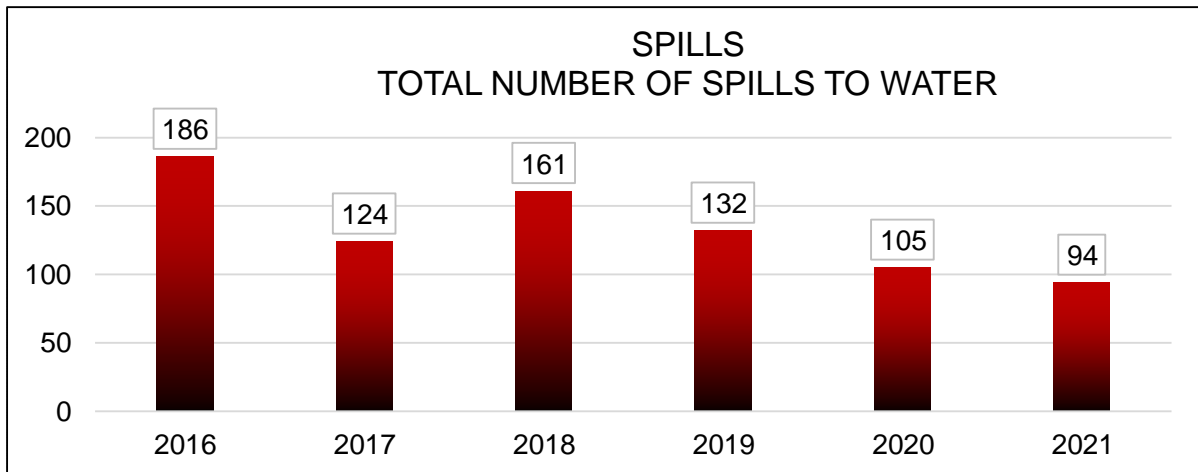
²⁴ AWO's Strategic Framework and 2021-2024 Strategic Plan

²⁵ (Number of Falls Overboard X 200,000) / Employee total hours worked = Total Falls Overboard Rate
 "AWO Totals", represents the rates of each of the three sectors combined and then divided by three.

²⁶ Reportable and Recordable on CG 2692 - as defined in 46 CFR § 4.03-2 and required per 46 CFR § 4.05-1

TOTAL SSRP REPORTABLE SPILLS TO WATER

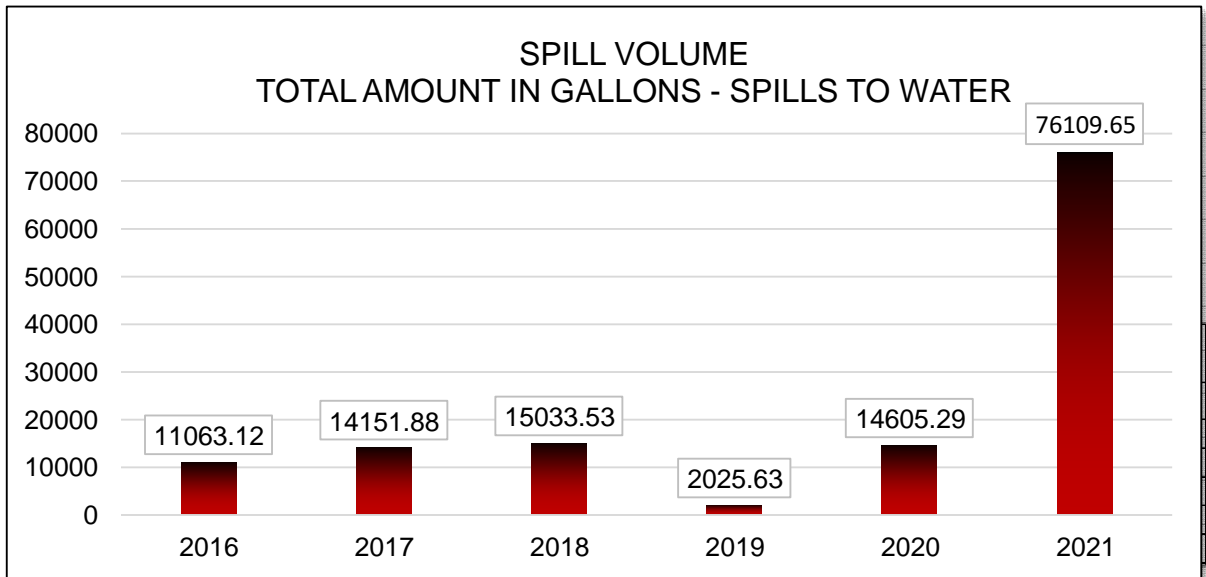
Recordable spills include spills (or discharges) of oil or other hazardous substances, in any volume, that impact the environment. Discharges which do not impact the environment (e.g., spills to deck) do not need to be reported. The Environmental Protection Agency has promulgated regulations for companies responsible for a release or spill of oil or hazardous substances. Specific definitions of oil and hazardous substances are included in the Clean Water Act.²⁷



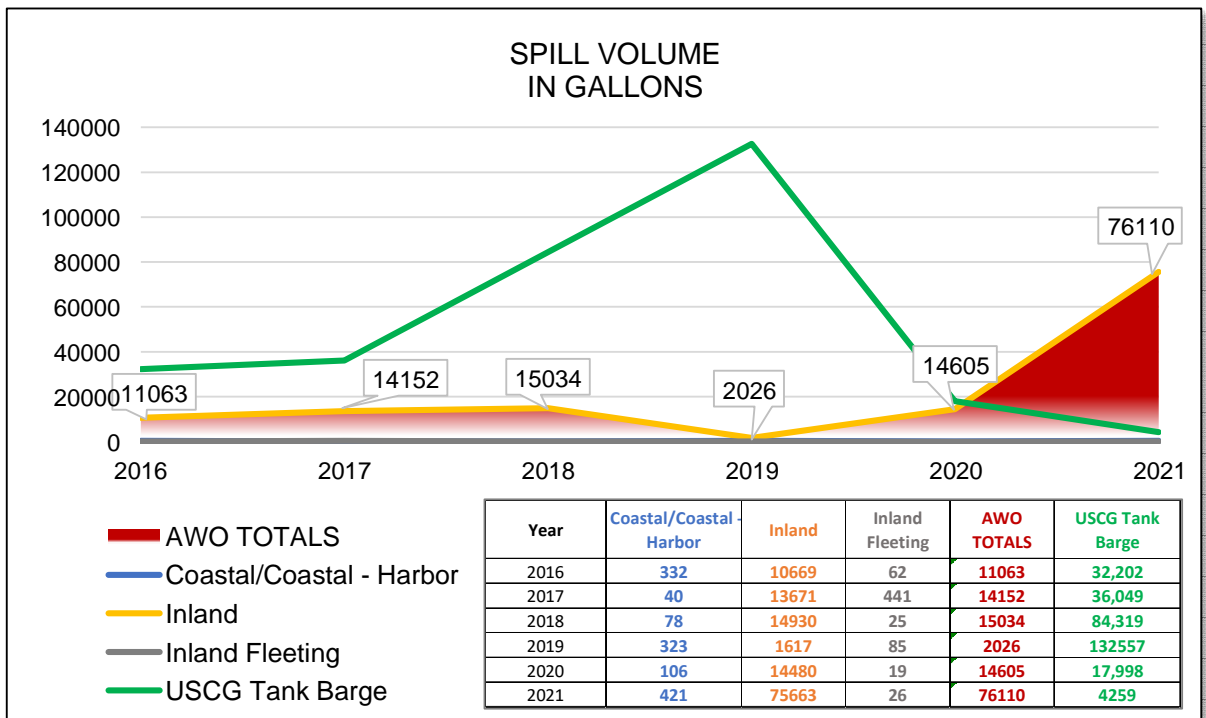
²⁷ 33 U.S.C. §1321

TOTAL VOLUME OF SPILLS IN GALLONS

Spill volumes are captured in gallons and fractions thereof. For example, one (1) U.S. cup equals 0.065 U.S. gallons, and one (1) tablespoon equals 0.0039 U.S. gallons. Keeping in mind this formula, it is important to remember that AWO captures spills to water only. AWO does not request data on spills to deck or spills in secondary containment areas. Also, AWO does not delineate between cargo spills and bunker or stores spills.



As part of the annual USCG – AWO Safety Partnership report, the Coast Guard tracks gallons of oil spilled resulting from operational tank barge pollution incidents, with the most recent available data coming from 2021.



SAFETY LEADERSHIP OBSERVATIONS

The challenge of managing the safety program for a vessel crew and its supporting team is complex, as each vessel faces a dynamic set of risks driven by people, machinery, and environmental factors. The SSRP seeks to tell our story of progress by measuring incidents and occurrence rates to reveal patterns and opportunities for improvement.

Examples of the varying risks profile of each vessel are revealed in the data, which shows disparity between sectors for different KPIs. An example of this is seen in the vast difference in fall-overboard rates for Inland Fleet Boats as compared to Coastal & Coastal Harbor and Inland ‘trip’ vessels, the latter two categories facing many less tow-building opportunities. While anecdotal at this time, it seems there is causal relationship between these two, a possibility that is being further examined by AWO’s Falls-overboard subcommittee.

Further, there a consistent call for clarification related to spill data, as the SSRP does not distinguish between types of spills, and only counts spills to water in its tally. This misalignment of the AWO collection efforts and those undertaken by members in the liquid business reveals an opportunity for the SSRP to improve by possibly adding qualifiers such as cargo type or operational activity to our list of items collected in our outreach. Additionally, many tank barge operators indicated their program’s commitment to recording and reducing spills to containment, a statistic that is not captured presently by AWO nor the USCG. Furthermore, spills to containment during a vessel fueling operation were sometimes considered an incident, sometimes a near miss, or sometimes an unreportable event, depending on the operation and situation in which the activity occurred.

These differences in reporting do not imply that operators are under-reporting; on the contrary, the information collected throughout the course of this report indicated a desire by many stakeholders to increase scrutiny and expand efforts to record incidents and near misses in a way that allows for measured, constant, improvement across the maritime industry. This must be the Safety Leadership Advisory Panel’s goal as we analyze the data we have, decide what improvements to make, and then seek to find sources of information that add value to this program and the many other safety programs of AWO.

Future Work

AWO is actively seeking input on our SSRP program in support of our Strategic Framework and 2021-2024 Strategic Plan. The Board of Directors, Executive Leadership, Safety Leadership Advisory Panel, and many subcommittees within the AWO association have expressed their commitment to improvement and understand the Safety Statistics Reporting Program is a great tool in our industry’s efforts to become safer, smarter, and more sustainable each day through measured progress.

The data points reported to and tracked by the SSRP are lagging indicators, measuring only past occurrences or failures. By contrast, leading indicators, such as near misses, can help identify weak points where incidents could possibly occur and enable operators to proactively address those issues. The Safety Leadership Advisory Panel thus has an opportunity to investigate where/if leading indicator data is collected else-where, and if so, whether we can leverage it for use in our SSRP program report outs or should consider adding criteria to our own data collection.

Including leading indicators in SSRP could help member companies monitor and assess the effectiveness of their safety management systems and processes and provide access to benchmarking to help reduce incidents. Furthermore, collection and analysis of leading indicators could help AWO to develop safety tools, resources, and meeting content, including lessons learned. It is the duty of AWO and SLAP to do the work of researching data sources and bring the conversation to the AWO Board of Directors for discussion and consideration.

In addition, developments in alternative fuels and carbon reduction strategies have skyrocketed. We have heard our members ask how to best approach GHG inventories related to these developments and AWO recognizes that as time goes on it will become necessary to measure not only the incident and near-incident data across the industry, but also operational efficiency, fuel consumption, waste streams, and other inputs that will feed our sustainability programs.

In the spirit of continuous improvement, we must examine and identify opportunities to improve SSRP collection efforts, reporting, and processes to meet the member driven data necessary to support our association for decades to come.

AWO greatly appreciates our members' contributions to the SSRP. We will continue produce annual reports to demonstrate the value of participating in the program and to demonstrate to government stakeholders and the public that AWO members are committed to continuous improvement in safety, security, and sustainability of America's Marine Highways, with the goal of zero harm to people, property, and the environment.

It is our duty to support our mariners' safety and use every resource available to that end, and we will continue to work toward that righteous goal.