



Alaska Sea Grant and Alaska Department of  
Environmental Conservation  
2022 Clean Boating for  
Ninilchik & Dillingham Harbors  
Final Report



**Prepared June 2022 for:**

**Alaska Department of Environmental Conservation (ADEC)  
and  
Alaska Sea Grant**

by Tav Ammu  
Alaska Sea Grant Fellow  
Bristol Bay, Ak 99576  
tammu@alaska.edu

**Table of Contents**

<b>Executive Summary</b>	<b>3</b>
<b>Background</b>	<b>4</b>
<b>Project Goal</b>	<b>6</b>
<b>Project Implementation</b>	<b>6</b>
<b>Results</b>	<b>9</b>
<b>Pilot Project</b>	<b>13</b>
<b>Recommended Next Steps</b>	<b>14</b>
<b>References</b>	<b>16</b>
<b>Appendix 1</b>	<b>17</b>
<b>Appendix 2</b>	<b>27</b>
<b>Appendix 3</b>	<b>28</b>
<b>Appendix 4</b>	<b>29</b>

## Executive Summary

Communities in Alaska have expressed concern regarding improper sewage disposal in harbors and fishing grounds. Alaska Sea Grant and the Alaska Department of Environmental Conservation (ADEC) collaborated from May 2021 through June 2022 to better understand and address this concern. Three objectives were identified: 1) create an outreach plan to encourage use of existing sewage management options, 2) conduct surveys on sewage management aboard vessels, and 3) design and implement a pilot project in two small communities using results from surveys.

Outreach was conducted to increase awareness about this issue via multiple methods, from online social media posts to in-person forums. Social media posts provided information to fishing groups, Native organizations, and communities. In-person outreach was conducted one-on-one, at conferences, expos, beach clean ups, breweries, and bookshops. This multifaceted approach helped to recruit participants in and to share results of the survey with diverse groups of stakeholders. Three surveys were created to gain a better understanding of concerns from different user groups: harbor staff, community members, and harbor users. Harbor users were either skippers or vessel owners of boats that are moored in a harbor.

All groups surveyed indicated signs detailing rules and regulations were the best way to encourage proper waste management procedures. Using the results from these surveys, a pilot project was created to encourage wastewater discharge compliance from boats within two local harbors, Ninilchik and Dillingham. Competitions were held in Ninilchik and Dillingham schools to create artwork on the theme of *what clean harbors mean to you*. Using the winning entry from each community, a sign was designed that included rules and regulations, contact numbers in the case of a spill, and links to more information. In Ninilchik, the sign will be posted at the entrance to the Ninilchik harbor dock. In Dillingham, a sign will be placed at each entrance to the docks, as well as the entrance to the harbor.

Multiple organizations, communities, and harbor staff have expressed interest in the results from the survey and the subsequent pilot project. It is recommended that additional funding be identified to continue the efforts from this project and to assess signage and outreach efficacy through a complete season of harbor use.

## Acknowledgement

This project has been funded wholly or in part by the United States EPA under assistance agreement number AA-01J87401 to the Alaska Department of Environmental Conservation (ADEC) and from ADEC to the University of Alaska Fairbanks Sea Grant through Reimbursable Service Agreement 18210092. The contents of this document do not necessarily reflect the views and policies of the EPA, nor does the EPA endorse trade names or recommend the use of commercial products mentioned in this document.

The views or opinions shared in the write-up belong to the survey participants or the author of this report and do not reflect the opinions of ADEC or Alaska Sea Grant.



Figure 1. Alaska has over 90 harbors with varied infrastructure. Ninilchik and Dillingham were identified as locations for the pilot study to add attractive signage.

## Background

Alaska has over 90,000 registered boat operators, all of whom need to manage the sewage waste produced on their boats, and over 90 harbors (Figure 1). Alaskan boaters have not always demonstrated an awareness of the need to use sewage pump-out stations and proper sanitary treatment of marine sewage discharges. In addition, many harbors in Alaska lack pump-out systems or bathroom facilities, or the infrastructure they do have is not user friendly or convenient. National clean boating programs exist; however, these programs are not well understood in Alaska, and improving education about clean boating practices is needed.

One of the nationally recognized standards for ensuring harbors are maintained is the [Alaska Clean Harbors Program](#) (also known as the “[Clean Marinas](#)” program). This program provides an optional certification based on best management practices (BMPs) in seven key areas (e.g., sewage or blackwater management). Initially, a harbor pledges to become a “clean harbor,” then demonstrates over time that they are abiding by the BMPs. Examples of expectations are to provide adequate trash cans or dumpsters, or to prohibit discharge of untreated human and pet waste within the harbor basin and

grounds. After demonstrating that clean harbor practices are being followed, the harbor's application is reviewed by the Alaska Clean Harbors Advisory Committee.

Most large harbors in Alaska have a harbormaster and harbor staff who are the focal point for ensuring harbors are clean and safe. However, since many Alaskan harbors are used only seasonally, there are a variety of management structures in place. Some harbors have a seasonal harbormaster or hire additional staff during the fishing season. Some harbors in Alaska do not have the funding or resources to hire any staff. For example, the Ninilchik small boat harbor, which can have as many as 130 boats in the harbor at a time, does not have a harbormaster, which makes implementing and enforcing best management practices difficult. On the other hand, Dillingham harbor has a full-time award-winning harbormaster dedicated to improving best management practices. The Dillingham harbor is owned and managed by the local municipality, who is able to make changes as the community sees fit. Because of their differing management dynamics, the Ninilchik and Dillingham harbors were chosen as locations for the pilot project.

### **Project Goal**

The goal for this project was to explore existing vessel sewage management practices, identify approaches to encourage compliance, remind boaters of their existing options, and pilot a new sewage management approach in one harbor or fishing ground.

### **Objectives**

- Develop and implement an outreach plan to encourage use of existing sewage management options targeted towards commercial fishing vessels.
- Conduct a survey on sewage management aboard vessels, identify barriers to use of marine sanitation devices, pump-out facilities, or alternative sewage management options.
- Design and implement a pilot project in a target harbor to address blackwater management issues.

### **Project Implementation**

A Clean Boating Outreach and Communications Plan (Appendix 1) was created to guide the initial outreach strategy and develop a timeline for accomplishing program objectives. Within the outreach and communications plan, key messages for specific stakeholders—small commercial boat operators, harbor staff, and community members—were outlined. For each group, ways of communicating those messages were also identified. Opportunities to present the project were also identified.

Surveys were developed to better understand Alaskans' opinions about the state of pollution in their local harbors. In September 2021, two surveys were developed and shared to gather input from community members and harbor users. Those surveys were available online, over the phone, or in person through January 2022. A third survey was developed targeting harbormasters and harbor staff. This survey was distributed during the Alaska Association of Harbormasters and Port Administrators annual meeting in October 2021. Information from all three surveys was used to inform the pilot project. Future surveys could be developed following this multi-stakeholder model to assess how the two different harbor communities responded to the implementation of the final pilot project.

Distributing information to stakeholders was accomplished in a variety of ways. As 30% of limited-entry commercial fishing permit holders are not Alaska residents (Commercial Fisheries Entry Commission, 2019), social media and email were used to reach those not present in Alaska outside of the fishing season. [A blog post](#) was published on the Alaska Sea Grant website explaining the project, encouraging community members and harbor users to take their respective surveys, and highlighting the importance of proper waste management. Table 1 lists the different Native organizations, fishing and conservation groups, and news organizations that were contacted to help promote the project. Most of the news organizations included in Table 1 shared the message of the project to their readership or listeners, either by creating their own piece about the project, or sharing the work by other news outlets (Table 2). Public service radio announcements were made in several communities to address the importance of proper waste management techniques and encourage survey participation (Appendix 2). In-person and phone outreach was observed to be particularly effective, as many commercial fishers were skeptical of the project and potential negative impacts for them or their harbors if their responses were misunderstood.

Table 1. Groups and organizations that distributed surveys and survey results to their constituents.

Native Organizations	Fishing or Conservation Groups	News Organizations
United Tribes of Bristol Bay	Upper Cook Inlet Drift Association (UCIDA)	KDLG
Bristol Bay Native Association	Alaska Longline Fishermen's Association (ALFA)	KDLL
Ninilchik Traditional Council	Bristol Bay Fishermen's Association	Alaska Daily News
Alaska Federation of Natives	Young Fishermen of Alaska	Fish Radio
Ahtna	Alaska Fishermen's Network	Reel Times
Sealaska	Alaska Marine Conservation Council	Kodiak Daily Mirror
Bering Straits	United Fishermen of Alaska (UFA)	Pacific Fishing Magazine
Calista	Trout Unlimited	Alaska Public Media
Chugach Alaska Corporation	Cordova District Fishermen United	Homer News
CIRI	Kenai Peninsula Fishermen's Association	
Doyon Limited	Bristol Bay Regional Seafood Development Association	
NANA	Cook Inlet Aquaculture Association	
Aleut Corporation	Center for Alaskan Coastal Studies	
	Southeast Alaska Regional Dive Fisheries Association	
	Salmon State	

	Southwest Alaska Salmon Habitat Partnership
	Alaska Salmon Alliance
	Sierra Club
	Kenai Watershed Forum
	AK Center
	Cook Inletkeeper
	Bristol Bay Economic Development Corporation

Twenty-eight harbor staff, 86 harbor users, and 99 community members participated in their respective surveys. More than half (18) of the harbor staff participants filled out the survey in person at the Alaska Association of Harbormasters and Port Administrators meeting in October 2021. Harbormasters and harbor staff that did not complete the survey at that meeting were given the opportunity to take the survey online. Most community members and harbor users took their surveys online. Despite promotion through fishing gear groups (UCIDA, ALFA, and UFA), many fishermen were hesitant to take the survey or talk about their respective harbors. Therefore, outreach was done through phone calls to amenable fishers recommended by UCIDA or Cook Inletkeeper employees. After a phone interview, many participants were willing to share phone numbers of other fishers from their community who might be open to discussion. Most of the community-member and harbor-user participants were from the Kenai Peninsula (Homer, Ninilchik, and Kenai) and Dillingham areas.

A variety of groups and organizations that were contacted to share the surveys with their communities (Table 1). These groups were sent a PDF of the survey results, a link to the website, and an offer to present to their organizations. News stories covering the project before and after completion of the survey and results are listed in Table 2. Presentations about the project were given to organizations, harbormasters, government entities, commercial fishing groups, and environmental forums before and after results were compiled (Table 3).

Table 2. Links to articles communicating the survey opportunity and results.

July 2, 2021:

<https://www.kdlg.org/news/2021-07-02/what-do-you-think-about-the-dillingham-harbor-a-bristol-bay-fisherman-wants-to-know#stream/0>

Sept. 29, 2021:

<https://alaskaseagrant.org/2021/09/29/there-are-90-harbors-in-alaska-how-clean-is-yours/>

October 16, 2021:

<https://www.kdll.org/post/econ-919-clean-harbors>

Nov. 16, 2021:

<https://alaskaseagrant.org/2021/11/16/state-fellow-spotlight-tav-ammu/>



Dec. 2, 2021:

<https://alaskaseagrant.org/2021/12/02/alaska-sea-grant-attends-pacific-marine-expo/>

December 27, 2021:

<https://www.kdlg.org/post/youth-art-contest-will-envision-what-clean-harbors-mean-dillingham#stream/0>

Dec. 28, 2021:

<https://www.ktoo.org/2021/12/28/youth-art-contest-dillingham-harbor/>

April 21-11, 2022:

<https://www.kbbi.org/local-news/2022-04-22/fisherman-presents-clean-harbors-project-to-ninilchik>

<https://www.kdll.org/local-news/2022-04-21/researcher-presents-clean-harbor-findings-to-ninilchik>

Table 3: Presentations to communicate the survey opportunity (pre-survey) and to share survey results (post-survey), including location, date, and number of attendees.

Pre-Survey Presentations	Post-Survey Presentations
<ul style="list-style-type: none"> <li>● Bristol Bay Native Association               <ul style="list-style-type: none"> <li>○ Dillingham, AK</li> <li>○ October 14, 2021</li> <li>○ 1 attendee</li> </ul> </li> <li>● Ninilchik Traditional Council               <ul style="list-style-type: none"> <li>○ Ninilchik, AK</li> <li>○ October 21, 2021</li> <li>○ 1 attendee</li> </ul> </li> <li>● Alaska Association of Harbormasters and Port Administrators               <ul style="list-style-type: none"> <li>○ Anchorage, AK</li> <li>○ October 25, 2021</li> <li>○ 18 attendees</li> </ul> </li> <li>● Upper Cook Inlet Drift Association               <ul style="list-style-type: none"> <li>○ Soldotna, AK</li> <li>○ January 3, 2022</li> <li>○ 2 attendees</li> </ul> </li> <li>● Cook Inletkeeper               <ul style="list-style-type: none"> <li>○ Homer, AK</li> <li>○ November 28, 2021</li> <li>○ 4 attendees</li> </ul> </li> <li>● Rotary Club of Soldotna               <ul style="list-style-type: none"> <li>○ Soldotna, AK</li> <li>○ January 6, 2022</li> <li>○ 26 attendees</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● Kodiak Harbormasters               <ul style="list-style-type: none"> <li>○ Kodiak, AK</li> <li>○ April 23, 2022</li> <li>○ 2 attendees</li> </ul> </li> <li>● ComFish               <ul style="list-style-type: none"> <li>○ Kodiak, AK</li> <li>○ March 25, 2022</li> <li>○ 17 attendees</li> </ul> </li> <li>● Ninilchik community members               <ul style="list-style-type: none"> <li>○ Ninilchik, AK</li> <li>○ April 16, 2021</li> <li>○ 5 attendees</li> </ul> </li> <li>● Western Alaska Interdisciplinary Science Conference               <ul style="list-style-type: none"> <li>○ Online</li> <li>○ April 22, 2022</li> <li>○ 22 attendees</li> </ul> </li> <li>● Dillingham Planning Committee               <ul style="list-style-type: none"> <li>○ Dillingham, AK</li> <li>○ May 6, 2022</li> <li>○ 2 Attendees</li> </ul> </li> <li>● Alaska Forum on the Environment               <ul style="list-style-type: none"> <li>○ Online</li> <li>○ May 26, 2022</li> <li>○ 24 Attendees</li> </ul> </li> <li>● Kenai harbor staff and board               <ul style="list-style-type: none"> <li>○ Online</li> <li>○ June 6, 2022</li> <li>○ 7 Attendees</li> </ul> </li> </ul>



	<ul style="list-style-type: none"> <li>● Ketchikan Local Emergency Planning Committee <ul style="list-style-type: none"> <li>○ Online</li> <li>○ June 8, 2022</li> <li>○ 9 Attendees</li> </ul> </li> <li>● Dillingham Harbormaster <ul style="list-style-type: none"> <li>○ In person</li> <li>○ June 20, 2022</li> <li>○ 1 Attendee</li> </ul> </li> </ul> <p>Future Presentations Planned</p> <ul style="list-style-type: none"> <li>● Bristol Bay Native Association (planned) <ul style="list-style-type: none"> <li>○ Dillingham, AK</li> <li>○ August 2022</li> </ul> </li> <li>● Juneau Local Emergency Planning Committee <ul style="list-style-type: none"> <li>○ Online</li> <li>○ August 2022</li> </ul> </li> <li>● Alaska Association of Harbormasters and Port Administrators (planned) <ul style="list-style-type: none"> <li>○ Nome, AK</li> <li>○ September 27, 2022</li> </ul> </li> </ul>
--	---

## Results

Results from the survey were compiled and are presented in full in a separate report (Appendix 4). Single-page summaries of the survey data were prepared for Dillingham and Ninilchik to make the survey results digestible (Figures 2-3). Each one-pager included relevant results from the surveys for community members and harbor users for their respective communities. Figure 2 shows the one-pager for Ninilchik with a picture of the winning artist holding her artwork. Figure 3 shows the one-pager for Dillingham with the winning artwork submission.

There were several take-aways from the survey results (Appendix 4). The biggest concern for all three stakeholder groups surveyed was “routine small spills/leaks.” This was unexpected, as the impetus for the survey was concern regarding blackwater/sewage being dumped directly in the harbor. During the presentation to Ninilchik community members, the question was posed why this was the case. It is likely due to the visibility of pollution on the water from even a small fuel or oil leak. Because water does not exchange very frequently in the protected environment of most harbors, spills and leaks remain present and apparent for extended periods.

Community members in Ninilchik who participated in the survey were equally split whether or not they were concerned about blackwater in the harbor (39%) (Figure 4). Whereas in Dillingham, 77% of community members responding thought that blackwater was an issue in the Dillingham harbor (Figure 5). These results were opposite what was anticipated. Because the impetus of the project was concern about blackwater in the Ninilchik harbor, it was anticipated that the community members there would have a higher level of concern.



## NINILCHIK CLEAN HARBORS SURVEY RESULTS

The Alaska Department of Environmental Conservation teamed with Alaska Sea Grant to better understand residents' perception of their local harbor sewage management practices and identify approaches to encourage compliance. These are the results from the harbor user and community member survey responses in Ninilchik.

### COMMUNITY MEMBER RESULTS: 18 PARTICIPANTS



A hazardous waste management and emergency spill response program would be wonderful for our community.

I appreciate your presence in the community! We have a fairly popular harbor and I would love to see more posted information for boaters regarding best practices. Tourism is huge here, and if the boat "captain" isn't willing to practice environmentally responsible boating, perhaps placards or signage might help raise awareness of those present that might only be along for the ride. If enough parties are aware of the environmental expectations, perhaps more accountability can be cultivated on a person-to-person basis. Thank you again for all your hard work!

For more information, including the final survey report and presentations about the survey, visit

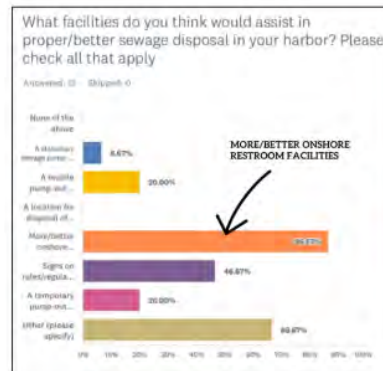
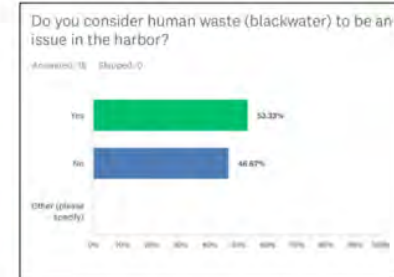
[alaskacleanharbors.org](http://alaskacleanharbors.org)

### HARBOR USERS RESULTS: 15 PARTICIPANTS



Port-o-potty is necessary, pollution definitely an issue in June, people from lower 48 live aboard, not many people pump bilge in harbor, permanent toilets not maintained or open, need place for used oil, need dumpster.

People will throw garbage bags wherever they can when there is no dumpster. When dumpsters were provided, locals [still] took their garbage home or to Homer and left the dumpsters for outsiders. [They were] still overflowing, not dumped routinely or at all, becoming a huge mess.



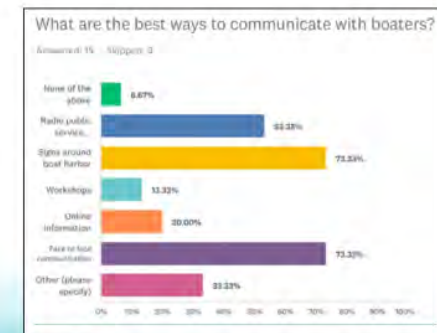
Overcrowding is the big issue.

Have not used a pump-out station. Would not use one if it was available.



PHOTO TAKEN BY BRYAN HOLEY

Ninilchik students were invited to design a poster that shows "What clean harbors mean to you." The winning entry, by Kate Hendryx, will be turned into a metal sign to be posted at the harbor with important rules, regulations and contact information in case of spills.



March 2022

Figure 2. Summary of project results specific to Ninilchik.





Figure 3. Summary of project results specific to Dillingham.

Do you consider human waste (blackwater) to be an issue in the harbor?

Answered: 18 Skipped: 0

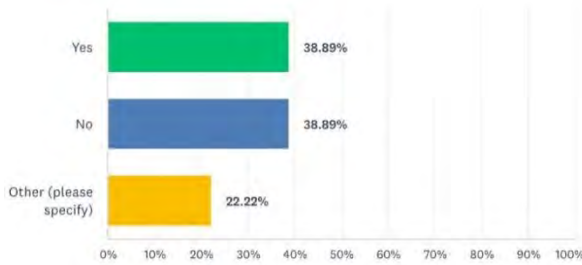


Figure 4. Question 4 Ninilchik responses

Do you consider human waste (blackwater) to be an issue in the harbor?

Answered: 13 Skipped: 1

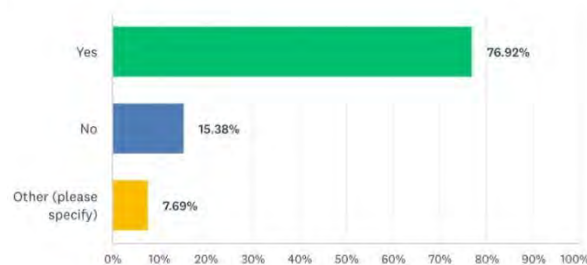


Figure 5. Question 4 Dillingham responses

Signs were considered the best way of communicating important information, particularly regarding rules and regulations, from both harbor staff and harbor users (Figures 6-7). Many participants in the survey shared the desire to protect the water and wanted to follow the rules, but did not necessarily know what that entailed. Signs were considered a good way of getting that information to harbor users. A possible reason for physical signs over online information may be that a permanent sign at a harbor with the logo of reputable organizations may carry more weight than an online post. As anecdotal evidence, one Dillingham Planning Committee member reviewing survey results while traveling reported being quite skeptical that signs would be particularly useful. Her skepticism was dispelled when arriving at her destination and not knowing where to go, she immediately looked for signs to direct her.

What are the best ways to communicate with boaters?

Answered: 25 Skipped: 3

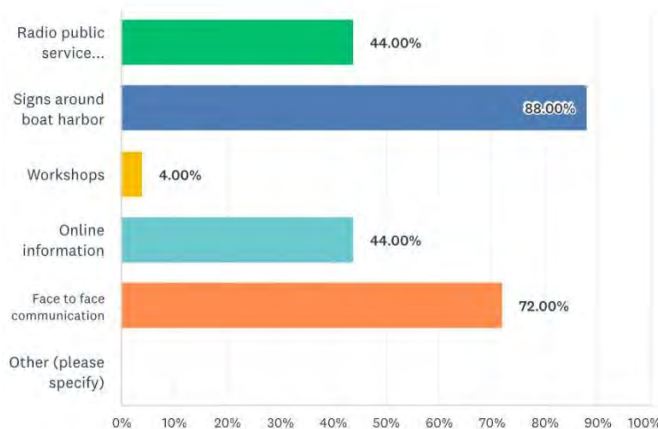


Figure 6. Harbor staff responses to how to communicate.

What are the best ways to communicate with boaters?

Answered: 84 Skipped: 2

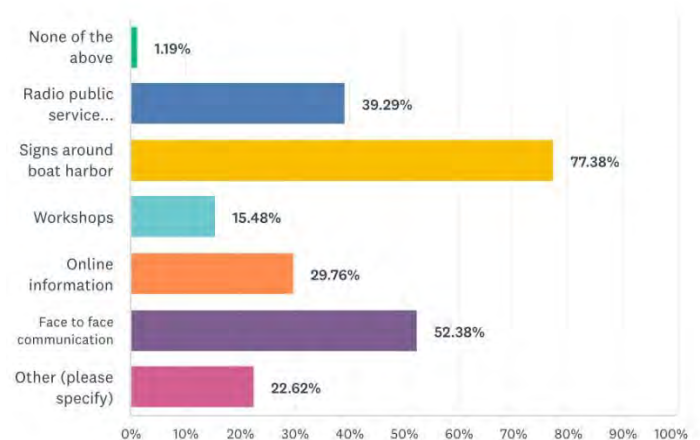


Figure 7. Harbor users' responses.

A broad survey take-away is that more education and information is wanted. People want to do the right thing, but may not know what that is. Education and outreach on proper waste management, even one-on-one, can help teach and remind harbor users about proper waste management.

Many participants were thankful for this attention to harbor pollution, because it is not frequently talked about among Alaskan boaters. Many participants thought that it is a prevalent and important focus in the lower 48 states, but not here. That could be due to the greater number of tourists passing through harbors in the lower 48 states, or that, unlike here, harbors are generally active year-round. Encouraging these discussions, conducting outreach, and having simple, frequent reminders before and during the fishing season are ways to remind harbor users about the right way to do things.

While the purpose of this project was to get a better understanding of challenges surrounding the state of their harbor, many participants made a point of expressing the positives. For example, people expressed a desire to put garbage and sewage in appropriate receptacles, but shore support services may be lacking. When restrooms are distant, locked, or non-existent, harbor users must improvise. Most harbor users thought their harbor staff was intent and engaged to reduce pollution. Many participants did not think that the state of their harbor was particularly bad. As Alaska has much less boat traffic, more extreme tides, and less land-based traffic than the lower 48 states, we are in a better position to protect and maintain harbor water quality than many harbors in other states.

## **Pilot Project**

A pilot project to create harbor signage was developed based on the findings of the survey results. There was interest in following the rules and regulations for discharges from boats, but oftentimes the proper procedures were not known. Communicating these requirements in a clear manner will encourage compliance, and could further propagate through peer-to-peer interactions.

Working with schools in both communities, students designed the artwork for a new sign to be posted at their local harbor. An art competition was held in Ninilchik and Dillingham for all children under 18 to show what clean harbors meant to them. A winner from each community was chosen by members of the community.

While the art competitions were ongoing, Alaska Sea Grant worked with the Department of Transportation in Ninilchik to obtain a permit for posting a sign next to the harbor. In Dillingham, as the land surrounding the harbor is municipally owned, approval was only required from the Harbormaster and the City of Dillingham.

The Alaska Sea Grant design team worked with the Alaska Department of Environmental Conservation to incorporate waste management information with the winning artwork (Figures 8a-b). This simple, informative information included QR codes, website links, and phone numbers for more information or to report a spill. Permanent metal signs are being made and installed in conspicuous locations in each harbor. These signs will continue to be an informational resource to harbor users. Through this project, there is the possibility that other harbors or communities will see the results of this pilot project and be encouraged to do something similar. Several news organizations published stories about the signs before they were even installed. Follow-up stories will continue to spread the word and



encourage clean boating in Alaska harbors. It is too early to see the results from the pilot project. A follow-up survey of effectiveness is recommended.

Several harbors and communities have reached out expressing interest in the clean harbors program and the results from the survey. Kodiak Harbor has utilized the free resource available at the Alaska Clean Harbors website for signage around the boat harbor. Kenai Harbor and Dillingham have requested presentations about the results of the survey, as well as resource opportunities for expansion and information. Overall, there is a desire for information and resources about clean boating from harbors and stakeholders.



Figure 8. a) Sign created for Ninilchik with artwork by 7th grader Kate Hendryx. b) Sign created for Dillingham with artwork by kindergartener Sharon Souvannasky.

### Recommended Next Steps

Future work recommended to build on the momentum this project generated. For future projects, there are recommended actions for participating organizations and stakeholder groups to consider to improve the likelihood of success of the clean vessel and clean harbors initiative.

ADEC

- Work with partners to develop a long term plan for participation in and support of the Alaska Clean Harbors Program.
- Support continuation of the harbor signage pilot project and harbor outreach.
- Work with harbormasters or harbor staff interested in improving waste management infrastructure.
- Continue harbor water sampling projects and share results with communities.

#### Alaska Sea Grant

- Participate in the Alaska Clean Harbors program and outreach.
- Continue the harbor signage pilot project in communities with Alaska Sea Grant Marine Advisory Program agents and other staff.
- Work with educators to create lesson plans discussing pollution and ecosystem impacts specific to their local harbors and coastal areas.
- Return to the Alaska Association of Harbormasters and Port Administrators annual conference and present survey results and outcomes from the pilot project.
- Share funding opportunities and resources to interested harbormasters and communities.

#### Harbormasters/Harbors

- Participate in the Alaska Clean Harbors program and work towards certification.
- Conduct an annual survey with harbor users and community members about their perception of the local harbor to determine the effectiveness of improvements efforts.
- From survey results, address concerns in an appropriate way for each community, and share successes and failures with one another.
- Update harbor signage dealing with sewage management.
- Submit radio public service announcements with a reminder not to discharge human waste within 3 nautical miles from land (see examples being used in Dillingham and Ninilchik in Appendix 2).
- Bolster current infrastructure needed for a clean harbors program, including sewage disposal systems such as port-o-potties, restrooms, pump-outs, used-oil disposal, and dumpsters.
- Share resource funding opportunities with other harbormasters.

#### Future Fellowship/Organization:

- Test effectiveness of the harbor sign pilot project and outreach efforts.
- Increase outreach to new communities to expand proper waste management information throughout Alaska.
- Conduct future surveys and outreach efforts with the aim of:
  - improving relations and possibility of involvement from harbor communities
  - documenting perception about changes occurring and outreach effectiveness
- Meet with local and regional representatives to secure funding for solutions.



## References

Alaska Department of Environmental Conservation, 2021. *Clean Boating Outreach and Communications Plan*. Ninilchik, p.5.Survey Write-up

Alaska Department of Environmental Conservation, 2021. *The State of the Alaska Message to Vessel Owners About Discharging Waste*. pp. single page.

Commercial Fisheries Entry Commission, 2019. *2019 Annual Report*. Available at: <https://www.cfec.state.ak.us/annrpts/AR2019.pdf> [Accessed 13 June 2022].

Lord, R., 2022. *Alaska Clean Harbors*. [online] Alaska Clean Harbors. Available at: <https://www.alaskacleanharbors.org/> [Accessed 10 May 2022].

## Appendix 1

# Alaska Sea Grant Clean Boating Outreach and Communications Plan

## Background

Communities have expressed concern regarding improper sewage disposal in small harbors and large fishing grounds. Although several harbors in Alaska have pump-out stations, not all vessels utilize this option.

An Alaska Sea Grant Fellow will explore existing vessel sewage management practices, identify approaches to encourage compliance, remind boaters of their existing options, and pilot a new sewage management approach in one harbor or fishing ground. This outreach plan addresses the Alaska Sea Grant deliverables in the work plan agreement for the period May 1, 2021– June 30, 2022. An Alaska Sea Grant Fellow will

- Implement an outreach plan to encourage use of existing sewage management options
- Develop and implement a survey on sewage management aboard vessels
- Design and implement a pilot project at a targeted harbor
- Prepare the final report.

## Goal

Explore existing vessel sewage management practices, identify approaches to encourage compliance, remind boaters of their existing options, and pilot a new sewage management approach in one harbor or fishing ground.

## Objectives

- Implement an outreach plan to develop strategies to encourage use of existing sewage management options targeted towards commercial fishing vessels
- Conduct a survey on sewage management aboard vessels, identify barriers to use of marine sanitation devices, pump out facilities, or alternative sewage management options
- Design and implement a pilot project in a target harbor to address blackwater management issues

## Key Messages

- Dumping blackwater within 3 nautical miles from land is prohibited and environmentally dangerous
- Recognize where sewage is incorrectly being disposed of, why that is occurring, and how best to counter that pollution

- Identify harbors or areas in Cook Inlet, Knik Arm, Kachemak Bay and Bristol Bay areas that could use new or improved facilities to deal with marine vessel sewage
- Provide information on alternative vessel sewage management options for when pump out stations are not available
- Better understand likely hurdles stopping boaters from properly disposing of waste
- Encourage harbors to strive for certification as an “Alaskan Clean Harbor” through identifying and providing options to rectify key areas of difficulty, particularly as they pertain to blackwater discharge
- Increase boater awareness of why it is important to use pump-outs and provide pump-out options – such as how to find and use them

## **Stakeholders and Target Audience**

Target Audience A: Small commercial boat operators

Target Audience B: Harbormasters

Target Audience C: Community members and other harbor users

## **Target Harbors**

- Ninilchik Small Boat Harbor
- Dillingham Harbor
- All Alaskan harbors

## **Key Messages**

### **Key messages common to all target audiences:**

- Marine sewage discharges to inland waters and harbors are illegal and environmentally harmful.

### **Key messages specific to small commercial boat operators:**

- Use pump-outs, marine sanitation devices (MSDs), or onshore restroom facilities when available
- Never discharge blackwater in a harbor or within 3 nautical miles of shore
- Pump-outs are available at many harbors
- A vessel not being equipped with an MSD does not allow it to dump within 3 nm of shore

### **Key messages specific to harbormasters, local residents, and other harbor users:**

- Alaska Clean Harbors program has templates and information for signage and paper hand-outs and can provide technical assistance on pollution prevention.
- Outreach to harbor users will increase proper use of restroom facilities and pump-out usage (knowing where they are and how they work)
- Some harbors are eligible for Clean Vessels Act (CVA) federal funding to purchase pump-outs – applications must go through ADF&G

- Grant funding may be available for local community members that want to lead water quality assessment and management at recreational beaches
- Temporary pump-out facilities are available and may be better suited than year-round stations

## **Communications Activities**

### **Commercial boaters, recreational boaters, community members**

- Online and in person surveys to cover current understanding of blackwater management issues (or lack of issues) in Alaska's harbors and perceived barriers to use of current facilities. Surveys will be designed for specific target audiences.
- Community engagement (e.g., beach cleanup, presentations of findings to harbor masters and community representatives, round table discussion with harbor masters, harbor users and community leaders, talking to community members with booths at area festivals or events related to the marine environment, tables at harbors or other public events)
- Rack cards and visible signage at harbors
- Public service announcements played at frequent intervals on local radio stations prior to and during fishing season
- News articles written detailing the intention of the surveys
- Commercial vessel operator outreach
- Host a discussion at the Alaska Sea Grant Young Fisherman's Summits

### **Harbormasters and harbor staff**

- Harbor site visits and walk-throughs
- Presentation at the Harbormaster Annual Meeting
- Alaska Clean Harbors website (including many available pollution prevention hand-outs)

## **Communications Tools**

- Events – Alaska Sea Grant Fellow will lead
  - An outreach event at Ninilchik harbor targeting harbor users in Ninilchik
  - Outreach at marine/harbor focused events, including Alaska Young Fishermen's Summit and the Alaska Harbormasters Annual Meeting
  - Community engagement activities (e.g., Beach cleanups at the Ninilchik Small Boat Harbor) to encourage community involvement and ownership of targeted harbor
  - Community communication opportunities (round table) for harbor masters, harbor users and community members to discuss issues and possible solutions in regards to proper sewage disposal
  - Door to door canvassing of impacted communities (i.e., Ninilchik old town)
- Technical assistance – Alaska Sea Grant Fellow will meet with harbor masters, stakeholder groups, harbor users, and community members to collect data through surveys and questionnaires
- Presentation(s) – Alaska Sea Grant Fellow will
  - Provide an educational presentation at community gatherings in targeted harbors (Dillingham and Ninilchik)

- Supply surveys and a preliminary presentation of findings at the Alaska Harbormasters Annual Meeting
- Provide a presentation on survey findings and pilot project to the regulatory community (i.e., Alaska Department of Environmental Conservation)
- Provide information/presentations to other groups (e.g., United Cook Inlet Drift Association, Cook Inlet Aquaculture Association, UTBB, Alaska Young Fishermen's Summit)
- Web site/social media/Radio
  - Alaska Sea Grant Fellow will design and implement social media (Fliers, Signs, Posters, newspaper articles, radio announcements) outreach targeting harbor users in targeted communities
  - Harbormasters and harbor users will be directed to the Alaska Clean Harbors website for additional resources on pollution prevention
  - Fellow will create a web page on Alaska Sea Grant's website detailing the results of the survey

## Personnel Involved

Alaska Sea Grant Director: Ginny Eckert

DEC Grant Manager: Sarah Apsens

Alaska Sea Grant State Fellow: Tav Ammu

## Strategy and Timeline

FY 2021						
Date	Activity	Tools	Location	Audience	Budget	Personnel
May	Harbor Site Visit, Meeting with Harbormaster, BBNA, BBFA, UTBB, BBRSDA,	Outreach and interview to better understand key areas of difficulty	Dillingham	Harbormaster, boaters and community members	N/A	Tav Ammu
May	Pilot Public Service Announcement (see Attachment 1)	Local KDLG radio station	Dillingham	Community members, boaters	N/A	Tav Ammu
May	1 <sup>st</sup> Draft of surveys (see attachment 2)	Computer	Dillingham	Harbormaster, Commercial Fishermen, Harbor users	N/A	Tav Ammu
May	Communicate with current clean	Internet and phone communication	Homer	Harbormasters	N/A	Tav Ammu

	harbors to ascertain best practices					
July	Reach out to Dillingham Mayor about clean Harbors program	Email	Dillingham	Alice Ruby	N/A	Tav Ammu
July	Conduct eight preliminary surveys to commercial fishermen in Dillingham	In person	Dillingham	Commercial Fishermen	N/A	Tav Ammu
July	Conduct clean harbor self-assessment with Dillingham harbormaster	In person	Dillingham	Harbormaster	N/A	Tav Ammu
July	Communicate with Dillingham City Manager	Phone	Dillingham	City Manager	N/A	Tav Ammu
August	Coordinate with Rachel Lord (former clean harbors lead) about October harbormasters conference	Internet and phone	Homer	Harbormasters	N/A	Tav Ammu
August	Community Engagement activity at targeted harbor (beach cleanup and community presentation)	Garbage Bags, Flyers (see Attachment 3), Gloves, Hand Tools, Signs, Posters, Snacks, Beverages	Ninilchik	Ninilchik Tribal Council, Kenai watershed forum, Community Members	\$180	Tav Ammu
August	Communicate with USCG Homer Detachment about pollution enforcement	Email and phone	Homer	USCG	N/A	Tav Ammu
August	Communicate with EPA about pollution enforcement and harbor water quality monitoring	Email and phone	Anchorage	EPA, DEC-Brock Tabor, Amber Bethe	N/A	Tav Ammu

August	Communicate with Kenai Borough Mayor and staff about program	Email	Kenai	Kenai Peninsula Borough Mayor	N/A	Tav Ammu
August	Communicate with Homer mayor about program and possible contacts	Email and in person	Homer	Homer Mayor's Office	N/A	Tav Ammu
August	communicate with Cook Inlet keeper about program and resources available	Email and phone	Homer	Sue Mauger	N/A	Tav Ammu
August	communicate with UCIDA about Ninilchik harbor and program	Email and phone	Kenai	Audrey, Dave Martin, Roland	N/A	Tav Ammu
September	Communicate with Dillingham and Ninilchik Elementary Schools about classroom competition for creating a sign about "What does a clean harbor mean to you"	Email and phone, in person presentation	Ninilchik, Dillingham	Elementary School Teachers and Students	N/A	Tav Ammu
September	Communicate with Army Corps of Engineers, DOT, and DNR about funding for Ninilchik harbor	Email and phone	Ninilchik	Army Corps of Engineers, DOT, DNR	N/A	Tav Ammu
September	Brainstorm with Ninilchik community members about best way to communicate clean harbors message	Phone	Ninilchik/S oldotna	Dave Martin, Dave blossom, Curtis wild, Tiffany Stonecipher, Jamie Grant, <u>etc.</u>	N/A	Tav Ammu
September	draft article for ADN about clean harbors program and encouraging survey participants	Newspaper article	Anchorage	Anchorage Daily News	N/A	Tav Ammu



September	communicate with DOT about complaint made in Ninilchik	Email and phone	Anchorage	DOT, Marcus Zimmerman	N/A	Tav Ammu
September	Communicate with fishery production companies about surveys	Email and phone	State of Alaska	Trident, Icicle, Peter Pan, Ocean Beauty, Alaskan Leader, Alaska General Seafoods, North Pacific, Leader Creek, etc.	N/A	Tav Ammu
September	Conduct door to door communication with residents of old town	In person	Ninilchik	Old town residents	300	Tav Ammu
September	Publish article for ADN about clean harbors program and encouraging survey participants	Newspaper article	State of Alaska	Harbor users, harbormasters, community members	N/A	Tav Ammu
September	Identify which communities will be addressed for Harbormaster/community member survey	Phone and email	State of Alaska	DEC, Alaska Sea Grant	N/A	Tav Ammu
September	Submit harbor surveys to harbormasters and community members	email link of survey	State of Alaska	Harbormaster Association, BBNA,	N/A	Tav Ammu
September	Submit harbor surveys to harbor users (boaters)	Email link of survey	State of Alaska	UTBB, UCIDA, UFA, YFA, DEC, Other fishing groups	N/A	Tav Ammu
October	Have round table discussion about preliminary findings and suggestions or considerations with Ninilchik representatives	In person	Ninilchik	NTC and Kenai Borough Representatives	300	Tav Ammu

October	Have round table discussion about preliminary findings and suggestions or considerations with DLG representatives	In person	Dillingham	Dillingham Harbormaster	600	Tav Ammu
October	Present preliminary findings from harbor users' surveys and obtain surveys from harbormasters	Annual Association of Harbormasters	Anchorage	Harbormasters and staff	N/A	Tav Ammu
November	Create sign prototype with Alaska Sea Grant graphic designer addressing clean harbor program	Alaska Sea Grant Graphic Design, signs from Cook Inletkeeper	Anchorage	Alaska Sea Grant		Tav Ammu and Graphic Design Team
November	Communicate with Dillingham and Ninilchik about possibility for temporary/permanent clean harbor signs	Sign prototype	Dillingham and Ninilchik	Harbor Users and community members	N/A	Tav Ammu
November	Post signs where signboard exists, and communities approve	Signs, hand tools, bolts and nuts	Dillingham and Ninilchik	Harbor users and community members	100	Tav Ammu
December	Report and summary of survey responses which includes an evaluation of behavioral and infrastructure barriers to pump-out use	Email	Online presentation	DEC, Alaska Sea Grant,	N/A	Tav Ammu

**FY 2022**

Date	Activity	Tools	Location	Audience	Budget	Personnel
January	Presentation of findings of survey with communities involved in survey with included opportunity to make	Online zoom meeting, make recording of slideshow presentation	YouTube	Communities heavily involved in survey		Tav Ammu

	community suggestions for rectifications					
January	Based on surveys, identify harbors and communities of concern to expand program to	Survey results	TBD	TBD	TBD	Tav Ammu
February	Create website on Alaska Sea Grant to present results from survey	Online	Anchorage	Alaska		Tav Ammu with IT Assistance from Alaska Sea Grant
February	Communicate with representatives and groups within harbors and communities of concern to address issues	Email and phone	TBD			Tav Ammu
March	Communicate with communities that responded to survey to address issues (i.e., put up signs, apply for temporary pump out stations, etc.)	Email and phone	TBD			Tav Ammu
April	Communicate with communities that responded to survey to address issues (i.e., put up signs, apply for temporary pump out stations, etc.)	Email and phone	TBD			Tav Ammu
April	Post signs in communities that did not have already established signboard	In person	TBD			Tav Ammu
May	Discuss recommendation for	Email and phone	TBD			Tav Ammu

	water quality monitoring project with communities that expressed concern in surveys					
May	Create Public Service Announcements for clean harbors					Tav Ammu
May	Publish article in ADN about clean harbors program					Tav Ammu
June	Final Report	N/A	Statewide	Sea Grant	N/A	Tav Ammu

## Deliverables

Required Deliverables	Proposed Activity/Number
All materials developed	Signs, posters, flyers, public service announcements, best practices slideshow for harbormasters, presentation for community members focused on blackwater management and value of keeping harbors clean
Survey design protocols; report summarizing survey responses which includes an evaluation of behavioral and infrastructure barriers to pump-out use	Expanding focus from <ul style="list-style-type: none"> <li>solely pump-out use barriers in harbors where pump-outs don't exist to problems that are within the community's ability to address.</li> <li>recreational boat users, and instead including survey question to target a broader audience of harbor users (i.e., commercial vessel operators, harbormasters, community members, etc.)</li> </ul>
Final report describing the pilot project and evaluating its success	Final reports should include: <ul style="list-style-type: none"> <li>Clear timeline and implementation plan for pilot project. List of key contacts for pilot project</li> <li>Communication plan(s) targeting key user groups</li> <li>Summary of survey findings</li> </ul>

**Appendix 2: Public Service Announcements****Dillingham Public Service Announcement 1 (KDLG, Summer 2021)**

Let's keep our harbor and waters clean and safe this fishing season. When in port use the restroom facilities located at the North end of the harbor. Remember it's illegal for anyone to discharge untreated sewage from a boat or vessel inside of 3 nautical miles from shore. Another main culprit to clean waters is dirty bilges. Use oil absorbent pads (diapers) to soak up unwanted oil and hazardous materials before pumping out bilge water. Place oil-soaked diapers in a plastic garbage bag and bring them to the harbormaster's office for proper disposal. Oil drum receptacles are also available for use, next to the harbormaster's office. If you see a spill or issue, please report it to the harbormaster or harbor staff by calling 842-1069. Let's keep our harbors and waters clean and safe this summer!!!

**Dillingham Public Service Announcement 2 (KDLG, Summer 2021)**

Let's keep our harbor and waters clean and safe this fishing season. When you're in port please use the restroom facilities located at the North end of the harbor. Never discharge untreated sewage in the harbor. Please remember cleaning fish and disposing of fish waste within the harbor is not allowed. If you find yourself cleaning fish while in the harbor or on land, there are fish waste disposal locations at the dump. Let's keep our harbors and waters clean and safe this summer!!!

**Kenai Peninsula Public Service Announcement 1 (KDLL, Summer 2021)**

Let's keep our harbor and waters clean and safe this fishing season. When in port use the restroom facilities located onshore. Remember it's illegal for anyone to discharge untreated sewage from a boat or vessel inside of 3 nautical miles from shore. Another main culprit to clean waters is dirty bilges. Use oil absorbent pads (diapers) to soak up unwanted oil and hazardous materials before pumping out bilge water. If you see a spill or issue, please report it to the USCG National Response Center at (800)424-8802 or the Department of Environmental Conservation Spill Response at (907)424-3060 . Let's keep our harbors and waters clean and safe this summer!!!

**Kenai Peninsula Public Service Announcement 2 (KDLL, Summer 2021)**

Let's keep our harbor and waters clean and safe this fishing season. When you're in port please use the restroom facilities located onshore. Never discharge untreated sewage in the harbor. Please remember cleaning fish and disposing of fish waste within the harbor is not allowed. Let's keep our harbors and waters clean and safe this summer!!!

### Appendix 3: Additional Outreach Materials

Alaska Sea Grant designed and printed stickers that highlight the artwork done by Ninilchik winner Kate Hendryx and serve as a reminder to “Do your part to keep our harbor clean!”



# **Appendix 4.**

## **Survey results report**



# Statewide Clean Boating Survey and Outreach 2022 Report



**Prepared February 2022 for:**

**Alaska Department of Environmental Conservation (ADEC)**

**and**

**Alaska Sea Grant**

by Tav Ammu  
Alaska Sea Grant Fellow  
17515 Ninilchik, AK 99683  
tammu@alaska.edu



**Acknowledgments:** This project was completed under coordination between the Alaska Department of Environmental Conservation and the Alaska Sea Grant. Without the support of Sarah Apsens and Ginny Eckert this project would not have been possible. We also appreciate all the Native Organizations and Fishing Organizations that shared links and information to their respective communities: Bristol Bay Economic Development Corporation, Bristol Bay Native Association, Ninilchik Traditional Council, Alaska Federation of Natives, Sea Alaska, Upper Cook Inlet Drift Association, Alaska Longline Fishermen's Association, Bristol Bay Fishermen's Association, Young Fisherman's Association, Alaska Fishermen's Network, Alaska Marine Conservation Council, United Fishermen of Alaska, Cordova District Fishermen United, Kenai Peninsula Fishermen's Association, Bristol Bay Regional Seafood Development Association, Cook Inlet Aquaculture Association, Center for Alaskan Coastal Studies, Salmon State, Trout Unlimited, Southwest Alaska Salmon Habitat Partnership, Southeast Alaska Dive Fisheries Association, Alaska Salmon Alliance, Kenai Watershed Forum, Cook Inletkeeper, Sierra Club and many others. We are also grateful for the news organizations that shared the information about the surveys: KDLG, KDLL, Anchorage Daily News, Fish Radio, Reel Times, and Kodiak Daily Mirror. Much appreciation for River City Books and the Homer Brewing company for the donations of space and goods.

This project has been funded wholly or in part by the United States EPA under assistance agreement number AA-01J87401 to the Alaska Department of Environmental Conservation. The contents of this document do not necessarily reflect the views and policies of the EPA, nor does EPA endorse trade names or recommend the use of commercial product mentioned in this document.

The views or opinions shared in this write-up belong to the survey participants or the author of this report and do not reflect the opinions of ADEC or Alaska Sea Grant.

**Cover Photograph:** Homer Harbor

## Table of Contents

<b><u>Summary.....</u></b>	<b><u>6</u></b>
<b><u>Introduction.....</u></b>	<b><u>8</u></b>
<b><u>Methods .....</u></b>	<b><u>9</u></b>
<b><u>Results .....</u></b>	<b><u>12</u></b>
<u>Harbor Staff .....</u>	<u>12</u>
<u>Community Members .....</u>	<u>17</u>
<u>Harbor Users .....</u>	<u>25</u>
<u>Appendix 1- Harbor Staff Survey Results.....</u>	<u>42</u>
<u>Appendix 2- Community Members Survey Results .....</u>	<u>59</u>
<u>Appendix 3- Harbor Users Survey Results .....</u>	<u>72</u>

## Tables and Figures

Table 1: Groups and organizations reached out to that were willing to spread the surveys to their communities	9
Figure 1: Graph from Great Alaskan Sportsman Survey, 2015, Conducted by Cook Inletkeeper	7
Figure 2: Flyers used in different communities to encourage participation in surveys	10
Figure 3: How many boats/boaters use your harbor throughout the year?	11
Figure 4: What resources are available to properly dispose of human waste in your harbor?	12
Figure 5: What are the biggest concerns for boater pollution in your harbor?	13
Figure 6: Which facilities do you think would assist in proper/better sewage disposal in your harbor?	13
Figure 7: What are the best ways to communicate with boaters?	14
Figure 8: How do you currently communicate with harbor users?	14
Figure 9: Map of the locations of Community Members survey participants. Different colors of circles represent the different amount of participants in each location	16
Figure 10: In your opinion, what are the biggest pollution concerns in your harbor?	17
Figure 11: Only Ninilchik participants	18
Figure 12: Only Dillingham participants	18
Figure 13: What resources are available to properly dispose of human waste in your harbor?	19
Figure 14: Question 3- Only Ninilchik participants	20
Figure 15: Question 3- Only Dillingham participants	20
Figure 16: Question 4- Do you consider human waste (blackwater) to be an issue in the harbor?	21
Figure 17: Question 4- Only Ninilchik participants	22
Figure 18: Question 4- Only Dillingham participants	22
Figure 19: Map of the locations of Harbor Users survey participants. Different colors of circles represent the different amount of participants in each location	24
Figure 20: Question 4- What are the biggest pollution concerns in your harbor?	25
Figure 21: Question 4- Only Ninilchik participants	26
Figure 22: Question 4- Only Dillingham participants	26
Figure 23: Question 5- Do you consider human waste (blackwater) to be an issue in the harbor?	27
Figure 24: Question 5- Only Ninilchik participants	28
Figure 25: Question 5- Only Dillingham participants	28
Figure 26: Question 6- Which sewage management system do you currently use on your boat?	29
Figure 27: Question 6: Ninilchik participants only	30
Figure 28: Question 6: Dillingham participants only	30
Figure 29: Question 7- Which resources are available to properly dispose of human waste in your harbor?	31
Figure 30: Question 7: Ninilchik participants only	32
Figure 31: Question 7: Dillingham participants only	32
Figure 32: Question 8- What facilities do you think would assist in proper/better sewage disposal in your harbor?	34
Figure 33: Question 8: Ninilchik participants only	35
Figure 34: Question 8: Dillingham participants only	36
Figure 35: Question 10- What are the best ways to communicate with boaters?	38
Figure 36: Question 10: Ninilchik participants only	39
Figure 37: Question 10: Dillingham participants only	39

## Summary

The Alaska Department of Environmental Conservation (ADEC) teamed with Alaska Sea Grant to create a Fellowship tasked with exploring existing marine vessel sewage management practices, identifying approaches to encourage compliance with federal and state regulations, reminding boaters of their existing options, and piloting a new sewage management approach in one harbor or fishing ground. The timeline for these tasks were from May 2021 to June 2022. The project was developed due to concern raised by communities regarding improper sewage disposal in small harbors and large fishing grounds. Originally it was intended to focus the surveys to the Ninilchik community and harbor users, as there is no harbormaster or entity in charge of enforcing rules at the harbor. The survey also focused on Dillingham harbor, as that is the location where the Fellow fishes and the harbormaster is very involved and interested in proper waste management practices. After initial undertaking the decision was made to expand the focus to the rest of Alaska. Surveys were created to better understand the opinions of communities regarding the state of pollution in their harbor.

Three different surveys were developed: Harbor Staff, Community Members, and Harbor Users. The Harbor Staff survey was designed to determine current sewage pump-out use, infrastructure needs, and potential barriers to pump-out use. For the Community Members' survey, the underlying goal was to determine if people perceived proper sewage management to be an issue in their local harbor and if it was a concern, what would be the best ways to address it. The survey directed at Harbor Users was created to identify current sewage handling practices, factors needed to utilize more environmentally responsible practices, and which options are viable or desirable.

The questions covered similar topics and themes for all three surveys, but the scope of the questions varied based on the audience. The surveys covered both qualitative (non-numerical) and quantitative (numerical) research questions. Both data sets will be explored in more detail in the Results section. Interviews were also conducted either via phone calls or in-person. During these interviews, participants had the opportunity, if they wanted, to converse without the surveys and to address issues they felt were most important. These interviews have been incorporated in this report using quotation marks.

To encourage as wide a spread of responses as possible the surveys were shared through a variety of means. With the help of local media outlets, such as KDLG in Dillingham, KDLL on the Kenai Peninsula, and Alaska Fish Radio throughout Alaska, the word was spread both online and on the radio. Multiple fishing organizations (UCIDA, ALFA, UFA, BBFA, etc), Native Organizations (NTC, BBEDC, BBNA, etc), and Conservation Organizations (Cook Inletkeeper, Ak Marine Conservation Council, etc) shared links to the surveys via social media and/or their newsletters. Several surveys were conducted over the phone or in person at different harbors. The Harbor Staff survey was conducted in person at the annual conference for the Alaska Association of Harbormasters and Port Administrators (AAHPA) October 24-29, 2021.



Tav Ammu, Julie Matweyou, and Gabe Dunham  
at the PME, Seattle

Because COVID was a concern, the opportunity to conduct large group outreach and surveys was limited but did occur at the 2021 Pacific Marine Expo (PME) in Seattle.

At the end of the survey there had been 86 Harbor User participants, 99 Community Member participants, and 28 Harbor Staff participants. The majority of Harbor Users (71%) believed that 'Routine small spills/leaks' was the biggest pollution concern in their harbor ([Figure 20](#)). 'Improper sewage disposal' was 4<sup>th</sup> on the list at 48% of those surveyed. In a later question, 47% of participants thought that sewage was not an issue in their harbor, compared to 45% who thought that it was an issue ([Figure 23](#)). Of those surveyed, the highest amount 33% used a 'honey bucket' as their main form of restroom onboard ([Figure 26](#)).

To encourage proper/better sewage disposal, 77% of participants thought that more 'signs on the rules/regulations about sewage' would help ([Figure 35](#)). The next highest score (40%) was 'more/better onshore restroom facilities' ([Figure 35](#)). Many Harbor Users were skeptical about filling out surveys, therefore a concerted effort was made to communicate either in person or on the phone. The conversations generally communicated the important topics from the survey but were also free-form and open to cover any issues not included in the survey. During interviews, if the Harbor User was not interested in conducting a survey then the information was not included in the final results, if however, they were open to including their responses, that information was inputted into the survey in the appropriate section.

The Community Members that participated in the survey had some similar opinions to the Harbor Users. The Community Members also believed that 'Routine small spills/leaks' were the biggest pollution concern (68%) ([Figure 10](#)). 'Improper sewage disposal' was 3<sup>rd</sup> on the list at 52% of those surveyed ([Figure 10](#)). In a later question, 45% of participants considered sewage to be an issue in their harbor, compared to 35% that did not think it was an issue ([Figure 16](#)).

Like the other two surveyed groups, the Harbor Staff also considered 'Routine small spills/leaks' to be the biggest pollution concern in their harbor (75%) ([Figure 5](#)). Second place was 'Discharge of dirty bilge water' (68%) and third was 'Improper sewage disposal' (54%) ([Figure 5](#)). 'Pump-out stations' were available at 58% of the harbors, while 'restrooms/outhouses' were available at 81% of the harbors that participated in the survey ([Figure 4](#)). Signs directing proper sewage disposal were available at 42% of the harbors. The majority of harbormasters (52%) thought that having a mobile pump-out station would improve sewage disposal ([Figure 6](#)). The facility considered to be the next most beneficial (48%) was to have 'more/better onshore restroom facilities'. 88% of Harbor Staff thought that 'signs around the boat harbor' were the best way to communicate with boaters ([Figure 7](#)). The second best way was considered to be 'face to face communication' at 72% ([Figure 7](#)).

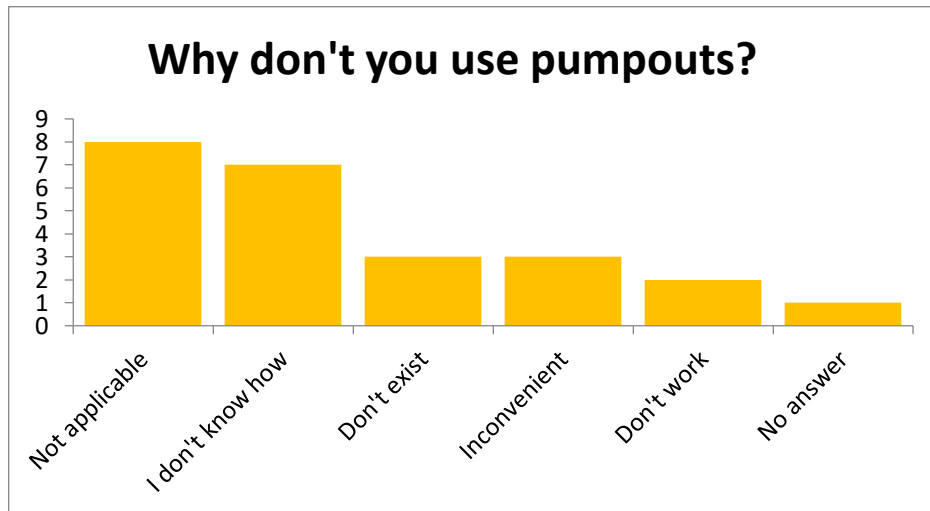
All three groups (Harbor Users, Community Members, and Harbor Staff) considered improper sewage disposal to be an issue as indicated by approximately 50% of the participants ([Figures 20, 10, 5](#)). During interviews several individuals expressed skepticism about whether more pump-out stations (facilities that suck sewage out of a boat's holding tanks) would significantly contribute to better wastewater management practices. The majority of participants thought that the best way of communicating information about proper sewage disposal were signs around the boat harbor followed by face-to-face communication ([Figures 35 & 7](#)).

## Introduction

The Alaska Department of Environmental Conservation teamed up with the Alaska Sea Grant to address concern raised by a community member about the condition of Ninilchik Harbor. As Ninilchik Harbor has shared jurisdiction between the Department of Transportation (DOT) and the Department of Natural Resources (DNR), as well as no Harbormaster, there has been no single point of contact for issues or concerns.

Most harbors have a harbormaster that is the focal point for ensuring harbors are clean and safe. One of the nationally recognized standards for ensuring harbors are maintained is through the [Alaska Clean Harbors Program](#) (known in the lower 48 as the “Clean Marinas” program). This program is an optional certification that stems from following certain Best Management Practices (BMPs) aimed at seven key areas. Initially a harbor pledges to become a Clean Harbor, then over a period of time, that harbor demonstrates that they are abiding by the BMPs. Some examples of the expectations in the BMPs are to “provide adequate trashcans or dumpsters” as well as “prohibit discharge of untreated human and pet waste within the harbor basin and grounds”. After proving that these practices and others are being followed, the harbor’s application is reviewed by the Alaska Clean Harbors Advisory Committee. As Ninilchik does not have a harbormaster, the opportunity to follow these Best Management Practices is much more complicated.

To better understand the scope of opinions about the state of the harbor the three different surveys were created and distributed. Those users that are in the vicinity of each harbor are the best sources for information about the state/condition of the harbor. Therefore, communicating with as many Harbor Users and Community Members as possible in any given area would improve the data points and have a better overall understanding of the status of harbors around the state.



A survey conducted by Cook Inletkeeper in 2015 focused on sewage handling by recreational boaters and the best methods of communicating rules and regulations. Using this survey as a background guide, ADEC and Alaska Sea Grant worked together to develop the questions most pressing for harbors.

Figure 1: Graph from Great Alaskan Sportsman Survey, 2015, Conducted by Cook Inletkeeper

Lord, R. (2015). 2015 Great Alaska Sportsman's Show Survey. Anchorage; Alaska.



## Methods

The ADEC and Alaska Sea Grant worked together to create survey questions that fulfilled certain goals. For the surveys directed at Harbor Users, these questions were aimed at determining current sewage handling practices, factors needed to utilize more environmentally responsible practices, and which options are viable or desirable. The surveys directed at Harbor Staff were aimed at determining current pump-out use, infrastructure needs, and potential barriers to pump-out use. While creating the surveys we decided a third survey, directed at Community Members, would help get a more thorough understanding of perceived issues by the community at large. Because the focus of the survey was explicitly about sewage and proper waste management, we encouraged directing the conversation towards these issues but also were open to discussing other topics that participants deemed important.

During the creation of the survey, it was decided to expand the breadth of the surveys to the rest of Alaska instead of solely focusing on Ninilchik and Dillingham. Having a baseline of information about different harbors and communities would allow different organizations to better allocate resources to areas that were both in need of and amenable to assistance to prevent or reduce harbor pollution.

After the commercial fishing season concluded in Dillingham, July 2021, an in-person preliminary survey was given to fishermen to better gauge thoughts and opinions on the formatting, phrasing and overall questions. After talking with eight fishermen, the survey was re-organized and changed to reflect those suggestions. Multiple fishermen expressed reluctance to discuss issues due to a distrust of government, distrust of surveys or because of other reasons. Therefore, whenever possible a face-to-face discussion was offered in an informal setting.

One method of outreach that was initiated in Ninilchik was physically going door to door. As this method was perceived as intrusive and relatively ineffective, the approach was redirected to cold-calling via phone. Harbor Users were the hardest group to obtain input from, therefore effort was made to communicate directly with them. Phone numbers of Harbor Users were mostly received from local conservation groups (Cook Inletkeeper) or fishing organizations (UCIDA). Willing interviewees would frequently share phone numbers of other Harbor Users that they thought would be open to talking. These interviews had the option of following the format of the surveys and the information being

inputted by the interviewer, or, were informally conducted and allowed the interviewee to direct the conversation. If the free-flowing conversations discussed sewage directly those results were added to the survey by the interviewee in the appropriate section and if the conversation drifted into a different area that information was inputted into the open-ended portions of the survey.

Despite COVID concerns there were some opportunities to meet with a decent number of Harbor Users and Community Members in person. Every year Alaska Sea Grant has a booth at the Pacific Marine Expo (PME) in Seattle. At this year's expo in November 2021, flyers were placed with QR codes on a pedestal with free swag to entice filling out the survey on an available iPad, or their own personal smartphones. As many Alaskan fisherfolk and community members attend the PME there was a good amount of outreach.



Alaska Sea Grant Fellow Tav Ammu at River City Books, Soldotna

In Soldotna, space was given at River City Books. Those who filled out the survey had their names put into a hat and winners

that were drawn had a book donated to them by the bookstore. Homer Brewing Company offered space, as well as the same system as River City Books but donated beers instead of books.

To cast as wide a net as possible our outreach focus also used social media and online outreach. We published a [blog post](#) on the Alaska Sea Grant and ADEC websites as well as the ADEC twitter account. The information was also included in Alaska Sea Grant’s monthly Fishlines newsletter. From there we were able to share that blog post (and surveys) with news outlets, fishing organizations, social media in particular communities, and Native organizations (Table 1). Distributing and posting flyers (Figure 2) with QR codes that linked to surveys in shops, at holiday bazaars, and other gathering spaces such as libraries or community centers throughout communities on the Kenai Peninsula and Dillingham was one way of minimizing face-to-face interactions but encouraging participation.

<b><u>Native Organizations</u></b>	<b><u>Fishing or Conservation Groups</u></b>	<b><u>News Organizations</u></b>
United Tribes of Bristol Bay	Upper Cook Inlet Drift Association	KDLG
Bristol Bay Native Association	Alaska Long Line Fishermen’s Association	KDLL
Ninilchik Traditional Council	Bristol Bay Fishermen’s Association	ADN
Alaska Federation of Natives	Young Fishermen of Alaska	Fish Radio
Ahtna	Alaska Fishermen’s Network	Reel Times
Sealaska	Alaska Marine Conservation Council	Kodiak Daily Mirror
Bering Straits	United Fishermen of Alaska	Pacific Fishing Magazine
Calista	Cordova District Fishermen United	
Chugach Alaska Corporation	Kenai Peninsula Fishermen's Association	
CIRI	Bristol Bay Regional Seafood Development Association	
Doyon Limited	Cook Inlet Aquaculture Association	
NANA	Center for Alaskan Coastal Studies	
Aleut Corporation	Southeast Alaska Regional Dive Fisheries Association	
	Salmon State	
	Trout Unlimited	
	Southwest Alaska Salmon Habitat Partnership	
	Alaska Salmon Alliance	
	Sierra Club	
	Kenai Watershed Forum	
	AK Center	
	Cook Inletkeeper	
	Bristol Bay Economic Development Corporation	

Table 1. Groups and organizations reached out to that were willing to spread the surveys to their communities



Figure 2. Flyers used in different communities to encourage participation in surveys

## Results

### Harbor Staff

The Harbor Staff survey was conducted in person during the Alaska Association of Harbormasters and Port Administrators (AAHPA) annual meeting in Anchorage on October 26, 2021. There were 18 Harbormasters or Harbor Staff that took the survey live and responses were broadcast onto a projector that was shared immediately with all in attendance. One of the Harbormasters that didn't attend the annual meeting had a booth at the Pacific Marine Expo in Seattle and took the survey at that time. After the annual conference, calls and emails with links to the survey were sent to the remaining 27 Harbormasters that are a part of the AAHPA. In total 28 Harbormasters or Harbor Staff took the survey. No interviews were conducted in person or over the phone for the Harbor Staff therefore all data that was accrued came from the surveys themselves. As anonymity was accepted to encourage a more open and honest discussion, 12 of the 28 Harbor Staff did not indicate which harbor they were a part of.

The vast majority of harbors took in 'Greater than 200 boats' throughout the year. The Harbor Staff participant that chose 'Other' stated that they harbor more than 1500 throughout the year (Figure 3).

### How many boats/boaters use your harbor throughout the year?

Answered: 28 Skipped: 0

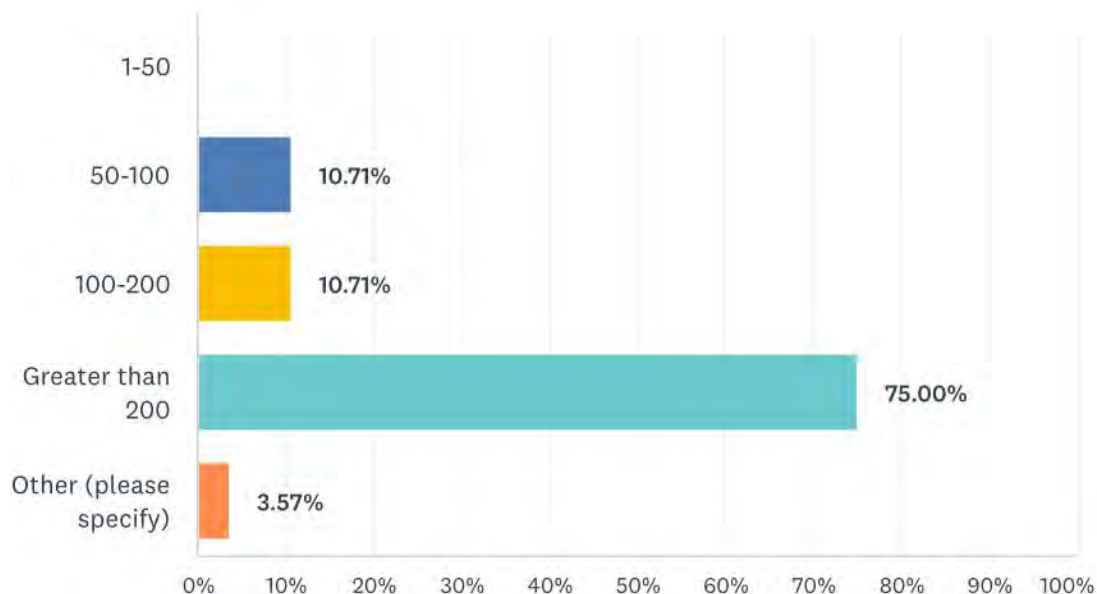


Figure 3: How many boats/boaters use your harbor throughout the year?

## Which resources are available to properly dispose of human waste in your harbor?

Answered: 26 Skipped: 2

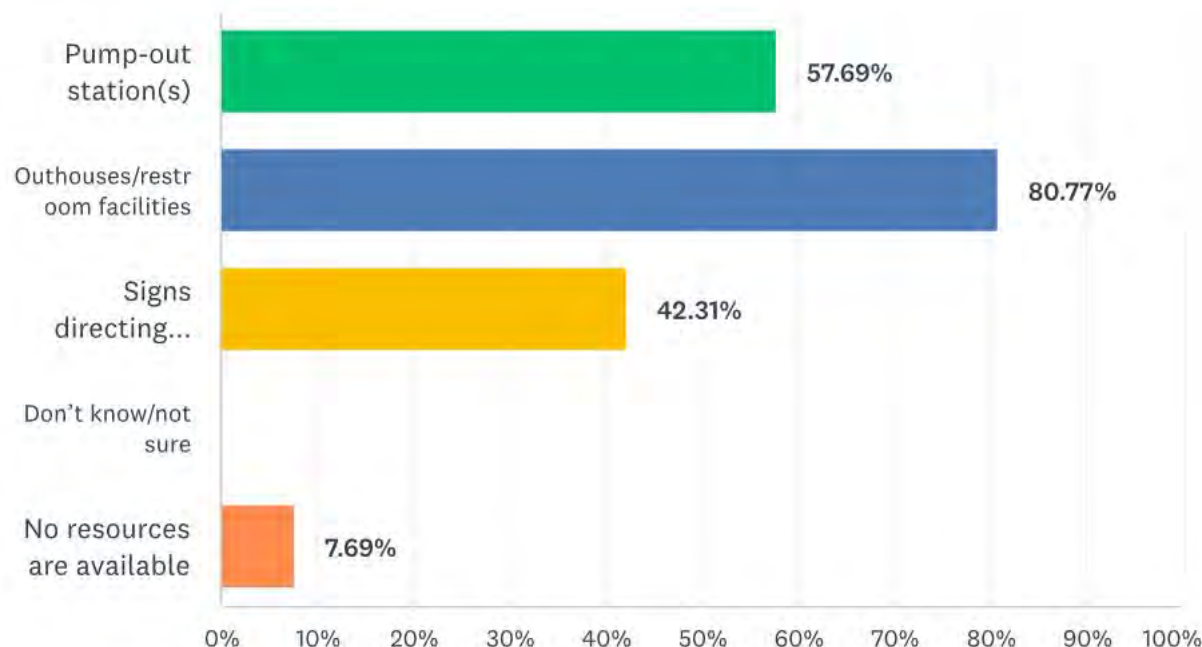


Figure 4: What resources are available to properly dispose of human waste in your harbor?

81% of Harbor Staff participants said that 'Outhouse/restroom facilities' were available in their harbor (Figure 4). The second highest were 'Pump-out station(s)' at 58% and third was 'Signs directing proper sewage disposal' at 42% (Figure 4). The two comments under 'No resources are available' mentioned that the "Pump out cart is in very poor condition" or that this question was "not applicable" to them.

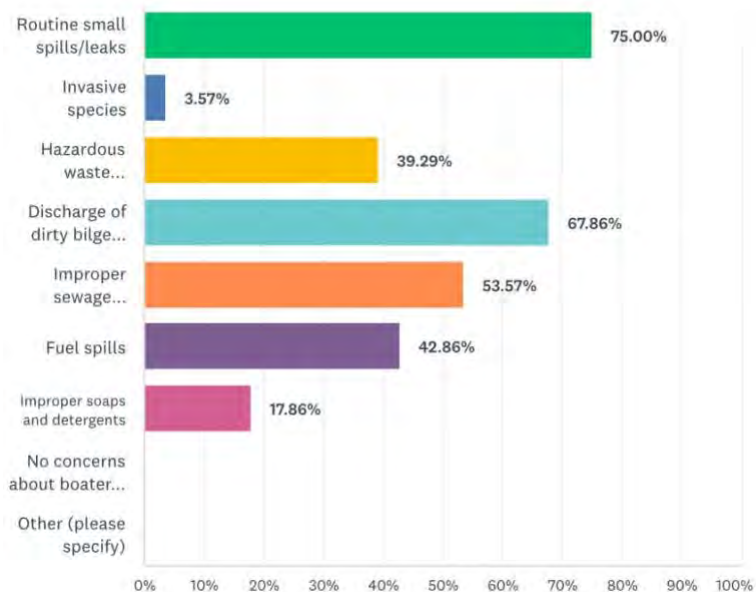


The biggest concern for most Harbor Staff was 'Routine small spills/leaks' at 75%. The second biggest concern was 'Discharge of dirty bilge water' at 68%. In third place was 'Improper sewage disposal' at 54% (Figure 5).

Figure 5: What are the biggest concerns for boater pollution in your harbor?

In your opinion, what are the biggest concerns for boater pollution in your harbor? Check as many as apply

Answered: 28 Skipped: 0

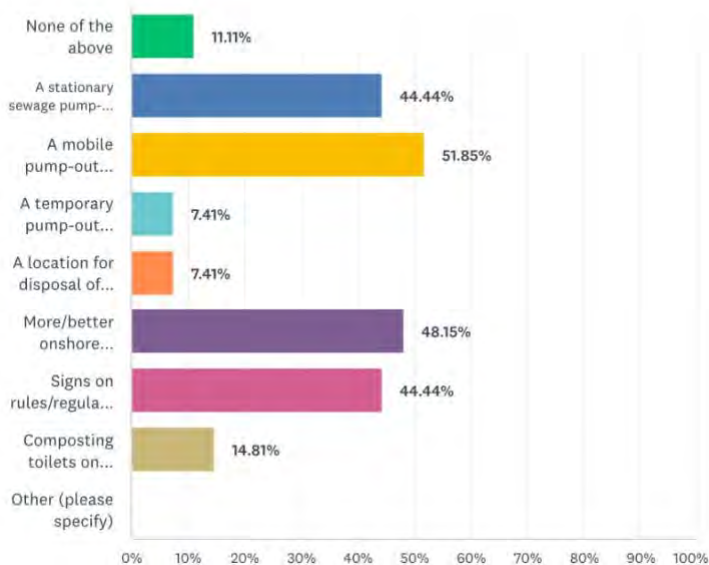


52% of Harbor Staff thought that 'A mobile pump-out station' would be the best thing to improve sewage disposal in their harbor. The second highest choice (48%) was 'More/better onshore restroom facilities'. The next two highest scoring options were tied at 44%, 'A stationary sewage pump-out station' and 'Signs on rules/regulations on sewage disposal' (Figure 6).

Figure 6: Which facilities do you think would assist in proper/better sewage disposal in your harbor?

Which facilities do you think would assist in proper/better sewage disposal in your harbor? Please check all that apply

Answered: 27 Skipped: 1



The following survey question was “Would a permanent or temporary pump-out station benefit your harbor? Why or why not?”. 24 of the 28 Harbor Staff answered this question and 17% of those that did respond had ambiguous answers that were hard to decipher. 46% of the Harbor Staff that responded said “Yes” in one form or another. Some participants mentioned how currently, harbor users “have to either go far offshore to pump out, or request a pump truck to come down”, or that it would benefit the “large seasonal fishing fleet”. Some thought a pump-out station could be beneficial if it was done with a fee. 36% of the Harbor Staff participants answered “No”. Some said so because “We already have 3 permanent stations, and are adding a 4<sup>th</sup>” or “it’s not really a problem”. If the “No” answer was expanded upon it was frequently explained because pump-out stations were already present in the harbor.

88% of the participants considered ‘Signs around the boat harbor’ to be the best method to communicate with boaters. The second best (72%) was deemed to be ‘Face to face communication; and tied for third at 44% were ‘Radio public service announcements’ and ‘Online information’ (Figure 7). This was a surprising outcome because, as can be seen in Figure 4, only 42% of Harbor Staff participants said there were currently ‘Signs directing proper sewage disposal’.

92% of Harbor Staff participants currently communicate ‘In person in the office’ or ‘In person on the docks’. Only 61% of the participants communicated ‘Indirectly through signs’ (Figure 8). This is again a bit unexpected, because as signs were considered to be the best

### What are the best ways to communicate with boaters?

Answered: 25 Skipped: 3

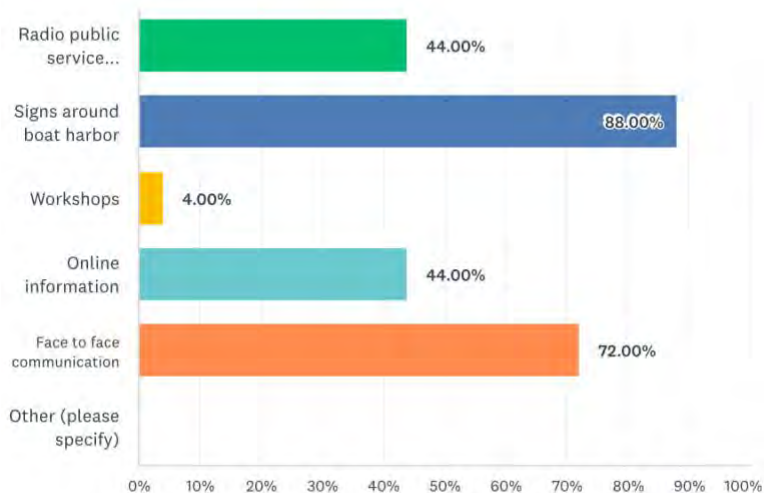


Figure 7: What are the best ways to communicate with boaters?

### How do you currently communicate with harbor users?

Answered: 26 Skipped: 2

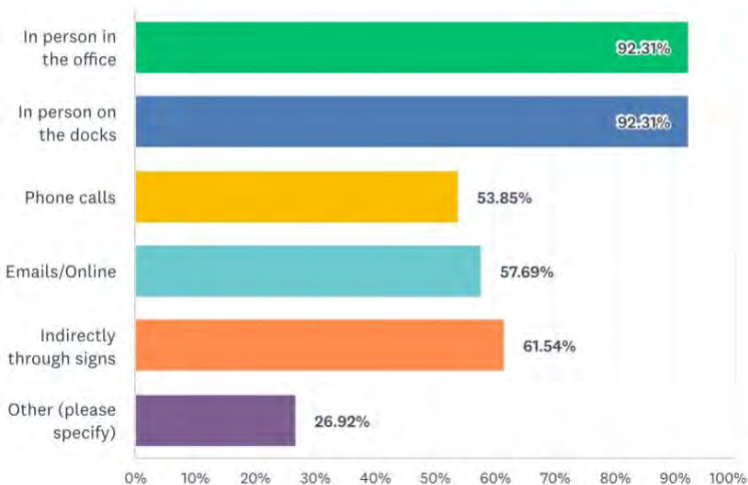


Figure 8: How do you currently communicate with harbor users?

form of communication, one would assume it would have a higher response. Those that selected 'Other' included several options that were overlooked by the survey. For example, "texting", "flyers" and "newsletters" were three other ways to communicate with boaters that were mentioned by participants.

The subsequent survey question was "Is your harbor certified or pledged as an Alaska Clean Harbor? Why or why not?" 21 of the 28 participants answered this question. Of those 21 that answered, 33% said "Yes", that they were either certified or pledged to work towards becoming certified. 43% were neither certified, nor pledged. 14% of those that participated in this question were unsure if they were either certified or pledged as an Alaska Clean Harbor and 10% said that this question was not applicable to them. Those that said "Yes", mentioned that it was the right thing to do. Some of the participants that answered "No" were unsure why that was the case, others thought that "some of the criteria is unattainable". A participant that was unsure about whether they were pledged or certified stated that they "never get too many complaints of dirty bilge in the harbor".

The next survey question directed at Harbor Staff was "What mitigation actions or best practices do you currently use to combat boater pollution?" Several Harbor Staff participants mentioned having free pump-out facilities as well as waste-oil collection points. Communication through a variety of means, flyers, in person, signs at every ramp, were also considered important reminders to educate the boating community. Multiple participants mentioned fines as being a useful tool to deter pollution. One participant talked of following marine best practices, which is also information shared by the Alaska Clean Harbors program. Two participants mentioned having established policies that have different requirements for live-aboards versus those that are just in for a short time.

There were a variety of responses when the survey asked Harbor Staff participants "What mitigation actions would you like to employ to combat boater pollution but do not currently? What barriers are preventing implementation?" Some participants mentioned being able to offer more varieties of disposal. Others wanted a greater number of cameras in order to document which boats and people are polluting. Increased funding, assistance from the United States Coast Guard (USCG) and education for boaters were also important factors to combat boater pollution.

The final question in the Harbor Staff survey was open to discuss any comments or suggestions about boating and sewage management in Alaska. One participant brought up the Clean Water Act and their financial assistance for improvement to pump-out facilities and/or equipment. Another talked about their concern with the contamination that can occur from grey water dumping, particularly that from large cruise ships. In the United States, grey water (used water from sinks, showers, etc.) is allowed to be dumped within the three nautical mile limit from land, unlike black water (toilet water), which must be pumped beyond three nautical miles from land. The final participant to answer this prompt encouraged the use of positive reinforcement incentives for those that use pump-out stations or conduct clean practices.



## Community Members

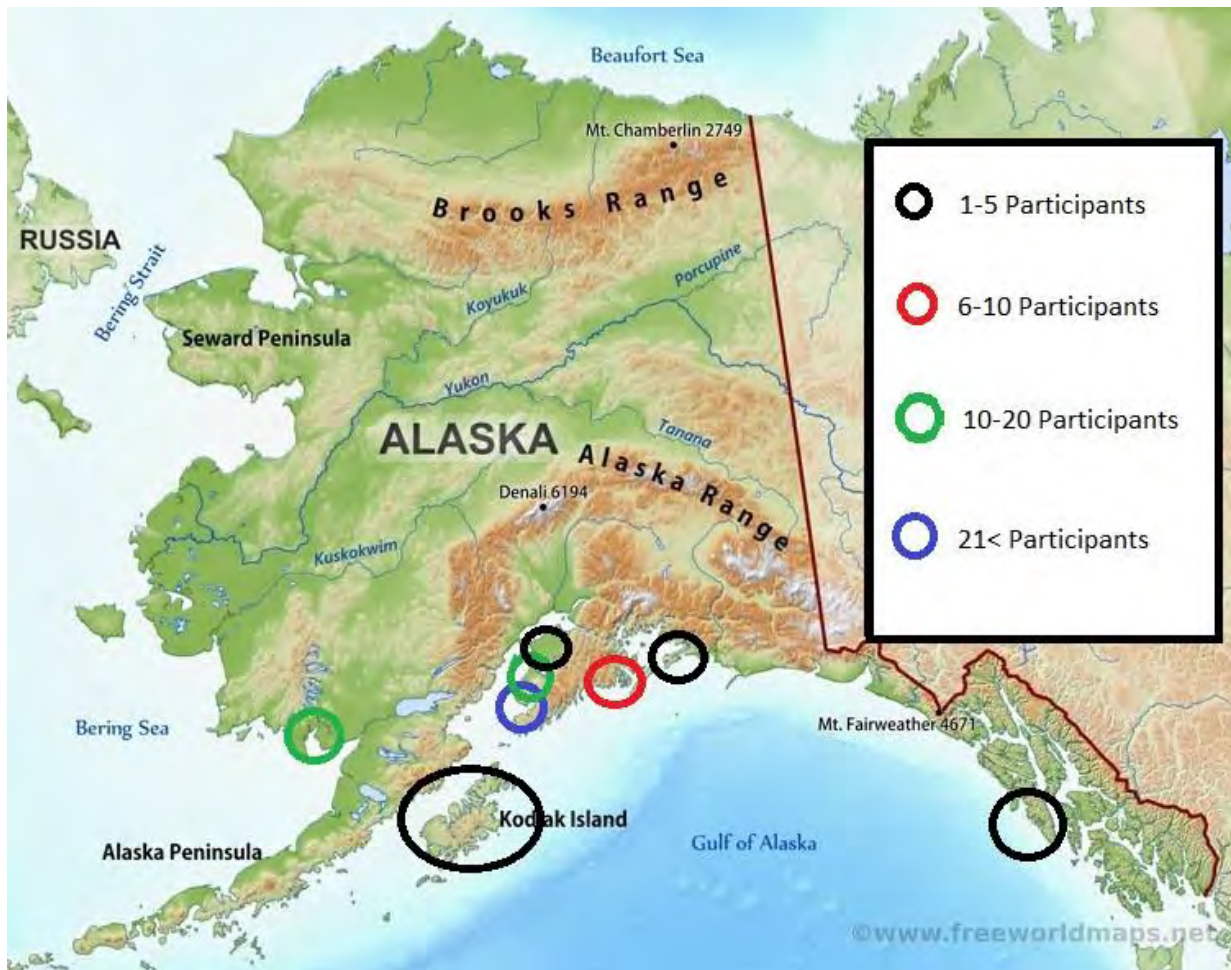


Figure 9: Map of the locations of Community Members survey participants. Different colors of circles represent the different amount of participants in each location

Figure 9 shows the locations of participants and the harbor they are nearest to. Community members were the largest group of participants (99) and of this group 1/3 of them (33) were from the Homer area. There were also 18 participants from Ninilchik and 14 from Dillingham. As these were the main focal areas for the survey this was not particularly surprising. Fortunately, all the participants in the survey were coastal with a harbor near their community. Because there was a good amount of Community Member survey participants (99), no interviews were sought out specifically for this demographic but still did occur, generally in a face-to-face setting. The results from those conversations were either included in the applicable section of the survey or in the open-ended prompts at the end of the survey.

In your opinion, what are the biggest pollution concerns in your harbor? Check as many as apply

Answered: 98 Skipped: 1

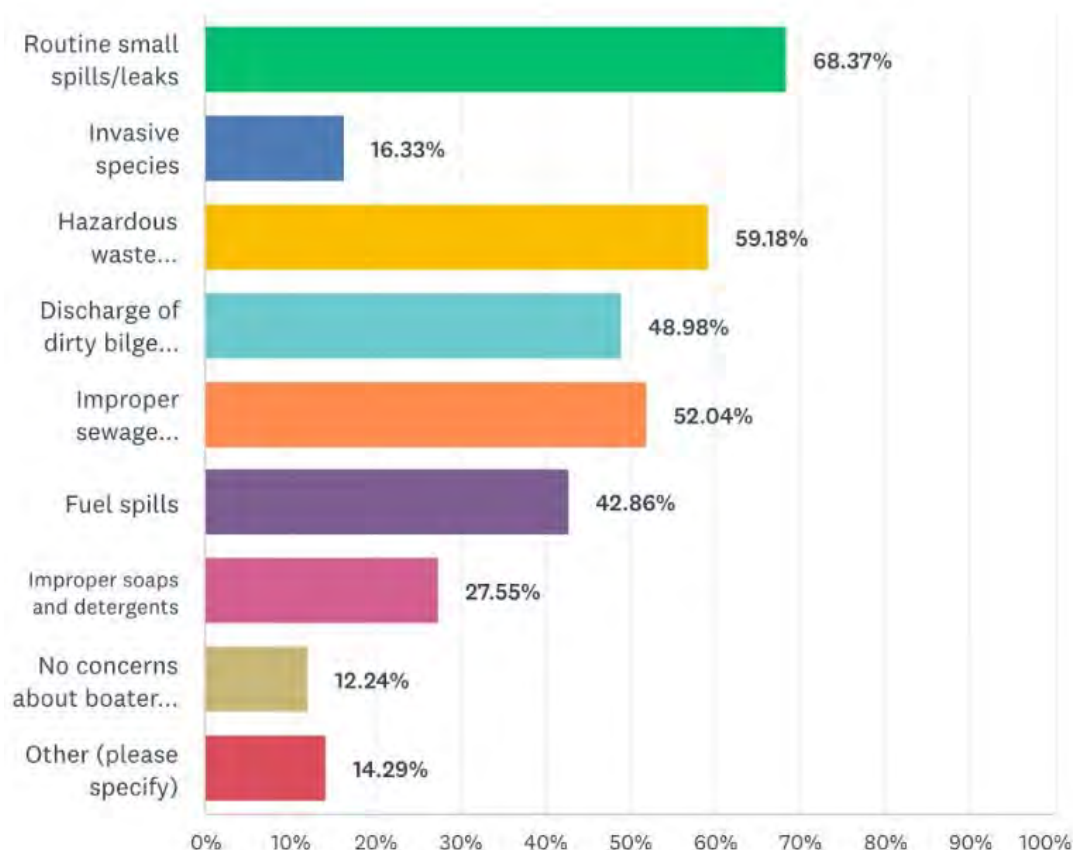


Figure 10: Question 2- In your opinion, what are the biggest pollution concerns in your harbor?

'Routine small spills/leaks' were considered the biggest pollution concern overall by Community Members (Figure 10). 'Hazardous waste (such as solvents and antifreeze) discharges' were thought to be the second biggest pollution concern (Figure 10). 'Improper sewage disposal' was the third highest at slightly over half of the participants (Figure 10). One of the possible choices that was not included but multiple participants mentioned in the 'Other' category was improper disposal of trash, plastic and Styrofoam waste.

These responses were very different when only Dillingham or Ninilchik participants were considered. Ninilchik participants had very different appraisals than did Dillingham (Figures 11 & 12 respectively). The biggest concern in Ninilchik was ‘Hazardous waste discharges’ at 57%. The next two highest were tied at 50%, ‘Improper sewage disposal’ and ‘Fuel spills’ (Figure 11). The degree of concern for Ninilchik participants was substantially lower than those in Dillingham. This was a surprising outcome, because as this project came about due to concern about the state of Ninilchik harbor, it was anticipated that a higher percentage of Community Members would have picked some of these prompts.

In Dillingham, 100% of participants considered ‘Routine small spills/leaks’ to be an issue (Figure 12). 85% of participants also believed that ‘Hazardous waste discharges’ and ‘Discharge of dirty bilge water’ were tied for significance of concern (Figure 22). ‘Improper sewage disposal’ was less of a concern but still rather high, 77% (Figure 12). This is a good example of how opinions of participants can be very location dependent. While the issues of concern are still prevalent, the degree of concern is very different between the two areas (Figure 11 & 12).

In your opinion, what are the biggest pollution concerns in your harbor? Check as many as apply

Answered: 18 Skipped: 0

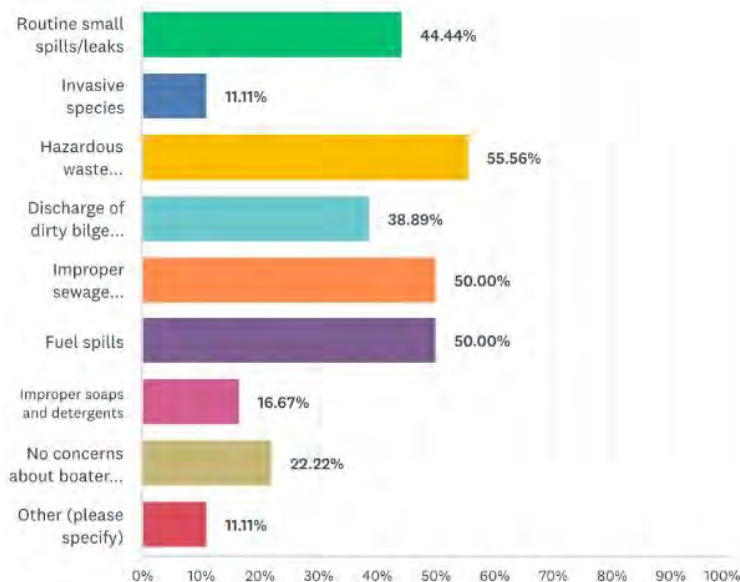


Figure 11: Question 2- Only Ninilchik participants

In your opinion, what are the biggest pollution concerns in your harbor? Check as many as apply

Answered: 13 Skipped: 1

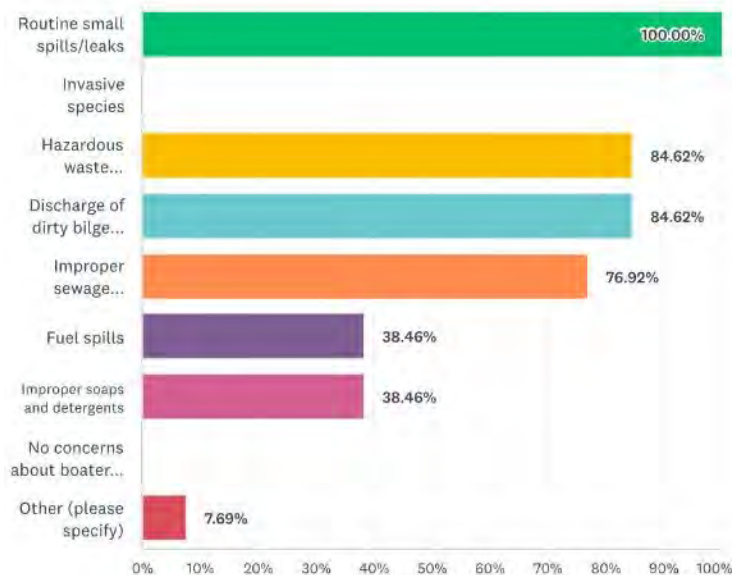


Figure 12: Question 2- Only Dillingham participants

## Which resources are available to properly dispose of human waste in your harbor?

Answered: 99 Skipped: 0

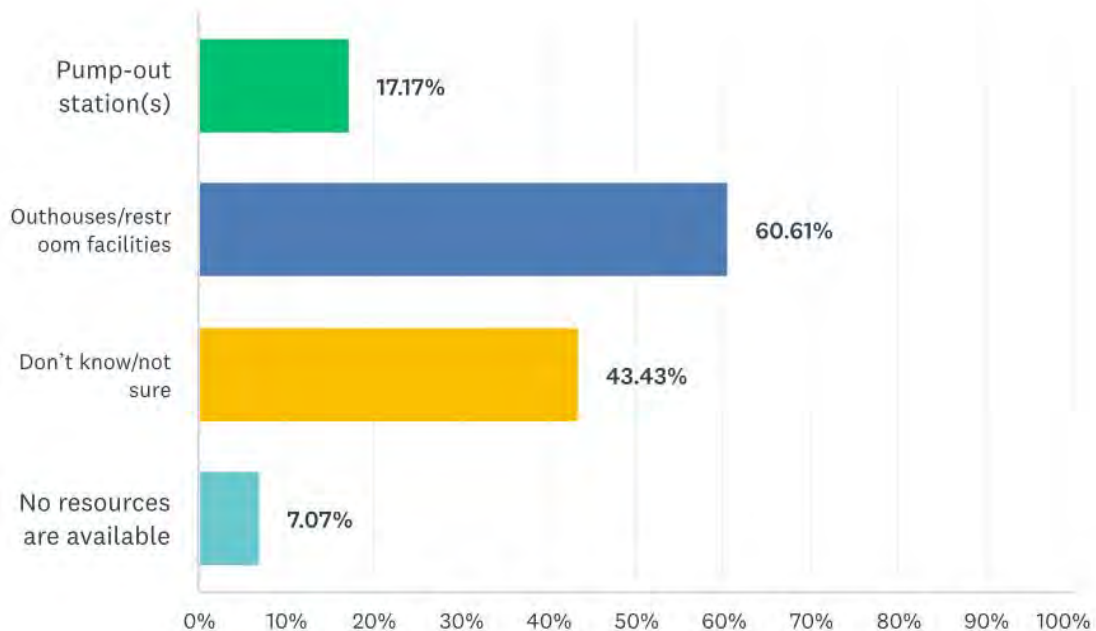


Figure 13: What resources are available to properly dispose of human waste in your harbor?

When all Community Member participants were surveyed, 'Outhouses/restroom facilities' were widely considered to be available at harbors (61%), 'pump-out stations' (17%) were not (Figure 13). A large portion of participants also were unaware of what resources were available (43%). 8% of participants chose to elaborate on this question. Of those that chose to elaborate 25% wrote that although restrooms do exist they are often locked and therefore unavailable. Another 25% commented that even though pump-out(s) do exist at their harbor, they are in inconvenient location and therefore probably not used.



In Ninilchik and Dillingham, these responses were again quite different (Figures 14 & 15). In the Ninilchik Community, the majority of participants (67%) 'don't know/not sure' what resources exist to dispose of human waste in their harbor (Figure 24). 22% of participants did know that 'Outhouses /restroom facilities' were available (Figure 14).

### Which resources are available to properly dispose of human waste in your harbor?

Answered: 18 Skipped: 0

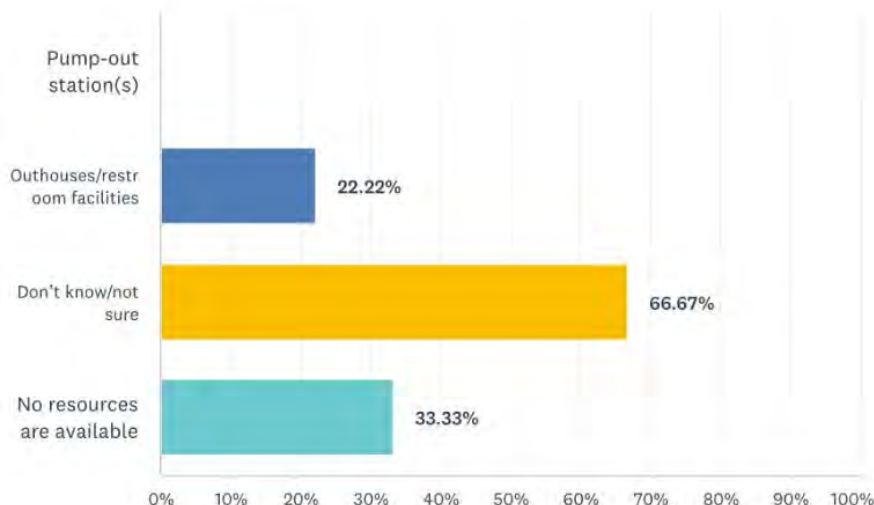


Figure 14: Question 3- Only Ninilchik participants

The participants in Dillingham once again had very different responses. 94% of Dillingham residents knew that 'Outhouses/restroom facilities' were available (Figure 15). 21% 'don't know/not sure' what resources were available (Figure 15). 7% of participants said that a 'Pump-out station' was available, although this is not the case (Figure 15). One participant mentioned that "waste oil/fluids are accepted at harbormaster offices" while another one stated "Restrooms couldn't be farther away from the highest boat harbor traffic."

### Which resources are available to properly dispose of human waste in your harbor?

Answered: 14 Skipped: 0

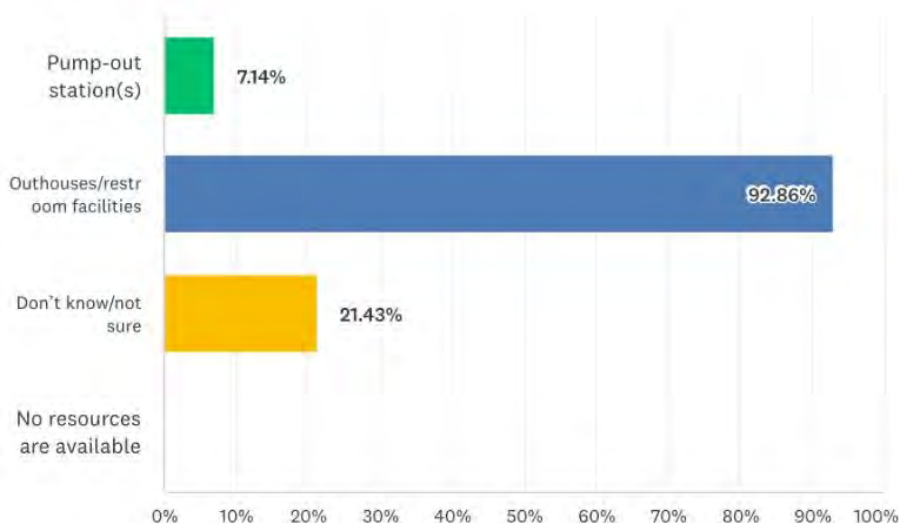


Figure 15: Question 3- Only Dillingham participants

## Do you consider human waste (blackwater) to be an issue in the harbor?

Answered: 98 Skipped: 1

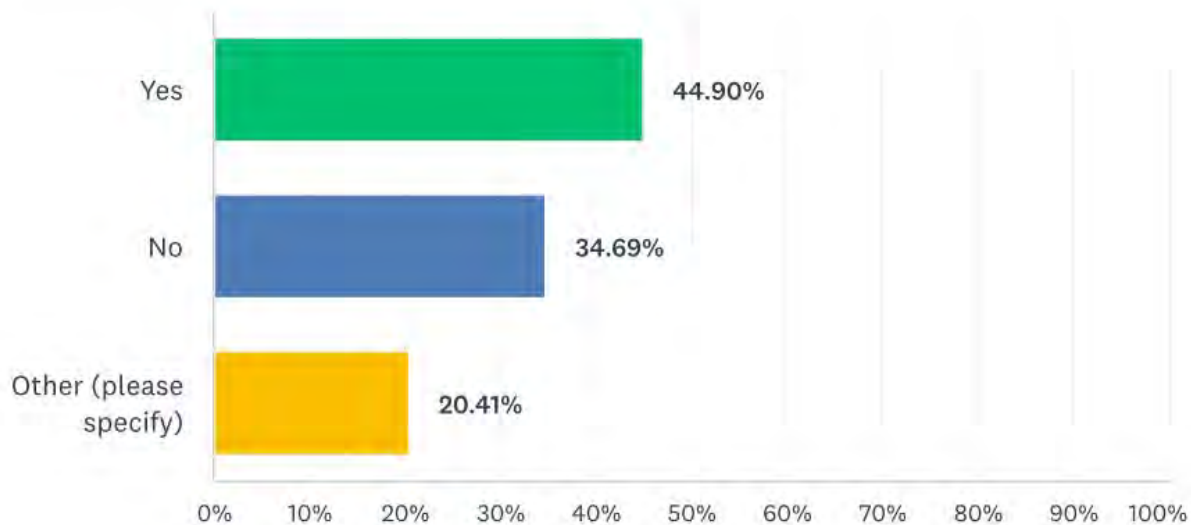


Figure 16: Question 4- Do you consider human waste (blackwater) to be an issue in the harbor?

Overall, of the participants taking the Community Members survey, less than half of those surveyed (45%) considered human waste to be an issue in the harbor (Figure 16). Several of the 'Other' answers stated things such as, "I wouldn't want to swim there", "I didn't think about it before but now it concerns me" or simply, "not sure". During face-to-face interviews, several participants repeated the idea that it wasn't a subject that they spent much amount of time concerned about but could be an issue.

In Ninilchik, it was split exactly evenly between those that thought that human waste was an issue and those that thought it wasn't (Figure 17). Of those that put other, some did not consider themselves knowledgeable enough about the subject to have an opinion, but others thought it was "worth a study and proactive measures to avoid".

In Dillingham, concern about human waste being an issue was significantly higher than the participants from Ninilchik, as well as the overall average (Figures 16, 17, & 18). These responses are quite different than Ninilchik and once again shows how opinions about the state of the harbor can be location dependent. During one interview a participant mentioned that they, as a teacher, had planned on getting mud and clay from the harbor to be used in a school project but other members of the staff suggested she get the materials from elsewhere. While their decision to get mud and clay from another source than the harbor was not solely based on human waste, it was a contributing factor.

The next question was "Would a permanent or temporary pump-out station benefit your harbor? Why or why not?". Participants got the opportunity to write in detail their thoughts on this subject. 60% of the participants that answered this question said "Yes", a permanent or temporary pump-out station would benefit their harbor. The degrees of belief in efficacy of the pump-out station varied greatly. One person, a diver, said that while diving approximately one mile away from the harbor they came across a large holding tank being dumped. Had there been pump-out facilities available at the

Do you consider human waste (blackwater) to be an issue in the harbor?

Answered: 18 Skipped: 0

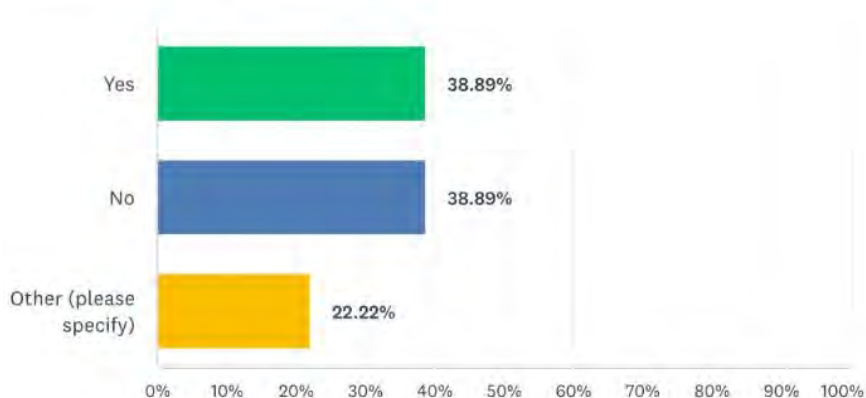


Figure 17: Question 4- Only Ninilchik participants

Do you consider human waste (blackwater) to be an issue in the harbor?

Answered: 13 Skipped: 1

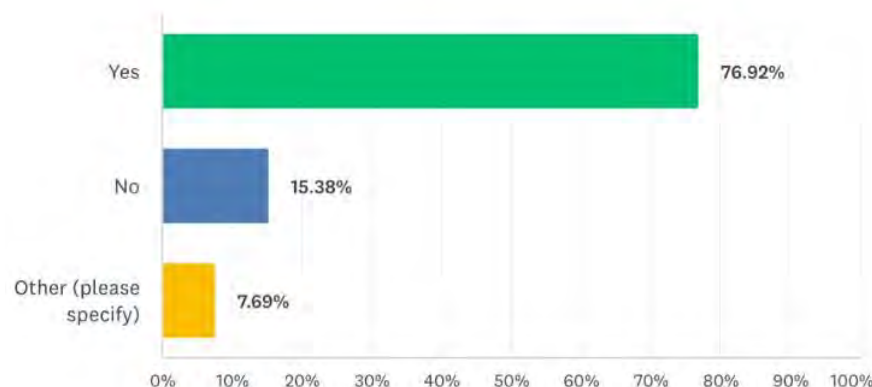


Figure 18: Question 4- Only Dillingham participants

harbor, this large and illegal discharge may not have occurred. Other participants talked about how current pump-out stations were in a bad location and therefore underutilized.

35% of participants said either “No” or “Not sure” about pump-out stations benefiting their harbor. Few participants elaborated more on the subject but of those that did, one doubted that pump-out stations would be used, another said that the ocean, through its tides, “pumps out the bilge”, while one stated that there was no room to accommodate for a pump-out station, regardless of the benefit.

The remaining 5% answered in ways that were hard to decipher and were therefore put in the “other” category. One participant responded with “I’m not an engineer but I’d appreciate a study”, and “the boats use 5 gallon buckets”. While the latter may imply that a pump-out station is not necessary as boats do not use them, it would be presumptuous to assume intention.

When narrowing the focus to particular locations, 71% of Ninilchik participants said “Yes”, again with varying degrees of positive impact. Some mentioned that the more resources available, the more likely the harbor would stay clean. Others saw that it could provide some benefit but were concerned about vandalization or cost.

In Dillingham, 75% said “Yes”. While the positive characteristics of a pump-out station were noted, several participants recognized that staffing and budget were constraints. The 25% of participants that said “No”, had two reasons for saying so, most boats just use a 5-gallon bucket or old habits are hard to break.

At the end of the survey participants were given the opportunity to ‘provide us with any additional comments or suggestions you have about boating and sewage management in Alaska.’ Of the 99 participants, 62 of them answered this question. Most were addressing issues specific to their community, but some had general comments as well. One participant was surprised that there was not better enforcement of regulations, “...in Cook Inlet... When it rains the whole yard looks like oil spill and it’s all flowing to rivers. I don’t know how they don’t get fined or half (sic) to clean it up. But there’s a lot of things wrong with Cook Inlet, I just think no one cares.” Another expressed concern, “how do you incentivize doing the right, and more expensive thing when the free thing has an almost zero chance of getting caught and no apparent impact to the ocean?” One participant pointed to the possibility of using port-o-potties as an inexpensive and effective way of helping address sewage problems in harbors. This sentiment was shared by another participant that thought blackwater sewage isn’t as much a concern in the ocean but “doesn’t become an issue unless concentrated in the harbor”.

Multiple participants stated in one form or another that education was the most important vehicle for change, advocating for educating harbor users and conducting radio public service announcements about boating and sewage management. The need for “environmentally-responsible boating” was addressed by one participant who thought that “placards or signage might help raise awareness... If enough parties are aware of the environmental expectations, perhaps more accountability can be cultivated on a person-to-person basis.” Many of the participants felt they were not educated on the subject, and therefore didn’t want to speak about a topic they weren’t familiar with. Even so, several participants appreciated the heightened awareness provided by participating in the survey.



### Harbor Users

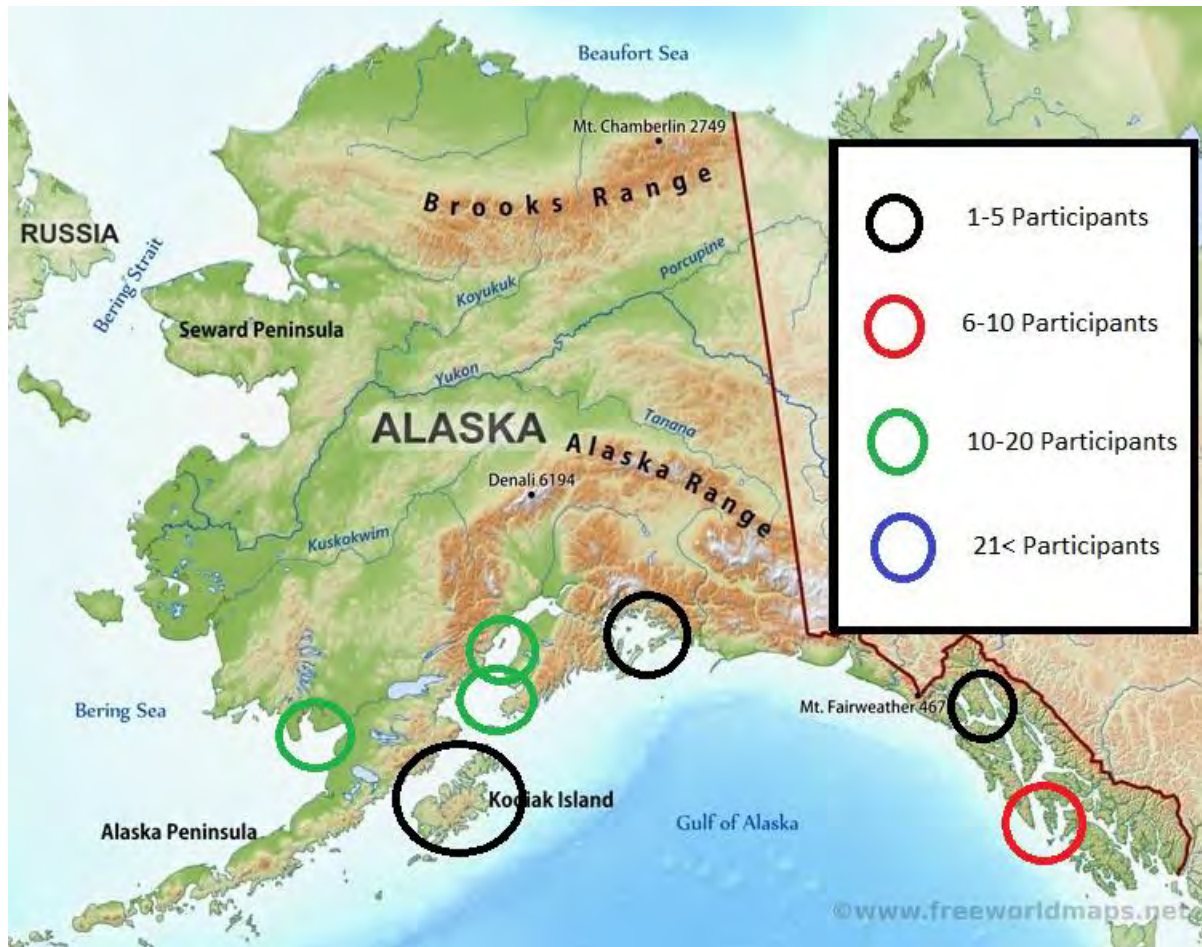


Figure 19: Map of the locations of Harbor Users survey participants. Different colors of circles represent the different amount of participants in each location

Figure 19 shows the locations of participants and the harbor they are nearest to. Harbor Users were the largest group of participants (86). There were 15 participants from Ninilchik and 12 from Dillingham. As these were the main focal areas for the survey this was not particularly surprising. Fortunately, all the participants in the survey were coastal with a harbor near their community. As it was difficult getting Harbor Users to take the survey, extra effort was made to call fishermen. The results from those conversations were included in the applicable section of the survey or in the open-ended area at the end of the survey. The data and graphs include the comprehensive results from interviews and individuals that took the surveys themselves.

In your opinion, what are the biggest pollution concerns in your harbor? Check as many as apply

Answered: 84 Skipped: 2

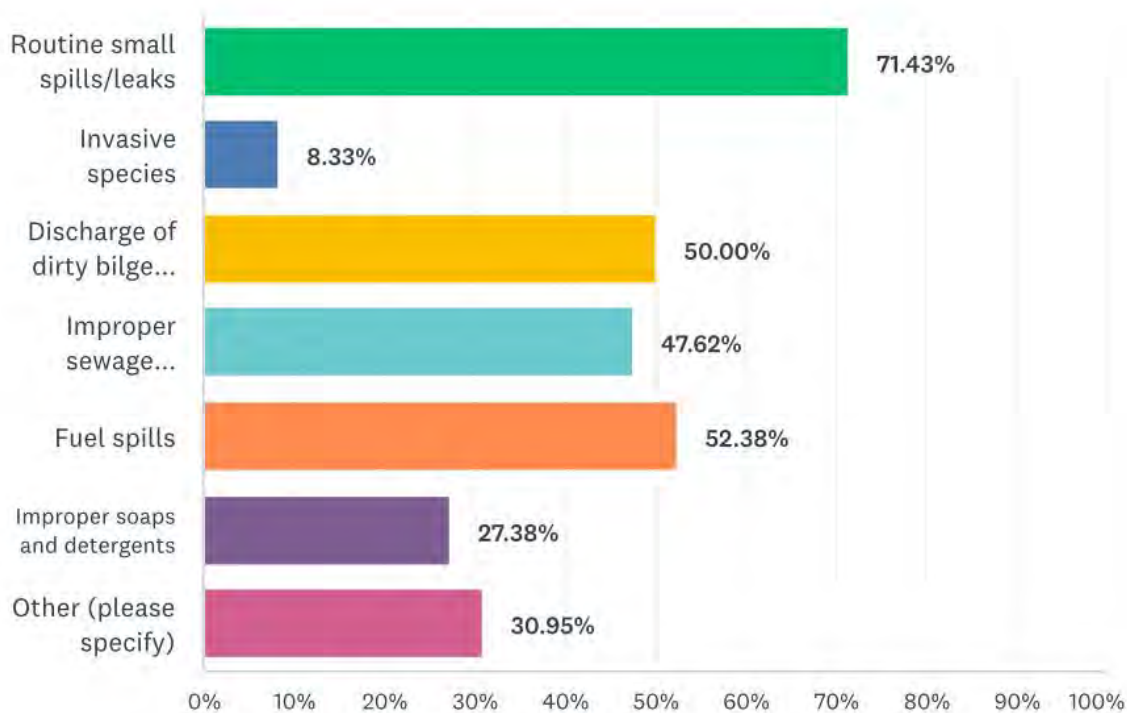


Figure 20: Question 4- What are the biggest pollution concerns in your harbor?

The biggest concern for Harbor Users was 'Routine small spills/leaks' (71%) followed by 'Fuel spills' (52%) (Figure 20). 'Improper sewage disposal' was 4<sup>th</sup> overall with 48% of participants considering it a pollution concern in their harbor (Figure 20). Some of the 'Other' responses included dog poop that isn't properly cleaned and that if a pump-out station isn't working properly, that people don't have time to wait for repairs.

For Ninilchik Harbor Users, the two biggest concerns were also 'Routine small spills/leaks' as well as 'Discharge of dirty bilge water' (both at 57%) (Figure 21). However, in Ninilchik the level of concern was almost 25% lower than that in Dillingham (Figures 21 & 22). This was also the case with Ninilchik's third biggest concern, 'Improper sewage disposal' (50%), again approximately 25% lower than Dillingham participants (Figure 21 & 22). Half of all the Ninilchik participants selected 'Other'. Some wrote about the need for dumpsters or used oil receptacles. Other participants wrote about needing facilities for public safety, such as fire suppression systems. While interviewing fishermen in Ninilchik, some stated that pollution is getting better. As each new generation of fisherfolk come into the field, they recognize the importance of not participating in harmful practices to sustain their livelihoods.

The two biggest concerns for Dillingham Harbor Users were tied at 83%: 'Routine small spills/leaks' and 'Discharge of dirty bilge water' (Figure 22). The next two highest were 'Improper sewage disposal' at 67% and 'Improper soaps and detergents' at 58% (Figure 22). These percentages show that for over half of those surveyed that these were major concerns. While conducting face-to-face conversations in Dillingham one fisherman talked about his biggest concern being people cleaning fish in the harbor and dumping their carcasses or entrails directly overboard.

In your opinion, what are the biggest pollution concerns in your harbor? Check as many as apply

Answered: 14 Skipped: 1

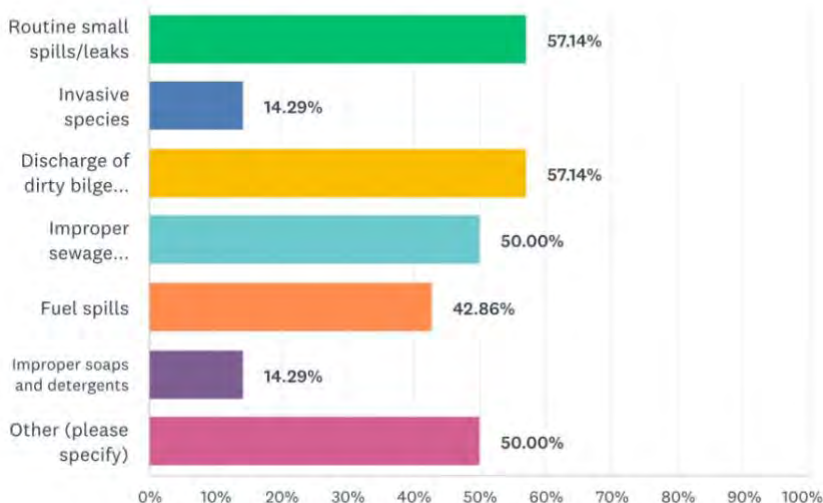


Figure 21: Question 4- Only Ninilchik participants

In your opinion, what are the biggest pollution concerns in your harbor? Check as many as apply

Answered: 12 Skipped: 0

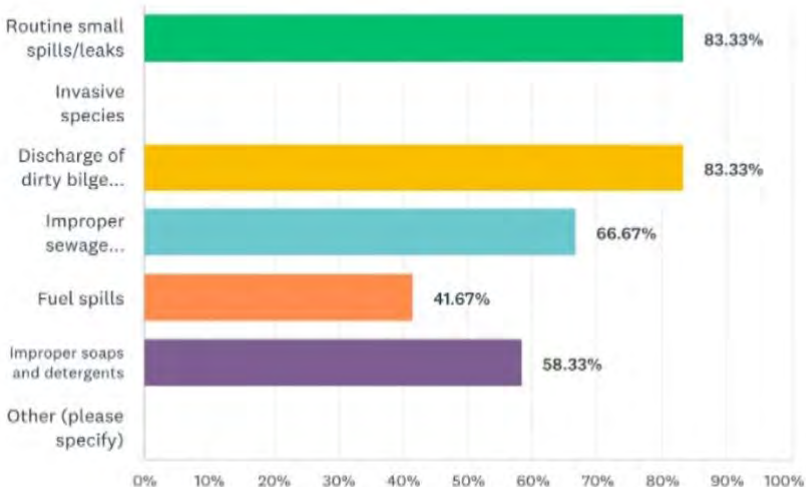


Figure 22: Question 4- Only Dillingham participants

## Do you consider human waste (blackwater) to be an issue in the harbor?

Answered: 86 Skipped: 0

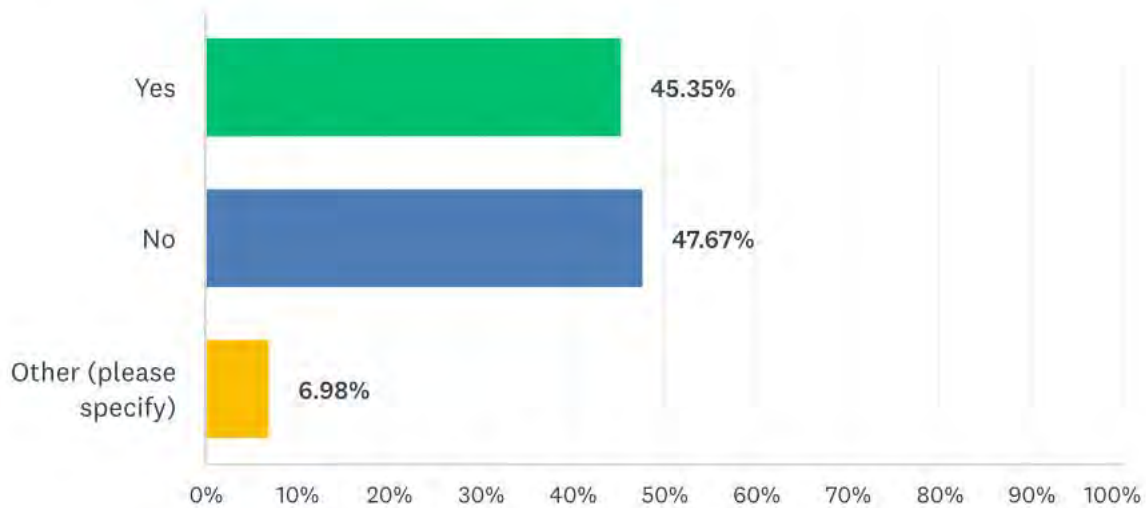


Figure 23: Question 5- Do you consider human waste (blackwater) to be an issue in the harbor?

Overall Harbor User participants were nearly split evenly whether sewage was an issue in the harbor (Figure 23). In opposition to the Community Members survey, more Harbor Users thought it was **not** an issue than thought it was (Figure 16 & 23).

Ninilchik Harbor Users concerns about human waste were at higher percentages than the overall results (Figure 24 & 23). Interviewing those on the phone or in person also showed two different sides. Some were adamant that people certainly dumped honey buckets overboard or discharged their heads and holding tanks directly into the harbor. Others were certain that people cared about the environment, would never dump directly into the harbor, that they went home or to the restrooms to do their business. Some expressed dismay at the fact that the permanent restrooms were 1/3 of a mile away from the harbor and that although there used to be dumpsters and port-o-potties nearby to the harbor, they haven't been there in recent years.

Do you consider human waste (blackwater) to be an issue in the harbor?

Answered: 15 Skipped: 0

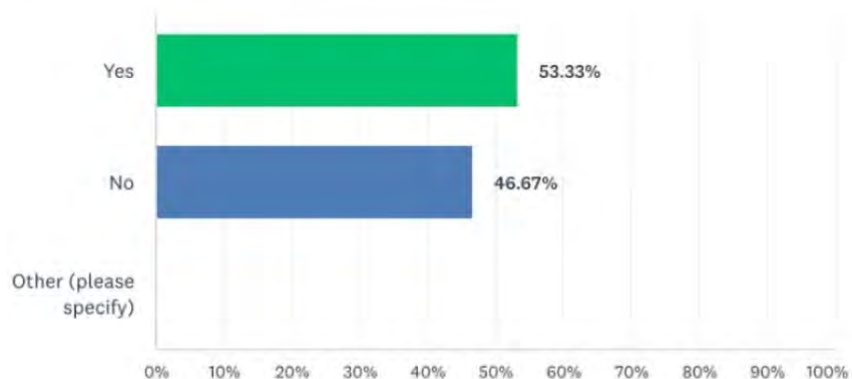


Figure 24: Question 5- Only Ninilchik participants

In Dillingham, 50% of participants thought that human waste was an issue, while 42% did not (Figure 25). The participant that chose Other, stated that she/he had not thought about it before but that it could be an issue. Percentage-wise, Dillingham and Ninilchik had similar opinions (Figures 24 & 25).

Do you consider human waste (blackwater) to be an issue in the harbor?

Answered: 12 Skipped: 0

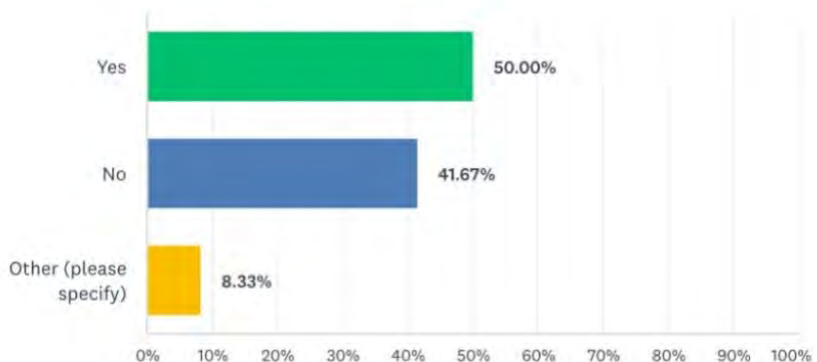


Figure 25: Question 5- Only Dillingham participants



## Which sewage management system do you currently use on your boat?

Answered: 81 Skipped: 5

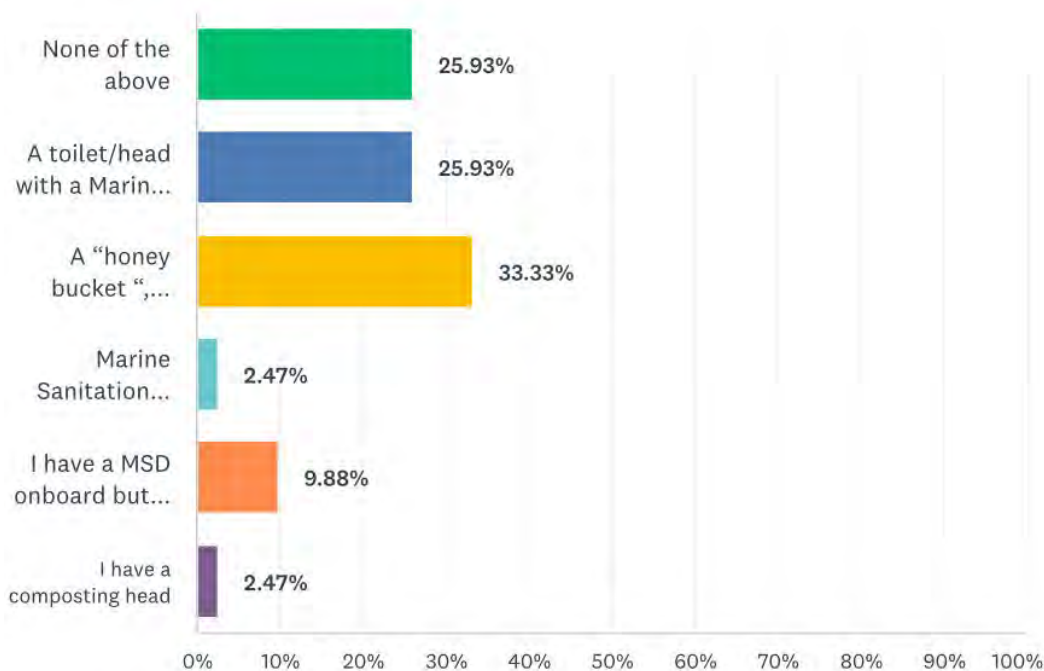


Figure 26: Question 6- Which sewage management system do you currently use on your boat?

1/3 of Harbor User participants use a 'honey bucket, 5-gallon bucket, or camp toilet' (33%) (Figure 26). The next highest two results are tied at 26%: 'A toilet/head with a Marine Sanitation Device (MSD)' and 'None of the above' (Figure 26). Only 10% of participants said that they 'have a MSD onboard but never use it' (Figure 26). While interviewing Harbor Users from Homer, one said that they go out for day trips and for the most part never need to go # 2. Another said that, while his boat does have a head and MSD onboard, after being on the water for the day he puts the boat on a trailer and takes it home. He drains his holding tank and dumps it into his toilet in his home. He found that it is more efficient to dump his waste at home because how rarely the MSD actually gets used and the time it takes to use a pump-out station due to the lines that sometimes exist.

Ninilchik Harbor Users had very different results than the overall opinions (Figure 27 & 26). The two most common were 'None of the above' and 'A toilet/head with a MSD' (both at 36%) (Figure 37). Only two participants use 'A honey bucket, 5-gallon bucket, or camp toilet' (14%) (Figure 27). Some of the participants wrote more on the survey to explain their choice. One participant wrote that they have a "18 gallon holding tank", another wrote, "I use it and dump outside of 3nm", while another wrote "I have a head but don't use it in the harbor. I use the porta potty provided by CICADA". It seems that the CICADA referred to is "Cook Inlet Council on Alcohol and Drug Abuse". A follow up with CICADA confirmed that they have never provided porta potties.

Which sewage management system do you currently use on your boat?

Answered: 14 Skipped: 1

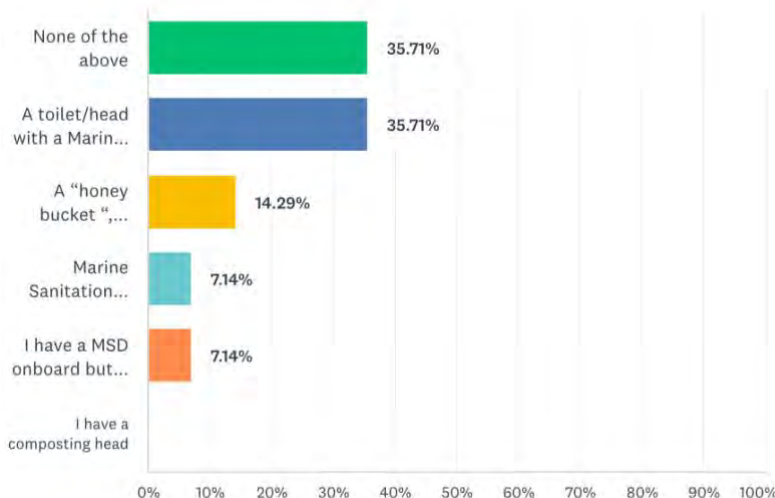


Figure 27: Question 6: Ninilchik participants only

Dillingham Harbor Users also had very different results from both Ninilchik Harbor Users and overall Harbor Users (Figure 28, 27 & 26). 2/3 of all Harbor Users say they use 'A honey bucket, 5-gallon bucket, or camp toilet' (67%) (Figure 28). Only one participant in Dillingham stated that they 'have a MSD onboard but never use it' (8%) (Figure 28). This is a surprising result because when the initial in-person survey with Harbor Users in Dillingham was conducted, over half of those interviewed (5) stated that they had a MSD but didn't use it. One comment from the survey, likely by a participant that chose 'None of the above' (25%), stated that they have a skiff.

Which sewage management system do you currently use on your boat?

Answered: 12 Skipped: 0

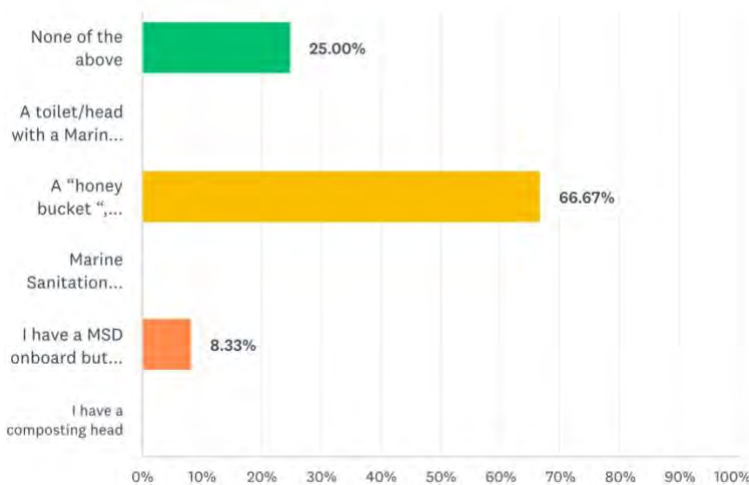


Figure 28: Question 6: Dillingham participants only

## Which resources are available to properly dispose of human waste in your harbor?

Answered: 84 Skipped: 2

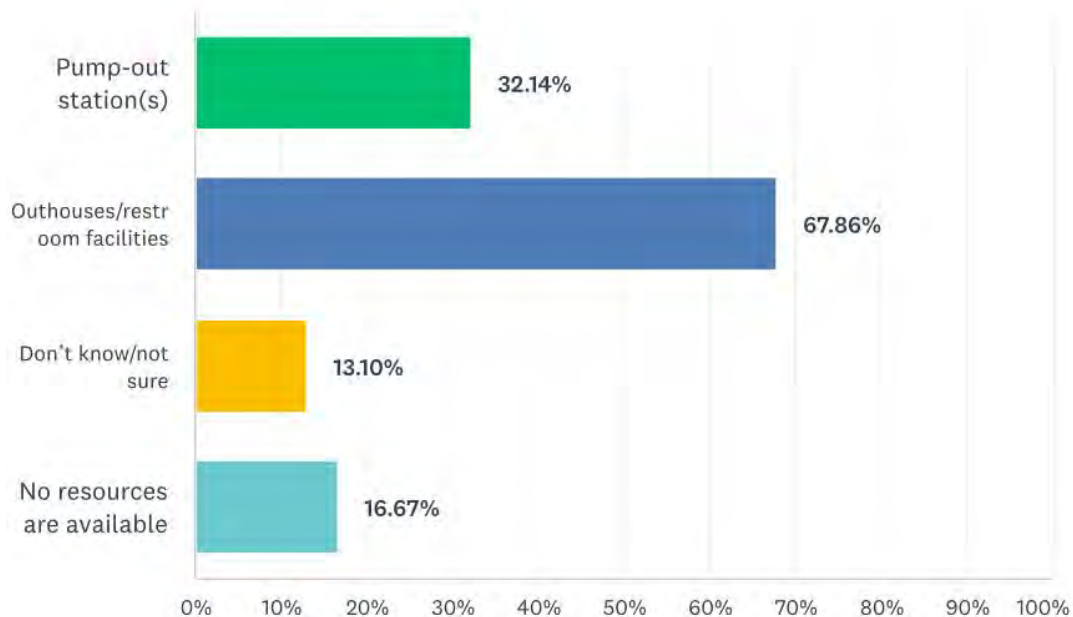


Figure 29: Question 7- Which resources are available to properly dispose of human waste in your harbor?

The results from all Harbor Users shows that 'Outhouses/restroom facilities' were stated as being available over 2/3 of the time (68%) (Figure 29). 'Pump-out station(s)' were only considered available less than 1/3 of the time (32%) (Figure 29). The rest of the participants stated that 'No resources were available' (17%) or they 'didn't know/not sure' (13%) (Figure 29).



The large majority of Harbor Users in Ninilchik knew about the availability of 'Outhouses/restroom facilities' (73%) however those that stated 'No resources are available' (27%) were likely referring to the locations and availability of the restrooms (Figure 30). Several participants wrote about that issue, "sometimes have temporary toilets", "used to be a nice place, most people dump sewage directly (into the harbor), outhouses sometimes but the permanent one is too far". Another participant stated that the state "took port-o-potties (and) dumpsters away, restrooms closed". One person that was interviewed stated that most locals go to their homes when their boat is in the harbor. They lock up their boat and just drive home to wait for the next opener. They therefore bring their garbage home and use the bathrooms at home too. This participant said that, when the dumpsters and port-o-potties existed by the harbor, locals made a point of not using them so that those without vehicles could. Now that the dumpsters and port-o-potties are no longer provided, the harbor users from outside the state must do something.

Which resources are available to properly dispose of human waste in your harbor?

Answered: 15 Skipped: 0

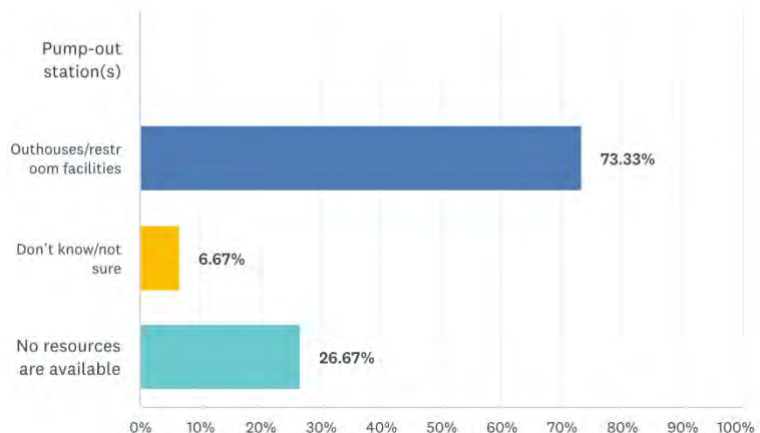


Figure 30: Question 7: Ninilchik participants only

The spread of opinions for Dillingham Harbor Users was much different than in Ninilchik (Figure 30 & 31). 42% of participants recognized that there are 'Outhouses/restroom facilities' available, whereas the exact same number of participants, believed that 'No resources are available' (42%) (Figure 31). This is a very surprising outcome of this survey because there are certainly permanent restrooms available that are visible from every part of the harbor. One participant also believed that 'Pump-out station(s)' were available, which is not accurate. It seems like the results from these two categories, 'No resources are available' and 'Pump-out station(s)' would have been

Which resources are available to properly dispose of human waste in your harbor?

Answered: 12 Skipped: 0

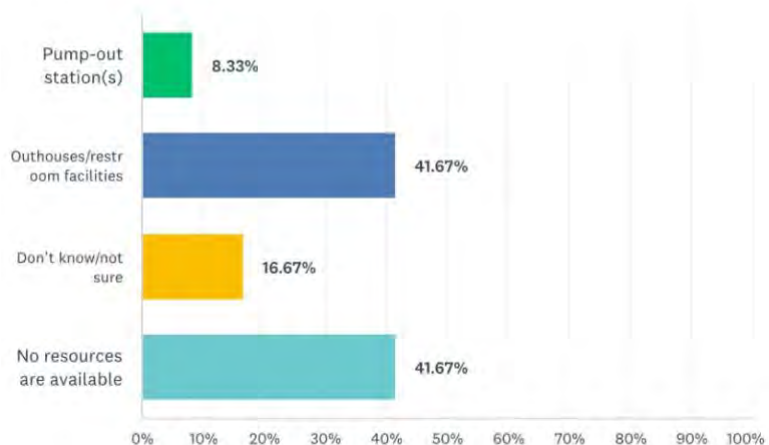


Figure 31: Question 7: Dillingham participants only

more accurately depicted in the 'Don't know/not sure' category. Similar to the Ninilchik situation, there are many Harbor Users that live in Dillingham and go home after pulling into the harbor. Therefore, they likely do not need or use the facilities at the harbor. This could possibly account for the responses that indicate inaccurate information.

This was a contentious question for some survey takers because some believed that the phrasing of this question was implying that something was wrong with their harbor and by answering it then they, the Harbor User, was agreeing with that belief. During conversations, over the phone or in-person, there was a concerted effort to assure this was not the case. That this question, and the survey in general, was aimed at better understanding people's opinions in order to facilitate proper waste management procedures. This was not aimed at getting people or harbors in trouble but to better identify shortcomings and to encourage ways of improvement.

## What facilities do you think would assist in proper/better sewage disposal in your harbor? Please check all that apply

Answered: 86 Skipped: 0

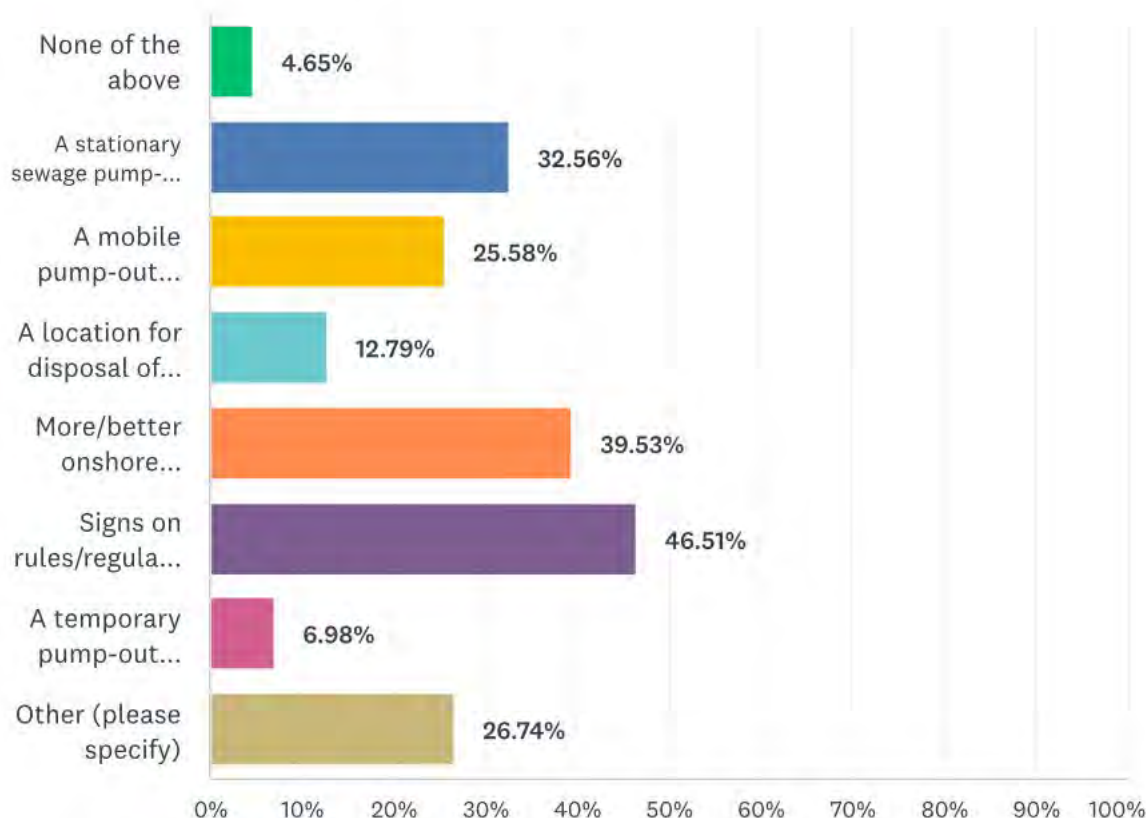


Figure 32: Question 8- What facilities do you think would assist in proper/better sewage disposal in your harbor?

For overall Harbor User participants, the option that got the highest responses was 'Signs on rules/regulations on sewage disposal' (47%) (Figure 32). This was encouraged during interviews as well, even by those that only used harbors in passing. A lot of information was exchanged by passing down from the older generation of fishermen to the younger. During one interview, a Harbor User in Homer recommended that signs should be directed both at the entrance to the harbor for incoming boats, as well as on shore for tourists or people arriving from land. The second highest response was 'More/better onshore restroom facilities' at 40% (Figure 32). Some participants that were interviewed mentioned that just as important as having more restrooms was having them in the right location during the right season. As many harbors in Alaska are only open during the summer season, having extra port-o-potties or extra permanent facilities that are open during that time was considered to be equally important.

The vast majority (87%) of Ninilchik Harbor User participants believed that 'More/better onshore restroom facilities' was the most important way to improve sewage disposal in Ninilchik (Figure 33). The next highest result was 'Other' at 67% (Figure 33). One of the comments from this was that "Overcrowding is the big issue". This was a common opinion during interviews with Ninilchik Harbor Users. Many of those interviewed thought that the root problem was overcrowding, and that improper sewage disposal was a symptom of that. The overcrowding caused boats to tie up in less than ideal locations and during low tides the undredged areas would tilt the boats, causing a variety of unfortunate impacts. The overcrowding was also a concern for safety. Should a fire occur, boats would only be able to leave at high tide and there are not fire suppression facilities near the harbor. Two participants posted in the 'Other' selection included better messaging and information as "a lot of people don't understand the effects fecal matter can have", either communicating this by "a person talking to boat owners before the season or handing out fliers". Several participants mentioned having a dumpster (that is dumped), port-o-potties that are close to the harbor, and places to deposit used oil.

What facilities do you think would assist in proper/better sewage disposal in your harbor? Please check all that apply

Answered: 15 Skipped: 0

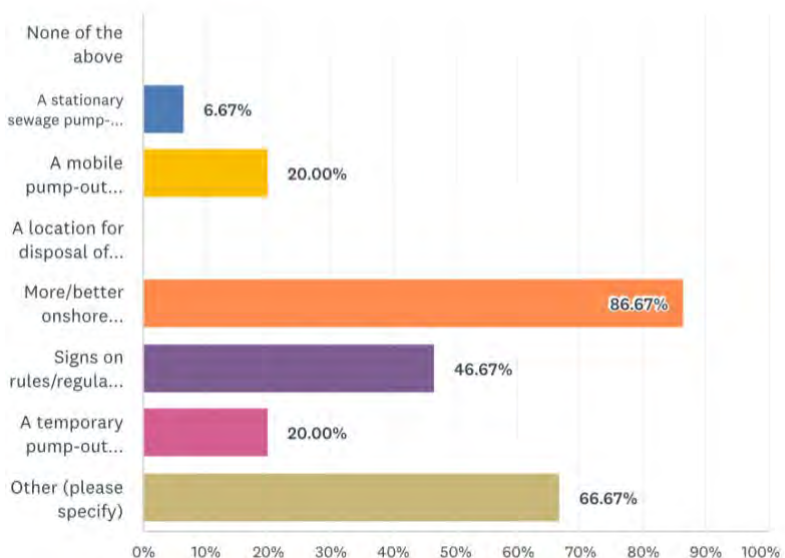


Figure 33: Question 8: Ninilchik participants only

Dillingham Harbor Users had very different opinions than did Ninilchik ones (Figures 34 & 33). 'Signs' were still considered the most important improvement (42%) for improving sewage disposal in the harbor (Figure 34). The next three highest options were all tied at 33% of participants thinking these facilities could improve sewage disposal, 'A stationary sewage pump-out station', 'A mobile pump-out station', 'A location for disposal of camp toilets (5-gallon buckets)' (Figure 34). During an interview with a Harbor User in Dillingham they mentioned the fact that there is no reason for them to get a head and an MSD onboard because there is no pump-out station available to them. As can be seen earlier in the survey, Figure 38, only 8% of those surveyed had heads and MSDs. Therefore, there is the argument of whether a pump-out station is warranted as so few boats have the resources that require a pump-out station contrary to the argument that without a pump-out station, there is no value in boats getting heads and MSDs.

What facilities do you think would assist in proper/better sewage disposal in your harbor? Please check all that apply

Answered: 12 Skipped: 0

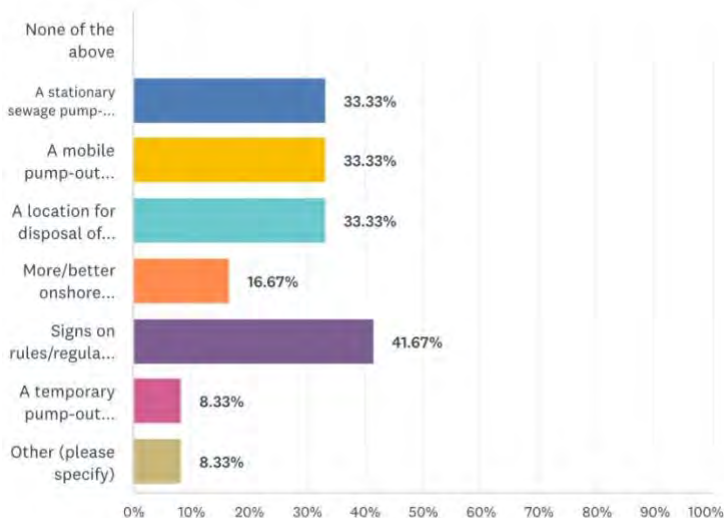


Figure 34: Question 8: Dillingham participants only

The next question from the survey was "Would a permanent or temporary pump-out station benefit your harbor? Why or why not?". Of the 86 Harbor Users that took this survey, 78 answered this question. Overall, 42% of Harbor Users responded with a version of "Yes". One participant stipulated that "if there is no enforcement it would not be worth it". 45% of the participants stated "No" in one form or another. Some were "happy with what we have", or contrarily, "there are pump-outs, but nobody uses them". One participant stated that "the MSDs available for fishing vessels no longer meet CG (Coast Guard) Standards. The Washington based facilities that sold them, no longer do". (Puget Sound, in Washington state is in fact a "No Discharge Zone" and therefore direct discharge from MSDs are not allowed there. However, USCG certified MSDs are still available for sale in Washington and are allowed to be used in Alaska.) 10% of the Harbor User participants thought that a permanent or temporary pump-out station would "maybe" benefit the harbor, and 3% of participants had ambiguous answers.

Of the Ninilchik Harbor Users, all 15 who took the survey answered this question. Of those 66% of the participants said "No", a permanent or temporary pump-out station would not benefit the harbor. One participant included the statement that "People wouldn't use it. (Ninilchik) is a very different community than say Homer". Another participant chimed in saying "Have not used one, would not use one if it was available". 2/3 of survey participants did not think a pump-out station would benefit Ninilchik harbor, the other 1/3 explained why it would be of benefit. "It would encourage boats to upgrade their sanitation devices", said one participant. Another Ninilchik Harbor User that was

interviewed said, “some harbor users may never use a pump-out station, but people absolutely won’t use it if it doesn’t exist”.

The Dillingham Harbor Users had a different approach. Of the 12 Harbor Users that took the survey, 11 answered this question. 73% of those that answered this question thought that either seasonal or multiple pump-out stations would be beneficial. 18% thought that it was not a good idea, one stating “there is no way to move around unless all the boats move for an opener”. One participant thought that it might be helpful, but fisherman may not have time to use a pump-out station.

## What are the best ways to communicate with boaters?

Answered: 84 Skipped: 2

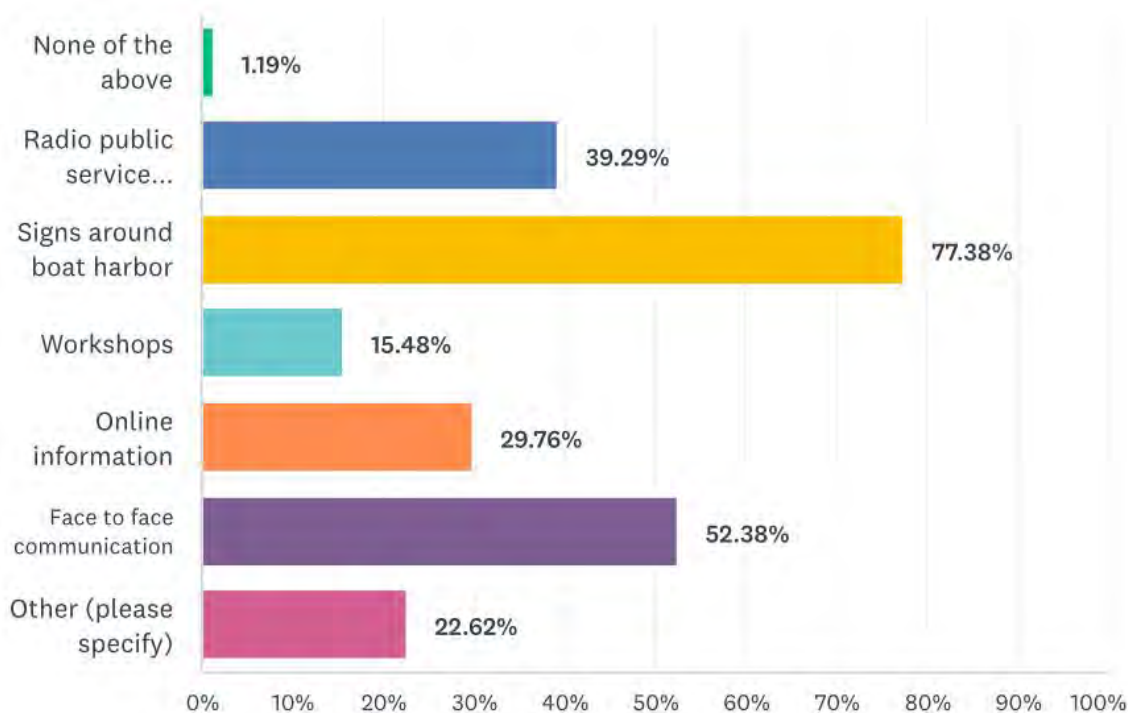


Figure 35: Question 10- What are the best ways to communicate with boaters?

This project is based around the premise of better understanding and encouraging proper waste management procedures for boaters so the hope was to hear from the boaters themselves about the best method of establishing lines of communication and exchanging information. The majority of Harbor Users (77%) thought ‘Signs around the boat harbor’ was the best method to communicate with boaters (Figure 35). The second highest choice was ‘Face to face communication’ at 52% (Figure 35). ‘Radio public service announcements’ was third at 39% (Figure 35).



The results from Ninilchik Harbor Users were very similar to the overall results. The number one position was tied at 73% of Harbor User participants that thought that 'Signs around the boat harbor' as well as 'Face to face communication' were the best methods for communicating (Figure 36). This is particularly difficult in Ninilchik as there is no harbormaster and therefore the 'Face to face communication' is likely from one Harbor User to another or from a subject matter expert to those in the harbor. One person interviewed recommended someone being on the dock before the

season talking to Harbor Users and explaining proper waste management practices. Several participants that chose "Other" recommended reaching out to fishing organizations, such as UCIDA, to get important information disseminated to fisherfolk. Another participant mentioned the value of workshops, like Alaska Marine Safety Education Association (AMSEA), for safety information, and that including important harbor information in trainings like that might be a good way to get information out. Another participant mentioned the value of using CB radios to put this sort of information out on channel 16.

The Dillingham participants thought that 'Signs around the boat harbor' was important enough to be tied for first (58%) with 'Radio public service announcements' (Figure 37). The next highest was 'Face to face communication' at 50% (Figure 37). The participant that chose 'Other' wrote about "email, text, cell phone, Facebook", which may have also been included in the 'Online information' option aside from text.

One of the last questions was "What else, if anything, is important for having clean harbors?" This was an attempt at encouraging Harbor User participants to communicate

## What are the best ways to communicate with boaters?

Answered: 15 Skipped: 0

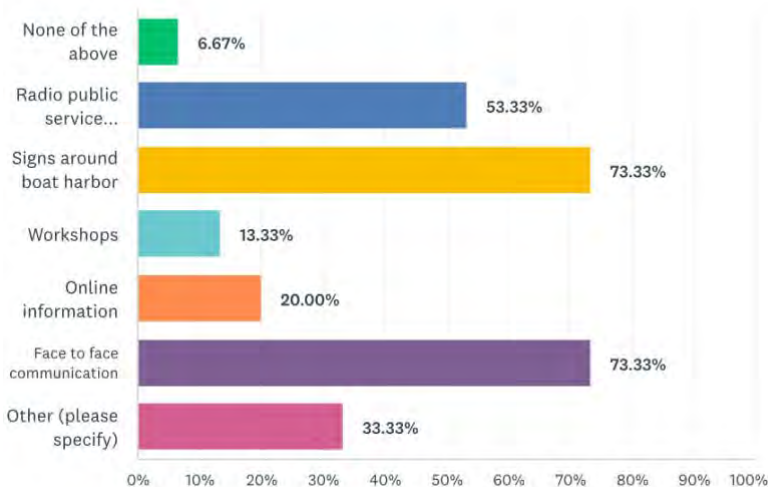


Figure 36: Question 10: Ninilchik participants only

## What are the best ways to communicate with boaters?

Answered: 12 Skipped: 0

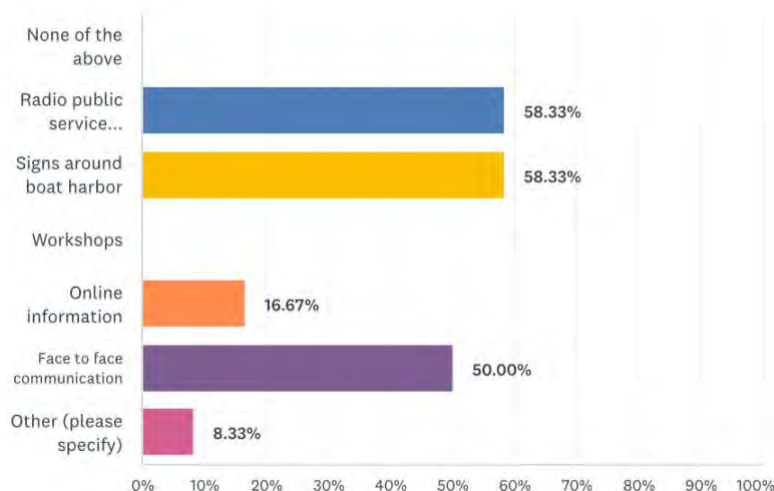


Figure 37: Question 10: Dillingham participants only

any issue that they felt needed to be addressed. Of the 86 Harbor Users that took the survey, 60 answered this question. While we can't include every answer to this question, we will highlight similar themes. Some thought that having more accessible dump stations for used oil, used diesel, used antifreeze and any other hazardous materials would encourage proper management of waste. Others were worried about the plastic situation. One person that was interviewed mentioned driving around the fishing grounds after the fishing season and filling up dozens of garbage bags with plastic waste.

During interviews, multiple participants made a point of talking about how involved and invested their harbormaster is, and how much of a difference that makes. Others mentioned about the necessity for a culture shift, where discussing these issues and making "correct use more palatable". Lots of participants spoke specifically about concerns that are occurring at their home harbor and the need to improve education on issues. Encouraging these conversations is vital to correct these concerns sooner rather than later. While multiple participants mentioned increasing enforcement, others mentioned culture shift.

In Ninilchik, 11 of the 15 Harbor User participants responded to this question. One survey participant as well as several Harbor Users that were interviewed thought that the Ninilchik Harbor wasn't that bad and in fact is getting better. They believed that fellow fisherfolk were good at pointing out when someone was engaging in improper waste management procedures. Many interviewed also thought that as the older generation was getting out of the business that the practices were getting more environmentally friendly. Despite these takes, multiple Harbor Users that were interviewed thought that it was worse than it's ever been. That there used to be facilities for Harbor Users to use, such as dumpsters and port-o-potties. Those have since been removed, due to funding issues, and several participants have recognized the danger that this poses. If there aren't dumpsters or used oil facilities available, people will have to do something with their waste, ignoring that concern does not solve the problem. Some fishermen avoid the Ninilchik harbor because of the overcrowding and fuel spills there. They went on to say that the big problem is that Ninilchik is an incredibly desirable location but poorly maintained and that the harbor needs to be expanded and better managed.

In Dillingham, of the 12 Harbor Users that took the survey, six answered this question. One comment was to ensure community buy-in. That with the help of BBRSDA, other fishing organizations and the fisherfolk themselves would go a long way to help with proper waste management practices. As it is a seasonal harbor, ensuring that attention during the summer season is key. One survey participant recommended "sending three text reminders--one pre-season, one mid-season, and one post-season".

## Conclusions

There were many take-aways from the survey. They are not included in here in any order of importance. There is rarely a one size fits all solution for any single issue. Working with community members, harbor staff, and harbor users to identify problems and craft solutions that are specific to each harbor is hugely important. Encouraging this communication between stakeholders is the best way to improve or recognize when things are going well.

For example, in Ninilchik, 87% of Harbor User participants thought that ‘More/better onshore restroom facilities’ was the most important way to improve sewage disposal there (Figure 34). While in Dillingham, 42% (the choice that received the highest number of votes) of the Harbor User participants thought that ‘Signs on rules/regulations on sewage disposal’ was most important (Figure 33). These Dillingham results most nearly resembled the overall average response for this question. Which just highlights the necessity of holding these discussions and crafting local solutions to ensure the best possible outcome.

One of the biggest take-aways from the survey were that education and information is wanted. People want to do the right thing and may not know what that is. Encouraging education and outreach about proper waste management, even just having a conversation about it, helps remind people that use the harbor as well as ensure that new people to the community are on the same page. Another reason people may not ensure proper waste management techniques is because the available infrastructure at their harbor does not make it easy or feasible. For example, people want to dump garbage and sewage in appropriate receptacles. Unfortunately, shore support services do not always exist in such a way to encourage proper disposal. When restrooms are distant, locked, or non-existent, harbor users must make a difficult decision.

In some cases, the three stakeholders (Harbor Users, Community Members, and Harbor Staff) all expressed similar opinions. The biggest concern for all three was ‘Routine small spills/leaks’. This was different than anticipated when the project was started but could help focus future attempts. Even so, about half of all survey participants considered ‘Improper sewage disposal’ to be a concern in their harbor.

Many participants were thankful for discussing the topic of harbor pollution because it is not frequently talked or thought about in Alaska. It was considered very prevalent and an important focus in the lower 48 but not here. Encouraging these discussions, conducting outreach and having simple, frequent reminders before and during the fishing season would remind harbor users about the right way to do things. One way that was identified as being particularly helpful in communicating important information was through ‘signs around the boat harbor’. These were considered the number one way to communicate with boaters by both Harbor User and Harbor Staff participants. Signs are also relatively cheap and easy to maintain.

While the purpose of this project was to get a better understanding of people’s opinions about the state of their harbor, it should be emphasized that multiple participants made a point of expressing the positives around their local harbor. That most Harbor Users thought their harbor staff was very intent and engaged which correlated to less pollution. Numerous participants did not think that the state of their harbor was particularly bad. As Alaska has much less boat traffic, more extreme tides, and less land-based traffic than the lower 48, we are in a better position than many harbors in other areas.



### Next Steps

These and past surveys (such as the one identified in [Figure 1](#)) identified that creating signs to remind harbor users about proper waste management techniques was the best way of communicating. Therefore, the next stage of this project is going to create signs in Ninilchik and Dillingham encouraging proper waste disposal. Working with schools in both communities, students will design the artwork for the sign. Dillingham students will design the sign and members of the local community will vote on the winner. The same will be done in Ninilchik with local students and local community members voting on the winner. Then the ADEC and Alaska Sea Grant graphic arts teams will work together to incorporate valuable waste management information and create permanent metal signs to be placed in their respective harbor. ADEC and Alaska Sea Grant will also be using the artwork to make stickers and magnets to hand out to the involved communities in order to encourage discussion and reminders.

Presenting the findings from this survey will be done where best to stimulate further conversation and encourage proper waste management procedures. Presentations will be done at two conservation conferences in spring 2022, Alaska Forum on the Environment (online), and COMFISH (in Kodiak). Effort will be made to present findings to communities and organizations that are interested in this work. Particular effort will be made to present in Ninilchik with Ninilchik Traditional Council, as well as in Dillingham with Bristol Bay Native Association. There will also be effort made to present at other forums, such as sports shows, or fishing organizations.

Prior to the summer, this survey write-up will be shared with all members of the AAHPA. Where possible, presentations of the findings will be done to harbor staff in person or via zoom.

In the future it is recommended that the following steps be taken:

- Consult with Harbormasters and staff to determine best means of waste management and disposal for their harbor
- Using information from previous bullet point, conduct education campaigns with harbor users to encourage proper waste disposal
- Conduct water testing and monitoring programs in or near harbors that are concern to communities
- Bolster/improve current infrastructure that addresses clean harbors program ie Sewage disposal systems (port-o-potties, restrooms, pump-outs), used oil disposal, dumpsters, etc)
- Conduct future surveys and/or outreach efforts should aim to:
  - Improve relations and possibility of involvement from communities
  - Document perception about changes occurring and outreach effectiveness
  - Have in-person group sessions to discuss issues, requirements and possible solutions (COVID permitting)
  - Recommended that local community member or harbor staff conduct survey and outreach, folks may be distrustful of outsiders
- Communal outreach to local and regional representatives to secure funding for possible solutions
- Funding is always a limiting factor: Currently the Clean Waters Act (which appropriates funds for sewage pump-out facilities) is only directed at recreational harbors
  - Working with communities and the State of Alaska to identify possible grant opportunities to expand facilities for harbor users
    - Expansion or creation of pump-out stations
    - Craft and post signs explaining rules in simple language

- Seasonal port-o-potties
- Seasonal dumpsters
- Cameras to identify those not following rules
- Enforcement of rules

# Appendix 1

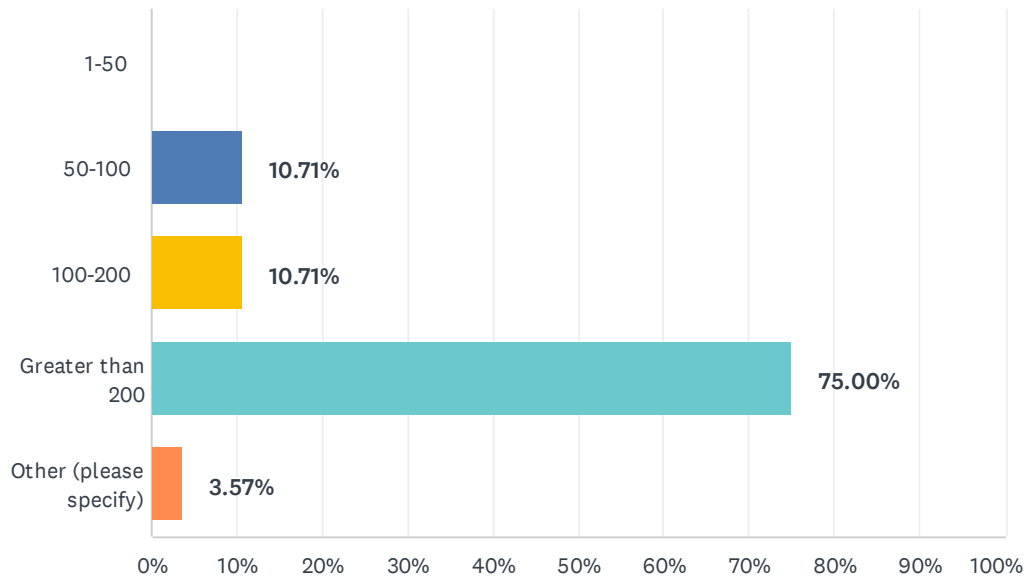
## Q1 In which boat harbor and in which town do you serve as staff?

Answered: 16   Skipped: 12

Valdez Harbors  
robert e galovin small boat harbor sand point alaska  
King Cove, AK  
Hoonah Harbor/Hoonah, Alaska 99829  
Cordova  
Petersburg, AK  
Whittier  
Wrangell  
City of Ketchikan  
Skagway Small Boat Harbor  
Valdez, two stationary pumpouts  
Ketchikan, 4 pump out stations  
Seward  
Anchorage  
Juneau  
Wrangell

## Q2 How many boats/boaters use your harbor throughout the year?

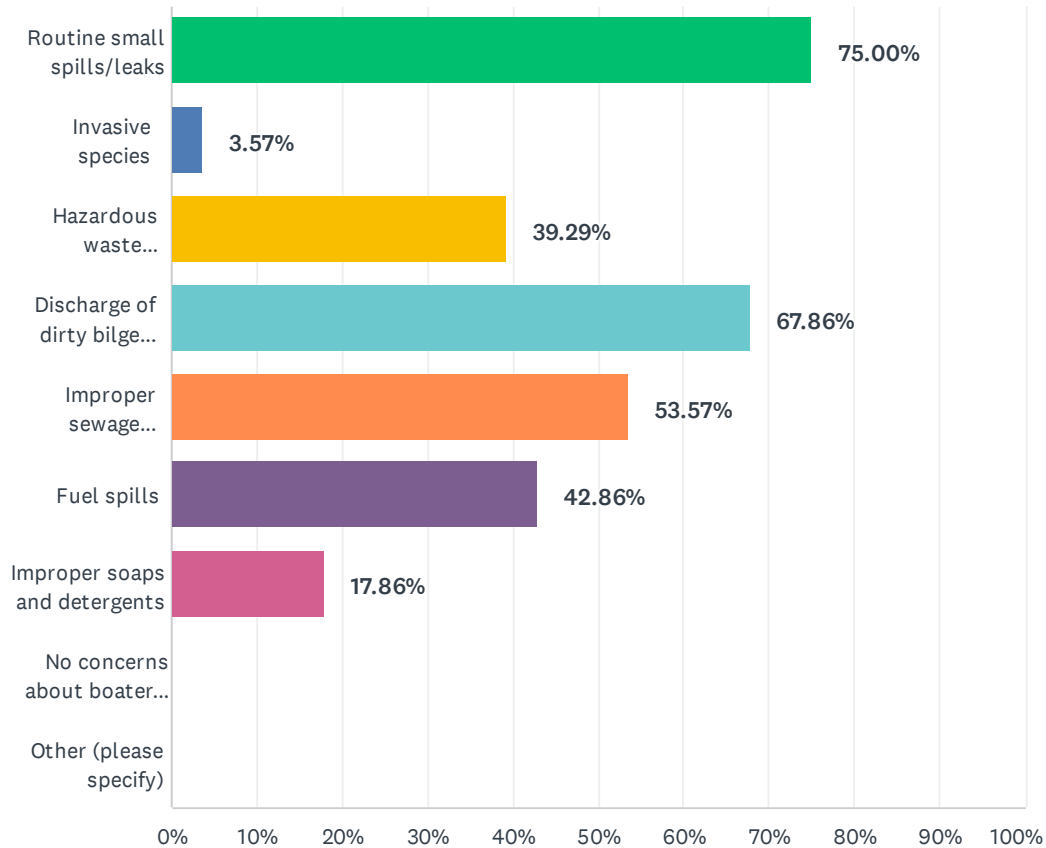
Answered: 28 Skipped: 0



ANSWER CHOICES	RESPONSES	
1-50	0.00%	0
50-100	10.71%	3
100-200	10.71%	3
Greater than 200	75.00%	21
Other (please specify)	3.57%	1
TOTAL		28

### Q3 In your opinion, what are the biggest concerns for boater pollution in your harbor? Check as many as apply

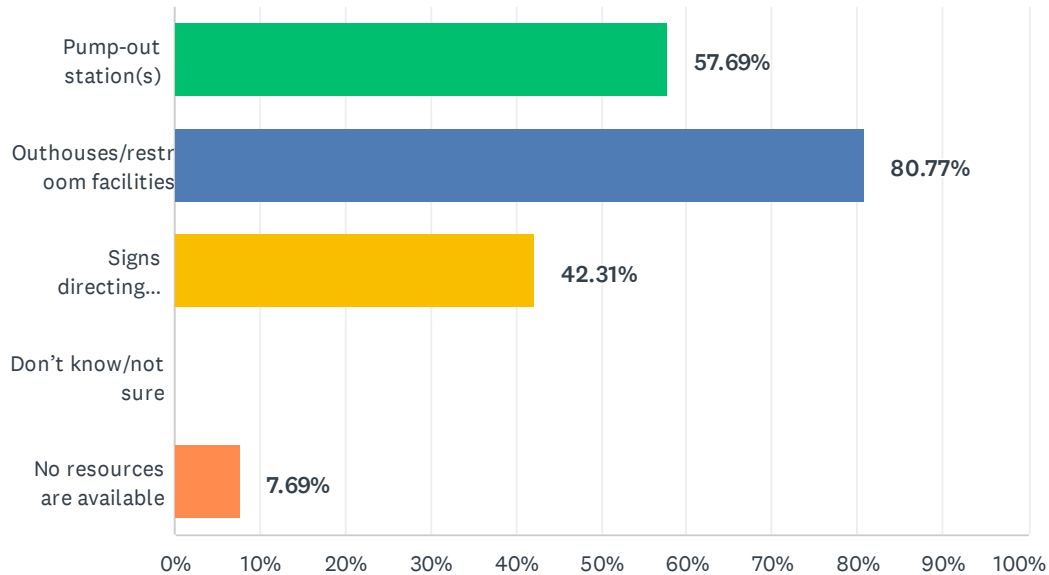
Answered: 28 Skipped: 0



ANSWER CHOICES	RESPONSES	
Routine small spills/leaks	75.00%	21
Invasive species	3.57%	1
Hazardous waste (solvents, antifreeze, etc) discharges	39.29%	11
Discharge of dirty bilge water	67.86%	19
Improper sewage (blackwater) disposal	53.57%	15
Fuel spills	42.86%	12
Improper soaps and detergents	17.86%	5
No concerns about boater pollution	0.00%	0
Other (please specify)	0.00%	0
Total Respondents: 28		

## Q4 Which resources are available to properly dispose of human waste in your harbor?

Answered: 26 Skipped: 2

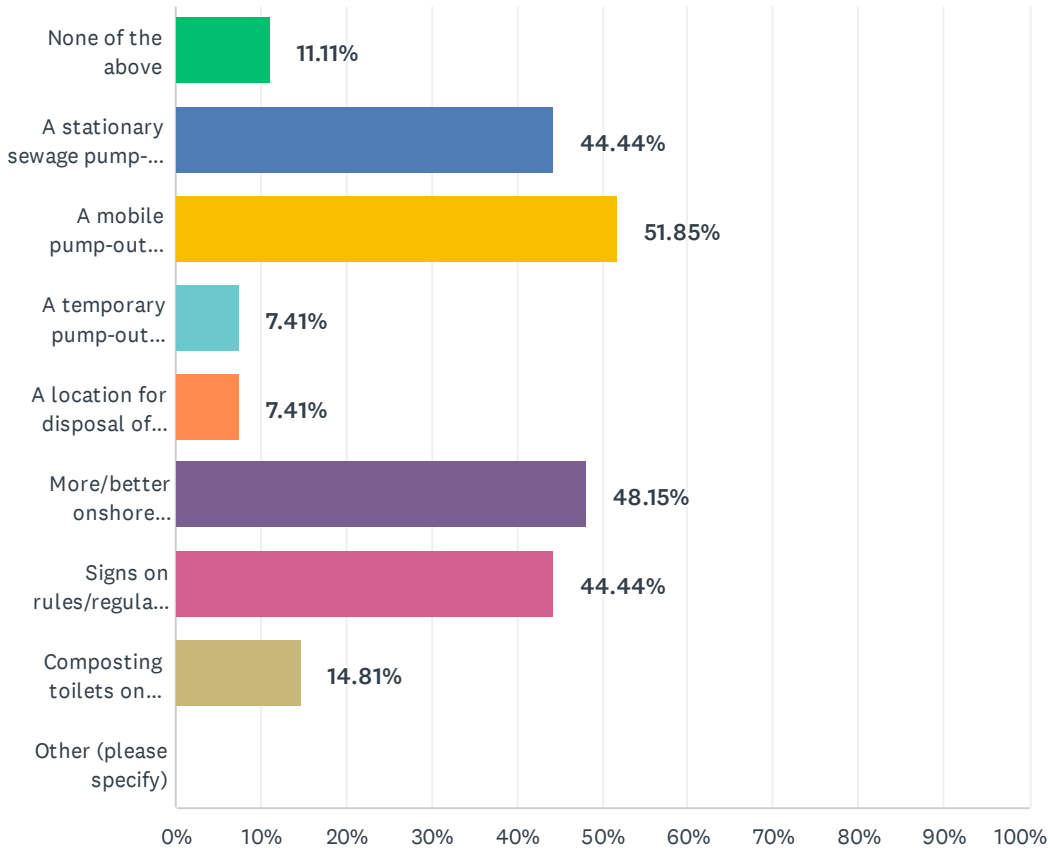


ANSWER CHOICES	RESPONSES	
Pump-out station(s)	57.69%	15
Outhouses/restroom facilities	80.77%	21
Signs directing proper sewage disposal	42.31%	11
Don't know/not sure	0.00%	0
No resources are available	7.69%	2
Total Respondents: 26		



## Q5 Which facilities do you think would assist in proper/better sewage disposal in your harbor? Please check all that apply

Answered: 27 Skipped: 1



ANSWER CHOICES	RESPONSES	
None of the above	11.11%	3
A stationary sewage pump-out station	44.44%	12
A mobile pump-out station	51.85%	14
A temporary pump-out station	7.41%	2
A location for disposal of camp toilets (5-gallon buckets)	7.41%	2
More/better onshore restroom facilities	48.15%	13
Signs on rules/regulations on sewage disposal	44.44%	12
Composting toilets on boats	14.81%	4
Other (please specify)	0.00%	0
Total Respondents: 27		

## Q6 Would a permanent or temporary pump-out station benefit your harbor? Why or why not?

Answered: 24 Skipped: 4

No, as we already have four stationary pump-out stations, 1 pump-out boat and a mobile pump-out cart...all free of charge.

have lift station

No

Yes. So, you don't have to go out of the harbor far offshore to pump out. Or request pump truck to come down.

Yes it would, because we have a large seasonal fishing fleet

Sure.

Weather would be a major factor in keeping it operational

Yes We currently have 2 but need one more for our Shoemaker Bay Harbor located 4 miles from town.

We already have 3 permanent stations, and are adding a 4th

One already in place

Yes, and we just got a new pumpout cart and pumpout boat with grant funding to help

Sailors need

We have two portions, boat and cart

It could benefit our harbors, we could create a fee for pumpouts because most of our facility users always pump outside of city limits

We have two permanent ones open year round

Both

No it's not really a problem. We've got a day use only boat launch vs a harbor

We have several

Benefits seem to be working so far

There currently is no way to pump out at this time

Yes

Probably a mobile boat mounted pump out system

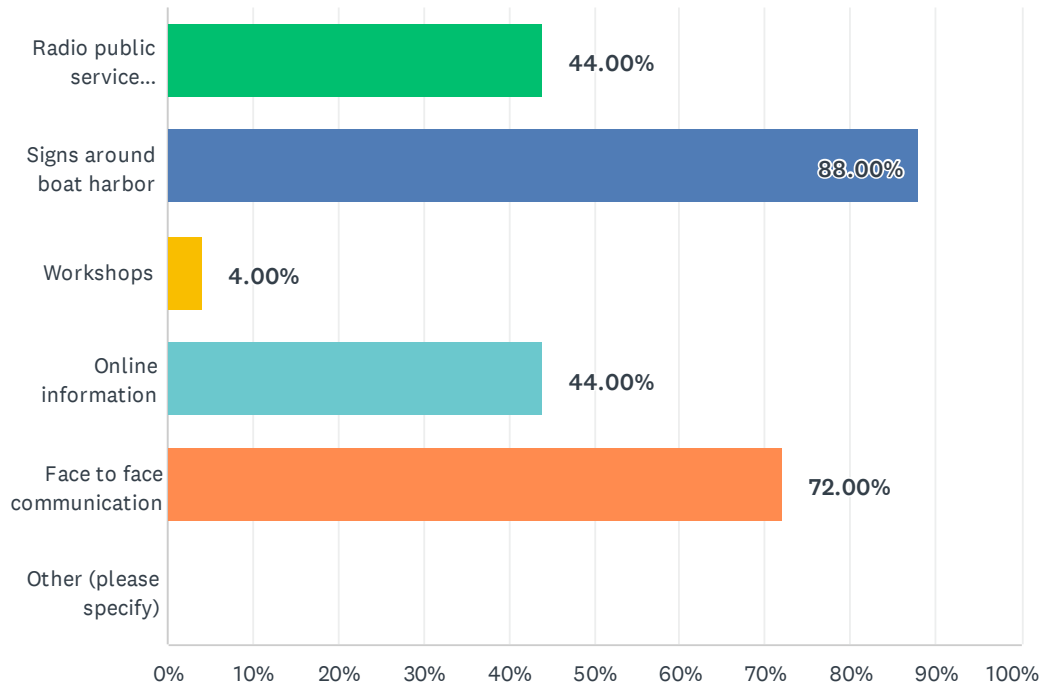
Yes

Already have facilities.

## Survey for Harbor Staff

### Q7 What are the best ways to communicate with boaters?

Answered: 25 Skipped: 3

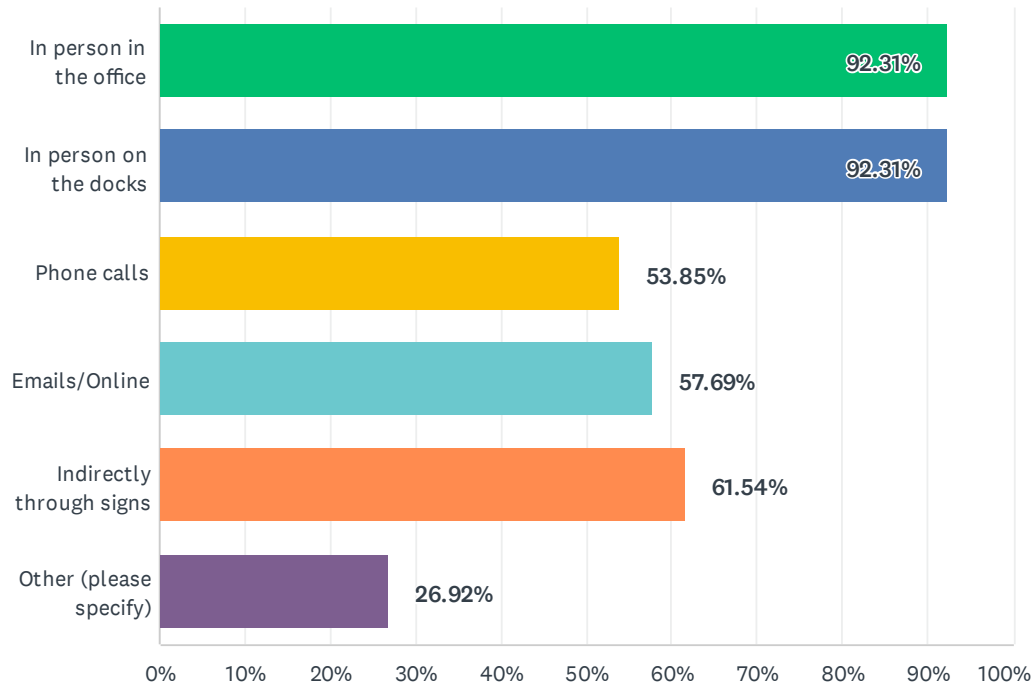


ANSWER CHOICES	RESPONSES	
Radio public service announcement	44.00%	11
Signs around boat harbor	88.00%	22
Workshops	4.00%	1
Online information	44.00%	11
Face to face communication	72.00%	18
Other (please specify)	0.00%	0
Total Respondents: 25		

## Survey for Harbor Staff

### Q8 How do you currently communicate with harbor users?

Answered: 26 Skipped: 2

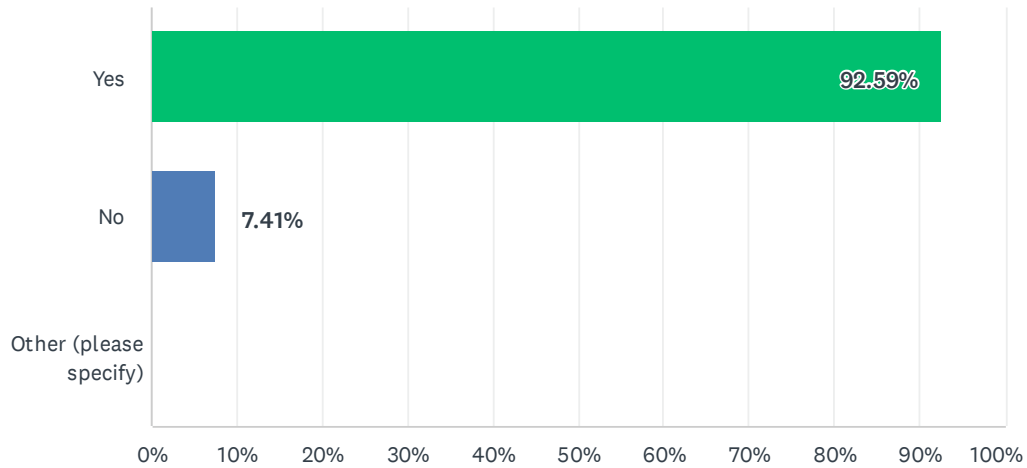


ANSWER CHOICES	RESPONSES	
In person in the office	92.31%	24
In person on the docks	92.31%	24
Phone calls	53.85%	14
Emails/Online	57.69%	15
Indirectly through signs	61.54%	16
Other (please specify)	26.92%	7
Total Respondents: 26		

Survey for Harbor Staff

## Q9 Have you heard of the Alaska Clean Harbors Program?

Answered: 27 Skipped: 1



ANSWER CHOICES	RESPONSES	
Yes	92.59%	25
No	7.41%	2
Other (please specify)	0.00%	0
TOTAL		27

## Q10 Is your harbor certified or pledged as an Alaska Clean Harbor? Why or why not?

Answered: 21 Skipped: 7

Yes, we are certified as an Alaska Clean Harbor.

no we have not certified or pledged and not sure why we haven't under new management again 4 times in the last three years

No

I suppose. Never get too many complaints of dirty bilge in the harbor.

We are not. We would like to have a installed sewage disposal service. first

It is not. Some of the Criteria is unattainable.

Pledged by previous harbormaster but nothing accomplished from what I can find since reporting in 2020

No.

We are not. We have been looking at getting this certification.

No our harbor is not certified

Our harbors aren't because we have an outdated harbor that needs to be reconstructed

Na

Not yet

Na

Yes

Yes

Yes

Yes

Yes! It's the right thing to do

Yes

Not sure

## Q11 What mitigation actions or best practices do you currently use to combat boater pollution?

Answered: 23 Skipped: 5

Offering free pump-out services and our maintenance pads for vessel work in our uplands have drains to catch all contaminants.

boater awareness a lot of captins are good about keeping clean

Harbor crew

Get up with each boat owner who is suspect to pumping out dirty bilge. Get them to clean it up.

Oil skinner, absorbent pads, booms

Monitoring by staff 24/7.

Signage and facilities for trash

We utilize the free sewage pump outs and have containers at our harbors to accept waste oil and other chemicals.

We have five used oil dump stations located throughout our harbors as well as 3 (soon 4) sewage pumpout stations. We require all live aboard vessels to have permanently installed USCG approved sanitation devices (no porta-pottys). There is anti-pollution signage at every ramp into the harbor.

Early response to sheen Waste oil disposal location Bilge water filtration system Flyers and

Brochures with information on cleaning products, disposal locations, BMP's for clean boating

Live aboard policy in the works. Mobile options and year round pump out service

Public shaming

We normally report all pollution to the local MSD and they take care of everything

Teach boaters how to properly pump out

Offer free oil/antifreeze disposal locations

Na

Public outreach, signage, penalties



We try to get people to not dump dirty bilge water in the harbor

Fines

Inform boaters

Education and signage

We follow marine best practices

## Q12 What mitigation actions would you like to employ to combat boater pollution but do not currently? What barriers are preventing implementation?

Answered: 18 Skipped: 10

Trying to encourage boaters to be more responsible

upper management funding

I don't know

Just better awareness of what's in your bilge

Sewage and bilge pumpout. Replacement of the harbor docks

USCG response to issue citations in a more consistent manner. Lack of Federal funding is the assumption for unresponsive enforcement. Change to State policy mandates for grey water pollution from large passenger vessels.

Modern pump out resource, modern signage, update oil recycle program and facilities.

Unknown

Offer more varieties of disposal. We see a big number of hazardous materials being left at the top of ramps and near dumpsters, leaving it up to harbor personnel to either dispose of it or harbor personnel reviewing camera footage to hold whoever accountable

Newer and improved used oil collection sites

More cameras to verify who is polluting.

Low or no cost waste disposal, vessel budget financial resources

Na

N/a

Require pumpouts

Staffing availability

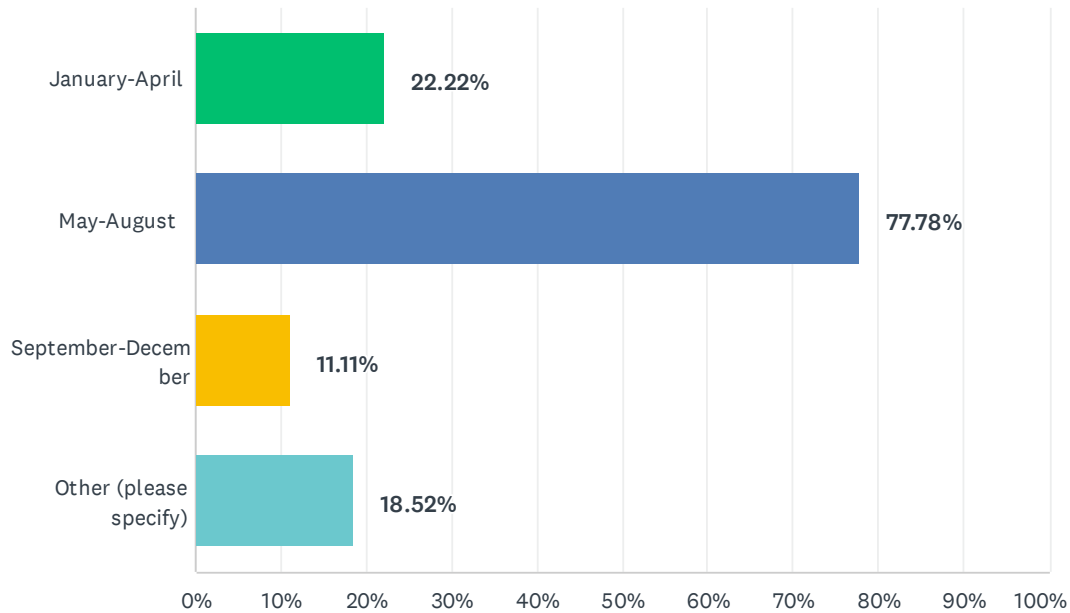
Fines

Educating the public would be a big help.

# Survey for Harbor Staff

## Q13 What months of the year is the highest use period for your harbor?

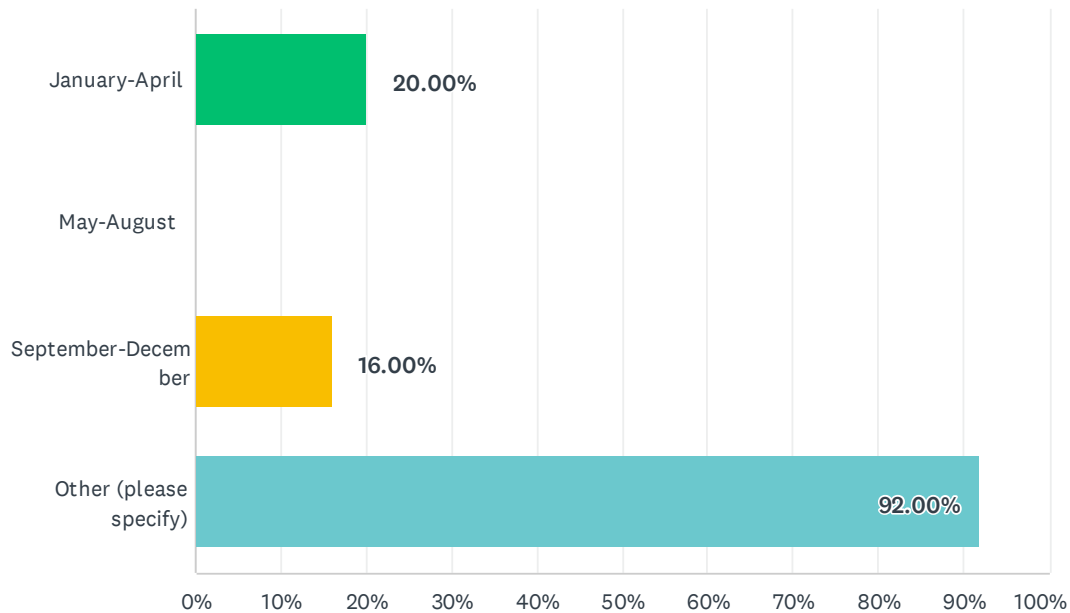
Answered: 27 Skipped: 1



ANSWER CHOICES	RESPONSES	
January-April	22.22%	6
May-August	77.78%	21
September-December	11.11%	3
Other (please specify)	18.52%	5
Total Respondents: 27		

## Q14 Are there periods your harbor is not utilized by boaters?

Answered: 25 Skipped: 3



ANSWER CHOICES	RESPONSES	
January-April	20.00%	5
May-August	0.00%	0
September-December	16.00%	4
Other (please specify)	92.00%	23
Total Respondents: 25		

## Q15 Please provide us with any additional comments or suggestions you have about boating and sewage management in Alaska.

Answered: 8   Skipped: 20

The Clean Water Act has been beneficial in helping various communities improve their facilities with new pump-out facilities and or equipment through grant funding

None

Please target the large cruise ship traffic. The bulk of the problem is large passenger vessel grey water management. The laws in place allow the dumping of toxic grey water that is responsible for much of the toxic levels we see in SE Alaska. Petersburg waste in local waters are by and large fish/seafood waste and such things as street runoff, snow dump melt. etc.

Stamps, stickers, or incentives for those that do use the pump out stations. Free bilge sock or raffle ticket for State wide recognition.

Na

None

N/a

none

# Appendix 2

## Q1 Which boat harbor and in which town do you visit most frequently in your community?

Answered: 97   Skipped: 2

St. Paul Harbor, Kodiak	Homer
	Soldotna
Homer Harbor	The Port of Anchorage Small Boat Launch
Homer	Ninilchik
	Homer
Kasilof	Homer
	Homer
Homer Harbor, Homer	Kodiak downtown harbor
Kasilof	Sitka
	Ninilchik
Homer	Ninilchik
	Ninilchik
Homer spit	Ninilchik
	Ninilchik
Homer	Ninilchik Harbor
Homer	Ninilchik
Ninilckic	Ninilchik
	Ninilchik
Kenai	Ninilchik
	Ninilchik
Valdez small boat harbor, in Valdez AK	Ninilchik
	Homer spit
Seward	cordova
	Homer Harbor, Homer
Homer	Homer
	Tiffany
Homer	Haines
	Auk Bay Juneau
Dillingham	Auke Bay
	Seward
seward	Ninilchik boat harbor
	Kenai
Homer	Homer
Homer Spit Harbor	Homer
Homer	Homer Boat Harbor, Homer, Alaska
Homer	Ninilchik
Homer spit small boat harbor	Homer
Homer	Homer
Homer	Homer
Kenai	Homer
Homer main harbor	Homer



Ninilchik

Ninilchik

You need to reword this question.

Seward Small Boat Harbor

Seward

South Douglas Harbor - Juneau

dillingham

Dillingham

Dillingham

Dillingham

Dillingham

Dillingham

Dillingham Boat Harbor

Dillingham

Dillingham Boat Harbor (DBH)

South Cove Craig AK

Cordova

Seward

KODIAK

Petersburg

Seward small boat harbor

Small boat harbor in dillingham

Dillingham

Dillingham BH

Curyung

Dillingham

Kenai

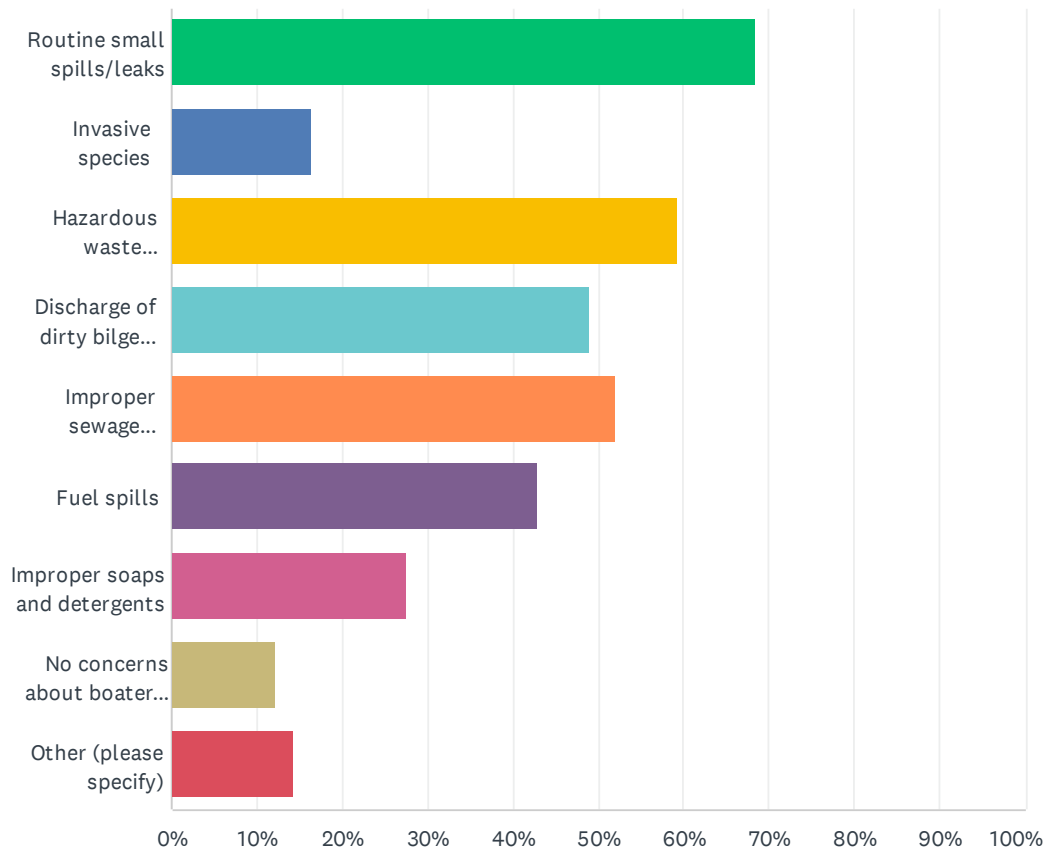
Kenai

Homer

## Survey for Community Members

### Q2 In your opinion, what are the biggest pollution concerns in your harbor? Check as many as apply

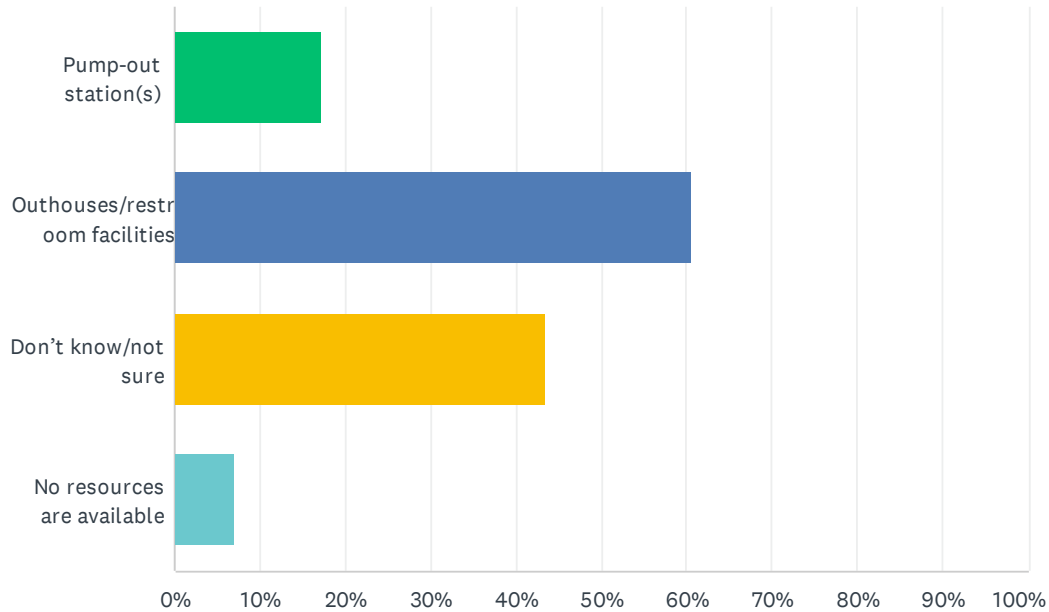
Answered: 98 Skipped: 1



ANSWER CHOICES	RESPONSES	
Routine small spills/leaks	68.37%	67
Invasive species	16.33%	16
Hazardous waste (solvents, antifreeze, etc) discharges	59.18%	58
Discharge of dirty bilge water	48.98%	48
Improper sewage (blackwater) disposal	52.04%	51
Fuel spills	42.86%	42
Improper soaps and detergents	27.55%	27
No concerns about boater pollution	12.24%	12
Other (please specify)	14.29%	14
Total Respondents: 98		

### Q3 Which resources are available to properly dispose of human waste in your harbor?

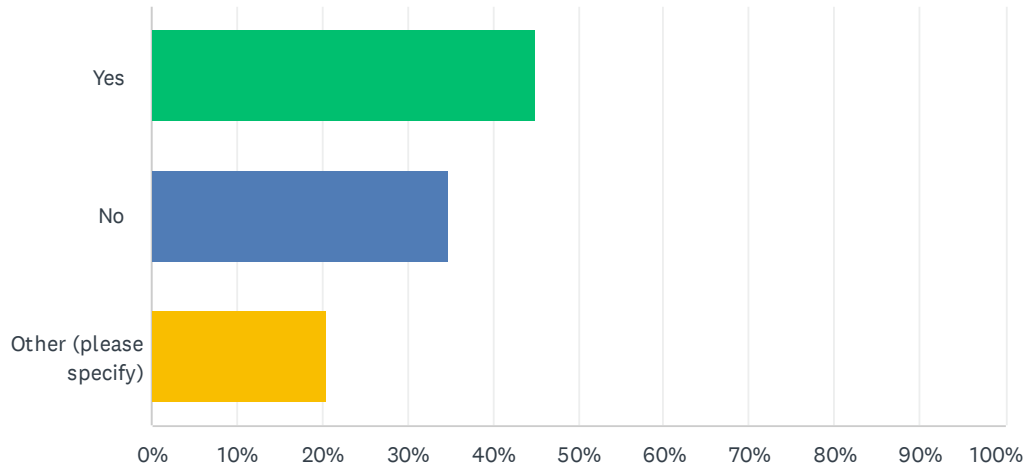
Answered: 99 Skipped: 0



ANSWER CHOICES	RESPONSES	
Pump-out station(s)	17.17%	17
Outhouses/restroom facilities	60.61%	60
Don't know/not sure	43.43%	43
No resources are available	7.07%	7
Total Respondents: 99		

## Q4 Do you consider human waste (blackwater) to be an issue in the harbor?

Answered: 98 Skipped: 1



ANSWER CHOICES	RESPONSES	
Yes	44.90%	44
No	34.69%	34
Other (please specify)	20.41%	20
TOTAL		98

## Q5 Would a permanent or temporary pump-out station benefit your harbor? Why or why not?

Answered: 92   Skipped: 7

Yes, less temptation for boats to discharge in harbor

Having an available pump out station is never a bad thing.

Unsure if already is one but would think there should be one at least as use of our harbor grows.

When cruise ships come in I'm unsure of how human waste is handled in Kachemak Bay.

A dump station for camp toilets

I'm not sure

No ocean pump bilge

I think they might have one

Not sure

Yes. Keeping human waste out of the harbor.

No, I think they have one

Yes or at least a portable toilet. They have nothing right now except the bushes

Not sure

Yes because it would make pumping out waste more east and accessible. People live on their boats year round so there is always a need.

I'm not sure

we already have one

Yes, it is needed. Newer boats tend to accumulate more waste/blackwater than previous and there are more boats now than in the past

availability of temporary until proven change is seen

Yes

Not sure if there is one but I'm sure it would be beneficial. Proper disposal of waste and hazardous liquids is important ant to me

Not sure

Yes, ease of access so more would comply

Yes. It should be an available resource

Don't know.

Yes

Yes anything and everything will help

Yes

Pump out stations are necessary for any area with significant foot traffic. The Homer spit certainly could use one or a second if one already exists

Probably, not qualified to say.

Yes, pollution is an issue

no

Yes. Our harbor is very crowded and needs a place for safe and effective pumping

Not sure if homer has one. If not yes

not sure if we have one.

i'm not sure

Yes!

Yes

The more amenities for visitors the better for the community in general.

Yes, it would keep it out of our waters

NA

I would argue that having one available would help facilitate best practices.

No room for station

Maybe

Yes there are a lot of boats and rvs that would use it if available

Can never go wrong providing resources to reduce water contamination in Alaskan Rivers.

I would hope so

I'm not an engineer but I'd appreciate a study

Possibly?

There is one already

unsure

There is a permanent one.

Yes, it would allow a way to discharge waste other than running out of the harbor and disposing of it in the Bay or Inlet.

Yes

Yea

Probably, not sure.

I don't know

Yes to ensure safety

I think it would be great to have as many resources as possible to keep our harbor clean.

It couldn't possibly hurt. I'm sure people would be less likely to pollute if they had access to a pump out station

Not sure

Yes

I don't know. Possibly

Yes. It would be nice to have its presence predictable and known

More seasonal and permanent pump out stations

Yes

I don't know

It would, concern about maintenance and cost.

Benefit for some. Worried about vandalizing equipment. Seasonal and very short.

Don't know

Benefit. Heavy use by boats in spring and summer. Large tour vessels handle their sewage appropriately. Several years ago we (as divers) encountered readily apparent evidence of a large holding tank pumped out about a mile from the harbor entrance, likely deliberately.

Yes. We have some. But they need a better location. Easier access with prevailing wind conditions for all vessel sizes.

Not sure

yes to be more clean

Yes prevent further dumping

The boats use 5 gallon buckets.

yes, for oil water or contaminated water.

Yes, fisherman go to the bathroom right over the side of the boat, or they dump their honeybuckets out in the bay, this is so unsanitary. If they kept a lid on bucket, and knew to properly dispose it our waters and subsistence way of life would not get contaminated.

yes this would eliminate human waste pollution

I am not sure how DBH handles fishing boat human waste, but if there isn't process like a pump out station then I do believe this would be an benefit to keep our waters clean.

I would think it would because many people live on their boats

I doubt it would be used.

they have 3

Definitely!

Yes, because we get asked about it all the time by transient vessels

Perhaps more of them, or a mobile system.

Yes

No the boats seldom have a latrine just a 5 gallon bucket

No,habit of dumping overboard will be hard to break.

Prolly not people don't care where they do #2 or #1

Yes it would help environmentally if it can be operated and maintained safely within current staff and budget constraints

No. Cause harbor almost dead

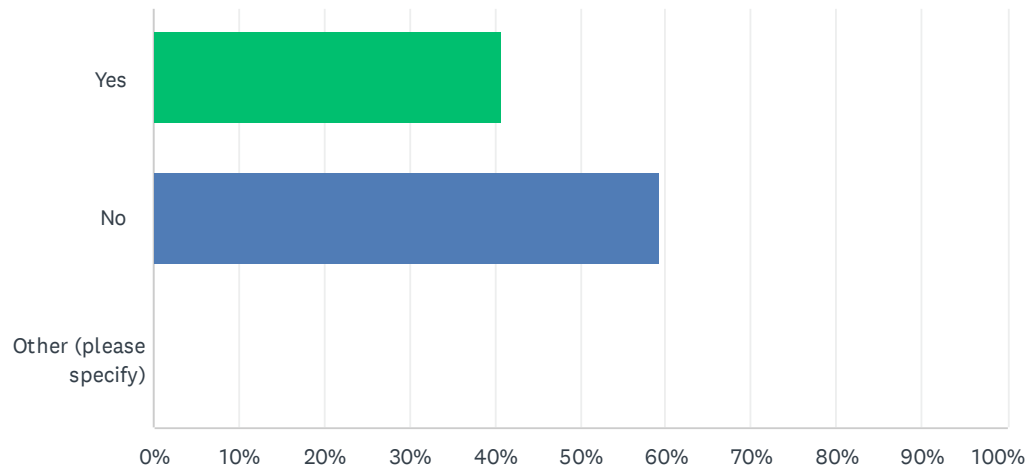
Probably! There are pump out stations for RVs, so I imagine one for boats would be feasible.



Survey for Community Members

## Q6 Have you heard of the Alaska Clean Harbors Program?

Answered: 98 Skipped: 1



ANSWER CHOICES	RESPONSES	
Yes	40.82%	40
No	59.18%	58
Other (please specify)	0.00%	0
TOTAL		98

## Q7 Please provide us with any additional comments or suggestions you have about boating and sewage management in Alaska.

Answered: 62 Skipped: 37

None

I think it's vital that there is sewage management at all levels from recreational boaters to commercial fishing vessels to visiting cruise ships and foreign vessels. Also how about pet feces in our harbor and impact of all sewage sources on local wildlife/marine mammals and birds? Unsure what educational materials are available for general public or standards/protocols for commercial vessels. Also if there is sewage management in our harbor, how well prepared is the system in the event of natural disaster such as earthquake/tsunami. Lots to think about!

Need to do something for campers. They camp and leave garbage and human waste all over

I don't know much about what boat users are doing or how they are managing sewage.

More concerned about dip netters dropping loads and diapers on the Beach

Porta potties or permanent public restrooms at areas like Ninilchik, Anchor Point and Deep Creek would be highly beneficial

This is an issue I was not previously aware of. Thank you for the informational survey.

None

More trash cans, annual beach/harbor clean up (fishing lines)

Subsidies could be offered to install decomposing toilets Boater education could target toxic waste products

Environmentally friendly cleaning products could be sold at harbor masters office

I am just not very educated on this topic

enforcement is a major issue throughout AK--too few law enforcement for such a huge area

Additional education for the boat owners/operators that use the harbor would also be valuable.

Many probably do not realize the magnitude of sewage/black water that is being dumped into the harbor or dumped off shore and carried into the harbor by the tides.

I'm an infrequent boat user, so I'm not up to date on what our harbor offers.

I would need more education on the matter

I'm a very occasional harbor user. Do not have much contact with its workings.

Not very educated

The Kenai river and Soldotna creek are exposed to corporate and highway salt brine in winter and antifreeze and petroleum products year round, plus copper from our tires.

Not knowledgeable enough to comment further

The more awareness the better!

These measures are especially important to protect species like beluga

Thanks for bringing your attention to this issue

Glad to hear about it.

thanks for doing this work!

Everyone shits in the ocean- but doesn't become an issue unless concentrated in the harbor.

Everyone needs to be aware of problems and do their part to relieve them

Thank you

Better enforcement, maybe use college students in the summers to patrol

I appreciate your presence in the community! We have a fairly popular harbor and I would love to see more posted information for boaters regarding best practices. Tourism is huge here, and if the boat "captain" isn't willing to practice environmentally-responsible boating, perhaps plaquards or signage might help raise awareness of those present that might only be along for the ride. If enough parties are aware of the environmental expectations, perhaps more accountability can be cultivated on a person-to-person basis. Thank you again for all your hard work!

Appreciate that you care about protecting our vital sensitive resources. Keep up the good work and protect all water ways and fish.

A hazardous waste management and emergency spill response program would be wonderful for our community.

Need studies done

Good luck! Thx for tackling this!

Na

N/A

?

Na

None

Nothing at this time

Thank you for taking interest in this issue!

None at this time

Personnel paid to watch for spills and to help prevent and clean up

It's past time to be cleaning up the harbors and coastline!

Na

Education is the first step, shove it in their faces

Port-o-potty's are 50 bucks a month.

Uscg inspection for boats.

No

I don't the number or location of all pump outs in the harbor area. It would make sense to have something shore-based by the launch ramps for the smaller vessels. Seward also has a successful hull washdown station across the bay in the commercial shipyard. Harbormaster has applied for grant funding to install another in SSBH as well. I am an invasive species monitor in Seward and the hull cleaning stations are supported by AKISP, Alaska Invasive Species Partnership.

Na

More resources for tribes to manage overall sewage disposal service

It's not just the harbor. Nushagak Bay has huge oil and fuel spills every year. 4000 fishermen on drift boats pooping every summer where we go to get our food. Tenders probably have poop tanks or something. Setnetters use their cabins and outhouses. Igushik needs a landfill, or at least the trash sites cleaned up. GIANT mess!

I would love to see education for fishers to know about pollutants.

The more education we can get out there, the better our people will help sustain our water ways and land.

There needs to be a public service announcement about boating and sewage management Education of blackwater and how it can harm our health and waters.

"out of sight, out of mind." I don't think people even think about it, just like they don't think about where sewage goes when they flush their toilets, or where the waste water goes when they use a dishwasher or dump things down the sink.

Na

How do you incentivize doing the right, and more expensive thing when the free things has an almost zero chance of getting caught and no apparent impact to the ocean?

As the swamp that feeds the boat harbor it is prolly polluted too.

Education for the users in the harbor is important. Many users have developed their practices over many, many years and may not be aware of any impacts caused.

Well I don't know how these docks get away with it in Cook Inlet aka kasilof and kenai rivers.

When it rains the whole yard looks like oil spill and it's all flowing to rivers. Idk how they don't get fined or half to clean it up. But there's a lot of things wrong with Cook Inlet I just think no one cares.

# Appendix 3

## Q1 Which boat harbor and in which town do you visit or moor in most frequently?

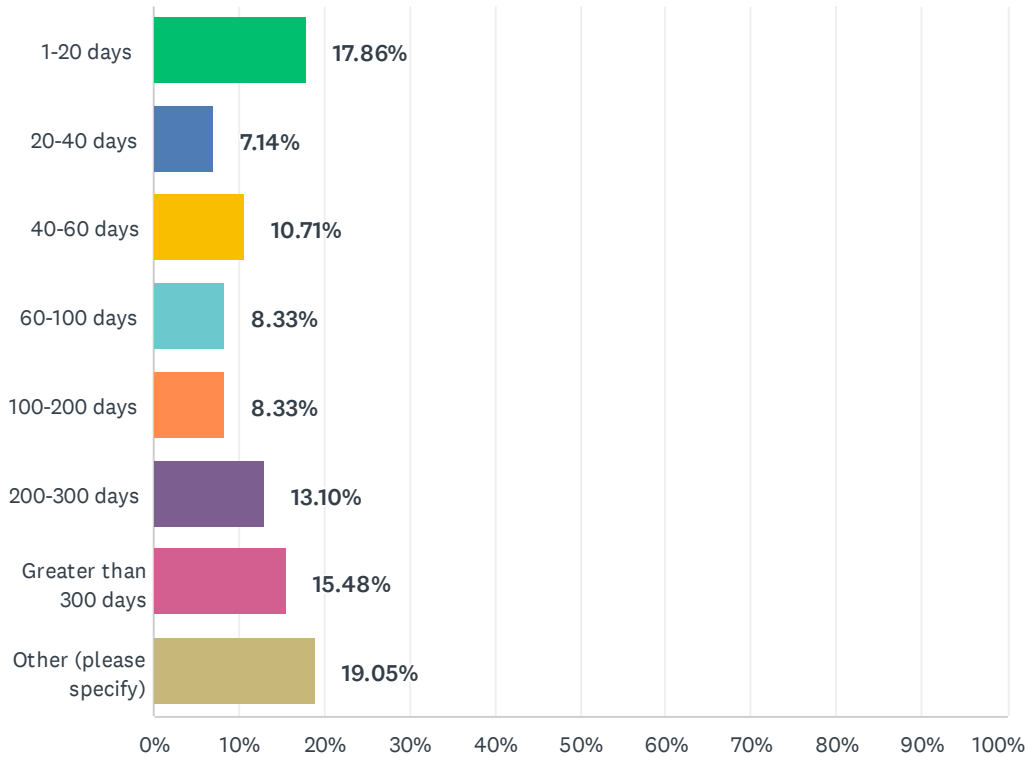
Answered: 86 Skipped: 0

Crescent	Dillingham
Sitka	Homer
Ninilchik	Homer
Ninilchik	Seward
Homer	Heritage Harbor Wrangell AK
Cordova	
Ninilchik	Seward
Homer	
Homer	
Homer	Petersburg
Homer	Aleknagik
Homer	Ship Creek Small boat launch
Ninilchik	Craig
Ninilchik	Nome
Homer	Eliason Harbor in Sitka, Ak
Egegik	Chignik Bay
Ninilchik	Wrangell
Statter and Harris harbors in Juneau	Petersburg
Ninilchik	Eliason harbor in sitka
Ninilchik	Petersburg, AK South Harbor
Kenai	kodiak
Dillingham	Dillingham
Dillingham	Dillingham
Ninilchik	Aleknagik Boat launch
Ninilchik	St Herman Harbor, Kodiak
Ninilchik	Homer, AK
Homer	ninilchik
Homer	Sitka Harbors
Kenai	Sitka
Homer	Crescent Harbor, Sitka
Ninilchik	Petersburg
Klawock, AK	Seward
Homer and Ninilchik	Cordova
Ninilchik	
Eliason and Thompson in Sitka	Statter Harbor, Juneau
Juneau Auke Bay	Aurora Harbor - Juneau, Alaska
Homer	dlg
Valdez	Dillingham boat harbor
Valdez	Dillingham
South Naknek	Dillingham
Dillingham	Aurora in Juneau
Dillingham	Petersburg
Cordova	Dillingham
Naknek	King Salmon
Kodiak	
Dillingham AK	

## Survey for Boat Users

### Q2 How many days per year is your boat moored in a harbor?

Answered: 84 Skipped: 2



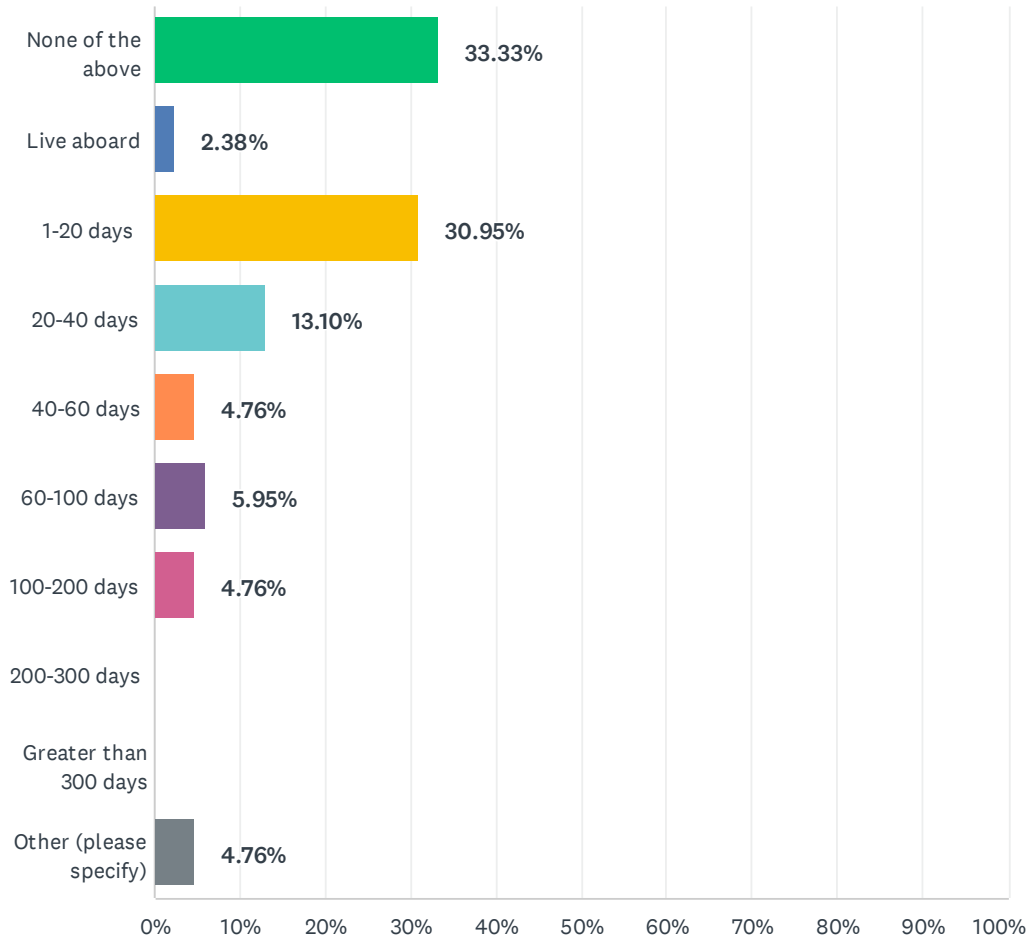
ANSWER CHOICES	RESPONSES	
1-20 days	17.86%	15
20-40 days	7.14%	6
40-60 days	10.71%	9
60-100 days	8.33%	7
100-200 days	8.33%	7
200-300 days	13.10%	11
Greater than 300 days	15.48%	13
Other (please specify)	19.05%	16
TOTAL		84



## Survey for Boat Users

### Q3 How many days is your boat occupied when it is moored in a harbor?

Answered: 84 Skipped: 2

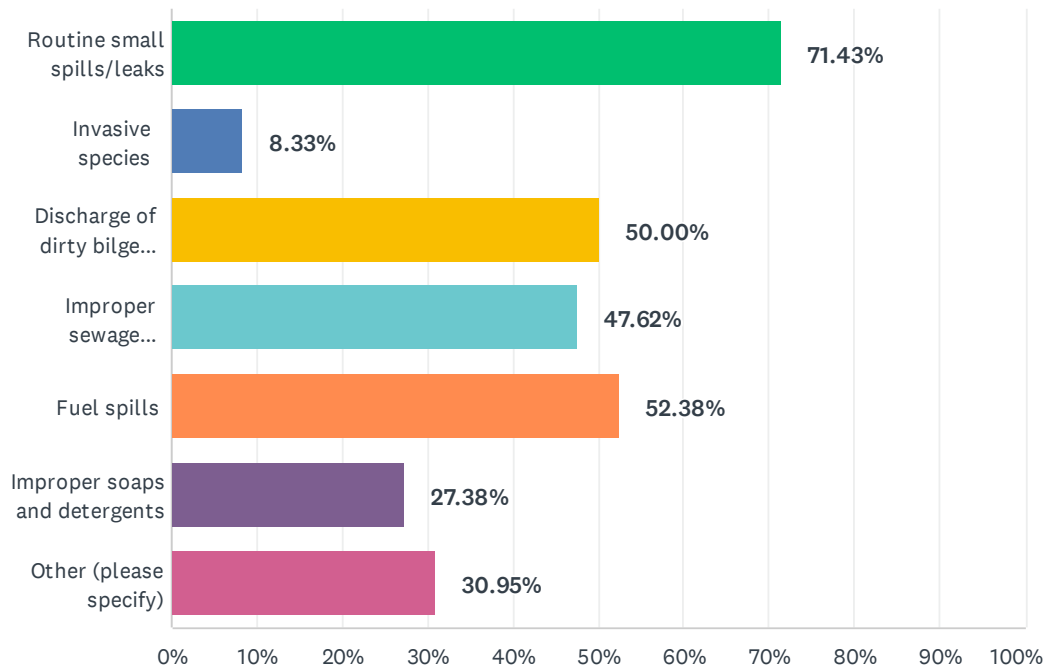


ANSWER CHOICES	RESPONSES	
None of the above	33.33%	28
Live aboard	2.38%	2
1-20 days	30.95%	26
20-40 days	13.10%	11
40-60 days	4.76%	4
60-100 days	5.95%	5
100-200 days	4.76%	4
200-300 days	0.00%	0
Greater than 300 days	0.00%	0
Other (please specify)	4.76%	4
TOTAL		84

## Survey for Boat Users

### Q4 In your opinion, what are the biggest pollution concerns in your harbor? Check as many as apply

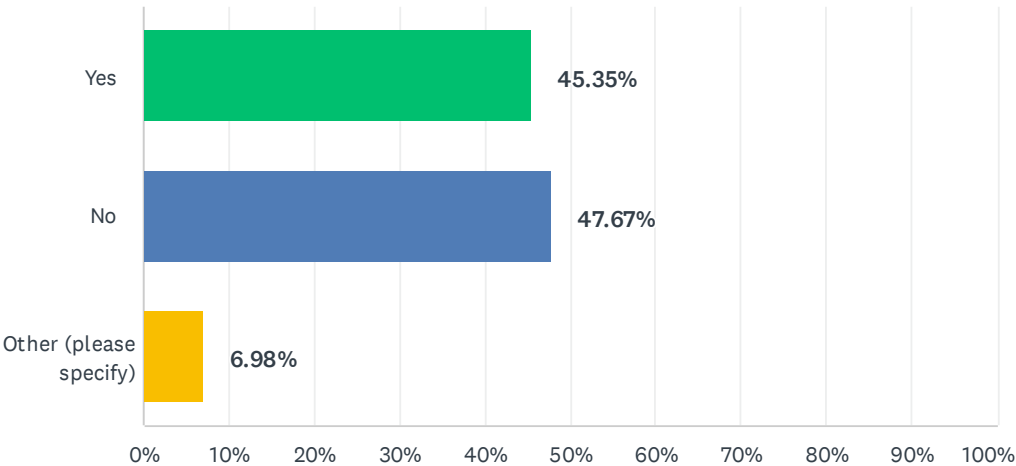
Answered: 84 Skipped: 2



ANSWER CHOICES	RESPONSES	
Routine small spills/leaks	71.43%	60
Invasive species	8.33%	7
Discharge of dirty bilge water	50.00%	42
Improper sewage (blackwater) disposal	47.62%	40
Fuel spills	52.38%	44
Improper soaps and detergents	27.38%	23
Other (please specify)	30.95%	26
Total Respondents: 84		

Q5 Do you consider human waste (blackwater) to be an issue in the harbor?

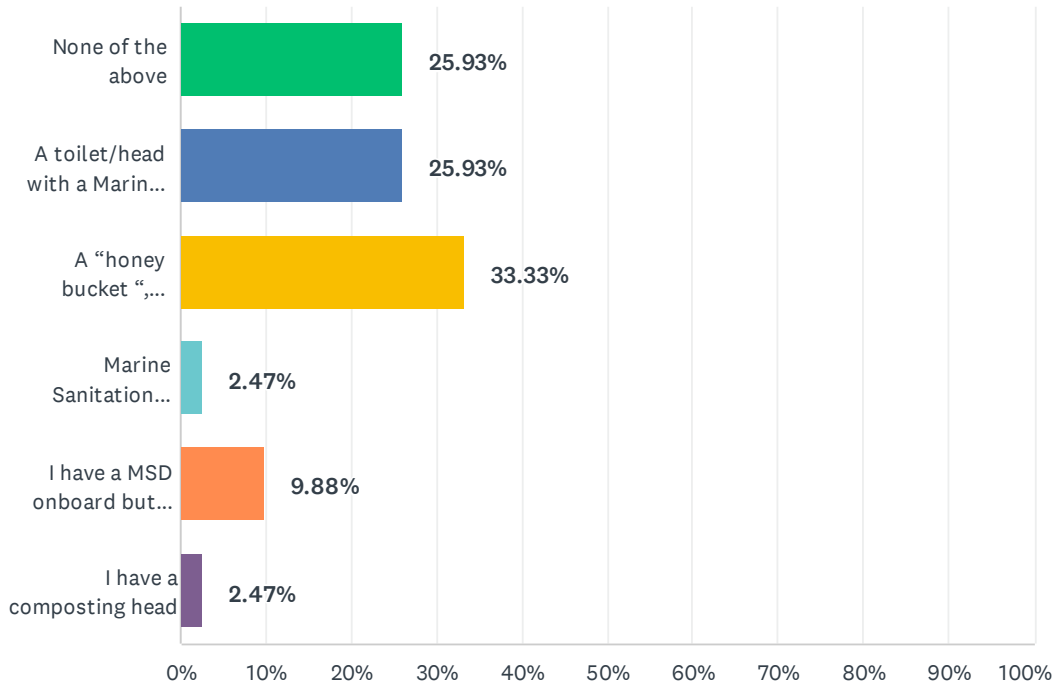
Answered: 86 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	45.35%	39
No	47.67%	41
Other (please specify)	6.98%	6
TOTAL		86

## Q6 Which sewage management system do you currently use on your boat?

Answered: 81 Skipped: 5

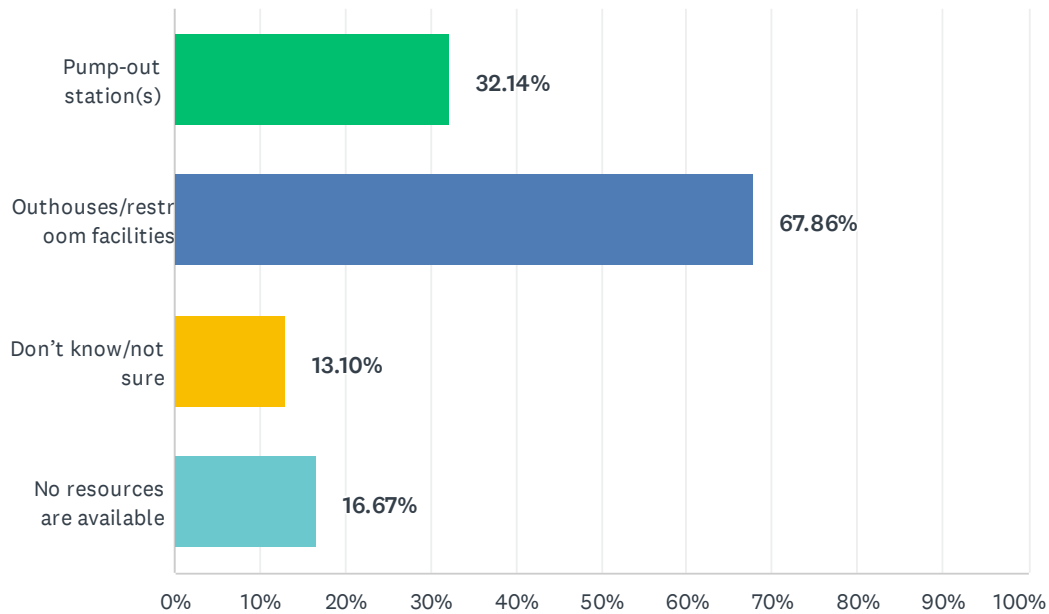


ANSWER CHOICES	RESPONSES	
None of the above	25.93%	21
A toilet/head with a Marine Sanitation Device (MSD)	25.93%	21
A "honey bucket ", 5-gallon bucket, camp toilet	33.33%	27
Marine Sanitation Device (MSD)	2.47%	2
I have a MSD onboard but never use it	9.88%	8
I have a composting head	2.47%	2
TOTAL		81

## Survey for Boat Users

### Q7 Which resources are available to properly dispose of human waste in your harbor?

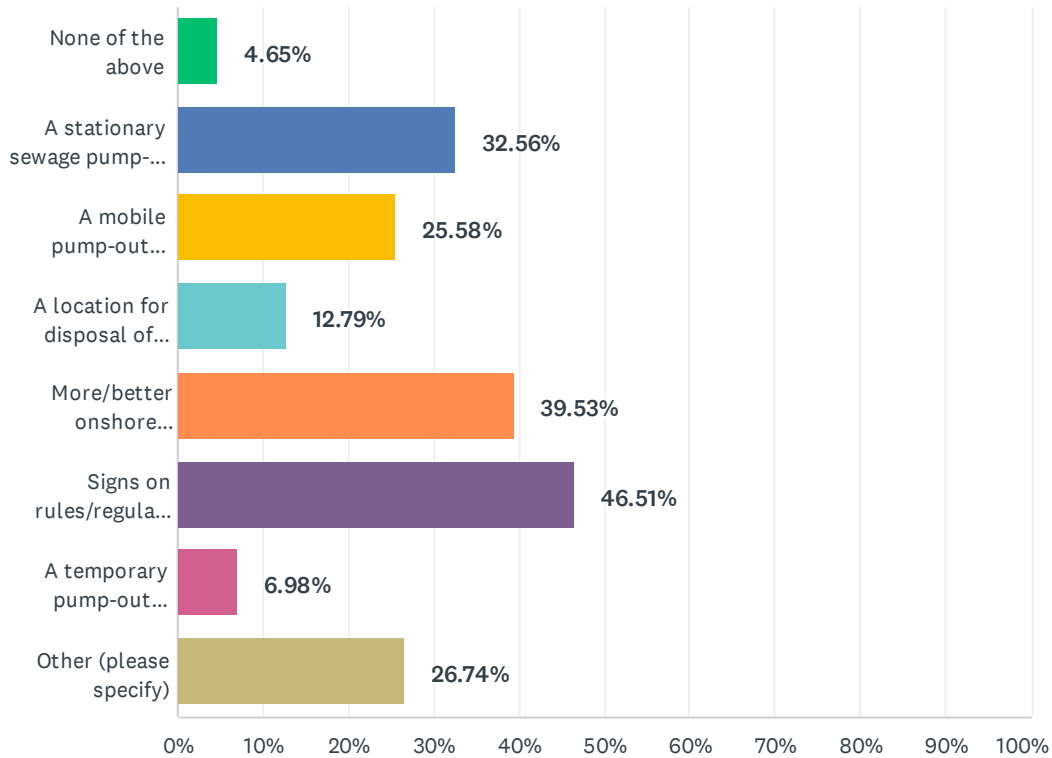
Answered: 84 Skipped: 2



ANSWER CHOICES	RESPONSES	
Pump-out station(s)	32.14%	27
Outhouses/restroom facilities	67.86%	57
Don't know/not sure	13.10%	11
No resources are available	16.67%	14
Total Respondents: 84		

## Q8 What facilities do you think would assist in proper/better sewage disposal in your harbor? Please check all that apply

Answered: 86 Skipped: 0



ANSWER CHOICES	RESPONSES	
None of the above	4.65%	4
A stationary sewage pump-out station	32.56%	28
A mobile pump-out station	25.58%	22
A location for disposal of camp toilets (5-gallon buckets)	12.79%	11
More/better onshore restroom facilities	39.53%	34
Signs on rules/regulations on sewage disposal	46.51%	40
A temporary pump-out station	6.98%	6
Other (please specify)	26.74%	23
Total Respondents: 86		

## Q9 Would a permanent or temporary pump-out station benefit your harbor? Why or why not?

Answered: 78 Skipped: 8

I'm not sure. Probably not - there aren't many people with live-aboards at my harbor.

Yes

Yes better sanitation options is always better

Can't relate to question, maybe

Maybe, without a real change in the user's mindset I don't think most would use it

Need a harbormaster at least seasonal, Probably most boats don't have holding tank

Temporary, the restrooms are pretty good. People sometimes make a mess but they get cleaned up, the restrooms are good

Absolutely

No but more signs explaining where they are would

Not a permanent, lots of boats are only in the summer, temporary would help, if one exists I don't know about it

Yes, more options would help

No

Yes. It would allow for disposal of black water without running out to legal distance to dispose of waste.

No

No

Statter has one. Harris does not.

No, people wouldn't use it. Very different community than say Homer

Nope, people wouldn't use it

not sure

A pump out station would help fisherman; get cleaned up safer, cleaner, quicker and more efficiently.

Maybe. Fisherman may not have time to use it.

No

No

No

Yea

Unsure

It would encourage boats to upgrade their sanitation devices

Less discharge

No. Have not used one, would not use if it was available.

Yes it would. Sewage would be handled properly.

Yes.

yes

Yes, Make it easy and user friendly so boaters would use it.

Yes. More than we currently have with easier access. But if there is no enforcement, it would not be worth it.



No

Yes, hundreds of boats moored out in the river

Summer only

It would be an Option that is not presently available

Maybe if it was convenient

Temporary, Iced in from October to March

Not sure probably not

Yes

Yes,

Already have one

Onshore option

No

A permanent pump-out station is already in place, but requires scheduling an appointment with harbor staff to use.

Happy with what we have.

Yes, currently to my knowledge there is no such station for pump out.

Not to sure.

Yes I think it would be beneficial to have.

No. Can't carry a boat toilet up dock

Yes. We do not have this service.

There already is a permanent pump-out station. I don't often see vessels using it though so I don't believe another one would be necessary.

Yes, currently do not have one.

there are pumpouts , nobody uses them

Very few live aboards. Strong currents and tidal changes flush the harbor 4 times a day. Strong currents would make it difficult to dock and pump out and would cause problems as boats would only want to use it at slack water. Fuel dock has same problems which can cause a traffic jam at slack.

No

I don't have enough knowledge to answer this

Yes. Boats won't even install holding tanks because they can't be emptied.

Temporary / seasonal

No, I have an open skiff  
Yes. It would get used more.  
No. Harbor not used enough for live aboards  
No

Yes. The more pump out stations that are able to be built, with adequate signage to ensure proper use, the cleaner our harbors will be!

We have one!

Currently, as far as I know, the MSD's available for fishing vessels no longer meet CG Standards. The Washington based facilities that sold them, no longer do.  
we have 3  
No

We have pump out facilities in all of our harbors.

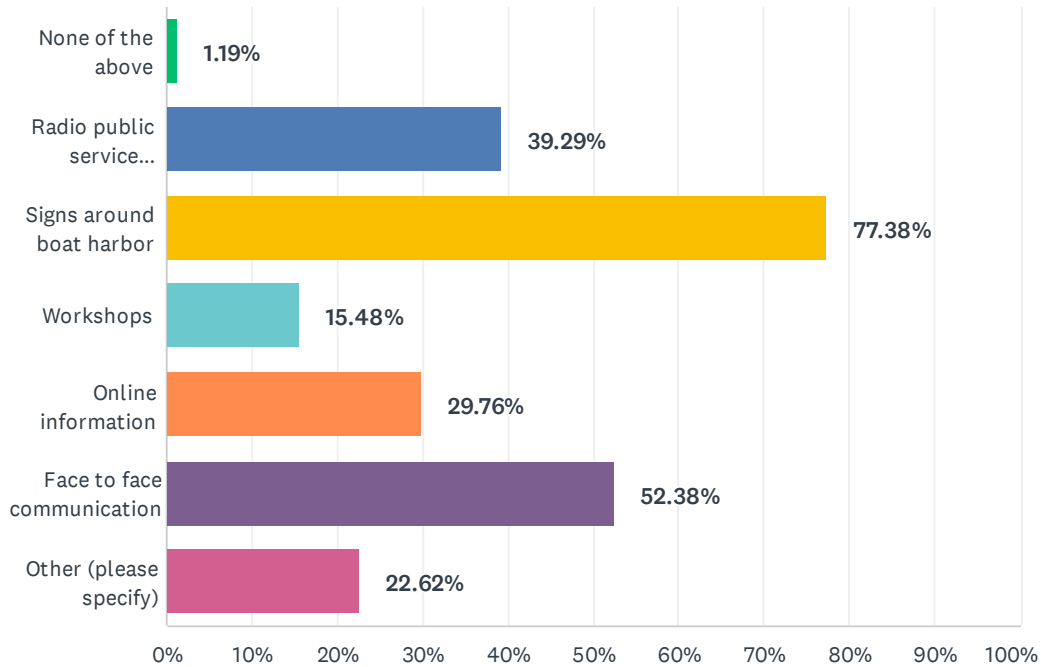
We already have one. No residents use it.

I dont think so  
No, there is no way to move around unless all the boats move for an opener  
Multiple stations are needed.  
I imagine so. Any extra barriers (like distance to another harbor) will decrease proper disposal  
Probably. Education and tickets/fines for non-use may be necessary  
Yes. There is currently none

## Survey for Boat Users

### Q10 What are the best ways to communicate with boaters?

Answered: 84 Skipped: 2

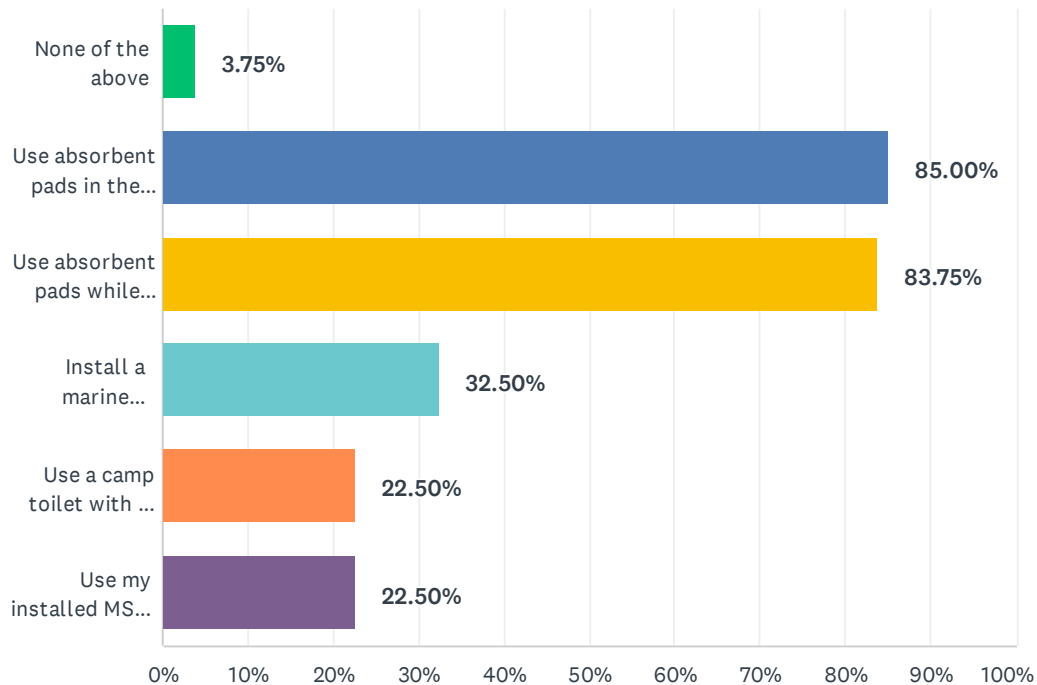


ANSWER CHOICES	RESPONSES	
None of the above	1.19%	1
Radio public service announcement	39.29%	33
Signs around boat harbor	77.38%	65
Workshops	15.48%	13
Online information	29.76%	25
Face to face communication	52.38%	44
Other (please specify)	22.62%	19
Total Respondents: 84		

## Survey for Boat Users

### Q11 Which of the following activities would you be willing to do to protect Alaska's waterways while boating.

Answered: 80 Skipped: 6



ANSWER CHOICES	RESPONSES	
None of the above	3.75%	3
Use absorbent pads in the bilge	85.00%	68
Use absorbent pads while fueling	83.75%	67
Install a marine sanitation device (msd) or black water storage tank to only dump waste at approved locations	32.50%	26
Use a camp toilet with a bio bag liner or something similar	22.50%	18
Use my installed MSD if a pump out station was available	22.50%	18
Total Respondents: 80		

## Q12 What else, if anything, is important for having clean harbors?

Answered: 60   Skipped: 26

Preventing people from dumping fish carcasses and fish waste overboard in the harbors.  
Inform people about the dangers and hazards of purposeful boat sinking of old boats.  
No dumping, dumpsters at harbor, they throw their garbage away somewhere so either in a dumpster on port or out in the bay  
Stopped going to Ninilchik harbor because of overcrowding and diesel spilling, expanding harbor would be best cause now there's no room

dock carts, oil/ antifreeze dump stations, Good harbor maintenance by staff  
Every harbor should have oil collector with booms setup for outgoing tides or preplanned schedule that can collect or contain oil sheens

Fuel dock workers are very attentive, the harbormaster walk the docks and check it, harbormaster notices issues quickly and does a great job solving them  
Not enough conversations about this, culture needs to change, make options available and correct use is more palatable,  
Restroom are very well maintained, talking to one another about good practices , emphasizing responsibility of captain/owner

Keep "em clean

Homer is pretty clean, lots of dumpsters and outhouses, when spills occur people are quick to clean it  
People will throw garbage bags wherever they can when there is no dumpster, locals took their garbage home or to homer and left dumpster to outsiders, still overflowing, not dumped routinely or at all, became a huge mess

Dillingham Needs constant dredging Naknek needs space in bad winds. Egegik needs the city Dock made more accessible and available to all, with enforcement from police officers if needed immediately  
Port o potty is necessary, pollution definitely an issue in June, people from lower 48 live aboard, not many people pump bilge in harbor, permanent toilets not maintained or open, need place for used oil, need dumpster,

Trash, especially plastics are a big issue.  
Extremely difficult with shared space ownership, hard to make anything positive happen ever  
Education aspect, signs reminding people to use dumpsters and outhouses

efficient motors, electric motors?  
Maybe sending 3 text reminders. A pre-season, mid-season and post season.

Everyone working together to make harbors a better place.

In springtime go down to the harbor and talk to folks. Have ucida give out info  
Na

In the day one could fish IN the harbor.  
Limit the number of boats in Ninilchik harbor. Boats registered to Ninilchik have priority.

Na

Monitoring.

Too many oil spills and doesn't appear to be any enforcement nor identifying source of oil slick. They have these robots that go around cleaning the harbor down south- we need these in Juneau

Proper enforcement

Stop the commercial fishing fleet from not only pumping bilge water into the harbor, but fish holding tank water as well.

Our harbor has only one way for water to enter. It is a cesspool after only a few weeks into the boating season. If someone dug an outlet so that water could out in two directions it would greatly assist in flushing the pool.

Pride in community

Community buyin

Controlling the seasonal aspect, the fishing season brings the problem, BBRSDA and other fishing organizations should be involved in a solutions.

Fishery protection from pollutants

Informed captains

Boat yard

Probably a lot of odds and ends are on the bottom of the harbor. At least 3 of my cellphones  
Fuel dock has been paying better attention about spills. Education could be better, more attention paid

Create strategic, small opening(s) in solid breakwaters in harbors with flow-through issues.

Dog poop on the docks

no littering, making sure people aren't dumping things in water.

This harbor is high-use and there are endangered Cook Inlet belugas that are impacted by all the anthropogenic use including noise, refuse, spills, leaking boats, and on shore there is a waste issue - a ton of cigarette butts, trash, and vandalism. I think more education needs to be done and the impact humans have on our wildlife is not emphasized enough at this specific harbor.

Have a harbor department that cares about constant oil in the harbor and do something about it

Awareness, making sure people know what is, and is not acceptable  
compliance, Wrangell has pumpouts, enforce the clean water act

Limiting fuel and oil spills. Trash not being thrown in harbor.

More dock carts so waste can more easily be moved from vessels to proper disposal. Very hard to find a cart

Raising awareness about the importance of clean waters

Security Cameras

Ninilchik harbor is not too bad.

Greater awareness/pressure on boat owners to avoid oil/fuel spills

Funding to support cleaner boats and cleaner sewage would help improve things. If people don't have the shoulder the costs of improvements alone, then we will have a greater chance of success for lowering fuel, oil, and human waste spills in harbors.

Make sure harbors have a good tidal flow through the harbor. Harbor design.

A harbormaster that cares and doesn't leave it to be governed Wild West style.

The lower 48 boating population is very accustomed to proper black water disposal. Alaska is lagging in this department. We need to do more education as well as having more pump out facilities.

Enforcing regulations, especially with comfish and liveaboards. They routinely violate the law. Have you ever seen a comfish boat at a pump out station? Ever?

Idk

A mix of users: daily, seasonal, and livaboard, keeps the harbor active and occupied. The more eyes who can catch mishaps and worse, the better.

Common sense. Also here is no benefit of good practices in the harbor if nearby municipal sewage facilities are only settling solids, if pumping them is not considering tidal flows, if thousands of visiting yachts and fishing boats do not comply during boating activities, if Local entities or DEC do not monitor conditions or enforce requirements.