

SAMPLING AND ANALYSIS PLAN

2019 SEDIMENT MONITORING NPDES PERMIT No. WA0037061

**Prepared for
LOTT Clean Water Alliance**

**Prepared by
Herrera Environmental Consultants, Inc.**



SAMPLING AND ANALYSIS PLAN

2019 SEDIMENT MONITORING NPDES PERMIT No. WA0037061

Prepared for
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September 4, 2019

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1. INTRODUCTION

LOTT Clean Water Alliance was issued national pollution discharge elimination system (NPDES) permit No. WA0037061 on February 16, 2018, allowing for discharge of water from the wastewater treatment plant (WWTP). In order to provide the Washington State Department of Ecology (Ecology) with the required information to meet permit conditions specified in Sections S9.A – Sediment Baseline Sampling and Analysis Plan and S9.B – Sediment Chemistry Analysis, LOTT Clean Water Alliance is required to conduct a sediment study.

Ecology's Sediment Management Standards (SMS) (Washington Administrative Code [WAC] Chapter 173-204) provides the framework for the Sediment Source Control Program (WAC 173-204-400 through 420), which provides a process for managing sources of sediment contamination from point and nonpoint source discharges through the NPDES permit program. Sediment monitoring is conducted in support of the sediment source control process. For this study, sediment monitoring will determine the potential of the discharge to cause sediment impacts and will recharacterize conditions with which past and future conditions can be compared.

The LOTT Clean Water Alliance Budd Inlet WWTP is a secondary treatment facility that was largely completed and on-line in August of 1982. The WWTP is a regional facility that serves portions of the cities of Lacey, Olympia, Tumwater, and Thurston County. The facility provides advanced treatment for nitrogen removal and also treats a portion of the effluent to class A reclaimed water. The facility has a maximum discharge capacity of 28 million gallons per day (MGD) over any 30-day period (Ecology 2017a).

The treated effluent is discharged to Budd Inlet through an outfall and multiport diffuser extending approximately 950 feet from the shoreline. Sediment will be collected from five locations in the proximity of the diffuser, which is 250 feet in length. In addition, sediment will be collected from three locations in the proximity of the overflow outfall. Sediment samples will be submitted for analysis of SMS chemicals of concern (COCs). Based on chemical analytical results, biological testing (bioassays) may be required.

This plan describes the sampling activities that will be conducted by Herrera Environmental Consultants (Herrera) to meet sediment monitoring requirements stated in the NPDES permit for the LOTT Clean Water Alliance WWTP. This plan includes a project description and summary of historical information associated with the project area, sample collection and analysis procedures, and sediment data reporting requirements. This plan has been prepared in accordance with guidelines provided in Ecology's *Sediment Cleanup User's Manual II, Appendix A: Sampling Guidance for NPDES Permits under the Sediment Management Standards* (2017b).

2. BACKGROUND AND OBJECTIVES

The LOTT Clean Water Alliance WWTP is located on Budd Inlet in Olympia, Washington (Figure 2-1). The facility has been in operation since 1982 and currently has a maximum discharge capacity of 28 MGD in any 30-day period. Wastewater flowing to the plant currently comes from over 100,000 homes and businesses served by the sewer utilities of Lacey, Olympia, and Tumwater. The plant operates 24 hours a day with approximately 12 million gallons of wastewater flowing through the WWTP on average each day (LOTT Clean Water Alliance 2019).

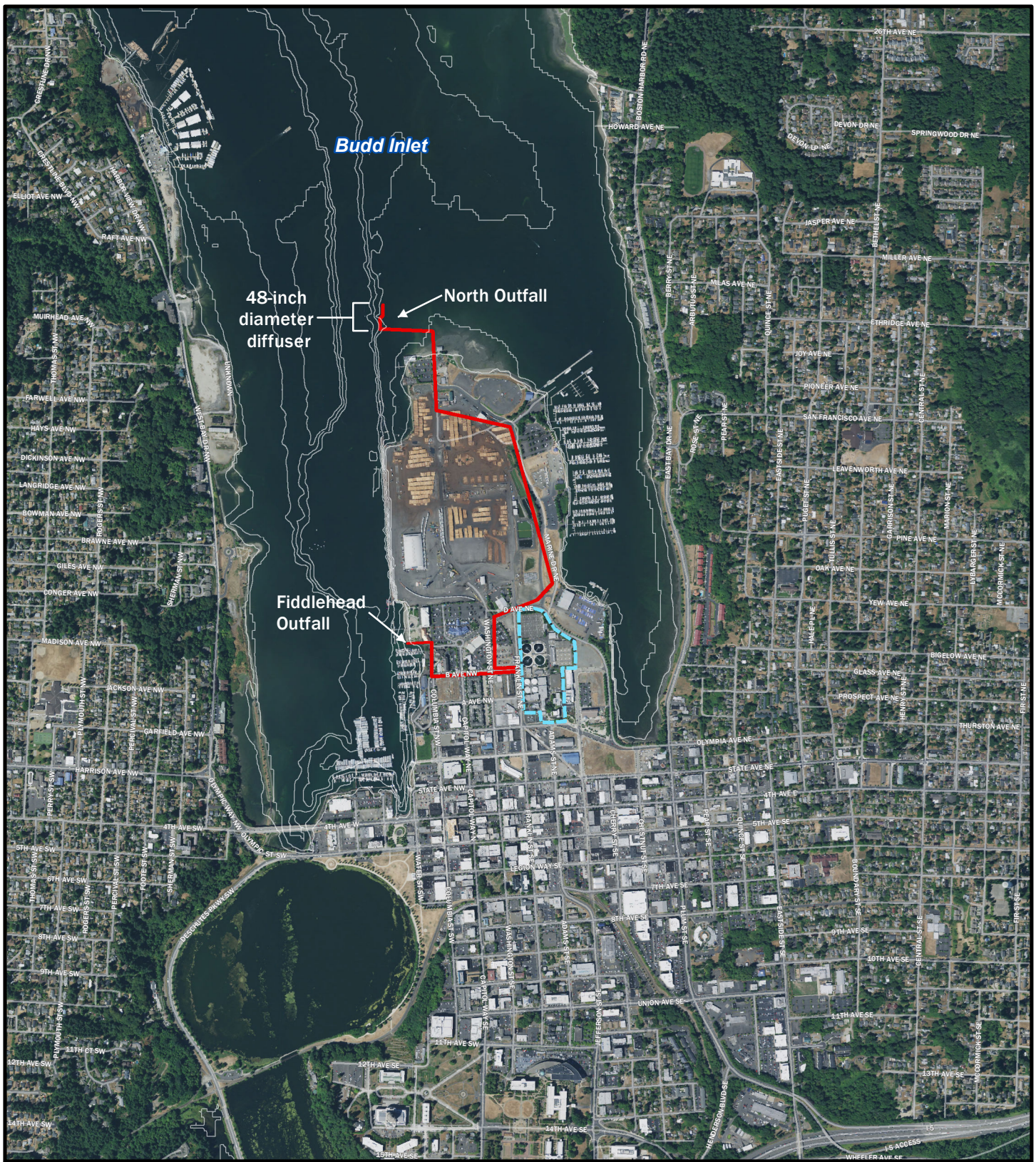
Treated effluent is discharged to Budd Inlet through a 950-foot-long outfall pipe with a 250-foot diffuser identified as the North outfall (Figure 2-1). The diffuser section has 55 evenly spaced 4.625-inch-diameter ports, plus a 10-inch-diameter cleanout port at the end of the diffuser (LOTT Alliance 2015).

Flows in excess of 65 MGD are discharged through a 48-inch-diameter, single-port outfall located at the Fiddlehead Marina (Figure 2-1). However, discharge at the Fiddlehead outfall occurs very infrequently (Ecology 2017a).

2.1. EXISTING INFORMATION

A search for sediment chemistry results in Ecology's Environmental Information Management System (EIM) database for the project vicinity identified a 1996 LOTT NPDES sediment monitoring study (EIM study ID LOTT_96). A total of 10 sediment sample locations were sampled in the vicinity of the North outfall, and a total of nine sediment sample locations were sampled in the vicinity of the Fiddlehead outfall (see Figure 2-2) for the following parameters:

- Conventional (total organic carbon [TOC], total solids, total volatile solids, ammonia, and sulfides)
- Metals (arsenic, cadmium, chromium, copper, lead, mercury, silver, and zinc)
- Semivolatile organic compounds (SVOCs)
- Total polychlorinated biphenyls (PCBs)
- Pesticides
- Oil and grease



Legend

- Outfall pipe
- LOTT Clean Water Alliance Wastewater Treatment Plant
-



Figure 2-1.

Outfall and Vicinity Map, LOTT Clean Water Alliance Wastewater Treatment Plant, Olympia, Washington.

0 750 1,500 3,000 Feet



USGS, Aerial (2015)

K:\Projects\Y2019\19-07025-000\Project\GISWorking\Figure 2-1. Vicinity map.mxd



Legend

- 1996 Sample locations
- Outfall pipe
- LOTT Clean Water Alliance Wastewater Treatment Plant

Figure 2-2.
1996 Sediment Sample Locations, LOTT Clean Water Alliance Wastewater Treatment Plant, Olympia, Washington.

0 325 650 1,300 Feet



 **HERRERA**
USGS, Aerial (2015)

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No SMS criteria exceedances were found in the samples collected near the North outfall; however, criteria exceedances were found in samples collected near the Fiddlehead outfall. Sample F-0-1 exceeded the sediment quality standard (SQS) criteria for butyl benzyl phthalate and dimethyl phthalate, and exceeded the maximum chemical concentration allowed in a sediment impact zone (SIZmax) for 4-methylphenol and bis(2-ethylhexyl) phthalate.

A sediment characterization study of existing sediment data was completed for Budd Inlet in 2008 (SAIC 2008)). As part of this study, all sediment data available in EIM for Budd Inlet were evaluated for SQS and Cleanup Screening Level (CSL) exceedances.

Figure 2-3 shows all SMS sediment criterion exceedances for data in the EIM database prior to 2008. As shown in the figure, no SMS exceedances were present in the immediate vicinity of the North outfall. South of the North outfall, COCs that exceeded SMS criteria in surface sediments included chlorinated aromatics, metals, polycyclic aromatic hydrocarbons (PAHs), miscellaneous extractables, phenol, and phthalates. In the area north of the outfall, miscellaneous extractables were the only SMS COC to exceed criteria. In the immediate vicinity of the Fiddlehead outfall, COCs that exceeded SMS criteria in surface sediments included miscellaneous extractables and phthalates.

In 2013, three surface sediment samples were collected in the vicinity of the North outfall as part of a sediment investigation at the Port of Olympia Budd Inlet Sediment site (Port of Olympia 2016) (EIM study ID G1300053). Two of the samples were analyzed for PAHs; and the third sample was analyzed for SMS marine COCs, including metals, SVOC, and PCBs. Mercury was the only parameter that exceeded SMS criteria.

2.2. STUDY OBJECTIVES

The goals of the 2019 sediment monitoring project are to demonstrate the potential for outfall discharge to cause adverse sediment impacts and to establish conditions with which future monitoring can be compared, if needed. Surface sediment samples will be collected for analysis of the following SMS marine sediment COCs:

- Metals (arsenic, cadmium, chromium, copper, lead, mercury, silver, and zinc)
- SVOCs
- PCBs

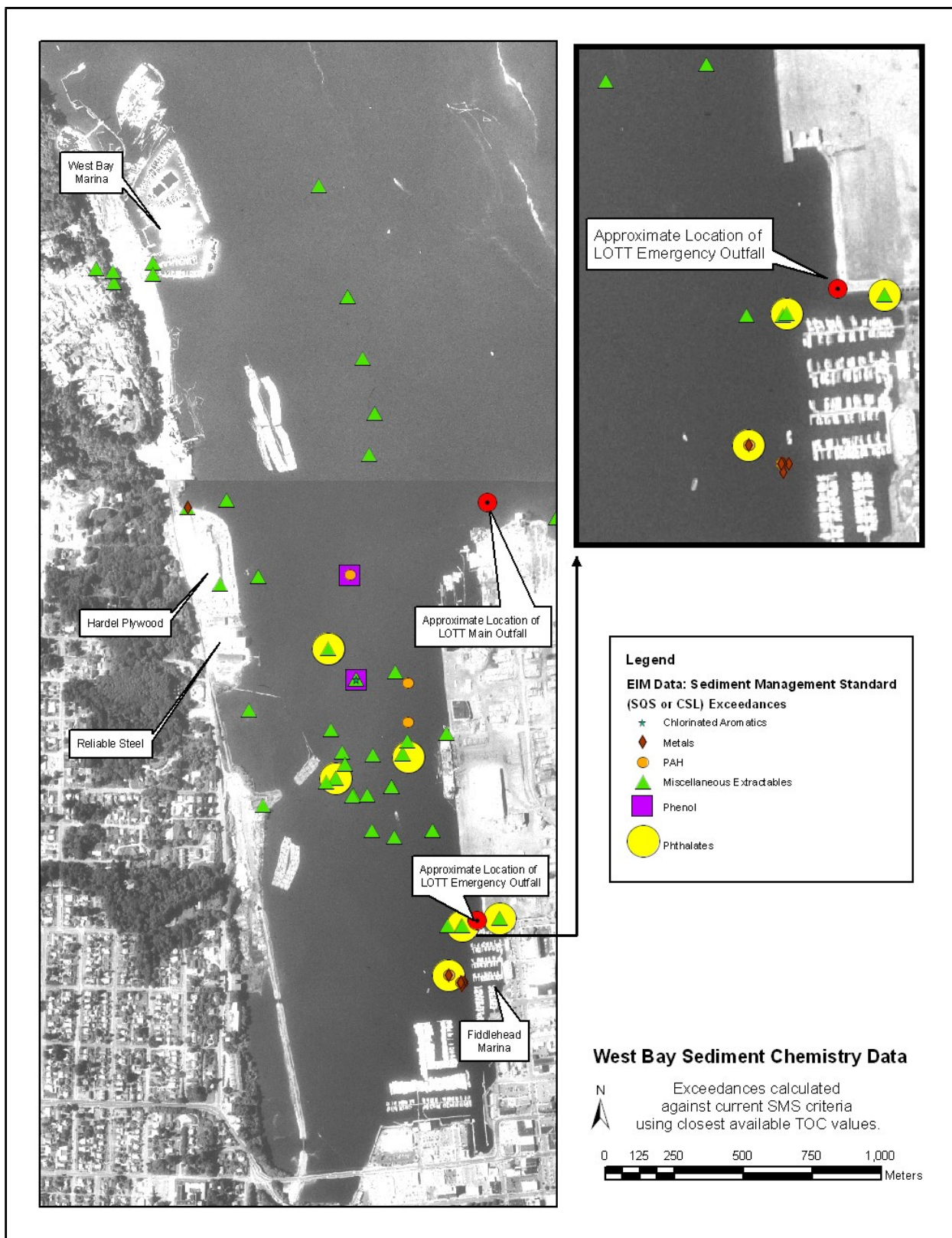


Figure 2-3. SMS Chemical Criteria Exceedances prior to 2008 in Budd Inlet near the Project Vicinity (SAIC 2008).

To facilitate the evaluation of analytical results, the sediment samples will also be analyzed for the following conventional parameters:

- TOC
- Grain size
- Total sulfides
- Ammonia
- Total solids
- Total volatile solids (TVS)

The standard marine sediment chemistry suite listed above is anticipated to adequately characterize potential sediment impacts from effluent discharged at the LOTT WWTP outfall.

Sediment chemistry data collected will be compared to SMS for marine sediments. Table 2-1 presents SMS SQS (WAC 173-204-320) and SIZmax (WAC 173-204-420) chemical criteria. If SQS chemical criteria are exceeded, bioassay (toxicity) testing will be conducted for that sample location.

Three bioassay tests including amphipod mortality, larval development, and juvenile polychaete growth will be performed on sediment stations with any SMS chemical exceedances. Test interpretations consist of endpoint comparisons to controls and reference on an absolute percentage basis, as well as statistical comparison to a reference. The SMS biological effects criteria are presented in Table 2-2.

Table 2-1. Comparison Criteria for LOTT NPDES Outfall Sediment Characterization.

Chemical Parameter	Sediment Management Standards	
	Sediment Quality Standard	SIZmax
Metals (mg/kg)		
Arsenic	57	93
Cadmium	5.1	6.7
Chromium	260	270
Copper	390	390
Lead	450	530
Mercury	0.41	0.59
Silver	6.1	6.1
Zinc	410	960
Nonionizable Organic Compounds (mg/kg organic carbon^a)		
Polycyclic Aromatic Hydrocarbons		
Total LPAH	370	780
Naphthalene	99	170
Acenaphthylene	66	66
Acenaphthene	16	57
Fluorene	23	79
Phenanthrene	100	480
Anthracene	220	1,200
2-Methylnaphthalene	38	64
Total HPAH	960	5,300
Fluoranthene	160	1,200
Pyrene	1,000	1,400
Benz(a)anthracene	110	270
Chrysene	110	460
Total benzo(a)fluoranthenes	230	450
Benzo(a)pyrene	99	210
Indeno(1,2,3-cd)pyrene	34	88
Dibenzo(a,h)anthracene	12	33
Benzo(g,h,i)perylene	31	78
Chlorinated Benzenes		
1,2-Dichlorobenzene	2.3	2.3
1-4-Dichlorobenzene	3.1	9
1,2,4-Trichlorobenzene	0.81	1.8
Hexachlorobenzene	0.38	2.3

**Table 2-1 (continued). Comparison Criteria for LOTT NPDES
Outfall Sediment Characterization.**

Chemical Parameter	Sediment Management Standards	
	Sediment Quality Standard	SIZmaxI
Nonionizable Organic Compounds (mg/kg organic carbon^a) (continued)		
Phthalate Esters		
Dimethyl phthalate	53	53
Diethyl phthalate	61	110
Di-n-butyl phthalate	220	1,700
Butyl benzyl phthalate	4.9	64
Bis(2-ethylhexyl)phthalate	47	78
Di-n-octyl phthalate	58	4,500
Miscellaneous Extractables		
Dibenzofuran	15	58
Hexachlorobutadiene	3.9	6.2
N-nitrosodiphenylamine	11	11
Polychlorinated Biphenyls (PCBs)		
Total PCBs	12	65
Ionizable Organic Compounds (µg/kg)		
Phenol	420	1,200
2-Methylphenol	63	63
4-Methylphenol	670	670
2,4-Dimethylphenol	29	29
Pentachlorophenol	400	690
Benzyl alcohol	57	73
Benzoic acid	650	650

^a Units in mg/kg organic carbon represent concentrations in parts per million, normalized to organic carbon. To normalize to TOC, the dry weight concentration for each parameter is divided by the decimal fraction representing the percent TOC content of the sediment.

mg/kg Milligrams per kilogram, parts per million.

µg/kg Micrograms per kilogram, parts per billion.

Total LPAH Represents the sum of the following low molecular weight polycyclic aromatic hydrocarbon compounds: naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, and anthracene.

Total HPAH Represents the sum of the following high molecular weight polycyclic aromatic hydrocarbon compounds: fluoranthene, pyrene, benz(a)anthracene, chrysene, total benzofluoranthenes, benzo(a)pyrene, indeno(1,2,3-c,d)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene.

Total benzofluoranthenes Represents the sum of the concentrations of the "b" and "k" isomers.

**Table 2-2. SMS Biological Effect Criteria for LOTT
NPDES Outfall Sediment Characterization.**

Biological Test	Sediment Management Standards	
	Sediment Quality Standard	SIZmax
Amphipod Mortality	The test sediment has a significantly higher (t-test, $P \leq 0.05$) mean mortality than the reference sediment, and the test sediment mean mortality is more than 25 percent greater, on an absolute basis, than the reference sediment mean mortality.	The test sediment has a significantly higher (t-test, $P \leq 0.05$) mean mortality than the reference sediment, and the test sediment mean mortality is more than 30 percent greater, on an absolute basis, than the reference sediment mean mortality.
Larval Development	The test sediment has a mean survivorship of normal larvae that is significantly less (t-test, $P \leq 0.1$) than the mean normal survivorship in the reference sediment, and the mean normal survivorship in the test sediment is less than 85 percent of the mean normal survivorship in the reference sediment.	The test sediment has a mean survivorship of normal larvae that is significantly less (t-test, $P \leq 0.1$) than the mean normal survivorship in the reference sediment, and the mean normal survivorship in the test sediment is less than 70 percent of the mean normal survivorship in the reference sediment.
Juvenile Polychaete Growth	The mean individual growth rate of polychaetes in the test sediment is less than 70 percent of the mean individual growth rate of the polychaetes in the reference sediment, and the test sediment mean individual growth rate is statistically different (t-test, $P \leq 0.05$) from the reference sediment mean individual growth rate.	The mean individual growth rate of polychaetes in the test sediment is less than 50 percent of the mean individual growth rate of the polychaetes in the reference sediment, and the test sediment mean individual growth rate is statistically different (t-test, $P \leq 0.05$) from the reference sediment mean individual growth rate.

3. ORGANIZATION AND SCHEDULE

The LOTT Water Alliance Project Manager will be Meghan Feuk. The Project Manager is the primary point of contact and is responsible for document review and technical matters related to the SAP and report.

LOTT Clean Water Alliance Project Manager

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The consultant, Herrera, is responsible for SAP preparation, field sampling, and reporting. Ms. Gina Catarra will serve as the Consultant Project Manager and QA Manager for Herrera, and will be responsible for coordinating project activities and submitting deliverable to LOTT Clean Water Alliance. She will also direct field sampling and provide data validation for laboratory data. Mr. Rob Zisette will serve as the Principal Investigator for Herrera, and will be responsible for the overall quality control of the project.

Consultant Project Manager/ QA Manager

Ms. Gina Catarra
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Principal Investigator

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Mr. Shawn Hinz of Gravity Environmental (Gravity) will be responsible for navigation, accurate station positioning, deployment and retrieval of sampling equipment, and recording sample locations and mudline depths.

Sampling Vessel Manager

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shawn@gravityenv.com

Herrera will also subcontract to Analytical Resources, Inc. (ARI) and EcoAnalysts, Inc. to ensure a high level of data comparability for this work assignment. Ms. Amanda Volgardsen of Analytical Resources, Inc., in Tukwila, Washington, will serve as the Analytical Laboratory Project Manager, and will be responsible for the testing and reporting of all sediment conventional and chemical analytes. Mr. Brian Hester of EcoAnalysts, Inc. (EcoAnalysts) will serve as the Biological Laboratory Project Manager and will be responsible for the sediment bioassay testing and reporting.

Analytical Laboratory Project Manager

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The major deliverables and associated deadlines for this work assignment are presented in Section 3.1.

3.1. SCHEDULE AND DELIVERABLES

The major deliverables and associated deadlines for this work assignment provided in Table 3-1.

Table 3-1. LOTT NPDES Outfall Sediment Characterization Schedule and Deliverables.		
Project Task	Start Date	End Date
Preliminary draft Sampling and Analysis Plan	March 7, 2019	April 15, 2019
City review preliminary draft Sampling and Analysis Plan	April 15, 2019	April 22, 2019
Final Sampling and Analysis Plan	April 23, 2019	April 29, 2019
Ecology review of draft Sampling and Analysis Plan	April 30, 2019	August 1, 2019
Final Sampling and Analysis Plan and response to comments	August 1, 2019	September 4, 2019
Sample collection	August 15, 2019	September 15, 2019
Sediment Chemistry Analysis	September 16, 2019	October 14, 2019
Reference sample collection (if needed)	October 14, 2019	October 14, 2019
Bioassay testing (if needed)	October 14, 2019	November 11, 2019
Preliminary draft Sediment Monitoring Report	November 10, 2019	December 20, 2019
City review preliminary draft Sediment Monitoring Report	December 23, 2019	January 20, 2020
Draft Sediment Monitoring Report	January 20, 2020	February 14, 2020
Ecology review of draft Sediment Monitoring Report	February 14, 2020	May 14, 2020
Final Sediment Monitoring Report and response to comments	May 14, 2020	May 29, 2020

4. STUDY DESIGN

This section describes the study design for collection and analysis of sediment associated with baseline monitoring for the LOTT WWTP. The study follows methods and guidance developed under the State sediment management program (Sediment Management Standards (WAC 173 204).

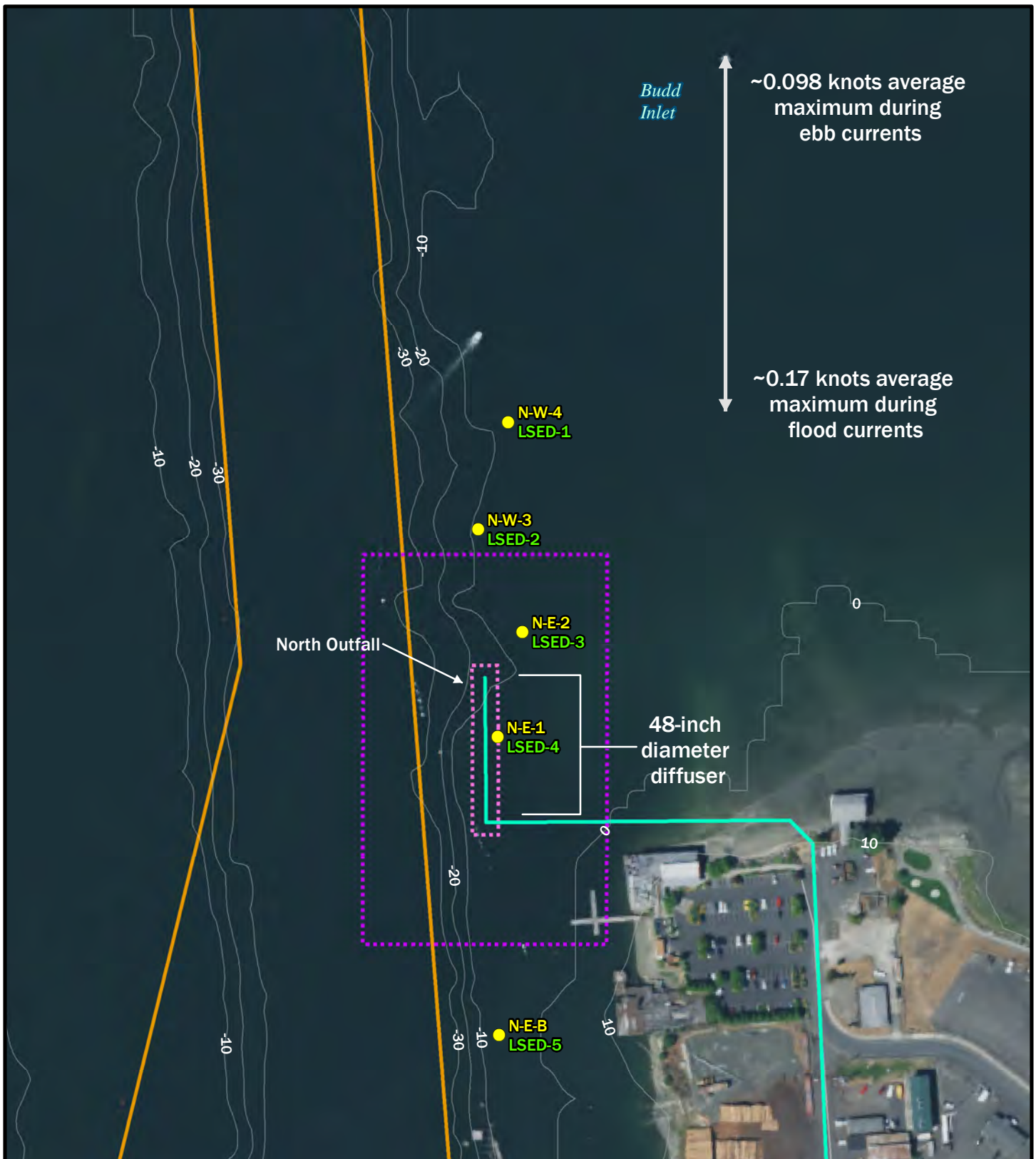
The recharacterization study is intended for general characterization and to determine if sediment COCs in the vicinity of the permitted outfall exceed SMS toxicity criteria. The purpose is not to delineate sediment concentrations in the area surrounding the outfall diffuser. Based on historical sediment chemistry results and guidance documents, five stations were selected to characterize the North outfall area and three stations were selected to characterize the Fiddlehead outfall area.

The 250-foot diffuser is situated at -13 feet mean lower low water (MLLW). The predominant currents (approximate 0.17 knots average maximum during flood currents and 0.098 knots average maximum during ebb currents) are from north to south based on ebb and flood tides in Budd Inlet (LOTT Alliance 2009). The Fiddlehead outfall is a 48-inch-diameter, single-port outfall located at the Fiddlehead Marina.

4.1. SAMPLE STATIONS

Samples will be collected from eight stations located in Budd Inlet (Figures 4-1 and 4-2). Five sampling stations have been established to recharacterize sediment along the North outfall; three sampling stations have been established to recharacterize sediment in the vicinity of the Fiddlehead outfall. The following sample locations range from approximately 50 to 450 feet from the North outfall pipe:

- Stations LSED-1, LSED-2, LSED-3, and LSED-5 are located in line with the diffuser pipe and the predominant current direction, which both align in a north-south direction. These stations correspond to 1996 sample stations N-W-4, N-W-3, N-E-2, and N-E-B, respectively. Samples will be collected approximately 450, 250, and 100 feet north of the diffuser pipe end (stations LSED-1, LSED-2, and LSED-3, respectively), and 300 feet south of the beginning of the diffuser pipe (station LSED-5).
- Station LSED-4 is located perpendicular to the diffuser pipe alignment and predominant current direction. The sample will be collected 50 feet to the east of the diffuser pipe at previous sample station N-E-1.



Legend

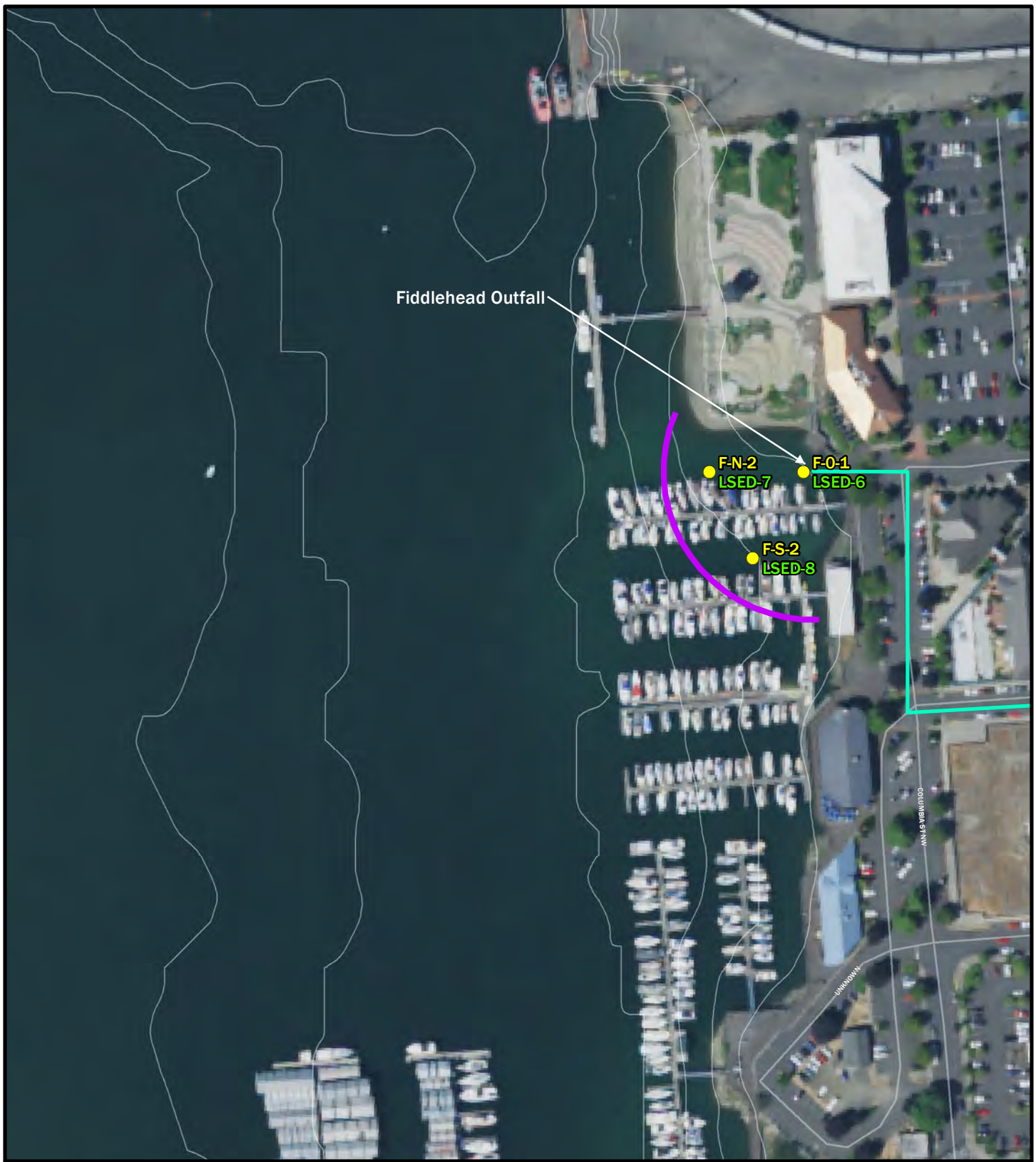
- Outfall pipe
- Mean lower low water (MLLW) contour (feet)
- ↔ Near-bed current speed and direction
- ● 1996 2019 Sample location
- Navigational channel
- Mixing zone
- Acute Zone

Note: Current speeds are derived from LOTT (2009)

Figure 4-1.
Sediment Sample Locations, North Outfall, LOTT Clean Water Alliance Wastewater Treatment Plant, Olympia, Washington.



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Legend

- ● **1996**
2019 Sample location
- Mixing zone boundary
- Outfall pipe

Figure 4-2.
Sediment Sample Locations, Fiddlehead Outfall,
LOTT Clean Water Alliance Wastewater Treatment
Plant, Olympia, Washington.

0 90 180 360
Feet



USGS, Aerial (2015)

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The following sample locations range from approximately 25 to 150 feet from the Fiddlehead outfall pipe:

- Station LSED-6 is located within 25 feet of the end of the outfall pipe and corresponds to 1996 sample station F-0-1.
- Stations LSED-7 and LSED-8 are located approximately 150 feet to the west and southwest of the outfall pipe, respectively. Stations LSED-7 and LSED-8 are located at 1996 sample stations F-N-2 and F-S-2, respectively.

If sediment chemistry results exceed any SMS criteria, one or more bioassay reference sediment samples will be collected from Carr Inlet.

4.2. SEDIMENT ANALYSIS

Representative surface sediment will be collected from 0 to 10 centimeters deep at all eight stations. An aliquot from each station will be homogenized and submitted for chemical analysis.

Sample aliquots for total sulfide will be placed in a container prior to sample homogenization to minimize loss due to volatilization. Refer to Section 6 for recommended holding times for each analysis. Samples from all stations will be analyzed for the SMS COCs. The chemical analyte list, analytical methods, and target detection limits (TDLs) are discussed in Section 7.1.

4.3. BIOASSAY ANALYSIS

If sediment chemistry test results exceed SMS criteria at a station, bioassays will be conducted to determine acute and chronic toxicity to established test organisms. Sediment from each station will be collected and submitted to the laboratory for bioassay testing, if required. Toxicity tests will include amphipod mortality, juvenile polychaete growth, and bivalve larvae development. Details on bioassay testing methodology are provided in Section 7.2.

5. QUALITY ASSURANCE/ QUALITY CONTROL

The purpose of project quality assurance/quality control (QA/QC) is to provide confidence in project data results through a system of quality control performance checks associated with data collection methods, laboratory analysis, data reporting, and appropriate corrective actions to achieve compliance with established performance and data quality criteria. This section presents the QA/QC procedures to ensure that the investigation data results are defensible and usable for their intended purpose.

5.1. MEASUREMENTS OF DATA QUALITY

Data quality objectives (DQOs) are qualitative or quantitative statements derived from the planning process. DQOs are used to clarify the study objectives and define the appropriate type of data to collect to support project decisions. Acceptance and performance criteria establish the quality and quantity of data needed to meet the project DQOs (Table 5-1). DQOs are based on Ecology's guidelines (2017b) and PSSDA guidelines established for QA1 data review (PTI 1989a, 1989b). General acceptance or performance criteria for the collection, evaluation, or use of environmental data for this investigation are outlined in Section 7.

Table 5-1. Project-Specific Data Quality Objectives, Sediment Baseline Monitoring, LOTT Clean Water Alliance WWTP.

Parameter	Replicate Criteria		Matrix Spike Criteria		Surrogate Spike Criteria	
	Warning Limits ^a	Action Limits ^b	Warning Limits ^a	Action Limits ^b	Warning Limits ^a	Action Limits ^b
Conventionals	None	20 percent	NA	75 to 125 percent 65 to 135 percent (sulfides)	NA	NA
Metals	None	20 percent	None	75 to 125 percent	NA	NA
Organics	Lab specified		Lab specified		Lab specified	

^a PSEP defines warning limits as "numerical criteria that serve to alert data reviewers and users to possible problems within the analytical system. When a warning limit is exceeded, the laboratory is not obligated to halt analyses, but the reported data may be qualified during subsequent QA/QC review."

^b PSEP defines action limits as "numerical criteria that, when exceeded, require specific action by the laboratory before data may be reported. Action limits are intended to serve as contractual controls on laboratory performance."

Conventionals include the following analyses: total organic carbon (TOC), ammonia, sulfides, and grain size.

Metals include the following analytes: arsenic, cadmium, chromium, copper, lead, mercury, silver, and zinc.

Organics include the following analyses: semivolatile organic compounds (SVOCs) and polychlorinated biphenyls (PCBs).

Acceptance and performance criteria are often specified in terms of precision, accuracy, representativeness, completeness, and comparability (PARCC) parameters. Numerical acceptance criteria cannot be assigned to all PARCC parameters, but general performance goals are established for most data collection activities. Data assessment procedures throughout this plan outline the steps to be taken, the responsible individuals, and the implications if QA objectives are not met. PARCC parameters are briefly described below.

5.1.1. Precision

Precision measures the reproducibility of measurements under a given set of conditions. Specifically, it is a quantitative measure of the variability of a group of measurements compared to their average value, usually stated in terms of standard deviation or coefficient of variation. It also may be measured as the relative percent difference (RPD) between two values. Precision includes the interrelated concepts of instrument or method detection limits (MDLs) and field sample variance. Sources of this variance include sample heterogeneity, sampling error, and analytical error.

5.1.2. Accuracy

Accuracy measures the bias of the measurement system. Sources of this error include the sampling process, field contamination, preservation, handling, sample matrix, sample preparation, and analysis. Data interpretation and reporting may also be significant sources of error. Typically, analytical accuracy is assessed through the analysis of spiked samples and may be stated in terms of percent recovery or the average (arithmetic mean) of the percent recovery. Blank samples are also analyzed to assess sampling and analytical bias (i.e., sample contamination). Background measurements similarly assess measurement bias.

5.1.3. Representativeness

Representativeness expresses the degree to which data represent a characteristic of a population, a parameter variation at a sampling point, or an environmental condition. Representativeness is a qualitative parameter, which is most concerned with proper design of the measurement program. Sample/measurement locations may be biased (judgmental) or unbiased (random or systematic). For unbiased schemes, the sampling must be designed not only to collect samples that represent conditions at a sample location, but also to select sample locations that represent the total area to be sampled.

5.1.4. Completeness

Completeness for sample collection is defined as the percentage of specified samples listed in the plan that are actually collected and analyzed. Completeness for acceptable data is defined as the percentage of acceptable data out of the total amount of data generated. Acceptable data

includes data that passes all QC criteria or data that may not pass all of the QC criteria but have appropriate corrective actions taken.

5.1.5. Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set may be compared to another. Sample data should be comparable with other measurement data for similar samples and sample conditions. This goal is achieved through the use of standard techniques to collect and analyze samples.

5.2. QUALITY ASSURANCE AND QUALITY CONTROL FOR CHEMISTRY SEDIMENT SAMPLES

Laboratory QC samples will be used to evaluate the data precision, accuracy, representativeness, and comparability of the analytical results.

Analytical performance is monitored through QC samples and spikes, such as laboratory method blanks, surrogate spikes, QC check samples, matrix spikes, matrix spike duplicates, duplicate samples, and duplicate injections. All QC samples are evaluated on the basis of a laboratory batch. Two basic types of batches are used: the preparation batch and the run (i.e., analytical) batch. The preparation batch includes all samples processed as a unit during organic sample preparation, metals digestion, or wet chemistry preparation. Preparation batches do not exceed 20 samples, excluding QC samples. The QC samples associated with sample preparation include method blanks, laboratory control samples (LCS), matrix spikes, and duplicates. The run batch includes all samples analyzed together in the run sequence. The run sequence is typically defined by the analytical method. For some analyses, such as TOC, the run batch is equivalent to the preparation batch. The QC samples associated with the run sequence include calibration standards, instrument blanks, and reference standards.

Instances may arise where high sample concentrations, nonhomogeneity of samples, or matrix interferences preclude achieving the detection limits or associated QC target criteria. In such instances, data will not be rejected *a priori* but will be examined on a case-by-case basis. The laboratory will report the reason for deviations from these detection limits or noncompliance with QC criteria in the case narrative.

5.2.1. Laboratory Method Blanks

A laboratory method blank is an analyte-free material processed in the same manner and at the same time as a project sample. The laboratory method blanks serve to demonstrate a contamination-free environment in the laboratory. The goal is for method blanks to be free of contamination. Low level contamination may be present but must be less than the practical quantitation limit (PQL) as defined by the method standard operating procedure (SOP). If

contamination is greater, the samples are reanalyzed. If contaminants are present in the method blank but not in project samples, no further action is required. All sources of contamination that are not common laboratory contaminants as defined in the method SOPs must be investigated as part of the corrective action process. Sample results must not be blank-subtracted unless specifically required by the analytical method

5.2.2. Surrogate Standards

For certain organic methods, all samples, including the laboratory method blank and standards, are spiked with a set of specific surrogate standards to monitor the accuracy of the analytical determination. Surrogate spikes are added at the start of the laboratory preparation process.

Surrogate recoveries must be within QC criteria for method blanks and LCSs to demonstrate acceptable method performance. If surrogate recoveries are outside QC criteria for method blanks or LCSs, corrective action is required, and the QC Manager should be notified. Surrogate recoveries in the samples indicate the method performance on the particular sample matrix. Surrogate recoveries that are outside QC criteria for a sample indicate a potential matrix effect. Matrix effects must be verified based on review of recoveries from the method blank or LCS, sample reanalysis, or evaluation of interfering compounds. Sample clean-up procedures required by Ecology-approved SOPs must be implemented to alleviate potential matrix problems.

5.2.3. Laboratory Control Sample

An LCS consists of a method blank spiked with target compounds of interest near the mid-point of the calibration range. The LCS is processed by the same sample preparation, standard addition, and analysis as the project samples. The recovery of target analytes in the LCS is an estimation of method accuracy.

LCS recovery must be within the control limits to demonstrate acceptable method performance. If the LCS recovery values are outside QC criteria for the target analytes, recovery values are significantly low, or the compounds were detected in the samples, then corrective action is required. After corrective action is complete, sample re-analysis is required for the failed parameters. For any deviations from the LCS control limits that cannot be resolved by sample re-analysis within holding times, the QC Manager must be notified immediately. If critical samples are affected, the Project Manager may determine that re-sampling is required.

5.2.4. Matrix Spike Sample

A matrix spike (MS) sample consists of a project sample split into two parts and processed as two separate samples in a manner identical to that of the rest of the samples. In addition to the regular addition of monitoring standards (internal standards, surrogate), spiking analytes are added to the sample aliquot. Generally, all method target analytes, if compatible, are added. A

subset of target analytes may be used if indicated in the method SOP and approved during review of the SOP. An MS must be prepared for every batch of 20 samples (or fewer) for a given matrix if sufficient sample allows. Field and trip blanks, if collected, must not be chosen for spiking. The laboratory must analyze a site-specific MS sample for every batch that contains samples from the site, even if the batch contains samples from other sites.

MS recovery values are a measure of the performance of the method on the sample being analyzed. MS recovery values outside the control limits applied to the LCS indicate matrix effects. Sample clean-up procedures may be warranted for samples with severe matrix effects. The laboratory should notify the QC Manager of these instances to determine an appropriate corrective action.

5.2.5. Matrix Spike Duplicate Sample

The matrix spike duplicate (MSD) sample is commonly prepared in conjunction with the MS sample. The MSD sample is prepared from a separate portion of the client sample and processed with the same additions as the MS. The MSD is prepared for methods that do not typically show concentrations of target analytes above MDLs, such as organic methods. The RPD values between the recovery values in the MS and MSD measure the precision of the analytical method on the actual project samples

5.2.6. Duplicate Sample

A duplicate sample consists of a set of two samples obtained in an identical manner from the same project sample. The collection of duplicate samples from a heterogeneous matrix requires homogenization to ensure that representative portions are analyzed. One sample per batch of 20 samples or fewer per matrix is analyzed in lieu of an MSD.

The duplicate is prepared for methods that typically show concentrations of target analytes above MDLs, such as metals and wet chemistry analytes. The RPD values between the recovery values in the original and duplicate measure the precision of the analytical method on the actual project samples.

5.2.7. Other Laboratory QC Samples

The laboratory performs analysis of other QC samples or standards, depending on the analytical method. Standard QC samples or standards are documented in the specific method SOP. Method-specific QC samples or standards include internal standard spikes for gas chromatography/mass spectrometry (GC/MS) methods, post-digestion spikes and serial dilutions for metals analysis, and interference check samples for inductively-plasma analysis. Results of all associated QC should be reported

5.2.8. Performance Evaluation Samples

As part of the laboratory approval process, the laboratory must analyze external performance evaluation (PE) samples provided by an outside certifying agency on an annual basis. The laboratory must maintain acceptable scores on PE samples as part of the approval process. For this project any PE failures for project target compounds must be reported to the QC Manager immediately.

5.3. QUALITY ASSURANCE AND QUALITY CONTROL FOR BIOASSAY SEDIMENT SAMPLES

The detailed SOPs for the bioassay tests proposed for this investigation will be provided by the selected biological laboratory upon request. This section summarizes toxicity test QA/QC procedures to be implemented to ensure the test results are valid. Standard QA/QC procedures include the use of negative controls, positive controls, reference sediment samples, laboratory replicates, and daily water quality measurements. In addition, close contact with the biological laboratory will be maintained prior to and during the testing period to resolve any QA/QC problems or testing methodology issues in a timely manner.

5.3.1. Negative Control

The negative control consists of clean, inert material tested in parallel with the test sediments under identical test conditions. The biological testing laboratory provides this clean material, which usually consists of sediment collected from the original location from which the test organisms were harvested (when applicable). Test acceptability criteria are based on results of the negative control. A test with at least 90 percent survival (70 percent mean normal survivorship for larval development) in negative control test chambers is considered acceptable.

5.3.2. Positive Control

A positive control will be run for each bioassay. Positive controls are chemicals known to be toxic to the test organism and that provide an indication of the sensitivity of the particular organisms used in a bioassay. Ammonium chloride or another appropriate reference toxicant will be used for the amphipod mortality, larval development, and juvenile polychaete growth bioassays.

5.3.3. Reference Sediment

Reference sediments, which closely match the grain size characteristics of the test sediments, will be run with each test batch for all three bioassays (± 20 percent of the percent fines of the test sediments [Ecology 2017b]). The reference sediment is used for test comparisons and interpretations. Carr Inlet will be used as the reference area; the specific collection sites will be

determined based on sample physical characteristics. All reference sediments will be analyzed for total solids, TOC, ammonia, sulfides, and grain size (Kendall 1990).

All bioassays have performance standards for reference sediments (Ecology 2017b). Failure to meet these standards may result in the requirement to retest.

5.3.4. Laboratory Replication

Five laboratory replicates of each test sediment, reference sediment, and negative control will be run for each respective bioassay. The replication of tests provides multiple observations of effects to test organisms so that statistical comparisons can be made between test and reference sediments.

5.3.5. Bioassay Water Quality

Water quality monitoring will be conducted for the amphipod, larval development, and juvenile polychaete growth bioassays. This consists of daily measurements of salinity, temperature, pH, and dissolved oxygen (every third day for juvenile polychaete growth bioassay). Ammonia and sulfides will be determined at test initiation and termination and interstitial salinity will be determined prior to the test setup. Monitoring will be conducted for all test and reference sediments and negative controls (including seawater controls). Parameter measurements must be within the limits specified for each bioassay as listed in Table 5-2. Measurements for each treatment will be made on a separate chemistry beaker set up to be identical to the other replicates within the treatment group. In addition, interstitial ammonia measurements at test initiation and test termination will be conducted for the amphipod test.

Table 5-2. Water Quality Control Limits for Bioassay Testing.				
Test (Test Species)	Temperature	Salinity	Dissolved Oxygen	pH ^b
Amphipod Mortality (<i>Eohaustorius estuarius</i>)	15 ± 1°C	28 ± 1 ppt	NA ^a	–
Amphipod Mortality (<i>Ampelisca abdita</i>)	20 ± 1°C	28 ± 1 ppt	NA ^a	–
Larval Development (<i>D. excentricus</i>)	15 ± 1°C	28 ± 1 ppt	>60 percent saturation	–
Juvenile Polychaete Growth (<i>N. arenaceodentata</i>)	20 ± 1°C	28 ± 2 ppt	NA ^a	–

^a Continuous aeration is required by the protocol, so the dissolved oxygen should not be a cause of concern.

^b pH is monitored as a water quality parameter. There are generally no control limits for pH; however, measurements of pH may be useful in interpreting results (Ecology 2008b).

5.4. DATA VALIDATION

At a minimum, all chemical laboratory data will undergo a QA1 review (PTI 1989a and Ecology 2017b); if requested by Ecology, the data will be reviewed following QA2 procedures (PTI 1989b). If data fail the review, the laboratory will be contacted and the data will be reanalyzed, qualified, or unqualified with an explanation. For each data type, the quality of the data will be summarized in validation memos.

In addition, laboratory data packages will be provided for the chemistry data to allow independent data verification and validation. The data packages will consist of the sample results followed by a cover letter describing procedures used and analytical problems encountered, qualifiers used, reconstructed ion chromatogram (GC/MS), mass spectra of detected target compounds (GC/MS), chromatograms, quantification reports, and calibration data summaries. Dilution volumes, sample sizes, percent moisture, and surrogate recoveries will be presented on each summary sheet with the analytical results. A similar package is also assembled for each quality control sample (e.g., method blank).

The following types of data will be reviewed:

- Analytical laboratory summary reports including QC summary data for surrogates, method blanks, LCSs, and MS/MSD samples. Acceptance and performance criteria will be developed from the current laboratory control limits even if those limits differ from the limits listed in Section 7.
- Calibration summary data will be checked to verify that all positive results for target compounds were generated under an acceptable calibration, as defined by the analytical method.
- Field QC results for blanks.
- Field data, such as sample identifications and sample dates, will be checked against the laboratory report.

Raw data files from the field and laboratory may not be reviewed unless there is a significant problem noted with the summary information.

After receipt from the laboratory, project data will be validated as described in the following section.

5.4.1. Evaluation of Completeness

The QC Manager will verify that the laboratory information matches the field information and that the following items are included in the data package:

- Chain-of-custody forms
- Case narrative describing any out-of-control events and summarizing analytical procedures
- Data report forms
- QA/QC summary forms
- Calibration summary forms
- Chromatograms documenting any QC problems

If the data package is incomplete, the QC Manager will contact the laboratory, which must provide all missing information within 1 day.

5.4.2. Evaluation of Compliance

The actual data validation follows the procedures that are briefly outlined below:

- Review the data to check field and laboratory QC results to verify that holding times and acceptance and performance criteria were met, and to note any anomalous values
- Review chromatograms, mass spectra, and other raw data if provided as backup information for any apparent QC anomalies
- Ensure all analytical problems and corrections are reported in the case narrative and that appropriate laboratory qualifiers are added
- For any problems identified, review concerns with the laboratory, obtain additional information if necessary, and check all related data to determine the extent of the error
- Apply data qualifiers to the analytical results to indicate potential limitations on data usability.

Qualification of data will follow applicable QA1 or QA2 guidelines. If no QA1 or QA2 guidelines exist, then applicable USEPA National Functional Guidelines for Data Review will be used (USEPA 2017a and 2017b).

5.4.3. Data Validation Reporting

The project chemist will perform the following reporting functions:

- Alert the QC Manager to any QC problems, obvious anomalous values, or discrepancies between the field and laboratory data, and resolve any issues.
- Discuss QC problems in a data validation memo for each laboratory report.
- Review the laboratory electronic data deliverable (EDD) and electronic field data, enter the data qualifiers into the database, and prepare analytical data summary tables. The tables will summarize those samples and analytes for which detectable concentrations were exhibited as well as complete analytical summary tables. The tables will include field QC samples.

At the completion of all field and laboratory efforts for site, the project chemist will prepare a data review/validation memorandum. The memorandum will summarize planned versus actual field and laboratory activities and data usability concerns.

6. FIELD PROCEDURES

This section describes the procedures for positioning, sample collection, processing, identification, documentation, equipment decontamination, and waste handling for the proposed field investigation. Samples will be collected for sediment chemistry and toxicity. The laboratory methods for chemical analysis and toxicity testing are presented in Section 7.

A total of six stations will be sampled in the vicinity of the outfall diffuser. In addition, a reference sediment sample will be collected if bioassay testing is required. All samples will be composed of sediment submitted to the laboratory for analysis. The Health and Safety Plan for this project is presented in Appendix A

6.1. SAMPLING VESSEL

The vessel R/V Tieton, owned and operated by Gravity, will be used for sediment grab sample collection. Sediment grabs will be collected using Gravity's power grab sampler (Section 6.3).

If necessary, reference sediment samples will be collected by EcoAnalysts using their Ponar dredge grab sampler from a contracted vessel.

6.2. STATION POSITIONING AND NAVIGATION

Station positioning will be accomplished using the R/V Tieton's onboard Trimble Differential global positioning system (DGPS) with Hypack Navigation. This system employs a ground-based reference station that sends carrier-phase corrections to an onboard GPS receiver to achieve sub-centimeter accuracy. The DGPS system will be linked to the local Washington State Real-time Network, which will use the Puget Sound base station network. The antenna for the onboard GPS receiver will be located at the end of the power grab sampler deployment boom, directly above the sampling location. Station coordinates will be recorded in latitude and longitude as decimal minutes with a minimum precision of four decimal places and shall be based on the North American Datum of 1983 (NAD 83).

Proposed sample location coordinates, as well as coordinates for both ends of the diffuser are presented in Table 6-1. These coordinates are approximate because they were determined by a combination of historical map locations and reported coordinates that were not accurate when converted to NAD 83. Final field-verified coordinates will be presented in the Data Report. The actual position of the diffuser will be located using a sonar fish finder. Once the boundaries of the outfall pipe have been located, sample stations will be positioned relative to the diffuser pipe.

Table 6-1. Sample Station Coordinates and Depth, LOTT NPDES Sediment Characterization.			
Sample Station	Coordinates^a		Approximate Depth^b (feet)
	Latitude	Longitude	
LSED-1	47.06068	-122.90618	-10
LSED-2	47.06016	-122.90637	-10
LSED-3	47.05967	-122.90604	-10
LSED-4	47.05917	-122.90619	-10
LSED-5	47.05774	-122.90611	-10
LSED-6	47.04988	-122.90420	10
LSED-7	47.04987	-122.90469	0
LSED-8	47.04957	-122.90445	0
Diffuser Outfall			
Beginning of diffuser	47.05875	-122.90625	-10
End of diffuser	47.05945	-122.90629	-10

^a Coordinate system is NAD 1983 HARN State Plane Washington North FIPS 4601 feet. Coordinates are approximate.

^b Mean lower low water (MLLW).

6.3. SAMPLE COLLECTION

Surface sediment grab samples will be collected using a stainless steel power grab sampler owned and operated by Gravity. Surface sediment will be collected from the 0- to 10-centimeter (0- to 4-inch) depth interval. It is expected that up to two grab samples may be collected at each sample station to obtain an adequate sample volume for all analyses required. Sample containers, holding times, preservation, and storage requirements are summarized in Table 6-2.

Table 6-2. Sediment Sample Analysis Summary, Preservation, Sample Container, and Holding Times.

Number of Samples^a	Analytical Parameters/Method	Sample Preservation	Technical Holding Time	Sample Container(s)
8	Semivolatile organic compounds/ SW-846 Method 8270D	Cool to 4°C	Extract within 14 days of collection; analyze within 40 days of extraction	One 8-oz wide-mouth glass jar with Teflon-lined lid
		Freeze, -18°C	Extract within 1 year of collection, analyze within 40 days of extraction	
8	Polychlorinated biphenyls/ SW-846 Method 8082	Cool to 4°C	Extract within 14 days of collection; analyze within 40 days of extraction	One 8-oz wide-mouth glass jar with Teflon-lined lid
		Freeze, -18°C	Extract within 1 year of collection, analyze within 40 days of extraction	
8	Metals/ SW-846 Methods 6000/7000 Series	Cool to 4°C	180 days (28 days for mercury)	One 8-oz wide-mouth glass jar with Teflon-lined lid
		Freeze, -18°C	2 years (28 days for mercury)	
10	Total organic carbon/ SW-846 9060 (Plumb)	Cool to 4°C	14 days from collection.	One 8-oz wide-mouth glass jar with Teflon-lined lid
		Freeze, -18°C	6 months from collection	
10	Grain Size/PSEP	Cool to 4°C	180 days from collection	One 16-oz wide-mouth glass jar with Teflon-lined lid
8	Sulfide/ SW-846 9030	Cool to 4°C, with 5 ml of zinc acetate	7 days from collection	One 2-oz wide-mouth glass jar with Teflon-lined lid
10	Ammonia/ PSEP	Cool to 4°C	7 days from collection	One 8-oz wide-mouth glass jar with Teflon-lined lid
10	Sediment Toxicity (Bioassay) ^b	Cool to 4°C, nitrogen atmosphere	8 weeks from collection	6 L in a plastic bag

^a Number of samples includes eight sample stations for all parameters and two reference sediment samples for selected parameters.

^b Bioassays consist of three toxicity tests: amphipod mortality, larval development, and polychaete growth.

°C = Degrees Celsius.

USEPA = US Environmental Protection Agency

oz = ounce

PSEP = Puget Sound Estuary Program Methods

SW-846 = *Test Methods for Evaluating Solid Waste, Physical Chemical Methods*, Third edition, SW-846 (USEPA 1986)

Samples will be carefully collected to ensure the following conditions are met:

1. Make logbook and field form entries as necessary throughout the sampling process to ensure accurate and thorough record keeping (field documentation is described in Section 6.7).
2. Position the sampling vessel at the targeted sampling location.
3. Set the sampler jaws in the open position, place the sampler over the edge of the boat, and lower the sampler to the bottom.
4. Trip the sampler to collect the sample.
5. Record the location using the DGPS; measure and record the water depth.
6. Retrieve the sampler and place it securely in the sampling vessel.
7. Examine the sample for the following sample acceptance criteria:
 - a. The sampler is not overfilled with sample so that the sediment surface is not pressed against the top of the sampler
 - b. The sample does not contain large foreign objects (e.g., trash or debris); a sample consisting of rock or gravel will be rejected in favor of depositional material (e.g., sand/silt/clay)
 - c. Overlying water is present in the sampler (indicates minimal leakage)
 - d. The overlying water is not excessively turbid (indicates minimal sample disturbance)
 - e. The sediment surface is relatively flat (indicates minimal disturbance or winnowing)
 - f. The desired penetration depth is achieved (at least 10 centimeters).
8. If sample acceptance criteria are not achieved, the sample will be rejected and another sample collection attempt will be made.
9. Siphon off any overlying surface water.
10. Collect one randomly selected sample for total sulfides analysis directly from the grab sampler and place the sediment aliquot in an appropriate, precleaned, labeled sample container. Approximately 5 milliliters (ml) of 2N (Normal) zinc acetate will be added to a 2 ounce (oz) wide mouth glass jar as a preservative. The sulfide subsample (approximately 50 grams) will be placed in the jar, covered, and shaken vigorously to completely expose the sediment to the zinc acetate. Care will be taken to not contaminate the metals samples with zinc acetate.

11. Measure and collect the top 10 centimeters (4 inches) with a stainless steel spoon, avoiding any sediment in contact with the inside surface of the grab sampler, and then place the sediment into a precleaned and decontaminated stainless steel bowl and cover with aluminum foil.
12. Record the following observations of sediment sample characteristics on the field form (Appendix B):
 - a. Texture
 - b. Color
 - c. Biological organisms or structures (shells)
 - d. Presence of debris (natural or anthropogenic objects, including wood and its general size)
 - e. Presence of oily sheen or obvious contamination
 - f. Odor (hydrogen sulfide, petroleum)
13. If the required amount of collected sediment volume has not been achieved, repeat steps 2 through 12.
14. Once enough sediment has been collected for each station and homogenized in a stainless steel bowl, place the sediment in the appropriate, precleaned, labeled sample containers.
15. Confirm all relevant documentation has been completed, entries are accurate, and paperwork has been signed.
16. Decontaminate sampling equipment, as needed, as described in Section 6.8 before proceeding to the next sampling station.

6.4. WET SIEVING

If bioassay testing is required, reference sediment will be collected from Carr Inlet by EcoAnalysts. A homogenized sample aliquot of sediment collected at the reference sediment location will be wet sieved in the field. The purpose for wet sieving is to separate the coarse and fine-grained material comprising a sediment sample in order to match appropriate test and reference locations for toxicological testing. A 63-micron sieve is used to separate the silt and clay (fines) from the sand and gravel portion of the sediment sample. The grain size distribution of a given sediment sample is an important physical parameter when conducting bioassays in order to determine an appropriate reference sample for comparison with test sediments. The wet sieving of reference sediment samples is conducted in the field at the time of collection, so

that reference samples with similar grain size distributions (± 20 percent as percent fines) can be targeted for the bioassays. The procedure for wet sieving is as follows:

1. Measure and record the exact volume of a small volumetric vessel.
2. Fill the vessel to the 50-mL line with an aliquot of homogenized sediment. Lightly tap the beaker on a hard surface to remove any air bubbles, and level the surface.
3. Rinse the entire contents of the beaker through a 63-micron (#230, 4 phi) sieve. Aggregates of material should be gently broken to facilitate sieving. Continue sieving until clear rinse water passes through the sieve.
4. Carefully transfer the coarse-grained material from the sieve into a 100-ml graduated cylinder.
5. Allow the material to settle for 5 minutes. Subtract the amount of solid material measured in the bottom of the graduated cylinder from the volume of sediment processed (50 mL). Multiply this value by 2 and subtract the volume of coarse-grained material from 100 to determine the decimal percentage of fines (silt and clay).
6. Record the percentages of coarse and fine-grained material in the field logbook.

6.5. SAMPLE IDENTIFICATION, CONTAINERS, AND LABELS

6.5.1. Sample Identification

All samples collected will be assigned a unique identification code; sample LSED-1 is the sediment sample collected from station LSED-1

6.5.2. Sample Containers

Precleaned sample containers will be supplied by the analytical laboratory for the required analyses. Spare sample containers will be carried by the field samplers for archive sample collection, and in case of breakage or possible contamination. Sample containers, preservation techniques, and holding times will follow Ecology (2017b) guidelines (see Table 6-2).

6.5.3. Sample Labels

Sample labels will be made of self-adhering material. An indelible pen will be used to fill out each label. Each sample label will contain:

- Project name (LOTT2019)
- Sample identification number

- Date of collection (day/month/year)
- Time of collection (military format)
- Analysis
- Preservative (as applicable)
- Company name and sampler initials (Herrera/GC)

Sample labels will be protected by packaging tape wrapped around the entire jar to prevent loss or damage of the labels during handling and storage.

6.6. SAMPLE STORAGE AND DELIVERY

All samples will be stored in insulated coolers and preserved by cooling with ice to a temperature of 4°C or below. Maximum sample holding and extraction times will be strictly adhered to by field personnel and the analytical and testing laboratories. Preparation of jars for shipment to fixed laboratories will be performed in the following manner:

- Samples will be packaged and shipped in accordance with US Department of Transportation regulations as specified in 49 Code of Federal Regulations (CFR) 173.6 and 49 CFR 173.24.
- Place sample containers in plastic Ziploc® bubble-pack bags, or wrap in bubble pack and secure with packaging tape.
- Prepare an empty insulated cooler by placing three to four ice packs in a garbage bag at the bottom of the cooler. Place sample containers in a garbage bag and fill with the sample bottles. Add additional bags of ice as needed to surround the bag containing the samples.
- Chain of custody forms will be enclosed in a plastic bag and taped to the inside lid of the cooler.
- Seal the cooler with strapping tape and a custody seal.

Samples for chemical analyses will be hand-couriered or shipped via overnight delivery to the analytical laboratory at completion of sample collection, accompanied by the chain of custody record, which identifies the shipment contents. The chain of custody will be signed by the individual relinquishing samples to the onsite laboratory representative. Upon receipt of samples at the laboratory, the shipping container seal will be broken and the condition of the samples will be recorded by the receiver. The field personnel will be responsible for the following:

- Packaging the samples
- Signing the chain of custody before placing inside the cooler to be sealed
- Applying a shipping label, a waybill, a custody seal, and strapping tape to the cooler
- Shipping the samples in accordance with the maximum holding time allowed for the analyses to be performed
- Notifying the laboratory of when the samples are shipped
- Confirming receipt of the samples by the laboratory and that the samples were received in good condition

All sediment samples will be retained for a minimum of 6 months from the time they were received using standard laboratory handling procedures. They may be removed from the laboratory prior to the end of the 6-month period only at the direction of the Herrera project manager.

6.7. FIELD DOCUMENTATION

A complete record of field activities will be maintained. Documentation necessary to meet QA objectives for this project include field notes and field forms (Appendix B), sample container labels, and chain-of-custody forms. The field documentation will provide descriptions of all sampling activities, sampling personnel, and weather conditions, and will record all modifications, decisions, and/or corrective actions to the study design and procedures. In addition, photographs of the grab samples will be included in the field documentation.

6.7.1. Field Logbooks

A field logbook will be kept on site during field operations. Daily activities will be recorded in a bound field logbook of water-resistant paper. Examples of the field forms to be used are presented in Appendix B. All entries will be made legibly, in indelible ink, and will be signed and dated. Information recorded will include the following:

- Date, time, place, and location of sampling
- Onsite personnel and visitors
- Daily safety discussion and any safety issues
- Field measurements and their units
- Observations about site, location, and samples (weather, current, odors, appearance, etc.)
- Equipment decontamination verification

Field logbooks are intended to provide sufficient data and observations to enable participants to reconstruct events that occur during project field activities. Entries should be factual, detailed, and objective. Unless restricted by weather conditions, all original data recorded in field logbooks and on sample identification labels, chain-of-custody records, and field forms will be written in waterproof ink. If an error is made, the individual responsible may make corrections simply by crossing out the error and entering the correct information. The erroneous information should not be obliterated. All corrections must be initialed and dated. All documentation, including voided entries, must be maintained within project files.

6.7.2. Chain of Custody Procedures

Samples will be retained at all times in the field crew's custody until samples are delivered or shipped to the laboratory by Herrera personnel. Chain-of-custody forms will be initiated at the time of sample collection to ensure that all collected samples are properly documented and traceable through storage, transport, and analysis. Information tracked by the chain-of-custody records will include sample identification, date and time of sample collection and receipt, and analyses required. When all line items on the form are completed or when the samples are relinquished, the sample collection custodian will sign and date the form, list the time, and confirm the completeness of all descriptive information contained on the form. Each individual who subsequently assumes responsibility for the samples will sign and date the chain-of-custody form.

The field chain-of-custody terminates when the laboratory receives the samples. The field sample custodian should retain a copy of the completed, signed chain-of-custody form(s) for project files. Upon receipt of samples at the laboratories, the shipping container seal will be broken and the receiver will record the condition of the samples. The laboratories will maintain chain-of-custody internally to track handling and final disposition of all samples.

6.8. EQUIPMENT DECONTAMINATION PROCEDURES

Sample processing equipment (i.e., spoons, bowls, and reusable containers from which samples are transferred to sample jars) will be washed with a laboratory-grade detergent (e.g., Liquinox) and water solution, and then rinsed with distilled water prior to field operations (decontamination rinsate will be disposed of overboard). Decontaminated equipment will be wrapped or covered with aluminum foil. Processing equipment will be decontaminated before use at each station in order to prevent cross contamination of samples. Any deviations from these procedures will be documented in the field notebook.

Personal non-disposable field equipment (e.g., boots and waterproof gloves and garments) will be rinsed with water and brushed clean prior to leaving the immediate vicinity of the sample collection area. Special attention will be given to removing mud and sediments that may adhere to boot treads.

6.9. WASTE DISPOSAL

Two types of investigation-derived waste will be generated during the activities described in this work plan:

- Sediment not submitted to the laboratories
- Disposable protective clothing and supplies

Excess sediment from sampling will be disposed of overboard at the time of collection. Used personal protective equipment (PPE) such as disposable gloves and supplies (e.g., paper towels and packaging) will be placed in plastic storage bags and disposed of as municipal waste. If PPE contains residual sediment, it will be decontaminated using the procedures outlined in Section 6.8 and then disposed of as non-hazardous material. Recyclable waste material (e.g., cardboard, aluminum) will be recycled, as feasible.

7. LABORATORY METHODS

All of the chemical and biological analytical testing procedures used in this project will be performed in accordance with SMS and PSEP guidelines. The laboratory analysis will be consistent with PSEP guidelines (PSEP 1997a, 1997b), and any recent modifications proposed during the annual SMARM and specified in the Sediment Cleanup User's Manual II (Ecology 2017b). The laboratories participating in this project (ARI and EcoAnalysts.) are accredited by Ecology for all chemical and biological methods to be used for this project, and has instituted internal QA/QC plans accordingly. Analyses will be required to conform to accepted standard methods and internal QA/QC checks prior to final approval.

7.1. CHEMICAL ANALYSES

Sediment samples will be submitted to Analytical Resources, Inc. located in Tukwila, Washington for chemical analyses. The specific analyses and conventional parameters to be measured, sample preparation methods, analytical methods, target reporting limits (RLs), and SMS guidelines (i.e., screening levels) are presented in Table 7-1. Actual sample RLs may vary due to analytical dilutions, percent solids, sample volumes used for analysis, and matrix interferences.

7.1.1. Detection Limits and Sample Analysis Scenarios

The samples collected for characterization will be analyzed for the parameters listed in Table 7-1. Laboratory RLs for all COCs are below SMS recommended RLs, with the exception of two compounds (2,4-dimethylphenol and hexachlorobutadiene). Method detection limits (MDLs) for these compounds are below the recommended RLs and will be reported by the laboratory to the MDLs. All reasonable means, including additional cleanup steps and method modifications, will be used to achieve sample RLs at or below the associated screening levels.

Table 7-1. SMS Chemical Parameter.						
Parameter	Preparation Method	Analysis Method	Laboratory		SMS ^a	
			MDL	MRL	SQS	SIZmax
Conventional Parameters						
Grain size (percent)	–	PSEP	–	0.1	–	–
Total solids (percent)	–	PSEP	–	0.1	–	–
Total volatile solids (percent)	–	PSEP	–	0.1	–	–
Total organic carbon (mg/kg)	–	PSEP	–	0.05	–	–
Ammonia (mg/kg)	–	Plumb (1981) ^b	–	5.0	–	–
Total sulfides (mq/kg)	–	PSEP	–	1.0	–	–

Table 7-1 (continued). SMS Chemical Parameter.

Parameter	Preparation Method	Analysis Method	Laboratory		SMS ^a	
			MDL	MRL	SQS	SIZmax
Metals			mg/kg dwt		mg/kg dwt	
Arsenic	3050B	6010C	–	5.0	57	93
Cadmium	3050B	6010C	–	0.2	5.1	6.7
Chromium	3050B	6010C	–	0.5	260	270
Copper	3050B	6010C	–	0.2	390	390
Lead	3050B	6010C	–	2.0	450	530
Mercury	7471B	7471B	–	0.025	0.41	0.59
Silver	3050B	6010C	–	0.3	6.1	6.1
Zinc	3050B	6010C	–	1.0	410	960
Non-Ionizable Organic Compounds						
Aromatic Hydrocarbons			µg/kg dwt		mg/kg OC	
LPAH ^c	3546	8270D	–	20	370	780
Naphthalene	3546	8270D	5.25	20	99	170
Acenaphthylene	3546	8270D	4.77	20	66	66
Acenaphthene	3546	8270D	5.13	20	16	57
Fluorene	3546	8270D	4.95	20	23	79
Phenanthrene	3546	8270D	4.69	20	100	480
Anthracene	3546	8270D	5.93	20	220	1,200
2-Methylnaphthalene	3546	8270D	5.67	20	38	64
HPAH ^d	3546	8270D	–	20	960	5,300
Fluoranthene	3546	8270D	4.52	20	160	1,200
Pyrene	3546	8270D	5.55	20	1,000	1,400
Benzo(a)anthracene	3546	8270D	5.18	20	110	270
Chrysene	3546	8270D	5.22	20	110	460
Total benzo(a)fluoranthenes ^e	3546	8270D	–	20	230	450
Benzo(a)pyrene	3546	8270D	5.18	20	99	210
Indeno(1,2,3-c,d)pyrene	3546	8270D	5.99	20	34	88
Dibenzo(a,h)perylene	3546	8270D	6.16	20	12	33
Benzo(g,h,i)perylene	3546	8270D	5.82	20	31	78
Chlorinated Benzenes			µg/kg dwt		mg/kg OC	
1,2-Dichlorobenzene	3546	8270D	4.66	20	2.3	2.3
1,4-Dichlorobenzene	3546	8270D	4.39	20	3.1	9
1,2,4-Trichlorobenzene	3546	8270D	5.96	20	0.81	1.8
Hexachlorobenzene	3546	8270D	4.74	20	0.38	2.3

Table 7-1 (continued). SMS Chemical Parameter.						
Parameter	Preparation Method	Analysis Method	Laboratory		SMS ^a	
			MDL	MRL	SQS	SIZmax
Non-Ionizable Organic Compounds (continued)						
Phthalate Esters			µg/kg dwt		mg/kg OC	
Dimethyl phthalate	3546	8270D	6.44	20	53	53
Diethyl phthalate	3546	8270D	17.7	20	61	110
Di-n-butyl phthalate	3546	8270D	5.31	20	220	1,700
Butyl benzyl phthalate	3546	8270D	8.05	20	4.9	64
Bis (2-ethylhexyl) phthalate	3546	8270D	28.8	50	47	78
Di-n-octyl phthalate	3546	8270D	10	20	58	4,500
Miscellaneous			µg/kg dwt		mg/kg OC	
Dibenzofuran	3546	8270D	10	20	15	58
Hexachlorobutadiene	3546	8270D	2.04	20	3.9	6.2
N-Nitrosodiphenylamine	3546	8270D	10.8	20	11	11
Ionizable Organic Compounds			µg/kg dwt		µg/kg dwt	
Phenol	3546	8270D	8.23	20	420	1,200
2-Methylphenol	3546	8270D	7.84	20	63	63
4-Methylphenol	3546	8270D	14.7	20	670	670
2,4-Dimethylphenol	3546	8270D	26.8	100	29	29
Pentachlorophenol	3546	8270D	31.3	100	360	690
Benzyl Alcohol	3546	8270D	14.9	20	57	73
Benzoic Acid	3546	8270D	59.1	200	650	650
Polychlorinated Biphenyls			µg/kg dwt		mg/kg OC	
Total PCB Aroclors ^f	3546	8082 LL	—	1.0	12	65

mg/kg OC = milligrams per kilogram organic carbon normalized. The listed chemical parameter criteria represent concentrations in parts per million normalized or expressed on a total organic carbon basis. To normalize to total organic carbon, the dry weight concentration for each parameter is divided by the decimal fraction representing the percent total organic carbon content of the sediment.

µg/kg dwt = microgram per kilogram dry weight

^a SMS criteria for the SQS and the SIZmax (WAC 173-204).

^b Procedures for Handling and Chemical Analysis of Sediment and Water Samples, Russell H. Plumb, Jr., EPA/Corps of Engineers, May 1981.

^c The LPAH criterion represents the sum of the following low molecular weight polynuclear aromatic hydrocarbon compounds: Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, and Anthracene. The LPAH criterion is not the sum of the criteria values for the individual LPAH compounds as listed.

^d The HPAH criterion represents the sum of the following high molecular weight polynuclear aromatic hydrocarbon compounds: Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Total Benzofluoranthenes, Benzo(a)pyrene, Indeno(1,2,3,-c,d)pyrene, Dibenzo(a,h)anthracene, and Benzo(g,h,i)perylene. The HPAH criterion is not the sum of the criteria values for the individual HPAH compounds as listed.

^e The Total Benzofluoranthenes criterion represents the sum of the concentrations of the "B," "J," and "K" isomers.

^f Total PCBs is the sum of Aroclors 1016, 1221, 1242, 1248, 1254, 1260, 1268.

7.1.2. Sediment Conventional Parameters

Analysis of conventional parameters is required to characterize the sediment and to aid in interpreting chemical and biological tests. Sediment conventional parameters to be analyzed include:

- Grain size
- Total solids
- Total volatile solids (TVS)
- Total organic carbon (TOC)
- Ammonia
- Total sulfides

Analysis methods for conventional parameters are listed in Table 7-1. The laboratory shall perform all method-required QC procedures outlined in Table 7-2. Grain size distribution for each sample will be determined in accordance with ASTM D 422 (modified). Hydrogen peroxide will not be used in this analysis because it breaks down organic aggregates causing an overestimation of the percent fines found in undisturbed sediment. Sieves #10 and #230 will be included in the grain size analysis. One standard reference material (SRM) sample will be run in each batch of sediment samples for TOC. SRM NIST 1941b will be used with acceptance limits of ± 20 percent of the certified value.

Table 7-2. Laboratory QA/QC Requirements for Conventional Parameters and COCs.					
Analysis Type	Method Blanks^a	Duplicates^a	CRM/RM	MS/MSD^a	Surrogates^b
Grain size		X			
Total solids		X			
Total volatile solids		X			
Total organic carbon	X	X ^e	X	X	
Ammonia	X	X			
Total sulfides	X	X			
Metals	X	X ^e	X	X	
Semivolatiles ^{c,d}	X	X ^e	X	X	X
PCBs ^{c,d}	X	X ^e	X	X	X

CRM = certified reference material; RM = reference material; MS/MSD = matrix spike/matrix spike duplicate

^a Frequency of Analysis (FOA) = 5 percent or one per batch, whichever is more frequent.

^b Surrogate spikes required for every sample, including matrix spiked samples, blanks, and reference materials.

^c Initial calibrations required before any samples are analyzed after each major disruption of equipment, and when ongoing calibration fails to meet criteria.

- ^d Ongoing calibration required at the beginning of each work shift, every 10 to 12 samples or every 12 hours (whichever is more frequent), and at the end of each shift.
- ^e Matrix spike duplicate may be used.

7.1.3. Chemicals of Concern

The SMS SQS values for COCs correspond to a sediment quality that will result in no adverse effects, including no acute or chronic adverse effects on biological resources and no significant health risk to humans (WAC 173-204-320). COCs to be analyzed in this investigation include chemical compounds that can be categorized as either metals, polycyclic aromatic hydrocarbons (PAHs), chlorinated hydrocarbons, phthalates, phenols, miscellaneous extractables, or PCB Aroclors. Analytical preparation and analysis methods for the compounds within each of these classes are listed in Table 7-1. One SRM or certified reference material (CRM) sample shall be run in each batch of sediment samples for the project. The laboratory shall perform all method-required QC procedures outlined in Table 7-2.

7.1.4. Holding Times

All samples for physical and chemical testing will be maintained at the laboratory at appropriate temperatures (see Table 6-2) and will be analyzed prior to the expiration times specified in Table 6-2.

7.2. BIOASSAY ANALYSES

This section describes specific procedures for the suite of bioassays used for SMS biological analysis. During the chemistry sampling event, sediment will be collected at all locations and submitted to the bioassay laboratory; samples will be analyzed at a particular station only if sediment chemistry results exceed SMS criteria. Undetected chemicals with MDLs that exceed the SQS criteria are also considered to be SMS exceedances. Bioassay testing requires that test samples be matched and tests run with appropriate reference sediments to factor out background conditions and sediment grain-size effects on bioassay organisms. Reference sediments will be collected only if chemical results indicate that bioassay testing is required. The location of the reference sediment sampling location will be recorded to the nearest 0.1 second (NAD 83).

All sediment samples selected for bioassay analysis will be stored at 4°C with no headspace in a nitrogen atmosphere until bioassay testing commences. All bioassays will commence within 8 weeks from collection of the grab sample of the sediment to be tested. The laboratory will maintain chain of custody procedures throughout biological testing.

Bioassay testing will be initiated as soon as possible once the sediment chemistry results indicate that analysis is required. This includes obtaining test organisms and control/reference sediments in a timely manner.

Three bioassays (Table 7-3) including amphipod mortality, larval development, and juvenile polychaete growth, will be conducted on each sample identified for biological testing. All biological testing will be conducted in strict compliance with Recommended Guidelines for Conducting Laboratory Bioassays on Puget Sound Sediments (PSEP 1995) with modifications included in Ecology's SCUM II (2017b), with appropriate modifications as specified in the annual review process. General biological testing procedures and specific procedures for each sediment bioassay are summarized in the following sections.

Table 7-3. Bioassay Suite for the LOTT NPDES sediment characterization	
Bioassay Test	Test Organism
10-Day Amphipod Mortality Test	<i>Eohaustorius estuarius</i> , <i>Rhepoxynius abronius</i> , or <i>Ampelisca abdita</i>
Larval Development Test ^a (echinoderm)	<i>Dendraster excentricus</i> (sand dollar)
20-Day Juvenile Polychaete Growth Test	<i>Neanthes arenaceodentata</i>

^a Actual test length may vary based on larval development stage.

The specific QA/QC measures employed as part of the biological analyses are discussed in detail in Section 5.

7.2.1. Amphipod Mortality Bioassay

This test involves exposing *Eohaustorius estuaries*, *Rhepoxynius abronius*, or *Ampelisca abdita* to test sediment for 10 days and counting the surviving animals at the end of the exposure period. Daily emergence data will be recorded as well. The control sediment has a performance standard of 10 percent mortality. The reference sediment has a performance standard of 25 percent mean mortality. The amphipod chosen is based on the percentage of sediment fines (i.e., greater than or equal to 60 percent fines, or less than 60 percent fines) as described in the SCUM II (Ecology 2017b).

The preferred amphipod species is *Eohaustorius estuarius*, as this species is relatively insensitive to salinity changes and grain size effects, except for high clay (>20 percent) content. The amphipod *Ampelisca abdita* is the recommended species when testing sediments with relatively high clay content (>20 percent). *Eohaustorius estuarius* can generally tolerate the widest range of salinities (2 to 28 ppt), whereas *Ampelisca abdita* prefer salinities of 28 ±1 ppt.

No treatment for confounding factors will be performed on the sediment sample during the bioassay procedure. Ammonia reference toxicant tests may be conducted if elevated ammonia concentration is suspected in test sediments.

7.2.2. Larval Development Bioassay

This test monitors larval development of a suitable echinoderm or molluscan species (e.g., *Dendraster excentricus* or *Mytilus galloprovincialis*) in the presence of test sediment. *M. galloprovincialis* is the preferred species, followed by *D. excentricus*. However, the primary

factor in selection of species for the larval test is the time of year. Therefore, *D. excentricus* will be used for this study, as indicated in SCUM II (Ecology 2017b). The sediment larval bioassay has a variable endpoint (not necessarily 48 hours) that is determined by the developmental stage of organisms in a sacrificial seawater control (PSEP 1995). At the end of the test, larvae from each test sediment exposure are examined to quantify abnormality and mortality. The seawater control has a performance standard of 70 percent mean normal survivorship. Initial counts will be made for a minimum of five 10 ml (0.34 oz) aliquots. Final counts for seawater control, reference sediment, and test sediment will be made on 10 ml (0.34 oz) aliquots. A resuspension protocol has been developed to address situations when sediment may have flocculent material such as wood fiber, which is described in the 2013 SMARM paper *Bioassay endpoint refinements: Bivalve larval and Neanthes growth bioassays*.

No treatment for confounding factors will be performed on the sediment sample during the bioassay procedure. Ammonia reference toxicant tests may be conducted if elevated ammonia concentration is suspected in test sediments.

7.2.3. Juvenile Polychaete Growth Bioassay

This sublethal, static-renewal toxicity test can be used to determine the relative toxicity of marine sediments using the juvenile polychaete, *Neanthes arenaceodentata*. The test is conducted in accordance with the methods described in SCUM II (Ecology 2017b) and by PSEP (1995) and modifications to the test approved by the Dredged Material Management Program (DMMP) agencies related to implementation of the ash-free dry weight (AFDW) growth endpoint (Kendall et al 2013).

The toxicity test involves a 20-day exposure to sediments and the response of the organisms to test sediments as compared to their response in control (clean) and reference sediment. The test endpoint is mean individual growth (expressed as mg/individual/day).

The control sediment has a performance standard of 10 percent mortality. The reference sediment has a performance standard of 80 percent of the control growth. The DMMP agencies have established a target control growth performance guideline of greater than or equal to 0.72 mg/individual/day (dry weight). The *N. arenaceodentata* negative control performance guideline is a target growth rate of greater than or equal to 0.72 mg/individual/day (dry weight); the negative control performance standard is greater than 0.38 mg/individual/day (dry weight) (below which the test is considered a QC failure). Use of worms smaller than 0.25 mg (dry weight) at the beginning of the test will also be considered a QC failure.

AFDW will be calculated to correct for the influence of sediment grain size differences between treatments:

$$AFDW = \text{dry weight} - \text{ashed weight}$$

AFDW will be used to determine individual worm weight and growth rates for data comparisons. The results will be submitted to EIM as AFDW.

8. DATA ANALYSIS AND REPORTING

This section describes data analysis and reporting requirements for the data collection activities described above.

8.1. DATA ANALYSIS

8.1.1. Analysis of Sediment Chemistry Data

The analysis of chemistry data will include a comparison of the results to SMS numeric criteria. Sediment chemistry data will be summarized and presented in tables indicating sampling locations and detected contaminants and any detection limits that exceed SQS and/or CSL numeric criteria, along with any data qualifiers assigned by the laboratory or during data validation efforts. All sample locations whether they exceed chemistry or bioassay will be mapped and the level of exceedance will be identified to delineate any areas of concern. Non-detected chemicals will also be included in the table.

8.1.2. Analysis of Biological Data

The analysis of biological data will include comparison to SMS biological effects criteria. Toxicity test data results will be summarized and presented in tables indicating sampling locations and test results that exceed SQS and/or CSL biological effects interpretive criteria, along with the results of statistical comparisons to reference sediment test results. The sampling locations with sediment toxicity exceeding the SMS criteria will be mapped to delineate any areas that may require cleanup or other remedial action.

8.2. RECORD KEEPING

All field notes, laboratory data, project plans and reports will be maintained for a minimum period of 10 years.

8.3. SEDIMENT MONITORING REPORT

A written monitoring report documenting all activities associated with collection, management, chemical analyses, and biological testing of collected samples will be prepared. The report will include recommendations for further action or investigation based on data comparisons to established evaluation criteria. Chemical, biological, and QA/QC reports will be included as appendices. At a minimum, the following will be included in the report:

- Description of sampling and analysis activities
- Protocols used during sampling and testing and an explanation of any deviations from Sampling and Analysis Plan protocols
- Physical descriptions of samples
- Methods used for station positioning, sample collection locations reported in latitude and longitude to the nearest tenth of a second (NAD 83)
- Map showing actual locations of sampling stations and results of data comparisons to SMS and other criteria
- Chain-of-custody records
- Chemistry and biological testing results and laboratory reports
- Comparison of data results to interpretive criteria
- QA/QC summary
- Data validation reports

The draft and final Sediment Monitoring Report (Data Report) will be submitted to Ecology as both an electronic (PDF) and hard copy report. Two hard copy reports will be submitted, one each for Water Quality Program (WQP) and Toxics Cleanup Program (TCP) files. In addition, all chemical and bioassay (if required) data will be submitted electronically to Ecology's EIM database. The Data Report and EIM submittals will be reviewed by and for TCP approval. The User Study ID code for this project will be "LOTT2019."

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APPENDIX A

Health and Safety Plan

SITE-SPECIFIC HEALTH AND SAFETY PLAN

NPDES OUTFALL SEDIMENT CHARACTERIZATION OLYMPIA, WASHINGTON

**Prepared for
LOTT Clean Water Alliance**

**Prepared by
Herrera Environmental Consultants, Inc.**



Note:

Some pages in this document have been purposely skipped or blank pages inserted so that this document will copy correctly when duplexed.

SITE-SPECIFIC HEALTH AND SAFETY PLAN

NPDES OUTFALL SEDIMENT CHARACTERIZATION OLYMPIA, WASHINGTON

Prepared for
LOTT Clean Water Alliance
500 Adams Street Northeast
Olympia, Washington 98501-6911




Prepared by
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April 26, 2019

HEALTH AND SAFETY PLAN REVIEW AND APPROVAL

Client: LOTT Clean Water Alliance Site Name: North Outfall
 Project Name: 2019 NPDES Sediment Project No.: _____
 Start Date: August 15, 2019 End Date: September 15, 2019
 Plan Expiration Date: September 15, 2019
 (Last day of expected fieldwork or no longer than 6 months).

The following individuals have reviewed this Health and Safety Plan and have approved its use for the dates specified.

<u>Gina Catarra</u>	<u></u>	<u>4/26/2019</u>
Plan Completed by	Signature	Date
<u>Gina Catarra</u>	<u></u>	<u>4/26/2019</u>
Project Manager	Signature	Date
<u>Rob Zisette</u>	<u></u>	<u>4/26/2019</u>
Corporate Health and Safety Officer	Signature	Date
<u>Gina Catarra</u>	<u></u>	<u>4/26/2019</u>
Site Health and Safety Officer	Signature	Date

This Health and Safety Plan (HASP) is based on federal (29 CFR Part 1910.120) and state (Chapter 296-843-120 WAC) regulations, which address practices conducted at sites associated with hazardous substances. This HASP is applicable only to employees of Herrera Environmental Consultants, Inc. Consultants, subconsultants, and contractors other than Herrera working at this jobsite are responsible for the health and safety of their own employees and are required to develop their own health and safety plan. Other contractor personnel, who provide site-specific information, may review this HASP; however, Herrera assumes no responsibility or liability for the use of this document by other parties.

Due to the potentially hazardous nature of this site and the activity occurring thereon, it is not possible to discover, evaluate, and provide protection for all possible hazards that may be encountered. Strict adherence to the health and safety guidelines set forth herein will reduce, but not eliminate, the potential for injury at this site. The health and safety guidelines in this Plan were prepared specifically for this site based on site conditions, purposes, dates, and personnel specified, and must be amended if these conditions change. This HASP should not be used on any other site without prior research by trained health and safety specialists.

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ATTACHMENTS

- Attachment 1 Injury/Exposure Report and Site Incident Report
- Attachment 2 Daily Tailgate Health and Safety Meeting Form
- Attachment 3 Personnel Training Certificates
- Attachment 4 Waterborne Vessel Safety Plan

ABBREVIATIONS AND ACRONYMS

ACGIH	American Conference of Governmental Industrial Hygienists
BTEX	benzene, toluene, ethylbenzene, and xylenes
CFR	Code of Federal Regulations
CPR	cardiopulmonary resuscitation
CSO	combined sewer overflow
DOSH	Washington State Division of Occupational Safety and Health
Ecology	Washington Department of Ecology
ERP	Emergency Response Plan
ESCBA	escape self-contained breathing apparatus
FID	flame ionization detector
HASP	health and safety plan
HAZWOP	Hazardous Waste Operations
HEPA	high efficiency particulate air
IDLH	immediately dangerous to life and health
LEL	lower explosive limit
LFC	lowest feasible concentration
mg/m ³	milligrams per cubic meter
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MSDS	Material Safety Data Sheet
MTCA	Washington Model Toxics Control Act
NIOSH	National Institute of Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
OVA	organic vapor analyzer
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PEL	permissible exposure limit

PID	photoionization detector
PPE	personal protective equipment
PPL	personal protection level (A, B, C, D)
ppm	parts per million
REL	recommended exposure limit
SCBA	self-contained breathing apparatus
SHSO	site health and safety officer
STEL	short-term exposure limit
SVOC	semi-volatile organic compound
TLV	threshold limit value
TWA	time weighted average
VOC	volatile organic compound
USCG	United States Coast Guard
USEPA	United States Environmental Protection Agency
WAC	Washington Administrative Code
WWTP	wastewater treatment plant

INTRODUCTION

This site-specific health and safety plan applies to field work associated with sites that have either potential or documented release of hazardous substance(s) to the environment. Herrera expects that all employees, for company-approved field work or personal use, will follow safety procedures and regulations set forth in this safety plan.

SAFETY POLICY

Herrera's Safety Policy is that health and safety of the staff is of paramount importance. Activities performed under potentially hazardous conditions shall be acknowledged and planned to mitigate personal injury. Herrera's Safety Policy shall apply during company-approved field work only.

SCOPE OF WORK AND SITE DESCRIPTION

Surface sediment samples will be collected from six stations near the North outfall of the LOTT Clean Water Alliance wastewater treatment plant (WWTP) in Budd Inlet, Olympia, Washington. Sediment samples will be collected using a power grab sampler deployed by an overhead winch on a boat owned and operated by Gravity Consulting. Gravity will provide a boat operator and a sampling equipment deployer. Sediment samples will be collected on 1 day. The major safety concerns are slips, trips, and falls when entering and exiting the boat, boat safety on the water, falling into the water, and overhead equipment and lines.

DETAILED DESCRIPTION OF SPECIFIC TASKS PLANNED

List each separate task in order of progression:

Task No.	Task Description
Task 1.	Sediment grab sampling from boat.

POTENTIAL HAZARDS ASSOCIATED WITH FIELD TASKS

Potential Chemical Hazards

- Total metals, specifically mercury
- Polycyclic aromatic hydrocarbons (PAHs)

Potential Physical Hazards

- Working near the overhead winch (i.e., pinch points and overhead lines)
- Boarding and exiting the boat
- Working in an unstable environment (i.e., near navigational channel with boat traffic)

Potential Biological Hazards

- None

INITIAL SITE ENTRY

- Has this been performed by Herrera?

Yes: ☐ No: ☒

USE OF WATERBORNE VESSELS

- Does field work require use of waterborne vessels, including rafts, canoes, skiffs, or commercial vessels?

Yes: ☒ No: ☐

Waterborne Vessel Safety Plan is provided as Attachment 4.

SEWERS OR OTHER AREAS OF POTENTIALLY CONTAINING EXPLOSIVE GASES OR VAPORS

- Will any field work be done in sewers or other areas containing explosive gas/vapors?

Yes: ☐ No: ☒

HAZARDOUS MATERIALS

- Will any hazardous materials (chemicals) be used on site (including decontamination)?

Yes: ☐ No: ☒

- Will any field work be done on a site with known or suspected release of hazardous materials?

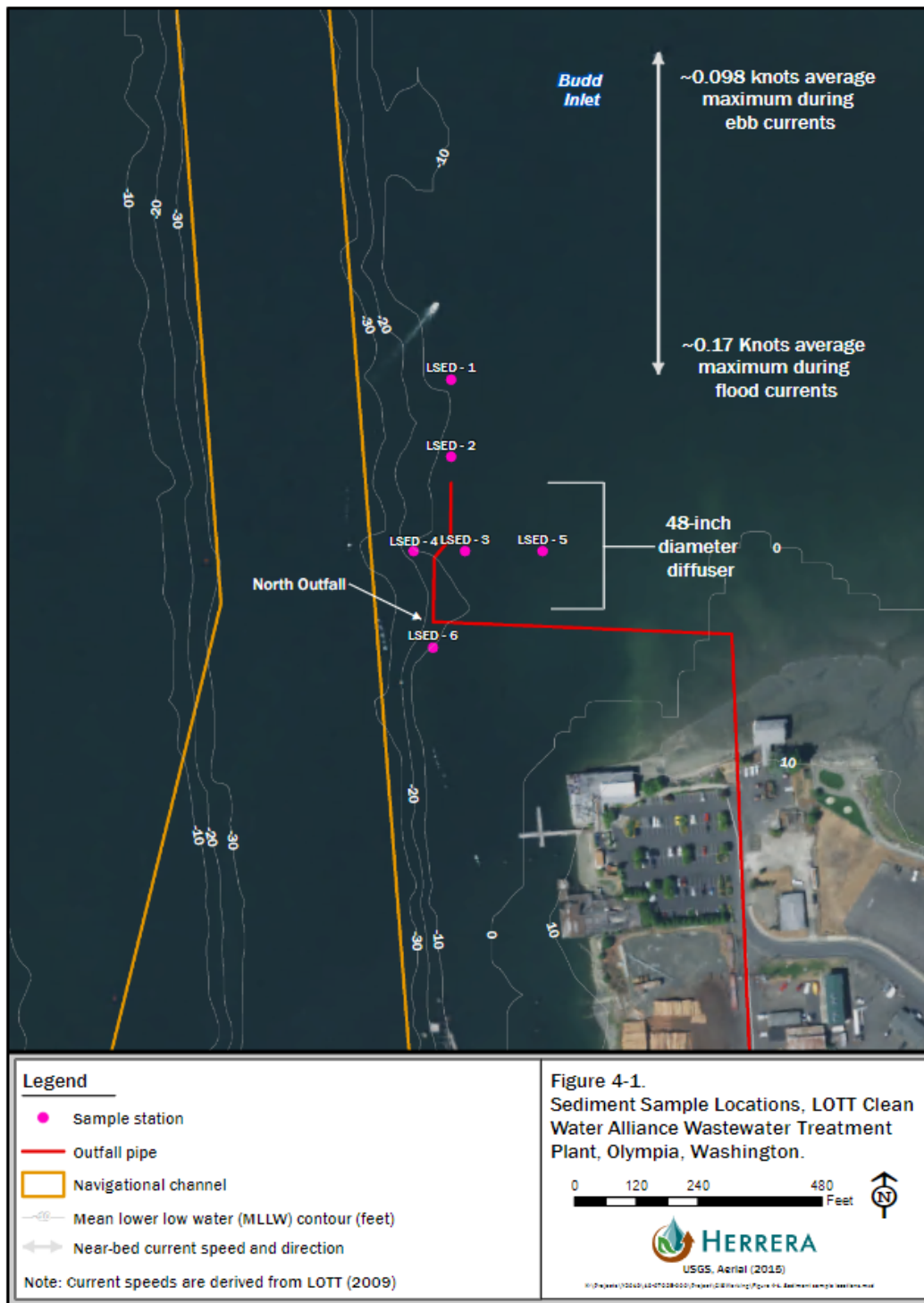
Yes: ☐ No: ☐

SITE STATUS

- Site Status: Occupied?

Yes: ☐ No: ☒

SITE MAP



SITE CONTROL AND SECURITY

- Any site access requirements and special considerations?
Yes: ☐ No: ☒
- Work will be done in daylight hours?
Yes: ☒ No: ☐
- Barricades, fencing, or other equipment to be used to mark the perimeter of the site?
Yes: ☐ No: ☒
- Require work area security (on- and off-hours) to be used?
Yes: ☐ No: ☒

SITE BACKGROUND INFORMATION

The LOTT Clean Water Alliance WWTP is located on Budd Inlet in Olympia, Washington. The facility has been in operation since 1982 and currently has a maximum discharge capacity of 28 MGD in any 30-day period. Treated effluent is discharged to Budd Inlet through a 950-foot-long outfall pipe with a 250-foot diffuser identified as the North outfall.

A total of 10 surface sediment samples were collected in the vicinity of the North outfall in 1996 for SMS parameters. No SMS criteria exceedances were found in the samples collected near the North outfall.

A sediment characterization study was completed for Budd Inlet in 2008. As part of this study, all sediment data available in EIM for Budd Inlet were evaluated for SMS exceedances. No SMS exceedances are present in the immediate vicinity of the North outfall. South of the outfall, COCs that exceed SMS criteria in surface sediments include chlorinated aromatics, metals, polycyclic aromatic hydrocarbons (PAHs), miscellaneous extractables, phenol, and phthalates. In the area north of the outfall, miscellaneous extractables were the only SMS COC to exceed criteria.

In 2013, three surface sediment samples were collected in the vicinity of the North outfall as part of a sediment investigation at the Port of Olympia Budd Inlet Sediment site. Two of the samples were analyzed for PAHs; and the third sample was analyzed for SMS marine COCs, including metals, SVOC, and PCBs. Mercury was the only parameter that exceeded SMS criteria.

LOCAL EMERGENCY AND PROJECT TELEPHONE NUMBERS

SITE ADDRESS AND PHONE NUMBER

Site Address: 611 Columbia Street Southwest, Olympia, Washington
(Fiddlehead Marina)

Site Phone Number: N/A

LOCAL EMERGENCY PHONE NUMBERS

Agency	Name	Telephone No. ^a
Hospital	Capital Medical Center	360-754-5858
Ambulance	Thurston County Medic One	911
Police/Sheriff	City of Olympia Police	360-704-2740
Fire	Olympia Fire Department	911
Coast Guard	24 Hour Emergency Response	206-217-6001

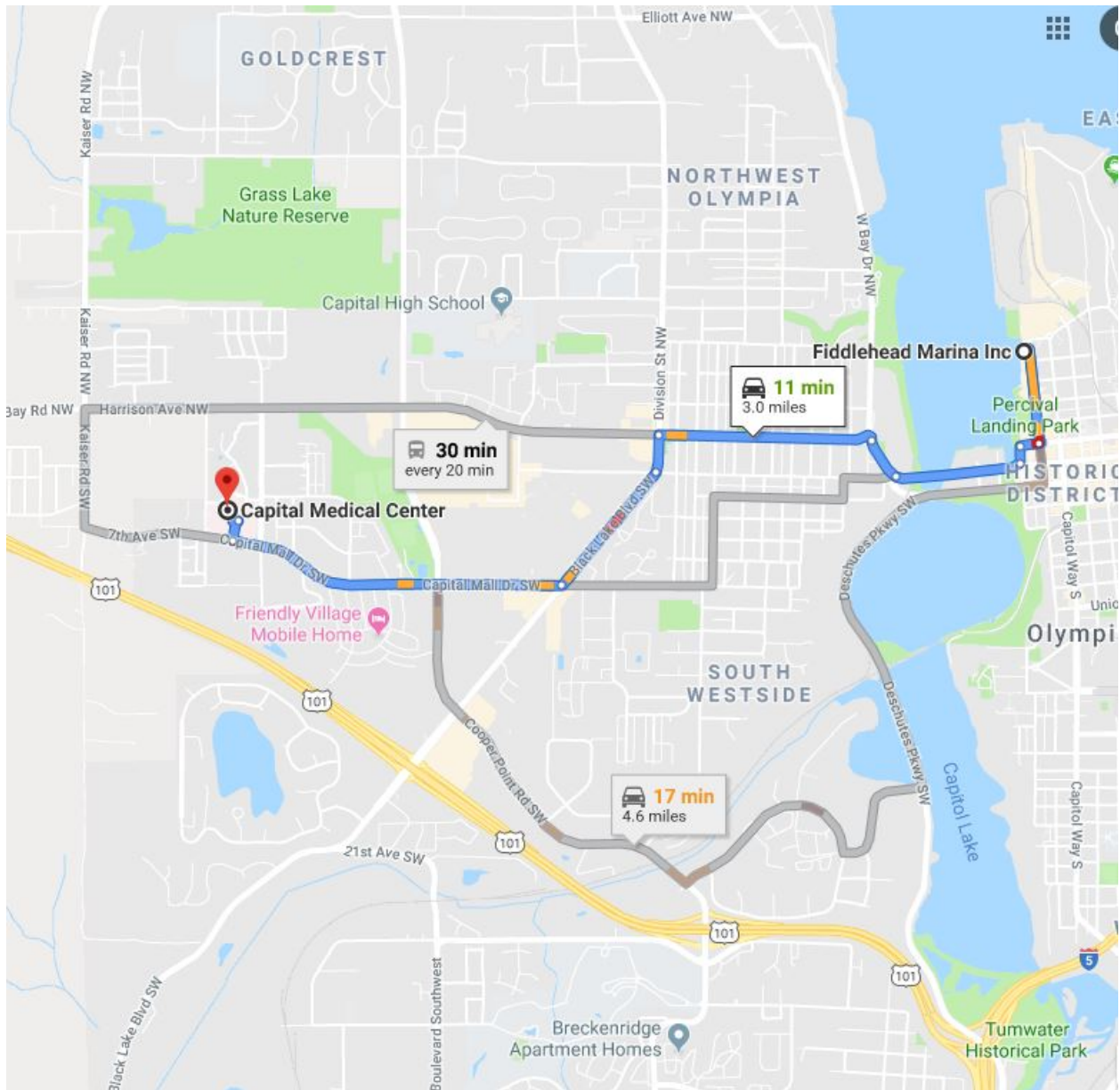
^a Include phone numbers other than "911."

PROJECT PERSONNEL PHONE NUMBERS

Role	Name	Telephone No.
Site Health and Safety Officer and Project Manager	Gina Catarra	206-787-8223 work; 206-679-9794 cell
Principal-in-Charge and Corporate Health and Safety Officer	Rob Zisette	206-787-8262 work; 206-930-6585 cell

HOSPITAL LOCATION AND ROUTE MAP

Post this page.



EMERGENCY ROUTES

Prior to field work, conduct a drive-by from the work area to the hospital to check for any obstacles (i.e., road closure due to construction, etc.) and change the emergency route(s) to the hospital accordingly.

Hospital Name: Capital Medical Center

Hospital Address: 3900 Capital Mall Drive Southwest, Olympia, Washington 98502

Hospital Phone Number: 360-754-5858

Refer to the previous page for the Hospital Location and Route Map. The route from the onsite work area to the hospital is:

- Dock at the Fiddlehead Marina
- Turn right from parking area onto Columbia Street Northwest
- Follow Columbia Street Northwest to State Avenue Northwest, turn right
- Turn right onto Fourth Avenue West
- At the roundabout, take first exit onto Olympic Way
- At the roundabout, take second exit onto Harrison Avenue Northwest
- Turn left at Division Street Northwest
- Continue straight onto Black Lake Boulevard Southwest
- Turn right onto Capital Mall Drive Southwest
- Turn right into Capital Medical Center, follow signs to Emergency Room at north end of hospital campus

EMERGENCY RESPONSE PLAN

INJURY OR EXPOSURE

If an injury or exposure occurs, take the following actions:

- Get first aid for the person immediately.
- Notify the Site Health and Safety Officer (SHSO). The SHSO is responsible for immediately notifying the Project Manager, and preparing and submitting an Injury/Exposure Report (Attachment 1) to the Corporate Health and Safety Officer within 24 hours, as well as notifying the employee's supervisor and Principal-in-Charge. If a subcontractor employee is injured, the Subcontractor Field Supervisor will also complete their own injury/exposure investigation and submit a copy of their report to the Corporate Health and Safety Officer as well.
- The SHSO will assume charge during a medical emergency.

SITE INCIDENT

If an incident (e.g., theft, car accident, property damage) occurs, take the following action:

- Notify the SHSO immediately. The SHSO is responsible for immediately notifying the Project Manager, and preparing and submitting a Site Incident Report (Attachment 1) to the Corporate Health and Safety Officer within 24 hours.

GENERAL SITE REQUIREMENTS AND BACKGROUND INFORMATION

HEALTH AND SAFETY PLAN ORGANIZATION AND RESPONSIBILITIES

Key Personnel

Herrera Principal-in-Charge:	Rob Zisette
Corporate Health and Safety Officer:	Rob Zisette
Herrera Project Manager:	Gina Catarra
Herrera Site Health and Safety Officer:	Gina Catarra
Herrera Field Personnel:	
Field Lead	Gina Catarra
Field Support	Nina Mass

Principal-in-Charge

The Principal-in-Charge provides a point of contact if the Project Manager cannot be accessed during emergency situations.

Project Manager

The Project Manager provides technical support to the Site Health and Safety Officer (SHSO) for health and safety decision-making. Prior to beginning onsite work, the Project Manager will ensure that employee training and medical clearance is current and up-to-date, and that site-specific safety and health concerns including, but not limited to, traffic control, boat safety issues, diving issues, have been addressed prior to field work. It is the responsibility of the Project Manager or designate to take all reasonable steps to ensure that:

- Employee training is current and up-to-date
- Each participant is informed of the known risks and physical requirements

- Each participant is shown where remote communication devices are kept (e.g., satellite phone, mobile cell phone, radios)
- Each participant has read this HASP
- Has determined what safety clothing and equipment is appropriate for this project
- All company and personal equipment taken into the field is thoroughly checked for safety and in good working condition by a qualified person before it is used
- Each participant is instructed in field safety, wearing of safety clothing (e.g., chemical resistant PPE, high-visibility reflective clothing, etc.), and safe use of equipment
- Site-specific health and safety concerns (including but not limited to: known or suspected chemical hazards, etc.) have been addressed prior to field work

Site Health and Safety Officer

The Site Health and Safety Officer (SHSO) shall be responsible for coordinating emergency response measures during this project. All workers shall report to the SHSO in the event of an emergency. Within 24 hours of the end of fieldwork, the SHSO will submit the completed (signed) HASP to the Corporate Health and Safety Officer.

The SHSO will oversee the overall Plan. He/she has the authority to stop work or prohibit any personnel from working on the site at any time for not complying with any aspect of the Plan.

Field Lead

Depending on the activity (i.e., installation, monitoring, sampling, demobilization), one member of the field team will be designated as Field Lead for each field task. The Field Lead is responsible for preventing unauthorized entry onto the site, ensuring all appropriate equipment is available and ready for use, and knowing who is on site at all times.

All Onsite Personnel

Each person on the site has responsibility for their own health and safety, as well as assisting others in carrying out the Plan. Any person observed to be in violation of the Plan should be assisted in complying with the Plan, or reported to the Project Manager, the SHSO, or the Subcontractor Field Supervisor.

Any site personnel may shut down field activities if there is a real or perceived immediate danger to life or health.

MINIMUM TRAINING, IMMUNIZATION, AND MEDICAL SURVEILLANCE REQUIREMENTS FOR SITE PERSONNEL

Training

All field workers have received health and safety training required by OSHA (29 CFR 1910.120) and Washington State Division of Occupational Safety and Health (DOSH) (Chapter 296-843-200 WAC), including some or all of the following:

- 40 hours Hazardous Waste Operations training (HAZWOP)
- 8 hours Annual HAZWOP Refresher training
- First Aid and CPR training
- Annual Respirator Fit Testing
- Hazard Communication Training Related to Biological Hazards in Sewer Work
- Confined Space Entry Training
- Annual Medical Clearance

Copies of personnel training certifications are presented in Attachment 3 of this HASP.

Medical Surveillance

The Herrera medical surveillance program is described in the corporate health and safety plan. In summary, all Herrera employees potentially exposed to hazardous substances or health hazards for 30 days or more a year will participate in the program. The medical surveillance program includes a determination of fitness for each individual to work in hazardous environments, including use of various levels of personal protective equipment. Medical examinations are conducted on a regular basis (usually annually) and each person's condition reviewed at that time. The Corporate Health and Safety Officer maintains medical records in a designated file and are available for review by each affected employee.

Immunizations

In accordance with recommendations provided by the U. S. Centers for Disease Control (CDC) regarding immunizations for sewage workers, Tetanus/Diphtheria (Td) immunizations shall be administered to all field personnel prior to field work potentially associated with sewage.

GENERAL FIELD SAFETY

The SHSO is responsible for establishing and coordinating procedures for evacuation of all onsite personnel, including non-Herrera personnel, prior to commencement of work. This plan will be reviewed at the site safety meeting conducted at the beginning of the first day of work (and at subsequent site safety meetings as warranted by changing conditions and addition of new site workers). A Daily Tailgate Health and Safety Meeting Form is to be completed and signed by all personnel who attended the site safety meetings (see Attachment 2).

In the event of a potential emergency, as determined by any onsite worker, the SHSO will be notified and all site personnel assembled at an area designated during the site safety meeting. The Project Manager, with the aid of the SHSO and other site workers, will decide the appropriate response depending onsite conditions.

GENERAL FIELD SAFETY REQUIREMENTS

- Prior to working on site, a general inspection of hazards will be made by the SHSO. SHSO is responsible for preventing unauthorized entry onto the site and for knowing who is on site at all times.
- If an onsite command post is necessary, ensure that it is located upwind from source areas, given prevailing winds, and identify on the Site Map (page 5).
- Onsite field personnel must have a communication device (i.e., cell phone, satellite phone) capable of connecting to an emergency contact (i.e., Herrera office, local emergency service).
- Designate at least one vehicle for emergency use.
- High-visibility reflective safety vests, shirt, or jacket that is fluorescent yellow-green, orange-red, or red in color; steel-toed boots; and hard hats will be worn on construction sites, around heavy equipment, when working in or around traffic, or during hours of darkness.

WORK LIMITATIONS AND RESTRICTIONS

- No eating or drinking is allowed in the work area.
- No smoking or lighting of matches or lighters is allowed in the work area.
- No rings, watches, bracelets, necklaces, or other jewelry that could trap chemical or biological contamination, or get caught in moving equipment.
- Employees will use the “buddy system,” which requires at least two people, at all times in working in Level C PPE, working around heavy equipment, or working on a boat.

HAZARD IDENTIFICATION

Hazards may exist in a number of forms on the site and shall be classified among three general categories: chemical, physical, and biological. The following list is meant to convey the general hazard classes that may be encountered on the site.

Chemical Hazards		Physical Hazards		Biological Hazards	
	Asbestos	X	Climatic Hazards		Coliform Bacteria
	Flammable Liquids/Gases	X	Heavy Equipment Operations		CSO Effluent, Untreated Sewage, WWTP Sludges
X	Metals		Drilling Rigs		Hospital Waste
	PCBs		Heavy Lifting		Stinging/Poisonous Insects
	Pesticides/Herbicides	X	Falling Hazards		Bacterial/Viral Agents
	Petroleum Hydrocarbons		Confined Space Entry		Rodents/Vermin
	Volatiles		Electrical Hazards		Large Predatory Animals
X	Semi-Volatiles		Explosives		Poisonous Snakes
	Toxic Liquids/Gases		Radioactive Isotopes		
	Dioxins/Furans		Traffic Hazards		
	Oxygen Deficiency	X	Water Hazards		
	Decontamination chemicals				

POTENTIAL CHEMICAL HAZARDS

Chemical hazards will be evaluated both by visual examination of site conditions, as well as by use of monitoring equipment. Visual indications of potential chemical hazards include evidence of dead or dying vegetation, dead animals, discolored vegetation or soil, sheens on water, nonaqueous liquids, etc. Monitoring equipment to be used at this site is discussed in under General Procedures for Air Monitoring section of this health and safety plan.

Regulatory Action Levels

The following tables provide information regarding the relative toxicity of chemicals that may be found at the site based on established state or federal cleanup levels.

Petroleum Products			Volatiles		
Chemical	Matrix	Regulatory Action Level	Chemical	Matrix	Regulatory Action Level

Semi-Volatiles			Metals		
Chemical	Matrix	Regulatory Action Level	Chemical	Matrix	Regulatory Action Level
LPAHs	Sediment	370 mg/kg OC	Mercury	Sediment	0.41 mg/kg
HPAHs	Sediment	960 mg/kg OC			

Pesticides/PCBs			Other		
Chemical	Matrix	Regulatory Action Level	Chemical	Matrix	Regulatory Action Level

References: Sediment Management Standards (WAC 173-204)

Exposure Pathways and Permissible Exposure Limits (PELs)

The following is a list of potential exposure pathways, and the PELs and TWAs for chemical and biological hazards that may be encountered on the site. The potential exposure pathways are not limited to those listed. Acute systems of exposure along with odor thresholds and descriptions are given when that information is known. Odor thresholds are not exact and vary with susceptibility or sensitivity involved.

Predominant Potential Site Chemical Hazards

Chemical (or Class)	Exposure Limits (TWA)			Other Pertinent Limits	Warning Properties/ Description	Routes of Exposure Or Irritation	Acute Health Effects	Chronic Health Effects/Target Organs
	OSHA PEL	NIOSH REL	STEL					
Coal tar pitch volatiles (creosote and coal tar); PAHs Acenaphthene Dibenzofuran Fluorene Phenanthrene Anthracene Pyrene Benzo(a)anthracene Chrysene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	0.2 mg/m ³	0.1 mg/m ³ Carcinogenic		IDLH = 80 mg/m ³ Carcinogenic	Black or dark brown oil/tar, mothball-like odor	Inhalation, absorption, skin and/or eye contact	Irritated eyes, skin, and respiratory system; dermatitis, bronchitis	Carcinogen A1 – Respiratory system, skin, bladder, kidneys (lung, kidney, and skin cancer) (potential occupational carcinogen)
Mercury		Vapor = 0.05 mg/m ³ [skin]		IDLH = 10 mg/m ³ CEILING (OSHA & NIOSH) = 0.1 mg/m ³ [skin]	Silver, white heavy odorless liquid as pure substance; in tailings not distinguishable	Inhalation, absorption ingestion, skin and/or eye contact	Irritated eyes, skin; cough , chest pain, breathing difficulty, bronchitis pneumonitis, tremors, insomnia, headache, irritability, indecision, weakness, exhaustion, salivation, gastrointestinal disturbances, anorexia, weight loss	Eyes, skin, respiratory system, central nervous system, kidneys

PEL-TWA = Permissible Exposure Limit-Time Weighted Average (8 hours).
REL-TWA = Recommended exposure limit – time weighted average.
TLV-TWA = Threshold Limit Value-Time Weighted Average (8 hours).
STEL = Short Term Exposure Limit (15 minutes).
IDLH = Immediately Dangerous to Life or Health.
LFC = Lowest feasible concentration (no-effect exposure)
CEILING = Ceiling Limit (not to be exceeded, even instantaneously).
References: ACGIH Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices. 93-94.
NIOSH Pocket Guide to Chemical Hazards, US Department of Health and Human Services, September 2005.
NIOSH Safety and Health Topic: Focus on Coal Mining – Safety Hazards, Health Hazards, and Mine Rescue, 2006.

Carcinogenicity Status (ACGIH)
A1 – Confirmed human carcinogen
A2 – Suspected human carcinogen
A3 – Animal carcinogen
A4 – Not classified as a human carcinogen

Note: No air monitoring will be conducted during field work, since no VOCs are expected and samples will be saturated.

POTENTIAL PHYSICAL HAZARDS

"X" If Applicable	Hazards	Hazard Control Measures
X	Motor Vehicle Driving	<ul style="list-style-type: none"> • Drive defensively. • If you need to place or receive a phone call, pull off the road to a safe location and stop the vehicle before using your cell phone. Allow voicemail to handle your calls. • Be aware of weather and road conditions when driving (i.e., heavy rain, snow; large puddles in roadway, black ice). • Driver and passengers must wear seatbelts.
X	Weather Extremes	<ul style="list-style-type: none"> • Establish site-specific contingencies for severe weather situations. • Provide for frequent weather broadcasts. • Weatherize safety gear, as necessary (e.g., ensure eye wash units do not freeze, etc.) • Identify special PPE needs. • Discontinue work during severe weather.
X	Heat Stress	<ul style="list-style-type: none"> • Provide cool break area and adequate breaks. • Provide cool non-caffeinated beverages. • Promote heat stress awareness. • Use active cooling devices (e.g., cooling vests) where specified.
X	Sunburn	<ul style="list-style-type: none"> • Apply sunscreen. • Wear hats/caps and long-sleeve shirts.
X	Cold Exposure	<ul style="list-style-type: none"> • Provide warm break area and adequate breaks. • Provide warm non-caffeinated beverages. • Promote cold stress awareness.
	Overhead Utilities (describe): _____	<ul style="list-style-type: none"> • Identify/locate existing overhead utilities prior to work. • Ensure that overhead utility lines are at least 15 feet away from project activities. • Contact utility companies to confirm locations, as necessary.
	Underground Utilities (describe): _____	<ul style="list-style-type: none"> • Identify/locate and mark existing underground utilities prior to work. • Ensure that underground utility lines are at least 5 feet away from project activities. • Contact utility companies to confirm locations, as necessary.
X	Heavy Equipment Operation	<ul style="list-style-type: none"> • Define equipment routes, traffic patterns, and site-specific safety measures. • Maintain line of sight between equipment operators and ground personnel and that both are informed of proper hand signals and communication protocols prior to field operations. • Ensure that lifting capacities, load limits, etc., are not exceeded. • Ensure that field personnel do not work in close proximity to operating equipment.
	Drilling (i.e., hollow-stem auger, push probe, etc.)	<ul style="list-style-type: none"> • Identify/locate underground utilities prior to drilling activities. • Wear hard hat, steel-toe boots, and noise protection. • Maintain line of sight between drillers and field personnel.

"X" If Applicable	Hazards	Hazard Control Measures
	Excavation/Trenching	<ul style="list-style-type: none"> • Ensure that any required sloping or shoring systems are approved as per 29 CFR 1926 Subpart P. • Identify/locate underground utilities prior to excavation/trenching activities. • Identify special PPE and monitoring needs if personnel are required to enter approved excavated areas or trenches. • Maintain line of sight between equipment operators and personnel in excavations/trenches. • Suspend or shut down operations at signs of cave in, excessive water, defective shoring, changing weather, or unacceptable monitoring results.
X	Noise	<ul style="list-style-type: none"> • Establish noise level standards for onsite equipment and operations. • Inform personnel of hearing protection requirements. • Define site-specific requirements for noise monitoring.
X	Compressed Gas Cylinders	<ul style="list-style-type: none"> • Use caution when moving or storing cylinders. • A cylinder is a projectile hazard if it is damaged or its neck is broken. • Store cylinders upright and secure them with chains or other means.
	Heights (scaffolding, ladders, etc.)	<ul style="list-style-type: none"> • Personal fall arrest system (i.e., full body harness, lanyards, anchor, etc.) is required by personnel when using powered elevated platforms. • Discontinue work during severe weather (windy conditions more than 40 miles per hour). • Identify special safety equipment needs (e.g., guardrails, safety nets, etc.). • Eliminate impalement hazards below the work area. • Use the buddy system, with one of the personnel serves as a safety monitor or "spotter," give verbal warning to personnel in elevated work area of possible fall hazards. • Other: _____
X	Slips, Trips, Falls	<ul style="list-style-type: none"> • Be aware of obstacles, such as cords, tools, and other equipment that may be present on the ground in the work area. • Identify and mark areas that are potentially slippery (e.g., wet or oily surfaces) with spray paint or flagging and walk around them. • Use handholds. • Wear boots with good traction. • Other: _____
	Holes, Ditches, Excavations	<ul style="list-style-type: none"> • Mark off the edge of holes, ditches, or excavations with barricades or flagging. • Field personnel shall remain several feet back from the edge of the excavation. • Provide for possible emergency egress (e.g., ladder, full body harness, tripod) if entering holes, ditches, or excavations is required. • Use appropriate safety gear (e.g., lanyard) to minimize the potential of falling into holes, ditches, or excavations, if needed.
	Steep Grades	<ul style="list-style-type: none"> • Mark off the edge of the ravine with barricades or flagging.

"X" If Applicable	Hazards	Hazard Control Measures
	Confined Space	<ul style="list-style-type: none"> • Ensure compliance with 29 CFR 1910.146. • Complete a confined space entry form. • Attach permit for confined space entry.
	Oxygen Deficiency	<ul style="list-style-type: none"> • Monitor oxygen level in work zone. • Do not enter area if oxygen level is less than 19.5 percent. • Use SCBA if area has less than 19.5 percent oxygen.
	Electrical	<ul style="list-style-type: none"> • Locate and mark energized lines. • De-energize lines as necessary. • Ground all electrical circuits. • Guard or isolate temporary wiring to prevent accidental contact. • Evaluate potential areas of high moisture or standing water and define special electrical needs.
	Fire/Explosion	<ul style="list-style-type: none"> • Inform personnel of the locations(s) of potential fire/explosion hazards. • Establish site-specific procedures for working and handling around flammables. • Ensure that appropriate fire suppression equipment and systems are available and in good working order. • Do not drive or park vehicles on dry vegetation during the dry season (April through October). • Define requirements for intrinsically safe equipment. • Identify special monitoring needs. • Remove ignition sources from flammable atmospheres. • Coordinate with local fire-fighting groups regarding potential fire/explosion conditions. • Establish contingency plans and review daily with team members.
	Traffic Hazards	<ul style="list-style-type: none"> • Establish a traffic control plan; contact local agencies for permits. • Wear bright orange reflective vests, hard hats, and steel-toed boots when working within or alongside traffic. • Barricade off work area and provide traffic signs as necessary, to direct traffic away from work area.
X	Water Hazards (boats)	<ul style="list-style-type: none"> • Establish a Float Plan and conduct a Boater's Pre-Departure Checklist (Attachment 4) prior to departure. • Wear an USCG-approved PFD at all times in boats less than 16 feet long. • Take extra care entering and exiting boats. • Be aware of adjacent boat traffic.
	Water Hazards (streams)	<ul style="list-style-type: none"> • Wear an USCG-approved PFD if wading in deep water. • Buddy system when working in streams. • Wear boots or waders with good traction when wading instream. • Maintain voice or visual contact with each team member. • Each team member carries an audible alarm device.
	Other: _____	<ul style="list-style-type: none"> • _____

Heat and Cold Stress

The SHSO will monitor weather broadcasts before the start of outdoor work each day, and more frequently as necessary. No work will be done outdoors during hazardous weather conditions (e.g., lightning storms).

For Heat Stress

- For temperatures above 75°F, each person will take their pulse at rest. At breaks, the pulse should be less than 110 beats per minute after 1 minute. Before returning to work, the pulse should be no more than 10 beats greater than the resting pulse.
- If the air temperature is greater than 89°F, work should be done for 30 minutes with a rest break of 10 minutes for Level 'D'. For Level 'C', work should be done for 20 minutes, with a rest break of 10 minutes. At least 8 ounces (1 cup) of non-caffeinated drinks, such as cool potable water, Gatorade-type drink, or dilute fruit juice should be consumed at each rest break or at least 1 cup every 20 minutes. At least 1 quart of cool liquids per employee per 1 hour is to be readily accessible at all times.
- Work should stop if any of the following symptoms occur: muscle spasm and/or pain in the limbs or abdomen (heat cramps); weak pulse, heavy sweating, dizziness, and/or fatigue (heat exhaustion); or rapid pulse, no sweating, nausea, dizziness, and/or confusion (heat stroke). Provide first aid immediately.
- Use sunscreen on unprotected skin to protect against ultraviolet exposure as necessary.

For Cold Stress

- For temperatures below 40°F, adequate insulating clothing must be worn. If the temperature is below 20°F, workers will be allowed to enter a heated shelter at regular intervals. Warm sweet drinks should be available. Coffee intake should be limited.
- No one should begin work or return to work from a heated shelter with wet clothes. Workers should be aware of signs of cold stress such as heavy shivering, pain in the fingers or toes, drowsiness, or irritability. Onsets of any of these signs are indications for immediate return to a heated shelter.

Noise

A noise hazard exists when working in the immediate vicinity of backhoe, drill rig, and other heavy machinery operations, as well as along busy roads and highways. In addition to the potential for hearing damage, noise may interfere with critical communication and recognition of other potential hazards at the work site, such as moving vehicles. To minimize potential injuries, field employees will utilize hearing protection devices, (ear plugs, headphones), as necessary, and maintain a high level of alertness at all times.

POTENTIAL BIOLOGICAL HAZARDS

Biological Hazard	Matrix
None	

PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

LEVEL OF PROTECTION

- **Level B:** Self-contained breathing apparatus (SCBA) or supplied-air respirator with an escape bottle, chemically resistant suit.
- **Level C:** Full-face air-purifying respirator, chemically resistant PPE.
- **Level D:** No respiratory protection. Safety glasses, hard hat, steel-toe boots, long-sleeved shirt and pants. Hearing protection, gloves, and other PPE as required.

To protect workers from potential contaminants in sample media, protective clothing will be worn during sampling activities, including Tyvek coveralls, protective eyewear, and chemical resistant boots and gloves. Protective clothing will be discarded or decontaminated between uses.

The following levels of protection (LOPs) have been selected for each work task based on an evaluation of the potential or known hazards, the routes of potential hazard, and performance specifications of the PPE. Onsite monitoring results and other information obtained from onsite activities will be used to modify LOPs and PPE as necessary to ensure sufficient personnel protection.

Work Task Number	D	C	B	Modifications Allowed
1	X			

Note: Use "X" for initial levels of protection. Use "(X)" to indicate LOPs that may be used as site conditions warrant.

PERSONAL PROTECTIVE EQUIPMENT

All personnel who perform work on site will be minimally required to meet the protective clothing and safety equipment requirements for Level D (minimum required PPE for Level D in the following table is marked by an "*"). Level D status will apply to fieldwork on the site unless the trigger mechanism(s) to Level C or B are activated. The SHSO must notify the Corporate Health and Safety Officer prior to work if Level "C" or "B" will be used.

PPE	Task 1
*Safety glasses/goggles	X
*Cotton coveralls/long-sleeved shirt and pants	X
*Hard hat (required at all construction sites)	X
*Steel-toed safety boots (as per ANSI Z41)	X
*Work gloves	X
Neoprene safety boots (as per ANSI Z41)	
Solvex or nitrile gloves (for sample handling)	
Ear plugs/muffs	
Reflective safety vest	
Insulated coveralls	
Chemical resistant suit: <input type="checkbox"/> Tyvek <input type="checkbox"/> Saranex <input checked="" type="checkbox"/> Other: PVC / Rain Suit	X
Chemical resistant boots or boot covers	
Inner gloves: <input type="checkbox"/> Cotton <input type="checkbox"/> Nitrile <input type="checkbox"/> Other:	
Outer gloves: <input checked="" type="checkbox"/> Nitrile <input type="checkbox"/> Neoprene <input type="checkbox"/> Rubber <input type="checkbox"/> Other:	X
Full-face air-purifying respirator (APR)	
Cartridges: <input type="checkbox"/> Organic vapors <input type="checkbox"/> P100 (99.97% filter efficiency for particulates) <input type="checkbox"/> GMA-P100 (organic vapors and particulates) <input type="checkbox"/> GMB-P100 (acid gases and particulates) <input type="checkbox"/> GMC-P100 (organic vapors, acid gases, particulates) <input type="checkbox"/> GME-P100 (multiple gases and particulates) <input type="checkbox"/> Other:	
Powered APR	
Positive-pressure, full-face SCBA	
Spare air tanks (Grade D air)	
Positive-pressure, full-face, supplied-air system	
Cascade system (Grade D air)	
Manifold system	
10-minute Escape self-contained breathing apparatus (ESCBA)	

* Represents minimum required PPE for Level D work (i.e., work on hazardous waste sites, construction sites, around heavy equipment, in or around traffic, or other physical hazardous conditions).

SAFETY EQUIPMENT

The safety equipment in the following table that is marked by an “*” shall be maintained on site at all times. Use an “X” to indicate safety equipment needed for each work task.

PPE	Work Task Number
	Task 1
*First-aid kit	X
*Emergency eye wash	X
*Fire extinguisher (Class A, B, C)	X
Photoionization detector	
Flame ionization detector	
US Coast Guard-certified fire extinguisher	X
Visual distress signal (VDS), (flashlight or orange flag)	X
Tripod/winch/full body harness	
Waterproof flashlight	X
Small backpack first aid kit	
Walkie talkies	

* Represents safety equipment that shall be maintained on site at all times.

DECONTAMINATION

Personnel decontamination is not anticipated during the project, with the exception of nitrile glove disposal (placed in a closed trash receptacle at the end of the day).

SAMPLING EQUIPMENT DECONTAMINATION

Decon Solutions:	Liquinox detergent, distilled water or site water
Decon Method:	<u>Bowls and spoons</u> : Scrub with Liquinox/water solution, rinse with site water <u>Grab sampler</u> : Scrub with Liquinox/water solution, rinse with site water.
Exposure Monitoring:	None
Level of Protection:	D
Location:	In the boat.

WASTE CHARACTERISTICS

WASTE GENERATION

Waste Anticipated:

Yes: ☒ No: ☐

Waste Type	Description	Quantity
Solid		
Liquid		
Sludge		
Incidental	Used disposable gloves, paper towels	1 Trash bag
Other		

PACKAGING REQUIREMENTS FOR WASTE MATERIAL

Open head 55-gallon drum:

Plastic trash bag: **X**

Other:

DISPOSAL AND/OR TREATMENT METHODS PROPOSED

Waste	Disposal and/or Treatment
Incidental waste	Disposed trash bag to the nearest dumpster as solid waste.

EMPLOYEE TRAINING, IMMUNIZATION, AND MEDICAL CLEARANCE

The following is a summary of training, immunization, and/or medical clearance information for personnel who will perform work on the site. Copies of personnel training certificates are presented in Attachment 3.

1. Name: Gina Catarra Title: SHSO, Field Lead Approved PPL: D

Field Responsibilities: _____

Training	Dates (Month/Year)
Current 8-Hour Refresher	6/2018
40-Hour Hazardous Waste	12/2002
Supervisor	
First Aid; CPR	10/2017
Confined Space Entry	
Medical Clearance	
Immunization: Tetanus/Diphtheria	
Other:	

2. Name: Nina Maas Title: Field Support Approved PPL: D

Field Responsibilities: Sediment sampling collection

Training	Dates (Month/Year)
Current 8-Hour Refresher	9/2018
40-Hour Hazardous Waste	
Supervisor	
First Aid; CPR	
Confined Space Entry	
Medical Clearance	
Immunization: Tetanus/Diphtheria	
Other:	

HEALTH AND SAFETY PLAN — ACKNOWLEDGEMENT AND AGREEMENT FORM

The following field personnel have read this health and safety plan and understand the potential and actual hazards present on the site and shall abide by its strictures.

_____ Name	_____ Signature	_____ Company	_____ Date
_____ Name	_____ Signature	_____ Company	_____ Date
_____ Name	_____ Signature	_____ Company	_____ Date
_____ Name	_____ Signature	_____ Company	_____ Date
_____ Name	_____ Signature	_____ Company	_____ Date
_____ Name	_____ Signature	_____ Company	_____ Date
_____ Name	_____ Signature	_____ Company	_____ Date
_____ Name	_____ Signature	_____ Company	_____ Date
_____ Name	_____ Signature	_____ Company	_____ Date

ATTACHMENT 1

Injury/Exposure Report and Site Incident Report

INJURY/EXPOSURE REPORT

(Attach additional documentation as necessary.)

Date of Incident: _____ Case No. _____ Time of Day _____
 Employee Name _____ Date of Birth _____
 Home Address _____ Phone No. _____
 Sex Male _____ Female _____ Age _____ Job Title _____ Social Security No. _____
 Office Location _____ Date of Hire _____
 Where did incident occur? (include address) _____

On employer's premises? Yes _____ No _____ Project Name/No. _____
 What was employee doing when incident occurred? (be specific) _____

How did the incident occur? (describe fully) _____

What steps could be taken to prevent such an incident? _____

Object or substance that directly caused incident? _____

Describe the injury or exposure _____

Part of body affected _____

Name and address of physician _____

If hospitalized, name and address of hospital _____

Loss of one or more days of work? Yes _____ No _____ If yes, date last worked _____

Has employee returned to work? Yes _____ No _____ If yes, date returned _____

Did employee die? Yes _____ No _____ If yes, date _____

Completed by (print) _____ Employee signature _____
 (Supervisor or Site Health & Safety Officer) Date _____

Signature _____ PIC Signature _____

Date _____ Date _____

This report must be completed by the employee's supervisor or Site Health and Safety Officer immediately upon learning of the incident. The completed report must be reviewed and signed by the Principal-in-Charge and transmitted to Corporate Health and Safety Officer within 24 hours of the incident, even if employee is not available to review and sign. Employee or employee's doctor must submit a copy of the doctor's report to Corporate Health and Safety Officer within 24 hours of the initial exam and any subsequent exams. For field injuries, submit a copy of the Health and Safety Plan.

SITE INCIDENT REPORT

(Attach additional documentation as necessary.)

Date of Incident: _____ Time of Incident: _____

Location of Incident: _____

Project Name: _____ Project No.: _____

Type of Incident* (check those that apply):

<input type="checkbox"/> "Near Miss"	<input type="checkbox"/> Vehicle Accident
<input type="checkbox"/> Underground Property Damage	<input type="checkbox"/> Fire
<input type="checkbox"/> Aboveground Property Damage	<input type="checkbox"/> Evacuation
<input type="checkbox"/> Theft	<input type="checkbox"/> Regulatory Agency Inspection or Violation
<input type="checkbox"/> Other (describe) _____	

*Submit copy of Health and Safety Plan and attachments for field-related incidents.

Description of Incident: _____

Cause of Incident: _____

Action Taken: _____

Future Corrective Action: _____

Estimated Amount of Damage: _____

Investigator Name _____ Signature _____ Date _____

Principal-in-Charge _____ Signature _____ Date _____

cc: Site Health and Safety Officer, Corporate Health and Safety Officer, and Human Resources within 24 hours of incident.

ATTACHMENT 2

Daily Tailgate Health and Safety Meeting Form

DAILY TAILGATE SAFETY MEETING FORM – HAZMAT

First Date of Activity: _____ Time: _____ Site Locations: _____

1. ☐ Discussed activities planned for the day
2. ☐ Individual activities are clear to each crew member
3. ☐ Chemical hazards discussed
 - a. ☐ Action levels are known and understood
 - b. ☐ Frequency and procedures for air monitoring are known and understood
4. ☐ Physical hazards discussed

a. <input type="checkbox"/> Heat stress	e. <input type="checkbox"/> Overhead utilities
b. <input type="checkbox"/> Cold stress	f. <input type="checkbox"/> Underground utilities
c. <input type="checkbox"/> Slip, trip, and fall hazards	g. <input type="checkbox"/> Moving and emptying drums
d. <input type="checkbox"/> Drilling operations	h. <input type="checkbox"/> Heavy equipment operations
5. ☐ Personal protective equipment (PPE) discussed
 - a. ☐ Head protection (hard hat)
 - b. ☐ Eye protection (safety glasses must have side shields)
 - c. ☐ Hearing protection (at all times when drill rig/heavy equipment operating, in close proximity to traffic)
 - d. ☐ Foot protection (steel toes and shanks for work boots)
 - e. ☐ Splash (solvent rinse)
 - f. ☐ Gloves
 - i. ☐ Chemical hazard (diluting standards for GC)
 - ii. ☐ Environmental conditions (cold)
 - iii. ☐ Protection against cross-contamination (disposal after each use)
 - iv. ☐ Physical hazard (cut, puncture, and abrasion)
6. ☐ Decontamination procedures discussed

a. <input type="checkbox"/> Drilling equipment	b. <input type="checkbox"/> Sampling equipment
--	--
7. ☐ Emergency procedures discussed
 - a. ☐ Route to hospital from site locations(s) above
 - b. ☐ Evacuation procedures
 - c. ☐ Cellular phone, map to hospital, first aid kit, and eyewash with onsite geologist
8. ☐ Special conditions/procedures

a. <input type="checkbox"/> Escort required	b. <input type="checkbox"/> Locked gates, permits, passes, etc.
---	---
9. ☐ Questions/concerns addressed
10. ☐ Other:

Meeting attended by (sign and date for each day of work on site; **USE BACK IF ADDITIONAL SPACE IS REQUIRED**):

(Print Name)	(Signature)	(Date)
--------------	-------------	--------

Meeting conducted by: _____ (Title) _____

ATTACHMENT 3

Personnel Training Certificates

Certificate of Completion

This is to certify that
Gina S. Catarra
has satisfactorily completed
8 hours of refresher training in
Hazardous Waste Operation and Emergency Response

to comply with the training requirements of
OSHA 29 CFR 1910.120 & WAC 296-843

168207
Certificate Number



Instructor

Jun 21, 2018
Date(s) of Training

Expires in 1 year.

Exam Score: N/A
If appropriate:

ARGUS PACIFIC, INC / 1900 WEST NICKERSON ST, SUITE 315 / SEATTLE, WASHINGTON 98119 / 206.285.3373 / ARGUSPACIFIC.COM

Responsive choking Adult and Child

Perform abdominal thrusts until the foreign object is expelled or the victim becomes unresponsive.

Inresponsive choking Adult/ Child/ Infant

Open airway. Remove the object if you see it. Begin CPR. Each time the airway is open for rescue breaths, look for an object in the victim's throat. If you see it, remove it. Do not blindly sweep your finger through an infant or child's throat.

Responsive Choking Infant

Give 5 blows/slaps between shoulder blades with enough force to expel the object.

Give 5 downward chest thrusts below the nipple line with enough force to expel the object.

Repeat back blows and chest thrusts until the foreign object is expelled or the infant becomes unresponsive.

CPR Training Center, Inc. (206) 621-3560



HAS COMPLETED THE FOLLOWING:

- ☒ Approved First-Aid class including adult 1-person CPR/AED
- ☒ None of the classes below were added to the above class
- ☐ Infant CPR/AED
- ☐ Child CPR/AED
- ☐ HIV/Bloodborne Pathogen Course: valid 1 year Meets WISHA/DSHS Guidelines WAC 296-62-06801 (b) (vii) (A-N) year taken
- ☐ Emergency Oxygen Administration
- ☐ Fire Extinguisher Training

(Knowledge and skill not assessed if crossed out)

CPR Training Center, Inc. (206) 621-3560



Business First Aid Until Help Arrives

Gina Catarra

HAS COMPLETED AN APPROVED FIRST AID CLASS INCLUDING ADULT 1 PERSON CPR/AED & additional courses as noted

Instructor



10-5-19
Expiration Date

Certificate of Completion

This certifies that

Nina Maas

has successfully completed

8 Hour HAZWOPER Refresher Training

Refresher certification does NOT necessarily indicate initial 24 or 40 Hour HAZWOPER certification

In Accordance w/Federal OSHA Regulation 29 CFR 1910.120(e) & (p)

And all State OSHA/EPA Regulations as well including 29 CFR 1926.65 for Construction.

This course (Version 2) is approved for 8 Contact Hours (0.8 CEUs) of continuing education per the California Department of Public Health for Registered Environmental Health Specialist (REHS) (Accreditation # 044).

Jules Griggs

Instructor

1809065207482

Certificate Number

9/6/2018

Issue Date

Julius P. Griggs

Julius P. Griggs
Program Administrator



Rod Zierenberg

Training Director

ONLINE TRAINING
OTS
SYSTEMS

HazMat Student, LLC
2828 Cochran St., Suite 322 Simi Valley, CA 93065
<http://www.hazmatstudent.com>

Scan this code or visit www.otsystems.net/v to verify certificate.

Proof of initial certification and subsequent refresher training is NOT required to take refresher training

This course is distributed by HazMat Student, LLC (<http://www.hazmatstudent.com>)

ATTACHMENT 4

Waterborne Vessel Safety Plan

WATERBORNE VESSEL SAFETY PLAN

This section applies to, but is not limited to, fieldwork requiring use of waterborne watercraft, including rafts, canoes, skiffs, barges, or commercial vessels either owned by or subcontracted by Herrera Environmental Consultants Inc. (Herrera). Vessel safety procedures are specified below. Additional information is provided in the following appendices:

- Appendix A: Float Plan, Pre-Departure, and Standard Checklists
- Appendix B: A Boater's Guide to the Federal Requirements for Recreational Boats and Safety Tips
- Appendix C: Washington Administrative Code (WAC) Boating Statutes
- Appendix D: Thurston County, Regulations and Restrictions on the Use of County Waters

PERSON-IN-CHARGE

Fieldwork that requires use of waterborne vessel(s) will be organized and supervised by a Project Manager (PM) or designate. It is the responsibility of the person-in-charge to take all reasonable steps to ensure that:

- Each participant be informed of the known risks and physical requirements.
- Each participant be shown where the personal floatation devices (PFDs) are stowed.
- Each participant has read this Plan.
- The vessel operator (boat driver) has a Boater Education Card (see <<http://www.boat-ed.com/washington/>>).
- The academic portion of the work is conducted safely.
- It has been determined what safety equipment and clothing is appropriate.
- All company and personal equipment taken into the field is thoroughly checked for safety by a qualified person before it is used.
- Each field trip participant is instructed in safety, the wearing of safety clothing, (e.g., hard hats, safety boots, goggles, etc.), and the safe use of equipment.

BOAT SAFETY AND EQUIPMENT REQUIREMENTS

The following section lists the minimum boat safety and equipment requirements in accordance with the United States Coast Guard (USCG) and Washington State waterborne vessel regulations. Other safety and equipment necessary to minimize accidents and personal injury during fieldwork requiring the use of waterborne vessels will be dictated by the knowledge or experience of the person-in-charge.

A. Float Plan

Before leaving for work in the field, a member of the field crew must fill out a Float Plan (Appendix A) describing when and where the work will take place, what vessels will be taken, and who will be present during the field event. A Float Plan should be filled out for work performed on company-owned and rented boats, as well as when services are subcontracted. A copy of the Float Plan should be left with the Project Manager or designated department office lead in case of an emergency.

B. Boat Safety Equipment

- A qualified person must check all equipment taken for fieldwork before removal from the office, to ensure that it is in good condition, complete, and safe.
- One PFD of proper size that is USCG approved must be kept in an accessible location on board for each person that is present. If the vessel is longer than 16 feet, one additional throwable PFD must be immediately available for use (see Appendix C). In a small boat (fewer than 16 feet in length), such as a raft, canoe, or kayak, PFDs must be worn at all times.
- A battery-operated or electric visual distress signal (VDS), such as a flashlight, must be present if the vessel is 16 feet or longer. A daytime VSD, such as an orange flag 3 feet by 3 feet with a black square above a black dot, must be present if the vessel is 16 feet or longer.
- A USCG-certified fire extinguisher must be present if there is a fire hazard due to the motor or fuel system of the vessel. It must be portable and have a specific marine-type mounting bracket. Look for “Marine Type USCG” on the label.
- If equipment fails during fieldwork, its use must be discontinued and the failure reported to the person-in-charge immediately. This equipment must not be used until satisfactory repairs have been completed.
- The responsibility for ensuring equipment is safe is vested in the person-in-charge.

- The Boater's Pre-Departure Checklist (Appendix A) must be completed prior to vessel departure (copy to be incorporated into the project file). Additional boat safety equipment requirements are provided in Appendix B.

C. Remote or Hazardous Areas

In the case of fieldwork to be performed in remote or hazardous areas, the Person-in-Charge should consider the following items:

- Have at least one participant trained in first aid.
- Have at least one participant trained in CPR.
- Provide a communication link to a central station (at a minimum, whistles provided for each participant).
- Provide large-scale maps of the area providing routes of egress.
- Conduct area-familiarization trips before work has started.
- Have a procedure for contacting the local police, who will organize a search for missing people.
- Leave a copy of the Float Plan at the base camp, plus an overall plan with the Project Manager or designated departmental office lead at the main office.
- For underwater research, evidence that diver(s) hold current and valid license (copies of personnel diving licenses are provided in Attachment 3 of this General Field HASP).
- For those who must be equipped with firearms, ensure that they are trained and hold a proficiency certificate.
- Have field participants be familiar with additional water safety and survival tips provided in Appendix B.

GENERAL VESSEL SAFETY CHECKLIST

It is the responsibility of the boat operator (company employee or subcontractor) to check the vessel prior to departure to ensure that it is in good working condition. Regular maintenance and proper operation of the boat are the best defenses against injury, including carbon monoxide poisoning. The following items apply to power boats and should be checked before departure for each trip:

- Make sure all exhaust clamps are in place and secure.
- Look for exhaust leaking from the exhaust system components evidenced by rust and/or black streaking, water leaks, or corroded or cracked fittings.
- Inspect rubber exhaust hoses for burned or cracked sections. All rubber hoses should be pliable and free of kinks.
- Confirm that cooling water flows from the exhaust outlet when the engines and generator are started.
- Test the operation of each carbon monoxide detector by pressing the test button.

Do not operate the vessel if any of the above problems exists!

The following items apply to power boats and should be checked at least annually:

- Replace exhaust hoses if any evidence of cracking, charring, or deterioration is found.
- Inspect each water pump impeller and inspect the condition of the water pump housing. Replace if worn or cracked (refer to the engine and generator manuals for further information).
- Inspect each of the metallic exhaust components for cracking, rusting, leaking, or looseness. Pay particular attention to the cylinder head, exhaust manifold, and water injection elbow.
- Clean, inspect, and confirm the proper operation of the generator cooling water anti-siphon valve (if equipped).

APPENDIX A

Float Plan, Pre-Departure, and Standard Checklists

LOTT NPDES Outfall Sediment Characterization Float Plan

*Do not file this plan with the Coast Guard.
Contact the Herrera office in case of delayed
return.*

1. Person in Charge

Name _____ Phone _____

2. Description of Boat

Name _____

Registration/
Documentation No. _____ Length _____

Make _____ Type _____

Hull Color _____ Trim
Color _____

Fuel Capacity _____ Engine Type _____ No. of
Engines _____

Distinguishing
Features _____

3. Operator of Boat

Name _____ Phone _____

4. Survival Equipment (check as appropriate)

- | | | |
|---|-------------------------------------|---------------------------------|
| <input type="checkbox"/> # _____ PFDs | <input type="checkbox"/> Flares | <input type="checkbox"/> Mirror |
| <input type="checkbox"/> Smoke Signals | <input type="checkbox"/> Flashlight | <input type="checkbox"/> Food |
| <input type="checkbox"/> Paddles | <input type="checkbox"/> Water | <input type="checkbox"/> Anchor |
| <input type="checkbox"/> Raft or Dinghy | <input type="checkbox"/> EPIRB | |
| <input type="checkbox"/> Others | | |

5. Marine Radio:

☐ Yes ☐ No

Type _____ Freqs. _____

Digital Selective Calling (DSC) ☐ Yes ☐ No

6. Trip Expectations

Depart From _____

Departure Date _____ Time _____

Going To _____

Arrival Date _____ Time _____

If operator has not arrived/returned by:

Date _____ Time _____

Call Rob Zisette at the following
number: _____ 206-930-6585

7. Vehicle Description

License No. _____ Make _____

Model _____ Color _____

Where is Vehicle Parked? _____

8. Persons on Board

Name:

9. Additional Information

General Vessel Safety Checklist

Each Trip:

- Make sure all exhaust clamps are in place and secure.
- Look for exhaust leaking from the exhaust system components evidenced by rust and/or black streaking, water leaks, or corroded or cracked fittings.
- Inspect rubber exhaust hoses for burned or cracked sections. All rubber hoses should be pliable and free of kinks.
- Confirm that cooling water flows from the exhaust outlet when the engines and generator are started.
- Test the operation of each carbon monoxide detector by pressing the test button.

Do not operate the vessel if any of these problems exist!

At Least Annually:

- Replace exhaust hoses if any evidence of cracking, charring, or deterioration is found.
- Inspect each water pump impeller and inspect the condition of the water pump housing. Replace if worn or cracked (refer to the engine and generator manuals for further information).
- Inspect each of the metallic exhaust components for cracking, rusting, leaking, or looseness. Pay particular attention to the cylinder head, exhaust manifold, and water injection elbow.
- Clean, inspect, and confirm the proper operation of the generator cooling water anti-siphon valve (if equipped).

Regular maintenance and proper operation of the boat are the best defenses against injury from carbon monoxide. To find out more information about how you can prevent carbon monoxide poisoning on recreational boats, contact:

U.S. Coast Guard Infoline
1-800-368-5647
<www.uscgboating.org>

National Marine Manufacturer's Association
312-946-6200
<www.nmma-medialink.com>

Boater's Pre-Departure Checklist

Know your vessel. Before departure, always be sure your vessel is in good working condition and properly equipped for emergencies. Avoid inconvenience and potential danger by taking a few minutes to check the following:

Minimum Federal Required Equipment	Yes	No
State Registration Documentation		
State Numbering Displayed		
Certificate of Documentation		
Lifejackets (PFDs) – one for each person		
Throwable PFD		
Visual Distress Signals		
Fire Extinguishers (fully charged)		
Proper Ventilation		
Backfire Flame Arrestor		
Sound Producing Device(s)		
Navigation Lights		
Oil Pollution Placard		
Garbage Placard		
Marine Sanitation Device		
Navigation Rules		
Any Additional State Requirements		

Besides meeting the federal requirements, prudent boaters carry additional safety equipment. The following additional items are suggested depending on the size, location, and use of your boat:

Recommended Equipment	Yes	No	N/A
VHF Marine Radio			
Anchor and Tackle			
Chart(s) of Area and Navigation Tools			
Magnetic Compass			
Fenders and Boat Hook			
Mooring Lines and Heaving Line			
Manual Bilge Pump or Bailing Device			
Tool Kit			
Spare Parts (fuses, spark plugs, belts, etc.)			
Spare Battery (fully charged)			

Recommended Equipment (continued)	Yes	No	N/A
Spare Propeller			
Extra Fuel and Oil			
Alternate Propulsion (paddles/oar)			
Flashlight and Batteries			
Search Light			
First Aid Kit			
Sunscreen (SPF 30+)			
Mirror			
Food and Water			
Extra Clothing			
AM/FM Radio			
Cellular Phone			
Binoculars			

Safety Checks and Tests	Yes	No	N/A
Test Marine Radio (voice call)			
Test Navigation and Anchor Lights			
Test Steering (free movement)			
Test Tilt/Trim			
Test Bilge Pump			
Check for Any Excessive Water in Bilges			
Check Fuel System for Any Leaks			
Check Engine Fluids			
Ensure Boat Plug is Properly Installed			
Check Electrical System			
Check Galley/Heating Systems			
Check Gauges (i.e., batteries)			
Check Fuel Amount			
Ensure Anchor is Ready for Use			
Check Load of Vessel and Secure Gear from Shifting			
Ensure Passengers Know Emergency Procedures and Equipment Location			
Everyone Put on a Lifejacket to Check for Proper Fitting			
Check the Weather Forecast			
File a Float Plan at Herrera Office			

APPENDIX B

A Boater's Guide to the Federal Requirements for Recreational Boats and Safety Tips

A BOATER'S GUIDE TO THE FEDERAL REQUIREMENTS FOR RECREATIONAL BOATS AND SAFETY TIPS



New in this Edition:

- Navigation Locks
- Trailer Safety
- Digital Selective Calling
- Rescue 21
- Naval Vessel Protection Zones
- America's Waterway Watch



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WELCOME

As a boat operator, you are expected to make sure that your vessel carries the required safety equipment (carriage requirement) and is in compliance with federal and state regulations for such things as numbering and operation. A Quick Reference Chart on page 42 will help you determine the minimum federal safety equipment requirements for your vessel.



This publication contains information about federal laws and equipment carriage requirements for recreational vessels of the United States. It is important that you understand that federal equipment requirements are **minimum** requirements and **do not** guarantee the safety of your vessel or its passengers. In the following sections, we have also provided recommendations for additional safety equipment you may wish to have on board.

In addition to the requirements stated in this pamphlet, the owner/operator may be required to comply with additional regulations and/or laws specific to the state in which the vessel is registered or operated. To ensure compliance with state boating laws, you should contact the appropriate boating agency in your area. A vessel in compliance with the laws of the state of registration may not meet the requirements of another state where the vessel is being operated.



Other equipment recommended for your safety and the safety of your passengers is noted in the section on Vessel Safety Checks on page 52 and in the Boater's Pre-Departure Checklist on page 70.

Remember, drowning is the Number One cause of boating fatalities and the most preventable. The U.S. Coast Guard recommends that you always wear a life jacket and require your passengers to do the same.

Conversion of Metric to U.S. Units

Metric Measure	Feet in Decimals	Feet and Inches
50.0 m	164.0 ft.	164' 1/2"
20.0 m	65.6 ft.	65' 7 1/2"
12.0 m	39.4 ft.	39' 4 1/2"
10.0 m	32.8 ft.	32' 9 3/4"
8.0 m	26.3 ft.	26' 3"
7.0 m	23.0 ft.	22' 11 1/2"
6.0 m	19.7 ft.	19' 8 1/4"
5.0 m	16.4 ft.	16' 4 3/4"
4.0 m	13.1 ft.	13' 11/2"
2.5 m	8.2 ft.	8' 2 1/2"
1.0 m	3.3 ft.	3' 3 1/3"

REGISTRATION (33 CFR 173) AND DOCUMENTATION (46 CFR 67)

There are two methods of registration for U.S. recreational vessels.

- Vessel Registration: state-issued Certificate of Number.
- Vessel Documentation: federally documented with the U.S. Coast Guard.

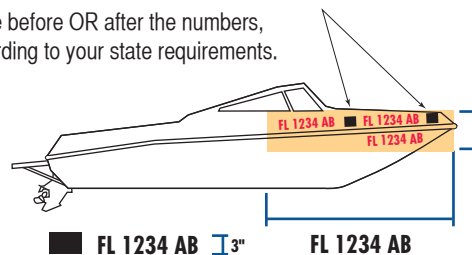
Vessel Registration: All undocumented vessels equipped with propulsion machinery must be registered in the state of principal use. A Certificate of Number will be issued upon registration and the number must be displayed on your vessel. The owner/operator of a vessel must also carry the valid Certificate of Number whenever the vessel is in use. When a vessel is moved to a new state of principal use, the Certificate remains valid for 60 days. Check with your state boating authority for registration requirements. Some states require all vessels to be registered, including vessels that are manually propelled and those that are Coast Guard documented.

Display of Numbers

Numbers must be painted or permanently attached to each side of the forward half of the vessel. The numbers must be read from left to right, and of a color that is contrasting with the background color; for example, black numbers on a white hull. The validation sticker(s) must be affixed within six inches of the registration number. No other letters or numbers may be displayed nearby.

State Validation Sticker

Place before OR after the numbers, according to your state requirements.



Lettering must be in plain, vertical block characters of not less than 3 inches in height. Spaces or hyphens between letter and number groupings must be equal to the width of a letter other than "I" or a number other than "1".

Notification of Changes to a Numbered Vessel

The owner of a vessel must notify the agency that issued the Certificate of Number within 15 days if:

- The vessel is transferred, destroyed, abandoned, lost, stolen, or recovered.
- The Certificate of Number is lost, destroyed, or the owner's address changes.

If the Certificate of Number becomes invalid for any reason, it must be surrendered to the issuing authority within 15 days.



Vessel Documentation

The U.S. Coast Guard Certificate of Documentation is a national form of registration dating back to the 11th Act of the First Congress. It serves as evidence of a vessel's nationality for international purposes, provides for unhindered commerce between the states, and admits vessels to certain restricted trades, such as coastwise trade and the fisheries. Since 1920, vessel financing has been enhanced through the availability of preferred mortgages on documented vessels.

Recreational vessels are eligible to be documented if they are wholly owned by a citizen or citizens of the United States *and* measure at least five net tons. Net tonnage is a measure of a vessel's volume. Most vessels more than 25 feet in length will measure five net tons or more.

A documented vessel is not exempt from:

- Applicable state or federal taxes.
- Compliance with state or federal equipment carriage requirements.

A documented vessel may also be required to pay a registration fee and display a validation sticker from the state of principal use. Boaters should check with their state boating agency.

To be in compliance with federal documentation requirements, a Certificate of Documentation must be:

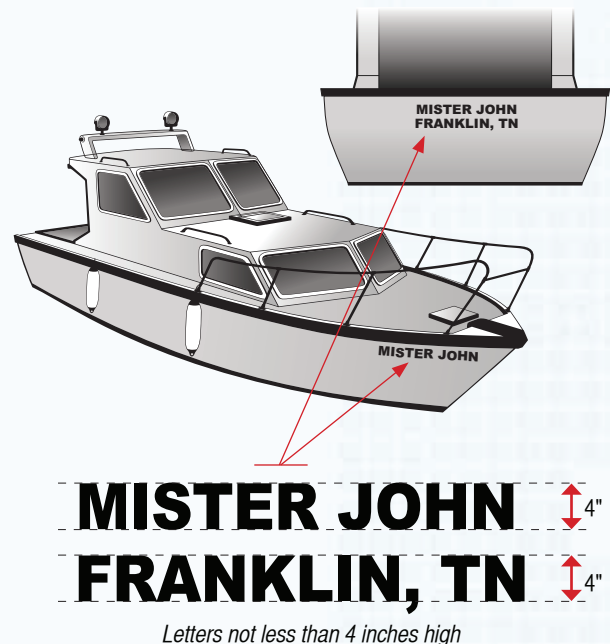
- The original document (photocopy not acceptable).
- On board the vessel.
- Current (not expired).
- Signed by the Director of the National Vessel Documentation Center.

Documented Vessel Marking Requirements

Hull Display

A documented recreational vessel hull display must:

- Have the name and hailing port of the vessel together in one place on the hull (usually on the stern).
- Be in letters not less than 4 inches in height.
- Be clearly readable.



The marking requirements for a documented recreational vessel state “together in one place on the hull.” Many recreational vessels will place the vessel name and hailing port on the stern, and vessel name on both sides of the bow, which is required for a commercial vessel. Although not required for a recreational vessel, this is an acceptable option.

Interior Display (Recreational and Commercial)

In addition, the vessel must have the official number permanently affixed in block-type Arabic numerals of not less than 3 inches in height, preceded by the letters “NO.” on some clearly visible interior integral structural part of the vessel.

Arabic numerals are the most common symbolic representation of numbers in the world. Permanently affixed means that the numbers must be affixed to the vessel so that alteration, removal, or replacement would be obvious. Numbers can be painted, carved, or welded.

NO.1234567 3"

*Interior display (recreational and commercial).
Numbers must be no less than 3 inches high.*

For more information on documented vessels, contact the U.S. Coast Guard National Vessel Documentation Center at (800) 799-8362 or online at www.uscg.mil/hq/cg5/nvdc.

EQUIPMENT REQUIREMENTS

The United States Coast Guard sets minimum standards for recreational vessels and associated safety equipment. To meet these standards, required equipment must be U.S. Coast Guard “approved” or “certified.” This means that it meets U.S. Coast Guard specifications, standards, and regulations for performance, construction, or materials.

Life Jackets (33 CFR 175)

You may have heard reference to Type I, II, III, IV, and V “Personal Flotation Devices” (PFDs). The term PFD is used in a strictly regulatory sense. For greater clarity, this publication will use the term “wearable life jacket” and “throwable device.” Understand that Type and Number refer to the same equipment, whether called a PFD or life jacket, and that any PFD is approved for use anywhere.

All recreational vessels must carry one wearable life jacket for each person on board. Any boat 16 feet and longer (except canoes and kayaks) must also carry one throwable (Type IV) device. Life jackets **should** be worn at all times when the vessel is underway. *A life jacket can save your life, but only if you wear it.*



Always check and read the manufacturer’s information booklet and label provided with all life jackets. They will provide valuable information, including size, type, intended use, and Coast Guard approval information.

Life jackets must be:

- U.S. Coast Guard-approved (check the label).
- In good and serviceable condition.
- Appropriate size and type for the intended user.
- Properly stowed.

Some items that are not required but are a good idea to have with your life jacket are a whistle and an emergency light.

Stowage

- Wearable life jackets must be readily accessible.
- You should be able to put them on in a reasonable amount of time in an emergency (vessel sinking, on fire, etc.)
- They should not be stowed in plastic bags, in locked or closed compartments, or have other gear stowed on top of them.
- Throwable devices must be immediately available for use. They should be on the main deck within arm's reach, hanging on a lifeline, or other easily reached location.

Inflatable Life Jackets

- U.S. Coast Guard-approved inflatable life jackets are authorized for use by persons 16 years of age and older (check the label).
- Inflatable life jackets require regular maintenance and attention to the condition of the inflator.
- They must have a full cylinder and all status indicators on the inflator must be green or the device is **not** serviceable and does **not** satisfy the legal requirement for the wearable life jacket carriage requirement.
- Inflatable life jackets are more comfortable, encouraging regular use. The best life jackets are ones the user will wear.

Child Life Jacket Requirements

On a vessel that is underway, children under 13 years of age must wear an appropriate U.S. Coast Guard-approved life jacket unless they are 1) below deck, or 2) within an enclosed cabin. If a state has established a child life jacket wear requirement that differs from the Coast Guard requirement, the state requirement will be applicable on waters subject to that state's jurisdiction.

Children's life jackets are approved for specific weight categories. Check the "User Weight" on the label and for an approval statement that will read something like:



Approved for use on recreational boats and uninspected commercial vessels not carrying passengers for hire by persons weighing "less than 30, lbs.," "30 to 50 lbs.," "less than 50 lbs.," or "50 to 90 lbs."

Life Jacket Requirements for Specific Activities

The U.S. Coast Guard recommends – and many states require – wearing life jackets when engaged in the following activities:

- Water skiing and other towed activities (use a type designed for water skiing.)
- Operating a Personal Watercraft, or PWC (use a type designed for water skiing or PWC use.)
- Whitewater boating activities.
- Sailboarding.

Check with your state boating agency for the laws that apply.

Federal law does not require life jacket use on racing shells, rowing sculls, racing canoes, and racing kayaks; state laws vary, however. Check with your state boating agency.

Note that if you are boating in an area under the jurisdiction of the U.S. Army Corps of Engineers, or a federal, state, or local park authority, other rules may also apply.

The U.S. Coast Guard recommends that you always wear a life jacket while underway on a boat and require passengers to do the same.

Life Jacket Flotation

The five types of life jackets are based on three kinds of flotation and can be characterized as follows:

Inherently Buoyant (Primarily Foam)

- The most reliable.
- Come in Adult, Youth, Child, and Infant sizes.
- Designed for swimmers and non-swimmers.
- Come in wearable and throwable styles.
- Special designs available for water sports.

Inflatable

- The most compact.
- Lightweight and comfortable.
- Sized only for adults.
- Only recommended for swimmers.
- Wearable styles only.
- Some have the best in-water performance.

Hybrid (Foam and Inflation)

- Reliable.
- Provides Inherent and Inflatable Buoyancy.
- Adult, Youth, and Child sizes.
- For swimmers and non-swimmers.
- Wearable styles only.
- Some designed for water sports.

BUOYANCY RATING: FOAM

Wearable Size	Type	Inherent Buoyancy
Adult	I	22 lbs.
	II & III	15.5 lbs.
	V	15.5 to 22 lbs.
Youth	II & III	11 lbs.
	V	11 to 15.5 lbs.
Child and Infant	II	7 lbs.
Throwable:		
Cushion	IV	20 lbs.
Ring Buoy		16.58. 32 lb.

BUOYANCY RATING: INFLATABLE

Wearable Size	Type	Inflatable Buoyancy
Adult	I & II	34 lbs.
	III	22.5 lbs.
	V	22.5 to 34 lbs.

BUOYANCY RATING: HYBRID

Wearable Size	Type	Inherent Buoyancy	Inflated Total Buoyancy
Adult	II & III	10 lbs.	22 lbs.
	V	7.5 lbs.	22 lbs.
Youth	II & III	9 lbs.	15 lbs.
	V	7.5 lbs.	15 lbs.
Child	II	7 lbs.	12 lbs.

Types of Life Jackets

A Type I, Off-Shore Life Jacket provides the most buoyancy. It is effective for all waters, especially open, rough, or remote waters where rescue may be delayed. It is designed to turn an unconscious wearer to a face-up position in the water.

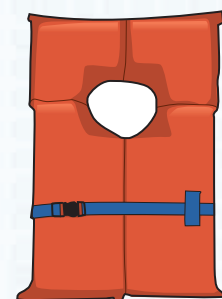
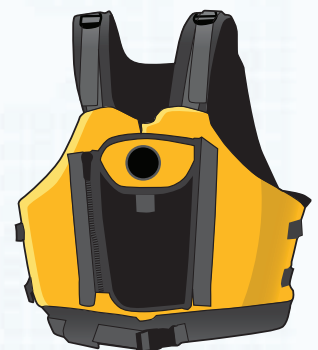


Uninflated



Inflated

A Type II, Near-Shore Buoyancy Vest is intended for calm, inland waters or where there is a good chance of quick rescue. Inherently buoyant life jackets of this type will turn some unconscious wearers to a face-up position in the water, but the turning is not as pronounced as with a Type I. This type of inflatable turns as well as a Type I foam jacket.



A Type III, Flotation Aid is good for users in calm, inland waters, or anywhere there is a good chance of quick rescue. The wearer may have to tilt their head back to remain in a face-up position in the water. The Type III foam vest has the same minimum buoyancy as a Type II. It comes in many styles, colors, and sizes and is generally the most comfortable type for continuous wear. Float coats, fishing vests, and vests designed with features suitable for various sports activities are examples of this type. This type of inflatable turns as well as a Type II foam vest.



A Type IV, Throwable Device is intended for use anywhere. It is designed to be thrown to a person in the water and grasped and held by the user until rescued. It is not designed or intended to be worn. Type IV devices include buoyant cushions, ring buoys, and horseshoe buoys. There are no Coast Guard-approved inflatable Type IV devices.



A Type V, Special-Use Device is intended for specific activities and may be carried instead of another life jacket only if used according to the condition(s) for which it is approved, as shown on its label. A Type V provides the performance of a Type I, II, or III (as marked on its label). If the label says the life jacket is "approved only when worn," the life jacket must be worn (except by persons in enclosed spaces) and used in accordance with the approval label to meet carriage requirements. Some Type V devices provide significant hypothermia protection. Varieties include deck suits, work vests, sailboarding vests, and sailing vests with a safety harness.



An Inflatable with Safety Harness is approved only as a Type V, Special-Use Device because its use to prevent falls overboard presents several risks. The U.S. Coast Guard has not assessed its potential for injury from suddenly stopping a fall and, in case of capsizing or sinking, the boat may take the wearer down, resulting in death. **Do not** attach the harness to the boat unless it is being worn with a tether of less than 6.5 feet in length with quick-release-under-load hardware. *Read the safety harness section of the owner's manual for intended use. Under no circumstances should the safety harness be used for any climbing activity. U.S. Coast Guard approval does not apply to this harness used under those circumstances.*

Finding the Right Life Jacket for You

Life jackets come in many designs, colors, styles, and materials. Some are made to stand up to rugged water sports, others to protect the wearer from cold-water temperatures. Be sure to choose one that is appropriate for your body size, planned activities, and the water conditions you expect to encounter.

Test the Fit

Start with a life jacket that is U.S. Coast Guard-approved. Try it on. It should fit comfortably snug. Then give it this test: with all straps, zippers, and ties securely fastened, raise your arms over your head. The jacket should stay in place and not ride up. Next, have someone lift your life jacket straight up at the shoulders. Again, the jacket should stay in place. If the zipper touches your nose or the jacket almost comes off, it is too loose.

Test the Buoyancy of Your Life Jacket

In shallow water or a swimming pool, under supervision and with all straps, zippers, and ties fastened, see how the life jacket floats you. Relax your body and let your head tilt back. Your chin should remain above water so that you can breathe easily. If not, you may need a different size or model, one that provides more buoyancy.

Choosing a Child's Life Jacket

Be sure to choose a child's life jacket that is U.S. Coast Guard-approved. Check to make sure your child's weight falls within the range shown on the label. While some children in the 30-50 pound weight range who can swim may ask for the extra freedom of movement that a Type III provides, note that most children in this weight range, especially those who cannot swim, should wear a Type II. To check for a good fit, pick the child up by the shoulders of the life jacket. If it fits correctly, the child's chin and ears will not slip through.

A child's life jacket should be tested in the water immediately after purchase. Children may panic when they fall into the water suddenly. Float testing not only checks the fit and buoyancy but also provides an important opportunity to teach them to relax in the water.

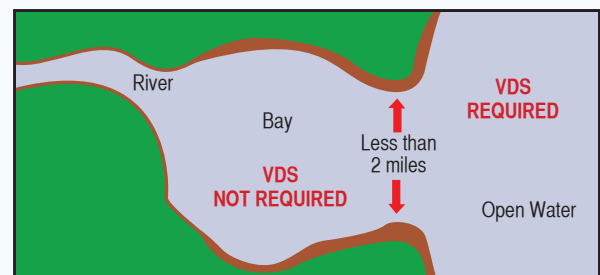
Be Safe. Wear Your Life Jacket.

Most deaths from drowning occur near shore in calm weather, not out at sea during a storm; 9 out of 10 drowning fatalities occur in inland waters, most within a few feet of safety. Worse still, many of these victims owned life jackets and may have survived had they been worn.

Wear your life jacket.
When you don't, you're risking your life.

Visual Distress Signals (33 CFR 175.101)

Vessels operating on U.S. coastal waters, the Great Lakes, and territorial seas, as well as those waters connected directly, up to a point where the waterway is less than two nautical miles wide, must be equipped with U.S. Coast Guard-approved visual distress signals (VDS). Vessels owned in the United States and operating on the high seas must also be equipped with U.S. Coast Guard-approved visual distress signals.



The following vessels are not required to carry day signals, but must carry night signals when operating from sunset to sunrise:

- Recreational boats less than 16 feet in length.
- Boats participating in organized events, such as races, regattas, or marine parades.
- Open sailboats less than 26 feet in length that are not equipped with propulsion machinery.
- Manually propelled boats.

Remember: The carriage requirement is only applicable in areas where VDS are required.

Pyrotechnic Devices

Pyrotechnic visual distress signals must be U.S. Coast Guard-approved, in serviceable condition, and readily accessible.

Check the expiration date. Expired signals may be carried as extra equipment, but cannot be counted toward meeting the visual distress signal requirement.

Launchers manufactured before January 1, 1981, and intended for use with approved signals, are not required to be U.S. Coast Guard-approved as long as they remain in serviceable condition.

If pyrotechnic devices are selected, a minimum of three signals are required for day use and three signals for night use. Some pyrotechnic signals meet both day and night use requirements (combination flares).

Pyrotechnic devices should be stored in a cool, dry place, if possible. A watertight container painted red or orange and prominently marked "DISTRESS SIGNALS" or "FLARES" is recommended.

U.S. Coast Guard-approved pyrotechnic visual distress signals and associated devices include:

- Pyrotechnic red flares, hand-held or aerial (day/night use.)
- Pyrotechnic orange smoke, hand-held or floating (day use.)
- Launchers for aerial red meteors or parachute flares.

Each of these devices has a different operating/burning time. Check the label to see how long each pyrotechnic device will remain illuminated. Choose a device best suited to the conditions in the area where your vessel is typically used.

Non-Pyrotechnic Devices

Non-pyrotechnic visual distress signals must be in serviceable condition, readily accessible, and certified by the manufacturer as complying with U.S. Coast Guard requirements. These signals include:

Orange Distress Flag

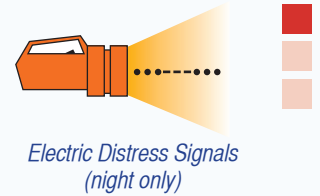
- Used as a day signal only.
- Must be at least 3 x 3 feet with a black square and ball on an orange background.
- Must be marked with an indication that it meets U.S. Coast Guard requirements in 46 CFR 160.072.
- Most visible when attached and waved on a paddle or boat hook, or flown from a mast.
- May be incorporated into devices designed to attract attention in an emergency, such as balloons, kites, or floating streamer.



Orange Flag (day only)

Electric Distress Light

- Acceptable for night use only.
- Automatically flashes the international SOS distress signal (•••—••••).
- Must be marked with an indication that it meets U.S. Coast Guard requirements in 46 CFR 161.013.



Electric Distress Signals (night only)

Under Inland Navigation Rules, a high-intensity white light flashing at regular intervals from 50-70 times per minute is considered a distress signal. Such devices, however, **do not** meet the Visual Distress Signal carriage requirement.

Regulations prohibit display of visual distress signals on the water under any circumstances, except where assistance is needed because of immediate or potential danger to persons on board a vessel.

All distress signals have distinct advantages and disadvantages. No single device is ideal under all conditions or suitable for all purposes.

Pyrotechnics are universally recognized as excellent distress signals, but there is potential for injury and property damage if not handled properly. These devices produce a very hot flame with the potential to cause burns and ignite flammable materials.

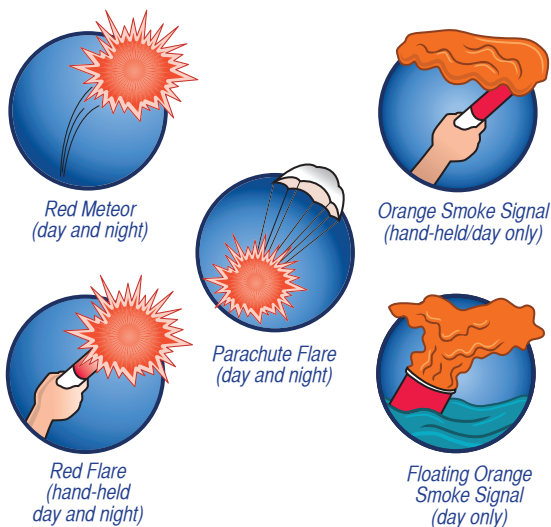
Pistol-launched and hand-held parachute flares and meteors have many characteristics of a firearm and must be handled with extreme caution. In some states and Canada they may be considered a firearm and prohibited from use. Be sure to check with your state boating agency.



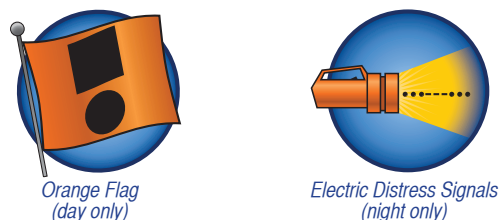
The following are just a few of the many combinations of devices that will meet the requirements:

- 3 hand-held red flares that are approved for day/night use.
- 1 hand-held red flare and 2 parachute flares for day/night use.
- 1 hand-held orange smoke signal and 2 floating orange smoke signals for day, and 1 electric distress light for night.

Pyrotechnic Devices:



Non-Pyrotechnic Devices:

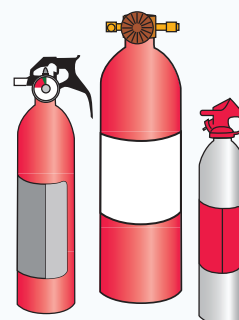


All boaters should be able to signal for help. Boaters must have U.S. Coast Guard-approved day and night signals for vessels when required. Signaling devices are recommended when operating on all open bodies of water.

Fire Extinguishers (46 CFR 25)

U.S. Coast Guard-approved, marine-type fire extinguishers are required on boats where a fire hazard could be expected from the engines or fuel system. Extinguishers are classified by a letter and number symbol. The letter indicates the type of fire the unit is designed to extinguish. Type B, for example, is designed to extinguish flaming liquids, such as gasoline, oil, and grease. The number indicates the amount of the extinguishing agent contained in the extinguisher; the higher the number, the greater the amount of agent in the extinguisher.

U.S. Coast Guard-approved extinguishers required for boats are hand-portable, have either B-I or B-II classification, and must be provided with a mounting bracket. While not required, it is recommended that the extinguishers be mounted in a readily accessible location. Consider locations where the extinguisher can be reached easily; for example, at or near the steering station or in the galley or engine room, but away from locations where a fire may likely start.



Fire Extinguishers

Extinguisher markings can be confusing because one extinguisher can be approved for several different types of fires (A, B, or C). For example, an extinguisher marked "Type A, Size II; Type B; C, Size I" is acceptable as a Type B-I extinguisher.

Look for the section of the label that states "Marine Type USCG, Type A, Size II; Type B; C Size I." (It will also contain a USCG approval number.) Make sure Type B is indicated. Hand-portable extinguishers will be either a Size I or II.

Size III and larger are too big for use on most recreational boats.

Classes	Foam (gals)	CO ² (lbs)	Dry Chemical (lbs)
B-I (Type B, Size I)	1.75	4	2
B-II (Type B, Size II)	2.5	15	10

Fire extinguishers are required on boats when any of the following conditions exist:

- There are closed compartments and compartments under seats where portable fuel tanks may be stored.
- There are double bottoms not sealed to the hull or that are not completely filled with flotation materials.
- There are closed living spaces.
- There are closed stowage compartments, in which combustible or flammable materials are stored.
- There are permanently installed fuel tanks. (Fuel tanks secured so they cannot be moved in case of a fire or other emergency are considered permanently installed. Also, if the weight of a fuel tank is such that persons on board cannot move it, the U.S. Coast Guard may consider it permanently installed.)

Fire Extinguisher Maintenance

Inspect extinguishers monthly to make sure that:

- Seals and tamper indicators are not broken or missing.
- Pressure gauges or other indicators, if so equipped, read in the operable range as described on the extinguisher.
- There is no obvious physical damage, rust, corrosion, leakage, or clogged nozzles.

If the minimum weight is stated on the extinguisher label, weigh extinguishers annually to check.

Fire extinguishers that do not satisfy the above requirements or that have been partially emptied must be replaced or taken to a qualified fire extinguisher servicing company for recharge.

Required Number of Fire Extinguishers

The following chart lists the number of fire extinguishers that are required on recreational vessels. If a U.S. Coast Guard-approved fixed fire extinguishing system is installed for the protection of the engine compartment, the required number of extinguishers may be reduced in accordance with the chart.

It is recommended that hand portable extinguishers be mounted in a readily accessible location.

Minimum Number of Hand-Portable Fire Extinguishers Required

Vessel length	No Fixed System	With approved Fixed Systems
Less than 26'	1 B-I	0
26' to less than 40'	2 B-I or 1 B-II	1 B-I
40' to 65'	3 B-I or 1 B-II and 1 B-I	2 B-I or 1 B-II

Ventilation (33 CFR 175/183, 46 CFR 25)

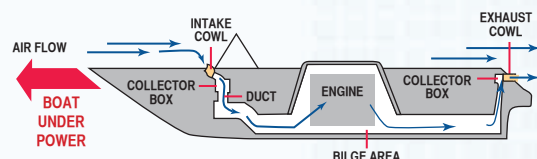
Boats that use gasoline for electrical generation, mechanical power, or propulsion are required to be equipped with a ventilation system.

A natural ventilation system is required for each compartment in a boat that:

- Contains a permanently installed gasoline engine.
- Has openings between it and a compartment that requires ventilation.
- Contains a permanently installed fuel tank and an electrical component that is not ignition-protected.
- Contains a fuel tank that vents into that compartment (including a portable tank.)
- Contains a non-metallic fuel tank.

A natural ventilation system consists of:

- A supply opening (duct/cowl) from the outside air (located on the exterior surface of the boat), or from a ventilated compartment, or from a compartment that is open to the outside air.
- An exhaust opening into another ventilated compartment or an exhaust duct to the atmosphere.



All blower motors installed in exhaust ducts must be in working condition regardless of date of manufacture.

Each exhaust opening or exhaust duct must originate in the lower one-third of the compartment. Each supply opening or supply duct and each exhaust opening or duct in a compartment must be above the normal accumulation of bilge water.

A powered ventilation system is required for each compartment in a boat that has a permanently installed gasoline engine with a cranking motor for remote starting.

A powered ventilation system consists of one or more exhaust blowers.

Each intake duct for an exhaust blower must be in the lower one-third of the compartment and above the normal accumulation of bilge water.

For boats built prior to 1980, there was no requirement for a powered ventilation system; however, some boats were equipped with a blower.

The U.S. Coast Guard Ventilation Standard, a manufacturer requirement, applies to all boats built on or after August 1, 1980. Some builders began manufacturing boats in compliance with the Ventilation Standard as early as August 1978. If your boat was built on or after August 1, 1978 it might have been equipped with either (1) a natural ventilation system, or (2) both a natural ventilation system and a powered ventilation system. If your boat bears a label containing the words "This boat complies with U.S. Coast Guard safety standards," you can assume that the design of your boat's ventilation system meets applicable regulations.

Boats built after 1980 with remote starters are required to display a label that contains at least the following information:

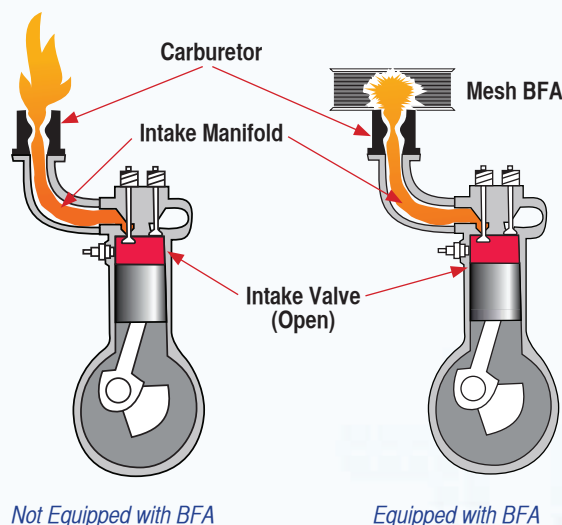
Warning

Gasoline vapors can explode. Before starting engine, operate blower at least four minutes and check the engine compartment bilge for gasoline vapors.

All boat owners are responsible for keeping their vessel's ventilation systems in operating condition. This means making sure openings are free of obstructions, ducts and ducting are not blocked or torn, blowers operate properly, and worn components are replaced with equivalent marine-type equipment.

Backfire Flame Control (46 CFR 25/58)

Gasoline engines installed in a motorboat or motor vessel after April 25, 1940, except outboard motors, must be equipped with an acceptable means of backfire flame control. The backfire flame arrester (BFA) must be suitably secured to the air intake with a flame-tight connection, and is required to be either U.S. Coast Guard-approved or comply with SAE J-1928 or UL 1111 standards and marked accordingly.



Other acceptable means of backfire flame control include: air and fuel induction systems usually found on personal watercraft, velocity stacks (attachments to carburetors), and reed-type (found in outboards.)

Sound Producing Devices (33 CFR 83)

Navigation Rules require sound signals to be made under certain circumstances. Meeting, crossing, and overtaking situations, described in the Navigation Rules beginning with Rule 32, are examples of circumstances in which sound signals are required. Recreational vessels are also required to use sound signals during periods of reduced visibility and while at anchor.

The following matrix provides the sound producing devices required for vessels:

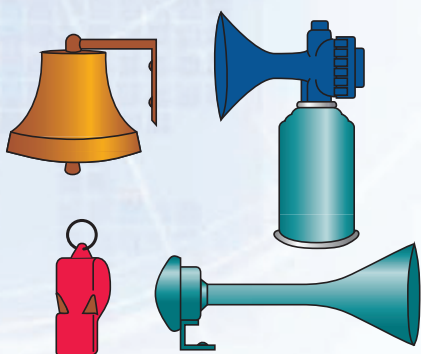
International Waters

Vessel Length	Whistle	Bell	Gong
12 meters or more (39.4 ft.)	X		
20 meters or more (65.6 ft.)	X	X	
100 meters or more (328.1 ft.)	X	X	X

Inland Waters*

Vessel Length	Whistle	Bell	Gong
12 meters or more (39.4 ft.)	X		
20 meters or more (65.6 ft.)	X	X	
100 meters or more (328.1 ft.)	X	X	X

**There have been changes to the Collision Regulations (COLREGS) and a regulatory change is forthcoming that will align the Inland Navigation Rules with the COLREGS. The Coast Guard is exercising its discretion not to enforce the provisions of the inland rules until the regulatory change is enacted.*



Signaling Devices

Navigation Lights (33 CFR 83)

Recreational vessels are required to display navigation lights between sunset and sunrise and during periods of restricted visibility (fog, rain, haze, etc.) The U.S. Coast Guard Navigation Rules, International-Inland, specifies lighting requirements for every description of watercraft. The information provided below is for power-driven and sailing vessels less than 65.5 feet (20 meters) in length.

Power-Driven Vessels

Note that a sail vessel under machine propulsion is considered a power-driven vessel.

If your power-driven vessel is less than 164 feet (50 meters) in length, it must display navigation lights as shown in Figure 1.

If your power-driven vessel is less than 39.4 feet (12 meters) in length, then it may display navigation lights as shown in Figure 2.

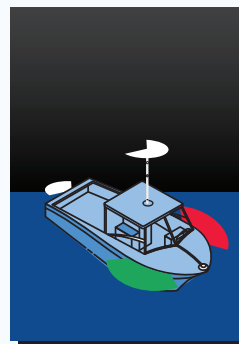


Figure 1

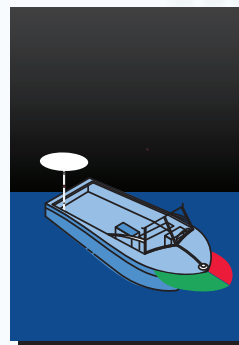


Figure 2

If your power-driven vessel is less than 23 feet (7 meters) in length and its maximum speed does not exceed 7 knots, then it may display an all-round white light and, if possible, sidelights, instead of the lights prescribed previously. (International Rules only.)

For power-driven vessels less than 39.4 feet (12 meters) in length, the masthead or all-round white light must be at least 3.3 feet (1 meter) above the sidelights.

In a vessel of less than 65.6 feet (20 meters) in length, sidelights may be displayed in a combination light as shown in Figure 2.

Sailing Vessels

If your sailing vessel is less than 65.6 feet (20 meters) in length, then it must display navigation lights as shown in Figures 3, 4, or 5.



Figure 3



Figure 4

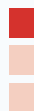


Figure 5



Figure 6

A sailing vessel of less than 23 feet (7 meters) in length shall, if practicable, exhibit lights as shown. (Figures 3 or 4.) If it does not, it shall have ready at hand an electric torch or lighted lantern (flashlight) showing white light that shall be exhibited in sufficient time to prevent collision. (See Figure 6.)



Vessel Under Oars

A vessel under oars may exhibit the lights for a sailboat. If it does not, it shall have ready at hand an electric torch (flashlight) or lighted lantern showing a white light that shall be exhibited in sufficient time to prevent collision. (See Figure 7.)



Figure 7

Lights and Shapes

To alert other vessels of conditions that may be hazardous, there are requirements to display lights at night and shapes during the day.

Anchored Vessels

At night: All vessels at anchor must display anchor lights. If your vessel is less than 164 feet (50 meters) in length, then its anchor light is an all-round white light visible where it can best be seen from all directions. (See Figure 8.)

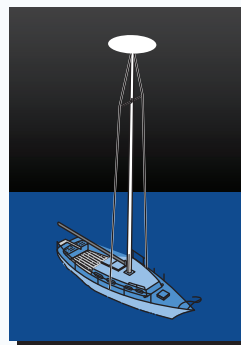


Figure 8

During the day: All vessels at anchor must display forward, where it can be best seen, a black ball shape. (See Figure 9.)

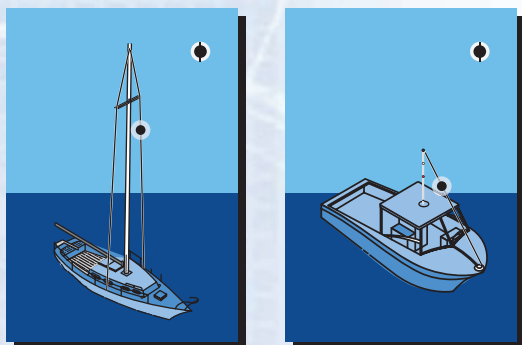


Figure 9

EXCEPTIONS: If your vessel is less than 23 feet (7 meters) in length, it is not required to display an anchor light or shape unless it is anchored in or near a narrow channel, fairway, or anchorage, or where other vessels normally navigate.

If your vessel is less than 65.6 feet (20 meters) in length, it is not required to display an anchor light if it is anchored in inland waters in a special anchorage designated by the Secretary under which the Coast Guard is operating.

Sailing Vessels Under Power

During the day, vessels under sail that are also being propelled by machinery, must exhibit forward, where it can best be seen, a black conical shape with the apex pointing down. (See Figure 10.)

EXCEPTION: If your vessel is less than 39.4 feet (12 meters) in length, then it is not required to display the shape in inland waters.



Figure 10

Reminder: If you are operating your sailing vessel at night using machinery, or sail and machinery, then your vessel must display the lights required for a power-driven vessel. (See Figures 3, 4, and 5.)

Vessels Restricted in their Ability to Maneuver

Navigation Rules require vessels restricted in their ability to maneuver to display appropriate day shapes (ball/diamond/ball) or lights. If the size of the vessel engaged in diving activities during the day make it impractical to display the day shapes, then it must exhibit a rigid replica of the international code flag "Alpha" not less than 3.3 feet (1 meter) in height to meet this requirement. If the diving activities are at night, then your vessel must display the navigation lights shown in Figure 11. This requirement does not affect the use of a red and white Divers Flag, which may be required by state or local law to mark a diver's location. The "A" flag is a navigation signal indicating your vessel's restricted maneuverability and does not pertain to the location of the diver.

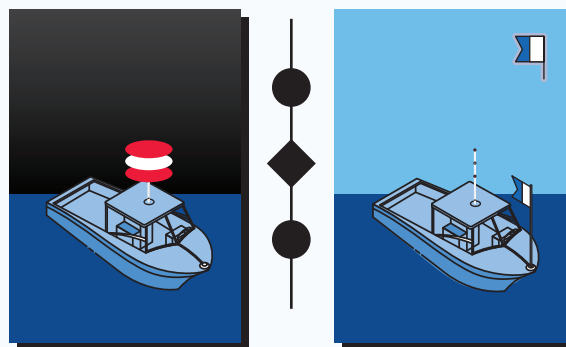


Figure 11



Pollution Regulations (33 CFR 151/155)

Annex V of MARPOL 73/78 prohibits throwing, discharging, or depositing any refuse matter of any kind (including trash, garbage, oil, and other liquid pollutants) into the waters of the United States.

The Federal Water Pollution Control Act prohibits the discharge of oil or hazardous substances that may be harmful into U.S. navigable waters. Vessels 26 feet and greater in length, with machinery spaces, must display a placard at least 5 by 8 inches, made of durable material, fixed in a conspicuous place in the machinery spaces, or at the bilge pump control station, stating the following:

Discharge of Oil Prohibited

The Federal Water Pollution Control Act prohibits the discharge of oil or oily waste upon or into any navigable waters of the United States. This prohibition includes any discharge that causes a film or discoloration of the surface of the water, or causes a sludge or emulsion beneath the surface of the water. Violators are subject to substantial civil and/or criminal sanctions, including fines and imprisonment.

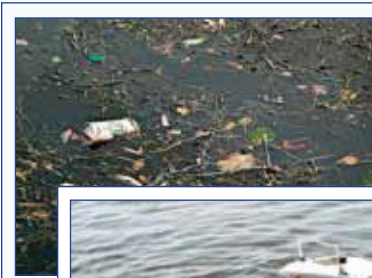
Regulations issued under the Federal Water Pollution Control Act require all vessels with propulsion machinery to have a capacity to retain oily mixtures on board and be equipped with a fixed or portable means to discharge these oily mixtures to a reception facility. On recreational vessels, a bucket, oil absorbent pads, and heavy-duty plastic bag, bailer, or portable pump are some of the suitable means that meet the requirement for retention on board until transferring the oily mixture to a reception facility. No person may intentionally drain oil or oily waste from any source into the bilge of any vessel. You must immediately notify the U.S. Coast Guard if your vessel discharges oil or hazardous substances in the water. Call the Coast Guard National Response Center toll-free (800) 424-8802, or (202) 267-2675.

Report the following information:

- Location of the incident.
- Size/quantity (estimated amount of material released).
- Description, color, consistency, odor.
- Date and time observed.
- Source and cause of the release, if known.
- Substance, if known.
- Weather and any other information that may help emergency personnel respond to the incident.

Discharge of Garbage

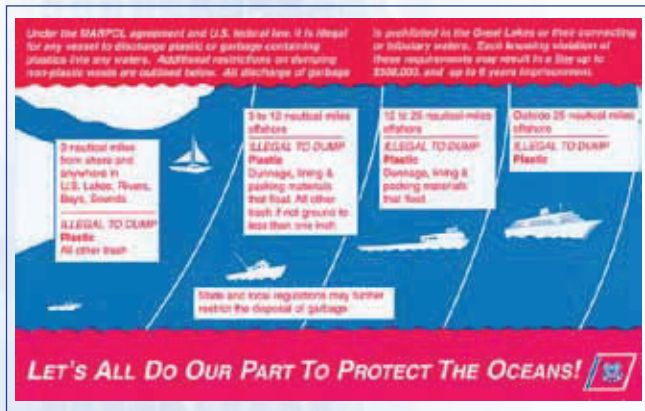
The Act to Prevent Pollution from Ships (MARPOL ANNEX V) places limitations on the discharge of garbage from vessels. It is illegal to dump plastic trash anywhere in the ocean or navigable waters of the United States. It is also illegal to discharge garbage in the navigable waters of the United States, including the inland waters and anywhere in the Great Lakes. The discharge of other types of garbage is permitted outside of specific distances offshore as determined by the nature of that garbage. (See chart next page.)



Note: state and local laws may place further restrictions on the disposal of garbage.

Garbage Type	Discharge
Plastics – includes synthetic ropes, fishing nets, and plastic bags	Prohibited in all areas
Comminuted or ground food waste, paper, rags, glass, etc.	Prohibited less than 3 miles from nearest land
Food waste, paper, rags, glass, metal, bottles, crockery, and similar refuse	Prohibited less than 12 miles from nearest land
Floating dunnage, lining, and packing materials	Prohibited less than 25 miles from nearest land

United States vessels of 26 feet or longer must display in a prominent location, a durable placard at least 4 by 9 inches notifying the crew and passengers of the discharge restrictions.



United States ocean-going vessels of 40 feet or longer that are engaged in commerce or equipped with a galley and berthing must have a written waste management plan describing the procedures for collecting, processing, storing, and discharging garbage, and must designate the person in charge of carrying out the plan.

Marine Sanitation Devices (33 CFR 159)

All recreational boats with installed toilet facilities must have an operable marine sanitation device (MSD) on board. Vessels 65 feet and under may use a Type I, II, or III MSD. Type I and Type II are “flow-through” devices, while a holding tank is a Type III device. Vessels over 65 feet must install a Type II or III MSD. All installed MSDs must be U.S. Coast Guard-certified. U.S. Coast Guard-certified devices are so labeled, except for some holding tanks, which are certified by definition under the regulations.

The discharge of treated sewage is allowed within 3 nautical miles of shore except in designated “No Discharge Zone” areas. (Untreated sewage may be discharged beyond 3 nautical miles.)

A “No Discharge Zone” is a body of water where the discharge of treated or untreated sewage is prohibited. When operating a vessel in a No Discharge Zone, the operator must secure the device in a manner that prevents any discharge. Some acceptable methods are: padlocking overboard discharge valves in the closed position, using a non-releasable wire tie to hold overboard discharge valves in the closed position, closing overboard discharge valves and removing the handle, and locking the door to the space enclosing the toilets. Note: these methods for preventing the overboard discharge are only required when operating in a No Discharge Zone. State and local laws may place further restrictions on overboard discharges.



OPERATING PROCEDURES

Navigation Rules

Boaters call navigation rules – the basic laws governing the steering or sailing of a boat – “The Rules of the Road.” These Rules define the roles and responsibilities of vessel operators. If all operators followed these rules, most accidents could be avoided.

The Rules are divided into two parts, Inland and International. Inland Rules apply to vessels operating inside the line of demarcation, while International Rules apply outside that line. Demarcation lines are printed on most navigational charts and are listed in the Navigation Rules.

Print copies of the rules can be obtained from the Superintendent of Documents, U.S. Government Printing Office, P.O. Box 979050, St. Louis, MO 63197-9000. Tel. (202) 512-1800, or you can download a copy from the U.S. Coast Guard, Boating Safety Division website at www.uscgboating.org.

The operator of a vessel 39.4 feet (12 meters) or greater is responsible for having and maintaining a copy of the Navigation Rules on board while operating on U.S. inland waters.

The Rules vary slightly depending on whether you are boating on inland or on international waters. As an example, when operating on inland waters, sound signals are signals of **intent**; when operating on international waters, they are signals of **action**.

Post a lookout. Designate someone to watch for dangers that may come from any direction.

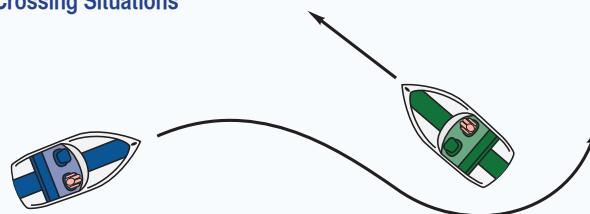
Maintain a safe speed. Except where speed is restricted by regulation, or the waterway is marked as a “No Wake” or “Slow Speed” area, you must judge safe speed for yourself, taking into account visibility, vessel traffic, your boat’s ability to maneuver, and the weather conditions.

Avoid a collision. The Rules of the Road include the actions to take when encountering another vessel on the water. Some of the most common situations you may encounter are: overtaking, meeting head-on, and crossing the bow of another vessel. In each case, the

boat designated as the “give-way” vessel is required to yield to the other boat, while the boat designated as the “stand-on” vessel should maintain its course and speed.

The following diagrams describe the whistle signals and actions to be taken by vessels in a crossing, meeting, or overtaking situation while operating in inland waters. These are basic examples; for additional information, consult the Navigation Rules.

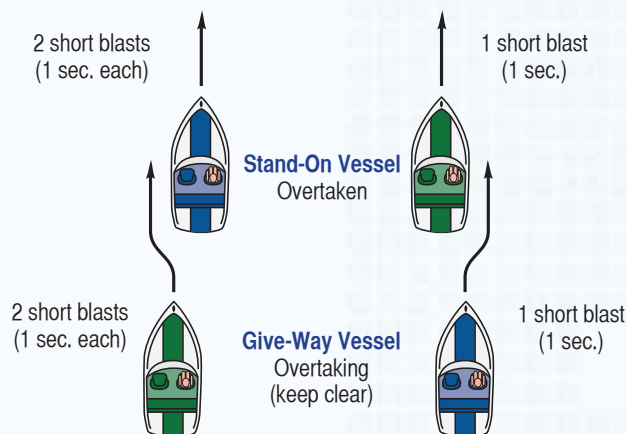
Crossing Situations



Give-Way Vessel
should alter course to pass
astern (behind)
1 short blast (1 sec.)

Stand-On Vessel
should maintain its course
and speed
1 short blast (1 sec.)

Overtaking Situation



2 short blasts
(1 sec. each)

Stand-On Vessel
Overtaken

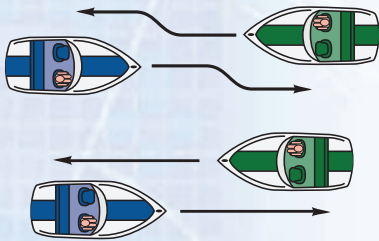
1 short blast
(1 sec.)

Give-Way Vessel
Overtaking
(keep clear)

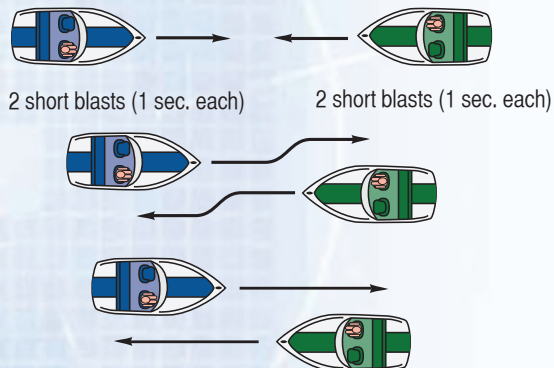
1 short blast
(1 sec.)

Meeting Head-On

Port-to-Port Passing (preferred)



Starboard-to-Starboard Passing



Aids to Navigation

Navigation buoys and beacons are placed along coastal and navigable waters as guides to mark safe water and hidden dangers, as well as to assist boat operators in determining their position in relation to land. Each aid to navigation provides specific information.

Several Aids are usually used together to form a local system that helps the boat operator follow natural and improved channels. Such Aids also provide a continuous system of charted markers for coastal piloting.

Individual Aids are used to mark landfall from seaward, and to mark isolated dangers.

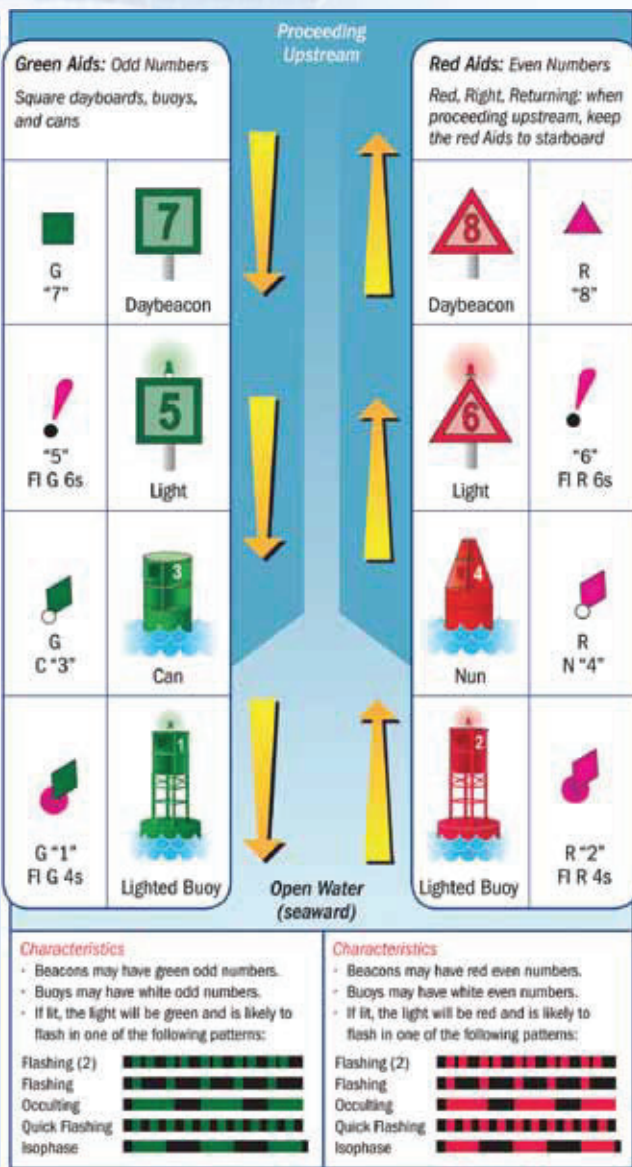
Lateral markers are buoys or beacons that indicate the port and starboard sides of a route to be followed. Virtually all U.S. lateral marks follow the traditional 3-R principle of "Red, Right, Returning." This means that when returning from seaward, keep the red markers on the right-hand (starboard) side of the vessel.

Boat operators **should not** rely on Aids to Navigation alone for determining their position. Storms and wave action can move buoys out of place.



Lateral Aids

Lateral aids marking the sides of channels, as seen when entering from seaward.



Do not tie up your boat to Aids to Navigation; it is dangerous and illegal.

Information and Regulatory Markers

These orange-and-white Aids are used to alert vessel operators to various warnings and regulations.

Symbol	Meaning	Examples
	Danger A diamond shape alerts boaters to hazards	
	Restricted Operations Marks with a circle indicate areas with regulated operations	
	Exclusion A diamond shape with a cross means boats are prohibited from the area	
	Information Marks with a square provide helpful information such as directions, distances, and locations	

Characteristics

- White with an orange horizontal band at both top and bottom.
- Black text within or around an orange square, circle, or diamond; or black text outside a diamond with an orange cross.
- May be buoys or beacons.
- If lit, the light will be white and may have any light rhythm except quick flashing, flashing (2), or Morse code "A."
- The chart symbol for this type of buoy is:

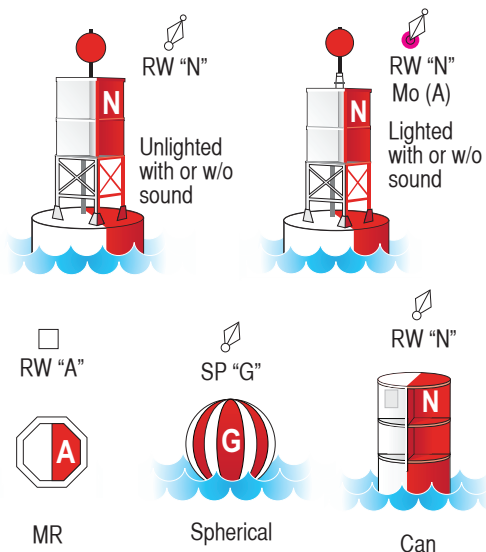


QUICK REFERENCE CHART

Equipment	Requirement	Vessel Length (in feet)					Page
		<16	16-26	26-40	40-65		
Certificate of Number (State Registration)	All undocumented vessels equipped with propulsion machinery must be state registered. Certificate of Number must be on board when the vessel is in use. Note that some states require all vessels to be registered.	X	X	X	X		5
State Numbering	(a) Plain block letters/numbers, not less than 3 inches in height, must be affixed on each side of the forward half of the vessel, in a contrasting color to the background, and read from left to right. (b) State validation sticker(s) must be affixed within 6 inches of the registration number. Note: check with your local boating agency for specific state requirements.	X	X	X	X		5
Certificate of Documentation	Applies only to "Documented" vessels: (a) Original and current certificate must be on board. (b) Vessel name/hailing port must be marked on exterior part of hull in letters not less than 4 inches in height. (c) Official Number must be permanently affixed on interior structure in numbers not less than 3 inches in height.		X	X	X		6
Life Jackets	(a) One Type I, II, III, or V wearable life jacket for each person on board. Must be U.S. Coast Guard-approved. (b) In addition, must carry one Type IV throwable device.	X	X	X	X		9
Visual Distress Signals (VDS)	(a) One electric distress light, or three combination day/night red flares. Note: only required to be carried on board when the vessel is operating between sunset and sunrise. (b) Three combination day/night red flares – hand-held, meteor, or parachute-type, or one orange distress flag, or one electric distress light, or three hand-held or floating orange smoke signals and one electric distress light.	X					17
Fire Extinguishers	(a) One B-I (when enclosed compartment). (b) One B-II or two B-I. Note: fixed system equals one B-I. (c) One B-II and one B-I, or three B-I. Note: fixed system equals one B-I.	X	X	X	X		21
Ventilation	(a) All vessels built after April 25, 1940 that are gasoline-fueled with enclosed engine and/or fuel tank compartments must have natural ventilation (at least two ducts fitted with cowls). (b) In addition, a vessel built after July 31, 1980 must have a rated power exhaust blower.	X	X	X	X		23
Sound Producing Devices	(a) A vessel of less than 39.4 feet (12 meters) must, at a minimum, have some means of making an efficient sound signal – i.e., handheld air horn, athletic whistle. A human voice/sound is not acceptable. (b) A vessel 39.4 feet (12 meters) or greater, must have a sound-signaling appliance capable of producing an efficient sound signal, audible for 1/2 mile, with a 4- to 6-second duration.	X	X	X	X		25
Backfire Flame Arrestor	Required on gasoline engines installed after April 25, 1940, except outboard motors.	X	X	X	X		25
Navigational Lights	Required to be displayed from sunset to sunrise and in areas of restricted visibility.	X	X	X	X		27
Oil Pollution Placard	(a) Placard must be at least 5 by 8 inches and made of durable material. (b) Placard must be posted in each machinery space or at the bilge control station.			X	X		32
Garbage Placard	(a) Placard must be at least 4 by 9 inches and made of durable material. (b) Displayed in a conspicuous place notifying all on board of the discharge restrictions.			X	X		34
Marine Sanitation Devices	If there is an installed toilet, the vessel must have an operable MSD Type I, II, or III.	X	X	X	X		35
Navigation Rules (Inland Only)	The operator of a vessel 39.4 feet (12 meters) or greater while operating on U.S. inland waters must have on board a copy of these rules.			X	X		36

Safe Water Markers

These Aids are used to mark fairways, mid-channels, and offshore approach points. They have unobstructed water on all sides. A buoy, lighted or unlighted, may show a red topmark. An appropriate nautical chart must be consulted to determine exact position



Characteristics

- White and red vertical stripes.
- A variety of shapes.
- May be lettered.
- Buoy may have red topmark.
- If lit:



Nautical Charts

One of the most important tools for safely navigating waterways is a Nautical Chart. Today, many recreational boaters use GPS receivers and perform electronic waypoint navigation. Although a GPS can tell you where you are in terms of latitude and longitude, it cannot show what is around or beneath the boat, or what obstacles may be in the way.

Nautical charts show the nature and shape of the coast, including water depths, marine hazards, general configuration and character of the bottom, and Aids to Navigation, as well as prominent landmarks, port facilities, and other relevant information. Changes brought about by people and nature require that nautical charts be constantly maintained and updated to aid safe navigation.

To meet the needs of the boating public, the National Oceanic and Atmospheric Administration's National Ocean Service (NOS) produces a variety of nautical charts and related products. Nautical charts can vary in scale and format. Chart scale refers to a measurement of an area, not the distance. A chart covering a relatively large area is called a "small scale" chart; a "large scale" chart will cover a relatively small area and show much greater detail. Having the most current chart is important. That is why the publication date is critical. Storms and wave action can alter the coastline, so only up-to-date charts should be used for navigation. For all navigation, boat operators should also use the chart that provides the level of detail needed.

NOS nautical charts may be purchased directly by mail from the NOS Distribution Branch or through an authorized agent. There are more than 1,700 nautical chart agents that sell NOS charts. Use the address and contact numbers below to obtain a list of agents near you or to request a free catalog:

FAA, National Aeronautical Charting Office

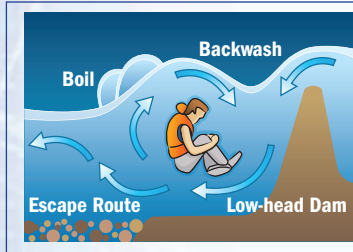
Distribution Division, AJW-3550
10201 Good Luck Road
Glendale, MD 20769-9700
Tel: (301) 436-8301 or (800) 638-8972
Fax: (301) 436-6829
E-mail: 9-AMC-chartsales@faa.gov
Website: www.naco.faa.gov/ecom

Updated chart information can be obtained from "Local Notice to Mariners," updated weekly by the U.S. Coast Guard and available online at www.navcen.uscg.gov/lnm/default.htm.

Dams and Navigation Locks

Low-head Dams

Those boating on rivers need to be aware of their location in regard to dams in their boating area. Low-head, or “fixed crest,” dams can be difficult to see from small vessels moving down-river. They can be extremely dangerous to small boats and swimmers; so much so they have been nicknamed “drowning machines.” Be aware that buoys are not in the river year round and even when they are they can be moved off station by the current. Keep a lookout for “Danger Dam” signs. It is strongly recommended that boaters **use navigation charts**, which provide valuable information on the location of dams and other hazards in the river.



Navigation Locks

A lock is an engineered structure that enables vessels to move between waterways of differing heights. There are specific procedures in place for navigating through locks. Specifics may vary in certain regions, but in general:

- Stay between the red and green buoys that mark the river's navigable channel.
- Request an opening using your marine radio, cell phone, or with a sound signal consisting of one prolonged blast (4-6 seconds) and one short blast (1 second) within one mile of the lock. Sound signals can be made by using the lock's pull-cord or your whistle, horn, megaphone, or hailer.
- Wait for the lock operator to signal you with horn blasts; additional signals may include traffic lights or flashing lights.
- Enter the lock at reduced speed.
- Make sure all passengers remain seated and wear their life jackets.
- Tie your craft to the mooring devices after entering; a minimum of 50 feet of line is recommended.
- Use fenders to avoid damage to your vessel and the lock walls.
- When through, wait for the lock operator's signal (horn and/or lights), then leave the lock at idle speed.

There is a specific order of lockage priority among vessels. Military and most commercial vessels have priority over recreational vessels.

LAW ENFORCEMENT

A vessel underway when hailed by a Coast Guard vessel is required to heave to or maneuver as directed so as to permit a boarding team to come aboard. (See “U.S. Coast Guard Boarding Policy: What to Expect” page 50.)

Other federal, state, and local maritime law enforcement officials may also board and examine your vessel, whether it is numbered, unnumbered, or documented. U.S. Coast Guard law enforcement personnel work with and may also be found aboard other agencies' enforcement vessels.

The U.S. Coast Guard may impose a civil penalty for failure to:

- Comply with equipment requirements.
- Report a boating accident.
- Comply with other federal regulations.
- Comply with Navigation Rules.

Negligent Operation (46 USC 2302 (a) (b))

Federal law prohibits the negligent or grossly negligent operation of a vessel and/or interference with the safe operation of a vessel so as to endanger lives and/or property. The U.S. Coast Guard may impose a civil penalty for negligent operation. Grossly negligent operation is a criminal offense and an operator may be fined up to \$5,000, imprisoned for one year, or both.

Some actions that may constitute negligent or grossly negligent operation are:

- Operating a boat in a designated swimming area.
- Excessive speed in the vicinity of other boats or in regulated waters.
- Hazardous water skiing or other water sports practices.
- Bowriding, or riding on seatback, gunwale, or transom.
- Operating a boat while under the influence of alcohol or drugs.

Boating Under the Influence (BUI) (46 USC 2302 (c)/33 CFR 95)

Operating a vessel while intoxicated is dangerous and a federal offense. If an operator of a recreational boat has a blood alcohol content of .08 (.10 in some states) or greater, the operator is subject to a civil penalty not to exceed \$1,000 a criminal penalty not to exceed \$5,000, or a one-year imprisonment, or both. Intoxicated operators who are cited by the Coast Guard may also be cited by other state or local law enforcement officials. State criminal penalties may vary and could include arrest, fines, and/or loss of motor vehicle driving privileges.

Termination of Use (46 USC 4308/33 CFR 177.05)

A U.S. Coast Guard Boarding Officer who observes a vessel being operated in an unsafe condition, specifically defined by law or regulation, and determines that an especially hazardous condition exists that cannot be corrected on the spot, may terminate the vessel's voyage and direct the operator to return to port.

Termination for unsafe use may be imposed for:

- Insufficient life-saving devices.
- Insufficient fire extinguishers.
- An overloaded vessel.
- Improper display of navigation lights.
- Improper ventilation of fuel tanks and engine spaces.
- Fuel leak or accumulation of fuel in the bilges.
- Inadequate backfire flame control.
- Operating in regulated boating areas during predetermined adverse conditions (applies only to Thirteenth USCG District: Idaho, Montana, Oregon, Washington).
- A manifestly unsafe voyage.

An operator who refuses to comply with the directions of a U.S. Coast Guard Boarding Officer to terminate the unsafe use of a recreational vessel can be cited for failure to comply with the Boarding Officer's instruction, as well as for the specific violation that was the basis for the termination order. Violators may be fined up to \$1,000, or imprisoned for up to one year, or both.

Reporting Boating Accidents (33 CFR 173.55)

The operator or owner of any recreational boat is required to file a Boating Accident Report if the boat is involved in an accident that results in any of the following:

- Loss of life.
- A person disappears from the vessel under circumstances that indicate death or injury.
- Personal injury that requires medical treatment beyond basic first aid.
- Damage to the boat and other property damage of \$2,000 or more.
- Complete loss of the boat.

Boat operators are required to report their accident to local authorities in the state where the accident occurred.

Fatal Accidents

Immediate notification is required for fatal accidents. If a person dies or goes missing as a result of a recreational boating accident, the nearest state boating authority must be notified without delay. The following information must be provided:

- Date, time, and exact location of the accident.
- Name of each person who died or went missing.
- Number and name of the vessel.
- Name and address of the owner and operator.

Reporting Timelines

If a person dies, goes missing from the boat, or receives injuries requiring medical treatment beyond basic first aid, a formal report must be filed within 48 hours of the accident.

For accidents involving property damage of \$2,000 or more, or the complete loss of a vessel, a formal report must be made within 10 days.

Note that state requirements for reporting boating accidents may be more stringent than federal requirements. Some states, for example, may require that all boating accidents be reported immediately. Check with the local marine patrol or the Boating Law Administrator in the state where the accident occurred for the reporting procedures that

apply. To download a Reference Guide to State Boating Laws and find more information regarding accident reporting, visit the U.S. Coast Guard Boating Safety Division website at www.uscgboating.org.

Rendering Assistance (46 USC 2304)

The master or person in charge of a vessel is obligated by law to provide assistance that can be safely provided to any individual in danger at sea. The master or person in charge is subject to a fine and/or imprisonment for failure to do so.

Requesting Assistance (Non-Distress Call)

If a boater contacts the U.S. Coast Guard on Channel 16 VHF-FM or Channel 70 DSC and the situation is determined to be non-distress, the Coast Guard will offer to contact any assistance provider (commercial or friend) the boater requests. If the boater has no preference, the Coast Guard will issue a Marine Assistance Request Broadcast (MARB). The boater may then be contacted directly by another boater "Good Samaritan" or by a commercial assistance provider with an offer of help.

U.S. Coast Guard Boarding Policy

Title 14, Section 89, of the United States Code authorizes the U. S. Coast Guard to board vessels subject to the jurisdiction of the United States, anytime upon the high seas and upon waters over which the United States has jurisdiction, to make inquiries, examinations, inspections, searches, seizures, and arrests.

What to Expect

The U.S. Coast Guard is a multi-mission agency. Although its legacy mission of saving lives at sea remains a priority, enforcement of maritime laws and homeland security has become the U.S. Coast Guard's – and the nation's – focus. The U.S. Coast Guard conducts nearly 70,000 boardings a year in its multiple roles: enforcing the law, providing search and rescue services, promoting boating safety, preventing damage to marine environments, and helping to secure the nation's borders. The more time a boater spends on the water, the more likely he or she will experience a U.S. Coast Guard boarding.

During law enforcement boardings, the scope of the vessel inspection is to determine the vessel's status (commercial, recreational, passen-

ger, cargo, and/or commercial fishing) and to check for compliance with all applicable federal laws and regulations.

The decision to board may be based on a vessel's activity, location, and, in some circumstances, obvious violations, such as operating at night without navigation lights, or improper display of registration numbers. The Coast Guard vessel will usually radio a series of pre-boarding questions, such as: What was the vessel's last port of call and what is its next port of call? How many persons are on board? What is the purpose of your voyage?

If the Coast Guard decides to board, consider it an important opportunity to learn something

new about safety equipment and safe boating practices. Typically, a uniformed U.S. Coast Guard Boarding Team of two to four officers will come aboard, introduce themselves, and state the reason for the boarding. Like all law enforcement officers, they will be armed. The officer in charge will ask if you have any weapons aboard; if so, they will usually secure all weapons for the duration of the boarding. They will conduct an initial safety inspection to identify any obvious safety hazards and to verify the general seaworthiness of your vessel.

The officer will then ask to see the vessel's registration or other documentation and proceed to a more detailed inspection of your required safety equipment: life jackets, fire extinguishers, flares, etc. You should know that the Boarding Officer will check every aspect of each item on the list. For example, with life jackets – the item most frequently cited for violations – the officer will check to see if you have U.S. Coast Guard-approved life jackets on board, in good and serviceable condition, properly stowed, and the correct size for the intended wearers.

When the boarding is complete, the officer will provide you with a report of the boarding, noting the results of the inspection of your vessel. In the event of a violation, the Boarding Officer will explain the results and the procedures you will need to follow to bring your vessel into compliance. If you have any questions, ask the Boarding Officer before the team departs.



VESSEL SAFETY CHECK

The U.S. Coast Guard would like to see all vessels in compliance with equipment carriage requirements and safely operated. If you are uncertain about the safety requirements for your vessel, one way to make sure you are in compliance is to schedule a Vessel Safety Check (VSC), offered as a free public service by the United States Coast Guard Auxiliary and United States Power Squadrons®, volunteer organizations dedicated to assisting the U.S. Coast Guard in promoting boating safety. Other federal and state agencies may also conduct these Vessel Safety Checks. (Find out more at www.safetyseal.net.)

A VSC is **not** a law enforcement action; however, in some states qualified marine law enforcement personnel may conduct Vessel Safety Checks. Qualified examiners will come to your vessel and conduct a courtesy examination of safety equipment carried or installed and certain aspects of the vessel's overall condition. VSC requirements parallel federal and state requirements with regard to equipment and vessel condition. Those vessels that pass will be awarded a VSC decal indicating a successful check.

The items checked during a VSC are:

- Navigation lights.
- Sound producing devices/bell.
- Voice communications.
- Life jackets and throwable flotation devices.
- Fire extinguishers.
- Visual distress signals.
- Backfire flame control.
- Overall vessel condition, including electric-fuel systems, galley-heating systems, deck free of hazards/clean bilge.
- Ventilation.
- Proper display of numbers.
- Pollution placard (oily waste discharge).
- MARPOL trash placards (garbage dumping restriction).
- Marine sanitation device.
- Registration/documentation.
- Navigation Rules book.
- State and/or local requirements.



Other recommended equipment

While not required, the following are also strongly recommended:

- VHF-FM Marine Radio with Digital Selective Calling System.
- Dewatering Device and Backup.
- Mounted Fire Extinguishers.
- Anchor and Line.
- First Aid Kit.
- Person-in-Water (PIW) Kit.
- Capacity Plates.

During the Vessel Safety Check, the vessel examiner will discuss with the recreational boater the purpose of specific marine safety equipment, will clarify federal and state regulations, will discuss certain safety procedures, and will answer any boating-related questions. Some of the topics discussed are:

- Accident reporting/owner responsibility.
- Charts and Aids to Navigation.
- Offshore operation.
- Inflatable life rafts.
- Immersion suits.
- Survival tips.
- First aid.
- Float plans.
- Weather and sea conditions.
- Insurance considerations.
- Fueling and fuel management.
- Boating checklist.
- Availability of boating safety classes.
- America's Waterway Watch.

For More Information

To schedule a Vessel Safety Check, or for more information on the Vessel Safety Check Program, contact your local U.S. Coast Guard Auxiliary or United States Power Squadrons, state boating agency, or visit the Vessel Safety Check website at www.safetyseal.net.



SAFETY AND SURVIVAL TIPS

Safe Boating Education

Training is important for boaters of all experience levels, but especially for the beginning boater. In a typical year, approximately 70 percent of accidents involving fatalities occur on boats where the boat operator



has had no formal instruction on how to operate the vessel. As a result, more than half of all states have enacted legislation mandating boater safety education as a requirement for boat operators.

Boating safety is no accident. To further develop your boating knowledge, proficiency, and confidence, take a boating safety course.

To locate local course offerings, or for more information on recreational boating and boating safety, contact your state boating agency, U.S. Coast Guard District office, or one of the organizations listed below:

United States Coast Guard Auxiliary

National Headquarters
www.cgaux.org

United States Power Squadrons®

National Headquarters
(888) 367-8777
www.usps.org

National Association of State Boating Law Administrators

(859) 225-9487
www.nasbla.org

National Safe Boating Council

(703) 361-4294
www.safeboatingcouncil.org

BoatU.S. Foundation

(800) 245-2628
www.boatus.com/foundation

U.S. Coast Guard District Offices are listed on the inside back cover.

***Take Time to Reflect on Safety
Safe Boating Begins Here ... with You!***

Operator's Responsibilities

Your degree of enjoyment on the water depends on you, your equipment, and other people who, like yourself, boat responsibly.

As a boat operator, you should:

- Make sure that everyone on board is wearing a U.S. Coast Guard-approved life jacket at all times while on the water.
- Take a boating safety course.
- Never operate a vessel while under the influence of alcohol or dangerous drugs.
- Make sure your boat is in top operating condition. It should be free of tripping hazards and fire hazards, and have clean bilges.
- Make sure the required safety equipment is on board, maintained in good working order, and that you know how to use these devices.
- Always file a float plan with a relative or friend.
- Have a complete understanding of the operation and handling characteristics of your boat.
- Know your location, where you are going, and how to return.
- Maintain a safe speed at all times to avoid collision.
- Keep an eye out for changing weather conditions, and act accordingly.
- Know and follow the "Rules of the Road" (Navigation Rules.)
- Know and obey federal and state regulations and waterway markers.
- Be sure to maintain a proper lookout. Scan the water back and forth. Stay alert. Most boating accidents are caused by operator inattention.

Remember, you are the key to safe boating!

Carbon Monoxide Hazards

Carbon Monoxide (CO) can be a silent killer on houseboats and other recreational vessels. Each year, boaters are injured or killed by carbon monoxide. Virtually all such poisonings are preventable.

Carbon monoxide is a by-product of the combustion of carbon-based material, such as gasoline, propane, charcoal, or wood. Common sources aboard boats include main and auxiliary engines, generators, cooking ranges, space heaters, and water heaters. Note that cold and poorly tuned engines produce more carbon monoxide than warm, properly tuned engines.

CO can collect within a boat in a variety of ways. Exhaust leaks – the leading cause of carbon monoxide fatalities – can allow CO to migrate throughout the boat and into enclosed areas. Even properly vented exhaust can re-enter a boat if it is moored too close to a dock or another boat, or if the exhaust is pushed back by prevailing winds. Exhaust can also re-enter boats when cruising under certain conditions, especially with canvas in place, which produces the “station wagon” effect. Exhaust can also collect in enclosed spaces near the stern swim platform.

What To Do

Schedule regular engine and exhaust system maintenance inspections by experienced and trained mechanics.

Be aware that dangerous concentrations of CO can accumulate when a boat, generator, or other fueled device is operated while the boat is at a pier, near a seawall, or alongside another boat. Do not run engines or equipment for extended periods of time under these conditions without continuous monitoring.

Keep forward-facing hatches open to allow fresh air to circulate in accommodation spaces, even in inclement weather.

Keep people clear of the rear deck area and swim platform of the boat while the generator or engines are running. Always monitor the swimming area.

Another dangerous practice to avoid is the towed water sport of “teak” surfing (also referred to as “drag” or “platform” surfing). Teak surfing is an activity where participants hang on to the boat’s swim platform while the boat moves forward slowly through the water and the participants surf in its wake. This is dangerous on two levels: it places individuals in close proximity to the vessel’s propeller, and it exposes them to dangerously high levels of carbon monoxide created by the vessel’s exhaust. Individuals can lose consciousness in seconds. Teak surfing is a dangerous practice that has been prohibited by law in many states.

Do not confuse carbon monoxide poisoning with seasickness or intoxication. If someone on board complains of irritated eyes, headaches, nausea, weakness, or dizziness, immediately move the person to fresh air, investigate the cause, and take corrective action. If necessary, seek medical attention.

Install a carbon monoxide detector in each accommodation space on your boat. Check the detectors periodically to be sure they are functioning properly.

Carbon Monoxide Checklist

Each Trip:

- Make sure all exhaust clamps are in place and secure.
- Look for exhaust leaking from the exhaust system components, as evidenced by rust and/or black streaking, water leaks, or corroded or cracked fittings.
- Inspect rubber exhaust hoses for burned or cracked sections. All rubber hoses should be pliable and free of kinks.
- Confirm that cooling water flows from the exhaust outlet when the engines and generator are started.
- Listen for any change in exhaust sound that could indicate a failure of an exhaust component.
- Test the operation of each carbon monoxide detector.
- **Do not** operate the vessel if any of these problems exist.

Annual Maintenance to be Performed by a Qualified Marine Technician:

- Replace exhaust hoses if any evidence of cracking, charring, or deterioration is found.
- Inspect each water pump impeller and inspect the condition of the water pump housing. Replace if worn or cracked (refer to the engine and generator manuals for further information).
- Inspect each of the metallic exhaust components for cracking, rusting, leaking, or looseness. Pay particular attention to the cylinder head, exhaust manifold, and water injection elbow.
- Clean, inspect, and confirm the proper operation of the generator cooling water anti-siphon valve (if so equipped).

Regular maintenance and proper operation of the boat are the best defenses against poisoning from carbon monoxide. To find out more about how you can prevent carbon monoxide poisoning on recreational boats, visit the U.S. Coast Guard Boating Safety Division website at www.uscgboating.org/command/co.htm.

Overloading

Never load your boat with passengers and cargo beyond its safe carrying capacity. Too many people and/or too much gear can cause the boat to become unstable. Always balance the load so that the boat maintains proper trim. When loading your boat:

- Distribute the load evenly fore and aft and from side to side.
- Keep the load low in the boat.
- Keep passengers seated; avoid standing in small boats.
- Secure gear to prevent shifting.
- Do not exceed the load specified in the U.S. Coast Guard Maximum Capacities information label, commonly called the “capacity plate,” required by federal law on motorized mono-hull boats less than 20 feet in length.

U.S. COAST GUARD CAPACITY INFORMATION

MAXIMUM HORSE POWER

MAXIMUM PERSONS CAPACITY (POUNDS)

MAXIMUM WEIGHT CAPACITY

PERSONS MOTOR & GEAR (POUNDS)

THIS BOAT COMPLIES WITH U.S. COAST GUARD SAFETY
STANDARDS IN EFFECT ON THE DATE OF CERTIFICATION

MODEL NO. SERIAL NO.

MFO. BY

If there is no capacity plate, use the following formula as a guide to determine the maximum number of persons you can safely carry in calm weather. The formula is applicable only to mono-hull boats less than 20 feet (12 meters) in length. A mono-hull is a boat that makes a single “footprint” in the water when loaded to its rated capacity; catamarans, trimarans, and pontoon boats are not mono-hull boats.

Boat Length (in feet)	Boat Width (in feet)							
	2.5	3	3.5	4	4.5	5	5.5	6
6	1	1	2	2	3	3	4	4
8	1	2	2	3	3	4	4	5
10	2	2	3	3	4	4	5	5
12	2	3	3	4	4	5	5	6
14	3	3	4	4	5	5	6	6
16	3	4	4	5	5	6	6	7

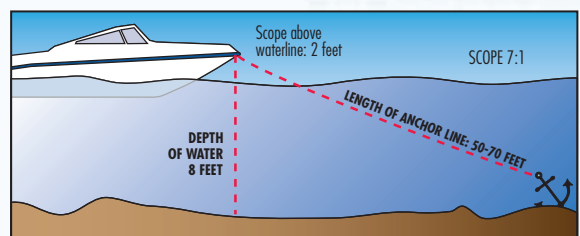
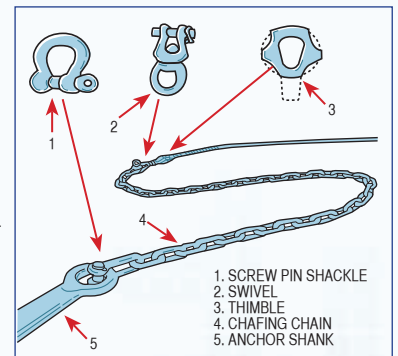
$$\text{Maximum Number of Persons} = \frac{\text{Boat Length} \times \text{Boat Width}}{15}$$

Anchoring

Anchoring is done for two principal reasons: 1) to stop for fishing, swimming, lunch, or an overnight stay, and 2) to keep the boat from running aground in bad weather or as a result of engine failure.

Anchoring can be a simple task if you follow these guidelines:

- Make sure you have the proper type of anchor (Danforth/Plow/Mushroom).
- Attach a 3-6 foot length of galvanized chain to the anchor. A chain will withstand abrasion by sand, rock, or mud on the bottom much better than a fiber line.
- Attach a length of nylon anchor line to the end of the chain using an anchor swivel, a combination called the “Rode.” The nylon will stretch under the impact of heavy waves or wind, cushioning the strain on the boat and the anchor.
- Select an area that offers maximum protection from wind, current, and boat traffic.
- Determine the water depth and type of bottom (preferably sand or mud).
- Calculate the amount of anchor line you will need to let out. The general rule is five to seven times as much line as the depth of water plus the distance from the surface of the water to where the anchor will attach to the bow. For example, if the water is eight feet deep and it is two feet from the surface of the water to your bow cleat, you would multiply 10 feet by 5 or 7 to get the amount of anchor line to put out. (See diagram below.)



- Secure the anchor line to the bow cleat at the point you want it to stop.
- Bring the bow of the vessel into the wind or current.
- When you get to the spot you want to anchor, place the engine in neutral.
- When the boat comes to a stop, slowly lower the anchor. Do not throw the anchor over, as throwing tends to foul the anchor line.
- When all of the line has been let out, back down on the anchor with the engine in idle reverse to help set the anchor firmly on the bottom.
- When the anchor is set, take note of reference points (landmarks) in relation to the boat. Check these points frequently to make sure you are not drifting.

Do not anchor from the stern!!

Anchoring by the stern has caused many boats – small boats especially – to capsize and sink. The reason is that the transom is usually squared off and has less freeboard than the bow. In addition, the stern may be carrying the added weight of a motor, fuel tank, or gear brought on board. In a strong current, the force of the water can pull the stern under. Anchoring at the stern also makes the boat vulnerable to swamping by wave action.

Vessels Operating Offshore

If you operate your vessel offshore, you should consider carrying additional safety equipment beyond the minimum federal requirements. This equipment should include appropriate communications gear, an inflatable life raft, an Emergency Position Indicating Radio Beacon (EPIRB), and a means of accurately determining your location. In cold waters, you should also carry an immersion suit for everyone on board. Do not underestimate the danger of hypothermia.

Communications

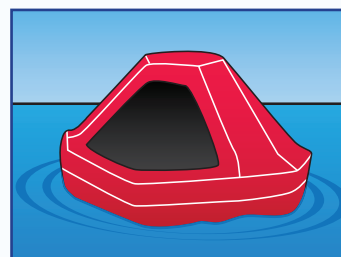
Carry communications gear – a marine VHF-FM and/or HF transceiver(s) – appropriate to your operating area. Cellular phone coverage is available in many coastal areas, but **should not** be considered a substitute for VHF-FM marine band radios for emergency purposes.

Improper use of a radio-telephone is a criminal offense. The use of obscene, indecent, or profane language during radio communications is a federal offense. Penalties exist for misuse of a radio, such as issuing a false distress call.

Channel 16 is the primary VHF-FM marine radio calling and distress channel. It is not to be used for general conversation or radio checks. Such traffic should be conducted on another authorized working channel.

Inflatable Life Rafts

An inflatable life raft can provide a survival platform for an extended period of time. Make sure the life raft is large enough for everyone on board when the boat operates offshore.

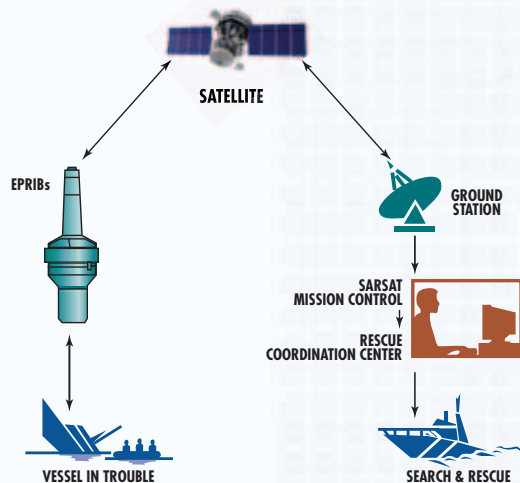


Life Raft

It should have the appropriate emergency equipment pack, and should be professionally serviced periodically, according to the manufacturer's instructions. U.S. Coast Guard-approved life rafts must meet a number of stringent material and performance standards.

Satellite EPIRBs

406 MHz Satellite Emergency Position Indicating Radio Beacons (EPIRBs) are designed to quickly and reliably alert rescue personnel, indicate an accurate distress position, and guide rescue units to the distress scene, even when all other communications fail. (See page 75.)



Immersion Suits

Immersion suits will delay the effects of hypothermia in cold water. (See page 63.) They should be properly stowed and maintained in accordance with the manufacturer's instructions.

Determining Your Location

It is advisable to carry on board a device to determine your position, such as a Global Positional System (GPS). These devices can be mounted or hand-held and will provide the boater with an accurate location to aid rescue agencies in the event of an emergency.

Small Boats, Hunters, Anglers, and Paddlers

Many hunters, anglers, and paddlers do not think of themselves as boaters, yet they use semi-V hull vessels, flat-bottom jon boats, or canoes and kayaks in pursuit of their sport. These boats tend to be less stable and can easily capsize. Capsizings, sinkings, or falls overboard from small boats account for 70 percent of all boating fatalities. Operators need to be fully aware of their boat's limitations and possess the skill and knowledge to overcome them.

Standing in a small boat raises the center of gravity and risks capsizing the boat. Standing for any reason, even changing seating position, can be dangerous, as is sitting on the gunwales or seat backs, or on a pedestal seat while underway. A raised center of gravity means that a wave, wake, or sudden turn can capsize the boat or result in a person falling overboard.

Staying Afloat

If the boat capsizes, or you fall overboard, follow these rules to stay afloat:

- Remain calm: do not thrash about or try to remove clothing or footwear. It is a common belief that persons dressed in heavy clothing or waders will sink immediately if they fall overboard. This is not true. Air trapped in clothing provides considerable flotation, and bending the knees will trap air in waders, providing additional flotation. Thrashing in the water leads to exhaustion and increases the loss of air that keeps you afloat.
- If you are wearing a life jacket, keep it on.
- Keep your knees bent.
- Float on your back and paddle slowly to safety.

Cold-Water Survival

Sudden immersion in cold water can induce rapid, uncontrolled breathing, cardiac arrest, and other physical conditions that can result in drowning. In an unexpected plunge, or in situations where you must enter cold water, here are a few guidelines to follow:

- Button up your clothing.
- Cover your head if possible; about 50 percent of body heat is lost from the head.
- If entering the water voluntarily, enter slowly.
- Keep your head out of the water if possible.
- If you cannot immediately get out of the water and rescue is not imminent, draw your knees to your chest and wrap your arms across your chest, hugging your life jacket in the Heat Escape Lessening Posture (H.E.L.P.) This will protect the major areas of your body from heat loss.
- If your boat has capsized and there are others in the water with you, huddle together with your arms around each other. These huddles are good for morale, keep everyone together, and make a larger target to spot in the water – all of which increase your chances of being seen and rescued.



H.E.L.P. Position

Hypothermia

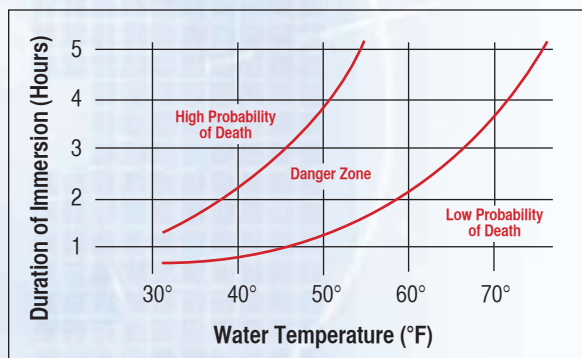
Immersion in cold water speeds the loss of body heat and can lead to hypothermia. Hypothermia is the abnormal lowering of internal body temperature. If your vessel capsizes, it will likely float on or just below the surface. Outboard-powered vessels, built after 1978, are designed to support you even if full of water or capsized. To reduce the effects of hypothermia, get in or on the boat. Try to get as much of your body out of the water as possible. If you do not get in the boat, a life jacket will enable you to keep your head out of the water. This is important because about 50 percent of body heat loss is from the head.

Cold water survival can be broken down into three phases:

- **Cold Shock:** an initial deep and sudden gasp followed by hyperventilation. Cold shock will pass in about one minute.
- **Cold Incapacitation:** in the next 10 minutes you will lose the effective use of your fingers, arms, and legs for any meaningful movement. Concentrate on self-rescue.
- **Hypothermia:** Depending on the temperature of the water, loss of consciousness may occur in as little as one hour.

For more information, see Cold Water Boot Camp at www.watersafetycongress.org.

It may be possible to revive a drowning victim who has been under water for considerable time and shows no signs of life. Numerous documented cases exist where victims have been resuscitated with no apparent harmful effects after long immersions. Start CPR immediately and get the victim to a hospital as quickly as possible.



The Danger Zone indicates conditions where safety precautions and appropriate behavior (adopting H.E.L.P.) can make the difference between death and survival.



Trailing

Legal Requirements

Be sure your boat trailer has current state registration and license plates, and working lights. Also, if your boat is more than 8.5 feet wide, it may require a special permit from your state Department of Transportation before transporting it on the highway.

Safety

A boat hull is designed for even support on the water. When transported on a trailer, your boat should be supported as evenly as possible across the hull to allow for even distribution of the weight of the boat and any contents. Your trailer should be long enough to support the full length of the hull, but short enough to allow the boat engine – secured and in the full “up” position – to extend freely.

Before towing:

- Be sure the tow ball and coupler are the same size and that all bolts with washers are tightly secured. The coupler should be completely over the ball and the latching mechanism locked.
- Balance the load evenly from front to rear and side-to-side. Too much weight on the hitch will cause the rear wheels of the tow vehicle to drag and may make steering difficult. Too much weight on the rear of the trailer will cause the trailer to “fishtail.”
- Check that safety chains are attached, trailer lights function properly, tires (including the spare) are adequately inflated, brakes are fully functional, and side mirrors are large enough to provide an unobstructed view on both sides of the vehicle.
- Secure all equipment inside the boat. Secure the boat cover, if used, so that it will not blow off or tear while towing.

Pre-Launching Preparations

- To save time, prepare your boat for launching away from the ramp. Remove engine supports and tie-downs, and make sure the winch is properly attached to the bow eye and locked in position. Disconnect the trailer lights to prevent shorting of the electrical system or burning out a bulb.
- Install the drain plug. Make ready dock lines, fenders, and boat hooks. Attach a line to the bow and the stern of the boat so the

boat cannot drift away after launching and can be easily maneuvered to the docking area.

- Visually inspect the launch ramp for hazards, such as a steep drop off, slippery area, and sharp objects. Proceed slowly to the ramp, remembering that your boat is just resting on the trailer and attached only at the bow. Have one person in the boat and one at the water's edge to help guide the driver of the tow vehicle.
- Double-check that you have installed the drain plug.

Launching

- Keep the trailer's rear wheels (and the boat's exhaust pipes) out of the water. If the exhaust pipes become immersed in the water, the engine may stall.
- Set the parking brake and place tire chocks behind rear wheels. Check boat systems, blower, bilge, pumps, and lights. Lower the motor. Start the boat engine and make sure water is passing through the engine cooling system.
- Make sure someone on shore is holding the lines attached to the boat. Release the winch and disconnect the winch line from the bow when the boat operator is ready. Launch with a light shove or by backing off the trailer under power.

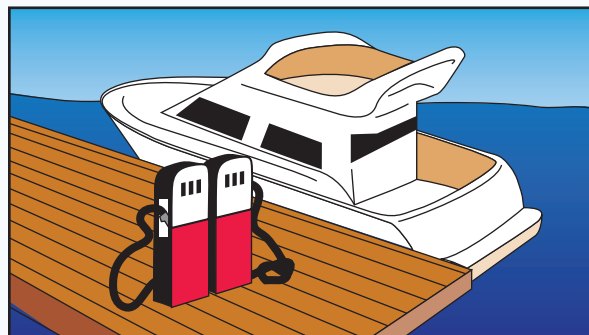
Retrieval

- As you approach the takeout ramp, note any changes in the current, tide, wind direction and/or velocity, and any increases in boating traffic that could make retrieval more difficult. Maneuver the boat carefully to the submerged trailer and raise the lower unit of the engine.
- Winch the boat onto the trailer and secure it. Drive the trailer with boat aboard carefully out of the ramp to a designated parking area for cleanup, reloading, and an equipment safety check.
- Remove the drain plug. Wash the trailer and boat, and flush the engine with fresh water. This will help prevent the transfer or spread of invasive species. In some areas special washing stations are provided and must be used. Check with your local marine patrol agencies.

Fueling Precautions

Most fires and explosions happen during or shortly after fueling. To avoid an accident, follow these safety guidelines.

- Refuel any portable tanks ashore.
- Close all hatches and other openings before refueling. Extinguish all smoking materials. Turn off engines, all electrical equipment, radios, stoves, and other appliances. Remove all passengers.
- Keep the fill nozzle in contact with the tank and wipe up any spilled fuel.
- After fueling, open all ports, hatches, and doors to ventilate. Run the blower for at least four minutes. Check the bilges for fuel vapors before starting the engine. Do the "sniff test" to make sure there is no odor of gasoline anywhere in the boat.



Do not start the engine until all traces of fuel vapors are eliminated!

Fuel Management

Practice the "One-Third Rule" by using:

- One-third of the fuel to go out.
- One-third to get back.
- One-third held in reserve.

Propeller Blade Warning

Never forget the danger to persons in the water and injuries that boat propellers can inflict. Most propeller injuries and fatalities involve open motorboats from 16 to 25 feet in length and result from operator inattention, inexperience, and carelessness.



People in the water can be severely injured or killed!

Be alert! Remember to shut off your engines when approaching swimmers or other persons in the water. Keep those in the water on the operator's side of the boat, always in view. Propeller guards are helpful but are not suitable for all types of boats. The best and safest action when people are in the water near your boat is to **shut off** your engines.

Weather

You should never leave the dock without first checking the local weather forecast. You can get the weather information from the TV, radio, local newspaper, online, or from one of the weather channels on your VHF-FM radio.

At certain times of the year, weather can change rapidly and you should continually keep a "weather eye" out. While you are out in a boat, here are a few signs you can look for that indicate an approaching weather change:

- Flat clouds getting lower and thicker.
- Puffy, vertically rising clouds getting higher.
- Dark, threatening clouds, especially to the west/southwest
- A sudden drop in temperature.
- A halo around the sun or moon.
- Increasing wind or a sudden change in wind direction.
- Flashes on the horizon.
- Seas becoming heavy.
- Heavy AM radio static, which can indicate nearby thunderstorm activity.

If you have a barometer on board, check it every two to three hours. A rising barometer indicates fair weather and a rise in wind velocity; a falling barometer indicates rain approaching.

What to Do in Severe Weather

- Reduce speed, keeping just enough power to maintain headway.
- Make sure everyone on board is wearing their life jacket.
- Turn on your running lights.
- If possible, head for the nearest shore that is safe to approach.
- Head the boat into the waves at a 45 degree angle.
- Keep the bilges free of water.
- Seat any passengers on the bottom of the boat, near the center line.
- If the engine fails, trail a sea anchor from the bow of the boat to keep it headed into the waves (A bucket can work as a sea anchor in an emergency.)
- Anchor the boat, if necessary.

Float Plans

Play it safe; keep a stack of Float Plan forms on hand. Leave a copy with a friend, relative, or the local marina before heading out on the water. In case of an emergency, pertinent information will be right at their fingertips to enable them to contact the local marine police or Coast Guard with necessary details. A word of caution: if you are delayed and it is not an emergency, inform those with your Float Plan, and be sure to notify them when you return so the Float Plan can be "closed out" and an unnecessary and costly search avoided. A sample Float Plan Form is provided on page 73. The Coast Guard also makes Float Plan Forms available online at www.uscgboating.org.



BOATER'S PRE-DEPARTURE CHECKLIST

Know your vessel. Before departure, always be sure your vessel is in good working order and properly equipped for emergencies. Avoid inconvenience and potential danger by taking a few minutes to check the following:

Minimum Federal Required Equipment	Page	Yes	No
State Registration (Certificate of Number)	5		
State Numbering Display	5		
Certificate of Documentation	6		
Life Jackets: one for each person on board	9		
Throwable Type IV Device	14		
Visual Distress Signals	17		
Fire Extinguisher (Fully Charged)	21		
Proper Ventilation	23		
Backfire Flame Control	25		
Sound Producing Device	25		
Navigation Lights	27		
Oil Pollution Placard	32		
Garbage Placard	34		
Marine Sanitation Device	35		
Copy of Navigation Rules (Inland Waters)	36		
Any Additional State Requirements			

Besides meeting the federal requirements, prudent boaters carry additional safety equipment and supplies. The following additional items are suggested depending on the size, location, and use of your boat:

Recommended Equipment and Supplies	Yes	No	N/A
VHF-FM Marine Radio			
EPIRB/PLB			
Anchor and Line			
Chart(s) of the Area and Navigation Tools			
Magnetic Compass			
Fenders and Boat Hook			
Mooring Lines and Heaving Line			
Manual Bilge Pump or Bailing Device			
Tool Kit			
Spare Parts (Fuses, Spark Plugs, Belts, etc.)			
Spare Battery (Fully Charged)			
Spare Propeller/Shear or Cotter Pins			
Extra Fuel and Oil			
Alternate Propulsion (Paddles/Oar)			
Flashlight and Batteries			
Search Light			
First Aid Kit			
Sunscreen (SPF 30+)			
Mirror			
Food and Water			
Extra Clothing/Foul Weather Gear			
AM-FM Radio			
Cellular Phone			
Binoculars			

Safety Checks and Tests

Yes No N/A

Test VHF Marine Radio (Voice Call)		
Test Navigation and Anchor Lights		
Test Steering (Free Movement)		
Test Tilt/Trim		
Test Bilge Pump		
Check for Excessive Water in Bilges		
Check Fuel System for Leaks		
Check Engine Fluids		
Ensure Boat Plug is Properly Installed		
Check Electrical System		
Check Galley/Heating Systems		
Check Gauges (i.e., Battery)		
Check Fuel Amount		
Ensure Anchor is Ready for Use		
Check Load of Vessel and Secure Gear		
Ensure Passengers Know Emergency Procedures and Equipment Location		
Check that all Life Jackets Fit Properly		
Check the Weather Forecast		
File a Float Plan with Relative or Friend		

You can also download a Pre-Departure Checklist from the U.S. Coast Guard website at www.uscgboating.org.

SAMPLE FLOAT PLAN

The Coast Guard makes Float Plan forms available online at www.uscgboating.org. Complete a Float Plan before boating and leave it with a person who can be depended upon to notify the U.S. Coast Guard or other marine rescue organization, should you not return as scheduled.

Remember: Do not file this plan with the U.S. Coast Guard.

Contact your friend in case of a delay, and always when you return.

1. Person Reporting Vessel Overdue

Name _____ Phone _____

Address _____

2. Description of Boat

Name _____

Registration/Documentation No. _____ Length _____

Make _____ Type _____

Hull Color _____ Trim Color _____

Fuel Capacity _____ Engine Type _____

No. of Engines _____

Distinguishing Features _____

3. Operator of Boat

Name _____ Age _____

Health _____ Phone _____

Address _____

Operator's Experience _____

4. Survival Equipment (Check as Appropriate)

☐ # _____ Life Jackets

☐ Flares

☐ Mirror

☐ Smoke Signals

☐ Paddles

☐ Raft or Dinghy

☐ Flashlight

☐ Water

☐ Food

☐ Anchor

☐ EPIRB

☐ Others _____

5. Marine Radio: ☐ Yes ☐ No

Type _____ Freqs. _____

Digital Selective Calling (DSC): ☐ Yes ☐ No

6. Trip Expectations

Depart from _____

Departure Date _____ Time _____

Going to _____

Arrival Date _____ Time _____

If operator has not arrived/returned by: Date _____ Time _____
call the Coast Guard or local authority at the following number:

7. Vehicle Description

License No. _____

Make _____ Model Color _____

Where is vehicle parked? _____

8. Persons on Board

Name _____

Age _____ Phone _____

Medical Conditions _____

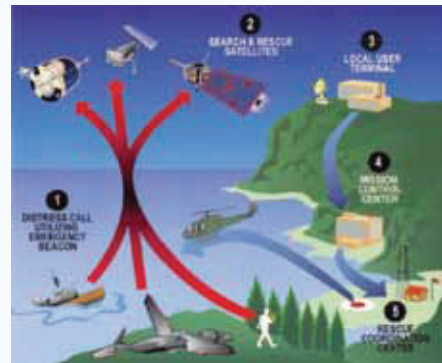
9. Additional Information

EMERGENCY NOTIFICATION/COMMUNICATION

Satellite EPIRBs (Emergency Position Indicating Radio Beacons)

Emergency distress beacons are essentially specialized radio transmitters that are designed for use in situations of grave or imminent danger or when lives are at risk.

How the System Works



EPIRBs operate as part of a worldwide distress system. An international satellite constellation maintains a vigilant, global “listening” watch for satellite EPIRB distress signals. The National Oceanic and Atmospheric Administration (NOAA) operates satellites, ground stations, and an alert-distribution system serving the United States and a large segment of the international community.

When activated, the satellite EPIRB transmits a distress signal with a beacon-unique identifying code. The system detects the signal, calculates an accurate distress position, checks the unique identifying code against the EPIRB registration database (vessel and point of contact information supplied by the owner) and routes the distress alert with registration information to the responsible U.S. Coast Guard (or international) Rescue Coordination Center (RCC).

406 MHz EPIRBs with GPS capability – either internally or externally supplied positional information – also provide an immediate GPS position in the information passed to the RCC and geostationary satellites make detection almost immediate. If the EPIRB does not have the ability to provide a GPS position, the process to determine a position takes about one hour on average and almost always less than two hours.

Satellite EPIRBs also include a homing beacon and strobe to help rescue forces quickly locate the distress scene. Satellite beacons have significant coverage, with alerting timeliness, position accuracy, and signaling advantages over other devices. Before purchasing or using other than a 406MHz EPIRB, be sure you understand its capabilities and limitations.

Mount the EPIRB to float free, according to the manufacturer's instructions, if possible. Otherwise, make sure it is readily accessible. Register the EPIRB with NOAA, according to the instructions provided with the beacon or at the NOAA website: www.sarsat.noaa.gov. Registration is mandatory, improves response time, and reduces false alarms.

Radio Regulations

Most recreational vessels less than 65.6 feet (20 meters) in length are not required to carry a marine radio. Any vessel that carries a marine radio must follow the rules of the Federal Communications Commission (FCC).

Licensing

The FCC does not require most operators of recreational vessels to carry a radio or to have an individual license to operate VHF-FM marine radios, EPIRBs, or any type of radar. Operators must however follow the procedures and courtesies that are required of licensed operators specified in the FCC rules. You may use the name or registration number of your vessel to identify your ship station.

Recreational Vessels that may be required to be licensed:

- Power-driven vessels more than 65 feet (20 meters) in length.
- Any vessel, including a recreational vessel, on an international voyage.

Radio Listening Watch

Vessels not required to carry a marine radio – for example, recreational vessels less than 65.6 feet (20 meters) in length, but which voluntarily carry a radio – must maintain a watch on Channel 16 (156.800 MHz) or VHF Channel 9 (156.450 MHz), the boater-calling channel, whenever the radio is operating and not being used to communicate.

VHF Marine Radio Channels

The chart below contains a partial listing of channels recreational boaters should be familiar with. For a complete listing of VHF channels and frequencies visit the U.S. Coast Guard Navigation Center website at www.navcen.uscg.gov.

Channel	Type of Message and Use
06	Inter-ship Safety: Used for ship-to-ship safety messages and search messages and for ships and aircraft of the Coast Guard.
09	Boater Calling: the FCC has established this channel as a supplementary calling channel for recreational boaters in order to relieve congestion on VHF Channel 16.
13, 67	Navigation Safety (also known as the Bridge-to-Bridge Channel): Ships greater than 20 meters in length maintain a listening watch on this channel in U.S. waters. This channel is available, to all ships. Messages must be about ship navigation – i.e., passing or meeting other ships. You must keep your messages short. Your power output must not be more than one watt. This is also the main working channel at most locks and drawbridges. Channel 67 is for the lower Mississippi River only.
16	International Distress, Safety, and Calling: Use this channel to get the attention of another station (calling) or in emergencies. Ships required to carry a radio maintain a listening watch on this channel. The U.S. Coast Guard and most coast stations also maintain a listening watch on this channel.
21A, 23A, 83A	U.S. Coast Guard only.
22A	U.S. Coast Guard liaison and Maritime Safety Information Broadcasts: Announcements of urgent marine information broadcasts and storm warnings on Channel 16.
24,25, 26,27 28, 84 85, 86	Public Correspondence (Marine Operator): Use these channels to call the marine operator at a public station. By contacting a public coast station, you can make and receive calls from telephones on shore. Except for distress calls, public stations usually charge for this service.
70	Digital Selective Calling: Use this channel for distress and safety calling and for general purpose calling, using only digital selective calling (DSC) techniques.

Digital Selective Calling (DSC)

Digital Selective Calling (DSC), allows boaters to instantly send an automatically formatted distress alert to the Coast Guard or other rescue authority anywhere in the world. Digital Selective Calling also allows boaters to initiate or receive distress, urgency, safety, and routine radiotelephone calls to or from any similarly equipped vessel or shore station, without requiring either party to be near a radio loudspeaker. DSC acts like the dial and bell of a telephone, allowing you to “direct dial” and “ring” other radios, or allowing others to “ring” you, without having to listen to a speaker. New VHF and HF radiotelephones have DSC capability.

All DSC-equipped radios, and most GPS receivers, have a data interface connector. The interface allows most models of GPS to be successfully interconnected to DSC-capable radios, regardless of manufacture. The Coast Guard recommends that you interconnect your GPS and DSC-equipped radio. Doing so may save your life in an emergency situation.

Users of a VHF-FM marine radio equipped with Digital Selective Calling will also need to obtain a Maritime Mobile Service Identity (MMSI) number. These are available from BoatU.S., Sea Tow, the FCC and the United States Power Squadrons®. More information on Digital Selective Calling is available online at www.navcen.uscg.gov/MARCOMMS/gmdss/dsc.htm.

When properly registered with an MMSI number and interfaced with GPS, the DSC radio signal transmits vital vessel information in an emergency. With one push of a button, your DSC radio sends an automated digital distress alert containing your MMSI number, position, and the nature of the distress (if entered) to other DSC-equipped vessels and rescue facilities.

Rescue 21

Rescue 21 is the advanced command, control, and communications system created to improve search and rescue with stronger VHF-FM marine radio signals, direction-finding capabilities, tracking of ships and aircraft, and better communications with state and local first-responders. The system is currently being installed in stages across the contiguous 48 states, Alaska, Hawaii, Guam, Puerto Rico, and the Great Lakes. When fully deployed, it will form the backbone of the U.S. Coast Guard's short-range communications system.

With increased communications coverage, advanced direction finding capabilities, and Digital Selective Calling, Rescue 21 helps take the “search” out of search and rescue.

Capabilities:

- Incorporates direction-finding equipment to improve locating vessels in distress.
- Enhances the clarity of distress calls.
- Upgrades playback and recording feature of distress calls
- Allows simultaneous channel monitoring.
- Provides full coverage out to 20 nautical miles from the coastline
- Reduces coverage gaps for coastal communications and along navigable rivers and waterways.
- Supports Digital Selective Calling.
- Portable towers for restoration of communications during emergencies or natural disasters.
- Improves interoperability among federal, state, and local agencies.

To take full advantage of Rescue 21, boat operators should upgrade to a DSC-capable VHF-FM marine radio, obtain a Maritime Mobile Service Identity (MMSI) number, enter the number into their radio, and connect the radio to a GPS receiver.

For Vessels Equipped with DSC-Capable Radios

If your vessel is equipped with a DSC-capable radio, and you have obtained and registered an MMSI number and it is properly connected to a GPS receiver, you need only press the red DSC Emergency Call Button for 5 seconds. Your vessel information and position will automatically be transmitted, including the nature of the distress (if entered), and a DSC reply should be received. Upon receipt of this acknowledgement, your radio should automatically shift to Channel 16 to continue voice communications with rescue assets. If no reply is received, switch the Channel 16 and use the procedures below.

SOS: Ships in Distress

Channel 16 is the primary radio channel for ships in distress. To make a distress call on marine VHF-FM Channel 16:

1. Make sure radio is on.
2. Select Channel 16 for standard marine VHF.
3. Press/hold the transmit button.
4. Clearly say: MAYDAY, MAYDAY, MAYDAY.

5. Also give:

- Vessel name, number and/or description.
- Position and/or location.
- Nature of emergency.
- Number of people on board.

6. Release transmit button.

7. Wait for 10 seconds. If no response, repeat "MAYDAY" call as above.

*****Make sure all persons are wearing their life jackets*****

Maritime Search and Rescue

To report Maritime Search and Rescue Emergencies, call the following numbers:

For the Great Lakes, Gulf and East Coasts:

Atlantic Area Command Center:

(757) 398-6700

For the Hawaiian, Alaskan and Pacific Coasts:

Pacific Area Command Center:

(510) 437-3701

False Distress Alerts

It is unlawful to intentionally transmit a false distress alert, or to unintentionally transmit a false distress alert without taking steps to cancel that alert. Boaters who transmit a false distress alert are required to immediately cancel the alert.

If you inadvertently transmit a false DSC alert:

1. Reset the equipment immediately.
2. Tune for radiotelephony on the associated distress and safety frequency in each band in which a false distress alert was transmitted.
3. Transmit a broadcast message to "All Stations" giving the ship's name, call sign, time the alert was transmitted and MMSI, and cancel the false alert on the distress and safety frequency in each band in which the false distress alert was transmitted.

Please post these guidelines near your radio.

OTHER RESPONSIBILITIES

Regulated Navigation Areas/Limited Access Areas (33 CFR 165)

In the aftermath of the September 11, 2001, terrorist attacks on the World Trade Center and the Pentagon, and the earlier attack on the USS Cole in Aden Harbor, Yemen, the United States Coast Guard established Safety and Security Zones to prevent further attacks on U.S. Naval vessels, cruise ships and commercial vessels, and critical infrastructure – such as petroleum facilities and nuclear power plants situated on or near the water. As a boater, not knowing how to act in certain areas or situations may put you in legal jeopardy or, worse, at risk of personal injury.

Help protect our country by learning the new rules:

Naval Vessel Protection Zones

Do not approach within 100 yards, and slow to minimum speed within 500 yards, of any U.S. Naval vessel. If you need to approach within 100 yards in order to ensure a safe passage in accordance with the Navigation Rules, you must contact the U.S. Naval vessel or the U.S. Coast Guard escort vessel on your VHF radio (Channel 16) for authorization.



If a Naval vessel is passing near where you are operating your boat, you may be asked to move your vessel to maintain the 100-yard distance. The U.S. Coast Guard will make an announcement ahead of time to alert boaters in the area.

Violations of the Naval Vessel Protection Zone are a felony offense, punishable by up to 6 years in prison and/or up to \$250,000 in fines.

Be aware that both the U.S. Navy and the U.S. Coast Guard are authorized to use deadly force to protect themselves.

Commercial Shipping Safety Zones

In addition to the Naval Vessel Protection Zone requirements, you must also avoid operating your vessel near all military vessels, cruise liners, and certain commercial vessels.



Observe and avoid all security zones and commercial port operations. Areas that have large marine facilities – including military, commercial/ cruise, or petroleum facilities – should be avoided. There are also restrictions near most dams, power plants, and other facilities located near water.

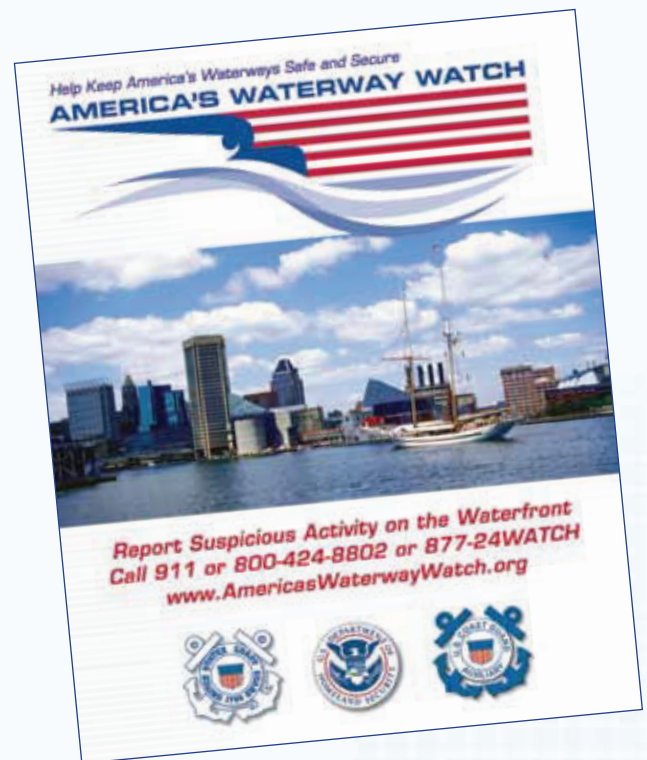
Bridges and Shipping Channels

Do not stop or anchor beneath bridges or in shipping channels. If you do, you can expect to be asked to move and/or be boarded by law enforcement officials.



America's Waterway Watch

If you operate a towboat, marina, recreational vessel, fishing vessel, or otherwise live, work, or engage in recreational activities on or near the nation's waterways, the United States Coast Guard would like your help in keeping these areas safe and secure. You can do this by participating in America's Waterway Watch (AWW), a nationwide initiative similar to the well-known and successful Neighborhood Watch program that asks community members to report suspicious activities to local law enforcement agencies.



We ask boaters to call 877-24WATCH if they notice suspicious activity or behavior on or near the water. Things to report include:

- Someone taking pictures, video, or making sketches of facilities like bridges, tunnels, ferry transport systems, fuel docks, or power plants.
- Someone asking questions about access to one of these facilities.

- Someone anchoring, fishing, or diving in an area not typically used for that activity.
- Unattended vessels in unusual locations.
- Unusual transfer of personnel or cargo while underway.
- Seeing a hole in a security fence around an industrial facility.



Do not take matters into your own hands. Call 877-24WATCH. In cases of immediate danger to life or property, call the Coast Guard on Channel 16 VHF-FM, or dial 911 for emergencies.

America's coasts, rivers, bridges, tunnels, ports, ships, military bases, and waterside industries may be targets for terrorist activity. Although waterway security is better than ever, with more than 95,000 miles of shoreline and more than 290,000 square miles of water, the U.S. Coast Guard and local first responders cannot do the job alone.

To find out how you can become involved, visit the America's Waterway Watch website at www.americaswaterwaywatch.org.

USCG INFORMATION

United States Coast Guard
Boating Safety Division (CG-5422)
2100 2nd Street SW, STOP 7581
Washington, D.C. 20593-7581
(202) 372-1062
www.uscgboating.org

District Recreational Boating Safety Specialists:

First District: Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, Vermont
 (617) 223-8464

Fifth District: Delaware, Maryland, New Jersey, North Carolina, Pennsylvania, Virginia, District of Columbia
 (757) 398-6204

Seventh District: Florida, Georgia, South Carolina, Puerto Rico, U.S. Virgin Islands
 (305) 415-7057

Eighth District: North Dakota, South Dakota, Wyoming, Nebraska, Minnesota, Iowa, Illinois, Indiana, Ohio (shared with Ninth District), Pennsylvania, West Virginia, Kentucky, Tennessee, Mississippi, Alabama, Georgia, Florida (shared with Seventh District) Louisiana, Arkansas, Missouri, Oklahoma, Kansas, New Mexico, Colorado, Texas.
 (504) 671-2157

Ninth District: Michigan, Minnesota, Ohio, Wisconsin
 (216) 902-6094

Eleventh District: Arizona, California, Nevada, Utah
 (510) 437-5364

Thirteenth District: Idaho, Montana, Oregon, Washington
 (206) 220-7257

Fourteenth District: Hawaii, Guam, American Samoa, Northern Marianas
 (808) 535-3424

Seventeenth District: Alaska
 (907) 463-2297

The U.S. Coast Guard thanks
the following partners for their support:

U.S. Coast Guard Auxiliary
www.cgaux.org

United States Power Squadrons®
(888) 367-8777
www.usps.org

National Association of
State Boating Law Administrators
(859) 225-9487
www.nasbla.org

National Safe Boating Council
(703) 361-4294
www.safeboatingcouncil.org

National Water Safety Congress
(440) 209-9805
www.watersafetycongress.org



For more information, please contact:

APPENDIX C

Washington Administrative Code (WAC) Boating Statutes

Chapter Listing | RCW Dispositions

Chapter 79A.60 RCW

REGULATION OF RECREATIONAL VESSELS

Sections

79A.60.010	Definitions.
79A.60.020	Violations of chapter punishable as misdemeanor—Circumstances—Violations designated as civil infractions.
79A.60.030	Operation of vessel in a negligent manner—Penalty.
79A.60.040	Operation of vessel in a reckless manner—Operation of a vessel under the influence of intoxicating liquor, marijuana, or any drug—Consent to breath or blood test—Penalty.
79A.60.045	Vessel impoundment—Procedure—Forfeiture.
79A.60.050	Homicide by watercraft—Penalty.
79A.60.060	Assault by watercraft—Penalty.
79A.60.080	Failure to stop for law enforcement officer.
79A.60.090	Eluding a law enforcement vessel.
79A.60.100	Enforcement—Chapter to supplement federal law.
79A.60.110	Equipment standards—Rules—Penalty.
79A.60.120	Tampering with vessel lights or signals—Exhibiting false lights or signals—Penalty.
79A.60.130	Muffler or underwater exhaust system required—Exemptions—Enforcement—Penalty.
79A.60.140	Personal flotation devices—Inspection and approval—Rules.
79A.60.150	Failure of vessel to contain safety equipment—Owner/operator may be cited for applicable infraction or crime.
79A.60.160	Personal flotation devices required—Penalty.
79A.60.170	Water skiing safety—Requirements.
79A.60.180	Loading or powering vessel beyond safe operating ability—Penalties.
79A.60.190	Operation of personal watercraft—Prohibited activities—Penalties.
79A.60.200	Duty of operator involved in collision, accident, or other casualty—Immunity from liability of persons rendering assistance—Penalties.
79A.60.210	Casualty and accident reports—Confidentiality—Use as evidence.
79A.60.220	Boating accident reports by local government agencies—Investigation—Report of coroner.
79A.60.230	Vessels adrift—Owner to be notified.
79A.60.240	Notice—Contents—Service.
79A.60.250	Posting of notice.
79A.60.260	Compensation—Liability on failure to give notice.
79A.60.270	Disputed claims—Trial—Bond.
79A.60.280	Liability for excessive or negligent use.
79A.60.290	Unclaimed vessel—Procedure.
79A.60.300	Vessels secured pursuant to chapter 79A.65 RCW.

- 79A.60.400** Vessels carrying passengers for hire on whitewater rivers—Purpose.
- 79A.60.410** Vessels carrying passengers for hire on whitewater rivers—Whitewater river outfitter's license required.
- 79A.60.420** Vessels carrying passengers for hire on whitewater rivers—Conduct constituting misdemeanor.
- 79A.60.430** Vessels carrying passengers for hire on whitewater rivers—Safety requirements.
- 79A.60.440** Vessels carrying passengers for hire on whitewater rivers—Operation of vessel—Exemptions.
- 79A.60.450** Vessels carrying passengers for hire on whitewater rivers—Use of alcohol prohibited—Vessel to be accompanied by vessel with licensed outfitter.
- 79A.60.460** Vessels carrying passengers for hire on whitewater rivers—Rights-of-way.
- 79A.60.470** Vessels carrying passengers for hire on whitewater rivers—Designation of whitewater river sections.
- 79A.60.480** Vessels carrying passengers for hire on whitewater rivers—Whitewater river outfitter's license—Application—Fees—Insurance—Penalties—State immune from civil actions arising from licensure.
- 79A.60.485** Vessels carrying passengers for hire on whitewater rivers—Rules to implement RCW **79A.60.480**—Fees.
- 79A.60.490** Vessels carrying passengers for hire on whitewater rivers—License sanction for certain convictions.
- 79A.60.495** Designation as whitewater river—Rules—Schedule of fines.
- 79A.60.498** Uniform regulation of business and professions act.
- 79A.60.500** Uniform waterway marking system.
- 79A.60.510** Findings—Sewage disposal initiative established—Boater environmental education—Waterway access facilities.
- 79A.60.520** Identification and designation of polluted and environmentally sensitive areas.
- 79A.60.530** Designation of marinas, boat launches, or boater destinations for installation of sewage pumpout or dump units.
- 79A.60.540** Contracts for financial assistance—Ownership of sewage pumpout or dump unit—Ongoing costs.
- 79A.60.550** Development by department of ecology of design, installation, and operation of sewage pumpout and dump units—Rules.
- 79A.60.560** Boater environmental education program.
- 79A.60.570** Grants for environmental education or boat waste management planning.
- 79A.60.580** Review of programs by commission.
- 79A.60.590** Allocation of funds.
- 79A.60.595** Commission to adopt rules.
- 79A.60.600** Liquid petroleum gas leak warning devices—Findings.
- 79A.60.610** Recreational boating fire prevention education program.
- 79A.60.620** Small spill prevention education program.
- 79A.60.630** Boating safety education—Commission's duties—Fee—Report to the legislature.
- 79A.60.640** Requirements to operate motor driven boats/vessels—Exemptions—Penalty.
- 79A.60.650** Boating safety education certification account.
- 79A.60.660** Operating motor driven boat or vessel for teak surfing, platform dragging, bodysurfing—Prohibition—Exceptions—Penalty.

- 79A.60.670** Boating activities program—Boating activities advisory committee—Adoption of rules.
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 - 79A.60.710** Vessels for hire—Requirements—Application of section—Penalty.
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79A.60.010

Definitions.

Unless the context clearly requires otherwise, the definitions in this section apply throughout this chapter.

(1) "Accredited course" means a mandatory course of instruction on boating safety education that has been approved by the commission.

(2) "Boat wastes" includes, but is not limited to, sewage, garbage, marine debris, plastics, contaminated bilge water, cleaning solvents, paint scrapings, or discarded petroleum products associated with the use of vessels.

(3) "Boater" means any person on a vessel on waters of the state of Washington.

(4) "Boater education card" means a card issued to a person who has successfully completed a boating safety education test and has paid the registration fee for a serial number record to be maintained in the commission's database.

(5) "Boating educator" means a person providing an accredited course.

(6) "Carrying passengers for hire" means carrying passengers in a vessel on waters of the state for valuable consideration, whether given directly or indirectly or received by the owner, agent, operator, or other person having an interest in the vessel. This shall not include trips where expenses for food, transportation, or incidentals are shared by participants on an even basis. Anyone receiving compensation for skills or money for amortization of equipment and carrying passengers shall be considered to be carrying passengers for hire on waters of the state.

(7) "Certificate of accomplishment" means a form of certificate approved by the commission and issued by a boating educator to a person who has successfully completed an accredited course.

(8) "Commission" means the state parks and recreation commission.

(9) "Darkness" means that period between sunset and sunrise.

(10) "Environmentally sensitive area" means a restricted body of water where discharge of untreated sewage from boats is especially detrimental because of limited flushing, shallow water, commercial or recreational shellfish, swimming areas, diversity of species, the absence of other pollution sources, or other characteristics.

(11) "Guide" means any individual, including but not limited to subcontractors and independent contractors, engaged for compensation or other consideration by a whitewater river outfitter for the purpose of operating vessels. A person licensed under RCW **77.65.480** or **77.65.440** and acting as a fishing guide is not considered a guide for the purposes of this chapter.

(12) "Marina" means a facility providing boat moorage space, fuel, or commercial services. Commercial services include but are not limited to overnight or live-aboard boating accommodations.

(13) "Motor driven boats and vessels" means all boats and vessels which are self propelled.

(14) "Motor vessel safety operating and equipment checklist" means a printed list of the safety requirements for a vessel with a motor installed or attached to the vessel being rented, chartered, or leased and meeting minimum requirements adopted by the commission in accordance with RCW **79A.60.630**.

(15) "Muffler" or "muffler system" means a sound suppression device or system, including an underwater exhaust system, designed and installed to abate the sound of exhaust gases emitted from an internal combustion engine and that prevents excessive or unusual noise.

(16) "Operate" means to steer, direct, or otherwise have physical control of a vessel that is underway.

(17) "Operator" means an individual who steers, directs, or otherwise has physical control of a vessel that is underway or exercises actual authority to control the person at the helm.

(18) "Observer" means the individual riding in a vessel who is responsible for observing a water skier at all times.

(19) "Owner" means a person who has a lawful right to possession of a vessel by purchase, exchange, gift, lease, inheritance, or legal action whether or not the vessel is subject to a security interest.

(20) "Person" means any individual, sole proprietorship, partnership, corporation, nonprofit corporation or organization, limited liability company, firm, association, or other legal entity located within or outside this state.

(21) "Personal flotation device" means a buoyancy device, life preserver, buoyant vest, ring buoy, or buoy cushion that is designed to float a person in the water and that is approved by the commission.

(22) "Personal watercraft" means a vessel of less than sixteen feet that uses a motor powering a water jet pump, as its primary source of motive power and that is designed to be operated by a person sitting, standing, or kneeling on, or being towed behind the vessel, rather than in the conventional manner of sitting or standing inside the vessel.

(23) "Polluted area" means a body of water used by boaters that is contaminated by boat wastes at unacceptable levels, based on applicable water quality and shellfish standards.

(24) "Public entities" means all elected or appointed bodies, including tribal governments, responsible for collecting and spending public funds.

(25) "Reckless" or "recklessly" means acting carelessly and heedlessly in a willful and wanton disregard of the rights, safety, or property of another.

(26) "Rental motor vessel" means a motor vessel that is legally owned by a person that is registered as a rental and leasing agency for recreational motor vessels, and for which there is a written and signed rental, charter, or lease agreement between the owner, or owner's agent, of the vessel and the operator of the vessel.

(27) "Sewage pumpout or dump unit" means:

(a) A receiving chamber or tank designed to receive vessel sewage from a "porta-potty" or a portable container; and

(b) A stationary or portable mechanical device on land, a dock, pier, float, barge, vessel, or other location convenient to boaters, designed to remove sewage waste from holding tanks on vessels.

(28) "Underway" means that a vessel is not at anchor, or made fast to the shore, or aground.

(29) "Vessel" includes every description of watercraft on the water, other than a seaplane, used or capable of being used as a means of transportation on the water. However, it does not include inner tubes, air mattresses, sailboards, and small rafts or flotation devices or toys customarily used by swimmers.

(30) "Water skiing" means the physical act of being towed behind a vessel on, but not limited to, any skis, aquaplane, kneeboard, tube, or any other similar device.

(31) "Waters of the state" means any waters within the territorial limits of Washington state.

(32) "Whitewater river outfitter" means any person who is advertising to carry or carries passengers for hire on any whitewater river of the state, but does not include any person whose only service on a given trip is providing instruction in canoeing or kayaking skills.

(33) "Whitewater rivers of the state" means those rivers and streams, or parts thereof, within the boundaries of the state as listed in RCW **79A.60.470** or as designated by the commission under RCW **79A.60.495**.

[**2005 c 392 § 2; 2003 c 39 § 45; 2000 c 11 § 92; 1998 c 219 § 5; 1997 c 391 § 1; 1993 c 244 § 5; 1933 c 72 § 1; RRS § 9851-1. Formerly RCW 88.12.010.**]

NOTES:

Intent—2005 c 392: See note following RCW [79A.60.630](#).

Intent—1993 c 244: "It is the intent of the legislature that the boating safety laws administered by the state parks and recreation commission provide Washington's citizens with clear and reasonable boating safety regulations and penalties. Therefore, the legislature intends to recodify, clarify, and partially decriminalize the statewide boating safety laws in order to help the boating community understand and comply with these laws.

It is also the intent of the legislature to increase boat registration fees in order to provide additional funds to local governments for boating safety enforcement and education programs. The funds are to be used for enforcement, education, training, and equipment, including vessel noise measurement equipment. The legislature encourages programs that provide boating safety education in the primary and secondary school system for boat users and potential future boat users. The legislature also encourages boating safety programs that use volunteer and private sector efforts to enhance boating safety and education." [[1993 c 244 § 1](#).]

79A.60.020**Violations of chapter punishable as misdemeanor—Circumstances—Violations designated as civil infractions.**

(1) A violation of this chapter designated as an infraction is a misdemeanor, punishable under RCW [9.92.030](#), if the current violation is the person's third violation of the same provision of this chapter during the past three hundred sixty-five days.

(2) A violation designated in this chapter as a civil infraction shall constitute a civil infraction pursuant to chapter [7.84](#) RCW.

[[1999 c 249 § 1501](#); [1993 c 244 § 6](#). Formerly RCW [88.12.015](#).]

NOTES:

Severability—1999 c 249: See note following RCW [79A.05.010](#).

Intent—1993 c 244: See note following RCW [79A.60.010](#).

79A.60.030**Operation of vessel in a negligent manner—Penalty.**

A person shall not operate a vessel in a negligent manner. For the purposes of this section, to "operate in a negligent manner" means operating a vessel in disregard of careful and prudent operation, or in disregard of careful and prudent rates of speed that are no greater than is reasonable and proper under the conditions existing at the point of operation, taking into account the amount and character of traffic, size of the lake or body of water, freedom from obstruction to view ahead, effects of vessel wake, and so as not to unduly or unreasonably endanger life, limb, property or other rights of any person

entitled to the use of such waters. Except as provided in RCW **79A.60.020**, a violation of this section is an infraction under chapter **7.84** RCW.

[**2000 c 11 § 93**; **1993 c 244 § 7**; **1933 c 72 § 2**; RRS § 9851-2. Formerly RCW **88.12.020**.]

NOTES:

Intent—1993 c 244: See note following RCW **79A.60.010**.

79A.60.040

Operation of vessel in a reckless manner—Operation of a vessel under the influence of intoxicating liquor, marijuana, or any drug—Consent to breath or blood test—Penalty.

(1) It is unlawful for any person to operate a vessel in a reckless manner.

(2) It is unlawful for a person to operate a vessel while under the influence of intoxicating liquor, marijuana, or any drug. A person is considered to be under the influence of intoxicating liquor, marijuana, or any drug if, within two hours of operating a vessel:

(a) The person has an alcohol concentration of 0.08 or higher as shown by analysis of the person's breath or blood made under RCW **46.61.506**; or

(b) The person has a THC concentration of 5.00 or higher as shown by analysis of the person's blood made under RCW **46.61.506**; or

(c) The person is under the influence of or affected by intoxicating liquor, marijuana, or any drug; or

(d) The person is under the combined influence of or affected by intoxicating liquor, marijuana, and any drug.

(3) The fact that any person charged with a violation of this section is or has been entitled to use such drug under the laws of this state shall not constitute a defense against any charge of violating this section.

(4)(a) Any person who operates a vessel within this state is deemed to have given consent, subject to the provisions of RCW **46.61.506**, to a test or tests of the person's breath for the purpose of determining the alcohol concentration in the person's breath if arrested for any offense where, at the time of the arrest, the arresting officer has reasonable grounds to believe the person was operating a vessel while under the influence of intoxicating liquor or a combination of intoxicating liquor and any other drug.

(b) When an arrest results from an accident in which there has been serious bodily injury to another person or death or the arresting officer has reasonable grounds to believe the person was operating a vessel while under the influence of THC or any other drug, a blood test may be administered with the consent of the arrested person and a valid waiver of the warrant requirement or without the consent of the person so arrested pursuant to a search warrant or when exigent circumstances exist.

(c) Neither consent nor this section precludes a police officer from obtaining a search warrant for a person's breath or blood.

(d) An arresting officer may administer field sobriety tests when circumstances permit.

(5) The test or tests of breath must be administered pursuant to RCW **46.20.308**. The officer shall warn the person that if the person refuses to take the test, the person will be issued a class 1 civil infraction under RCW **7.80.120**.

(6) A violation of subsection (1) of this section is a misdemeanor. A violation of subsection (2) of this section is a gross misdemeanor. In addition to the statutory penalties imposed, the court may order

the defendant to pay restitution for any damages or injuries resulting from the offense.

[2014 c 132 § 1; 2013 c 278 § 1; 1998 c 213 § 7; 1993 c 244 § 8. Prior: 1990 c 231 § 3; 1990 c 31 § 1; 1987 c 373 § 6; 1986 c 153 § 6; 1985 c 267 § 2. Formerly RCW 88.12.025, 88.12.100, and 88.02.095.]

NOTES:

Effective date—1998 c 213: See note following RCW 46.20.308.

Intent—1993 c 244: See note following RCW 79A.60.010.

Effective date—Severability—1990 c 231: See notes following RCW 79A.60.170.

Legislative finding, purpose—Severability—1987 c 373: See notes following RCW 46.61.502.

79A.60.045

Vessel impoundment—Procedure—Forfeiture.

(1) Whenever the operator of a vessel is arrested for a violation of RCW 79A.60.040, the arresting officer, or another officer acting at the arresting officer's direction, has authority to impound the vessel as provided in this section.

(2) This section is not intended to limit or constrain the ability of local government from enacting and enforcing ordinances or other regulations relating to the impoundment of vessels for the purposes of enforcing RCW 79A.60.040.

(3) Unless vessel impound is required for evidentiary purposes, a law enforcement officer must seek a series of reasonable alternatives to impound before impounding the vessel. Reasonable alternatives to impound may include, but are not limited to:

(a) Working with the vessel's owner to locate a qualified operator who can take possession of the vessel within thirty minutes following the arrest of the vessel's operator and giving possession of the vessel to such a person;

(b) Leaving the vessel at a marina, dock, or moorage facility, provided that:

(i) The owner is present and willing to sign a liability waiver by which the owner agrees to waive any claims related to such an action against the law enforcement officer and the officer's agency and indemnify the officer and the agency against any claims related to such an action by any third party; and

(ii) The owner agrees to pay any applicable moorage charges or fees; and

(c) Towing the vessel to the closest boat ramp, marina, or similar type facility where the owner can meet the impounding officer within thirty minutes in order to:

(i) Moor the vessel by accepting any applicable moorage charges or fees; or

(ii) Take possession of the vessel if the owner was not present at the time of the arrest.

(4) For the purposes of this section, storing an impounded vessel may include, but is not limited to:

(a) Removing the vessel to and placing it in a secure or other type of moorage facility; or

(b) Placing the vessel in the custody of an operator licensed by the United States coast guard per 46 C.F.R. Sec. 11.482 to provide commercial assistance towing services in Washington state who must:

(i) Tow it to a storage facility operated by the towing entity for storage or to a moorage facility for storage; or

(ii) Tow it to a location designated by the operator or owner of the vessel.

(5) In exigent circumstances, an impounding officer may temporarily attach an impounded vessel to a mooring buoy or anchor the vessel to the bottom for up to twenty-four hours, after which time the impounding officer must move or cause the vessel to be moved to an appropriate facility for storage as outlined in subsection (4) of this section.

(6) If the impounding officer secures a vessel by placing it on its trailer, the officer, moorage facility representative, or commercial assistance towing service is authorized to detach the vessel's trailer from the vehicle to which it is attached, attach the trailer to an impounding vehicle, operate the vessel to load it on the trailer, and then tow the vessel on its trailer to the storage facility.

(7) All vessels must be handled appropriately and returned in substantially the same condition as they existed before being impounded, unless forfeited pursuant to subsection (12) of this section. Except as provided in subsection (12)(b) of this section, all personal property in the vessel must be kept intact and must be returned to the vessel's owner or agent during the normal business hours of the entity storing the vessel upon request, provided the vessel owner, or the owner's agent, is able to provide sufficient proof of his or her identity.

(8) No moorage facility or vessel towing service provider is required to accept an impounded or otherwise secured vessel under this section for towing or storage. An impounding officer intending to secure a vessel by means of storing it at a moorage facility must have the permission of the owner or operator of the moorage facility prior to leaving the vessel at the facility. The impounding officer shall identify an authorized person on the vessel impound authorization and inventory form to represent the vessel impound facility. The officer must provide a copy of the vessel impound authorization and inventory form to the designated person representing the vessel impound facility along with the addresses of the registered and legal owners of the vessel. The moorage facility may require that the impounding officer's agency take responsibility for the foreclosure process set forth in subsection (12) of this section before they consent to accept an impounded vessel.

(9)(a) An impounding officer impounding a vessel pursuant to this section shall notify the legal and registered owner or owners of the impoundment of the vessel. The notification must be in writing and sent within one business day after the impound by first-class mail, digital transmission, or facsimile to the last known address of the registered and legal owner or owners of the vessel, as identified by the department of licensing, and must inform the owner or owners of the identity of the person or agency authorizing the impound. The impounding officer may serve the operator with the vessel impound authorization and inventory form at the time of impound if the operator is a legal or registered owner of the vessel. Personal service of the vessel impound authorization and inventory form meets the notice requirement of this subsection with respect to the legal or registered owner personally served. The notification must be provided on a vessel impound authorization and inventory form and include: (i) The name, address, and telephone number of the facility where the vessel is being held; (ii) the right of redemption and opportunity for a hearing to contest the validity of the impoundment; and (iii) the rate that is being charged for the storage of the vessel while impounded.

(b) A notice does not need to be sent to the legal or registered owner or owners of an impounded vessel if the vessel has been redeemed.

(c) The impounded vessel may not be redeemed by the operator within a twelve-hour period starting at the time of the operator's arrest. The vessel may be redeemed by or released to an owner or an agent of the owner that is not the operator within the twelve-hour period following arrest.

(10) A moorage facility that accepts a vessel impounded pursuant to this section for storage may charge the owner of the vessel up to one hundred twenty-five percent of the normal moorage rates of tenants or guests in addition to a fee for securing the impounded vessel. A moorage facility must store the vessel in the least costly boat slip or storage area available that is appropriate for the vessel size. An entity that provides emergency vessel towing services that accepts a vessel impounded pursuant to this section for towing or storage, or both, may charge its normal towing and storage fees. The costs of removal and storage of vessels under this section is a lien upon the vessel until paid, unless the impoundment is determined to be invalid. The registered owner of a vessel impounded pursuant to this

section is responsible for paying all fees associated with the towing and storage of the vessel resulting from its impoundment, except as otherwise provided in subsection (15) of this section.

(11) Within fifteen days of impoundment of the vessel, or until the vessel is forfeited pursuant to subsection (12) of this section, the legal or registered owner of a vessel impounded and stored pursuant to this section may redeem the vessel by paying all towing and storage fees charged as allowed in subsection (10) of this section. Within fifteen days of impoundment of the vessel, or until the vessel is forfeited pursuant to subsection (12) of this section, any person who shows proof of ownership or written authorization from the impounded vessel's registered or legal owner or the vessel's insurer may view the vessel without charge during the normal business hours of the entity storing the vessel. The moorage facility may request that a representative of the impounding agency be present during redemption. If requested, the impounding agency must provide a representative as requested by the moorage facility.

(12) If an impounded vessel stored pursuant to this section is not redeemed by its registered or legal owner pursuant to subsection (11) of this section within fifteen days of its impoundment, the entity storing the vessel, or the agency of the impounding officer, if required by the moorage facility under subsection (8) of this section, may initiate foreclosure. Forfeiture by the vessel owner is complete twenty days after mailing of the notice required by this subsection, unless within that time the owner, or any lienholder or holder of a security interest, pays all fees associated with the towing and storage of the vessel resulting from its impoundment. However, foreclosure may not be completed while a hearing under subsection (15) of this section to contest the validity of the impoundment is pending in district or municipal court or while any appeal of a decision of the district or municipal court on the validity of the impoundment is pending.

(a) In order to foreclose on the vessel, the foreclosing entity must mail notice of its intent. Such a notice must, at a minimum, state: (i) The intent of the foreclosing entity to foreclose on the vessel; (ii) that, when the foreclosure process is complete, the owner forfeits all ownership interest in the vessel; (iii) the right of the foreclosing entity to take possession of or dispose of the vessel upon completion of the foreclosure process; and (iv) that the owner, or other interested person or entity, may avoid forfeiture of the vessel by paying all fees associated with the towing and storage of the vessel resulting from its impoundment within twenty days of mailing of the notice. The notice must be mailed to the owner of the vessel at the address on file with the state with which the vessel is registered, or on file with the federal government, if the vessel is registered with the federal government, and any lienholder or secured interests on record. A notice need not be sent to the purported owner or any other person whose interest in the vessel is not recorded with a state or with the federal government.

(b) Upon completion of the foreclosure process, the registered and legal owners of the vessel forfeit any and all ownership interest in it and the entity administering the foreclosure process must dispose of it through sale. The proceeds of a sale under this section shall be applied first to payment of the amount of reasonable charges incurred by the entity for towing, storage, and sale, then to the owner or to satisfy any liens of record or security interests of record on the vessel in the order of their priority. If the sale is for a sum less than the applicable charges, the foreclosing entity is entitled to assert a claim for the deficiency against the vessel owner. Nothing in this section prevents any lienholder or secured party from asserting a claim for any deficiency owed the lienholder or secured party. If more than one thousand dollars remains after the satisfaction of amounts owed to the entity and to any owner or bona fide security interest, then the foreclosing entity must remit the moneys to the department of licensing for deposit in the derelict vessel removal account established in RCW 79.100.100. A copy of the forfeited vessel disposition report form identifying the vessel resulting in any surplus shall accompany the remitted funds. Transfer of ownership of the vessel after foreclosure must comply with RCW 79.100.150, when applicable. All personal property in the vessel not claimed prior to foreclosure must be turned over to the law enforcement agency that authorized the impoundment. The personal property must be disposed of pursuant to chapter 63.32 or 63.40 RCW, or as otherwise provided by law. Within fourteen days of the completion of the foreclosure process of a vessel pursuant to this subsection, the foreclosing entity shall send a forfeited vessel disposition report, together with a copy of the vessel impound authorization and inventory form and the notice of intent to foreclose, to the department of licensing so that the department

may include documentation in the ownership records of the vessel. The vessel disposition information sent to the department of licensing on the forfeited vessel disposition report relieves the previous owner of the vessel from any civil or criminal liability for the operation of the vessel from the date of sale thereafter, and transfers full liability for the vessel to the party to whom the vessel is transferred by the foreclosing entity.

(13) Any individual or entity whose assistance has been requested by an impounding officer who in good faith provides trailering, towing, or secured or other type of moorage of a vessel impounded pursuant to this section is not liable for any damage to or theft of the vessel or its contents, or for damages for loss of use of the vessel resulting from any act or omission in providing assistance other than for acts or omissions constituting gross negligence or willful or wanton misconduct, or for any damages arising from any act or omission committed during the foreclosure process.

(14) If a law enforcement officer impounds and secures a vessel pursuant to this section, the impounding officer and the government agency employing the officer are not liable for any damage to or theft of the vessel or its contents, or for damages for loss of use of the vessel, or for any damages arising from any act or omission committed during the foreclosure process.

(15) Any legal or registered owner seeking to redeem an impounded vessel under this section has a right to a hearing in the district or municipal court for the jurisdiction in which the vessel was impounded to contest the validity of the impoundment. The district court has jurisdiction to determine the issues involving all impoundments including those authorized by the state or its agents, unless the impoundment was authorized by municipal agents. The municipal court has exclusive jurisdiction to determine the issues involving impoundments authorized by agents of the municipality. Any request for a hearing must be made in writing per the instructions provided on the uniform vessel impound authorization and inventory form and must be received by the appropriate court within ten business days of the date that the vessel impound authorization and inventory form was mailed to or served on the registered or legal owner or owners of the impounded vessel. If the hearing request is not received by the court within ten business days of the sending or personal service of the notice of impoundment pursuant to subsection (9) of this section, the right to a hearing is waived and the registered owner is liable for any towing, storage, or other impoundment charges permitted under this chapter. Upon receipt of a timely hearing request, the court shall proceed to hear and determine the validity of the impoundment.

(a) Within five days after the request for a hearing, the court shall notify the operator of the impound facility, the registered and legal owners of the vessel, and the officer or agency authorizing the impound in writing of the hearing date and time.

(b) At the hearing, the petitioner may produce any relevant evidence that is admissible under court rules to show that the impoundment, towing, or storage fees charged were not proper. The court may consider a written report made under oath by the officer who authorized the impoundment in lieu of the officer's personal appearance at the hearing.

(c) At the conclusion of the hearing, the court shall determine whether the impoundment was proper, whether the towing or storage fees charged were in compliance with the fees established in subsection (10) of this section, and who is responsible for payment of the fees. The court may not adjust fees or charges that are in compliance with subsection (10) of this section.

(d) If the impoundment is found proper, the impoundment, towing, and storage fees as permitted under this chapter together with court costs must be assessed against the petitioner.

(e) If the impoundment is determined to be in violation of this section, then the registered and legal owners of the vessel bear no impoundment, towing, or storage fees, any security must be returned or discharged as appropriate, and the agency that authorized the impoundment is liable for any towing, storage, or other impoundment fees permitted under this chapter. The court shall enter judgment in favor of the moorage facility or vessel towing contractor against the agency authorizing the impound for the impoundment, towing, and storage fees incurred. In addition, the court shall enter judgment in favor of the petitioner for the amount of the filing fee required by law for the impound hearing petition. If an impoundment is determined to be in violation of this section, the impounding officer and the government

agency employing the officer are not liable for damage to or theft of the vessel or its contents, or damages for loss of use of the vessel, if the impounding officer had reasonable suspicion to believe that the operator of the vessel was operating the vessel while under the influence of intoxicating liquor or any drug, was in physical control of the vessel while under the influence of intoxicating liquor or any drug, or was operating the vessel in a reckless manner, or if the impounding officer otherwise acted reasonably under the circumstances in acting to impound and secure the vessel.

(f) If any judgment entered under this subsection is not paid within fifteen days of notice in writing of its entry, the court shall award reasonable attorneys' fees and costs against the defendant in any action to enforce the judgment. Notice of entry of judgment may be made by registered or certified mail, and proof of mailing may be made by affidavit of the party mailing the notice. Notice of the entry of the judgment must read essentially as follows:

TO:
 YOU ARE HEREBY NOTIFIED JUDGMENT
 was entered against you in the Court
 located at in the sum of \$., in an
 action entitled, Case No. YOU
 ARE FURTHER NOTIFIED that attorneys' fees
 and costs will be awarded against you under
 RCW if the judgment is not paid within 15
 days of the date of this notice.
 DATED this day of, (year)
 Signature
 Typed name and address of party mailing
 notice

(16) By September 30, 2017, the department of licensing in collaboration with the commission shall create the following forms for use in the enforcement of this section:

(a) A vessel impound authorization and inventory form. This form must include sections for the impounding officer to record the addresses of the registered and legal owners of the vessel and the designated individual that will act on behalf of the impound facility; and

(b) A forfeited vessel disposition report form.

(17) The definitions in this subsection apply throughout this section unless the context clearly requires otherwise.

(a) "Impound" means to take and hold a vessel in legal custody.

(b) "Legal owner" means a person having a perfected security interest or a registered owner of a vessel unencumbered by a security interest.

(c) "Moorage facility" includes a private moorage facility as defined in RCW **88.26.010**, a moorage facility as defined in RCW **53.08.310**, or a moorage facility owned or operated by the agency of the arresting officer.

(d) "Registered owner" or "owner" means the person whose lawful right of possession of a vessel has most recently been recorded with the department of licensing.

(e) "Secure moorage" is in-water moorage or dry storage at a moorage facility in a location specifically designated for the moorage of vessels and in a location where access is controlled or security is provided.

(f) "Vessel" includes any vessel as defined in RCW **79A.60.010** and includes any associated trailer or towing device used to transport the vessel if it is included in the impoundment.

[**2017 c 247 § 1.**]

79A.60.050**Homicide by watercraft—Penalty.**

(1) When the death of any person ensues within three years as a proximate result of injury proximately caused by the operating of any vessel by any person, the operator is guilty of homicide by watercraft if he or she was operating the vessel:

- (a) While under the influence of intoxicating liquor or any drug, as defined by RCW 79A.60.040;
- (b) In a reckless manner; or
- (c) With disregard for the safety of others.

(2) When the death is caused by a skier towed by a vessel, the operator of the vessel is not guilty of homicide by watercraft.

(3) A violation of this section is punishable as a class A felony according to chapter 9A.20 RCW.

[2000 c 11 § 94; 1998 c 219 § 1. Formerly RCW 88.12.029.]

79A.60.060**Assault by watercraft—Penalty.**

(1) "Serious bodily injury" means bodily injury which involves a substantial risk of death, serious permanent disfigurement, or protracted loss or impairment of the function of any part or organ of the body.

(2) A person is guilty of assault by watercraft if he or she operates any vessel:

(a) In a reckless manner, and this conduct is the proximate cause of serious bodily injury to another; or

(b) While under the influence of intoxicating liquor or any drug, as defined by RCW 79A.60.040, and this conduct is the proximate cause of serious bodily injury to another.

(3) When the injury is caused by a skier towed by a vessel, the operator of the vessel is not guilty of assault by watercraft.

(4) A violation of this section is punishable as a class B felony according to chapter 9A.20 RCW.

[2000 c 11 § 95; 1998 c 219 § 2. Formerly RCW 88.12.032.]

79A.60.080**Failure to stop for law enforcement officer.**

Any operator of a vessel who willfully fails to stop when requested or signaled to do so by a person reasonably identifiable as a law enforcement officer is guilty of a gross misdemeanor.

[1990 c 235 § 1. Formerly RCW 88.12.035, 88.12.110, and 88.08.070.]

79A.60.090**Eluding a law enforcement vessel.**

Any operator of a vessel who willfully fails or refuses to immediately bring the vessel to a stop and who operates the vessel in a manner indicating a wanton or willful disregard for the lives or property of others while attempting to elude a pursuing law enforcement vessel, after being given a visual or

audible signal to bring the vessel to a stop, shall be guilty of a class C felony punishable under chapter **9A.20** RCW. The signal given by the law enforcement officer may be by hand, voice, emergency light, or siren. The officer giving such a signal shall be in uniform and his or her vessel shall be appropriately marked showing it to be an official law enforcement vessel.

[**1990 c 235 § 2**. Formerly RCW **88.12.045**, **88.12.120**, and **88.08.080**.]

79A.60.100

Enforcement—Chapter to supplement federal law.

(1) Every law enforcement officer of this state and its political subdivisions has the authority to enforce this chapter. Law enforcement officers may enforce recreational boating rules adopted by the commission. Such law enforcement officers include, but are not limited to, county sheriffs, officers of other local law enforcement entities, fish and wildlife officers, through the director, the state patrol, and state park rangers. In the exercise of this responsibility, all such officers may stop and board any vessel and direct it to a suitable pier or anchorage to enforce this chapter.

(2) This chapter shall be construed to supplement federal laws and regulations. To the extent this chapter is inconsistent with federal laws and regulations, the federal laws and regulations shall control.

[**2001 c 253 § 60**; **1994 c 264 § 80**; **1993 c 244 § 9**; **1988 c 36 § 73**; **1986 c 217 § 10**. Formerly RCW **88.12.055**, **88.12.330**, and **91.14.100**.]

NOTES:

Intent—1993 c 244: See note following RCW **79A.60.010**.

79A.60.110

Equipment standards—Rules—Penalty.

In addition to the equipment standards prescribed under this chapter, the commission shall adopt rules specifying equipment standards for vessels. Except where the violation is classified as a misdemeanor under this chapter, violation of any equipment standard adopted by the commission is an infraction under chapter **7.84** RCW.

[**1993 c 244 § 10**. Formerly RCW **88.12.065**.]

NOTES:

Intent—1993 c 244: See note following RCW **79A.60.010**.

79A.60.120

Tampering with vessel lights or signals—Exhibiting false lights or signals—

Penalty.

An operator or owner who endangers a vessel, or the persons on board the vessel, by showing, masking, extinguishing, altering, or removing any light or signal or by exhibiting any false light or signal, is guilty of a misdemeanor, punishable as provided in RCW 9.92.030.

[1993 c 244 § 11. Formerly RCW 88.12.075.]

NOTES:

Intent—1993 c 244: See note following RCW 79A.60.010.

79A.60.130**Muffler or underwater exhaust system required—Exemptions—Enforcement—Penalty.**

(1) All motor-propelled vessels shall be equipped and maintained with an effective muffler that is in good working order and in constant use. For the purpose of this section, an effective muffler or underwater exhaust system does not produce sound levels in excess of ninety decibels when subjected to a stationary sound level test that shall be prescribed by rules adopted by the commission, as of July 25, 1993, and for engines manufactured on or after January 1, 1994, a noise level of eighty-eight decibels when subjected to a stationary sound level test that shall be prescribed by rules adopted by the commission.

(2) A vessel that does not meet the requirements of subsection (1) of this section shall not be operated on the waters of this state.

(3) No person may operate a vessel on waters of the state in such a manner as to exceed a noise level of seventy-five decibels measured from any point on the shoreline of the body of water on which the vessel is being operated that shall be specified by rules adopted by the commission, as of July 25, 1993. Such measurement shall not preclude a stationary sound level test that shall be prescribed by rules adopted by the commission.

(4) This section does not apply to: (a) A vessel tuning up, testing for, or participating in official trials for speed records or a sanctioned race conducted pursuant to a permit issued by an appropriate governmental agency; or (b) a vessel being operated by a vessel or marine engine manufacturer for the purpose of testing or development. Nothing in this subsection prevents local governments from adopting ordinances to control the frequency, duration, and location of vessel testing, tune-up, and racing.

(5) Any officer authorized to enforce this section who has reason to believe that a vessel is not in compliance with the noise levels established in this section may direct the operator of the vessel to submit the vessel to an on-site test to measure noise level, with the officer on board if the officer chooses, and the operator shall comply with such request. If the vessel exceeds the decibel levels established in this section, the officer may direct the operator to take immediate and reasonable measures to correct the violation.

(6) Any officer who conducts vessel sound level tests as provided in this section shall be qualified in vessel noise testing. Qualifications shall include but may not be limited to the ability to select the appropriate measurement site and the calibration and use of noise testing equipment.

(7) A person shall not remove, alter, or otherwise modify in any way a muffler or muffler system in a manner that will prevent it from being operated in accordance with this chapter.

(8) A person shall not manufacture, sell, or offer for sale any vessel that is not equipped with a muffler or muffler system that does not comply with this chapter. This subsection shall not apply to power

vessels designed, manufactured, and sold for the sole purpose of competing in racing events and for no other purpose. Any such exemption or exception shall be documented in any and every sale agreement and shall be formally acknowledged by signature on the part of both the buyer and the seller. Copies of the agreement shall be maintained by both parties. A copy shall be kept on board whenever the vessel is operated.

(9) Except as provided in RCW **79A.60.020**, a violation of this section is an infraction under chapter **7.84** RCW.

(10) Vessels that are equipped with an engine modified to increase performance beyond the engine manufacturer's stock configuration shall have an exhaust system that complies with the standards in this section after January 1, 1994. Until that date, operators or owners, or both, of such vessels with engines that are out of compliance shall be issued a warning and be given educational materials about types of muffling systems available to muffle noise from such high performance engines.

(11) Nothing in this section preempts a local government from exercising any power that it possesses under the laws or Constitution of the state of Washington to adopt more stringent regulations.

[**2000 c 11 § 97**; **1993 c 244 § 39**. Formerly RCW **88.12.085**.]

NOTES:

Intent—1993 c 244: See note following RCW **79A.60.010**.

79A.60.140

Personal flotation devices—Inspection and approval—Rules.

(1) The commission shall adopt rules providing for its inspection and approval of the personal flotation devices that may be used to satisfy the requirements of this chapter and governing the manner in which such devices shall be used. The commission shall prescribe the different types of devices that are appropriate for the different uses, such as water skiing or operation of a personal watercraft. In adopting its rules the commission shall consider the United States coast guard rules or regulations. The commission may approve devices inspected and approved by the coast guard without conducting any inspection of the devices itself.

(2) In situations where personal flotation devices are required under provisions of this chapter, the devices shall be in good and serviceable condition and of appropriate size. If they are not, then they shall not be considered as personal flotation devices under such provisions.

[**1993 c 244 § 12**. Formerly RCW **88.12.095**.]

NOTES:

Intent—1993 c 244: See note following RCW **79A.60.010**.

79A.60.150

Failure of vessel to contain safety equipment—Owner/operator may be cited for applicable infraction or crime.

If a vessel does not contain the safety equipment required under this chapter and the rules of the commission, and the operator is not the owner of the vessel but is operating the vessel with the express or implied permission of the owner, then either the owner or the operator, or both, may be cited for the applicable infraction or charged with the applicable crime.

[2013 c 278 § 6; 1993 c 244 § 13. Formerly RCW 88.12.105.]

NOTES:

Intent—1993 c 244: See note following RCW 79A.60.010.

79A.60.160

Personal flotation devices required—Penalty.

(1) No person may operate or permit the operation of a vessel on the waters of the state without a personal flotation device on board for each person on the vessel. Each personal flotation device shall be in serviceable condition, of an appropriate size, and readily accessible.

(2) Except as provided in RCW 79A.60.020, a violation of subsection (1) of this section is an infraction under chapter 7.84 RCW if the vessel is not carrying passengers for hire.

(3) A violation of subsection (1) of this section is a misdemeanor punishable under RCW 9.92.030, if the vessel is carrying passengers for hire.

(4) No person shall operate a vessel under nineteen feet in length on the waters of this state with a child twelve years old and under, unless the child is wearing a personal flotation device that meets or exceeds the United States coast guard approval standards of the appropriate size, while the vessel is underway. For the purposes of this section, a personal flotation device is not considered readily accessible for children twelve years old and under unless the device is worn by the child while the vessel is underway. The personal flotation device must be worn at all times by a child twelve years old and under whenever the vessel is underway and the child is on an open deck or open cockpit of the vessel. The following circumstances are excepted:

(a) While a child is below deck or in the cabin of a boat with an enclosed cabin;

(b) While a child is on a United States coast guard inspected passenger-carrying vessel operating on the navigable waters of the United States; or

(c) While on board a vessel at a time and place where no person would reasonably expect a danger of drowning to occur.

(5) Except as provided in RCW 79A.60.020, a violation of subsection (4) of this section is an infraction under chapter 7.84 RCW. Enforcement of subsection (4) of this section by law enforcement officers may be accomplished as a primary action, and need not be accompanied by the suspected violation of some other offense.

[2000 c 11 § 98; 1999 c 310 § 1; 1993 c 244 § 14; 1933 c 72 § 5; RRS § 9851-5. Formerly RCW 88.12.115 and 88.12.050.]

NOTES:

Intent—1993 c 244: See note following RCW 79A.60.010.

79A.60.170**Water skiing safety—Requirements.**

(1) The purpose of this section is to promote safety in water skiing on the waters of Washington state, provide a means of ensuring safe water skiing and promote the enjoyment of water skiing.

(2) No vessel operator may tow or attempt to tow a water skier on any waters of Washington state unless such craft shall be occupied by at least an operator and an observer. The observer shall continuously observe the person or persons being towed and shall display a flag immediately after the towed person or persons fall into the water, and during the time preparatory to skiing while the person or persons are still in the water. Such flag shall be a bright red or brilliant orange color, measuring at least twelve inches square, mounted on a pole not less than twenty-four inches long and displayed as to be visible from every direction. This subsection does not apply to a personal watercraft, the design of which makes no provision for carrying an operator or any other person on board, and that is actually operated by the person or persons being towed. Every remote-operated personal watercraft shall have a flag attached which meets the requirements of this subsection. Except as provided under RCW 79A.60.020, a violation of this subsection is an infraction under chapter 7.84 RCW.

(3) The observer and the operator shall not be the same person. The observer shall be an individual who meets the minimum qualifications for an observer established by rules of the commission. Except as provided under RCW 79A.60.020, a violation of this subsection is an infraction under chapter 7.84 RCW.

(4) No person shall engage or attempt to engage in water skiing without wearing a personal flotation device. Except as provided under RCW 79A.60.020, a violation of this subsection is an infraction under chapter 7.84 RCW.

(5) No person shall engage or attempt to engage in water skiing, or operate any vessel to tow a water skier, on the waters of Washington state during the period from one hour after sunset until one hour prior to sunrise. A violation of this subsection is a misdemeanor, punishable as provided under RCW 9.92.030.

(6) No person engaged in water skiing either as operator, observer, or skier, shall conduct himself or herself in a reckless manner that willfully or wantonly endangers, or is likely to endanger, any person or property. A violation of this subsection is a misdemeanor as provided under RCW 9.92.030.

(7) The requirements of subsections (2), (3), (4), and (5) of this section shall not apply to persons engaged in tournaments, competitions, or exhibitions that have been authorized or otherwise permitted by the appropriate agency having jurisdiction and authority to authorize such events.

[2000 c 11 § 99; 1993 c 244 § 15; 1990 c 231 § 1; 1989 c 241 § 1. Formerly RCW 88.12.125, 88.12.080, and 88.12.070.]

NOTES:

Intent—1993 c 244: See note following RCW 79A.60.010.

Effective date—1990 c 231: "This act shall take effect July 1, 1990." [1990 c 231 § 4.]

Severability—1990 c 231: "If any provision of this act or its application to any person or circumstance is held invalid, the remainder of the act or the application of the provision to other persons or circumstances is not affected." [1990 c 231 § 5.]

79A.60.180**Loading or powering vessel beyond safe operating ability—Penalties.**

(1) A person shall not load or permit to be loaded a vessel with passengers or cargo beyond its safe carrying ability or carry passengers or cargo in an unsafe manner taking into consideration weather and other existing operating conditions.

(2) A person shall not operate or permit to be operated a vessel equipped with a motor or other propulsion machinery of a power beyond the vessel's ability to operate safely, taking into consideration the vessel's type, use, and construction, the weather conditions, and other existing operating conditions.

(3) A violation of subsection (1) or (2) of this section is an infraction punishable as provided under chapter **7.84** RCW except as provided under RCW **79A.60.020** or where the overloading or overpowering is reasonably advisable to effect a rescue or for some similar emergency purpose.

(4) If it appears reasonably certain to any law enforcement officer that a person is operating a vessel clearly loaded or powered beyond its safe operating ability and in the judgment of that officer the operation creates an especially hazardous condition, the officer may direct the operator to take immediate and reasonable steps necessary for the safety of the individuals on board the vessel, including directing the operator to return to shore or a mooring and to remain there until the situation creating the hazard is corrected or ended. Failure to follow the direction of an officer under this subsection is a misdemeanor punishable as provided under RCW **9.92.030**.

[**2000 c 11 § 100**; **1993 c 244 § 16**. Formerly RCW **88.12.135**.]

NOTES:

Intent—1993 c 244: See note following RCW **79A.60.010**.

79A.60.190**Operation of personal watercraft—Prohibited activities—Penalties.**

(1) A person shall not operate a personal watercraft unless each person aboard the personal watercraft is wearing a personal flotation device approved by the commission. Except as provided for in RCW **79A.60.020**, a violation of this subsection is a civil infraction punishable under RCW **7.84.100**.

(2) A person operating a personal watercraft equipped by the manufacturer with a lanyard-type engine cutoff switch shall attach the lanyard to his or her person, clothing, or personal flotation device as appropriate for the specific vessel. It is unlawful for any person to remove or disable a cutoff switch that was installed by the manufacturer.

(3) A person shall not operate a personal watercraft during darkness.

(4) A person under the age of fourteen shall not operate a personal watercraft on the waters of this state.

(5) A person shall not operate a personal watercraft in a reckless manner, including recklessly weaving through congested vessel traffic, recklessly jumping the wake of another vessel unreasonably or unnecessarily close to the vessel or when visibility around the vessel is obstructed, or recklessly swerving at the last possible moment to avoid collision.

(6) A person shall not lease, hire, or rent a personal watercraft to a person under the age of sixteen.

(7) Subsections (1) through (6) of this section shall not apply to a performer engaged in a professional exhibition or a person participating in a regatta, race, marine parade, tournament, or exhibition authorized or otherwise permitted by the appropriate agency having jurisdiction and authority to authorize such events.

(8) Violations of subsections (2) through (6) of this section constitute a misdemeanor under RCW **9.92.030**.

[**2000 c 11 § 101; 1993 c 244 § 17**. Formerly RCW **88.12.145**.]

NOTES:

Intent—1993 c 244: See note following RCW **79A.60.010**.

79A.60.200

Duty of operator involved in collision, accident, or other casualty—Immunity from liability of persons rendering assistance—Penalties.

(1) The operator of a vessel involved in a collision, accident, or other casualty, to the extent the operator can do so without serious danger to the operator's own vessel or persons aboard, shall render all practical and necessary assistance to persons affected by the collision, accident, or casualty to save them from danger caused by the incident. Under no circumstances may the rendering of assistance or other compliance with this section be evidence of the liability of such operator for the collision, accident, or casualty. The operator shall also give all pertinent accident information, as specified by rule by the commission, to the law enforcement agency having jurisdiction: PROVIDED, That this requirement shall not apply to operators of vessels when they are participating in an organized competitive event authorized or otherwise permitted by the appropriate agency having jurisdiction and authority to authorize such events. These duties are in addition to any duties otherwise imposed by law. Except as provided for in RCW **79A.60.020** and subsection (3) of this section, a violation of this subsection is a civil infraction punishable under RCW **7.84.100**.

(2) Any person who complies with subsection (1) of this section or who gratuitously and in good faith renders assistance at the scene of a vessel collision, accident, or other casualty, without objection of the person assisted, shall not be held liable for any civil damages as a result of the rendering of assistance or for any act or omission in providing or arranging salvage, towage, medical treatment, or other assistance, where the assisting person acts as any reasonably prudent person would have acted under the same or similar circumstances.

(3) An operator of a vessel is guilty of a class C felony and is punishable pursuant to RCW **9A.20.021** if the operator: (a) Is involved in a collision that results in injury to a person; (b) knew or reasonably should have known that a person was injured in the collision; and (c) leaves the scene of the collision without rendering all practical and necessary assistance to the injured person as required pursuant to subsection (1) of this section, under circumstances in which the operator could have rendered assistance without serious danger to the operator's own vessel or persons aboard. This subsection (3) does not apply to vessels involved in commerce, including but not limited to tugs, barges, cargo vessels, commercial passenger vessels, fishing vessels, and processing vessels.

[**2000 c 11 § 102; 1996 c 36 § 1; 1993 c 244 § 18; 1984 c 183 § 1; 1983 2nd ex.s. c 3 § 48**. Formerly RCW **88.12.155, 88.12.130, and 88.02.080**.]

NOTES:

Intent—1993 c 244: See note following RCW [79A.60.010](#).

79A.60.210**Casualty and accident reports—Confidentiality—Use as evidence.**

(1) All reports made to the commission pursuant to RCW [79A.60.200](#) and [79A.05.310](#) shall be without prejudice to the person who makes the report and shall be for the confidential usage of governmental agencies, except as follows:

(a) Statistical information which shall be made public;

(b) The names and addresses of the operator and owner and the registration number or name of the vessel as documented which was involved in an accident or casualty and the names and addresses of any witnesses which, if reported, shall be disclosed upon written request to any person involved in a reportable accident, or, for a reportable casualty, to any member of a decedent's family or the personal representatives of the family.

(2) A report made to the commission pursuant to RCW [79A.60.200](#) and [79A.05.310](#) or copy thereof shall not be used in any trial, civil or criminal, arising out of an accident or casualty, except that solely to prove a compliance or failure to comply with the report requirements of RCW [79A.60.200](#) and [79A.05.310](#), a certified statement which indicates that a report has or has not been made to the commission shall be provided upon demand to any court or upon written request to any person who has or claims to have made a report.

[[1999 c 249 § 1502](#); [1984 c 183 § 3](#). Formerly RCW [88.12.165](#), [88.12.140](#), and [43.51.402](#).]

NOTES:

Severability—1999 c 249: See note following RCW [79A.05.010](#).

79A.60.220**Boating accident reports by local government agencies—Investigation—Report of coroner.**

Law enforcement authorities, fire departments, or search and rescue units of any city or county government shall provide to the commission a report, prepared by the local government agency regarding any boating accident occurring within their jurisdiction resulting in a death or injury requiring hospitalization. Such report shall be provided to the commission within ten days of the occurrence of the accident. The results of any investigation of the accident conducted by the city or county governmental agency shall be included in the report provided to the commission. At the earliest opportunity, but in no case more than forty-eight hours after becoming aware of an accident, the agency shall notify the commission of the accident. The commission shall have authority to investigate any boating accident. The results of any investigation conducted by the commission shall be made available to the local government for further processing. This provision does not eliminate the requirement for a boating accident report by the operator required under RCW [79A.60.200](#).

The report of a county coroner, or any public official assuming the functions of a coroner, concerning the death of any person resulting from a boating accident, shall be submitted to the commission within one week of completion. Information in such report may be, together with information in other such reports, incorporated into the state boating accident report provided for in RCW **79A.05.310(4)**, and shall be for the confidential usage of governmental agencies as provided in RCW **79A.60.210**.

[**1999 c 249 § 1503**; **1987 c 427 § 1**. Formerly RCW **88.12.175**, **88.12.150**, and **43.51.403**.]

NOTES:

Severability—1999 c 249: See note following RCW **79A.05.010**.

Boating accidents and boating safety services—Study—Report—1987 c 427: "The parks and recreation commission shall conduct a study of boating accidents and boating safety services in Washington including a review of how the local option tax for funding of boating safety enforcement is used. Further the parks and recreation commission shall develop recommendations to address identified problems and report these recommendations to the legislature by January 2, 1988." [**1987 c 427 § 4**.]

79A.60.230

Vessels adrift—Owner to be notified.

Any person taking up any vessel found adrift, and out of the custody of the owner, in waters of this state, shall forthwith notify the owner thereof, if to him or her known, or if upon reasonable inquiry he or she can ascertain the name and residence of the owner, and request such owner to pay all reasonable charges, and take such vessel away.

[**1993 c 244 § 19**; Code 1881 § 3242; **1854 p 386 § 1**; RRS § 9891. Formerly RCW **88.12.185**, **88.12.160**, and **88.20.010**.]

NOTES:

Intent—1993 c 244: See note following RCW **79A.60.010**.

79A.60.240

Notice—Contents—Service.

Such notice as is required by RCW **79A.60.230** shall be given personally, or in writing; if in writing, it shall be served upon the owner, or may be sent by mail to the post office where such owner usually receives his or her letters. Such notice shall inform the party where the vessel was taken up, and where it may be found, and what amount the taker-up or finder demands for his or her charges.

[**1999 c 249 § 1504**; **1993 c 244 § 20**; Code 1881 § 3243; **1854 p 386 § 2**; RRS § 9892. Formerly RCW **88.12.195**, **88.12.170**, and **88.20.020**.]

NOTES:

Severability—1999 c 249: See note following RCW **79A.05.010**.

Intent—1993 c 244: See note following RCW **79A.60.010**.

79A.60.250**Posting of notice.**

(1) In all cases where the notice required by RCW **79A.60.230** is not given personally, it shall be the duty of the taker-up to post up at the post office nearest the place where such vessel may be taken up, a written notice of the taking up of such vessel. The written notice shall contain a description of the vessel, with the name, if any is painted thereon, also the place where taken up, the place where the property may be found, and the charge for taking the same up.

(2) If the taker-up is traveling upon waters of the state, such notice shall additionally be posted up at the first post office he or she shall pass after the taking up.

(3) In all cases, the person who took up the vessel shall at the time when, and place where, he or she posts up such notice, also mail a copy of such notice, directed to the postmaster of each post office on waters of the state, and within fifty miles of the place where such vessel is taken up.

[**1999 c 249 § 1505**; **1993 c 244 § 21**; Code 1881 § 3244; **1854 p 386 § 3**; RRS § 9893. Formerly RCW **88.12.205**, **88.12.180**, and **88.20.030**.]

NOTES:

Severability—1999 c 249: See note following RCW **79A.05.010**.

Intent—1993 c 244: See note following RCW **79A.60.010**.

79A.60.260**Compensation—Liability on failure to give notice.**

Every person taking up any vessel so found adrift, and giving the notice herein required, shall be entitled to receive from the owner claiming the property, a reasonable compensation for his or her time, services, expenses, and risk in taking up said property, and take notice of the same, to be settled by agreement between the parties. In case the person has not, within ten days after the taking up, substantially complied with the provisions of this chapter in giving the notice, the person shall be entitled to no compensation, but he or she shall be liable to all damages the owner may have suffered, and be also liable to the owner for the value of the use of the vessel, from the time of taking it up until the same is delivered to the owner.

[**1993 c 244 § 22**; Code 1881 § 3245; **1854 p 386 § 4**; RRS § 9894. Formerly RCW **88.12.215**, **88.12.190**, and **88.20.040**.]

NOTES:

Intent—1993 c 244: See note following RCW [79A.60.010](#).

79A.60.270**Disputed claims—Trial—Bond.**

In case the parties cannot agree on the amount to be paid the taker-up, or the ownership, and the sum claimed is less than one thousand dollars, the owner may file a complaint, setting out the facts, and the judge, on hearing, shall decide the same with a jury, or not, and in the same manner as is provided in ordinary civil actions before a district judge. If the amount claimed by the taker-up is more than one thousand dollars, the owner shall file his or her complaint in the superior court of the county where the property is, and trial shall be had as in other civil actions; but if the taker-up claims more than one thousand dollars, and a less amount is awarded him or her, he or she shall be liable for all the costs in the superior court; and in all cases where the taker-up shall recover a less amount than has been tendered him or her by the owner or claimant, previous to filing his or her complaint, he or she shall pay the costs before the district judge or in the superior court: PROVIDED, That in all cases the owner, after filing his or her complaint before a district judge, shall be entitled to the possession of the vessel, upon giving bond, with security to the satisfaction of the judge, in double the amount claimed by the taker-up. When the complaint is filed in the superior court, the clerk thereof shall approve the security of the bond. The bond shall be conditioned to pay such costs as shall be awarded to the finder or taker-up of such vessel.

[[1993 c 244 § 23](#); [1987 c 202 § 248](#); Code 1881 § 3246; [1854 p 386 § 5](#); RRS § 9895. Formerly RCW [88.12.218](#), [88.12.200](#), and [88.20.050](#).]

NOTES:

Intent—1993 c 244: See note following RCW [79A.60.010](#).

Intent—1987 c 202: See note following RCW [2.04.190](#).

79A.60.280**Liability for excessive or negligent use.**

In case the taker-up shall use the vessel, more than is necessary to put it into a place of safety, he or she shall be liable to the owner for such use, and for all damage; and in case it shall suffer injury from his or her neglect to take suitable care of it, he or she shall be liable to the owner for all damage.

[[1993 c 244 § 24](#); Code 1881 § 3247, part; [1854 p 387 § 6](#); RRS § 9896, part. FORMER PART OF SECTION: Code 1881 § 3247, part. Now codified as RCW [88.20.070](#). Formerly RCW [88.12.222](#), [88.12.210](#), and [88.20.060](#).]

NOTES:

Intent—1993 c 244: See note following RCW [79A.60.010](#).

79A.60.290

Unclaimed vessel—Procedure.

In case such vessel is of less value than one hundred dollars, and is not claimed within three months, the taker-up may apply to a district judge of the district where the property is, who, upon being satisfied that due notice has been given, and that the owner cannot, with reasonable diligence be found, shall order the vessel to be sold, and after paying the taker-up such sum as he or she shall be entitled to, and the costs, the balance shall be paid the county treasurer as is provided in the case of the sale of estrays. In case the vessel exceeds one hundred dollars, and is not claimed within six months, application shall be made to the superior court of the county, and the same proceeding shall be thereupon had. All sales made under this section shall be conducted as sales of personal property on execution.

[[1993 c 244 § 25](#); [1987 c 202 § 249](#); Code 1881 § 3247, part; [1854 p 387 § 7](#); RRS § 9896, part. Formerly RCW [88.12.225](#), [88.12.220](#), [88.20.070](#), and [88.20.060](#), part.]

NOTES:

Intent—1993 c 244: See note following RCW [79A.60.010](#).

Intent—1987 c 202: See note following RCW [2.04.190](#).

79A.60.300

Vessels secured pursuant to chapter 79A.65 RCW.

The provisions of RCW [79A.60.230](#) through [79A.60.290](#) do not apply to vessels secured pursuant to chapter [79A.65](#) RCW.

[[2000 c 11 § 103](#); [1994 c 51 § 8](#). Formerly RCW [88.12.227](#).]

79A.60.400

Vessels carrying passengers for hire on whitewater rivers—Purpose.

The purpose of RCW [79A.60.440](#) through [79A.60.480](#) is to further the public interest, welfare, and safety by providing for the protection and promotion of safety in the operation of vessels carrying passengers for hire on the whitewater rivers of this state.

[[2000 c 11 § 104](#); [1993 c 244 § 26](#); [1986 c 217 § 1](#). Formerly RCW [88.12.230](#) and [91.14.005](#).]

NOTES:

Intent—1993 c 244: See note following RCW [79A.60.010](#).

79A.60.410

Vessels carrying passengers for hire on whitewater rivers—Whitewater river outfitter's license required.

(1) No person shall act in the capacity of a paid whitewater river outfitter, or advertise in any newspaper or magazine or any other trade publication, or represent himself or herself as a whitewater river outfitter in the state, without first obtaining a whitewater river outfitter's license from the department of licensing in accordance with RCW [79A.60.480](#).

(2) Every whitewater river outfitter's license must, at all times, be conspicuously placed on the premises set forth in the license.

[[2000 c 11 § 105](#); [1997 c 391 § 2](#). Formerly RCW [88.12.232](#).]

NOTES:

Effective date—1997 c 391 §§ 2, 4, 5, 7, and 8: "Sections 2, 4, 5, 7, and 8 of this act take effect January 1, 1998." [[1997 c 391 § 12](#).]

79A.60.420

Vessels carrying passengers for hire on whitewater rivers—Conduct constituting misdemeanor.

Except as provided in RCW [79A.60.480](#), the commission of a prohibited act or the omission of a required act under RCW [79A.60.430](#) through [79A.60.480](#) constitutes a misdemeanor, punishable as provided under RCW [9.92.030](#).

[[2000 c 11 § 106](#); [1997 c 391 § 3](#); [1993 c 244 § 27](#). Formerly RCW [88.12.235](#).]

NOTES:

Intent—1993 c 244: See note following RCW [79A.60.010](#).

79A.60.430

Vessels carrying passengers for hire on whitewater rivers—Safety requirements.

(1) While carrying passengers for hire on whitewater rivers in this state, the licensed whitewater river outfitter shall comply with the following requirements at the beginning of every trip:

(a) If using inflatable vessels, use only vessels with three or more separate air chambers;

(b) Ensure that all passengers are wearing a securely fastened United States coast guard-approved type V personal flotation device of the proper size, and that all guides are wearing a securely fastened United States coast guard-approved type III or type V personal flotation device;

(c) Ensure that a spare United States coast guard-approved type III or type V personal flotation device in good repair is accessible to all vessels on each trip;

(d) Ensure that each vessel has on it a bagged throwable line with a floating line and bag;

(e) Ensure that each vessel has accessible an adequate first aid kit;

(f) Ensure that each vessel has a spare propelling device;

(g) Ensure that a repair kit and air pump are accessible to inflatable vessel;

(h) Ensure that equipment to prevent and treat hypothermia is accessible to all vessels on a trip;
and

(i) Ensure that each vessel is operated by a guide who has complied with the requirements of subsection (2) of this section.

(2) No person may act as a guide unless the individual is at least eighteen years of age and has:

(a) Successfully completed a lifesaving training course meeting standards adopted by the commission;

(b) Completed a program of guide training on whitewater rivers, conducted by a guide instructor, which program must run for a minimum of fifty hours on a whitewater river and must include at least the following elements:

(i) Equipment preparation and boat rigging;

(ii) Reading river characteristics including currents, eddies, rapids, and hazards;

(iii) Methods of scouting and running rapids;

(iv) River rescue techniques, including emergency procedures and equipment recovery; and

(v) Communications with clients, including paddling and safety instruction; and

(c) Completed at least one trip on an entire section of whitewater river before carrying passengers for hire in a vessel on any such section of whitewater river.

(3) A guide instructor must have traveled at least one thousand five hundred river miles, seven hundred fifty of which must have been while acting as a guide.

(4) Any person conducting guide training on whitewater rivers shall, upon request of a guide trainee, issue proof of completion to the guide completing the required training program.

[1997 c 391 § 4; 1993 c 244 § 30; 1986 c 217 § 6. Formerly RCW 88.12.245, 88.12.280, and 91.14.050.]

NOTES:

Effective date—1997 c 391 §§ 2, 4, 5, 7, and 8: See note following RCW 79A.60.410.

Intent—1993 c 244: See note following RCW 79A.60.010.

79A.60.440

Vessels carrying passengers for hire on whitewater rivers—Operation of vessel—Exemptions.

(1) No person may operate any vessel carrying passengers for hire on whitewater rivers in a manner that interferes with other vessels or with the free and proper navigation of the rivers of this state.

(2) Every operator of a vessel carrying passengers for hire on whitewater rivers shall at all times operate the vessel in a careful and prudent manner and at such a speed as to not endanger the life, limb, or property of any person.

(3) No vessel carrying passengers for hire on whitewater rivers may be loaded with passengers or cargo beyond its safe carrying capacity taking into consideration the type and construction of the vessel and other existing operating conditions. In the case of inflatable vessels, safe carrying capacity in whitewater shall be considered as less than the United States coast guard capacity rating for each vessel. This subsection shall not apply in cases of an unexpected emergency on the river.

(4) Individuals licensed under chapter 77.32 RCW and acting as fishing guides are exempt from RCW 79A.60.420 and 79A.60.460 through 79A.60.480.

[2000 c 11 § 107; 1993 c 244 § 28; 1986 c 217 § 3. Formerly RCW 88.12.250 and 91.14.020.]

NOTES:

Intent—1993 c 244: See note following RCW 79A.60.010.

79A.60.450

Vessels carrying passengers for hire on whitewater rivers—Use of alcohol prohibited—Vessel to be accompanied by vessel with licensed outfitter.

(1) Whitewater river outfitters and guides on any trip carrying passengers for hire on whitewater rivers of the state shall not allow the use of alcohol during the course of a trip on a whitewater river section in this state.

(2) Any vessel carrying passengers for hire on any whitewater river section in this state must be accompanied by at least one other vessel being operated by a licensed whitewater river outfitter or a guide under the direction or control of a licensed whitewater river outfitter.

[1997 c 391 § 5; 1993 c 244 § 31; 1986 c 217 § 7. Formerly RCW 88.12.255, 88.12.290, and 91.14.060.]

NOTES:

Effective date—1997 c 391 §§ 2, 4, 5, 7, and 8: See note following RCW 79A.60.410.

Intent—1993 c 244: See note following RCW 79A.60.010.

79A.60.460

Vessels carrying passengers for hire on whitewater rivers—Rights-of-way.

(1) Except as provided in subsection (2) of this section, vessels on whitewater rivers proceeding downstream have the right-of-way over vessels proceeding upstream.

(2) In all cases, vessels not under power proceeding downstream on whitewater rivers have the right-of-way over motorized craft underway.

[1993 c 244 § 29; 1986 c 217 § 4. Formerly RCW 88.12.260 and 91.14.030.]

NOTES:

Intent—1993 c 244: See note following RCW 79A.60.010.

79A.60.470

Vessels carrying passengers for hire on whitewater rivers—Designation of whitewater river sections.

Whitewater river sections include but are not limited to:

- (1) Green river above Flaming Geyser state park;
- (2) Klickitat river above the confluence with Summit creek;
- (3) Methow river below the town of Carlton;
- (4) Sauk river above the town of Darrington;
- (5) Skagit river above Bacon creek;
- (6) Suiattle river;
- (7) Tieton river below Rimrock dam;
- (8) Skykomish river below Sunset Falls and above the Highway 2 bridge one mile east of the town of Gold Bar;
- (9) Wenatchee river above the Wenatchee county park at the town of Monitor;
- (10) White Salmon river; and
- (11) Any other section of river designated a "whitewater river section" by the commission under RCW 79A.60.495.

[2000 c 11 § 108; 1997 c 391 § 6; 1986 c 217 § 8. Formerly RCW 88.12.265, 88.12.300, and 91.14.070.]

79A.60.480

Vessels carrying passengers for hire on whitewater rivers—Whitewater river outfitter's license—Application—Fees—Insurance—Penalties—State immune from civil actions arising from licensure.

(1) The department of licensing may issue a whitewater river outfitter's license to an applicant who submits a completed application, pays the required fee, and complies with the requirements of this section.

(2) An applicant for a whitewater river outfitter's license shall make application upon a form provided by the department of licensing. The form must be submitted annually and include the following information:

- (a) The name, residence address, and residence telephone number, and the business name, address, and telephone number of the applicant;
- (b) Certification that all employees, subcontractors, or independent contractors hired as guides meet training standards under RCW 79A.60.430 before carrying any passengers for hire;
- (c) Proof that the applicant has liability insurance for a minimum of three hundred thousand dollars per claim for occurrences by the applicant and the applicant's employees that result in bodily

injury or property damage. All guides must be covered by the applicant's insurance policy;

(d) Certification that the applicant will maintain the insurance for a period of not less than one year from the date of issuance of the license; and

(e) Certification by the applicant that for a period of not less than twenty-four months immediately preceding the application the applicant:

(i) Has not had a license, permit, or certificate to carry passengers for hire on a river revoked by another state or by an agency of the government of the United States due to a conviction for a violation of safety or insurance coverage requirements no more stringent than the requirements of this chapter; and

(ii) Has not been denied the right to apply for a license, permit, or certificate to carry passengers for hire on a river by another state.

(3) The department of licensing shall charge a fee for each application, to be set in accordance with RCW **43.24.086**.

(4) Any person advertising or representing himself or herself as a whitewater river outfitter who is not currently licensed is guilty of a gross misdemeanor.

(5) The department of licensing shall submit annually a list of licensed persons and companies to the *department of community, trade, and economic development, tourism promotion division.

(6) If an insurance company cancels or refuses to renew insurance for a licensee, the insurance company shall notify the department of licensing in writing of the termination of coverage and its effective date not less than thirty days before the effective date of termination.

(a) Upon receipt of an insurance company termination notice, the department of licensing shall send written notice to the licensee that on the effective date of termination the department of licensing will suspend the license unless proof of insurance as required by this section is filed with the department of licensing before the effective date of the termination.

(b) If an insurance company fails to give notice of coverage termination, this failure shall not have the effect of continuing the coverage.

(c) The department of licensing may sanction a license under RCW **18.235.110** if the licensee fails to maintain in full force and effect the insurance required by this section.

(7) The state of Washington shall be immune from any civil action arising from the issuance of a license under this section.

[**2002 c 86 § 327**; **2000 c 11 § 109**; **1997 c 391 § 7**; **1995 c 399 § 216**; **1986 c 217 § 11**. Formerly RCW **88.12.275**, **88.12.320**, and **91.14.090**.]

NOTES:

***Reviser's note:** The "department of community, trade, and economic development" was renamed the "department of commerce" by 2009 c 565.

Effective dates—2002 c 86: See note following RCW **18.08.340**.

Part headings not law—Severability—2002 c 86: See RCW **18.235.902** and **18.235.903**.

Effective date—1997 c 391 §§ 2, 4, 5, 7, and 8: See note following RCW **79A.60.410**.

79A.60.485

Vessels carrying passengers for hire on whitewater rivers—Rules to implement

RCW 79A.60.480—Fees.

The department of licensing may adopt and enforce such rules, including the setting of fees, as may be consistent with and necessary to implement RCW 79A.60.480. The fees must approximate the cost of administration. The fees must be deposited in the business and professions account created in RCW 43.24.150.

[2011 c 298 § 35; 2000 c 11 § 110; 1997 c 391 § 9. Formerly RCW 88.12.276.]

NOTES:

Purpose—Intent—Agency transfer—Contracting—Effective date—2011 c 298: See notes following RCW 19.02.020.

79A.60.490**Vessels carrying passengers for hire on whitewater rivers—License sanction for certain convictions.**

Within five days after conviction for any of the provisions of RCW 79A.60.430 through 79A.60.480, the court shall forward a copy of the judgment to the department of licensing. After receiving proof of conviction, the department of licensing may sanction the license of any whitewater river outfitter under RCW 18.235.110. Proof of compliance with all licensing requirements and correction of the violation under which the whitewater river outfitter was convicted may be considered by the department as mitigating factors when taking disciplinary action.

[2002 c 86 § 328; 2000 c 11 § 111; 1997 c 391 § 8. Formerly RCW 88.12.278.]

NOTES:

Effective dates—2002 c 86: See note following RCW 18.08.340.

Part headings not law—Severability—2002 c 86: See RCW 18.235.902 and 18.235.903.

Effective date—1997 c 391 §§ 2, 4, 5, 7, and 8: See note following RCW 79A.60.410.

79A.60.495**Designation as whitewater river—Rules—Schedule of fines.**

The commission shall adopt rules that designate as whitewater rivers all sections of rivers with at least one class III rapid or greater, as described in the American Whitewater Affiliation's whitewater safety code. The commission is authorized to consider the imposition of a schedule of fines for minor violations.

[1997 c 391 § 10. Formerly RCW 88.12.279.]

79A.60.498**Uniform regulation of business and professions act.**

The uniform regulation of business and professions act, chapter **18.235** RCW, governs unlicensed practice, the issuance and denial of licenses, and the discipline of licensees under this chapter.

[**2002 c 86 § 329.**]

NOTES:

Effective dates—2002 c 86: See note following RCW **18.08.340**.

Part headings not law—Severability—2002 c 86: See RCW **18.235.902** and **18.235.903**.

79A.60.500**Uniform waterway marking system.**

The parks and recreation commission is hereby directed to develop and adopt rules establishing a uniform waterway marking system for waters of the state not serviced by such a marking system administered by the federal government. Such system shall be designed to provide for standardized waterway marking buoys, floats, and other waterway marking devices which identify or specify waterway hazards, vessel traffic patterns, and similar information of necessity or use to boaters. Any new or replacement waterway marking buoy, float, or device installed by a unit of local government shall be designed and installed consistent with rules adopted by the parks and recreation commission pursuant to this section.

[**1987 c 427 § 3.** Formerly RCW **88.12.285**, **88.12.350**, and **43.51.404.**]

79A.60.510**Findings—Sewage disposal initiative established—Boater environmental education—Waterway access facilities.**

The legislature finds that the waters of Washington state provide a unique and valuable recreational resource to large and growing numbers of boaters. Proper stewardship of, and respect for, these waters requires that, while enjoying them for their scenic and recreational benefits, boaters must exercise care to assure that such activities do not contribute to the despoliation of these waters, and that watercraft be operated in a safe and responsible manner. The legislature has specifically addressed the topic of access to clean and safe waterways by requiring the 1987 boating safety study and by establishing the Puget Sound partnership.

The legislature finds that there is a need to educate Washington's boating community about safe and responsible actions on our waters and to increase the level and visibility of the enforcement of boating laws. To address the incidence of fatalities and injuries due to recreational boating on our state's

waters, local and state efforts directed towards safe boating must be stimulated. To provide for safe waterways and public enjoyment, portions of the watercraft excise tax and boat registration fees should be made available for boating safety and other boating recreation purposes.

In recognition of the need for clean waterways, and in keeping with the Puget Sound partnership's water quality work plan, the legislature finds that adequate opportunities for responsible disposal of boat sewage must be made available. There is hereby established a five-year initiative to install sewage pumpout or sewage dump stations at appropriate marinas.

To assure the use of these sewage facilities, a boater environmental education program must accompany the five-year initiative and continue to educate boaters about boat wastes and aquatic resources.

The legislature also finds that, in light of the increasing numbers of boaters utilizing state waterways, a program to acquire and develop sufficient waterway access facilities for boaters must be undertaken.

To support boating safety, environmental protection and education, and public access to our waterways, the legislature declares that a portion of the income from boating-related activities, as specified in RCW **82.49.030** and **88.02.650**, should support these efforts.

[**2011 c 171 § 117**; **2007 c 341 § 57**; **1999 c 249 § 1506**; **1989 c 393 § 1**. Formerly RCW **88.12.295**, **88.12.360**, and **88.36.010**.]

NOTES:

Intent—Effective date—2011 c 171: See notes following RCW **4.24.210**.

Effective date—2007 c 341: See RCW **90.71.907**.

Severability—1999 c 249: See note following RCW **79A.05.010**.

79A.60.520

Identification and designation of polluted and environmentally sensitive areas.

The commission, in consultation with the departments of ecology, fish and wildlife, natural resources, social and health services, and the Puget Sound partnership shall conduct a literature search and analyze pertinent studies to identify areas which are polluted or environmentally sensitive within the state's waters. Based on this review the commission shall designate appropriate areas as polluted or environmentally sensitive, for the purposes of chapter 393, Laws of 1989 only.

[**2007 c 341 § 56**; **1999 c 249 § 1507**; **1994 c 264 § 81**; **1989 c 393 § 3**. Formerly RCW **88.12.305**, **88.12.380**, and **88.36.030**.]

NOTES:

Effective date—2007 c 341: See RCW **90.71.907**.

Severability—1999 c 249: See note following RCW **79A.05.010**.

79A.60.530**Designation of marinas, boat launches, or boater destinations for installation of sewage pumpout or dump units.**

(1) A marina which meets one or more of the following criteria shall be designated by the commission as appropriate for installation of a sewage pumpout or dump unit:

(a) The marina is located in an environmentally sensitive or polluted area; or

(b) The marina has one hundred twenty-five slips or more and there is a lack of sewage pumpout or dump units within a reasonable distance.

(2) In addition to subsection (1) of this section, the commission may at its discretion designate a marina as appropriate for installation of a sewage pumpout or dump unit if there is a demonstrated need for a sewage pumpout or dump unit at the marina based on professionally conducted studies undertaken by federal, state, or local government, or the private sector; and it meets the following criteria:

(a) The marina provides commercial services, such as sales of food, fuel or supplies, or overnight or live-aboard moorage opportunities;

(b) The marina is located at a heavily used boating destination or on a heavily traveled route, as determined by the commission; or

(c) There is a lack of adequate sewage pumpout or dump unit capacity within a reasonable distance.

(3) Exceptions to the designation made under this section may be made by the commission if no sewer, septic, water, or electrical services are available at the marina.

(4) In addition to marinas, the commission may designate boat launches or boater destinations as appropriate for installation of a sewage pumpout or dump unit based on the criteria found in subsections (1) and (2) of this section.

[**1993 c 244 § 32**; **1989 c 393 § 4**. Formerly RCW **88.12.315**, **88.12.390**, and **88.36.040**.]

NOTES:

Intent—1993 c 244: See note following RCW **79A.60.010**.

79A.60.540**Contracts for financial assistance—Ownership of sewage pumpout or dump unit—Ongoing costs.**

(1) Marinas and boat launches designated as appropriate for installation of a sewage pumpout or dump unit under RCW **79A.60.530** shall be eligible for funding support for installation of such facilities from funds specified in RCW **79A.60.590**. The commission shall notify owners or operators of all designated marinas and boat launches of the designation, and of the availability of funding to support installation of appropriate sewage disposal facilities. The commission shall encourage the owners and operators to apply for available funding.

(2) The commission shall seek to provide the most cost-efficient and accessible facilities possible for reducing the amount of boat waste entering the state's waters. The commission shall consider providing funding support for portable pumpout facilities in this effort.

(3) The commission shall contract with, or enter into an interagency agreement with another state agency to contract with, applicants based on the criteria specified below:

(a)(i) Contracts may be awarded to publicly owned, tribal, or privately owned marinas or boat launches.

(ii) Contracts may provide for state reimbursement to cover eligible costs as deemed reasonable by commission rule. Eligible costs include purchase, installation, or major renovation of the sewage pumpout or dump units, including sewer, water, electrical connections, and those costs attendant to the purchase, installation, and other necessary appurtenances, such as required pier space, as determined by the commission.

(iii) Ownership of the sewage pumpout or dump unit will be retained by the state through the commission in privately owned marinas. Ownership of the sewage pumpout or dump unit in publicly owned marinas will be held by the public entity.

(iv) Operation, normal and expected maintenance, and ongoing utility costs will be the responsibility of the contract recipient. The sewage pumpout or dump unit shall be kept in operating condition and available for public use at all times during operating hours of the facility, excluding necessary maintenance periods.

(v) The contract recipient agrees to allow the installation, existence and use of the sewage pumpout or dump unit by granting an irrevocable license for a minimum of ten years at no cost to the commission.

(b) Contracts awarded pursuant to (a) of this subsection shall be subject, for a period of at least ten years, to the following conditions:

(i) Any contract recipient entering into a contract under this section must allow the boating public access to the sewage pumpout or dump unit during operating hours.

(ii) The contract recipient must agree to monitor and encourage the use of the sewage pumpout or dump unit, and to cooperate in any related boater environmental education program administered or approved by the commission.

(iii) The contract recipient must agree not to charge a fee for the use of the sewage pumpout or dump unit.

(iv) The contract recipient must agree to arrange and pay a reasonable fee for a periodic inspection of the sewage pumpout or dump unit by the local health department or appropriate authority.

(v) Use of a free sewage pumpout or dump unit by the boating public shall be deemed to be included in the term "outdoor recreation" for the purposes of chapter 4.24 RCW.

[2000 c 11 § 112; 1993 c 244 § 33; 1989 c 393 § 5. Formerly RCW 88.12.325, 88.12.400, and 88.36.050.]

NOTES:

Intent—1993 c 244: See note following RCW 79A.60.010.

79A.60.550

Development by department of ecology of design, installation, and operation of sewage pumpout and dump units—Rules.

The department of ecology, in consultation with the commission, shall, for initiation of the statewide program only, develop criteria for the design, installation, and operation of sewage pumpout

and dump units, taking into consideration the ease of access to the unit by the boating public. The department of ecology may adopt rules to administer the provisions of this section.

[1993 c 244 § 34; 1989 c 393 § 6. Formerly RCW 88.12.335, 88.12.410, and 88.36.060.]

NOTES:

Intent—1993 c 244: See note following RCW 79A.60.010.

79A.60.560

Boater environmental education program.

The commission shall undertake a statewide boater environmental education program concerning the effects of boat wastes. The boater environmental education program shall provide informational materials on proper boat waste disposal methods, environmentally safe boat maintenance practices, locations of sewage pumpout and dump units, and boat oil recycling facilities.

[1993 c 244 § 35; 1989 c 393 § 7. Formerly RCW 88.12.345, 88.12.420, and 88.36.070.]

NOTES:

Intent—1993 c 244: See note following RCW 79A.60.010.

79A.60.570

Grants for environmental education or boat waste management planning.

The commission shall award grants to local government entities for boater environmental education or boat waste management planning. Grants shall be allocated according to criteria developed by the commission.

[1989 c 393 § 8. Formerly RCW 88.12.355, 88.12.430, and 88.36.080.]

79A.60.580

Review of programs by commission.

The commission shall, in consultation with interested parties, review progress on installation of sewage pumpout and dump units, the boater environmental education program, and the boating safety program.

[1999 c 249 § 1508; 1993 c 244 § 36; 1989 c 393 § 9. Formerly RCW 88.12.365, 88.12.440, and 88.36.090.]

NOTES:

Severability—1999 c 249: See note following RCW [79A.05.010](#).

Intent—1993 c 244: See note following RCW [79A.60.010](#).

79A.60.590**Allocation of funds.**

The amounts allocated in accordance with *RCW [82.49.030](#)(3) shall be expended upon appropriation in accordance with the following limitations:

(1) Thirty percent of the funds shall be appropriated to the recreation and conservation funding board and be expended for use by state and local government for public recreational waterway boater access and boater destination sites. Priority shall be given to critical site acquisition. The recreation and conservation funding board shall administer such funds as a competitive grants program. The amounts provided for in this subsection shall be evenly divided between state and local governments.

(2) Thirty percent of the funds shall be expended by the commission exclusively for sewage pumpout or dump units at publicly and privately owned marinas as provided for in RCW [79A.60.530](#) and [79A.60.540](#).

(3) Twenty-five percent of the funds shall be expended for grants to state agencies and other public entities to enforce boating safety and registration laws and to carry out boating safety programs. The commission shall administer such grant program.

(4) Fifteen percent shall be expended for instructional materials, programs or grants to the public school system, public entities, or other nonprofit community organizations to support boating safety and boater environmental education or boat waste management planning. The commission shall administer this program.

[[2007 c 241 § 72](#); [2000 c 11 § 113](#); [1993 c 244 § 37](#); [1989 c 393 § 11](#). Formerly RCW [88.12.375](#), [88.12.450](#), and [88.36.100](#).]

NOTES:

***Reviser's note:** RCW [82.49.030](#) was amended by 2000 c 103 § 18, deleting subsection (3).

Intent—Effective date—2007 c 241: See notes following RCW [79A.25.005](#).

Intent—1993 c 244: See note following RCW [79A.60.010](#).

79A.60.595**Commission to adopt rules.**

The commission shall adopt rules as are necessary to carry out all sections of chapter 393, Laws of 1989 except for RCW [79A.60.550](#) and [82.49.030](#). The commission shall comply with all applicable provisions of chapter [34.05](#) RCW in adopting the rules.

[**1999 c 249 § 1509**; **1989 c 393 § 14**. Formerly RCW **88.12.385**, **88.12.460**, and **88.36.110**.]

NOTES:

Severability—1999 c 249: See note following RCW **79A.05.010**.

79A.60.600

Liquid petroleum gas leak warning devices—Findings.

(1) The legislature finds that:

(a) Washington state has the greatest length of marine shoreline miles of the lower forty-eight states;

(b) Such marine waters and the extensive freshwater lakes and rivers of the state provide innumerable recreational opportunities, and support a state recreational vessel population that is one of the largest in the country;

(c) Many of Washington's popular recreational waters are remote from population centers and thus remote from emergency health care facilities;

(d) Washington's climate in the western portion of the state, in which its marine recreational waters lie, is cool and wet for much of the year. Much of the state's recreational vessel activity is conducted in the late fall and winter months in connection with fishing activities. For these reasons the great majority of Washington vessels are equipped with heating devices. These appliances are in use for a much greater portion of the boating season than in other states, and are predominantly fueled by liquid petroleum gas;

(e) Current state and federal standards governing heating and cooking appliances on vessels that are fueled by liquid petroleum gas do not adequately protect against undetected gas leaks. Such gas leaks have led to explosions on Washington waters, causing loss of life and property damage;

(f) The commission coordinates a statewide program of boating safety education to communicate accident prevention information to boaters at risk of fires, explosions, and other hazards, and administers a boating accident reporting program to assess the effectiveness of accident prevention measures.

(2) It is the intent of the legislature to address the state's unique local circumstances regarding inadequate protection of Washington's boaters from undetected leaks of liquid petroleum gas-fueled appliances by incorporating into the boating safety program an intensified boating fire prevention program with special emphasis on preventing fires and carbon monoxide poisoning caused by auxiliary fuels and appliances.

[**1994 c 151 § 1**; **1993 c 469 § 1**. Formerly RCW **88.12.500**.]

NOTES:

Severability—1993 c 469: "If any provision of this act or its application to any person or circumstance is held invalid, the remainder of the act or the application of the provision to other persons or circumstances is not affected." [**1993 c 469 § 7**.]

Effective date—1993 c 469: "This act is necessary for the immediate preservation of the public peace, health, or safety, or support of the state government and its existing public institutions, and shall take effect immediately [May 17, 1993]." [**1993 c 469 § 8**.]

79A.60.610**Recreational boating fire prevention education program.**

The commission shall undertake a statewide recreational boating fire prevention education program concerning the safe use of marine fuels and electrical systems. The boating fire prevention education program shall provide for the distribution of fire safety materials and decals warning of fire hazards and for educational opportunities to educate boaters on the safety practices needed to operate heaters, stoves, and other appliances in Washington's unique aquatic environment. The commission shall evaluate the boating public's voluntary participation in the program and the program's impact on safe boating.

[2006 c 140 § 4; 1994 c 151 § 2. Formerly RCW 88.12.505.]

NOTES:

Short title—2006 c 140: See note following RCW 79A.60.660.

79A.60.620**Small spill prevention education program.**

(1) The Washington sea grant program, in consultation with the department of ecology, shall develop and conduct a voluntary spill prevention education program that targets small spills from commercial fishing vessels, ferries, cruise ships, ports, and marinas. Washington sea grant shall coordinate the spill prevention education program with recreational boater education performed by the state parks and recreation commission.

(2) The spill prevention education program shall illustrate ways to reduce oil contamination of bilge water, accidental spills of hydraulic fluid and other hazardous substances during routine maintenance, and reduce spillage during refueling. The program shall illustrate proper disposal of oil and hazardous substances and promote strategies to meet shoreside oil and hazardous substance handling, and disposal needs of the targeted groups. The program shall include a series of training workshops and the development of educational materials.

[2000 c 11 § 114; 1991 c 200 § 110. Formerly RCW 90.56.090.]

79A.60.630**Boating safety education—Commission's duties—Fee—Report to the legislature.**

(1) The commission shall establish and implement by rule a program to provide required boating safety education. The boating safety education program shall include training on preventing the spread of aquatic invasive species. The program shall be phased in so that all boaters not exempted under RCW 79A.60.640(3) are required to obtain a boater education card by January 1, 2016. To obtain a boater education card, a boater shall provide a certificate of accomplishment issued by a boating

educator for taking and passing an accredited boating safety education course, or pass an equivalency exam, or provide proof of completion of a course that meets the standard adopted by the commission.

(2) As part of the boating safety education program, the commission shall:

(a) Establish a program to be phased over eleven years starting July 1, 2005, with full implementation by January 1, 2016. The period July 1, 2005, through December 31, 2007, will be program development, boater notification of the new requirements for mandatory education, and processing cards to be issued to individuals having taken an accredited course prior to January 1, 2008. The schedule for phase-in of the mandatory education requirement by age group is as follows:

January 1, 2008 - All boat operators twenty years old and younger;

January 1, 2009 - All boat operators twenty-five years old and younger;

January 1, 2010 - All boat operators thirty years old and younger;

January 1, 2011 - All boat operators thirty-five years old and younger;

January 1, 2012 - All boat operators forty years old and younger;

January 1, 2013 - All boat operators fifty years old and younger;

January 1, 2014 - All boat operators sixty years old and younger;

January 1, 2015 - All boat operators seventy years old and younger;

January 1, 2016 - All boat operators;

(b) Establish a minimum standard of boating safety education accomplishment. The standard must be consistent with the applicable standard established by the national association of state boating law administrators;

(c) Adopt minimum standards for boating safety education course of instruction and examination that ensures compliance with the national association of state boating law administrators minimum standards;

(d) Approve and provide accreditation to boating safety education courses operated by volunteers, or commercial or nonprofit organizations, including, but not limited to, courses given by the United States coast guard auxiliary and the United States power squadrons;

(e) Develop an equivalency examination that may be taken as an alternative to the boating safety education course;

(f) Establish a fee of ten dollars for the boater education card to fund all commission activities related to the boating safety education program created by chapter 392, Laws of 2005, including the initial costs of developing the program. Any surplus funds resulting from the fees received shall be distributed by the commission as grants to local marine law enforcement programs approved by the commission as provided in RCW **88.02.650**;

(g) Establish a fee for the replacement of the boater education card that covers the cost of replacement;

(h) Consider and evaluate public agency and commercial opportunities to assist in program administration with the intent to keep administrative costs to a minimum;

(i) Approve and provide accreditation to boating safety education courses offered online; and

(j) Provide a report to the legislature by January 1, 2008, on its progress of implementation of the mandatory education program.

[**2011 c 171 § 118**; **2005 c 392 § 3**.]

NOTES:

Intent—Effective date—2011 c 171: See notes following RCW **4.24.210**.

Intent—2005 c 392: "It is the intent of the legislature to establish a boating safety education program that contributes to the reduction of accidents and increases the enjoyment of boating by all operators of all recreational vessels on the waters of this state. Based on the 2003 report to the

legislature titled "Recreational Boating Safety in Washington, A Report on Methods to Achieve Safer Boating Practices," the legislature recognizes that boating accidents also occur in nonmotorized vessels in this state, but, at this time there is no national educational standard for nonmotorized vessels. Therefore, the commission is hereby authorized and directed to work with agencies and organizations representing nonmotorized vessel activities and individuals operating nonmotorized vessels to decrease accidents of operators in these vessels. It is also the intent of the legislature to encourage boating safety education programs that use volunteer and private sector efforts to enhance boating safety and education for operators of nonmotorized vessels to work closely with the state parks and recreation commission in its efforts to reduce all boating accidents in this state." [2005 c 392 § 1.]

79A.60.640

Requirements to operate motor driven boats/vessels—Exemptions—Penalty.

(1) No person shall operate or permit the operation of motor driven boats and vessels with a mechanical power of fifteen horsepower or greater unless the person:

(a) Is at least twelve years of age, except that an operator of a personal watercraft shall comply with the age requirements under RCW 79A.60.190; and

(b)(i) Has in his or her possession a boater education card, unless exempted under subsection (3) of this section; or

(ii) Is accompanied by and is under the direct supervision of a person sixteen years of age or older who is in possession of a boater education card, or who is not yet required to possess the card as provided in the program phase in RCW 79A.60.630(2)(a).

(2) Any person who can demonstrate they have successfully completed, prior to July 24, 2005, a boating safety education course substantially equivalent to the standards adopted by the commission shall be eligible for a boater education card upon application to the commission and payment of the fee, without having to take a course or equivalency exam as provided in RCW 79A.60.630(1). Successful completion of a boating safety education course could include an original or copy of an original certificate issued by the commission, the United States coast guard auxiliary, or the United States power squadrons, or official certification by these organizations that the individual successfully completed a course substantially equivalent to the standards adopted by the commission.

(3) The following persons are not required to carry a boater education card:

(a) The operator of a vessel engaged in a lawful commercial fishery operation as licensed by the department of fish and wildlife under Title 77 RCW. However, the person when operating a vessel for recreational purposes must carry either a valid commercial fishing license issued by the department of fish and wildlife or a boater education card;

(b) Any person who possesses a valid marine operator license issued by the United States coast guard when operating a vessel authorized by such coast guard license. However, the person when operating a vessel for recreational purposes must carry either a valid marine operator license issued by the United States coast guard or a boater education card;

(c) Any person who is legally engaged in the operation of a vessel that is exempt from vessel registration requirements under chapter 88.02 RCW and applicable rules and is used for purposes of law enforcement or official government work. However, the person when operating a vessel for recreational purposes must carry a boater education card;

(d) Any person at least twelve years old renting, chartering, or leasing a motor driven boat or vessel with an engine power of fifteen horsepower or greater who completes a commission-approved motor vessel safety operating and equipment checklist each time before operating the motor driven boat or vessel, except that an operator of a personal watercraft shall comply with the age requirements under RCW 79A.60.190;

(e) Any person who is not a resident of Washington state and who does not operate a motor driven boat or vessel with an engine power of fifteen horsepower or greater in waters of the state for more than sixty consecutive days;

(f) Any person who is not a resident of Washington state and who holds a current out-of-state or out-of-country certificate or card that is equivalent to the rules adopted by the commission;

(g) Any person who has purchased the boat or vessel within the last sixty days, and has a bill of sale in his or her possession to document the date of purchase;

(h) Any person, including those less than twelve years of age, who is involved in practicing for, or engaging in, a permitted racing event where a valid document has been issued by the appropriate local, state, or federal government agency for the event, and is available for inspection on-site during the racing event;

(i) Any person who is not yet required to have a boater education card under the phased schedule in RCW **79A.60.630**(2)(a); and

(j) Any person born before January 1, 1955.

(4) Except as provided in subsection (3)(a) through (i) of this section, a boater must carry a boater education card while operating a vessel and is required to present the boater education card, or alternative license as provided in subsection (3)(a) and (b) of this section, to a law enforcement officer upon request.

(5) Failure to possess a boater education card required by this section is an infraction under chapter **7.84** RCW. The penalty shall be waived if the boater provides proof to the court within sixty days that he or she has received a boater education card.

(6) No person shall permit the rental, charter, or lease of a motor driven boat or vessel with an engine power of fifteen horsepower or greater to a person without first reviewing with that person, and all other persons who may be permitted by the person to operate the vessel, all the information contained in the motor vessel safety operating and equipment checklist.

[**2005 c 392 § 4.**]

NOTES:

Intent—2005 c 392: See note following RCW **79A.60.630**.

79A.60.650

Boating safety education certification account.

The boating safety education certification account is created in the custody of the state treasurer. All receipts from fees collected for the issuance of a boater education card shall be deposited in the account and shall be used only for the administration of RCW **79A.60.630** and **79A.60.640**. Only the state parks and recreation commission may authorize expenditures from the account. The account is subject to allotment procedures under chapter **43.88** RCW, but an appropriation is not required for expenditures.

[**2005 c 392 § 5.**]

NOTES:

Intent—2005 c 392: See note following RCW **79A.60.630**.

79A.60.660**Operating motor driven boat or vessel for teak surfing, platform dragging, bodysurfing—Prohibition—Exceptions—Penalty.**

(1) No person may operate a motor driven boat or vessel or have the engine of a motor driven boat or vessel run idle while an individual is teak surfing, platform dragging, or bodysurfing behind the motor driven boat or vessel.

(2) No person may operate a motor driven boat or vessel or have the engine of a motor driven boat or vessel run idle while an individual is occupying or holding onto the swim platform, swim deck, swim step, or swim ladder of the motor driven boat or vessel.

(3) Subsection (2) of this section does not apply when an individual is occupying the swim platform, swim deck, swim step, or swim ladder for a very brief period of time while assisting with the docking or departure of the vessel, while exiting or entering the vessel, or while the vessel is engaged in law enforcement or emergency rescue activity.

(4) For the purposes of this section, "teak surfing" or "platform dragging" means holding onto the swim platform, swim deck, swim step, swim ladder, or any portion of the exterior of the transom of a motor driven boat or vessel for any amount of time while the motor driven boat or vessel is underway at any speed.

(5) For the purposes of this section, "bodysurfing" means swimming or floating on one's stomach or on one's back on or in the wake directly behind a motor driven boat or vessel that is underway.

(6) A violation of this section is a natural resource infraction punishable as provided under chapter 7.84 RCW, however the fine imposed may not exceed one hundred dollars.

[2006 c 140 § 1.]

NOTES:

Short title—2006 c 140: "This act may be known and cited as the Jenda Jones and Denise Colbert safe boating act." [2006 c 140 § 5.]

79A.60.670**Boating activities program—Boating activities advisory committee—Adoption of rules.**

(1) The boating activities program is created in the recreation and conservation funding board.

(2) The recreation and conservation funding board shall distribute moneys appropriated from the boating activities account created in RCW 79A.60.690 as follows, or as otherwise appropriated by the legislature, after deduction for the board's expenses in administering the boating activities program and for related studies:

(a) To the commission for boater safety, boater education, boating-related law enforcement activities, activities included in RCW 88.02.650, related administrative expenses, and boating-related environmental programs, such as pumpout stations, to enhance clean waters for boating;

(b) For grants to state agencies, counties, municipalities, port districts, federal agencies, nonprofit organizations, and Indian tribes to improve boating access to water and marine parks, enhance the boater experience, boater safety, boater education, and boating-related law enforcement activities, and

to provide funds for boating-related environmental programs, such as pumpout stations, to enhance clean waters for boating; and

(c) If the amount available for distribution from the boating activities account is equal to or less than two million five hundred thousand dollars per fiscal year, then eighty percent of the amount available must be distributed to the commission for the purposes of (a) of this subsection and twenty percent for grants in (b) of this subsection. Amounts available for distribution in excess of two million five hundred thousand dollars per fiscal year shall be distributed by the board for purposes of (a) and (b) of this subsection.

(3) The recreation and conservation funding board shall establish an application process for boating activities grants.

(4) Agencies receiving grants for capital purposes from the boating activities account shall consider the possibility of contracting with the commission, the department of natural resources, or other federal, state, and local agencies to employ the youth development and conservation corps or other youth crews in completing the project.

(5) To solicit input on the boating activities grant application process, criteria for grant awards, and use of grant moneys, and to determine the interests of the boating community, the recreation and conservation funding board shall solicit input from a boating activities advisory committee. The recreation and conservation funding board may utilize a currently established boating issues committee that has similar responsibility for input on recreational boating-related funding issues. Members of the boating activities advisory committee are not eligible for compensation but may be reimbursed for travel expenses as provided in RCW **43.03.050** and **43.03.060**.

(6) The recreation and conservation funding board may adopt rules to implement this section.

[**2011 c 171 § 119; 2007 c 311 § 2.**]

NOTES:

Intent—Effective date—2011 c 171: See notes following RCW **4.24.210**.

79A.60.680

Study of boater needs—Funding recommendations.

(1) By December 1, 2007, the *interagency committee for outdoor recreation shall complete an initial study of boater needs and make recommendations to the appropriate committees of the legislature on the initial amount of funding that should be provided to the commission for boating-related law enforcement purposes under RCW **79A.60.670**(2)(a).

(2) The *interagency committee for outdoor recreation shall periodically update its study of boater needs as necessary and shall make recommendations to the governor and the appropriate committees of the legislature concerning funding allocations to state parks and other grant applicants.

[**2007 c 311 § 3.**]

NOTES:

***Reviser's note:** Chapter 241, Laws of 2007 amended numerous sections of chapter **79A.25** RCW, and changed the name of the "interagency committee for outdoor recreation" to the "recreation and conservation funding board."

79A.60.690**Boating activities account.**

The boating activities account is created in the state treasury. Moneys in the account may be spent only after appropriation. Expenditures from the account may be used only as authorized under RCW **79A.60.670** and **79A.60.680**.

Grants, gifts, or other financial assistance received by the *interagency committee for outdoor recreation from state and nonstate sources for purposes of boating activities may be deposited into the account.

[**2007 c 311 § 1.**]

NOTES:

***Reviser's note:** Chapter 241, Laws of 2007 amended numerous sections of chapter **79A.25** RCW, and changed the name of the "interagency committee for outdoor recreation" to the "recreation and conservation funding board."

79A.60.700**Refusal to submit to certain tests—Not admissible as evidence—Penalty.**

(1) The refusal of a person to submit to a test of the alcohol concentration, THC concentration, or presence of any drug in the person's blood or breath is not admissible into evidence at a subsequent criminal trial.

(2) A person's refusal to submit to a test or tests pursuant to RCW **79A.60.040**(4)(a) constitutes a class 1 civil infraction under RCW **7.80.120**.

[**2014 c 132 § 2; 2013 c 278 § 2.**]

79A.60.710**Vessels for hire—Requirements—Application of section—Penalty.**

(1) No person who has vessels for hire, or the agent or employee thereof, shall rent, lease, charter, or otherwise permit the use of a vessel, unless the person:

(a) Displays the vessel registration numbers and a valid decal on the vessel hull as required by RCW **88.02.550**(1);

(b) Keeps a copy of the vessel registration certificate aboard the vessel, in compliance with RCW **88.02.340**;

(c) Displays a carbon monoxide decal on the vessel as required by RCW **88.02.390**(2) if the vessel is motor-driven and is not a personal watercraft;

(d) Provides a copy of the rental agreement to be kept aboard during the rental, lease, charter, or use period for vessels required under chapter **88.02** RCW to be registered;

(e) Ensures that the vessel, if motor-propelled, meets the muffler or underwater exhaust system requirement in RCW **79A.60.130**;

(f) Outfits the vessel with the quantity and type of personal flotation devices required by RCW **79A.60.140** and **79A.60.160** for the number and ages of the people who will use the vessel;

(g) Explains the personal flotation device requirements to the person renting, leasing, chartering, or otherwise using the vessel;

(h) Equips the vessel with a skier-down flag, and explains observer and personal flotation requirements of RCW **79A.60.170**, if the persons renting, leasing, chartering, or otherwise using the vessel will be waterskiing;

(i) If the vessel is a personal watercraft, provides a personal flotation device and a lanyard attached to an engine cutoff switch for the operator to wear at all times when operating the personal watercraft, as required by RCW **79A.60.190**;

(j) Reviews with the person operating the vessel, and all other persons who the operator may permit to operate the vessel, all the information contained in the motor vessel safety operating and equipment checklist prescribed by the Washington state parks and recreation commission and required under RCW **79A.60.640**(6); and

(k) Provides all other safety equipment required by RCW **79A.60.110** and referenced in the motor vessel safety operating and equipment checklist prescribed by the Washington state parks and recreation commission and required under RCW **79A.60.640**(6).

(2) This section does not apply to fishing guides and charter boat operators who have a United States coast guard operator's license and are operating on navigable waters, and people who act in the capacity of a paid whitewater river outfitter or guide, or who operate a vessel carrying passengers for hire on whitewater rivers in this state.

(3) As provided in RCW **79A.60.020**, a violation of this section is a civil infraction punishable under chapter **7.84** RCW, unless:

(a) The violation is a violation of RCW **88.02.550**, which is punished as a class 2 civil infraction; or

(b) The current violation is the person's third violation of the same provision of this chapter during the past three hundred sixty-five days. If it is the person's third violation, then it must be punished as a misdemeanor under RCW **9.92.030**.

[**2013 c 278 § 5.**]

APPENDIX D

Thurston County Regulations and Restrictions on the Use of County Waters

Title 16 - WATERWAYS AND VESSELS

Chapters:

Chapter 16.04 - REGULATIONS AND RESTRICTIONS ON THE USE OF COUNTY WATERS

Sections:

16.04.010 - Definitions.

As used in this chapter the following terms shall have the meaning ascribed to them by this section:

"Aquatic event" or "regatta" means any organized water event of limited duration which is duly sanctioned by duly constituted authority and which is conducted according to a prearranged schedule and in which general public interest is manifested.

"Aquatic plant" means rooted or floating plants growing in any fresh waters. Examples include, but are not limited to, lilies, pond weeds and milfoil.

"Authorized emergency vessel" means any authorized vessel or watercraft of the Thurston County sheriff's office, municipal police departments, municipal fire departments, the United States Government, and state of Washington authorized patrol vessels or watercraft.

"Boat livery" means one who operates a business of renting or leasing boats.

"Bona fide dealer" means one who buys and sells boats in the normal course of business, but does not include the private sale of motorboats between two individuals.

"County" means the county of Thurston.

"Diver's flag" means a flag, that is nationally recognized as being a diver's flag. This flag shall only pertain to skin and scuba diving (self-contained underwater breathing apparatus).

"Motorboat" means any vessel propelled in any respect by machinery, whether or not such machinery is the principal source of propulsion, and including those vessels temporarily equipped with detachable motors. This would include such vessels as personal watercraft.

"Observer" means the individual riding in the motor boat who shall be responsible for observing the person being towed at all times. The observer and the person operating the motorboat shall not be the same person. The observer shall be at least ten years of age.

"Person" means any natural person, partnership, association or corporation.

"Personal watercraft" means a vessel of less than sixteen feet which uses a motor powering a water jet, as its primary source of motive power and which is designed to be operated by a person sitting, standing or kneeling on the vessel, rather than in the conventional manner of sitting or standing inside the vessel.

"Scuba diving" shall mean that an individual utilized a self-contained underwater breathing apparatus while swimming underwater.

"Sheriff" means the sheriff of Thurston County or any duly appointed deputy sheriff of Thurston County.

"Sunset" shall be defined as that prescribed for sunset in Olympia by the Director of the Nautical Almanac at the United States Observatory at Washington, D. C.

"Vessel" or "watercraft" means any contrivance used or designed for navigation on water, excluding aircraft.

"Water ski" means all forms, manners, means or contrivances of person or persons being towed behind a motorboat.

"Waters" includes any lake, pond, and all other waters within Thurston County including all salt water within areas of Thurston County.

(Ord. 9478 § 1, 1990: Ord. 8070 § 1, 1985: Ord. 6271 § 1, 1979: Ord. 3303 § 1, 1965)

16.04.020 - Adoption by reference of Title 46, Section 1454 of United States Code.

All vessels and motorboats operated and used upon waters of Thurston County shall, in all respects, conform to the requirements of the Washington Administrative Code, Chapter 352-60 through Section 352-60-110 and the United States Code, Title 46, Section 1454, as amended, and the rules and regulations promulgated thereunder insofar as all lifesaving equipment, safety equipment, lighting equipment and all other equipment and devices therein specified. Three copies of such codes and regulations are on file in the office of the county auditor and one copy is on file with the city clerk of each city of the county.

(Ord. 8070 § 2, 1985: Ord. 6271 § 2, 1979: Ord. 3303 § 2, 1965)

16.04.030 - Speed and manner of operation.

- A. No person shall operate any vessel or motorboat, or manipulate any water skis, surfboard or similar device in a disorderly, grossly indifferent, reckless or negligent manner so as to endanger the life, limb or property of any person.
- B. The operator of a motorboat shall not let anyone ride or sit on either the starboard or port gunwales or on the decking over the bow while moving, except while in the act of mooring or casting off.
- C. No person shall operate a motorboat at a speed greater than is reasonable and proper under the conditions at the time and place of operation, taking into account the amount and character of traffic, size of the waters, freedom from construction to view ahead and so as to unreasonably endanger persons or property or other rights of any person entitled to use of such waters.
- D. No operator of any motorboat shall carry passengers in an unsafe manner taking into consideration weather and other existing operating conditions.

(Ord. 8070 § 3, 1985: Ord. 3303 § 3, 1965)

16.04.040 - Operation while under the influence of intoxicating beverages.

- A. It is unlawful for any person who is under the influence of intoxicating liquor or any drug to operate or be in actual physical control of any vessel or watercraft or manipulate any water skis, surfboard or similar device while:
 - 1. Having a 0.08 percent or more by weight of alcohol in their blood as shown by chemical analysis of their breath, blood or other bodily substance made under RCW 46.61.506 as now or hereafter amended; or
 - 2. Being under the influence of or affected by intoxicating liquor or any drug; or
 - 3. Being under the combined influence of or affected by intoxicating liquor and any drug.
- B. It is unlawful for the owner of any vessel or watercraft or any person having such in charge or in control to authorize or knowingly permit the same to be operated by any person who is under the influence of intoxicating liquor or any drug.

(Ord. 11951 § 1, 1999: Ord. 8070 § 4, 1985: Ord. 3303 § 4, 1965)

16.04.041 - Duty to obey law enforcement officer—Authority of officer.

- A. Any person requested or signaled to stop by a law enforcement officer for any violations of this chapter has a duty to stop. The signal given by the police officer may be hand, voice, emergency light or siren.
- B. No person shall wilfully fail or refuse to comply with any lawful order or direction of any duly authorized police officer invested by law with authority to direct, control or regulate traffic upon any or all waterways of Thurston County.
- C. Any person requested to identify himself to a law enforcement officer pursuant to an investigation of a violation of this chapter has a duty to identify himself, give his current address, and sign an acknowledgement of receipt of the notice of violation.

(Ord. 8070 § 5, 1985)

16.04.050 - Unlawful for owner of vessel to permit its operation by incompetent person.

It shall be unlawful for any person owning or in charge of a vessel to authorize the same to be operated by any person under the influence of or affected by the use of intoxicating liquor or any drug, or by any person who by reason of a physical or mental disability would be incapable of safely operating such vessel.

(Ord. 8070 § 6, 1985: Ord. 3305 § 5, 1965)

16.04.060 - Age limit.

- A. It is unlawful for any person under the age of twelve years of age to operate or be permitted, by the owner or person having charge of a motorboat, to operate a motorboat.
- B. It is also unlawful for a person under the age of sixteen to operate a motorboat at a speed in excess of five miles per hour.
- C. It is unlawful for a person under the age of sixteen to operate a personal watercraft.
- D. It is unlawful for a person to lease, hire, or rent a personal watercraft to any person who is under sixteen years of age.

(Ord. 12238 § 1, 2000: Ord. 9478 § 2, 1990: Ord. 8070 § 7, 1985: Ord. 3303 § 6, 1965)

16.04.070 - Overloading of vessels.

It shall be unlawful for any vessel to be loaded with passengers or cargo which exceed the safe-carrying capacity of the vessel. Where safe-carrying capacity of a vessel is specified by the manufacturer, such limitation shall be considered the maximum safe loading for the purpose of this chapter.

(Ord. 8070 § 8, 1985: Ord. 3303 § 7, 1965)

16.04.080 - Overpowering of boats.

It is unlawful for any motorboat to be equipped with any motor or propulsion machinery beyond its safe power capacity, taking into consideration the type of construction of such vessel. Where the manufacturer of a vessel has specified the maximum safe horsepower for a particular boat, such maximum shall be considered the limit of safe capacity for the purposes of this chapter. The responsibility for not overloading or overpowering any vessel shall be with the operator of such vessel.

(Ord. 3303 § 8, 1965)

16.04.100 - Speed limits—General.

It is unlawful to operate a motorboat upon or across any fresh waters of Thurston County at a rate of speed greater than five miles per hour except on lakes otherwise specifically provided for in Section 16.04.110 of this chapter or when participating in an event pursuant to Section 16.04.180 of this chapter, dealing with aquatic events. Except for aquatic events pursuant to Section 16.04.180 of this chapter it shall be unlawful to operate a motorboat upon or across any waters of Thurston County in excess of forty-five miles per hour.

(Ord. 8070 § 9, 1985: Ord. 6723 § 1, 1980: Ord. 6271 § 4, 1979: Ord. 3303 § 10, 1965)

16.04.110 - Speed limits and skiing times on certain lakes.

- A. Commencing with the opening day of general lowland fishing season each year in Thurston County and continuing for a total of thirty days, the speed limit for vessels or motorboats shall not be in excess of five miles per hour at any time, except as otherwise provided in this section.
- B. It shall be lawful to operate any vessel or watercraft at a speed in excess of five miles per hour on the following lakes at any time of the year that permits year-round fishing:
 - 1. Black Lake;
 - 2. Scott Lake, a private lake;
 - 3. Lake St. Clair. Except that the speed limit on the entire lake is reduced to five MPH, and a no-wake zone is created within two hundred feet of the shore whenever water levels are more than sixty-nine and one-half feet above sea level. These speed and no-wake restrictions are in abeyance for that portion lying south of the public access area and southwest to 62nd Avenue SE whenever the water level falls to sixty-nine and one-half feet or below but shall automatically become effective again for the entire lake at any time that the water level rises above sixty-nine and one-half feet.
 - 4. Lake Lawrence.
- C. It shall be lawful to operate any vessel or motorboat or similar contrivance at a speed in excess of five miles per hour on the following lakes in Thurston County after the lapse of the initial thirty-day period of lowland fishing season as provided in subsection A of this section, and on Memorial Day and the two days immediately preceding Memorial Day, whether or not these days fall within such thirty-day period.
 - 1. Summit Lake;
 - 2. Long Lake; except:
 - a. That portion of the lake described as beginning at the north boundary of the Carpenter Road Public Access, along the west shore to the Holmes Island Bridge, then easterly along the southwest shore of Holmes Island to the eastern most point thereof, thence southwesterly across Long Lake to the point of beginning; and
 - b. That portion of the lake lying northerly of a line between the north boundary of the community boat ramp at Reflection Point on the west shore of the lake and the north boundary of the boat ramp at the Aquaterra Apartments on the east shore of the lake, and
 - c. That portion of the lake described as the narrow channel which connects the northern most and southern most sections of the lake.
- D. Watercraft operating in excess of five miles per hour with or without skier in tow shall remain at least two hundred feet from any and all shorelines and one hundred feet from other watercraft and

persons. Said watercraft, when operating in excess of five miles per hour shall proceed around the lake in a counter-clockwise direction.

- E. Placement of buoys will be along a line two hundred feet from any shore, dock, or public swimming area to restrict any watercraft traveling in excess of five miles per hour to an area outside the buoys. Provided, however, that the provision shall not apply to motorboat operators pulling water skiers for takeoff or landing by means of the most expeditious route when such takeoff or landing would not constitute an undue risk to persons or property. For purposes of starting at and returning to shore, water skiers may temporarily exceed the speed limit of five miles per hour.
- F. Placement and maintenance of buoys under this section shall be optional and the responsibility of the skiers and the property owners. Distance between buoys placed under this section shall not exceed three hundred feet.
- G. No watercraft shall operate in excess of five miles per hour from official sunset or eight p.m., whichever is earlier, until eleven a.m.
- H. All motor operated watercraft operating in Thurston County waters after sundown shall be equipped and have lit proper running lights as provided in "The United States Code, Title 46, Section 1954." Lights must be placed high enough that their light will not be obstructed by persons or parts of the boat.
- I. It is unlawful to operate a vessel in excess of five miles per hour within two hundred feet of a public boat launch and/or public swimming area or to pull water skiers for take off or landing within two hundred feet of a public boat launch and/or public swimming area.

(Ord. 12539 § 1, 2001; Ord. 12238 § 2, 2000; Ord. 11951 § 2, 1999; Ord. 10326 § 1, 1993; Ord. 8617 § 1, 1987; Ord. 8070 § 10, 1985; Ord. 7305 § 1, 1982; Ord. 6723 § 2, 1980; Ord. 6271 § 5, 1979; Ord. 4954 § 1, 1975; Ord. 4548 § 1, 1973; Ord. 3303 § 11, 1965; Ord. No. 14975, § 1(Att. A), 12-17-2013)

16.04.120 - Observers.

It is unlawful for any operator of a motorboat to tow any water skier, aquaplane or similar contrivance without having a competent and capable person in the boat to act as an observer and to assist in any emergency. The boat operator shall be at least sixteen years of age. The observer shall continuously observe the person or persons being towed and shall display a flag immediately after the towed person or persons fall into the water, and during the time preparatory to skiing while the person or persons are still in the water. Such flag shall be a bright red or brilliant orange color, measuring at least twelve inches square, mounted on a pole not less than twenty-four inches long and displayed as to be visible from every direction.

No person shall engage or attempt to engage in water skiing, aquaplaning or similar activities by means of a motorboat or device, the design of which makes no provision for carrying an operator and an observer on board, and that is actually operated by the person or persons being towed.

(Ord. 9478 § 3, 1990; Ord. 8070 § 11, 1985; Ord. 3347, 1965; Ord. 3303 § 12, 1965)

16.04.125 - Operation of personal watercraft.

A person operating a personal watercraft equipped by the manufacturer with a lanyard type engine cutoff switch must attach the lanyard to his or her person, clothing, or personal flotation device as is appropriate for the specific vessel. It is unlawful for any person to remove or disable a cutoff switch which was installed by the manufacturer.

(Ord. 9478 § 4, 1990)

16.04.130 - Personal flotation devices.

- A. All watercraft operating within the boundaries of Thurston County shall carry a United States Coast Guard approved personal flotation device on board for each person in the craft. Each personal flotation device shall be in serviceable condition, of an appropriate size, and readily accessible. For purposes of this section only, watercraft includes every vessel that is propelled or controlled by machinery, sails, oars, paddles, poles or another vessel, except racing shells, rowing sculls and racing kayaks.
- B. All water skiers and persons operating or riding on a personal watercraft will wear a United States Coast Guard approved or accepted personal flotation device.

(Ord. 11951 § 3, 1999: Ord. 9478 § 5, 1990: Ord. 8070 § 12, 1985: Ord. 3303 § 13, 1965)

16.04.135 - Fire extinguishers.

- A. Fire extinguishers must be carried on all motorboats that have one or more of the following conditions which make the boat of closed construction:
 - 1. Inboard engines;
 - 2. Closed compartments under thwarts and seats wherein portable fuel tanks may be stored;
 - 3. Double bottoms not sealed to the hull or which are not completely filled with flotation material;
 - 4. Closed living spaces;
 - 5. Closed storage compartments in which combustible or flammable material is stored; or
 - 6. Permanently installed fuel tanks.
- B. Each fire extinguisher is classified by letter and Roman numeral according to the type of fire it may be expected to extinguish and the size of the extinguisher. The letter indicates the type of fire:
 - 1. Fires of ordinary combustible materials;
 - 2. Gasoline, oil and grease fires;
 - 3. Electrical fires.

Extinguishers approved for motorboats are hand-portable of either B-I or B-II classification.

(Ord. 8070 § 13, 1985)

16.04.140 - Counterclockwise operation of motorboats and skiers.

On all waters where circular traffic pattern is possible, motorboats and/or motorboats having in tow a person or person on water skis, aquaplane, or similar contrivance shall be operated at all times in a counterclockwise direction.

(Ord. 3303 § 14, 1965)

16.04.160 - Operation of vessels within marked areas.

No person shall operate a vessel within a water area which has been clearly marked with buoys, skin-diving markers, or some other distinguishing device as a bathing, swimming, skin-diving, or otherwise restricted area; provided, that this section shall not apply in cases of emergency.

(Ord. 3303 § 16, 1965)

16.04.170 - Right-of-way.

Operators of motorboats shall at all times yield the right-of-way to non-motor-powered craft, swimmers, bathers, water-skiers and aquaplaners.

(Ord. 3303 § 17, 1965)

16.04.180 - Regattas, races or aquatic events.

A. Definitions.

1. "Regatta" or "race" or "aquatic event" means an organized water event on fresh waters of Thurston County of limited duration, which is conducted according to a prearranged schedule. This definition does not include Christmas boat parades or July 4 parades.
2. "Frequency" means the number of regattas, races or aquatic events which may be held pursuant to the application procedures provided for herein; the number shall be limited to two such regattas, races or aquatic events during any one calendar year on Black Lake and Lawrence Lake only. Regattas are prohibited on Lawrence Lake from the weekend that includes the first Sunday in May to the weekend that includes Labor Day of each year, including those weekends.

B. Submission of Application. An individual or organization, planning to hold a regatta, race, or aquatic event which, by its nature, circumstances or location, may introduce extra or unusual hazards to the safety of life on the waters of Thurston County, shall submit an application to the Thurston County Sheriff's Office for approval of application, which shall be sent to the county commissioners for permission to hold such an event.

C. Applications shall be submitted on forms provided by the county sheriff and shall be submitted no less than ninety days prior to the start of said event and in any case not later than the first day of the month of May of the year of the event. Each application shall be accompanied by a fee of five hundred dollars, to be paid to the county sheriff before submitting the application pursuant to subsection (b) of this section.

D. The application shall include the following details:

1. The name and address of sponsoring organization;
2. The name and address and telephone number of person or persons in charge of the event;
3. Nature and purpose of event;
4. Information as to general interest;
5. Estimated number and types of watercraft participating;
6. Estimated number of spectator watercraft;
7. Estimated number of persons, participants, and all others;
8. Minimum number of boats and persons being furnished by sponsoring organizations to patrol event;
9. A time schedule and description of events;
10. A section of a chart or scale drawing showing the boundaries of the event, the various water courses or areas to be utilized by participants, officials, and spectators and how access by the general public to adjacent county parks, if any, will be preserved;

11. Commitment to contract with the sheriff's office for the law enforcement officers deemed necessary by the sheriff for safety during the proposed event;
 12. Plan for rescue operations, including proof of certification of divers to be used if not Thurston County sheriff deputies;
 13. Plan for prevention, reporting and containment of fuel spills; and
 14. Plan for providing public notice to the affected homeowners as defined in Thurston County Code 16.04.180.F.
- E. Upon receiving an application to hold regatta, race or event, the Thurston County sheriff's office shall take the following actions or make the following determinations:
1. Whether the proposed regatta, race or event may be held in the proposed location with safety to life and property;
 2. Whether the interest of safety of life and property requires changes in the application before it can be approved;
 3. Whether the event requires regulation or patrol at the proposed location;
 4. Whether the Department of Water and Waste Management has approved the plan for prevention, reporting and containment of fuel spills;
 5. Whether the Risk Management Department has approved the certification of insurance; and
 6. Whether the application be recommended for approval or rejection by the commissioners for stated reasons;
 7. The number of sheriff's deputies that are required to provide adequate safety and law enforcement protection during the event and the hours such sheriff's coverage is required.
 8. The application shall be sent with the recommendations of the Thurston County sheriff's office to the county commissioners not less than sixty days prior to event.
- F. The sponsoring group shall post notice in the local paper and- shall mail a notice to property owners surround the lake within which the regatta will be held and any additional property owners within two hundred and fifty feet of the proposed site of the event two weeks prior to board of county commissioners action on said application. Such notice shall specify the date of the proposed event.
- G. The county commissioners may close for general use any part or whole of a lake for the purpose of the event, provided the approval of the application be on the condition that all terms specified in the application be met by the sponsoring group.
- H. The county commissioners may require a surety bond deemed adequate and subject to their approval, from the applicant, being for the payment of all damages which may be caused either to person or persons or to property by reason of said event and arising from any acts of the applicant, his agents, employees, or subcontractors, and to insure that requirements for markers, rescue equipment or other safety conditions stated in the application finally approved are actually provided. Said bond shall run to Thurston County for the use and benefit of any person, firm, co-partnership or municipality having a cause of action against the obligor of said bond.
- I. Each application shall be accompanied by a certificate of insurance showing that the sponsor has obtained public liability and property damage insurance for the payment of all damages which may be caused either to person or persons or to property by reason of said event and arising from any acts of the applicant, its agents, employees, or subcontractors, and to insure that requirements for markers, rescue equipment or other safety conditions stated in the application finally approved, are actually provided. Thurston County shall be named as an additional insured and shall be notified by the insurer at least twenty days prior to any cancellation of the insurance, which shall have a minimum coverage of five million dollars per accident. The insurance certificate shall be reviewed and approved by the Thurston County Risk Management Division before the permission to hold a regatta is issued to the applicant.

- J. The approval of any application is within the discretion of the Thurston County board of commissioners as set forth in this section.
- K. Approved applications are subject to the condition that the applicant will fulfill the provisions specified in the application finally approved. If at any time the sponsors or participants in such event violate any of the conditions contained in the application, such application may be revoked by the sheriff in the name of the county for the public safety.
- L. Any testing for a motorboat race or regatta authorized under this section shall be limited as further authorized in the application finally approved.

(Ord. 9747, 1991: Ord. 8070 § 14, 1985: Ord. 6271 § 6, 1979: Ord. 3303 § 18, 1965)

(Ord. No. 14122, 9-16-2008)

16.04.190 - Refuse.

It is unlawful for any person to deposit refuse, foreign matter or litter in the waters of Thurston County.

(Ord. 3303 § 19, 1965)

16.04.200 - Scuba diving.

Persons engaging in scuba diving shall mark the water areas where such operations are being conducted with buoyed flags of sufficient size so that they may be seen at a distance of not less than one hundred yards under normal visibility conditions; provided, that where scuba diving operations are conducted between the hours of sunset and sunrise, artificially illuminated marker buoys shall be provided which are visible at a distance of not less than one hundred yards under normal visibility conditions. Scuba diving shall not be conducted so as to unreasonably interfere with normal operation of vessels.

(Ord. 8070 § 15, 1985: Ord. 3303 § 20, 1965)

16.04.210 - Boat mooring buoys.

Any boat mooring buoy placed upon the waters of Thurston County shall be marked so that it will be clearly visible at a distance of not less than one hundred yards under normal daylight visibility conditions.

(Ord. 3303 § 21, 1965)

16.04.220 - Buoys.

Buoys placed and maintained by Thurston County shall comply with the requirements of Chapter 352-66 of the Washington Administrative Code. It is unlawful to remove or otherwise disturb any buoy placed in accordance with Sections 16.04.110, 16.04.160, 16.04.180, 16.04.200 or 16.04.210 of this chapter.

(Ord. 11951 § 4, 1999: Ord. 3303 § 22, 1965)

16.04.230 - Enforcement by sheriff.

It shall be the duty of the sheriff to enforce the provisions of this chapter. When a violation of this chapter is made in the presence of the sheriff or a sheriff's deputy, said sheriff or sheriff's deputy may board any vessel and may arrest the violator.

(Ord. 3303 § 23, 1965)

16.04.240 - Custody of arrested person.

Whenever any person is arrested for any violation of this chapter, the arresting officer may serve a citation and notice to appear in court. The arrested person, in order to secure release, and when permitted by the arresting officer must give a written promise to appear in court as required by the citation and notice, by signing in the appropriate place, the written citation and notice served by the arresting officer. Upon the arrested person's failing or refusing to sign such written promise, the person may be taken into custody of such arresting officer and so remain or be placed in confinement.

(Ord. 8070 § 16, 1985: Ord. 3303 § 24, 1965)

16.04.250 - Reporting of accidents.

Any person operating a vessel, water skis, aquaplane or similar device which has collided with any person or property of another, causing any property damage or personal injury, shall within twenty-four hours report such collision to the sheriff.

(Ord. 8070 § 17, 1985: Ord. 3303 § 25, 1965)

16.04.265 - Registration of vessels.

- A. Except as provided in this chapter, no person may own or operate any vessel on the waters of this state unless the vessel has been registered and displays a registration number and a valid decal in accordance with this chapter.
- B. Vessel registration is required under this chapter except for the following:
 - 1. Military or public vessels of the United States, except recreational-type public vessels;
 - 2. Vessels owned by a state or subdivision thereof, used principally for governmental purposes and clearly identifiable as such;
 - 3. Vessels owned by a resident of a country other than the United States if the vessel is not physically located upon the waters of this state for a period of more than sixty days;
 - 4. Vessels owned by a resident of another state if the vessel is registered in accordance with the laws of the state in which the owner resides, but only to the extent that a similar exemption or privilege is granted under the laws of that state for vessels registered in this state; provided, that any vessel which is validly registered in another state and which is physically located in this state for a period of more than sixty days is subject to registration under this chapter;
 - 5. Vessels used as a ship's lifeboat;
 - 6. Vessels equipped with propulsion machinery of less than ten horsepower that:
 - a. Are owned by the owner of a vessel for which a valid vessel number has been issued,
 - b. Display the number of that numbered vessel followed by the suffix "1" in the manner prescribed by the department, and
 - c. Are used as a tender for direct transportation between that vessel and the shore and for no other purpose;

7. Vessels under sixteen feet in overall length which have no propulsion machinery of any type or which are not used on waters subject to the jurisdiction of the United States, or on the high seas beyond the territorial seas for vessels owned in the United States and are powered by propulsion machinery of ten or less horsepower;
 8. Vessels with no propulsion machinery of any type for which the primary mode of propulsion is human power;
 9. Vessels which are temporarily in this state undergoing repair or alteration;
 10. Vessels primarily engaged in commerce which have or are required to have a valid marine document as a vessel of the United States; and
 11. Vessels primarily engaged in commerce which are owned by a resident of a country other than the United States.
- C. Vessels are exempt from the excise tax alone, but not from registration, if they are:
1. Used exclusively for commercial fishing purposes;
 2. Motorized and under sixteen feet in length having more than ten horsepower;
 3. Motorized and under sixteen feet in overall length used on federally regulated waters, including Puget Sound;
 4. Owned and held for sale by a dealer;
 5. Owned by certain nonprofit youth organizations.
- D. Vessels are exempt from both the excise tax and registration if they are:
1. Under sixteen feet with no propulsion machinery;
 2. Under sixteen feet with ten horsepower or less when used on waters not subject to federal jurisdiction;
 3. Temporarily in the state for repair or alteration;
 4. Primarily engaged in commerce and with a valid marine document;
 5. Owned by residents of another country. These vessels are allowed sixty days' use without registration or tax;
 6. Owned by residents of other states. These vessels are allowed sixty days' use without registration or tax if the resident state grants similar reciprocity;
 7. Used as a ship's lifeboat (to include all of the following):
 - a. Equipped with propulsion machinery of ten horsepower or less,
 - b. Owned by a person with a registered boat,
 - c. Display the number of that registered vessel followed by the suffix "1" in the manner prescribed by the department of licensing,
 - d. Used only as ship's tender for direct transportation from ship to shore and back.
- E. Vessels that are documented are exempt from titling but are required to be registered unless they qualify under other exemptions listed.

(Ord. 8311, 1986: Ord. 8070 § 18, 1985)

16.04.271 - Registration certificate.

Upon payment of proper fees and excise tax, the Department of Licensing or its agents shall issue a certificate of registration. The registration document must be signed by the owner shown on its face and carried at all times on the vessel for which it is issued.

(Ord. 8070 § 19, 1985)

16.04.281 - Decals—Placement.

Upon registration, the applicant will receive a registration document and two decals. One decal shall be affixed to the bow on the port side and one decal shall be affixed to the bow on the starboard side. The decals must be located on the outside of the vessel so that each decal is visible without obstruction from a sideview of the vessel while the vessel is in the water. The numbers must be at least three inches in height and of a color which contrasts from the hull.

(Ord. 8070 § 20, 1985)

16.04.300 - Registration of boat dealers.

All bona fide boat dealers must register as such with the county auditor. Such boat dealers shall be issued a registration certificate and number as provided for in this section; provided, however, that it is not necessary for the boat dealer to affix the registration numbers to any boat which he has or owns for the purposes of sale, and he may use a hanging or removable plate upon which is inscribed his registration number while the boat is in operation on the waters of Thurston County.

(Ord. 8070 § 21, 1985; Ord. 3488 § 8, 1966; Ord. 3478 § 1 (part), 1966; Ord. 3303 § 33, 1965)

16.04.340 - Violators guilty of misdemeanor—Penalties.

- A. Unless a violation is specifically designated as a civil infraction, any person who violates this chapter shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not more than two hundred fifty dollars or by imprisonment of not more than ninety days in the county jail, or both by fine and imprisonment within the discretion of the court.
- B. Violation of the following sections of this chapter shall constitute a class 4 civil infraction:
 - 1. Section 16.04.070, overloading of vessels;
 - 2. Section 16.04.080, overpowering of boats;
 - 3. Section 16.04.100, speed limits—general;
 - 4. Section 16.04.110, speed limits and skiing times on certain lakes;
 - 5. Section 16.04.120, observers;
 - 6. Section 16.04.130, personal flotation devices.
 - 7. Section 16.04.135, fire extinguishers;
 - 8. Section 16.04.140, counterclockwise operation of motorboats and skiers;
 - 9. Section 16.04.170, right-of-way;
 - 10. Section 16.04.200, scuba diving;
 - 11. Section 16.04.360, engine type noise;
 - 12. Section 16.04.370, transportation of aquatic plants.

Civil infractions shall be heard and determined according to Chapter 7.80 RCW, as amended and any applicable court rules.

- C. It shall be within the discretion of the court to require any person who violates any section of this chapter to attend boating safety school in addition to or in lieu of a fine.

(Ord. 11951 § 5, 1999: Ord. 3303 § 38, 1965)

16.04.350 - Operation of vessels on Capitol Lake and certain other waters.

Rules and regulations for the operation of vessels on Capitol Lake shall be those as are promulgated by the State Director of General Administration; and the provisions of this chapter shall not apply to Capitol Lake or to any waters within an incorporated city or cities in Thurston County.

(Ord. 6271 § 9, 1979: Ord. 3303 § 39, 1965)

16.04.360 - Engine type noise.

- A. Motorboats must be muffled so they do not exceed 85 db at fifty feet in any manner of operation, e.g., idling, accelerating, cruising and must have a readily identifiable muffling system in place in the exhaust system. All motorboats or vessels shall use an adequate and operating muffling device with a series of baffles and chambers, which shall effectively blend the exhaust and motor noise in such a manner so as to preclude excessive or unusual noise. It shall be unlawful to remove, disable, bypass, or use a cutout device on any muffler or muffling device of any motorboat or vessel. Where water is used for muffling, it must be in conjunction with a marine designed exhaust manifold. Simply injecting water into an exhaust header does not meet this standard.
- B. Outboard motors, because of their design, do not require additional muffling.
- C. The Thurston County sheriff or authorized agents shall be the enforcement authority to enforce the standards set forth in this section.
- D. The provisions of subsection (a) of this section shall not apply to motorboats actually competing in a race or regatta authorized in Section 16.04.180 of this chapter or authorized testing for that race or regatta.

(Ord. 9478 § 6, 1990: Ord. 8070 § 22, 1985: Ord. 7187, 1982: Ord. 6271 § 10, 1979)

16.04.370 - Transportation of aquatic plants.

- A. It is unlawful for any person to remove aquatic plants from the waters of Thurston County by means of a motorboat, vessel, or watercraft, or trailer or motorized vehicle used to remove a motorboat, vessel, or watercraft.
- B. Subsection (a) shall not apply to the harvesting of aquatic plants for weed control purposes.
- C. It is unlawful for any person to place a trailer or launch a motorboat, vessel, or watercraft with aquatic plants attached into waters of Thurston County.
- D. The Thurston County sheriff or authorized agents shall be the enforcement authority to enforce the standards set forth in this section.

(Ord. 9478 § 7, 1990)

16.04.380 - Emergency powers.

- A. Whenever water levels create an emergency on any lake within the unincorporated areas of Thurston County and the board of county commissioners find that such an emergency exists and demands immediate action to preserve public health or to protect life or property, the board may reduce speed limits, limit hours of use or place whatever other restrictions on lake use as are necessary and appropriate.
- B. Such action may be taken in a special meeting complying with the notice requirements set forth in RCW 42.30.080. At the time the emergency action is taken, the board of county commissioner shall set a public hearing in compliance with the notice requirements or RCW 36.32.120 to consider whether the emergency restrictions should continue and to set a date when the emergency restriction will expire. In no event shall the public hearing occur more than twenty days after the emergency action is taken.
- C. Notice of the emergency restrictions shall be published in the official county newspaper and like notice shall be posted on or prior to the date of publication in a conspicuous place at all public accesses to the lake.

(Ord. 11951 § 6, 1999)

APPENDIX B

Field Forms



Sediment Sample Record

Project Name/Number: LOTT CWA NPDES Permit Outfall Sediment Characterization / 19-07025-000 Dates:

Location: _____ Crew: _____ Gear: _____

[illegible]

