

City of Seattle Waterways Safety Study



May 2024





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Table of Contents

Executive Summary	4
Introduction.....	7
Study Methodology	8
Context: Waterways and Activities.....	9
Existing Public Safety Operations	16
Waterways Jurisdiction.....	16
Agencies Within the City Organization	17
Agencies Outside the City Organization.....	27
Safety Response Types	30
Findings and Recommendations	39
Appendix A: List of Interviewees.....	45
Appendix B: Features of Other Cities	48
Appendix C: Other Organizations with Waterways Responsibilities.....	50

Executive Summary

About this Report

Increased variety of activity on Seattle waterways, alongside a growing number of residents and visitors, is creating demand for more safety patrols, emergency response assets, and coordination of multiple activities occurring on the same bodies of water. These requests have prompted the City of Seattle (the City) to commission a study to better understand waterways safety concerns and needs. BERK Consulting was engaged to provide an assessment of the City's existing marine public safety operations and recommendations for improvement.

This report summarizes the activities, existing public safety agencies, and response types on Seattle waterways to establish a baseline for recommendations. The findings in this report are based on guidance from a City staff workgroup, interviews with various waterways stakeholders, desk research, data analysis, and peer city research.

Context

Seattle waterways include over 200 miles of coastline, bodies of freshwater and saltwater, and different waterway types such as lakes, inlets, and rivers. These waterways are used for various activities, including recreation; commercial fishing and seafood processing; ship building, repair, and maintenance; residential use; moorage; maritime logistics and shipping; tourism; general and commercial aviation operations; and water transportation.

Existing Public Safety Agencies

Multiple agencies have roles, responsibilities, and resources on Seattle waterways. Within the City organization, the Seattle Police Department (SPD), Seattle Fire Department (SFD), and Seattle Parks and Recreation (SPR) all have roles to ensure safe waterways activities among recreational, commercial, and residential users. SPD Harbor Patrol and SFD marine response units have complementary functions and share a responsibility to ensure an effective emergency response to incidents in both freshwater and saltwater areas. Seattle Parks and Recreation manages beaches, waterfront parks, and boat launches, some of which are staffed by lifeguards and boat ramp rangers during the summer, when there is increased recreational activity.

Outside the City organization, several agencies overlap in waterways safety responsibilities and carry out these roles in partnerships with Harbor Patrol, SFD, and SPR. These agencies include the King County Sheriff's Office Marine Unit; Mercer Island Police Department Marine Patrol; Port of Seattle; U.S. Coast Guard; U.S. Coast Guard Auxiliary; Washington State Parks; Washington State Department of Ecology; Washington State Department of Fish & Wildlife; Washington State Department of Natural Resources (DNR); U.S. Army Corps of Engineers; and Tribal Marine Police. Interviewees within and outside the City described good working relationships, collaboration, and information-sharing.

Safety Response Types

Various response types are necessary to support safety on Seattle waterways, including law enforcement and regulation; patrols; fire incidents; dive rescue; search, rescue, and accident investigation; vessel inspections; education and community engagement; removal of navigational hazards; hazardous materials response; and permitting. These are currently shared responsibilities among multiple agencies. Specifically, the agencies who primarily patrol each waterway area are:

- **Lake Washington:** Harbor Patrol, King County Sheriff's Office Marine Unit, Mercer Island Police Department Marine Patrol, U.S. Coast Guard (for events), U.S. Coast Guard Auxiliary (for events)
- **Lake Union:** Harbor Patrol
- **Lake WA Ship Canal:** Harbor Patrol
- **Puget Sound:** SFD Fireboat Unit, U.S. Coast Guard, Port of Seattle (Port properties)
- **Duwamish:** Port of Seattle (Port properties)
- **Other Areas:** SPR (summer lifeguards and boat ramp rangers)

Findings and Recommendations

In conducting our interviews, research, and analysis, we learned about safety concerns from the perspectives of various waterways stakeholders and investigated topics and recommendations related to these concerns. Many of our findings involve waterways users and agencies beyond the City, which reflects the shared responsibilities and collaborative relationships we heard about during interviews. Our recommendations focus on actions that the City could lead.

Findings on existing marine public safety operations:

- **Seattle waterways accommodate a variety of uses.** There are more residents, visitors, and types of recreational activities around the waterways. More safety education is needed for recreational users.
- **Current resources for emergency response and patrols are limited.** Asset locations and staffing levels limit SPD and SFD response times. Property crime was identified as a problem that may benefit from more patrols.
- **Current Harbor Patrol data does not provide a complete picture of need.** It is difficult to establish a metric for recommended marine police unit staffing. Past data collection practices make it challenging to assess workload trends and determine locations where resources may be most needed.
- **Derelict vessel response is a resource-intensive activity.** There are insufficient resources to fully address the problems of derelict boats.
- **SPD and SFD work effectively together on emergency response.** There is generally good coordination and cooperation between SPD and SFD during emergency response, but more formal procedures are needed.

Recommendations supporting patrols:

- Consider coverage by SPR Park Rangers to support noise ordinance enforcement.
- Support SFD's efforts to add a South Lake Union (SLU) fire station, which could add increased presence on Lake Union and Lake Washington, and improve SFD response times to freshwater.
- Use available call or incident data to understand the demand for Harbor Patrol services.

Recommendations supporting education and community engagement:

- Improve recreational boater education with signage and situational training modules.
- Partner with other organizations to conduct safety checks for recreational users.
- Be transparent about the level of service Harbor Patrol can deliver.
- Maintain an online data dashboard for Harbor Patrol activity.

Recommendations supporting navigational hazards:

- Raise awareness about the DNR's Vessel Turn-In Program.
- Lobby for stronger enforcement tools and additional state funding to address derelict vessels.

Recommendations supporting emergent needs:

- Review memorandums of understanding (MOUs) between SPD and SFD to determine whether and how they should be updated. This review process should include agreement on a cadence for regular review going forward.
- Create a venue for regular conversation to strengthen agency relationships.

Introduction

Seattle is a maritime city located between the Puget Sound and Lake Washington with the Lake Union/Lake Washington Ship Canal system connecting the freshwater lakes to the saltwater Sound. The area also has a significant maritime economy with numerous Port of Seattle facilities including Fisherman’s Terminal, a grain terminal, marine cargo terminals that move international cargo, several public marinas, and two cruise terminals.

In addition, there are increasing numbers of people living near Lake Union and visiting the Seattle area. The South Lake Union neighborhood has experienced greater population growth than other Seattle neighborhoods, with 10,000 new residents since 2010 and 3,800 residential units proposed or under construction.¹ In 2023, 37.8 million visitors came to Seattle and King County, which was 9% more visitors than in 2022, and approximately 90% of the number of visitors to Seattle and King County in 2019.²

Alongside a growing residential and visitor population, increased variety of activity on the waterways in Seattle is creating demand for safety patrols, emergency response assets, and coordination of multiple activities occurring on the same bodies of water. This prompted the City of Seattle (the City) to commission a study to better understand Seattle’s marine public safety operations and needs. BERK Consulting was engaged to assess the current state and provide recommendations for improvement.

It is important that the City continues to prioritize waterways safety due to the wide-ranging needs and activities of commercial, recreational, and residential users, as well as the maritime industry’s impact on the Washington State economy. In 2022, Washington’s maritime industry supported more than 174,000 jobs and brought in more than \$45 billion in business revenues, including more than \$380 million in state government revenues.³

This report summarizes the activities, safety needs, and response types on Seattle waterways, as well as the safety roles and responsibilities of public safety agencies with waterways jurisdiction to establish a baseline understanding of the current state as well as for future resources and staffing.

¹ Downtown Seattle Association, 2022. *Economic Report: State of Downtown*. Available at: <https://web.archive.org/web/20230930070313/https://downtownseattle.org/programs-services/research/economic-report/live/>.

² Visit Seattle, “Visit Seattle Celebrates Record-Setting \$8.2 Billion in Visitor Spending at Annual Meeting,” March 27, 2024. Available at <https://visitseattle.org/press/press-releases/visit-seattle-celebrates-record-setting-8-2-billion-in-visitor-spending-at-annual-meeting/>.

³ McKinley Research Group and High Peak Strategy, 2022. *Economic Impacts of Washington’s Maritime Industry*, page 1. Available at: https://www.maritimefederation.com/uploads/1/0/9/1/109194033/wa_maritime_impacts_2022_report.pdf.

Study Methodology

Findings in this report are based on workgroup guidance, interviews, desk research, data analysis, and peer city research.

Workgroup. This study was guided by a workgroup made up of representatives from the Seattle Police Department (SPD), the Seattle Fire Department (SFD), City of Seattle Finance & Administrative Services, the Seattle Mayor’s Office, and Seattle City Councilmember Dan Strauss’ office.

Workgroup Members

- Captain Anthony Gaedcke, SPD
- Harbor Lieutenant Marc GarthGreen, SPD Harbor Patrol
- Captain Luke Schultz, SFD Fireboat Unit
- Lieutenant Robert Kerns, SFD Fireboat Unit
- Helen Fitzpatrick, SFD
- Kate Hoffman, Councilmember Strauss’ Office
- Adrian Matanza, Finance and Administrative Services
- Dan Nolte, Mayor’s Office

Interviews. From September 2023 through February 2024, BERK conducted interviews with local government, maritime industry, the residential community, and recreational organizations to learn about waterways safety needs. A list of interviewees is in **Appendix A: List of Interviewees**.

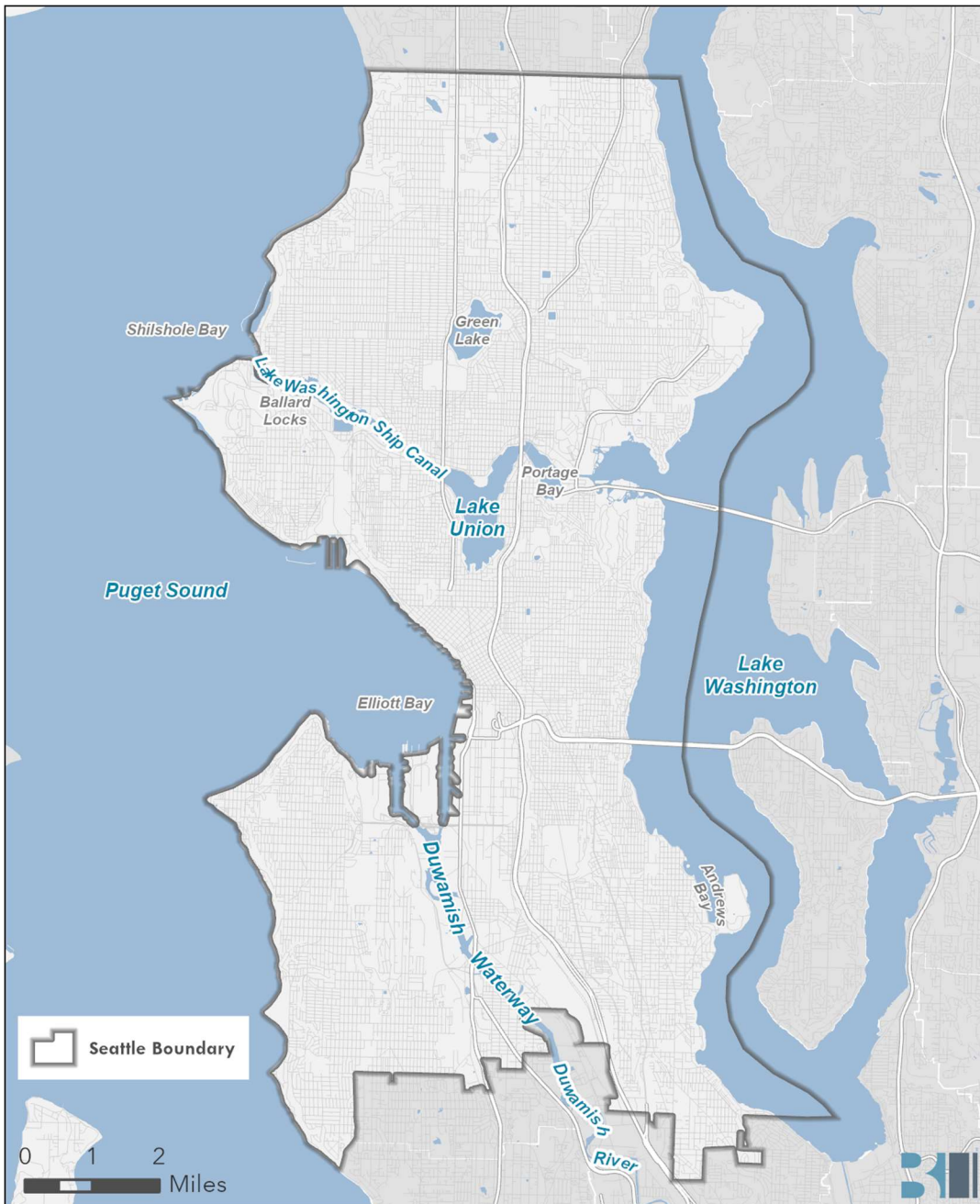
Data Analysis. BERK quantified the volume of waterway activities and safety responses using data from various sources including SPD, SFD, and Seattle Parks and Recreation. Data sources are cited in relevant exhibits and sections of the report.

Peer City Research. BERK researched marine safety operations in cities with similar waterway areas and safety needs. A summary of this research is in **Appendix B: Features of Other Cities**.

Context: Waterways and Activities

Seattle’s waterways surround and bisect the city (Exhibit 1). At the west end of the Lake Washington Ship Canal, the Ballard Locks connect the Puget Sound (saltwater) and Lake Union (freshwater) through “locking,” which facilitates transit between waters of different elevations and types. Each waterway area hosts more than one type of activity, except “Other Areas” which are mainly used for recreation (Exhibit 2). Even so, multiple recreational activities occur on the same waterway, such as regattas, kayak rentals, and swimming at Green Lake.

Exhibit 1. Map of Seattle Waterway Areas



Source: BERK, 2024.

Exhibit 2. Seattle Waterway Activities by Waterway Area

Area	Recreation	Commercial	Residential	Moorage	Cargo	Tourism	Seaplanes	Ferries
Lake Washington	✓	✓	✓	✓			✓	
Lake Union	✓	✓	✓	✓		✓	✓	
Lake WA Ship Canal	✓	✓		✓	✓			
Puget Sound	✓	✓	✓	✓	✓	✓		✓
Duwamish	✓	✓		✓	✓			
Other Areas	✓							

Source: BERK, 2024.

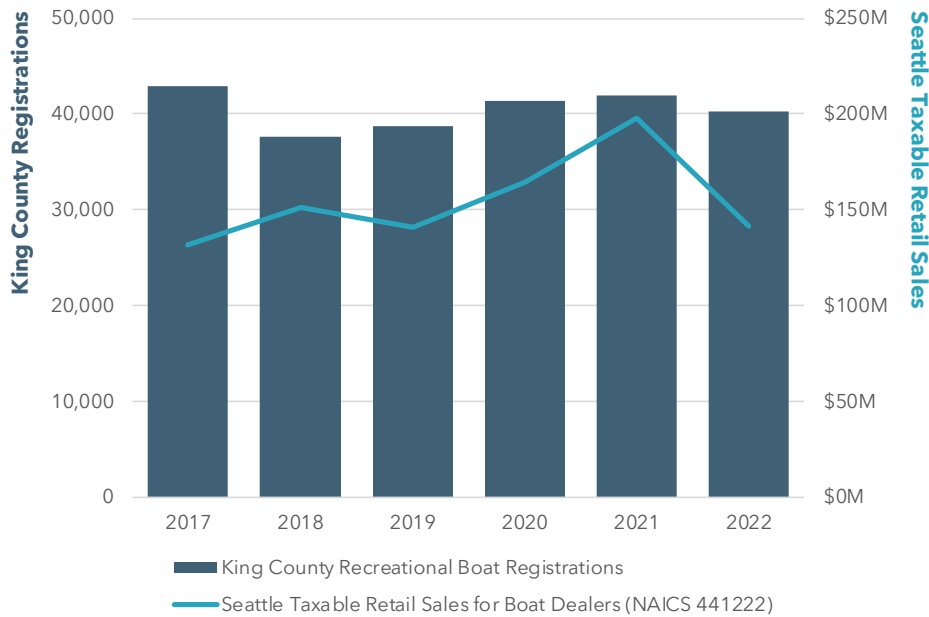
Recreation

Recreational activities may occur in any unrestricted area with access to water. Along the waterfronts are private docks, boat clubs, rental companies, and City parks with fishing piers, swimming beaches, and boat launches (see **Seattle Parks and Recreation**). Examples include canoeing, crabbing, fishing, electric boats, hot tub boats, kayaking, kitesurfing, rowing, sailing, surfing, wakeboarding, waterskiing, and windsurfing. These activities are especially popular in the summer when there are more tourists, camps and lessons, regular events such as the Tuesday night Duck Dodge on Lake Union, and major multi-day events such as Seafair.

Participants may have varying levels of experience, from individuals renting a stand-up paddleboard (SUP) for the first time to rowing teams practicing for regattas. While users who operate motorized vessels are required to take a boater education course and obtain a Washington State Boater Education Card, users who operate human-powered vessels such stand-up paddleboards, kayaks, or canoes, are not required to. Users who rent human-powered vessels may receive some information or training from rental company representatives, but it is unclear if this happens consistently. In addition to boat rental companies, private owners rent boats and may not comply with all (or be aware of) education and safety requirements. When boaters get into trouble, private vessel assistance companies can help with towing or other services, in addition to public safety agencies.

Motorized boat registrations and sales trends show increased recreational activity through the COVID-19 pandemic (Exhibit 3). In 2022, however, the number of recreational boat registrations was lower than in 2021, which also follows the trend of boat sales and Seattle Parks and Recreation boat launch permits (see **SPR Permitting Activity**). Boats without a motor are exempt from registration with the Washington State Department of Licensing, which means that there is limited data on the number of these vessels on the waterways. Exhibit 4 shows that 15 companies offering recreational waterways activities and services filed business license tax certificates with the City between 2019 and 2023. These include boat rental, boat share, and boating instruction businesses.

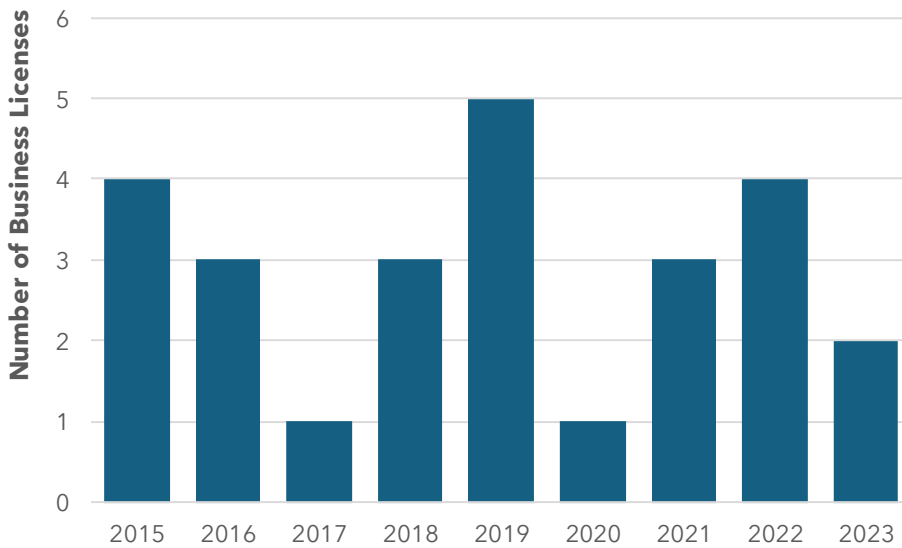
Exhibit 3. King County Recreational Boat Registrations and Seattle Taxable Retail Sales for Boat Dealers, 2018-2022



Note: King County includes waterways outside of Seattle such as Lake Sammamish.

Sources: Washington State Department of Licensing, 2023; Washington State Sea Grant, 2023; Washington Coast Economist, 2023; BERK, 2024.

Exhibit 4. New Recreational Waterways Businesses, 2015-2023



Note: Relevant businesses identified based on Trade Name.

Sources: [City of Seattle](#), 2024; BERK, 2024.

Commercial

Manufacturing, seafood production plants, maritime logistics, shipyards, restaurants/bars, and other businesses are located along freshwater and saltwater waterfronts. A 2019 Port of Seattle study estimated that all segments of commercial fishing generated more than \$671.2 million in 2017.⁴ Along the Duwamish River are industrial facilities including Boeing (aerospace), Lafarge (cement), and Recology (waste). The King County International Airport is also located by the Duwamish River. Several interviewees shared that they feel that the City neither fully recognizes the importance of the maritime location nor appreciates the economic impact and thus does not adequately protect the interests of the maritime sector or resource the needs.⁵

Residential

Over 500 floating homes (permanently anchored) are located around Lake Union and Portage Bay,⁶ in addition to over 200 legally recognized floating on-water residences such as houseboats (docked).⁷ Shilshole Bay Marina is the largest liveaboard community on the West Coast with space for about 1,400 moorage customers.⁸ There are also waterfront residences located along Lake Washington, Lake Union, and Puget Sound.

Floating Homes on Lake Union



Source: BERK, 2023.

⁴ Port of Seattle, 2019. *Port of Seattle, Port of Tacoma & The NWSA Economic Impacts*, Chapter 3, Commercial Fishing. Available at: https://www.portseattle.org/sites/default/files/201905/190412_commercial_fishing_chapter_3_economic_impact.pdf. Commercial fishing includes fishing vessels moored in Seattle operating out of Alaskan fisheries (\$455M); fisheries outside of Alaska (\$26.6M), and cold storage, seafood processing, and service businesses (\$189.7M).

⁵ This issue came up during a discussion convened by the North Seattle Industrial Association and an interview with the Transportation Institute.

⁶ See <https://seattlefloatinghomes.org/floating-home-locations/>.

⁷ Sarah Anne Lloyd, "Why Seattle Won't Allow New Houseboats Anymore," *Seattle Met*, June 10, 2021. Available at: <https://www.seattlemet.com/home-and-real-estate/2021/06/no-more-new-houseboats-in-seattle>.

⁸ See "Monthly Moorage" at <https://www.portseattle.org/page/monthly-moorage>.

Moorage

Marinas, piers, and terminals provide docking infrastructure for recreational and commercial vessels, and some also provide fuel and maintenance services. Dock space is rented subject to availability and many docks currently have long waiting lists. The Port of Seattle's Shilshole Bay Marina's estimated wait time is 6 months to 16 years depending on slip size and location.⁹ Seattle has two long-term mooring facilities, Lakewood Moorage and Leschi Moorage, that were formerly operated by Seattle Parks but are now operated by a private entity.¹⁰ Recreational boaters who are members at private yacht clubs also have access to moorage.

Boaters tying up inappropriately on private docks due to a lack of public moorage was an issue raised by some interviewees. Per Seattle Municipal Code (SMC) [16.40.030](#), Andrews Bay on Lake Washington is the only location in Seattle where recreational anchorage is permitted, for a maximum of 72 hours per seven-day period. Commercial anchorage areas are in Elliott Bay, Smith Cove, Shilshole Bay, Salmon Bay, and Portage Bay.

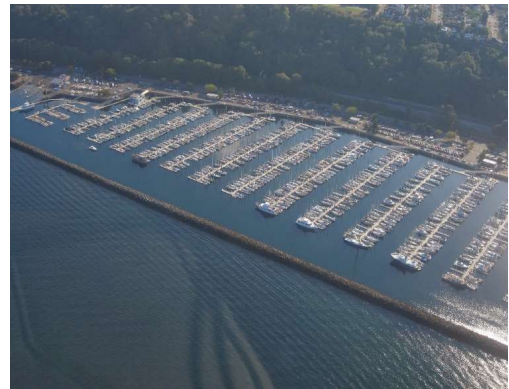
Cargo

The Northwest Seaport Alliance (NWSA) partnership between the Port of Seattle and the Port of Tacoma manages five container terminals along Elliott Bay and the Duwamish River. In 2022, NWSA handled 0.73 million twenty-foot equivalent units (TEU) with domestic trading partners in Alaska and Hawaii and 2.65 million TEU with international trading partners.¹¹

Tourism

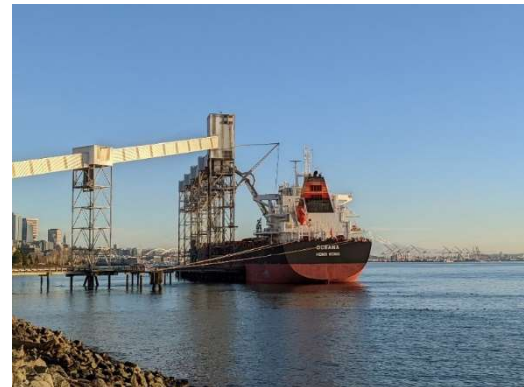
The Port of Seattle reported 291 cruises and over 900,000 individual passengers departing from Pier 66 and Pier 91 during the 2023 cruise season.¹² The Victoria Clipper operates whale watching tours from Pier 69 and passenger-only ferry service to Victoria. Smaller sightseeing boats such as Argosy Cruises also offer tours of Puget Sound and Lake Union. Visitors also rent boats and other watercraft (see **Recreation**).

Shilshole Bay Marina



Source: BERK, 2012.

Pier 86 Grain Terminal on Elliott Bay



Source: BERK, 2024.

⁹ See "Moorage Rates & Estimated Wait Times" at <https://www.portseattle.org/page/monthly-moorage>.

¹⁰ See "Moorages" at <https://www.seattle.gov/parks/recreation/outdoor-water-recreation/boating-and-sailing>.

¹¹ The Northwest Seaport Alliance, 2022. *Annual Trade Report*, page 3. Available at: <https://s3.us-west-2.amazonaws.com/nwseaportalliance.com.if-us-west-2-or/2023-04/2022%20NWSA%20Annual%20Cargo%20Report.pdf>.

¹² Port of Seattle, "Port of Seattle Completes Record-Setting 2023 Cruise Season," November 9, 2023. Available at: <https://www.portseattle.org/news/port-seattle-completes-record-setting-2023-cruise-season>.

Seaplanes

The Federal Aviation Administration (FAA) recognizes two seaplane airports on Seattle waterways, both on Lake Union: Kenmore Air and Seattle Seaplanes.¹³

Kenmore Air offers regularly scheduled flights to Tacoma, the San Juan Islands, and British Columbia.

Outside Seattle but on Lake Washington, Kenmore Air has another seaplane base at the north end of the lake, and Seaplane Scenics departs from Carillon Point (in Kirkland) or the Will Rogers-Wiley Post Memorial Seaplane Base (owned by the City of Renton). These commercial seaplane operators offer scenic flights and charter flights.

Lake Union does not have a dedicated runway for seaplanes, but there are advisory buoys intended to alert people on the water of a takeoff or landing. Five buoys were installed in the center of Lake Union in 2018, and they are active from Memorial Day to Labor Day. Seaplane pilots control the buoy lights and activate them during takeoff or landing. The Recreational Boating Association of Washington manages the “Mind the Zone” educational campaign to raise awareness of these advisory buoys.¹⁴

As seaplanes require large sections of waterway areas to operate, there continues to be push and pull between residential and recreational users and the seaplane industry. In the Lake Union area, interviewees noted incidents of less informed recreational boaters, kayakers, and paddleboarders venturing into the landing zone of Kenmore Air.¹⁵ According to Kenmore Air, the number of Kenmore Air seaplane flights departing from Lake Union has decreased from 779 flights in July 2018 to 643 flights in July 2023, in part due to increased recreational activity on the lake that makes it difficult to execute safe landings.

Any proposed changes to the seaplane landing zone or operations for safety reasons would need to ensure that federal navigation requirements could still be met and weigh any economic and operational impacts to commercial seaplane operators such as Kenmore Air. See **Law Enforcement and Regulation** for more information on the regulatory roles of the FAA and U.S. Coast Guard.

Kenmore Air Lake WA Terminal



Source: BERK, 2024.

¹³ See facilities under Facility Type “Seaplane Base” at <https://adip.faa.gov/agis/public/#/advancedAirportMap>.

¹⁴ See <https://www.rbaw.org/mindthezone>.

¹⁵ This issue came up in interviews with the Recreational Boating Association of Washington, the Seattle Floating Homes Association, and Harbor Patrol.

Ferries

Colman Dock is Seattle’s main ferry terminal. In 2023, Washington State Ferries (WSF) reported 8.9 million vehicle drivers, 5.8 million vehicle passengers, and 3.9 million foot passengers across the WSF system. The most popular route was Seattle-Bainbridge Island, with 4.7 million total riders.¹⁶ Kitsap Transit operates three routes from Seattle’s Colman Dock to Bremerton, Kingston, and Southworth, and King County Metro operates water taxis to West Seattle and Vashon Island from Colman Dock. The Victoria Clipper operates regular service to and from Victoria, BC out of Pier 69. Increased passenger ferry service has added to boat traffic post-pandemic.

Kitsap Transit and WSF ferries at Colman Dock



Source: BERK, 2023.

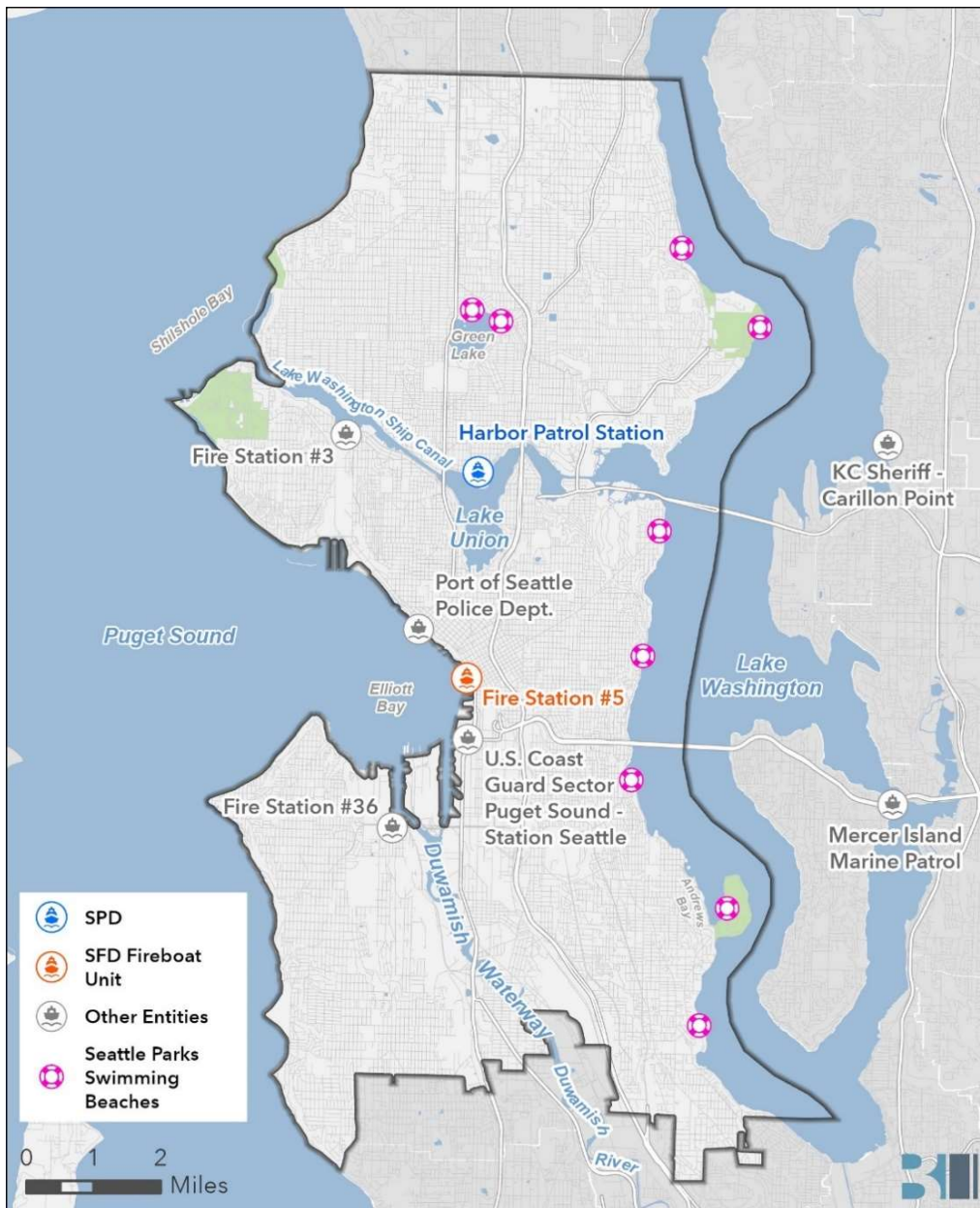
¹⁶ Washington State Ferries, 2024. *Traffic Statistics Rider Segment Report, Jan 1, 2023 thru Dec 31, 2023*. Available at: <https://wsdot.wa.gov/sites/default/files/2024-01/WashingtonStateFerries-TrafficStatistics-2023Annual.pdf>.

Existing Public Safety Operations

Waterways Jurisdiction

Revised Code of Washington (RCW) [35.21.160](#) describes that cities have jurisdiction over adjacent waters. The City of Seattle thus has jurisdiction over Lake Union, Green Lake, Haller Lake, Bitter Lake, a portion of the Duwamish River, Lake Washington, Elliott Bay, and Shilshole Bay. As these waterways are adjacent to other cities and under the jurisdiction of regional agencies, multiple agencies within and outside the city have public safety operations on Seattle waterways (Exhibit 5).

Exhibit 5. Locations of Seattle Waterways Public Safety Agencies



Source: BERK, 2024.

Agencies Within the City Organization

This section describes resources and activity levels for police, fire, and parks and recreation services based on site visits, interviews, desk research, and data provided by SPD, SFD, and Seattle Parks and Recreation. Activity trends describe current levels of service to provide a baseline of where additional support could be used.

SPD Harbor Patrol

SPD Harbor Patrol is the primary law enforcement responder to incidents on Seattle waterways. Harbor Patrol responds to 911 dispatched calls in the city, calls directly to the Harbor Patrol phone line, requests for mutual aid which may be outside the city, and incidents arising during patrols. All Harbor Patrol officers are authorized to make arrests.

Harbor Patrol Assets

The Harbor Patrol station is located at the north end of Lake Union (see Exhibit 5). Ten patrol boats of various sizes and specifications are docked there. This includes three larger platform boats with water pumping capabilities that are used for patrols, response, and dive training, as well as smaller response boats used for search, rescue, and patrols. SPD has a dive compressor building for filling dive tanks, a dive van for transporting equipment, remote-operated vehicles for sonar searches, and access to two cadaver dogs through a contract with King County. Harbor Patrol has dedicated staff that conduct maintenance and repairs on the boats. Officers also dedicate some of their time to maintenance and repairs.

Harbor Patrol has one boat with firefighting capability, which can maneuver through tight spaces such as docks and floating homes. When responding to incidents in Lake Union and Lake Washington, this boat can quickly respond and start firefighting activities ahead of SFD's arriving with their fireboats, which have increased water capacity.

Harbor Patrol Staffing

Harbor Patrol is currently staffed under the Special Operations Unit. Candidates must have three years of police experience before applying for Harbor Patrol. Upon joining, officers participate in training for marine firefighting, diving, and boating, which can take up to six months to complete. It takes three weeks (prior to joining Harbor Patrol) to complete the boat training course; it can take up to two months to complete all required checkoffs and internal training requirements; and it takes up to six months to complete all required dive training.

Once Harbor Patrol officers have completed all but their diving training, they are assigned to squads of four officers consisting of one sergeant and three officers for 24-hour shifts. While on shift, the minimum staffing allowed is three individuals (to account for leave time and absences) and boats are typically staffed with two people. For larger operations and responses (and dive operations), three individuals might be needed.

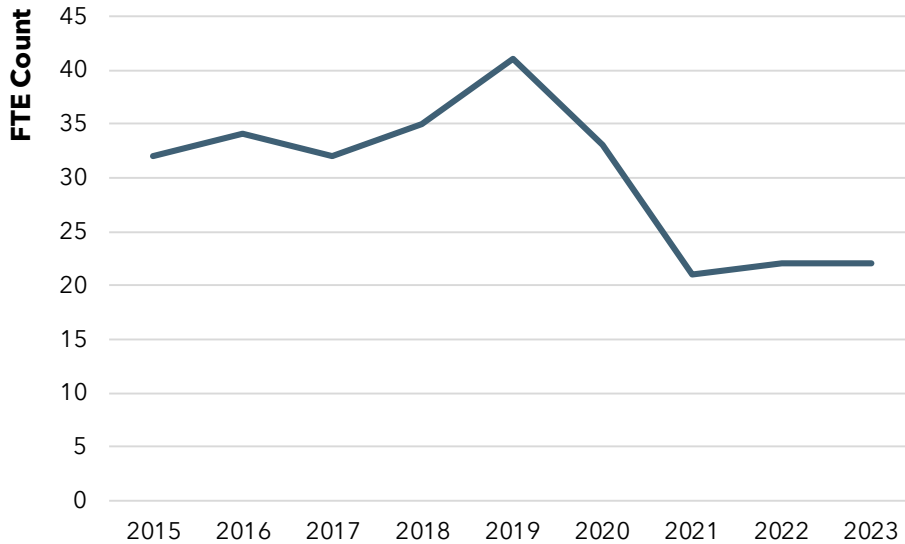
Harbor Patrol Boat 6



Source: BERK, 2023.

Since January 2020, SPD sworn staffing has dropped by more than 450 below fully authorized levels. The use of “patrol augmentation” has been necessary to meet minimum safety and performance standards, which is often voluntary work at overtime rates. Between 2020 and April 2022, SPD transferred more than 100 officers from specialty, investigative, and other units into 911 response to address SPD’s goals for response times and patrol coverage.¹⁷ These department-wide actions meant that the number of filled positions for Harbor Patrol decreased between 2019 and 2021, as shown in Exhibit 6. In addition, there are vacant Harbor Patrol officer positions that are currently not filled to ensure staffing needs elsewhere in SPD can be met (Exhibit 7).

Exhibit 6. SPD Harbor Patrol Filled Positions, 2015-2023



Sources: SPD, 2024; BERK, 2024.

Exhibit 7. SPD Harbor Patrol Budgeted and Filled Positions, 2023

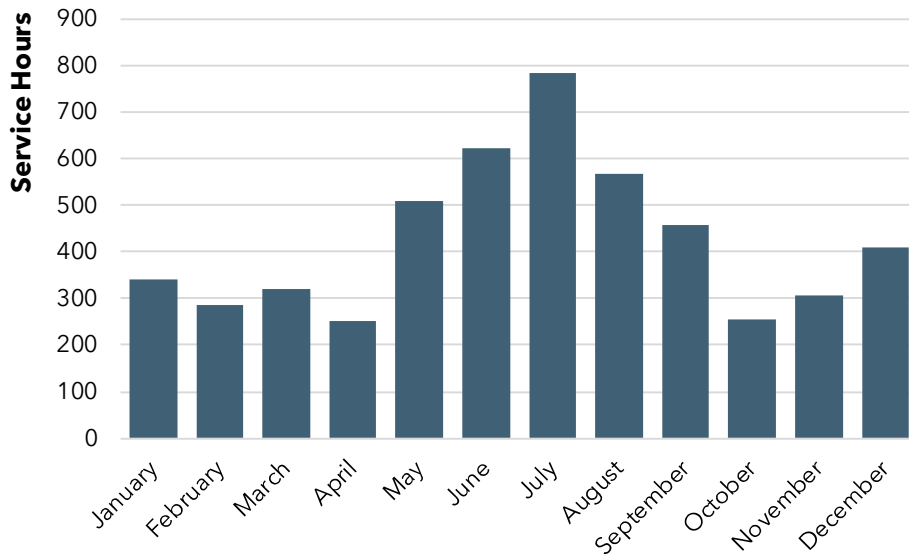
Position Type	Number of Budgeted Positions	Number of Filled Positions
Lieutenant	1	1
Sergeant	4	4
Officer	23	13
Marine Equipment Servicer	1	1
Administrative Staff Assistant	1	1
Total	30	20

Source: SPD, 2024.

¹⁷ Greg Doss, “Resolution 32050 – SPD Staffing Incentives,” *Seattle City Council Central Staff Memorandum*, April 26, 2022.

The City’s 2023-2024 Budget includes funding for Harbor Patrol to increase patrols during the summer boating season. Harbor Patrol currently adds one boat on Lake Washington from Thursday through Sunday in the summer months. Auxiliary SPD officers in training for Harbor Patrol openings assist with summer patrols and events such as Seafair. Auxiliary officers are not trained in diving or firefighting, but can support overall safety. As shown in Exhibit 8, Harbor Patrol responder service hours peaked in summer months in 2023.

Exhibit 8. SPD Harbor Patrol Service Hours by Month, 2023



Note: Includes all Harbor Patrol responders, regardless of unit assignment.

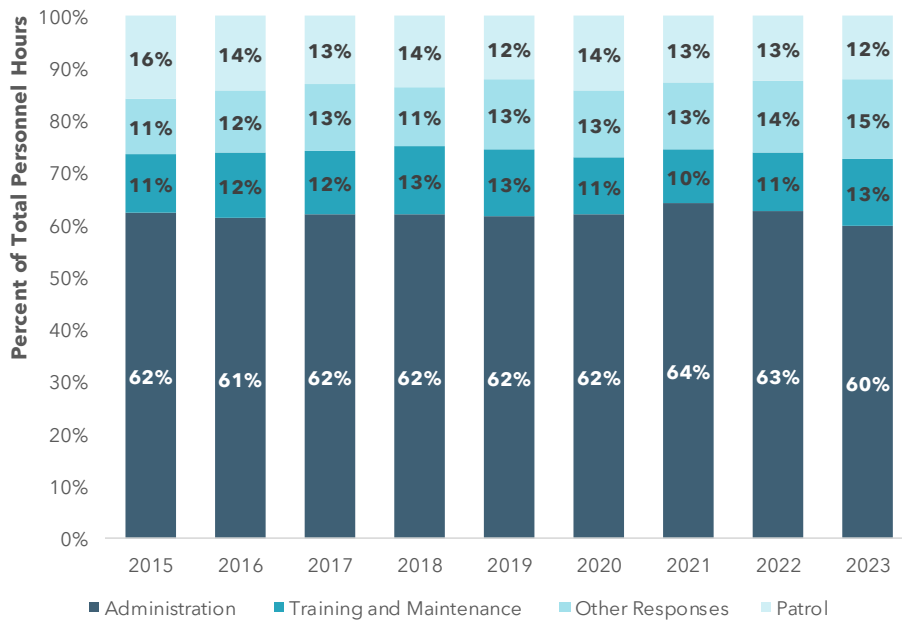
Sources: SPD, 2024; BERK, 2024.

Harbor Patrol does not use unsworn officers to assist with its responsibilities, though research for this report identified other cities that take this approach. For example, the City of Santa Monica has civilian responders on the Santa Monica Pier and the Virginia Marine Resources Commission hires part-time and temporary employees to handle non-enforcement matters such as paperwork. See **Appendix B: Features of Other Cities** for examples of unsworn officers in other cities.

Harbor Patrol Activity

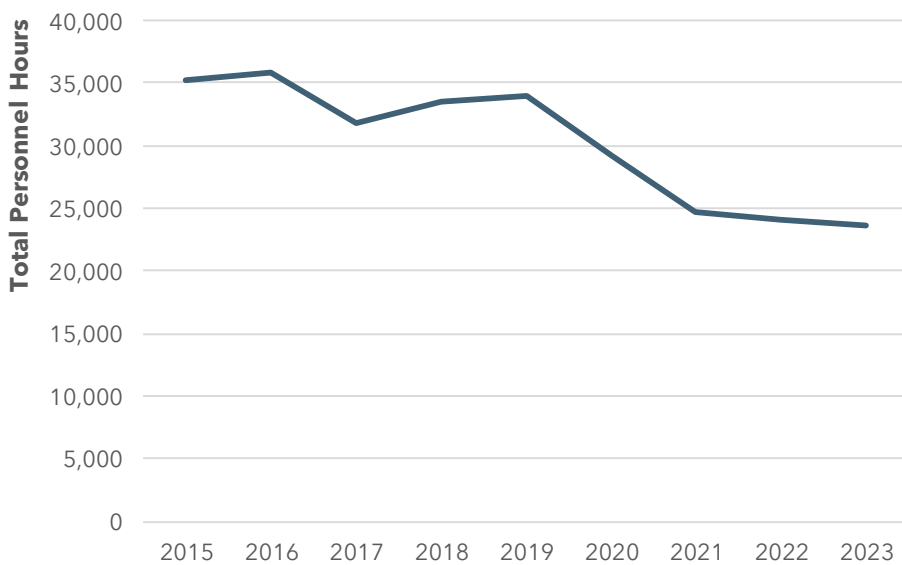
Based on data from Harbor Patrol paper logs, approximately 25% of personnel hours are spent on patrol or response. The remaining time is allocated to overhead such as training, administrative tasks, and maintenance (Exhibit 9). These percentages have remained consistent since 2015. Harbor Patrol also receives calls directly from residents and businesses on the waterways because of their established relationships. Those calls may not be included in paper logs. This data also shows that total personnel hours has decreased between 2015 and 2023, in line with a reduction in positions (Exhibit 10). With fewer total personnel hours and the same share of time spent on activities, Harbor Patrol is spending fewer total hours on patrol and response.

Exhibit 9. Harbor Patrol Share of Activities, 2015-2023



Sources: SPD, 2024; BERK, 2024.

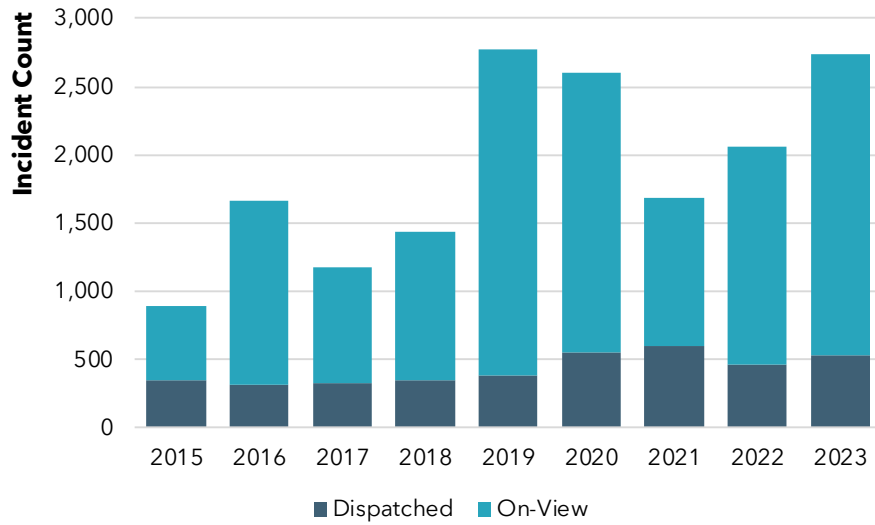
Exhibit 10: Harbor Patrol Total Personnel Hours Based on Paper Logs, 2015-2023



Sources: SPD, 2024; BERK, 2024.

Data from the SPD Computer Aided Dispatch (CAD) system shows that most incident responses are “on-view,” which includes responses where the officer sees the incident first without being dispatched on a call, receives or is referred a call from an outside agency, receives a non-911 call such as directly to the Harbor Patrol phone line, or is “flagged down” by a community member (Exhibit 11). “Dispatched” responses indicate that an officer was sent to the field to respond to a call received to the 911 call center. In 2023, the top ten Harbor Patrol dispatch types accounted for 77% of total incidents, with patrols and premise checks comprising 52% of total incidents (Exhibit 12).

Exhibit 11. SPD Harbor Patrol Incident Responses, 2015-2023



Note: The number of Harbor Patrol police officers declined from 26 to 14 from 2020 to 2021, which is likely contributing to some of the decline in officer-initiated responses from 2020 to 2021.

Sources: SPD, 2024; BERK, 2024.

Exhibit 12. SPD Harbor Patrol Top 10 Incident Response Final Case Types, 2023

Final Case Type	Incident Count	Share of Total Incidents
Premise Checks - Crime Prevention	792	29%
Directed Patrol Activity	529	19%
Harbor - Harbor Code Violation	268	10%
Harbor - Debris, Navigational Hazard	171	6%
Harbor - Water Emergencies	104	4%
Assist Public - Other (Non-specified)	83	3%
Harbor - Assist Boater (Non-emergency)	71	3%
Suspicious Circumstance - Suspicious Person	50	2%
Assigned Duty - In-service Training	48	2%
Crisis Complaint - General	48	2%
<i>Other Premise Check Final Case Types</i>	99	4%
<i>All Other Final Case Types</i>	525	19%
Total Incident Responses	2,740	100%

Source: SPD, 2024.

SFD Marine Response Units

SFD provides firefighting, emergency medical response, and rescue on Seattle waterways. SFD's primary responsibilities are life safety and property conservation on or near the water including vessels, houseboats, marinas, and boat storage facilities.

Marine Response Assets

SFD's marine response is based out of three locations (see Exhibit 5):

- Fire Station 5, located between Pier 54 and Colman Dock, houses Fireboat 2, Fireboat Leschi, Rescue Boat 5, and other small rescue boats. Fire Station 5 is the home base for the Fireboat Unit, which staffs the fireboats at Fire Station 3 and Fire Station 5. This is also the home base for Engine 5 Unit which staffs the Engine 5 truck and Rescue Boat 5.
- Fire Station 3, located at Fisherman's Terminal, houses Fireboat 1 and Fireboat Chief Seattle. These boats are staffed by the Fireboat Unit, which will drive from Fire Station 5 to Fire Station 3 and launch.
- Fire Station 36, located in West Seattle, has the Marine 1 Unit, which provides landside firefighting response for fires on or near the water.

SFD Fireboat Leschi



Source: BERK, 2023.

SFD is piloting a program to station rescue watercraft with rescue sleds at different locations around the city, with the goal of responding to any incident within 10 minutes. As an example, SFD would keep a watercraft in Leschi to be able to respond to needs on Lake Washington. The rescue watercraft can be driven by firefighter rescue swimmers. The City of Kirkland Fire Department and the City of Shoreline Fire Department have already adopted this rescue swimmer jet ski method to quickly respond to waterways emergencies.

Fireboat Unit Staffing

Fireboat Unit candidates must have one year of SFD experience before applying. The requirement was previously three years, but this was reduced to address a younger candidate pool and higher SFD turnover in recent years. It takes one year to bring a new deckhand through deckhand and Acting Officer training, and at least three years to train acting Fireboat Pilots and Engineers. Pilot and Engineer trainees take Civil Service tests to be eligible to fill those positions when a Pilot or Engineer retires.

Staffing for the Fireboat Unit has remained stable since 2015, with no positions currently held vacant (Exhibit 13). SFD noted that three additional fireboats have been added to the fleet, but staffing has remained the same. Staff are assigned to four-person crews for 24-hour shifts. Staff participate in ongoing training during the day and are typically underway on patrol or training on the fireboats for two to four hours each day. The Fireboat Unit does not draw from outside the unit for staffing needs.

Exhibit 13. SFD Fireboat Unit Budgeted and Filled Positions, 2024

Position Type	Number of Budgeted Positions	Number of Filled Positions
Captain	1	1
Lieutenant	3	3
Fireboat Pilot	4	4
Fireboat Engineer	4	4
Firefighter (Deckhand)	8	8
Total	20	20

Source: SFD, 2024.

SFD has also formed a Surface Water Rescue Swimmer program to provide rapid response for drowning emergencies. The program added 13 new members in 2022, for a total of 45 members.¹⁸ New rescue swimmers are firefighters who have completed a regional course and additional training to gain active rescue swimmer status. Rescue swimmers gather for quarterly training modules.

Fire Station 5 Activity

SFD tracks the run load for each unit, which is the average number of dispatches in a 24-hour shift. The Fireboat Unit is dispatched for incidents including onshore and offshore ship/boat fires, marina fires, fires immediately adjacent to the water, automatic fire alarms for waterfront occupancies, water rescues, emergency medical responses on the water, and vessels in distress. In 2023, the Fireboat Unit averaged 0.8 dispatches per shift across the four fireboats (Exhibit 14).

Exhibit 14. SFD Unit Run Load for Marine Response Assets, 2019-2023

Asset	Location	Staffed By	2019	2020	2021	2022	2023
Fireboat 1	Station 3	Fireboat Unit	0.2	0.2	0.1	0.2	0.3
Fireboat 2	Station 5	Fireboat Unit	0.1	0.3	0.2	0.2	0.2
Fireboat Chief Seattle	Station 3	Fireboat Unit	0.1	0.1	0.1	0.0	0.1
Fireboat Leschi	Station 5	Fireboat Unit	0.2	0.2	0.2	0.2	0.2
Total for Fireboat Unit			0.6	0.8	0.6	0.6	0.8
Rescue Boat 5	Station 5	Engine 5 Unit	0.4	0.5	0.3	0.3	0.4
Engine 5	Station 5	Engine 5 Unit	7.4	6.2	8.4	9.7	10.4
Marine 1	Station 36	Engine 36 Unit	0.1	0.1	0.1	0.1	0.1

Sources: SFD, 2023; BERK, 2024.

¹⁸ Seattle Fire Department, 2022. *Annual Report*, page 28. Available at: https://www.seattle.gov/documents/Departments/Fire/About/2022_Annual_Report_Web.pdf.

As dispatch may differ from deployment (whether the asset is sent out) and response (whether the asset arrives at the scene and provides response), unit run load cannot be used to calculate total annual responses for each asset. Exhibit 15 shows that the Fireboat Unit responded to 81 incidents in 2023, compared to 3,171 incidents for Engine 5, and 19 incidents for Rescue Boat 5 (staffed by the Engine 5 Unit). The Fireboat Unit and Rescue Boat 5 primarily provided responses to rescues and marine fires, while Engine 5 primarily provided responses to EMS incidents.

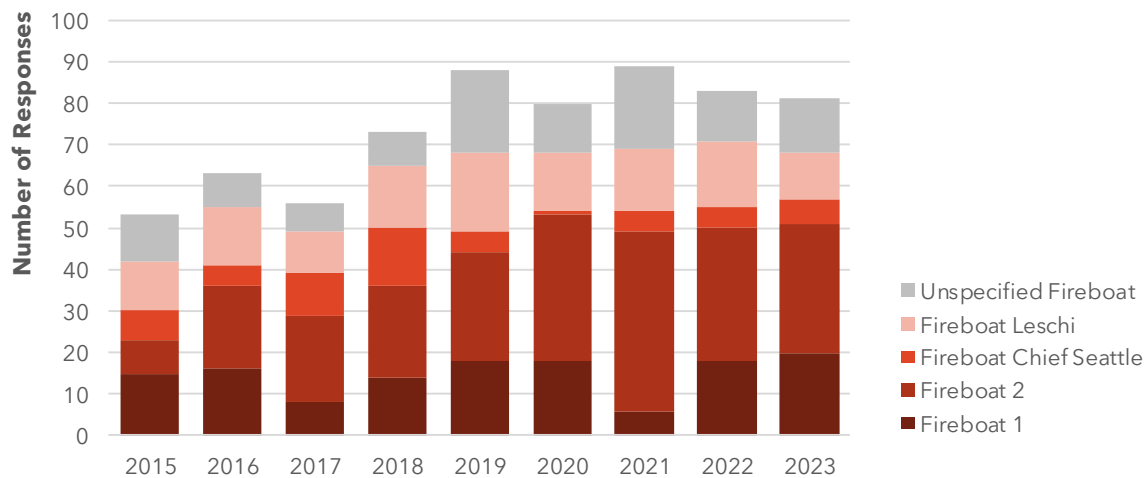
Exhibit 15. SFD Fire Station 5 Response Types by Unit, 2023.

Response Type	Fireboat Unit		Rescue Boat 5		Engine 5 Unit	
Rescue	23	28%	11	58%	28	1%
Marine Fire / Sinking	22	27%	5	26%	7	0%
Event	17	21%	0	0%	11	0%
Alarms	9	11%	0	0%	702	22%
Fire	6	7%	2	11%	531	17%
EMS	4	5%	1	5%	1,864	59%
Haz-Mat	0	0%	0	0%	17	1%
Other	0	0%	0	0%	11	0%
Total Responses	81	100%	19	100%	3,171	100%

Sources: SFD, 2024; BERK, 2024.

Among Fireboat Unit responses with specified assets, the saltwater assets Fireboat 2 and Fireboat Leschi housed at Fire Station 5 have been used in more incident responses than the freshwater assets Fireboat 1 and Fireboat Chief Seattle housed at Fire Station (Exhibit 16).

Exhibit 16. SFD Fireboat Unit Responses by Asset, 2015-2023.



Notes: For each response, an unspecified fireboat is first assigned to allow the crew to decide which assets to take. Then, the designation is changed to assign a specific asset or assets. "Unspecified Fireboat" refers to responses where this designation was not changed.

Sources: SFD, 2024; BERK, 2024.

Seattle Parks and Recreation

Seattle Parks and Recreation (SPR) manages over 380 parks and green spaces in the city, including 34 waterfront sites with various recreational amenities (Exhibit 17). Waterfront Park at Pier 58 has recently been demolished to accommodate a new 20-acre park from Pioneer Square to Pier 62. There are approximately 1,000 part-time and full-time employees in the department with positions ranging from administration, to parks maintenance, to instructors, to safety and security.

Exhibit 17. Seattle Parks and Recreation Waterfront Sites and Amenities

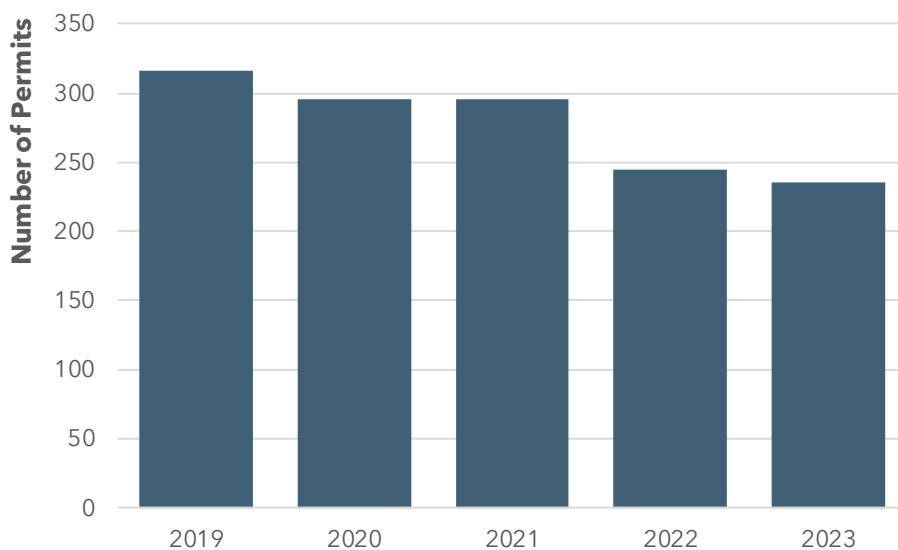
SPR Waterfront Site	Fishing Pier	Swimming Beach	Hand-Carry Boat Launch	Motorized Boat Launch
14 th Ave NW Boat Ramp				✓
Alki Beach Park			✓	
Atlantic City Boat Ramp				✓
Beer Sheva Park			✓	
Belvoir Place			✓	
Carkeek Park			✓	
Charles Richey Sr Viewpoint			✓	
Cormorant Cove			✓	
Discovery Park			✓	
Don Armeni Park				✓
Duwamish Waterway Park			✓	
Fairview Park			✓	
Fairview Walkway			✓	
Golden Gardens Park	✓		✓	✓
Green Lake Park	✓	✓	✓	
Lake Union Park			✓	
Lake Washington Boulevard	✓		✓	
Leschi Park			✓	✓
Lincoln Park			✓	
Lowman Beach Park			✓	
Madison Park		✓		
Madrona Park	✓	✓		
Martha Washington Park			✓	
Matthews Beach Park		✓	✓	
Mount Baker Park	✓	✓		
Piers 62 and 63	✓			
Pritchard Island Beach		✓		
Seacrest Park	✓		✓	
Seward Park	✓	✓	✓	
South Day Street Park				✓
Stanley Sayres Memorial Park			✓	✓
Sunnyside Ave N Boat Ramp				✓
Terry Pettus Park			✓	
Warren G. Magnuson Park		✓	✓	✓

Sources: SPR, 2024; BERK, 2024.

SPR Permitting Activity

Five of the seven City motorized boat launches have parking and require launch permits: Eddie Vine at Golden Gardens; Don Armeni in West Seattle; and Stan Sayers, Atlantic City, and Magnuson Park on Lake Washington. Permits may be purchased for single-day, overnight, or annual use which allows up to four nights stay at the boat launch. Single-day and overnight permits are purchased at a kiosk at the boat launch. Applications for annual permits can be completed online, by phone, mailed in, or dropped off in person. Exhibit 18 shows that the total annual boat launch permits at these five boat launches has declined in recent years, with 236 permits in 2023. The launches at 14th Ave NW and Sunnyside Ave N along the Ship Canal do not require a permit.¹⁹

Exhibit 18. Annual Boat Launch Permits, 2019-2023



Sources: SPR, 2024; BERK, 2024.

SPR Safety Enforcement Staffing

Beach Lifeguards: During the summer, SPR staffs between 80 and 100 lifeguards at the swimming beaches, with five to eight lifeguards at each beach, seven days a week. Lifeguard shortages in recent summers have led to SPR closing select swimming beaches.

Boat Ramp Rangers: SPR is budgeted to staff boat ramp rangers from May 1 through Labor Day on Saturdays and Sundays, in addition to occasional fishing peak days. At full staffing, there would be eight to ten seasonal staff and one year-round supervisor. Boat ramp location assignments shift based on staff availability and estimated ramp usage.

Park Rangers: Park Ranger duties include educating community members and visitors about rules of conduct; serving as ambassadors of the City's park system and preservation of natural resources; and supporting compliance with park regulations through issuing warnings, citations, and requesting mutual aid when needed. Park Rangers are unsworn and unarmed. The minimum requirement for recruitment is one year of experience or an equivalent amount of education or

¹⁹ See "Boat Launches" at <https://www.seattle.gov/parks/recreation/outdoor-water-recreation/boating-and-sailing>.

training in parks and recreation, security, or a related field. SPR is currently expanding the Park Ranger program to staff 28 Park Rangers. Initial deployment of the expanded program is expected to staff three teams of two Park Rangers, seven days a week from 6 a.m. to 9 p.m. with an emphasis on patrolling the downtown Seattle parks.²⁰

Agencies Outside the City Organization

There are several other public safety agencies with responsibilities on Seattle waterways (and beyond in some cases) outside the City organization. These agencies frequently work in partnerships with Harbor Patrol, SFD, and Seattle Parks and Recreation, and provide additional presence on Lake Washington (King County Sheriff and Mercer Island Marine Patrol) and Puget Sound (Port of Seattle and U.S. Coast Guard). Interviewees within and outside the City described good working relationships, collaboration on major events such as Seafair and Opening Day, and information-sharing on safety issues.

King County Sheriff's Office Marine Unit

The King County Sheriff's primary responsibilities on the waterways are law enforcement and search and rescue on all county waterways. The King County Sheriff has firefighting capabilities on some of its boats and provides mutual aid to local jurisdictions in need of support. The King County Sheriff does proactive patrols during the summer months and will respond to incidents from their stations throughout the rest of the year.

Eight cities also contract for their services, including Beaux Arts Village, Kenmore, and Kirkland.²¹ The Marine Unit is a team of 13 people with four full-time employees and nine part-time employees. There are four stations where it houses its fleet: Carillon Point (in Kirkland), Harbor Villa (in Kenmore), Des Moines, and Lake Sammamish. In addition to these stations, each full-time employee has an inflatable kayak carried in their vehicle that can be deployed in more remote locations.

Mercer Island Marine Patrol

The Mercer Island Marine Patrol promotes boating safety and the protection of life and property in the waters surrounding Mercer Island. Mercer Island has interlocal agreements to provide marine patrol services with the cities of Bellevue, Hunts Point, Renton, and Yarrow Point.²² The Marine Patrol provides regular boat patrols of Lake Washington and surrounding shoreline, enforces state and local laws, answers calls for assistance, gives emergency medical aid, suppresses boat and waterfront fires, investigates water related accidents, and educates the public in safe boating practices. The Marine Patrol has 22 trained officers, but not all are certified for subsurface diving.

²⁰ "Park Ranger Program Expansion," Seattle Park District Board Presentation, April 3, 2023. Presentation deck available at: <https://council.seattle.gov/wp-content/uploads/2023/03/Agenda-Item-4-Presentation-Park-District-Board-Park-Ranger-Overview.pdf>.

²¹ See "Cities & Towns That Contract For Service" at <https://kingcounty.gov/en/legacy/depts/sheriff/about-us/enforcement/specialized/marine-patrol.aspx>.

²² See documents ending with "Marine Patrol ILA" at https://library.municode.com/wa/mercercounty/municipal_codes/codes_of_ordinances/collection_of_ordinances/collection_of_ordinances?nodeId=2b9a7cd32a055.

Port of Seattle

The Port of Seattle Police Department partners heavily with Harbor Patrol and works alongside the U.S. Coast Guard, specifically during the cruise ship season which typically runs from April to October. The Port of Seattle Police Department has jurisdiction over Port of Seattle properties from 1st Ave South to Shilshole Marina, as well as terminals 5, 18, 30, 46, and 115 managed by the Northwest Seaport Alliance. In 2021, there were 40 civilian personnel and 117 commissioned personnel in the Port of Seattle Police Department, including 89 police officers.²³

The Port of Seattle Police Department has a Marine Patrol Unit as well as a Police Dive Team that performs searches, recoveries, and rescues. The Marine Patrol Unit operates the Harbor 1 vessel for patrols, emergency response, and threat detection. The Police Dive Team coordinates with U.S. Coast Guard to perform critical infrastructure checks. Other responsibilities and activities of the Port of Seattle include clearing debris (specifically old munitions and explosives), managing derelict vessels, and responding to thefts and break-ins.

U.S. Coast Guard

The U.S. Coast Guard is a federal agency in charge of protecting the sea, engaging in maritime law enforcement and security, and facilitating maritime transportation. There are nine coast guard districts covering the United States. Seattle waterways are contained within Sector Puget Sound in District 13. Sector Puget Sound has over 780 active duty, reserve, and civilian personnel.²⁴

Sector Puget Sound has boat stations in downtown Seattle near Colman Dock, Bellingham, Port Angeles, Neah Bay, and Forks. Their primary responsibilities within the Seattle waterways include facilitating vessel traffic; permitting marine events; establishing safety zones; enforcing local, state, and federal laws; and preventing and responding to emergencies and pollution.

The U.S. Coast Guard organizes the quarterly Area Maritime Security Committee (AMSC). The AMSC includes security officers for cruises, terminals, and critical facilities, as well as Harbor Patrol and SFD.

U.S. Coast Guard Auxiliary

The U.S. Coast Guard Auxiliary is comprised entirely of volunteers and has the authority to perform most duties of U.S. Coast Guard, except for law enforcement. Volunteers provide their own boats but are given instructions and training through U.S. Coast Guard Auxiliary to perform vessel inspections and support with recreational boater safety. Their primary responsibility is to ensure boaters are educated and safe on the waterways.

There are over 600 Coast Guard auxiliary volunteers in the Puget Sound region.²⁵ Seattle is in the Coast Guard Auxiliary's District 13, Division 2. This division covers most of King County including the Seattle-Bellevue metropolitan area, the Eastside, Seattle-Elliott Bay, and Renton.

²³ See page 37 at <https://www.portseattle.org/sites/default/files/2022-07/POSPD%20Annual%20Report%202021.pdf>.

²⁴ U.S. Coast Guard, "[United States Coast Guard Sector Puget Sound Fact Sheet](#)," 2021.

²⁵ Ibid.

Washington State Parks

Washington State Parks is responsible for keeping people safe on any named waterway in the State of Washington through programs such as the Recreational Boating Safety Program. This program distributes boater education cards and manages the Clean Vessel Act Grant, the Life Jacket Loaner Program, and Paddle Safe Week. Other responsibilities include collecting recreational boating fatality and accident information, distributing federal funds to increase safe waterways education, and training marine law enforcement.

Other Organizations

The State Departments of Ecology, Fish & Wildlife, Natural Resources, U.S. Army Corps of Engineers, and Tribal Marine Police also have responsibilities on Seattle waterways. See **Appendix C: Other Organizations with Waterways Responsibilities**.

Safety Response Types

Various response types supporting safety on Seattle waterways emerged through our research on code regulations and interviews with public safety agencies. These response types are all necessary and comprehensive of the response types used to support waterways safety. Exhibit 19 summarizes the primary existing safety response types currently shared by agencies around Seattle waterways.

Exhibit 19. Summary of Response Types and Currently Responsible Agencies

Safety Response Type	Currently Responsible Agencies
Law enforcement and regulation	Harbor Patrol; King County Sheriff; Mercer Island Marine Patrol; U.S. Coast Guard; Port of Seattle Police Department; FAA; Department of Fish & Wildlife; Tribal Marine Police
Fire incidents	SFD marine response units; Harbor Patrol; King County Sheriff; Port of Seattle Fire Department
Search, rescue, and accident investigation	Harbor Patrol; SFD marine response units (search and rescue); King County Sheriff; Mercer Island Marine Patrol (search and rescue); U.S. Coast Guard; Washington State Parks (data collection); King County Medical Examiner's Office (data collection); WA State Department of Health (data collection)
Dive rescue	Harbor Patrol; SFD marine response units; King County Sheriff; Mercer Island Marine Patrol; Port of Seattle Police Dive Team; U.S. Coast Guard
Patrols	Harbor Patrol; SFD Fireboat Unit; Seattle Parks and Recreation; King County Sheriff; Mercer Island Marine Patrol; Port of Seattle Marine Patrol Unit; U.S. Coast Guard
Education and community engagement	Harbor Patrol; Washington State Parks; King County Sheriff; U.S. Coast Guard Auxiliary; rental companies and other service providers
Vessel inspections	Harbor Patrol; King County Sheriff; Mercer Island Marine Patrol; U.S. Coast Guard Auxiliary; U.S. Coast Guard; Department of Ecology
Navigational hazards	Harbor Patrol; Department of Natural Resources; King County Sheriff; Port of Seattle; U.S. Coast Guard; U.S. Army Corps of Engineers; Seattle Parks and Recreation; private property owners
Hazardous materials response	Harbor Patrol; SFD; Department of Ecology; U.S. Coast Guard; other city, county, and state agencies for emergency management
Permitting	Harbor Patrol; Seattle Parks and Recreation; King County Sheriff; U.S. Army Corps of Engineers

Source: BERK, 2024.

Law Enforcement and Regulation

Regulations to promote waterways safety are outlined in city, county, state, and federal codes. Multiple agencies enforce laws and regulations on Seattle waterways.

Harbor Patrol: SMC [16.08.010](#) authorizes the City to exercise its police power over Seattle waterways. SMC [16.12.010](#) states that the Chief of Police has the authority to enforce City regulations.

King County Sheriff: King County Code (KCC) [12.44.010](#) authorizes King County to exercise its police power over county waterways, which include all Seattle waterways.

The **City of Mercer Island** has authority over waterways within its city limits (Mercer Island City Code [11.02.020](#)), which includes areas of Lake Washington.

The **U.S. Coast Guard** has the authority to enforce federal laws on waters subject to the jurisdiction of the United States per [Title 14 Section 2](#) and is acknowledged as having jurisdiction over Seattle waterways in SMC [16.08.010](#). When on the waterways, seaplanes are considered a waterways vessel and are subject to U.S. Coast Guard navigation rules according to [36 Code of Federal Regulations \(CFR\) Sections 327.3 and 327.4](#).

The **U.S. Army Corps of Engineers** also has jurisdiction over Seattle waterways according to SMC [16.08.010](#). [33 CFR Section 320](#) covers the general regulatory policies that the U.S. Army Corps of Engineers administers. [33 CFR Section 207.750](#) describes the administration and navigation regulations for the Lake Washington Ship Canal.

The **Port of Seattle Police Department** has jurisdiction over Port of Seattle properties.

The **Federal Aviation Administration** is charged to regulate the use of navigable airspace in [49 U.S. Code Section 40103](#) and also regulates pilot certifications and regulations such as those outlined in [14 CFR Section 61](#).

The **Washington Department of Fish and Wildlife** enforces fishing and collection permits and capture limits amongst waterways users (RCW [Title 77](#)). Their primary goal is to ensure the sustainable conservation of fish and wildlife on the waterways.

Tribal Marine Police patrol waterways and enforce when needed during fishing and shellfish seasons to ensure compliance with all ordinances and regulations related to fishing, harvesting, and hunting (RCW [10.92.020](#)).

Examples of Waterway Regulations

Pertaining to recreational activity:

- SMC [16.20](#) enforces speeding, intoxication limits, and boat registration requirements.
- SMC [25.08.485](#) enforces noise from watercraft and residential quiet hours.
- KCC [12.44](#) enforces boating regulations including speed limits and intoxication on King County waterways.
- RCW [79A.60.640](#) requires boater education for recreational boaters.

Pertaining to residential activity:

- SMC [23.60A.202](#) limits new floating home moorage sites to Lake Union and Portage Bay.
 - [Director's Rule 9-2020](#) to SMC 23.60A.203.D legally recognizes floating on-water residences (e.g., houseboats) if the residence existed prior to July 1, 2014.
-

Fire Incidents

SFD’s Fireboat Unit is the lead agency for fire incident response. Harbor Patrol provides support to SFD on Lake Union and other waterways within the City of Seattle, per a settlement agreement between the Seattle Firefighters Union and the Seattle Police Officers Guild.²⁶ This agreement states that for incidents on the water away from shore, Harbor Patrol first assumes incident command until it is determined that the fire requires the assistance of SFD. Once SFD arrives, SFD assumes incident command. For shore-based fire incidents, Harbor Patrol may begin firefighting until SFD arrives on the scene, upon which SFD takes over incident command. If SFD is the initial responder to the shore-based fire incident, SFD assumes incident command.

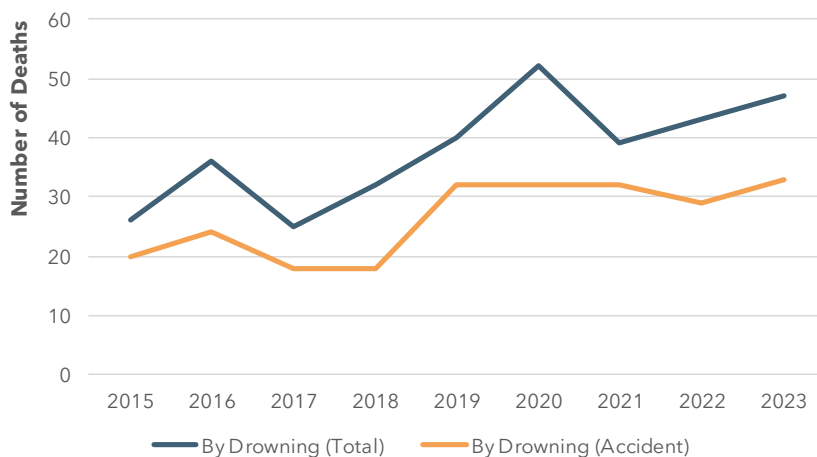
King County Sheriff and the Port of Seattle Fire Department also have firefighting capabilities. Since the pumping capacity per minute from their boats is significantly less than SFD’s, they may begin the fire suppression response until SFD arrives with the larger fireboat.

Search, Rescue, and Accident Investigation

Harbor Patrol, SFD, KC Sheriff, Mercer Island Marine Patrol, and U.S. Coast Guard often work together for search and rescue. Harbor Patrol and King County Sheriff also provide emergency response to investigate crimes or accidents, such as reports of drownings. The U.S. Coast Guard has authority to investigate boating accidents, but generally defers to the respective local jurisdiction.

King County Medical Examiner’s Office and Washington State Department of Health collect data on drownings by county. In King County, the number of deaths by drowning has increased in recent years (Exhibit 20). Washington State Parks gathers accident data and reports it to the U.S. Coast Guard, which consolidates all boating incident data to the Boating Accident Records Database. In 2022, there were 11 boating accidents on Seattle waterways recorded to this database, with 15 vessels involved, 5 injuries, and 2 deaths (Exhibit 21).

Exhibit 20. King County Deaths by Drowning, 2015-2023



Sources: King County Medical Examiner’s Office, 2024; BERK, 2024.

²⁶ “Mutual Offer of Settlement by the Seattle Firefighters Union, Local 27 and the Seattle Police Guild to the City of Seattle”, signed on February 15, 2000.

Exhibit 21. U.S. Coast Guard Boating Accident Statistics by Body of Water, 2022

Body of Water	Accidents	Vessels	Injuries	Deaths
Lake Washington	5	7	4	1
Lake Union	3	4	1	0
Puget Sound	3	4	0	1

Sources: [U.S. Coast Guard, 2024](#); BERK, 2024.

Dive Rescue

Harbor Patrol is the lead agency for dive rescue. SPD and SFD have an established protocol regarding subsurface dive rescue response, which states that Harbor Patrol has primary responsibility, but a dual notification will be made to both Harbor Patrol and SFD when there is a request for emergency water rescue.²⁷ The first unit of rescue divers to arrive on scene begins underwater rescue operations. If rescue divers from both Harbor Patrol and SFD are present, dive units work in unified command with Harbor Patrol assuming incident command and a land-based SPD supervisor dispatched.

King County Sheriff, Mercer Island Marine Patrol, Port of Seattle, and U.S. Coast Guard also have dive rescue capabilities. Several agencies, including Harbor Patrol, also provide dive security services to private individuals and companies ahead of major events and for visiting dignitaries.

Patrols

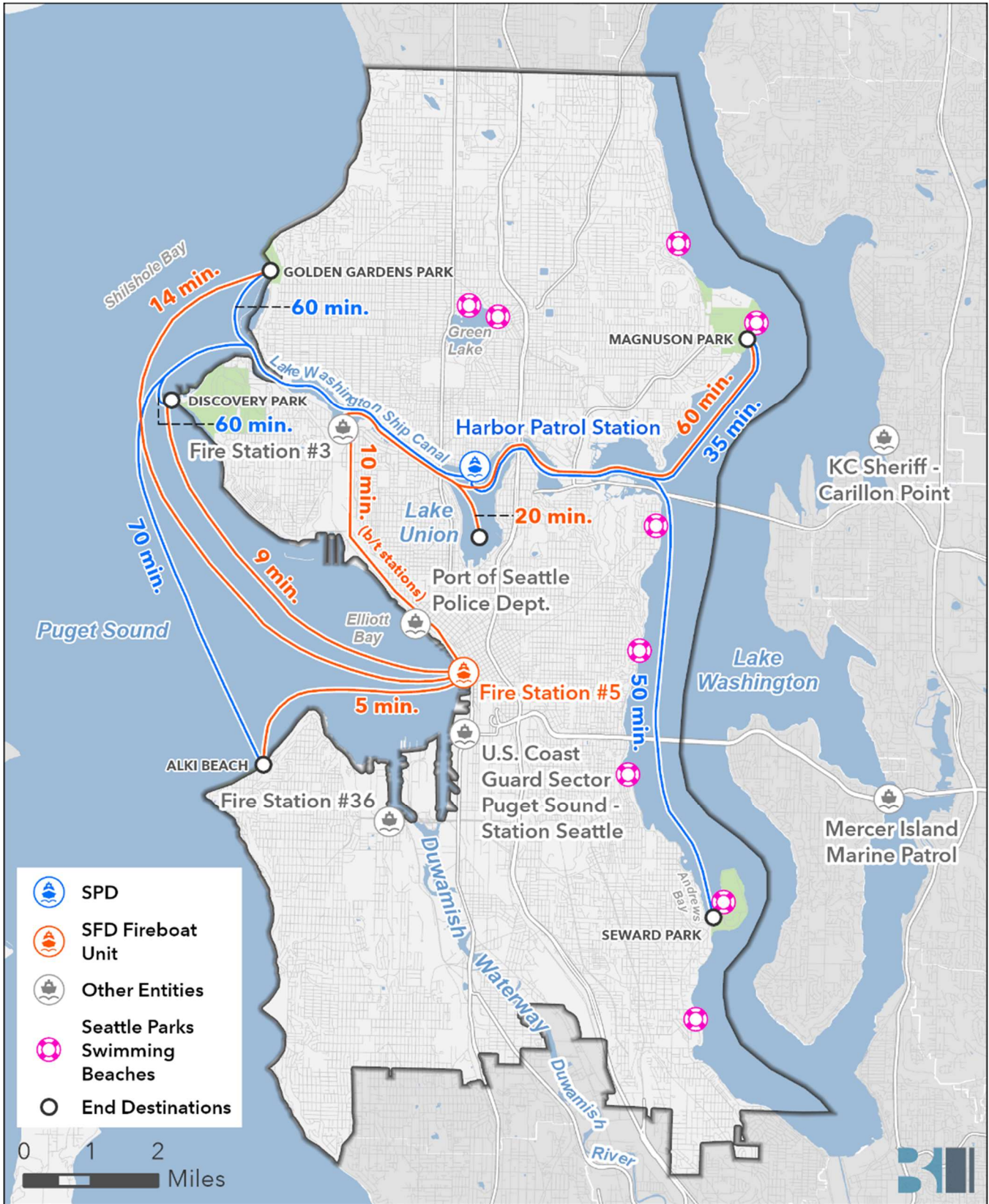
Active patrols of the waterways help to ensure marine security and the safety of water users, enforce safety regulations, deter crime, and respond to incidents as they occur. With current staffing for one boat, Harbor Patrol focuses patrols on the Lake Union and Lake Washington Ship Canal areas. Lake Washington is also a primary response area, but it is not patrolled for extended periods of time. King County Sheriff and Mercer Island Marine Patrol both have boats on patrol in Lake Washington. The SFD Fireboat Unit, Port of Seattle Marine Patrol Unit, and U.S. Coast Guard patrol on Elliott Bay.

Prior to 2019, Harbor Patrol had the resources to patrol both Lake Union and Lake Washington. Given staffing shortages and the distance from Lake Union to parts of Lake Washington such as Andrews Bay, Harbor Patrol often relies on support from the King County Sheriff and Mercer Island Marine Patrol due to their proximity, but neither agency provides 24/7 staffing.

Exhibit 22 shows estimated response times for Harbor Patrol and the SFD Fireboat Unit from Fire Station 5. It can take Harbor Patrol approximately one hour to reach Elliott Bay and parts of Lake Washington at regular response speeds, but half that time for emergency response where boats can exceed the seven knots speed limit without causing undue harm. The Fireboat Unit has faster responses to saltwater incidents on the Puget Sound but lengthier response times to freshwater incidents on Lake Union or Lake Washington. These responses require the Fireboat Unit to travel first by vehicle to Fire Station 3 (a transit of approximately ten minutes), and then by boat to the incident.

²⁷ "Subsurface Dive Rescue Response, Seattle Police Department & Seattle Fire Department Protocol", signed by the SPD and SFD chiefs.

Exhibit 22. Harbor Patrol and SFD Fireboat Unit Estimated Response Times



Source: BERK, 2024.

Education and Community Engagement

During patrols, Harbor Patrol officers enforce lifejacket use, boat speeds, and boating licenses for recreational waterway users. Harbor Patrol also engages with commercial waterway stakeholders during quarterly meetings and Lake Union residents who often call the Harbor Patrol phone line directly about concerns. Harbor Patrol maintains a good relationship with the residential community it serves. Many residents of floating homes, houseboats, and liveboards contact Harbor Patrol directly for assistance, advocate to the City for increased resources, and provide financial donations to the Seattle Police Foundation.

Washington State Parks manages the Recreational Boating Safety Program and provides grant funding to local agencies to provide education. Harbor Patrol has received grant awards from Washington State Parks for education in the past but declined the awards in recent years. State Parks grant dollars are tied to deliverables, such as the number of classes or number of contacts. As Harbor Patrol currently has insufficient staffing to achieve the desired deliverables, they are unable to use these grant funds.

The King County Sheriff and U.S. Coast Guard Auxiliary also provide education to recreation users during patrols and vessel inspections.

Vessel Inspections

[Chapter 352-60](#) of the Washington Administrative Code (WAC) outlines recreational vessel requirements. This includes having life jackets, fire extinguishers, and navigation lights on board among other legally required items. Harbor Patrol, King County Sheriff, and Mercer Island Marine Patrol perform boat safety inspections and are authorized to issue tickets. The U.S. Coast Guard Auxiliary also conducts safety inspections, with all members required to conduct at least five inspections per year. The U.S. Coast Guard conducts over 2,000 commercial vessel inspections and examinations annually in the Puget Sound region.²⁸

The Department of Ecology performs vessel inspections on large commercial shipping vessels (see [Appendix C: Other Organizations with Waterways Responsibilities](#) for more details).

Washington State Vessel Inspection Form

Source: BERK, 2024.

²⁸ U.S. Coast Guard, "[United States Coast Guard Sector Puget Sound Fact Sheet](#)," 2021.

Navigational Hazards

As referenced in Law Enforcement and Regulation, Harbor Patrol, U.S. Coast Guard, and Army Corps of Engineers exercise jurisdiction over the waterways within Seattle according to SMC [16.08.010](#). All three parties are also involved in the removal of navigational hazards. SMC [16.12.010](#) states that the Chief of Police has the authority “to remove, impound or sell any vessel, water sport craft or obstruction anchored or moored in violation of this title deemed a public nuisance or a hazard to navigation or operated or afloat under conditions deemed unsafe for water transportation.” Harbor Patrol responds to calls about navigational hazards, such as logs or floating home barrels that have come loose. These are stored in the Harbor Patrol Storage Pen until retrieval or pick-up by agencies tasked to dispose of larger objects, including derelict vessels.

Derelict Vessels


Boats that sink or are abandoned need to be removed and disposed of, as they pollute the water and create a navigational hazard or impede use of dock space. Removal and disposal of vessels can cost tens of thousands of dollars. As shown in Exhibit 23, there are several steps to dispose of an abandoned or derelict boat, no matter whether the boat is one’s own property. This may lead some to abandon or sell vessels, rather than comply with all the steps. Some interviewees speculated that the number of abandoned boats may be increasing, as owners can sell boats online for very little money to users who do not understand the moorage regulations or licensing requirements. This saves them the hassle of dismantling the boat and removing the hazardous materials before taking it to a landfill or recycling facility.

Harbor Patrol Storage Pen




Source: BERK, 2023.

Exhibit 23. DNR Derelict Boat Disposal Materials



How to Dispose of an Abandoned or Derelict Boat

Questions?
Visit Our Website:
dnr.wa.gov/derelict-vessels



IF THE BOAT IS NOT YOURS
You can do one of the following:

- **Call your local law enforcement, file a report, and ask them to ticket the owner for illegal dumping and/or trespassing.** See if the officer can track down the owner by searching the registration number (WN #). Law enforcement can then ask them to remove the boat from your property.
- **If you do not find the last registered owner,** some counties will issue a “Junk Vehicle Affidavit” which will permit you to dispose of the boat without a title.
- **You can also take the boat to the dump yourself,** but you will need to follow the Lost and Found Property Laws under RCW 63.21 to gain legal custody. Call your local landfill for their requirements before taking the boat.
- **If you do not have a trailer to haul the boat,** contact a local tow or vessel transport company.
- **If the boat is in good enough condition,** and after you have gained legal possession of it by following RCW 63.21.010 you may then keep or sell it.

SEE WAC 308-93-275 AND RCW 46.55.230 FOR DETAILED INFORMATION.


IF YOU OWN THE BOAT

- **If you have the title to the vessel,** you can take it directly to a landfill, or rent a dumpster and dismantle the boat yourself after draining and disposing of any hazardous materials properly. Engines and trailers can be recycled at a metal recycler.
- **If you lost the title,** contact a Department of Licensing (DOL) agent and ask for an “Affidavit in Lieu of Title” to be used for the purpose of disposing the vessel.
- **Vessels on the water that are too big for a trailer,** contact your local boatyard to haul out and dispose of for you. Or you can have a boat transportation company take it to the landfill.

PRIVATE MOORAGE FACILITIES


If you are a private moorage facility, follow RCW 88.26 to gain custody. As a private moorage facility, you are required by law RCW 88.26.030 to obtain insurance coverage. You may also seek a contract with local government for the removal of vessels, see RCW 79.100.130.

Vessel Turn-In Program (VTIP)
If you are unable to dispose of your boat and do not have the financial means to do so, you may qualify for the VTIP. Go to DNR’s website, review the Eligibility Criteria form, and fill out the application.

 dnr.wa.gov/programs-and-services/aquatics/derelict-vessels/vessel-turn-program

SEE RCW 79.100.160 FOR DETAILED INFORMATION

DERELICT VESSEL REMOVAL PROGRAM AND VESSEL TURN-IN PROGRAM
360-902-BOAT (2628)



Source: DNR, 2023.

When boat owners do not properly dispose of their vessels, law enforcement officers such as Harbor Patrol can issue tickets and enforce penalties, such as those listed in Exhibit 24.

Exhibit 24. Examples of Penalties for Derelict Vessel Offenses

RCW	Description of Offense	Severity	Fine (\$)
79.100.110.1	Aquatic Land - Abandon Vessel: A person who causes a vessel to become abandoned or derelict upon aquatic lands.	Misdemeanor	\$500
79.100.110.2	Aquatic Land - Sink Vessel / Block Waterways: A person who intentionally, through action or inaction and without the appropriate state, local, or federal authorization, causes a vessel to sink, break up, or block a navigational channel upon aquatic lands.	Misdemeanor	\$500

Sources: DNR, 2024; BERK, 2024.

DNR Derelict Vessel Removal Program

The Washington State Department of Natural Resources’ (DNR) Derelict Vessel Removal Program was created in 2002 to help address the problem of abandoned vessels ([RCW 79.100](#)). In the event that a boat owner does not properly dispose of their vessel, a public agency can dispose of derelict vessels and then apply for reimbursement from the Derelict Vessel Removal Program. Funding for this program comes from the watercraft excise tax, as well as the recreational vessel registration fee and the commercial vessel fee.

While the DNR houses the program and disburses the funds, many other agencies are also involved in vessel removal and destruction including Harbor Patrol, King County Sheriff, Port of Seattle, U.S. Coast Guard, U.S. Army Corps of Engineers, and Seattle Parks and Recreation. For example, [SMC 16.08.050](#) notes the Waterway Operations and Maintenance Account for reimbursement of expenses involved in removing obstructive vessels from waterways. Despite the funding, there is a backlog of derelict vessels still to be removed. Since 2002, approximately 117 vessels have been removed from Seattle and as of February 2024, there were 21 more still to be removed (Exhibit 25).

Exhibit 25. DNR Derelict Vessel Inventory, February 2024

Priority Level	Vessels statewide	Vessels in Seattle	Vessels in Seattle removed since 2002
1 - Emergencies	3	1	19
2 - Non-emergency existing threats	71	3	19
3 - Vessels impacting habitat	20	0	4
4 - Minor navigation or economic impact	10	2	6
5 - Other abandoned or derelict vessels	191	15	64
Unknown	0	0	5
Total	296	21	117

Sources: DNR, 2024; BERK, 2024.

DNR Vessel Turn-In Program

In addition to the DNR's Derelict Vessel Removal Program and the penalties that can be enforced by law enforcement agencies, the DNR tries to mitigate the number of new derelict vessels through its Vessel Turn-In Program. This is a free program for those who qualify and has the potential for significant cost savings by getting boats off the waterways before they sink or run aground.

The DNR also outlines steps for Cities to become "authorized public entities" (APE) in accordance with [RCW 79.100](#). This provides Cities and their law enforcement agencies with the authority to more proactively remove abandoned and derelict vessels that pose a significant environmental or navigational hazard while still utilizing funds from the DNR's Derelict Vessel Removal Account. Harbor Patrol has already worked with the DNR to be designated as an authorized public entity.

Hazardous Materials Response

In the City of Seattle, SFD is the designated primary agency for oil and hazardous materials (HAZMAT) incidents, with support from SPD, U.S. Coast Guard, and other city, county, and state agencies for emergency management. SFD manages HAZMAT incidents with the following priorities (in order): life safety, incident stabilization, property conservation, and environmental protection.²⁹

Permitting

SMC [16.12.010](#) grants the Chief of Police the authority to permit the following activities on the waterways within the limits of the City: movement of unseaworthy craft and anchoring or moorage of vessels or water sport craft or obstructions in anchorage areas; skin diving or scuba diving; and marine events, races, and regattas. KCC [12.46.050](#) also grants moorage and anchorage permitting authority to King County Sheriff. Seattle Parks and Recreation manages launch permits at motorized boat ramps in the city (see **SPR Permitting Activity**).

The U.S. Army Corps of Engineers has authorities granted by federal legislation to protect the nation's aquatic resources. The Army Corps evaluates applications for permits for proposed activities, such as dredging, construction of docks and bulkhead, and placing navigation aids under the authorities of Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, and Section 103 of the Marine Protection, Research and Sanctuaries Act.³⁰

²⁹ City of Seattle Office of Emergency Management, 2021. *City of Seattle Comprehensive Emergency Management Plan, ESF #10 - Oil and Hazardous Materials*. Available at: <https://www.seattle.gov/documents/Departments/Emergency/PlansOEM/2021%20EMAP%20Updated%20Plans/2021%20Update.AnnexIV.ESF10.signed.pdf>.

³⁰ See <https://www.nws.usace.army.mil/Missions/Civil-Works/Regulatory/Permit-Guidebook/Corps-Permit/>.

Findings and Recommendations

In interviews for this study, the main safety concerns that emerged were around life safety, theft, fire, and interaction of multiple use types on the same bodies of water (Exhibit 26). These safety concerns are summarized below by waterway area. Due to higher summertime participation in recreational waterway activities and the unpredictable nature of accidents, fires, and theft, some safety concerns are more visible than others depending on the time of year.

Exhibit 26. Summary of Main Safety Concerns by Waterway Area

Waterway Area	Main Safety Concerns
Lake Washington	Multiple recreational activities Vessel safety compliance Recreational boating behavior (speeding, boating under the influence, noise) Drownings and other accidents
Lake Union	Multiple recreational activities Vessel safety compliance Seaplane landings and take-offs Theft from floating homes and docks Houseboat and marina fires Drownings and other accidents
Lake WA Ship Canal	Recreational users sharing the same waterway with commercial users Theft from docks and property Marina and property fires Drownings and other accidents
Puget Sound	Recreational users sharing the same waterway with commercial users Theft from docks and property Drownings and other accidents
Duwamish Waterways	Recreational users sharing the same waterway with commercial users Drownings and other accidents
Other lakes and parks	Multiple recreational activities Drownings and other accidents

Source: BERK, 2024.

The remainder of this section synthesizes our findings on the City’s existing marine public safety operations and recommendations to improve the current state. While many of our findings involve waterways users and agencies beyond the City, which reflects the shared responsibilities and collaborative relationships, we focused our recommendations on actions that the City could lead, which could include partnering, and where it has control over additional necessary resources. Exhibit 27 summarizes these recommendations by response type, rather than waterway area, as we view the recommendations as potentially benefiting all waterway areas.

Exhibit 27. Summary of Recommendations by Response Type

Response Type	Recommendations
Patrols	<ul style="list-style-type: none"> Consider coverage by SPR Park Rangers to support noise ordinance enforcement. Support SFD's efforts to add a fire station in South Lake Union. Use available call or incident data to understand the demand for Harbor Patrol services.
Education and community engagement	<ul style="list-style-type: none"> Improve recreational boater education with signage and situational training modules. Partner with other organizations to conduct safety checks for recreational users. Be transparent about the level of service Harbor Patrol can deliver. Maintain an online data dashboard for Harbor Patrol activity.
Navigational hazards	<ul style="list-style-type: none"> Raise awareness about the DNR's Vessel Turn-In Program. Lobby for stronger enforcement tools and additional state funding for derelict vessels.
Emergent needs	<ul style="list-style-type: none"> Review MOUs to determine whether and how they should be updated. Create a venue for regular conversations to strengthen agency relationships.

Source: BERK, 2024.

Finding: Seattle waterways accommodate a variety of uses.

There are more residents, visitors, and types of recreational activities around the waterways.

Many interviewees noted increased recreational activity on the waterways, particularly from human-powered or non-motorized vessels including stand-up paddleboards. While the data on motorized boat registrations, sales, and launch permits show lower numbers in recent years, data on non-motorized vessels is harder to come by. However, growth in population, tourism, and new businesses offering rentals and other recreational services suggests an increased variety of activities available and opportunities for waterway use.

More safety education is needed for recreational users. Interviewees identified a need for increased education for recreational users on the waterways. There are many regulations governing use of the waterways, such as speed limits, rights-of-way, anchoring locations, and requirements for carrying safety equipment that new or infrequent users may not be aware of. Specific to Lake Union, users must be aware of seaplane activity and the damage that excessive boat wake can cause to floating home sewer lines and pontoons. Currently, Harbor Patrol, King County Sheriff, and Mercer Island Marine Patrol spend much of their time patrolling the waterways, providing a visible presence, enforcing boater regulations, and making community contacts.

Recommendation: Augment education for recreational users.

Improve recreational boater education with signage and situational training modules.

Informational signage at boat ramps and other access points can raise awareness of speed limits and other regulations specific to an area. Situational training modules can demonstrate how to navigate crowded waterways, such as the Port of Seattle area or the Lake Washington Ship Canal, where there are commercial vessels. All materials should be available in multiple languages to lower cultural barriers.

Partner with other organizations to conduct safety checks for recreational users. In practice, education means informing users of boating regulations and checking that users have the required equipment. While some of this education will be done through patrols by Harbor Patrol and other enforcement agencies, the City should explore the regular use of SPR Park Rangers, the U.S. Coast Guard Auxiliary, or other organizations to take a larger role as safety education does not need to be implemented by law enforcement.

Finding: Current resources for emergency response and patrols are limited.

Asset locations and staffing levels limit SPD and SFD response times. Harbor Patrol currently focuses patrols on Lake Union and the SFD Fireboat Unit is more focused on Elliott Bay due to station locations and the requirements to “lock” between Puget Sound and Lake Union. Though police and fire calls for service have returned to pre-pandemic levels, Harbor Patrol staffing has decreased and SFD staffing has remained constant.

While not an emergency, Harbor Patrol cannot respond to all noise complaints in areas such as Andrews Bay further south on Lake Washington, where nearby residents have highlighted a desire for increased patrols to enforce excessive noise generated from recreational users.³¹ Currently, Mercer Island Marine Patrol is often enlisted to support enforcement in this area as its boats are docked on Lake Washington.

SFD noted that current response times to emergency calls in freshwater areas are a safety issue and identified its greatest need as increasing waterside staffing with an additional fireboat crew. One crew would remain at Station 5 on Elliott Bay, and a second crew would be at a new SFD-specific station ideally located at the south end of Lake Union. A fireboat on Lake Union would speed up response time to fire incidents on that waterway, the Ship Canal, Portage Bay, and Lake Washington.

Property crime was identified as a problem that may benefit from more patrols. There is a perception among owners whose property abuts the waterways that property crime is a problem.³² This can entail people prowling properties or boats; stealing personal property, equipment, or scrap metal; siphoning gasoline from parked vehicles; abandoning derelict boats on private docks; or

³¹ Complaints were heard through interviews with Harbor Patrol, King County Sheriff, and Mercer Island.

³² Interviewees representing commercial, industrial, and residential users all described an uptick of theft from buildings, vessels, and docks. Many felt that increased Harbor Patrol presence could deter such thefts.

starting fires.³³ These are perceived problems, not necessarily supported by crime reports, but are actionable nonetheless. Visible police presence may contribute to improvement in these measures by deterring crime and decreasing response times to calls. Harbor Patrol identified its greatest need as additional staff to increase patrol presence, as did many of the individuals consulted for this study through interviews.

Recommendation: Rethink staffing for noise complaints and add fire resources.

Consider coverage by SPR Park Rangers to support noise ordinance enforcement. The City could consider adding patrols and coverage by SPR Park Rangers to support enforcement of the City's noise ordinance in areas such as Andrews Bay. Park Rangers have the authority to cite individuals and may also achieve compliance by reminding users of City regulations.

See recommendation, *Augment education for recreational users*, for additional thoughts on how Park Rangers could provide support.

Support Seattle Fire Department's efforts to add a fire station in South Lake Union. SFD would need an additional 56 FTEs, plus assets and equipment, to staff a new station on South Lake Union. Fourteen positions would be needed, with four shifts: four for a ladder truck, four for a fire engine, two for an aid car, and four for a fireboat. The station would include boat moorage for SFD on the south end of the lake. The Harbor Patrol station would remain in its current location.

See recommendation, *Use data to inform decisions*, for more on Harbor Patrol staffing.

Finding: Current Harbor Patrol data does not provide a complete picture of need.

It is difficult to establish a metric for recommended marine police unit staffing. For regular police patrol officers, there are standard approaches to identifying the appropriate level of staffing, such as based on population, number of hours of coverage needed, or workload. For a marine unit, there is no common approach or metric used, such as number of patrol officers per mile of coastline. In 2021, the City of San Francisco Police Department conducted a staffing analysis where different methodologies were used depending on the unit. A non-scaling methodology was used for the marine unit and other units "staffed electively to facilitate city and department priorities."³⁴ Other methodologies utilized in the analysis were workload-based, ratio-based (e.g., number of officers per boat), and fixed post (positions staffed a specific level for a specific number of hours).³⁵ SPD currently has a research project underway to establish a comprehensive police efficiency method ("Measuring the Efficiency of a Large Local Police Agency 2024-146").

³³ The National Incident-Based Reporting System (NIBRS) is used by law enforcement agencies to classify offenses as crimes against people, crimes against property, or crimes against society. NIBRS codes for the behaviors described are all crimes against property.

³⁴ City & County of San Francisco Police Department, 2022. *Staffing Analysis of the San Francisco Police Department*, page 6. Available at: <https://www.sanfranciscopolice.org/sites/default/files/2022-03/SFPD2021StaffingAnalysisReport20220307.pdf>

³⁵ Ibid., pages 4-6.

Past data collection practices make it challenging to assess workload trends and determine locations where resources may be most needed. Harbor Patrol has maintained paper logs of all activity since the 1970s. In October 2023, the unit transitioned response logging to the SPD Computer Aided Dispatch (CAD) system. The CAD system also reports patrol activity based on location data collected from the Mobile Data Terminal used to interface with the system.³⁶ CAD response and patrol activity may or may not overlap with what is recorded in the paper logs. While the paper logs are no longer a comprehensive source, they track non-call for service (overhead) activities that are not otherwise recorded.

Recommendation: Use data to inform decisions about Harbor Patrol staffing and communication with the public about level of service.

Be transparent about the level of service Harbor Patrol can deliver. As adding officers will be a challenge given hiring and budget constraints, the City should be transparent with the community of waterways users about current and future staffing levels, and what this implies for the level of service Harbor Patrol can provide. In addition, Harbor Patrol should strive to clarify how the level of service would change based on different levels of staffing support. Many interviewees would like to see patrols on Elliott Bay, Lake Union, and Lake Washington. A minimum of four officers would be needed to add another Harbor Patrol boat on patrol. Harbor Patrol and the City can continue to hold open discussions about emergent needs and ideas for how partners can provide support.

Maintain an online data dashboard for Harbor Patrol activity. To enhance transparency and public awareness, SPD could enrich the available public information on Harbor Patrol activity.

Use available call or incident data to understand the demand for Harbor Patrol services.

Data can help show the impact of the recent reduction in staffing or support requests for additional staffing. It can also help determine how best to deploy existing resources or where to ask partners for support. SPD is developing a new map drawn to identify more specific Harbor Patrol “beat” areas, such as Elliott Bay, Lake Union, Duwamish, Alki, and Fauntleroy. These beats will allow better tracking of patrol activity and activity in areas such as floating home communities and commercial fishing zones.

Finding: Derelict vessel response is a resource-intensive activity.

There are insufficient resources to fully address the problem of derelict boats. Many interviewees described challenges with removing and disposing of derelict boats. It can be difficult to find the owner of derelict boats and penalties are not substantial enough to force owners to comply with the law, which leaves other property owners and agencies to front the removal costs. Even with the DNR Derelict Vessel Program and Vessel Turn-In Program, there is a backlog of derelict vessels.

³⁶ SPD publishes call for service data, including Harbor Patrol responses, to the City of Seattle [open data portal](#). CAD data is also visualized on the SPD Information and Data [pages](#).

Recommendation: Support additional tools to ensure proper disposal of derelict vessels by owners reducing the need for public agencies to step in.

Raise awareness about the DNR’s Vessel Turn-In Program. By informing more people of the DNR Vessel Turn-In Program, Seattle can prevent boats from becoming derelict, which in turn become more expensive to remove. Two ways of increasing awareness about this program are:

1. Include Vessel Turn-In Program information in the Boater Education Card programming.
2. Provide Vessel Turn-In Program information when boaters renew their boat registrations.

Lobby for stronger enforcement tools and additional state funding for derelict vessels. One option to bolster enforcement is to impose a larger penalty for leaving a derelict vessel. Another option is to amend the boat registration process so that the City, State, or other organizations can more easily find the owner and force compliance with vessel disposal. This would likely require time from staff in the City of Seattle Office of Intergovernmental Relations. Additional funding could help address the backlog of derelict vessels.

Finding: SPD and SFD work effectively together on emergency response.

There is generally good coordination and cooperation between SPD and SFD during emergency response, but more formal procedures are needed. Staff from both departments noted that there is a need to clarify roles and responsibilities when both agencies are involved in incident response and that there is some tension over roles. There are existing settlement agreements and memorandums of understanding (MOUs) that are over 20 years old and may not represent current departmental missions and capabilities.

Recommendation: Establish regular convenings between SPD and SFD to discuss incident response and strengthen agency working relationships.

Review MOUs to determine whether and how they should be updated. Both departments have expressed some dissatisfaction with the agreements as written while also noting there may be complications to reopening them related to union contracts. Each agency could review and propose short-term and longer-term amendments for discussion at the venue described below. This review process should include agreement on a cadence for regular review going forward.

Create a venue for regular conversations to strengthen agency relationships. This venue could be an opportunity to review policies and practices regularly, discuss how to address emergent needs, and determine if there are opportunities for joint training.

Appendix A: List of Interviewees

Government Organizations

Seattle Police Department

- Lieutenant Marc Garth Green, Harbor Patrol
- Officer Aaron Frausto, Harbor Patrol
- Officer Kyle Galbraith, Harbor Patrol
- Loren Atherley, Director of Performance Analytics & Research
- Mirs VonAschen-Cook, Research Program Manager

Seattle Fire Department

- Chief Harold D. Scoggins
- Assistant Chief Bryan Hastings, Operations
- Helen Fitzpatrick, Executive Director of Administration
- Captain Dietrich Hauge, Rescue Boat & Watercraft
- Captain Luke Schultz, Fireboat Unit
- Lieutenant Robert Kerns, Fireboat Unit

King County Sheriff's Office

- Sergeant Richard Barton, Marine Rescue Dive Unit
- Deputy Ernest Brent, Marine Rescue Dive Unit
- Deputy Nathan Greiert, Marine Rescue Dive Unit

City of Mercer Island Police Department

- Sergeant Chad Schumacher, Marine Patrol

Port of Seattle (also provided Recreational and Residential perspectives)

- Kenneth Lyles, Director of Maritime Operations
- Krystelle Acob, Senior Administrative Assistant
- Kelli Goodwin, Senior Manager of Maritime Operations at Terminal 91
- Russ Read, Senior Manager of Maritime Security
- Rut Perez-Studer, Senior Manager of Fishing & Commercial Vessels at Fisherman's Terminal
- Karlina Smith, Senior Manager of Recreational Boating at Shilshole Bay Marina, Harbor Island Marina, and Bell Harbor Marina
- Shelby Allman, Harbor Operations Supervisor of Recreational Boating at Shilshole Bay Marina, Harbor Island Marina, and Bell Harbor Marina

- Andy Gregory, Senior Program Manager of Maritime Industry Engagement
- Sabrina Bolieu, Regional Government Relations Manager of External Relations

U.S. Coast Guard

- Lieutenant Commander John Robertson
- Nicole Metzke, Port Security Specialist

U.S. Coast Guard Auxiliary

- Mike Allert, Volunteer

Washington State Parks

- Rob Sendak, Boating & Winter Recreation Programs Manager

Businesses and Industry

American Waterway Operators

- Peter Schrappen, Vice President of Pacific Coast Region

Ballard Oil

- Warren Aakerkvik, former Owner and President

Ivar's

- Bob Donegan, President

Kenmore Air

- David Gudgel, CEO
- John Gowey, Director of Operations

North Seattle Industrial Association

- Eugene Wasserman, President

Transportation Institute

- Sarah Scherer, Vice President, Pacific Coast Operations

Residential

Seattle Floating Homes Association

- Peter Erickson, President

Recreational

Recreational Boating Association of Washington

- Andrea Pierantozzi, Vice President of Government Affairs

Organizations in Other States

Port of Long Beach

- Drew Schneider, Assistant Director of Security

Santa Monica Police Department Harbor Unit

- Dan Buchanan, Pier & Harbor Services Supervisor
- Christopher Camp, Lead Harbor Services Officer
- Lieutenant Gerardo Leyva

Virginia Marine Police

- Chief Matthew Rogers
- Deputy Chief Herbert Bell

Appendix B: Features of Other Cities

BERK researched marine safety operations in cities with similar waterway areas and safety needs. While we reached out to over a dozen cities, we primarily relied on desk research. We did not speak to another city that, like Seattle, had ocean, rivers, and lakes within its boundaries. We interviewed representatives from Long Beach, CA, Mercer Island, Santa Monica, CA, and Virginia.

Unsworn officers

Chelan County, Washington: During the summer, volunteers assist the Chelan County Sheriff's Office Marine Patrol Unit with education and enforcement for recreational waterway users.³⁷

Mercer Island, Washington: The City of Mercer Island Police Department Marine Patrol previously filled a marine technician position with firefighting and EMT training. This position is no longer in use due to safety concerns, as unsworn officers cannot use force when lawful, make arrests, or perform other functions that may be necessary for self-defense.

Los Angeles, California: Los Angeles County Fire Department lifeguards assist with enforcing recreational waterways safety through patrols and citations. In 2023, the division employed 177 permanent lifeguards and 602 recurrent lifeguards who operated from 24 stations and 159 lifeguard towers along the Los Angeles coast. The lifeguarding division also has 58 beach patrol vehicles, eight rescue boats, and two paramedic boats.³⁸

Santa Monica, California: The Santa Monica Police Department Harbor Unit is a 24-hour civilian first-responder unit located at the Santa Monica Pier. In the 2022-2023 fiscal year, the Harbor Unit was staffed with 10.9 FTE.³⁹ Harbor officers are trained EMTs, rescue boat captains, marine firefighters, and lifeguards. As unsworn officers, harbor officers observe and report recreational and commercial activity with support from LA County Lifeguards for ocean lifeguarding services and LA County Sheriff's Office for waterway enforcement. Hiring challenges include aligning pay and pension with job requirements, as there are varied responsibilities for harbor officers and other agencies in the area attract a similar pool of candidates.

Virginia Marine Resources Commission: The Virginia Marine Resources Commission hires part-time and temporary employees to handle non-enforcement matters such as paperwork. The Marine Patrol division enforces commercial and recreational fishing regulations and does not use auxiliary officers because of liability concerns.

Statewide central office

Oregon: Established in 1959, the Oregon State Marine Board manages multiple waterways use processes including recreational user education, floating home titles, boat rental business registrations, and environmental stewardship programs. The agency is currently working with

³⁷ See "Marine Patrol" at <https://www.co.chelan.wa.us/sheriff/pages/marine-patrol>.

³⁸ See page 2 at https://fire.lacounty.gov/wp-content/uploads/2024/02/2023-Statistical-Summary_022024.pdf.

³⁹ See page 42 at <https://finance.smgov.net/Media/Default/annual-reports/FYE2023/FYE2023-Operating-Budget.pdf>.

retailers and manufacturers to sell paddle sport equipment alongside life jackets, leashes, and whistles as part of an education and outreach initiative for non-motorized boat users.⁴⁰

Dedicated seaplane terminal

Vancouver, British Columbia: The Vancouver Harbor Flight Center is a privately developed seaplane terminal that opened in 2011. The terminal serves regularly scheduled airlines and charter airlines who fly from Vancouver to Seattle, Vancouver Island, and other areas in British Columbia.

⁴⁰ See page 2 at <https://www.oregon.gov/osmb/info/Documents/Strategic%20Plan/2023AgencyStrategicPlan.pdf>.

Appendix C: Other Organizations with Waterways Responsibilities

Washington State Department of Ecology (DoE)

The DoE seeks to improve and protect water quality; manage and conserve water resources; and effectively manage coastal and inland shorelines to assure the State has sufficient supplies of clean water for communities and the natural environment. In the Seattle waterways, the DoE has several programs including shorelines and environmental assistance, solid waste management, spills (preparedness, response, and restoration), water quality, and water resources.

The DoE also has a prominent role in vessel inspections of commercial shipping vessels greater than 300 gross tons. The DoE's primary interest in these inspections is to reduce the risk of spills to state waters amongst vessels that pose a substantial risk of harm to the environment or the public.

Washington State Department of Fish and Wildlife (WDFW)

The WDFW's primary concern is the management and enforcement of fish and wildlife safety and conservation throughout Seattle waterways. It periodically patrols Seattle's waterway areas during fishing and shellfish seasons to enforce permits and protect capture limits.

Washington State Department of Natural Resources (DNR)

In addition to the Derelict Vessel Removal Program and Vessel Turn-In Program described earlier in this report, the DNR is directed by statute to manage state-owned aquatic lands with the following goals: encourage direct public use and access; foster water-dependent uses; ensure environmental protection; opportunities for utilization of renewable resources; and generate income from the use of aquatic lands. In the Seattle area waterways, this takes the forms of permitting the harvest of shellfish and geoduck; leasing and licensing state-owned aquatic lands; reinvesting department revenues towards restoring the aquatic ecosystem; and removing derelict maritime equipment.

U.S. Army Corps of Engineers (USACE) - Seattle District

The USACE Seattle District provides engineering expertise and manages water resources for local waterways activities. Their work includes operating local dams and locks (such as the Ballard Locks), preventing and responding to flooding, and assisting with the removal of derelict vessels through Seattle waterway areas.

Tribal Marine Police

Tribal Marine Police are present throughout the Seattle waterway areas including the Suquamish Police Department Marine Division, which patrols in and around the Port Madison Indian reservation and accustomed fishing, harvesting, and hunting places. Tribal Marine Police patrol Seattle waterways during fishing and shellfish seasons to ensure compliance with all ordinances and regulations related to fishing, harvesting, and hunting (and enforcement when needed).