Prince William Sound Regional Citizens' Advisory Council

Board of Directors Meeting September 16-17, 2021

Use Zoom for meeting audio and presentations https://pwsrcac.zoom.us/j/87189335167
Teleconference: 1-888-788-0099 Meeting ID: 871 8933 5167

Final Agenda

Thursday, September 16, 2021

8:30	A	Call to Order, Roll Call & Introduction of Zoom • Welcome – President Robert Archibald • Introductions/Director reports on activities since the last meeting
8:45	B	1-0 Approve Agenda
8:50	C	1-1 Approve Minutes of May 6-7, 2021, Regular Board Meeting 1-2 Approve Minutes of May 21, 2021, Special Board Meeting
8:55	D	Public Comment Period, limit five minutes per person
9:05	E	Internal Opening Comments ***(Please limit to general information not contained in Agenda)*** • Technical Committee Updates (POVTS, OSPR, TOEM, SAC, & IEC) • PWSRCAC Board Sub Committee Updates (Finance, Legislative, & Governance)
9:45		BREAK
9:55	F	External Opening Comments ***(Please limit to general information not contained in Agenda)*** • PWSRCAC Ex-Officio Members • Trans Alaska Pipeline System Shippers, Owner Companies, and Pilots
11:00		BREAK
11:10	G	Alyeska / SERVS Activity Report
12:00		BREAK
1:00	H	Consent Agenda 3-2 Contract Approval: Crude Oil Tank 7 & BWT Tank 94 Maintenance Review 3-3 Contract Approval: State Legislative Monitor
1:05	I	Update on C-Plan Scoping Process and Other SPAR Topics – ADEC Commissioner Jason Brune
2:00	J	4-1 FY2021 Audit Acceptance – Gregory Dixon with Joy Merriner of BDO
2:25		BREAK
2:35	K	4-2 Report Acceptance: Field Trials of Messenger Line Throwing Devices – Joe Lally with Peter Soles of Glosten
3:15	L	4-3 Presentation on Alaska Oil Spill Lesson Bank – Betsi Oliver
3:40		BREAK
3:50	M	4-4 Report Acceptance: Marine Winter Bird Survey – Danielle Verna with Anne Schaefer & Dr. Mary Anne Bishop of PWSSC
4:30	N	3-1 Contract Approval: Oxygenated Hydrocarbons – Danielle Verna and Austin Love
5:00		RECESS

Shaded Items Require Board Action

Friday, September 17, 2021

9:00	A	Call to Order & Roll Call
9:05	B	Overview of Onboard Ballast Water Treatment System – Bob Hayes of ConocoPhillips, Polar Tankers
9:40	C	4-5 Report Acceptance: A Summary of Dispersants Research – Betsi Oliver with Dr. Merv Fingas of Spill Science
10:25		*BREAK* *Continued on next page*

10:25		*BREAK* *Continued from previous page*
10:35	D	4-6 Report Acceptance: Port Valdez Weather Buoy Data Analysis – Roy Robertson with Rob Campbell
11:20	E	4-7 Report Acceptance: History of Tanker Contingency Planning – Linda Swiss with Sierra Fletcher of Nuka Research & Planning Group, LLC
12:00		*BREAK*
1:00	F	4-8 PWSRCAC Long Range Planning – Joe Lally
1:35	G	4-9 Proposed Amendment to PWSRCAC Bylaws – Walt Wrede
1:50	H	4-10 Approval of FY2022 Budget Modifications – Gregory Dixon
2:00		*BREAK*
2:10	I	4-11 Council January 2022 Events – Donna Schantz
2:30	J	President's Report to the Board
2:40	K	Executive Director's Report to the Board
2:50	L	Financial Manager's Report to the Board
3:00	M	Consideration of Consent Agenda Items
3:15	N	Closing Comments
3:30		ADJOURN

Shaded Items Require Board Action

Additional items provided for information only:

- ~~PWSRCAC Name Roster *(Board Members only)*~~
- ~~PWSRCAC Expense Reimbursement Form~~
- 2-1 List of Commonly Used Acronyms
- 2-2 Budget Status Report
- 2-3 Director Attendance Record
- 2-4 Committee Member Attendance Record
- 2-5 List of Board Committee Members
- 2-6 PWSRCAC One-Page Strategic Plan
- 2-7 List of Board and Executive Committee Actions
- 2-8 PWSRCAC Organizational Chart
- 5-1 September 2021 Program/Project Status Report

PRINCE WILLIAM SOUND
REGIONAL CITIZENS' ADVISORY COUNCIL
MINUTES
ANNUAL BOARD MEETING
May 6 and 7, 2021
(Virtual)

Members Present

Robert Archibald	City of Homer
Amanda Bauer	City of Valdez
Robert Beedle	City of Cordova
Mike Bender	City of Whittier
Nick Crump	Prince William Sound Aquaculture Corporation
Ben Cutrell	Chugach Alaska Corporation
Patrick Domitrovich	City of Seward
Wayne Donaldson	City of Kodiak
Patience Andersen Faulkner	Cordova District Fishermen United
Mako Haggerty	Kenai Peninsula Borough
Luke Hasenbank	Alaska State Chamber of Commerce
Elijah Jackson	Kodiak Village Mayors Association
Melvin Malchoff	Port Graham Corporation
Dorothy Moore	City of Valdez
Bob Shavelson	Oil Spill Region Environmental Coalition
Rebecca Skinner	Kodiak Island Borough
Angela Totemoff	Tatitlek Corporation & Tatitlek Village IRA Council
Michael Vigil	Chenega Corporation & Chenega IRA Council
Kirk Zinck	City of Seldovia

Members Absent
(None)

Ex-Officio Members Present

Allison Natcher	Alaska Dept. of Environmental Conservation
LCDR Sara Ellis-Sanborn	U.S. Coast Guard MSU Valdez
Lee McKinley	Alaska Dept. of Fish & Game
Paul Degner	Bureau of Land Management
Heather Lescanec	Alaska Dept. of Natural Resources
Kevin Reeve	Alaska Div. of Homeland Security & Emergency Management

Committee Members Present

Steve Lewis	POVTS Committee
Jim Herbert	OSPR Committee
Davin Holen	SA Committee
George Skladal	TOEM Committee
Cathy Hart	IE Committee
Savannah Lewis	IE Committee

Staff Members Present

Donna Schantz	Executive Director

Walt Wrede	Director of Administration
Joe Lally	Director of Programs
Brooke Taylor	Director of Communications
Gregory Dixon	Financial Manager
Jennifer Fleming	Executive Assistant
Betsi Oliver	Outreach Coordinator
Linda Swiss	Project Manager
Alan Sorum	Project Manager
Austin Love	Project Manager
Amanda Johnson	Project Manager
Jeremy Robida	Project Manager
Danielle Verna	Project Manager
Nelli Vanderburg	Project Manager Assistant
Hans Odegard	Project Manager Assistant
Natalie Novik	Administrative Assistant
Leigh Lubin	Administrative Assistant

Others Present

Andres Morales	Alyeska Pipeline Service Company
Michelle Egan	Alyeska Pipeline Service Company
Mike Day	Alyeska Pipeline Service Company
Kate Dugan	Alyeska Pipeline Service Company
Jennifer Bleicher	Alyeska Pipeline Service Company
Diana Bouchard	Alyeska Pipeline Service Company
Angelina Fuschetto	Crowley Alaska Tankers
Paul Manzi	Crowley Alaska Tankers
Monty Morgan	Polar Tankers
Chris Merten	Alaska Tanker Company
John Merrigan	Alaska Tanker Company
Rob Kinnear	Hilcorp Alaska, LLC/Harvest Midstream
Lori Nelson	Hilcorp
Capt. Joseph Martin	Southwest Alaska Pilots Association (SWAPA)
Anna Carey	Alaska Dept. of Environmental Conservation
Commissioner Jason Brune	Alaska Dept. of Environmental Conservation
Graham Wood	Alaska Dept. of Environmental Conservation
Tiffany Larson	Alaska Dept. of Environmental Conservation
Melissa Woodgate	Alaska Dept. of Environmental Conservation
Emily Pokon	Alaska Dept. of Environmental Conservation
Becky Spiegel	Alaska Dept. of Environmental Conservation
Sarah Moore	Alaska Dept. of Environmental Conservation
Zuzana Culakorg	Alaska Dept. of Environmental Conservation
Seth Robinson	Alaska Dept. of Environmental Conservation
Diane Munson	Alaska Dept. of Environmental Conservation
Stephanie Lovell	Alaska Dept. of Environmental Conservation
Gabriel Hagen	U.S. Coast Guard MSU Valdez
Roy Totemoff	Tatitlek Corporation
LT Hadley Owen	NOAA Coast Survey
Joe Levesque	Levesque Law Group, legal counsel
Sierra Fletcher	Nuka Research and Planning Group, LLC

Kate Troll	PWSRCAC legislative monitor, Alaska
Roy Jones	PWSRCAC legislative monitor, Washington, D.C.
Patrick Carney	Atlantic Technical Management, Inc.
Keith Boswell	National Pipeline Services
Breck Tostevin	Nielson Koch, PLLC
Gabrielle St. Pierre	Pipeline and Hazardous Materials Safety Administration
Robert Guisinger	Pipeline and Hazardous Materials Safety Administration
Bill Mott	Taku Engineering
Steve (Vinnie) Catalano	Cook Inlet Regional Citizens Advisory Council
Kayleigh Paulin	Alaska SeaLife Center
Peter Soles	Glosten
Nathan Crain	Glosten
Tom Rueter	Alaska Maritime Agency
Rep. Andy Josephson	Alaska State House
Elwood Brehmer	Alaska Journal of Commerce
Margaret Bauman	Cordova Times
Lizbeth Bowen	U.S. Geological Survey
William Driskell	Independent Consultant
James Payne	Payne Environmental Consultants, Inc.

[Recorder's Note: Due to the COVID-19 pandemic, this meeting of the Prince William Sound Regional Citizens' Advisory Council was conducted in its entirety by videoconference, with participants primarily located in the EVOS region.]

Thursday, May 6, 2021

CALL TO ORDER, WELCOME, INTRODUCTIONS/DIRECTOR REPORTS

The annual meeting of the Board of Directors of the Prince William Sound Regional Citizens' Advisory Council was held May 6 and 7, 2021, via Zoom video conference. President Robert Archibald called the meeting to order at 8:30 a.m. on May 6, 2021, and welcomed everyone to the meeting.

A roll call was taken. The following 15 Directors were present at the time of the roll call, representing a quorum for the conduct of business: Archibald, Bauer, Beedle, Bender, Cutrell, Donaldson, Haggerty, Hasenbank, Malchoff, Moore, Shavelson, Skinner, R. Totemoff, Vigil, and Zinck. (Patrick Domitrovich joined the meeting later at 10:15 a.m. and Patience Andersen Faulkner at 1:03 p.m.)

Introductions and Directors' reports followed.

1-0 AGENDA

President Archibald presented the agenda (green-colored sheet) for approval. He asked the Board to allow Capt. Joe Martin of the Southwest Alaska Pilots Association to go first under Item G – External Opening Comments of Shippers, Owner Companies, and Pilots.

Amanda Bauer **moved to approve the agenda** (green-colored sheet) **with the rearrangement of the Shippers, Owner Companies, and Pilots External Opening Comments to allow Capt. Joe Martin to report first**. Mako Haggerty **seconded.** Hearing no objection, the **agenda was approved** (with the rearrangement of the External Opening Comments as stated).

4-1 PWSRCAC ANNUAL DIRECTOR APPOINTMENTS

As outlined in the briefing sheet (Item 4-1) in the meeting notebook, the Board took up the annual seating of member representatives for those seats expiring at this meeting. President Archibald read the names of those Directors nominated for appointment to the Board.

Dorothy Moore **moved to confirm the appointment** of the selected representatives for each of the member entities listed for two-year terms expiring May 2023, as follows:

City of Homer	Robert Archibald
City of Kodiak	Wayne Donaldson
City of Seldovia	Kirk Zinck
City of Seward	Patrick Domitrovich
City of Valdez	Amanda Bauer
Kenai Peninsula Borough	Mako Haggerty
Kodiak Village Mayors Association	Elijah Jackson
Prince William Sound Aquaculture Corp.	Nick Crump
Tatitlek Corp. and Tatitlek IRA Council	Angela Totemoff

Michael Vigil **seconded** and the **motion passed** without objection.

1-1 MINUTES

Dorothy Moore **moved to approve the minutes** of the Regular Board Meeting of January 28 and 29, 2021. Amanda Bauer **seconded** and the **minutes were approved as presented**.

1-2 MINUTES

Amanda Bauer **moved to approve the minutes of the Special Board Meeting** of April 2, 2021. Michael Vigil **seconded** and the **minutes were approved as presented**.

PUBLIC COMMENTS

(None at this time.)

INTERNAL OPENING COMMENTS – PWSRCAC TECHNICAL COMMITTEE UPDATES

OIL SPILL PREVENTION & RESPONSE COMMITTEE (OSPR)

Chair Jim Herbert thanked staff for all their efforts on behalf of the OSPR Committee. He reported that since the last Board meeting in January the committee had done the following:

- The committee, along with the other technical committees, had been kept informed about ADEC's regulatory reform efforts. The Board would hear more on this at its September meeting.

- The committee accepted the Web-Based Regional Stakeholder Committee Resources as having met the contractual terms laid out in the contract. There would be a presentation on this project later in this meeting's agenda. The committee recommended that the Board similarly accept the project as having met the terms and conditions of the contract.

- Contractor Nuka Research and Planning Group, LLC, updated the committee on the progress of the History of Tanker Contingency Plan Project and had explained the approach and provided a draft report.

- The committee received a presentation on the Pyxis camera technology for use in tracking spilled oil on water using infrared technology. This is a new technology.

- Port Valdez weather buoys have been reporting and logging data since they were positioned in early fall 2019. A report was submitted and reviewed by the project team and the project team met to discuss selecting a peer reviewer.

- Due to COVID-19 pandemic precautions, staff was not able to observe many SERVS exercises in 2020. The committee did accept a few exercise reports.

- The committee was updated on area and regional planning efforts for the Alaska Regional Response Team, and the Prince William Sound, Arctic and Western Alaska, and Inland Alaska area committees.

- The committee has been kept updated on c-plan reviews and amendments, as follows:

    - Prince William Sound Tanker C-Plan
      The Prince William Sound Tanker C-Plan renewal process is expected to start soon.

    - Valdez Marine Terminal (VMT) C-Plan
      Comments were submitted on proposed changes to the aboveground oil storage tank standards. The Board was reminded that Taku Engineering's report on Tank 8 and National Pipeline Services' report on cathodic protection systems would be presented at this Board meeting.

- Outreach Coordinator Betsi Oliver, along with some OSPR members, provided support for a high school academic competition – the National Ocean Science Bowl – which was held virtually this year and is an outreach opportunity for young people interested in science.

- Some OSPR members participated in some of the fishing vessel training with their own vessels. This year participants had to do an online recertification of their HAZWOPER training followed by a two-day on-water training using equipment when possible, although in some cases when weather or other limitations did not permit they had to resort to a radio exercise.

Herbert invited anyone interested, particularly the new Board members, to join the committee.

SCIENTIFIC ADVISORY COMMITTEE (SAC)

Chair Davin Holen updated the Board on the Scientific Advisory Committee's (SAC) activities as follows:

- General Updates: SAC met three times since the January Board meeting. Since that meeting, Jeffrey Brooks, one of the committee's two social scientists, resigned from the committee. The Council hired Dr. Danielle Verna as a new project manager, who took over Austin Love's assigned responsibilities for this committee.

- Virtual Conferences: Committee members Roger Green, Debu Misra, and Wei Cheng registered for the virtual Arctic and Marine Oil Spill Program (AMOP) conference to take

place June 8-10, 2021. In addition, Davin Holen was approved by SAC to attend the virtual International Oil Spill Conference (IOSC) from May 10-14, 2021.

- Long Term Environmental Monitoring Program (LTEMP): The committee accepted Dr. Lizabeth Bowen's report on Mussel Transcriptomics and the 2020 LTEMP report by William Driskell and James Payne. Both reports are on the agenda for Board acceptance at this meeting.

- Technological Disasters Guidebook & Appendices Update Project: This project was accepted by SAC and sent to the Board for acceptance at this meeting. SAC Chair Davin Holen will present the updated Guidebook at the IOSC conference in May and it will also be highlighted to the National Sea Grant office. Additionally, the revision of Appendix F was spun off into a separate project that is being managed by the Council's Outreach Coordinator Betsi Oliver.

- Dispersant Use Policy Project: A cross-committee project team led by Outreach Coordinator Betsi Oliver has been assembled to lead a project to review the current state of research on dispersant use and provide recommendations to the Board regarding the Council's current dispersant use policy, including any potential updates the groups feel are warranted. The goal of the project team is to define the intent and scope of the project, put together an RFP, review draft deliverables from Dr. Merv Fingas, and evaluate dispersant materials that will be provided to the contractor. This project team has met once and will meet again the week following this Board meeting.

- Recovery of a Subsistence Way of Life Project: Outreach on the Recovery of a Subsistence Way of Life Project continues, even though the technical portion of the project was finished in January 2021. On April 28, 2021, staff from the Alaska Department of Fish and Game (ADF&G) - Division of Subsistence presented the results of this project at the Alaska Forum on the Environment. Approximately 40 people attended the virtual presentation and this was at least the third time the results of the project were shared publicly by ADF&G. They were previously shared during a Chugach Regional Resources Commission Board meeting in October 2020 and during PWSRCAC's September 2020 Board meeting.

PORT OPERATIONS AND VESSEL TRAFFIC SYSTEMS COMMITTEE (POVTS)

Chair Steve Lewis introduced the committee members and updated the Board on the efforts of the Port Operations and Vessel Traffic Systems Committee (POVTS) since the last Board meeting, as follows:

- The committee had two regular meetings and multiple project team meetings since the January Board meeting.

- The committee continues to monitor the weather-based projects led by the OSPR Committee and on matters pertaining to the Port Valdez weather buoys.

- Project 8010: Rescue Tug Best Available Technology Review: The committee accepted the final report for this project and a presentation would be made to the Board at this meeting. The committee recommended the Board accept the report.

- Project 8012: Line-Throwing Device Trials: The committee awarded the contract for Line-Throwing Device Trials to Glosten. This project is a follow up to a previous project on

researching BAT for line throwing technology current available and will involve trials for different line-throwing devices to get towlines from a tug to a stricken vessel. The plan is for trials to start in June in Puget Sound, WA. Lewis noted the good cooperation and support between the equipment suppliers. He said he had heard anecdotally that Alyeska may send an observer to the trials and he hoped that would happen.

- Project 8013: AIS/Radar Whitepaper: The committee awarded the contract for the AIS/Radar Whitepaper project to C-Core. A project team was formed that has met with C-Core representatives to discuss the project's scope and objectives. C-Core has already provided the committee with an extensive bibliography and literature review.

Lewis went on to outline the topics of investigation and potential future projects for the POVTS Committee, as follows:

- Maritime English: Potential risks created by faulty bridge-to-shore, bridge-to-bridge, and on-bridge communications on spot chartered, foreign-flagged tankers crewed by individuals for whom English is a second language. The committee is exploring a possible project that would benefit the language barrier situation other than simply documenting it.

- Tanker and Tug De-carbonization: The implications of recent actions taken by the International Maritime Organization (IMO), numerous maritime industry groups, and the U.S. government to mandate the extent and timing of elimination of maritime greenhouse gas (GHG) discharge to 50% by 2050. The U.S. recently announced its goal of going beyond the IMO target to reduce the GHG emissions to net zero by 2050. These goals are advisory but there is a lot of energy being put into rolling them into the International Convention for the Prevention of Pollution from Ships (MARPOL regulations) which would make them mandatory for international trade. This will impact the TAPS fleet and shipping propulsion in general and is something that PWSRCAC should be in front of or apprised of as it moves forward. Lewis pointed out that the Council had not been following this closely. Lewis said it was his intention to get a conversation started among the regulators, shippers, and SERVS to understand going forward what everybody thinks can be done to meet these goals, and how and when it will affect the fleet.

- Committee Composition: Lewis expressed gratitude and appreciation for the work of the committee members who were leaving and specifically to Jeremy Talbott and Cliff Chambers. Cliff Chambers, in particular, had attended more than 100 committee meetings and was a good anchor of institutional knowledge. Lewis encouraged anyone interested to join the committee.

TERMINAL OPERATIONS AND ENVIRONMENTAL MONITORING COMMITTEE (TOEM)

Chair Amanda Bauer updated the Board on the Terminal Operations and Environmental Monitoring Committee (TOEM) activities since the last Board meeting in January.

- Work on the Cathodic Protection Systems Review Project was essentially completed. The completion of the project was delayed because requested information was not received from Alyeska in a timely manner. However, since the January Board meeting, PWSRCAC received enough information to finish the project. The committee reviewed and accepted the report by National Pipeline Services on the project and has recommended that the Board accept that final report at this meeting, authorize its sharing with Alyeska, and state

and federal regulators, and request appropriate action pertaining to the report's conclusions and recommendations.

- Work on the Tank 8 Internal Inspection Review Project was also essentially complete. Like the Cathodic Protections Systems Review project, completion of the Tank 8 Internal Inspection Review Project was delayed by slow information flow from Alyeska. However, since January PWSRCAC received sufficient information from Alyeska to finish the essential parts of this work. The committee reviewed and accepted the report on Tank 8 by Taku Engineering. A presentation of the report would be made to the Board at this meeting and the committee has recommended that the Board accept this final report by Taku Engineering, authorize its sharing with Alyeska, and state and federal regulators, and request appropriate action pertaining to the report's conclusions and recommendations.

- The committee has been monitoring Alyeska's progress to implement recommendations that resulted from the April 12, 2020 Admin Sump oil spill at the Valdez Marine Terminal (VMT). Those recommendations are meant to reduce the risk of a similar spill from the VMT in the future. The committee plans to continue tracking the implementation of all these recommendations until they are completed.

- In February, the committee discussed and worked with Taku Engineering to review ADEC's proposed storage tank regulation changes and developed comments for ADEC's consideration. The Council submitted those comments to ADEC on February 25. The comments were geared towards ensuring that the proposed changes do not increase the risk of an oil spill from a crude oil storage tank at the VMT.

Bauer thanked staff for all their work and said more detailed information on the TOEM projects would be shared during the presentations at this Board meeting.

INFORMATION AND EDUCATION COMMITTEE (IEC)

Vice Chair Savannah Lewis reported for the Information and Education Committee (IEC) in the absence of Chair Trent Dodson. She introduced the committee members for the benefit of the new Board members. She reported that the committee had had one regular meeting and two project team meetings since the Board's last meeting in January. Trent Dodson was elected Chair. Former Chair Linda Robinson has taken a leave of absence from the committee.

The committee's focus since January was as follows:

- Project 3500: Community Outreach: Council Outreach Coordinator Betsi Oliver moderated the "Economics of Oil Spills" session at the Alaska Forum on the Environment. She was also planning the 2021 Prince William Sound Natural History Symposium, which will take place virtually on May 24. IEC's Savannah Lewis volunteered at the virtual Science and Engineering Fair in March, as did Steve Lewis who judges the oil spill science special award category sponsored by the Council. Oliver and volunteer Jim Herbert did virtual judging for this year's National Ocean Science Quiz Bowl Competition. IEC is considering ways to improve recognition of Council sponsorship at virtual events.

- Project 3530: Youth Involvement: IEC accepted three Youth Involvement projects proposed in response to the last RFP. Unfortunately, two existing projects had to cancel due to COVID-19 travel restrictions. Currently, the Prince William Sound Science Center is finishing up an

educational guide for leading remote operated vessel (ROV) programs. Other projects are in process or scheduled for this summer.

- Project 3610: Website and Web Presence: Several technical updates were made to the Council's website along with the logo changeover. Staff participated in a shipper spill drill on March 23-25, which offered an opportunity to train additional staff on how to update the Council's website in the case of a real event.

- Project 3620: Connecting With Our Communities: The logo guidance document was finalized, with IEC's input, and the official transition to the updated logo, approved at the September 2020 Board meeting, has taken place. Staff is currently working with Helvey Communications to update other graphic elements and contract deliverables.

- Project 3903: Internship**:** Intern Rosie Brennan made a lot of progress with all the updated lesson plans. Brennan and staff members Betsi Oliver and Amanda Johnson are collaborating, along with support from PWSRCAC's website contractor, to build a search tool for these lesson plans. A group of teachers has agreed to participate in a focus group to test the tool and provide feedback. IEC's goal is to have everything ready to launch this summer.

- Project 6560: Peer Listener: An RFP was recently issued for the data gathering phase of this project, which was budgeted at the January 2021 Board meeting, but no proposals were received. IEC plans to reopen the RFP and get more proactively engaged with Council partners who may be interested.

INITIAL OPENING COMMENTS – PWSRCAC BOARD SUBCOMMITTEE UPDATES

LEGISLATIVE AFFAIRS COMMITTEE (LAC)

Chair Dorothy Moore outlined the make-up of the Legislative Affairs Committee (LAC) for the past year for the new Board members: Chair Dorothy Moore, Vice Chair Rebecca Skinner, Robert Beedle, Mako Haggerty, Thane Miller, Robert Archibald, and Kirk Zinck.

Moore reported on the following committee activities:

- An update by the Council's federal legislative monitor Roy Jones and state legislative monitor Kate Troll was scheduled for the following day of this Board meeting.

- The committee met seven times since the January Board meeting.

- The committee worked on a number of legislative priorities which would be addressed by Troll and Jones the following day. Those priorities included:

  State Priorities
  - House Bill 104: This bill contains the increase in the surcharge on refined fuels to help sustain ADEC's Division of Spill Prevention and Response (SPAR).
  - House Bill 33: This bill increases penalties for polluters, including those that spill crude oil.
  - House Bill 54: This is a bill addressing invasive species prevention and response, including marine invasive species.

- The Governor's Budget: The committee is working to restore the five positions at the SPAR Division that were proposed for elimination.
- The committee was tracking the ADEC C-Plan regulation reform effort.
- Committee members participated in a meeting with Commissioner Brune and the new SPAR Division Director, Tiffany Larson.
- Committee members participated in a project team kick-off meeting with the contractor on the AIS/Radar project.

Federal Priorities

- The committee had several interactions and correspondence with the Alaska congressional delegation regarding funding for repair and replacement of the radar systems in Prince William Sound.
- The committee, along with Roy Jones and staff, has been working with Sen. Dan Sullivan's staff on potential amendments to the Oil Spill Liability Trust Fund (OSLTF) bill.

Moore thanked all members of the committee for their dedication and hard work over the past year. She urged all Board members to consider joining the LAC for the upcoming year.

Moore reported that Kate Troll would be moving on to other things in her life and had chosen not to renew her contract with the Council for the next year. Moore thanked Troll for her advice and insights over the past year which had benefited the Council greatly and she wished her well in her future endeavors. A request for proposals to find a replacement for Troll had been issued and the LAC would participate in reviewing the responsive proposals to select Troll's replacement.

FINANCE COMMITTEE

Treasurer Wayne Donaldson reported for the Finance Committee. He introduced the current committee members for the new Board members. Donaldson recognized that Roy Totemoff was retiring after nine years on the Board and thanked him for his service on the committee.

Donaldson reported that the Finance Committee had met twice since the last Board meeting, on February 15, and April 13, 2021.

At the February 15 meeting, the committee reviewed the 12/31/2021 interim financial statements and the budget modifications.

At the April 13 meeting, the committee took up the following items:

- Reviewed the 3/31/2021 interim financial statements.
- Reviewed the Executive Director and Financial Manager's FY2020 report to the Board on Alyeska contract compliance. This item was Item 3-7 on the Board's consent agenda. The Finance Committee recommended the Board approve this report.
- The committee also reviewed the FY2020 Form 990. This item was on this Board meeting agenda (Item 4-9). Board members would have an opportunity to ask questions before it is approved. The Finance Committee recommended full Board approval so that the Executive Director may sign and submit it to the Internal Revenue Service before the May 15 due date.
- Previewed a preliminary version of the FY2022 budget. There will be a budget workshop on May 19 and a Special Board Meeting on May 21 to approve a FY2022 budget.

BOARD GOVERNANCE COMMITTEE (BGC)

Chair Robert Beedle introduced the past year's Board Governance Committee members for the benefit of the new Board members. The committee met three times since the January Board meeting.

Committee Activities

- The committee continued to work on its annual review of the Council's bylaws and had two sections remaining. The committee invited all Board members to review the bylaws and send their comments and suggestions to the committee.
- The committee reviewed a draft letter to the Mayor of the Kodiak Island Borough regarding the Kodiak Village Mayors Association seat on the Board.
- The committee reviewed a draft Request for Proposals (RFP) for a Long Range Planning Assessment.
- The committee reviewed Senate Bill 24 which addresses videoconferencing for nonprofit boards within the State of Alaska.
- The committee reviewed and approved amendments to Board Policy 604 having to do with taking action in executive sessions. That amendment was Item 3-4 on the Consent Agenda for the Board's approval at this meeting.
- The committee reviewed and approved a short set of guidelines and best practices for executive sessions. That document is an informational item for the Board and serves as backup to the proposed amendment to Policy 604. It is intended to be a quick reference which will be housed either in document management or the committee website.
- The committee reviewed and approved an amendment to Board Policy 106 having to do with employee pay dates. That amendment was Item 3-3 on the Consent Agenda for Board approval at this meeting.

Beedle announced that the next meeting of the BGC would be in May. He thanked all BGC members for their dedication and hard work over the past year and hoped they would consider serving again for another year. He encouraged other Board members who were interested to sign up as well.

For the Good of the Order

For the good of the order and efficiencies of time, the External Opening Comments of the SWAPA Pilots was moved up in the agenda.

EXTERNAL OPENING COMMENTS - PILOTS

SOUTHWEST ALASKA PILOTS ASSOCIATION (SWAPA)

Capt. Joe Martin of the Southwest Alaska Pilots Association (SWAPA) introduced himself to the Board, explaining for the new Board members that SWAPA pilots are tasked with the onboard navigational control of tankers in and out of Port Valdez and docking and undocking those vessels at the Valdez Marine Terminal (VMT).

Martin reported that a few weeks prior he had received a call from a fellow pilot indicating that the tanker *Stena Suede* was anchored approximately 15 miles south of Hinchinbrook Entrance.

In SWAPA's opinion, anchoring in the open waters in the Gulf of Alaska is, at best, imprudent and, at worst, negligent.

It was determined that the vessel had been unable to retrieve its anchor and had to use its engines to help prevent dragging. Furthermore, they had sustained damage to their windlass and bow mooring equipment during this event.

Martin stated it was his understanding that the following morning, after the offshore weather had subsided, the vessel was able to retrieve its anchor and reconfigure its mooring arrangement to the satisfaction of the VMT. He added that, to his knowledge, the remainder of the vessel's visit was uneventful.

He stated that this incident prompted him to draft a letter to provide guidance to the maritime community regarding anchoring large seagoing commercial vessels in Southwest Alaska Region II.

SWAPA then placed that guidance on the SWAPA website, swpilots.com, and it is also SWAPA's intention to publish its web address in the U.S. Coast Pilot to allow this guidance to reach a broader audience.

In summary, Martin emphasized that the only location for anchoring large seagoing vessels calling in Prince William Sound that SWAPA endorses is the anchorage at Knowles Head.

Following his remarks, Martin took questions from the Board. There was a brief discussion of the dangers and the risky decision by the crew of the *Stena Suede* to anchor in the open waters of the Gulf of Alaska, the resulting drifting and dragging of its anchor, and a situation that could have been a lot worse.

Amanda Bauer commented it was likely that economics played a big role in the decision of the ship's captain to anchor in the Gulf of Alaska because it is free to anchor outside Hinchinbrook Entrance.

Robert Archibald said he considered it was an important conversation to keep up because the Gulf of Alaska is not a place to be with an anchor down, starting and stopping a main engine on a very large vessel, and there is evidence of those dangers when the weather turns against you in the wrecks all the way from Shemya to Cape Yakataga. He had heard this incident was being considered "a near miss" incident.

Break: 9:37 a.m. – 9:57 a.m.

EXTERNAL OPENING COMMENTS – PWSRCAC *EX OFFICIO* MEMBERS

ALASKA DEPT. OF ENVIRONMENTAL CONSERVATION (ADEC)

Commissioner Jason Brune, new SPAR Director Tiffany Larson, Emma Pokon, and Graham Wood updated the Board on ADEC's activities since the Council's January meeting.

SPAR Director Tiffany Larson briefly introduced herself to the Board. President Archibald welcomed her and stated that PWSRCAC would try to assist SPAR Division in any way that it could.

Commissioner Brune stated that he made a commitment to Larson when she took over the SPAR Division that if she believes there is need for additional positions in SPAR to meet EPA regulations he

would try to get funding for those positions. He reiterated commitments he made at the Board's January meeting to bring sustainability to SPAR funding. He reported that he and his staff were working behind the scenes to see passage of the legislation to increase the refined fuels tax from $.0095 to $.015 per gallon. If that legislation passed, the increase in funding, along with the existing $.05/barrel production tax going to funding SPAR and the existing FY2022 staffing levels, would be sufficient to secure SPAR funding for a decade or more. He emphasized, however, that if that legislation did not pass, then he would have to continue on the path of cuts to existing positions and he did not want to do that. He said he appreciated PWSRCAC's efforts to get that additional funding and he committed to keeping the Council updated as progress is made.

As to the ADEC Article 4 regulatory updates, Commissioner Brune stated he felt it would be unfair to Larson, just coming into the role, to go over those issues at this meeting but he would brief the Board at its September meeting. He committed to meet with PWSRCAC before that time, as well as the Cook Inlet Regional Citizens Advisory Council (CIRCAC). He pointed out that there would be a long public comment period which would end either December 15, 2021, or January 31, 2022.

In follow-up to some questions about responsibility of spillers that were raised at the Council's January Board meeting, Brune stated that there are penalties for crude oil spills over 18,000 gallons., under AS 46.03.759, but ADEC does not have the statutory authority to fine for spills under that volume. All responsible parties have to clean up their spills, including small spillers, and they have to pay for ADEC oversight. A court may assess additional amounts against a responsible party but it is statutorily limited to certain costs.

He reported that there had been a hydrochloric acid spill at the VMT that morning, but it was not to water. There was no risk to individuals and the spill had been contained. It originated from a plastic container that is now empty.

Commissioner Brune took questions from the Board:

Wayne Donaldson asked about whether ADEC would propose statutory changes, regulatory changes, or both as part of its Article 4 regulatory reform. Commissioner Brune stated that, to date, the review team had not proposed any statutory changes. If any were to come forward, they would have to be supported by him and the Governor's Office and go through the legislative process. There is not any intention *yet* to propose any statutory changes but he was leaving that up to Tiffany Larson as she and her team go through the review process.

Mako Haggerty asked how well the recovery of costs was working. Commissioner Brune stated that from the "responsible" responsible parties, ADEC does get cost recovery into the response fund. But every year there are spills, either from boats sinking or other incidents, where those entities are not able to reimburse ADEC. He said there is a reporting every year of what is spent and what is recovered. In some instances, the Legislature has appropriated monies for clean-up from the response fund and those are unlikely to be recovered, such as the funds appropriated for PFAS and other recent incidents. He said cost recovery is never 100% but the department takes what it can get. He said he would follow up with information to PWSRCAC staff on the breakdown of cost recoveries.

Archibald pointed out that ADEC is experiencing a drastic loss of institutional knowledge in the personnel who have left the department recently, and that is of concern to PWSRCAC, and it is the PWSRCAC's hope that ADEC can find some knowledgeable people to fill those positions. Brune

agreed that losing one in four people every year is unacceptable and he was committed to turning that around.

Graham Wood introduced Allison Natcher who will be the new designated *ex officio* representative for ADEC to the Council, effective May 10. Crystal Smith left the department April 20. The recruitment for her position has been completed and he hoped there would be an announcement on her replacement by the end of the week.

[Patrick Domitrovich joined the meeting at approximately 10:15 a.m. 18 Directors present.]

ALASKA DEPT. OF FISH AND GAME (ADF&G)
For the benefit of the new Board members, Lee McKinley outlined his role as the *ex officio* representative to the Council for the Alaska Dept. of Fish and Game. He had no specific opening comments but was available to answer questions during the meeting.

U.S. FISH & WILDLIFE SERVICE (USF&W)
(No report.)

OIL SPILL RECOVERY INSTITUTE (OSRI)
(No report.)

ALASKA DEPT. OF NATURAL RESOURCES
Heather Lescanec of the State Pipeline Coordinator's Office explained the office, her role and the work related to TAPS.

She reported that the office was currently working on doing reviews for all the pipelines, including TAPS, c-plans, etc. Field visits were planned for this summer, including visits to the VMT. The State Pipeline Coordinator's Office also works on integrity issues on TAPS.

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)
(No report.)

U.S. DEPT. OF THE INTERIOR (DOI) AND
BUREAU OF LAND MANAGEMENT (BLM)
Paul Degner spoke for both the Department of the Interior (DOI) and the Bureau of Land Management (BLM) at this meeting. He reported that BLM had received updated guidance from the DOI that would allow limited field opportunities. It will require extensive risk analysis and management approval to get clearance for those opportunities and they will have to work through the process to get that approval.

U.S. COAST GUARD (USCG)
LCDR Sara Ellis-Sanborn represented USCG (MSU-Valdez) at this meeting in the absence of CDR Patrick Drayer.

She reported the following:

- *Stena Suede* incident. USCG received an email from the *Stena Suede* asking if there were any USCG objections to the vessel drifting 15 nautical miles off Hinchinbrook Entrance, which the USCG did not have. That was the limit of USCG's involvement in the incident until the following morning when the USCG was informed of the vessel's windlass failure.

- Non-functioning radar. There is troubleshooting taking place. Technicians were out at Potato Point the previous day and they were back out there that day.

- Security zone entry permits for the VMT. There is an internal administrative review of USCG processes and they are not using the form anymore but are requiring the same information. USCG is asking that those seeking security zone entry permits simply call the Vessel Traffic Center.

- USCG received a request from SERVS/Edison Chouest Offshore (ECO) about placing the Mineral Creek barge. USCG has completed its response and it should be going out to SERVS/ECO that day. She deferred to SERVS/ECO to share the USCG response.

- A Marine Safety and Security Team (MSST) will not happen in 2021, but USCG will continue to enforce the security zone with the assets it has in Valdez.

Robert Beedle asked about the USCG's efforts to fix the malfunctioning radar in Prince William Sound. LCDR Sanborn stated that the USCG was troubleshooting the problem with the old equipment and was trying to fix it. Whether there would be a new system/equipment installed, that decision was in the hands of USCG higher-ups.

PWSRCAC Project Manager Austin Love thanked the USCG for working with PWSRCAC on security zone permits.

Amanda Bauer asked if the *Stena Suede's* request was to drift or to anchor. LCDR Sanborn stated that it was not a request at all; rather it was a question whether USCG had objection to the vessel drifting. Anchoring was not mentioned at all and there was no more communication with the vessel until the next morning when they reported a windlass failure.

Archibald stated that there was a report of damage to line-handling equipment. LCDR Sanborn said she was not aware of that. The information she was aware of was the windlass failure which caused the anchor to lock in place, but she would find out from the investigating officer and report back.

In response to an inquiry from Robert Beedle, LCDR Sanborn stated that there was no reason given by the *Stena Suede* for the drift.

NATIONAL OCEAN & ATMOSPHERIC ASSOCIATION (NOAA)

LT Hadley Owen from NOAA's Office of Coast Survey reported that the NOAA ship *Fairweather* was in Prince William Sound earlier in the year to do surveys for chart updates in the following areas: Whittier and Passage Canal and Cochrane Bay, Surprise Inlet, the bases of Harvard and Yale glaciers, and the Columbia Glacier, Orca Inlet and north of Cordova. They will be back later in the year to do more surveys, likely in the College Fjord area.

She reported that in general NOAA is looking to update its Coast Pilot and that if there are certain functions that PWSRCAC would like to see preserved, etc., to let her know at alaska.navmanager@noaa.gov. There will be approximately an 18-month time lag to update the charts.

ALASKA DIV. OF HOMELAND SECURITY & EMERGENCY MANAGEMENT (ADHSEM)

Kevin Reeve introduced himself to the Council. He is the State Lead Planner for the Alaska Division of Homeland Security & Emergency Management (ADHSEM) and the State Emergency Response

Commission (SERC) coordinator. He also works in the State Emergency Operations Center as the Logistics Chief. He stated that in those roles he might be a resource for PWSRCAC in those areas. He reported that ADEC Commissioner Brune and ADHSEM Commissioner Saxe are co-chairs of the SERC but they had limited ability to conduct SERC or Local Emergency Planning Committee (LEPC) activities during the pandemic.

He reported that FEMA Region 10 in 2020 and recently in 2021 developed an Alaska Catastrophic Annex which looks at a 1964-style earthquake and the impacts occurring in Prince William Sound. If such a catastrophic earthquake should occur, Southcentral Alaska will be fragmented into what FEMA/ADHSEM call "five islands of response." Prince William Sound is one of those five islands of response, meaning that FEMA/ADHSEM may not be able to reach the area with supplies, etc. from their usual supply lines from Anchorage and they would have to look to ferry emergency supplies in from another area. He also pointed out that there is a significant earthquake fault (Cascadia subduction zone) along the coast of Oregon and Washington that would have significant impacts to Alaska if that ruptured because supply lines would be broken. FEMA Region 10 is currently working to update their Cascadia subduction zone plans and he, as Alaska's State Lead Planner for emergency management at ADHSEM, is working with FEMA to make sure that their planning includes provision for emergency supplies and routes to supply Alaska at such a time.

He emphasized that the reason he brought up these issues at this time is because there is a significant potential for impact to Prince William Sound from either a 1964 magnitude quake or a Cascadia subduction zone rupture, or a Barry Arm slide in Prince William Sound which is currently being assessed. He suggested that PWSRCAC look at the information on the Alaska Earthquake Center's tsunami mapping website where it shows significant potential impacts to Valdez, Whittier, Tatitlek, and Chenega, and each one of those individual communities has a specific inundation map. He offered to discuss these potential risks further and provided his email if anyone wanted to get more information, kevin.reeve@alaska.gov. He added that one of his staff was currently working on the Barry Arm slide risk assessment.

U.S. FOREST SERVICE

(No report.)

OIL SPILL RECOVERY INSTITUTE (OSRI)

(No report.)

EXTERNAL OPENING COMMENTS – TAPS SHIPPERS, OWNER COMPANIES, AND PILOTS

CROWLEY ALASKA TANKERS

Angelina Fuschetto reported Crowley Alaska Tankers had transported 15,128,230 barrels of oil from the Valdez year-to-date. There had been no injuries beyond first aid. She reported that COVID-19 had put a lot of extra protocols on board the vessels and crews and she offered kudos to the crews.

Paul Manzi spoke of alternative fuels and designs for a fully electric autonomous tug in the future that Crowley was exploring. Management wants Crowley to be the most sustainable maritime company in the country by 2050.

CONOCOPHILLIIPS/POLAR TANKERS

Monty Morgan reported Polar Tankers had transported 25,500,000 barrels year-to-date throughout the West Coast without incident.

As to the fleet, Morgan reported that the *Polar Discovery* came back from shipyard. The *Polar Enterprise* will go to shipyard. The Polar *Endeavour* was currently in a Portland shipyard undergoing repairs to fix the damage caused by the allision with the ECO Tug *Courageous* reported at the January Board meeting.

Morgan reported on a spill exercise which was conducted in March as a hybrid exercise. A virtual command center was created through the Microsoft® Teams platform and there were approximately 400 participants. Morgan commented that it went better than he had anticipated. The training they received to use the Microsoft® Teams platform helped.

Amanda Bauer inquired about when a report would be issued on the *Courageous/Endeavour* allision incident. Morgan stated that Polar Tankers has its own internal report but he had not seen anything yet from Alyeska. In response to a question from Jim Herbert about whether there was additional damage found to the *Polar Endeavour* than initially observed, Morgan stated there was not. He added that the damage was well documented at the time of the damage inspection immediately after the incident and it was inspected again after the temporary repairs were made.

ALASKA TANKER COMPANY (ATC)

Chris Merten reported that Alaska Tanker Company made 18 voyages year-to-date, carrying 19.3 million barrels, with no incidents. There was one medical treatment injury involving a cut which needed stitches; the injured crewperson returned to work that day.

He reported that it was an interesting year with shipyard problems caused by the pandemic, nothing critical but some things could not be done that shippers like to get done while a vessel is out of service. However, they were able to install approximately 90% of the ballast water treatment system (BWTS) on the *Alaska Navigator* when she was in the shipyard this time last year. Some of the work on the *Navigator* was reduced because of COVID restrictions at the shipyard that impacted labor availability. ATC will continue installing and commissioning the remainder of the BWTS work this year and planned to have the system up and running by December.

Merten reported the *Alaska Legend* finished up a voyage to Japan on April 28 and was currently cleaning tanks and would enter the shipyard on May 10 in Korea. The problems in the shipyards because of COVID-19 were likely to remain, but because Korea had managed its situation a little better than others, he was hopeful that shipyard workforce issues would be better and that the work that was planned could be done. This included regular maintenance as well as installation of the BWTS.

Briefly addressing earlier comments by Steve Lewis about GHGs, carbon emissions, and the IMO commitments, Merten said there was only a limited number of improvements that could be made with existing vessels, but ATC was looking at the technologies that are available. It will be a challenge to implement, but something ATC feels needs to be done.

Merten reported that ATC continued to have a good relationship with Harvest with good communications, voyage planning, and safe operations.

HARVEST ALASKA MIDSTREAM

Rob Kinnear reported that Harvest Alaska Midstream had moved 21 cargos year-to-date (18 on ATC tankers and three spot-chartered vessels). He commented that there was a steady trickle of spot

charters since last July because of less demand caused by COVID-19 on the West Coast and a couple of shipyards backed up in the ATC fleet. Harvest had relied on spot charters to keep oil moving and offset those two factors. Looking forward, two more spot charters were scheduled, one for the *Stena Spirit* the following week and an additional load in June.

Break: 11:07 a.m. – 11:17 a.m.

ALYESKA/SERVS ACTIVITY REPORT

Alyeska's Emergency Preparedness and Response Director Andres Morales presented the Alyeska/SERVS activity report for year-to-date.

VMT Operations:

- **Operations:** (*As of 3/31/2021)*

	YTD 2021
Tankers Loaded	55
Tankers Escorted	56
Barrels Loaded	42,935,074

	Since start up
Tankers Loaded	22,908
Tankers Escorted	14,229
Barrels Loaded	17,497,631,428

- **Safety:** *(As of 3/31/2021)*

Days away from work cases	1
TAPS Combined Recordable Rate %	0.43

- **Environment:** *(As of 3/31/2021)*

Spill Volume (Gallons)	2.5
Number of Spills	2

COVID-19 Response & Prevention:

- **Processes and procedures for personnel and facilities:**
  - Screening process
  - Travel guidance
  - Site-specific isolation and evacuation plans
  - Communication plan

- **Urban workforce back to 100% capacity:**
  - All offices are open
  - Vaccinations continue to be provided to the TAPS workforce
    - 51% of TAPS workforce
    - Company goal of 65% of TAPS workforce.

- As of 4/12/21 there were 102 cumulative COVID-19 cases on TAPS.

Fishing Vessel Availability by Port (end of 1st quarter 2021):

Port	Tier 1	Tier 2
Valdez	23	14
Cordova	30 (7 Rapid Resp.)	110
Whittier	6	21
Seward		27
Homer		37
Kodiak		31
Totals	**59**	**240**

2021 Contingency Plan Activities:

VMT ODPCP

- Amendment 2021-2:
  - Updated contacts to meet DOT/PHSMA Notice of Correction Letter
  - Published: 4/14/21.

- Amendment 2021-1:
  - Updated contacts and APSC PRAC Certificate
  - Published: 2/3/21.

- Amendment 2020-5:
  - Updated owner information
  - Published 1/14/21.

2021 VMT/PWS Training & Exercises:

- 1st Quarter Activities:
  - Tethered Escort Tug Exercise (10 knots)
  - OSRB Crucial Skimmer Task Force training exercises (4)
  - Unannounced Rapid Response Vessel Call-Out Drill
  - Tethered Escort Tug Exercise (6 knots)
  - IMT Notification Test
  - 2021 Polar Tankers PWS Exercise
  - Unannounced Quarterly QI/IC Notification Drill
  - Emergency Tow Exercise
  - Spring Fishing Vessel Training:

Port	On-Water Days
Kodiak	4/02 - 4/06
Homer	4/09 – 4/12
Seward	4/15 – 4/16
Whittier	4/20 - 4/21
Cordova	4/24 – 4/29
Valdez	5/03 – 5/06

- Upcoming Exercises:
  - SERVS OSCP Training:
  - May 12-16 and 19-23

- June 2-6 & 24-27
- Current Buster 8 & Crucial Skimmer TF Exercise in Sheep Bay 4/15
- Operational Readiness Exercise in Whittier, 4/19 (tentative)
- Current Buster 8 & Crucial Skimmer TF Exercise in Port Valdez, 4/23
- Operational Readiness Exercise in Cordova, 4/30
- 2021 VMT IMT Exercise with equipment deployments, 5/26
- Valdez Duck Flats Training Deployment, 6/18 and 6/30
- Fall Fishing Vessel Training in Cordova, late September
- 2021 Andeavor/Marathon PWS Exercise, 10/13 – 14
- VMT Equipment Deployment #2, by Fall 10/31/21 (tentative)

2021 Valdez Projects

- Ballast Header Inspection and Repair (Berth 5, A Header)
- Berth 5 and Berth 4 Gangways
- Tank Program:
  - Internal inspection of Crude Tank 7 and Tank 94
  - External coating of Crude Tank 10
  - Tank 94 annular plate.

Morales reported on a hydrochloric acid (HCl) spill that had occurred that morning. He reported that the HCl is housed in special storage totes and the spill came from one of the totes. He had no information at that time of the volume of the HCl release but would update PWSRCAC as more information became available. The maximum release in a worse-case scenario would not exceed 300 gallons, which is the maximum capacity of the special storage tote. Alyeska initiated a berth-loading shutdown on Berth 4 until other risk factors could be determined and it was restarted approximately 50 minutes later.

Morales reported that the investigation report on the January 11, 2021, allision of the *Courageous* tug with the *Polar Endeavour* tanker was in legal review and it would be there for some time.

In response to inquiries by Jim Herbert about Alyeska's COVID-19 statistics and response, Morales clarified that the 102 cases on TAPS he reported earlier was the total of all who work on TAPS. Alyeska was encouraging its employees to get vaccinated and had considered taking the vaccine out to those in the field to make it easier for employees to get the shots.

NOMINATIONS & ELECTION OF OFFICERS & EXECUTIVE COMMITTEE MEMBERS-AT-LARGE

President Archibald opened the floor to nominations for the 2021-2022 Officers and three Members-at-Large to the Executive Committee:

For the office of President:	Amanda Bauer nominated Robert Archibald.
For the office of Vice President:	Robert Beedle nominated Amanda Bauer.
For the office of Secretary:	Amanda Bauer nominated Bob Shavelson.
For the office of Treasurer:	Rebecca Skinner nominated Wayne Donaldson.
For the Members-at-Large:	Amanda Bauer nominated Rebecca Skinner, Ben Cutrell, and Robert Beedle.

Hearing no further nominations, Archibald declared **nominations closed**.

Rebecca Skinner **moved to seat the nominees** (since no seat was contested). Dorothy Moore **seconded** and **a roll call vote was taken** as follows:

Robert Archibald	Yes.
Amanda Bauer	Yes.
Robert Beedle	Yes.
Mike Bender	Yes.
Nick Crump	Yes.
Ben Cutrell	Yes.
Patrick Domitrovich	(No audible response).
Wayne Donaldson	Yes.
Patience Andersen Faulkner	(No audible response).
Mako Haggerty	(No audible response).
Luke Hasenbank	Yes.
Elijah Jackson	Yes.
Melvin Malchoff	(No audible response).
Dorothy Moore	Yes.
Bob Shavelson	(No audible response).
Rebecca Skinner	Yes.
Angela Totemoff	Yes.
Michael Vigil	Yes.
Kirk Zinck	Yes.

The **motion to seat the nominated 2021-2022 Officers and Members-at-Large to the Executive Committee passed** (14 in favor, 5 non-responsive).

Lunch Break: 11:45 a.m. – 12:45 p.m.

CONSENT AGENDA
3-1, 3-2, 3-3, 3-4, 3-5, 3-6, 3-7

The consent agenda consisted of seven items: 3-1, 3-2, 3-3, 3-4, 3-5, 3-6, 3-7.

Amanda Bauer **moved to approve the consent agenda** as presented. Rebecca Skinner **seconded.**

The **consent agenda was approved** as follows:

- **3-1 APPROVAL OF RESOLUTION DESIGNATING PWSRCAC CHECK SIGNERS**
  Adoption of the resolutions provided by First National Bank Alaska to update the list of authorized individuals to sign checks and conduct financial transactions on PWSRCAC's account.

- **3-2 APPROVAL OF FY2021 BUDGET MODIFICATIONS**
  Approval of budget modifications reducing expenses by $121,160.

- **3-3 APPROVAL OF AMENDMENTS TO POLICY 106 PERTAINING TO EXECUTIVE SESSIONS**
  Approval of the proposed amendment to Board Policy 106 as recommended by the Board Governance Committee.

- **3-4 APPROVAL OF AMENDMENTS TO POLICY 604 PERTAINING TO EMPLOYEE PAY DATES**
  Approval of the proposed amendments to Board Policy 604 changing the semi-monthly pay dates from the 8th and the 22nd of each month to the 10th and the 24th, to take effect the first payroll of June 2021.

- **3-5 APPROVAL OF TECHNICAL COMMITTEE APPOINTMENTS**
  Appointment of committee members to two-year terms to the following respective committees:

  Scientific Advisory Committee (SAC)

Wayne Donaldson	Renewal
John Kennish	Renewal
Wei Cheng	Renewal
Dorothy Moore	Renewal
Roger Green	Renewal

  Note: The committee consists of eight members including renewals.
  Directors on SAC: Dorothy Moore, Wayne Donaldson.

  Terminal Operations and Environmental Monitoring Committee (TOEM)

Harold Blehm	Renewal
Mikkel Foltmar	Renewal
Steve Goudreau	Renewal
Tom Kuckertz	Renewal
Patrick Tomco	Renewal

  Note: The committee consists of eight members including renewals.
  Directors on TOEM: Amanda Bauer.

  Oil Spill Prevention and Response Committee (OSPR)

Jim Herbert	Renewal
John LeClair	Renewal
Gordon Scott	Renewal
Skye Steritz	Renewal

  Note: The committee consists of eight members including renewals.
  Directors on OSPR: Robert Beedle, Mike Bender.

  Port Operations and Vessel Traffic Systems (POVTS)

Cliff Chambers	Renewal
Steve Lewis	Renewal

  Note: The committee consists of six members including renewals.
  Directors on POVTS: Amanda Bauer, Robert Archibald.

  Information and Education Committee (IEC)

Trent Dodson	Renewal
Jane Eisemann	Renewal
Cathy Hart	Renewal
Andrea Korbe	Renewal
Savannah Lewis	Renewal
Patience Andersen Faulkner	Renewal

  Note: The committee consists of nine members including renewals.
  Directors on IEC: Patience Andersen Faulkner.

- **3-6 CONTRACT APPROVAL FOR SMITHSONIAN ENVIRONMENTAL RESEARCH CENTER**
  Authorization for a contract with Smithsonian Environmental Research Center for work to be performed under the 9520 Marine Invasive Species Project FY2021 budget, at an amount not to exceed $46,450.

- **3-7 APPROVAL OF CONTRACT COMPLIANCE VERIFICATION REPORT**
  Acceptance of the PWSRCAC/Alyeska Annual Contract Compliance Verification Report.

[Patience Andersen Faulkner joined the meeting at approximately 1:03 p.m. – 19 Directors present.]

4-2 REPORT ACCEPTANCE: REVIEW OF CATHODIC PROTECTION SYSTEMS AT THE VALDEZ MARINE TERMINAL

PWSRCAC Project Manager Austin Love introduced Keith Boswell of National Pipeline Services. Boswell summarized the conclusions and recommendations in his report which reviewed the maintenance and operation of cathodic protections systems at the Valdez Marine Terminal (VMT) and whether those protection systems are in line with industry best practices. A copy of the report was included in the meeting notebook under Item 4-2.

The report's key recommendations were that Alyeska should:

- Institute alternative testing to eliminate measurement errors.
- Modify its policy to define polarization measurements.
- Investigate alternative methods to measure polarized and depolarized potentials.

The action requested of the Board was to accept the report and allows its distribution to Alyeska and federal and state regulators.

Amanda Bauer **moved to accept** the report titled "Review of Cathodic Protection Systems at the Valdez Marine Terminal" by Keith Boswell of National Pipeline Services as meeting the terms and conditions of Contract 5998.19.01, with direction to staff to forward the report to Alyeska and state and federal regulators accompanied by a cover letter summarizing the findings and recommendations with requests for appropriate action. Robert Beedle **seconded** and the **motion passed** without objection.

4-3 REPORT ACCEPTANCE: CRUDE OIL STORAGE TANK 8 & MAINTENANCE REVIEW

This agenda item was a follow-up to an interim report and presentation made to the Board at its January 2021 Board meeting on the maintenance of Tank 8 at the Valdez Marine Terminal Tank Farm. Project Manager Austin Love introduced Bill Mott of Taku Engineering who presented his final report which summarized the results of Taku Engineering's review of records and procedures related to the maintenance of Tank 8 at the VMT and included recommendations to improve the maintenance of Tank 8 and other storage tanks at the VMT.

Mott's initial findings presented to the Board at its January meeting were that there was an error in Alyeska's data and there were inherent systematic errors in all of the other data collected pertaining to the effectiveness of the cathodic protection system underneath Tank 8's floor. Alyeska was still collecting the data in the same way. Mott stated that it gave a false sense of security that a tank is protected when in reality, as in the case of Tank 8, there is an elevated corrosion rate on what should be a well-protected tank. Mott also concluded that there may be some perforations in

Alyeska's secondary containment liner underneath tanks at the VMT which warranted a more comprehensive look.

The final report was included in the meeting notebook under Item 4-3

A general discussion with the Board followed the presentation.

Rebecca Skinner asked for the issue to be put on the September Board meeting agenda at which time she would like Alyeska to explain what it is doing about the problems outlined in the report, unless the response PWSRCAC gets back from Alyeska in the interim is clear and in a written format, such that the information may be disseminated to the Board.

Project Manager Linda Swiss reminded the Board that PWSRCAC had an outstanding request for informal review of the approval of the VMT c-plan from the decision of November 2019 and Alyeska had an outstanding request for informal review of the decisions made in the approval of that plan. She had no more information to impart at that time but wanted the Board to be aware of these outstanding review requests in relation to this secondary containment issue.

The Board was asked to accept the report as meeting the terms of the contract of the project and for its forwarding to Alyeska and regulators.

Amanda Bauer **moved to accept** the report titled "Crude Oil Storage Tank 8 Maintenance Review" by William Mott of Taku Engineering, dated March 2021, as meeting the terms and conditions of Contract number 5056.20.01, with direction to staff to forward the report to Alyeska and state and federal regulators accompanied by a cover letter summarizing findings and recommendations with requests for appropriate action. Rebecca Skinner **seconded** and the **motion passed** without objection.

Break: 2:25 p.m. – 2:35 p.m.

4-4 REPORT ACCEPTANCE: RESCUE TUGBOAT BEST AVAILABLE TECHNOLOGY ASSESSMENT

This agenda item sought Board acceptance of a final report titled "Best Available Technology Assessment for the Hinchinbrook Entrance ETV" by Glosten. PWSRCAC Project Manager Alan Sorum introduced Peter Soles and Nathan Crain from Glosten who presented the report's findings.

Soles and Crain outlined the project which looked at design practices and new technologies in existing vessels that would be considered best available technology (BAT) and best practices in the design and operation of highly capable rescue tugboats and comparing the results to Edison Chouest Offshore's (ECO) *Ross Chouest* (currently operating in Prince William Sound).

Glosten's assessment was that the SASEMAR Next-Gen Coastal ETV tug, *Luz de Mar,* was the vessel most representative of rescue tug BAT for service at Hinchinbrook Entrance. In direct comparison with *Luz de Mar*, the current SERVS utility/sentinel tug, *Ross Chouest*, has deficiencies on five important aspects of rescue tug/ETV design. Those deficiencies are:

- Lower free running speed
- Less maneuverability/agility
- Less capacity and redundancy in rescue and recovery equipment
- No capability as a firefighting vessel

- Less overall redundancy and versatility of operation.

The report noted that some of the *Ross Chouest* deficiencies could be addressed with retrofitting – namely those related to rescue and recovery equipment and firefighting fitness – but others are more intrinsic to the design (such as the brick-shaped hull, the principal dimensions, and powering propulsion, etc.) and could have compounding disadvantageous effects in certain circumstances.

Glosten's assessment of the SASEMAR Next-Gen Coastal ETV design was that the vessel provided the following:

- Improved speed equals a better response time.
- Improved maneuverability equals a higher probability of connecting successfully.
- Introduces new operating modes for emergency towing/response.
- Enables bow first approach for disabled ships with forward inertia.
- Improved rescue and spill response capacity.

A briefing sheet and the report were included in the meeting notebook under Item 4-4. The Board was asked to accept the report and allow its public distribution.

Amanda Bauer **moved to accept** the report titled "Best Available Technology Assessment for the Hinchinbrook Entrance ETV" by Glosten, as meeting the terms and conditions of Contract 8010.21.01 and allowing distribution of the report to the public. Rebecca Skinner **seconded** and the **motion passed** without objection.

PRESENTATION ON VETTING OF FOREIGN FLAGGED TANKERS

This agenda item was the result of the Board's previously expressed interest in hearing more about the vetting of foreign flagged tankers prior to their coming into Prince William Sound. The Board's interest was heightened because of changes in crude oil market forces in recent years that had resulted in more foreign flagged vessels entering Prince William Sound.

Project Manager Alan Sorum introduced Rob Kinnear of Harvest Alaska Midstream and Patrick Carney of Atlantic Technical Management, along with Lori Nelson of Hilcorp, who participated in the presentation.

At the conclusion of the presentation, several Board members made comments.

Robert Archibald emphasized to Rob Kinnear the importance of conveying to foreign crews the importance of not anchoring outside Hinchinbrook Entrance and taking note of the lessons learned from the *Stena Suede* incident. Kinnear expounded more on Harvest's understanding of the *Stena Suede* incident but stated that Harvest was still getting information on what happened.

Jim Herbert suggested it would be prudent to involve foreign flagged vessels in some of the towing and other exercises that are conducted in Prince William Sound. Kinnear agreed in theory but in practice he did not know how it would happen.

POVTS Chair Steve Lewis said he looked forward to a more thorough review of the *Stena Suede* incident. He added that what is common practice elsewhere and what makes sense in the north Gulf of Alaska are two totally different considerations. Anybody who has local knowledge, which the local fleet has, knows that to anchor outside Hinchinbrook Entrance is imprudent and unsafe

because of the extreme weather conditions that can whip up very quickly, particularly in the spring. Locals know that and will not anchor out there. He added that the only rationale he could come up with why the captain of the *Stena Suede* decided to anchor outside the Entrance was purely economics (i.e., to save the money it would have cost to come through the Entrance, pick up a pilot, and go to Knowles Head). Lewis emphasized to Kinnear that that kind of decision was not prudent operatorship in the north Gulf of Alaska. He added that the message Harvest needed to take to heart and to get across to its charter companies is that every shipper/ship's operator has a responsibility of proper utilization of the resource and that anchoring offshore, while a common practice elsewhere, does not work in north Gulf of Alaska and it does not fit with Alaska's expectations or Alaska's mode of operating here.

(This was an information-only item. No action was requested of the Board.)

DISCUSSION WITH REP. ANDY JOSEPHSON, ALASKA STATE LEGISLATURE, DIST. 17

The Board had an open discussion with Rep. Andy Josephson of the Alaska State Legislature, District 17, on various legislation pending before the Legislature at that time, and specifically HB 104 (formerly SB 115) and possible outcomes.

(This was an information-only item. No action was requested of the Board.)

Recess: The meeting recessed for the day at 4:15 pm. to be reconvened at 8:30 a.m. the following day.

Friday, May 7, 2021

CALL BACK TO ORDER

President Archibald called the meeting back to order at 8:31 a.m. on May 7, 2021. A roll call was taken and there were 13 Directors present at the time of the call back to order: Archibald, Bauer, Beedle, Bender, Crump, Cutrell, Donaldson, Hasenbank, Jackson, Moore, Skinner, Totemoff, and Vigil. Kirk Zinck joined immediately thereafter at 8:38 a.m., Patrick Domitrovich at 9:25 a.m., and Melvin Malchoff at approximately 9:30 a.m.

For the Good of the Order

President Archibald announced that Joe Martin of SWAPA would be available for additional questions/discussion on the *Stena Suede* incident after the morning break.

[Kirk Zinck joined the meeting at 8:38 a.m. 14 Directors present.]

4-6 FEDERAL AND STATE GOVERNMENT AFFAIRS UPDATE

PWSRCAC Director of Administration Walt Wrede introduced an update on federal and state government affairs on issues important to the Council and explained briefly the purpose of this agenda item for the benefit of the new Board members. He introduced the Council's two legislative monitors, Roy Jones and Kate Troll, who reported on political developments and prospects in Washington, D.C., and Juneau related to PWSRCAC's legislative priorities.

State Update:

Kate Troll reported on three pieces of legislation currently in the Alaska Legislature:

- HB 33 (sponsored by Rep. Andy Josephson) to increase oil spill penalties. The bill did not go anywhere this session and was sitting in the House Resources Committee at that time.

- HB 54 (the invasive species bill which sets up an invasive species council) had recently started to move forward and had been referred to the House Finance Committee and was scheduled for a hearing on Tuesday, May 11. Even if passed by the committee, the bill may not make it all the way through to the Senate before the Legislature's deadline for adjournment.

- HB 104 (legislation that contained the fix for the SPAR Division funding to ensure a sustainable budget not dependent on unrestricted general funds). One provision in this bill would increase the motor fuel tax and another would increase the refined fuels surcharge by $0.005. The bill was scheduled for a hearing on May 11 at 9:00 a.m. and to the House Floor on May 12. Troll urged the Board to designate at least two Council representatives to testify on May 11 and May 12. She opined that the bill's prospects were positive. Rep. Bishop had the support from all the Fairbanks representatives. However, she noted that it may not make it all the way through the Senate because of the time deadline for adjournment.

As to the SPAR Division, the Governor's budget had proposed to cut five more positions. The Legislature had weighed in and concluded that it would put an undue burden on remaining staff. PWSRCAC also weighed in and those five positions were reinstated. It was hoped that after passage by the House and Senate, the Governor would sign it. Troll noted that Senate President Peter Micciche was a strong advocate of SPAR. She encouraged PWSRCAC representatives from other areas of Prince William Sound to testify, to give a broader testimony on the importance of this funding to SPAR.

Troll had previously informed PWSRCAC that she would not be renewing her contract with the organization, opting for retirement and other life's adventures. Robert Archibald thanked Troll for all her work during this session, particularly in the middle of the pandemic.

Federal Update

Roy Jones reported on progress to rectify the non-functioning radar issues. He reported that there would be an assessment performed this summer. Once that is complete, the USCG could make some investment to repair or replace. He noted that this movement forward came after PWSRCAC's letter to Alaska's congressional delegation, a letter to the Commandant of the USCG, and the help of Bill Grawe of the USCG National Pollution Funds Center. He commented that Alaska's congressional delegation was well aware that constant vigilance had kept oil out of the water for the most part for over thirty years, but if something was not done about the non-functioning radar that could change at any moment.

On the Oil Spill Liability Trust Fund (OSLTF), Jones reported that there was $7.6 billion in the fund as of that time. Congress is looking for pots of money to draw on. The idea is not to let it get so big that it becomes a target to raid. The $0.09/barrel tax at the refinery continues until the fund hits $7 billion and then stops until the fund drops below $5 billion. This is a good result as it keeps the funding secure with a pot of between $5-$7 billion which should be sufficient to handle more than one oil spill. Congress recently passed legislation to keep the financing rate going until 2025. There is also language proposed by PWSRCAC to allow the National Pollution Funds Center to allocate monies that all states could apply for and obtain for a prevention program to keep oil out of their waters.

Jones reported that he had worked on issues related to the BP-Hilcorp transition and PWSRCAC's *amicus curiae* brief. He provided some input but did not write the brief.

He noted the departure from Alyeska of Kim Harb who had done an excellent job of representing Alyeska in Washington, D.C.

Jones commented that the PWSRCAC was always looking for bipartisan support for the work that the organization does, noting that the Council membership represents such a broad region and it has done a great deal of work for the region. He said the Alaska delegation is always eager to see the Council representatives and welcomes visits to their offices.

President Archibald thanked Troll and Jones for all their work on behalf of the Council and wished Troll well in her future endeavors.

[Patrick Domitrovich joined the meeting at approximately 9:25 a.m. 15 Directors present.]

(This was an information-only item. No action was requested of the Board.)

4-7 WEB-BASED REGIONAL STAKEHOLDER COMMITTEE PROJECT

Project Manager Jeremy Robida, along with Sierra Fletcher of Nuka Research and Planning Group gave the Board an overview of a project that created a web-based Regional Stakeholder Committee (RSC) resources section on the PWSRCAC's website. PWSRCAC has long been involved with the RSC exercise practice and the working relationship between spill-affected stakeholders and response decision-makers so that local concerns, locally available resources, and local clean-up needs can be discussed and addressed. The deliverables of this project brought those activities into a web-based format that can be easily accessed by the RSC participants.

A briefing sheet was included in the meeting notebook under Item 4-7.

The Board was asked to accept the project deliverables as having met the contractual terms of the project led by Nuka Research and Planning.

Amanda Bauer **moved to accept** the Web-Based Regional Stakeholder Committee Resources project, led by contractor Nuka Planning and Research, as having met all of the contractual terms set forth in the contract. Angela Totemoff **seconded** and the **motion carried** without objection.

Break: 9:50 a.m. – 10:00 a.m.

For the Good of the Order

SWAPA COMMENTS (Continued)

SWAPA President Joe Martin returned to continue discussions with the Board about the incident that occurred with the foreign-flagged tanker, *Stena Suede,* when it anchored outside Hinchinbrook Entrance in April and then drifted for some distance while struggling to retrieve its anchor.

Jim Herbert asked how a pilot gets to a vessel that is going to anchor up at Knowles Head.
Martin explained that there are two pilotage regulations: federal and state. U.S.-flagged ships fall under the federal regulations and are authorized to proceed through Hinchinbrook Entrance and to

go directly to Knowles Head anchorage. A foreign flagged vessel or a US flagged vessel that is coming in from a foreign port fall under state regulations and are required to proceed from Hinchinbrook Entrance directly to the pilot station. The pilot boards at the pilot station, then the pilot delivers them back out to the Knowles Head anchorage. The pilot goes back out to Knowles Head and pilots them in when it is time for the vessel to come into the VMT. Martin pointed out that another part of the state regulation prohibits a foreign vessel from "loitering" in state waters. They must go directly to the pilot station.

Martin did not have information on the costs to be piloted in, but there would be a charge. He will get that information after the meeting and pass it along.

A general discussion followed of general piloting procedures at Hinchinbrook Entrance. Martin stated he was not the pilot that piloted in the *Stena Suede*. He was informed by another pilot who also was not the pilot of the vessel. SWAPA was alerted that there was a vessel in the Gulf of Alaska that was dragging its anchor.

President Archibald thanked Martin for returning to the meeting and explaining more of the details of the *Stena Suede* incident.

4-8 PRESENTATION ON THE RESPONSIBLE PARTY AND LIABILITIES OF AN OIL SPILL

Project Manager Linda Swiss introduced this agenda item which arose from the Board's expressed interest in learning more about the designation of "responsible party" and the liabilities of an oil spiller. The Board's particular interest arose in connection with the transition from BP to Hilcorp and which entity is the responsible party. PWSRCAC wanted to better understand the relationships.

Swiss introduced attorney Breck Tostevin with the Seattle law firm of Neilsen Koch PLLC and formerly an assistant attorney general for the State of Alaska with expertise in this area. Tostevin briefed the Board on who pays for response and damages from an oil spill, the liabilities associated with a spill, and the legal implications of the "responsible party," and he outlined the legal and financial requirements and differences between federal and state laws and regulations in this regard.

A general discussion with the Board followed.

Tostevin stated that there were still things that needed to be resolved on the BP-Hilcorp transfer. He hoped that when PWSRCAC received the additional documents it had requested, Hilcorp's financial responsibility disclosures would be apparent, such as insurance and endorsements, etc. He stated that if PWSRCAC could see Hilcorp's federal vessel response plans that may resolve some of the outstanding issues that concern PWSRCAC. He added that the Statement of Contractual Terms submitted by Hilcorp as part of its c-plan submittal was the wrong form and that needed to be changed.

Project Manager Linda Swiss pointed out that PWSRCAC was still awaiting documents from a public records request PWSRCAC made to ADEC.

In response to a question about Hilcorp's status, Alyeska's Andres Morales confirmed that Hilcorp had been made a party to the Gulf of Alaska Agreement. Linda Swiss will provide information to the Board on the terms of the Gulf of Alaska Agreement as it pertains to TAPS shippers.

Tostevin's full power point presentation was to be loaded on PWSRCAC's website.

(This was an information-only item. No action was requested of the Board.)

4-9 APPROVAL OF IRS FORM 990

Financial Manager Gregory Dixon gave an overview of the organization's IRS Form 990 for FY2020 which was emailed to all Board members for their review earlier in the week. The deadline for filing was May 17, 2021. Dixon pointed out that the return would become public information once filed and the Council is obligated to provide a copy upon request. It was prepared by the Council's accountants, BDO, from the information provided by Dixon on behalf of the organization, and it was reviewed by the Finance Committee. The Finance Committee recommended that the Board approve its filing.

Dorothy Moore **moved to authorize** the Executive Director to sign the IRS Form 990 on behalf of PWSRCAC and submit it to the IRS on or before May 15, 2021. Michael Vigil **seconded** and the **motion carried** without objection.

4-10 COPING WITH TECHNOLOGICAL DISASTERS GUIDEBOOK AND APPENDICES

This agenda item (presented by Project Manager Austin Love and SAC Chair Davin Holen) sought Board approval of the Council's document titled "Coping with Technological Disasters: A User Friendly Guidebook" and the Appendices associated with the guidebook. A briefing sheet and a copy of the Guidebook were included in the meeting notebook under Item 4-10.

Love gave an overview of the Guidebook, its history, and the staff and volunteers who worked on the project, noting that the Guidebook was now in its fourth revision and the third revision of the Appendices.

David Holen outlined the changes that have occurred since the Guidebook was first published in 1999, in an attempt to make it easier to read quickly. Much of the original information was moved to the Appendices and the way the information is distributed has changed, such as via the internet and social media.

Dorothy Moore moved to approve the document titled "Coping with Technological Disasters: A User Friendly Guidebook" Version 4 and the 11 associated appendices, titled as Appendices A-K, as final and allow them to be distributed publicly. Angela Totemoff **seconded** and the **motion carried** without objection.

Archibald congratulated Holen and those who worked on the revisions.

Lunch Break: 11:40 a.m. – 1:00 p.m.

4-12 REPORT ACCEPTANCE: LTEMP 2020 SAMPLING RESULTS & INTERPRETATIONS AND PORT VALDEZ MUSSEL TRANSCRIPTOMICS MONITORING

Project Manager Austin Love, along with consultant contractors James Payne of Payne Environmental Consultants, Inc., William Driskell, independent consultant, and Lizabeth Bowen of the U.S. Geological Survey presented this agenda item which sought Board acceptance of two reports which were included in the meeting notebook under Item 4-12, along with a briefing sheet:

(1) "Long Term Environmental Monitoring Program: 2020 Sampling Results and Interpretations," by Dr. James R. Payne and William B. Driskell; and

(2) "Using Mussel Transcriptomics for Environmental Monitoring in Port Valdez, Alaska: 2019 and 2020 Pilot Study Results," dated February 17, 2021, by Lizabeth Bowen (USGS), Austin Love (PWSRCAC), Shannon Waters (USGS), Katrina Counihan (Alaska SeaLife Center), Brenda Ballachey (USGS), Heather Colletti (National Park Service), William Driskell (independent consultant), and James R. Payne, Ph.D. (Payne Environmental Consultants).

The annual LTEMP report provided an analysis summary and interpretation of the passive sampling device, mussel, and sediment samples taken each summer as part of the Council's environmental monitoring work.

The mussel transcriptomics report summarized the results of a two-year pilot study investigating the utility of using mussel transcriptomics as part of the Council's LTEMP.

Love explained the different sampling and analyses for each report. He reported that the LTEMP analysis shows hydrocarbon trends in the blue mussels continue to be low. The sediment samples also showed a low trend in hydrocarbon concentrations over time, but signals of the Ballast Water Treatment Facility were still visible in the results. The mussel transcriptomics showed increased levels in the samples taken in Port Valdez, compared to other regions of Prince William Sound, and there may be other pollutants coming from the VMT that deserve attention through the Council's LTEMP.

Dorothy Moore **moved**:

- **To accept** the report titled "Long Term Environmental Monitoring Program: 2020 Sampling Results and Interpretations," by Dr. James R. Payne and William B. Driskell, dated March 2021, as meeting the terms and conditions of Contract 951.21.04, and for distribution to the public; and
- **To accept** the report titled "Using Mussel Transcriptomics for Environmental Monitoring in Port Valdez, Alaska: 2019 and 2020 Pilot Study Results," dated February 17, 2021, as meeting the terms and conditions of Contract 951.21.06 and for distribution to the public.

Angela Totemoff **seconded** and the **motion carried** without objection.

4-13 SCHEDULING OF SEPTEMBER 2021 BOARD MEETING

Staff sought Board direction on how to proceed with the upcoming September 16 and 17, 2021, Board meeting that was scheduled for Seward. If the decision of the Board was that the meeting should occur virtually, then staff asked for a shift in the rotation of the annual community meeting so that the September meeting in 2022 is held in Seward. In addition, staff sought Board approval to delegate authority to the Executive Committee to make decisions on whether to hold future in-person events virtually. The future events in question at this time were the Science Night, the Volunteer Workshop, and the holiday party set to take place in Anchorage on December 2-3, 2021; and the January 27-28, 2022 Board meeting also scheduled for Anchorage. A decision on the December 2021 and January 2022 events needed to be made early in order to avoid cancellation penalties.

A briefing sheet was included under Item 4-13 which laid out the reasons for staff's request. Executive Director Donna Schantz highlighted the ongoing logistical difficulties of in-person meetings or even hybrid in-person/virtual meetings during the pandemic and the continued risks to the health and safety of staff and volunteers at this time. A hybrid meeting in September may also be a disservice to the community of Seward if only a limited number of people would attend and the public events that PWSRCAC typically sponsors in the community cannot happen. She reported that the Executive Committee had met the previous week and recommended that the September meeting be held virtually.

After a brief discussion, Angela Totemoff **moved to approve**:

(a) a deviation from the Board-approved regular meeting schedule by holding the September 16 and 17, 2021 PWSRCAC Board meeting virtually, shifting the rotation of the annual community meeting so that the September 2022 meeting is held in Seward; and

(b) delegation of authority to the Executive Committee to make decisions regarding future in-person Council events.

Melvin Malchoff **seconded** and the **motion passed** without objection.

PRESIDENT'S REPORT TO THE BOARD

President Archibald reminded everyone that one cannot underestimate Mother Nature and the weather and noted that there had been several recent maritime incidents around the world causing salvage companies to be busy worldwide. He said he found this information interesting and pertinent to the discussions the previous day relating the to the *Stena Suede* incident.

He congratulated the Board, staff, and other volunteers on making the successful transition to virtual meetings but was looking forward to resumption of in-person meetings soon.

He noted that despite COVID-19 the organization had maintained its efficiency and mission throughout, through the efforts of dedicated staff and volunteers. It had been a unique and stressful year and he hoped the pandemic would come to an end soon.

The organization accomplished positive meetings through Zoom technology, staff maintained its proactive success and moved forward, and some of the completions were reported at this meeting.

PWSRCAC also experienced and observed the first spill drill (by ConocoPhillips/Polar Tankers) on a virtual platform, conducted from multiple locations hundreds of miles away and with hundreds of individuals. For those who were involved, it was impressive.

PWSRCAC staff and volunteers met and attended meetings with USCG, legislators, and commissioners and directors of various agencies, keeping PWSRCAC's voice in the forefront and advocating for the safe operation of the VMT and the tankers that ply the waters of Prince William Sound.

He commented that PWSRCAC's mission demands it to be diligent, represent its entities, strive for transparency and excellence in dealing with federal, state, and industry partners, and when an incident occurs, all must learn the root cause, agree on a solution, and prevent a reoccurrence. Urging continued vigilance at the highest level, he pointed out that PWSRCAC was born out of

complacency by industry and government, and that complacency was the enemy at a dangerous level. As history played out, a terrible learning lesson came to pass (the *Exxon Vald*ez oil spill) and he cautioned against thinking that the human element is infallible.

He wished the best to everyone for the coming summer and hoped to be able to meet everyone face-to-face again in the coming year.

EXECUTIVE DIRECTOR'S REPORT TO THE BOARD

Executive Director Schantz provided a written report in advance of the meeting on the Council's activities and key items of interest/concern. She highlighted some of those items:

- Both offices are now open for the first time since the COVID shutdown on March 17, 2020, with some staff in the office. The current office mitigation plan includes a cautious approach to reopening; it was anticipated that the majority of staff would be back in the office in the coming weeks, and volunteers and other visitors would be able to come into the offices in the near future. She emphasized how challenging the past year had been for everyone on so many levels – the pandemic and other events, such as unrest, and distractions on so many levels, but through it all staff had managed to keep focused and kept projects moving forward, as evidenced by the presentations at this meeting on complicated and technical projects that had resulted in high quality reports and recommendations to improve the safe transportation of oil. She commended staff and the dedicated volunteers who worked to keep up the Council's work.

- She recognized that outstanding questions remained surrounding the *Stena Suede* incident in April and she would work to obtain more information, not to point fingers, but to make recommendations on measures that could be put in place to ensure a similar incident did not happen again. She emphasized the importance of the lessons learned and the root causes being open and transparent so improvements could be made to benefit everyone.

- She reiterated SWAPA's Capt. Joe Martin's statement that the Coast Pilot would be updated with the information that Knowles Head is the only safe anchorage for commercial vessels, so spot charters are well aware of that information. She emphasized the importance of communication and having written information for spot charters about the dangers of the north Gulf of Alaska, such as the lack of safe anchorage, the difficulty in predicting the weather, the risk of barrier jets, and the underreporting of weather data from the Seal Rocks buoy. All this information would be known to regular TAPS trade vessels and it needs to be conveyed to spot charters unfamiliar with the weather in the north Gulf of Alaska and the TAPS vessel operating systems. She emphasized that it was unreasonable to expect an incoming spot charter to be able to grasp and digest all that they needed to know from all the c-plans and manuals that are just handed to them before they come into port. She emphasized the importance of direct communication with those charters and communication of local knowledge.

- She shared an email (with permission) from John Kotula, formerly of ADEC and manager of the marine vessel section of the preparedness program and who worked as a lead field person for determining the adequacy of post-EVOS spill prevention systems, especially the tugs. He was directly involved in efforts by ADEC to enhance the SPAR system and he left the department about the time that they started to see the serious reduction of SPAR personnel and budgets:

Hello, Donna,
I have been following many areas of concerns related to TAPS and government regulators. Having just read the latest issue of the Observer, I thought this would be an appropriate time to say stay strong, vigilant, and focused. I believe we are facing challenging times that could takes us 30 years into the past very quickly.
Sincerely,
John Kotula

- She said she would like to know if any SERVS assets were deployed while the *Stena Suede* was dragging anchor for about 30 hours with the damaged windlass and loss of mooring equipment. She pointed out that the Glosten report on the Hinchinbrook ERV BAT emphasized that time was of the essence in a rescue. Had something gone wrong, the outcome for the *Stena* Suede could have been very different. From the information PWSRCAC had at that time it did not appear that any SERVS assets were deployed.

- The organization's new logo has been launched and is now in use throughout the organization's written and online materials.

- She welcomed Dr. Danielle Verna to staff as the Environmental Monitoring Project Manager. She welcomed the new Board members and bid farewell to some long-standing Board members (Thane Miller, Roy Totemoff, and Rob Chadwell) and technical committee members Jeffrey Brooks (SAC) and Cliff Chambers (POVTS), as well as Valdez staff member Administrative Assistant Leigh Lubin.

- She recognized the following volunteers who had reached a milestone in their service to the organization this year:
  - 5 years of service: Davin Holen, Luke Hasenbank, and Melvin Malchoff
  - 10 years of service: Roy Totemoff
  - 15 years of service: Dave Goldstein
  - 20 years of service: Steve Lewis
  - 30 years of service: George Skladal.

- She announced a budget workshop for May 19 and a Special Board of Directors meeting on May 21, 2021 to approve the 2021-2022 budget.

- Staff will coordinate a virtual SERVS/VMT tour soon.

FINANCIAL MANAGER'S REPORT TO THE BOARD

Financial Manager Gregory Dixon reported that the organization's 2020 IRS Form 990 approved by the Board the previous day had been filed that day with the IRS by the Council's accounting firm BDO.

Dixon reiterated that the Board would meet on May 19 for a budget workshop and on May 21 for a Special Board meeting to approve the 2021-2022 budget. He noted the challenges of putting together a budget during the pandemic because of the unknowns involved, such as travel expenses, etc. A draft budget would be sent out to the Board members the week following this Board meeting.

Also following this Board meeting, directors would receive via USPS mail a conflict of interest form which each director needed to complete and return to him.

He thanked those who had served on the Finance Committee during the past year, particularly, Roy Totemoff who had served as the main check signer for the organization.

4-11 ANNUAL BOARD COMMITTEE APPOINTMENTS

The annual appointment to Board subcommittees was led by Executive Director Schantz and President Archibald.

Schantz pointed out that technical committee appointments had been approved under the consent agenda (Item 3-5) because there were no new appointees to any committee, but if any Board member wanted to serve on a technical committee who was not yet assigned, to let her know.

The following directors volunteered to serve on each Board committee and were **confirmed by a motion made** by Michael Vigil, **seconded** by Amanda Bauer, and **passed** without objection. (It was agreed that Directors who were not present at this point in the meeting but who wanted to serve on a subcommittee could be added later.)

- FINANCE COMMITTEE:
  Treasurer Wayne Donaldson (chair), Angela Totemoff, Rebecca Skinner, Mako Haggerty, Robert Archibald.

- LONG RANGE PLANNING COMMITTEE:
  All chairs of the five technical committees, Amanda Bauer, Elijah Jackson, Robert Archibald, and volunteer Cathy Hart.

- BOARD GOVERNANCE COMMITTEE:
  Dorothy Moore, Robert Beedle, Mike Bender.

- LEGISLATIVE AFFAIRS COMMITTEE:
  Dorothy Moore, Rebecca Skinner, Kirk Zinck, Robert Beedle, Mako Haggerty, Robert Archibald, Angela Totemoff.

CONSIDERATION OF CONSENT AGENDA ITEMS

(None.)

CLOSING COMMENTS

Directors were given the opportunity to make closing comments.

ADJOURNMENT

There being no further business to come before the Board, the **meeting was adjourned** at 3:45 p.m., on a **motion made** by Dorothy Moore and **seconded** by Mike Bender and **passed** without objection.

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Secretary

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Prince William Sound Regional Citizens' Advisory Council
Special Board of Directors Meeting Minutes
May 21, 2021

Members Present: Patience Andersen Faulkner, Amanda Bauer, Robert Beedle, Nick Crump (9:17am), Ben Cutrell, Wayne Donaldson, Elijah Jackson, Dorothy Moore, Bob Shavelson, Rebecca Skinner, Angela Totemoff, and Michael Vigil

Members Absent: Robert Archibald, Mike Bender, Patrick Domitrovich, Mako Haggerty, Luke Hasenbank, Melvin Malchoff, and Kirk Zinck

Staff Present: Gregory Dixon, Jennifer Fleming, Amanda Johnson, Joe Lally, Austin Love, Hans Odegard, Roy Robertson, Jeremy Robida, Donna Schantz, Alan Sorum, Linda Swiss, Brooke Taylor, Nelli Vanderburg, Danielle Verna, and Walt Wrede

Others Present: Joe Levesque (Levesque Law Group)

Call to Order: Vice-President Amanda Bauer called the meeting to order at 9:00am. A roll call was taken. The following 11 Directors were present, representing a quorum for the conduct of business: Faulkner, Bauer, Beedle, Cutrell, Donaldson, Jackson, Moore, Shavelson, Skinner, Totemoff, and Vigil.

Approval of the Agenda: Bauer asked if there were any changes to the agenda. Hearing none, the agenda was approved as presented.

Public & Opening Comments: Bauer asked for comments from the public; there were none.

Approval of FY2022 Budget: Schantz explained that staff is seeking approval of the FY2022 budget, as reviewed at the May 19, 2021, Board budget workshop.

Moore moved to adopt the FY2022 budget as presented during the budget workshop on May 19, 2021, and as described in the Proposed FY2022 Budget Book dated April 27, 2021, including adjustments outlined during the workshop (total income is $3,739,044, total expenses are $4,182,255, contingency is $100,000 and net assets used are $543,211). Vigil seconded. Bauer asked for discussion/objection; hearing none, the budget was approved.

Consent Agenda: The consent agenda consisted of two items.

Beedle moved to approve the consent agenda as presented. Moore seconded. Bauer asked for objection; hearing none, the consent agenda was approved.

- Approval of FY2022 C-Plan Contractor Pool & Contractor: Authorizing individual contracts with Attorney Breck Tostevin; Nuka Research and Planning Group, LLC.; Polaris Applied Sciences, Inc.; and Shannon & Wilson for professional services with the aggregate total not to exceed the amount approved for 651 Contingency Plan Review in the final FY2022 budget, and delegate authority to the Executive Director to enter into individual contracts with selected contractorsultants.

- Approval of FY2022 LTEMP Contractor: Authorizing individual contracts with NewFields Environmental Forensics Practice, Oregon State University, and the United States Geological Survey with the aggregate total not to exceed the amount approved in the final FY2022 LTEMP budget (project #9510) for contract expenses, and delegate authority to the Executive Director to enter into individual contracts with the aforementioned consultants; and authorizing contract work to commence prior to the start of FY2022, as approximately$30,000 of these funds will need to be expended in May and June 2021.

Consideration of Consent Agenda Items: There were none.

Board Committee Appointments: Schantz explained that staff is seeking approval to seat Patience Andersen Faulkner and Luke Hasenbank to the Board Governance Committee, and Patience Andersen Faulkner to the Long Range Planning Committee. Faulkner and Hasenbank were not in attendance at the earlier May Board meeting where these committee appointments were seated. Since that time, they have expressed interest to serve.

Beedle moved to appoint Patience Andersen Faulkner and Luke Hasenbank to the Board Governance Committee and Patience Andersen Faulkner to the Long Range Planning Committee. Totemoff seconded. Bauer asked for discussion/objection; hearing none, the appointments were approved.

Executive Session: Moore moved to go into Executive Session to discuss the Amicus Brief in support ofthe City of Valdez Appeal on the Regulatory Commission of Alaska ruling related to the disclosure of Hilcorp/Harvest Alaska's financial information. Beedle seconded, and the motion was passed. The following were asked to join the Board in Executive Session: Joe Levesque, Robin Brena, Donna Schantz, Joe Lally, Alan Sorum, Walt Wrede, Linda Swiss, Jennifer Fleming, Brooke Taylor, Gregory Dixon, and Amanda Johnson. The Board entered Executive Session at approximately 9:10am.

The Board and staff members came out of Executive Session at 10:20am.

Report on Executive Session:

Donaldson moved to delegate authority to the Executive Committee to approve amendments to the *amicus curiae* brief that was approved by the Board at the January 2021 meeting to incorporate components of the Regulatory Commission of Alaska's Order 17. The *amicus brief* is in support of the City of Valdez's Appeal of the Regulatory Commission of Alaska's ruling relating to the disclosure of Hilcorp/Harvest Alaska's financial information. Totemoff seconded. Bauer asked for discussion/objection; hearing none, the action was approved.

Closing Comments: Bauer asked for closing comments. There were none.

Adjourn: Moore moved to adjourn. Beedle seconded. The meeting adjourned at 10:22am.

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Secretary

PWSRCAC
Acronym List
Updated July 10, 2019

AAC	Alaska Administrative Code
ABS	American Bureau of Shipping
ACMP	Alaska Coastal Management Program
ACS	Alaska Clean Seas
ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game
ADNR	Alaska Department of Natural Resources
AIMS	Alaska Incident Management System
AMOP	Arctic & Marine Oil Spill Program (Technical Seminar)
ANC	Anchorage
ANS	Alaska North Slope or Aquatic Nuisance Species
ANSTF	Aquatic Nuisance Species Task Force
ANWR	Arctic National Wildlife Reserve
AOOS	Alaska Ocean Observing System
APSC	Alyeska Pipeline Service Company
ARRT	Alaska Regional Response Team
AS	Alaska Statute
ATC	Alaska Tanker Company
ATOM	Alyeska Tactical Oil Spill Model
AVTEC	Alaska Institute of Technology (formerly Alaska Vocational Technical Center)
BAT	Best Available Technology
BBL	Barrel (42 Gallons = 1 bbl)
BGC	Board Governance Committee (PWSRCAC Committee)
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
BLM	Bureau of Land Management
BOO	Barge of Opportunity
BMPP	Best Management Practices Plan
BP	British Petroleum or bollard pull
BTT	Biological Treatment Tanks
BWT(F)	Ballast Water Treatment (Facility)
C-Plan	Contingency Plan
CAA	Clean Air Act

CAOS	Coastal Alaska Observing System
CDFU	Cordova District Fishermen United
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CIP	Community Impacts Planning
CIRCAC	Cook Inlet Regional Citizens Advisory Council
CISPRI	Cook Inlet Spill Prevention and Response, Incorporated
CMT	Crisis Management Team
COA	Condition of Approval
COSRS	Community Oil Spill Response System
COTP	Captain of the Port (USCG)
CWA	Clean Water Act
DAF	Dissolved Air Flotation
DEIS	Draft Environmental Impact Statement
DES	Division of Emergency Services
DMR	Discharge Monitoring Report
DNV	Det Norske Veritas – Norwegian Quality Assurance consultant
DOI	U.S. Department of the Interior
DOT	U.S. Department of Transportation
DPS	Dynamic Positioning System
DR&R	Dismantling, Removal and Restoration
DTTS	Disabled Tanker Towing Study
DWT	Deadweight ton
ECO	Edison Chouest Offshore
EIA	Environment Impact Assessment
EIS	Environmental Impact Statement
EOC	Emergency Operations Center
EPA	U.S. Environmental Protection Agency
EPPR	Emergency Prevention Preparedness and Response
ERB	Emergency Response Building
ERP	Emergency Response Plan
ERV	Emergency Response Vessel
ETT	Enhanced Tractor Tug
EVOS	Exxon Valdez Oil Spill

EVOSTC	Exxon Valdez Oil Spill Trustees Council
FBU	Fairbanks Business Unit, Alyeska
FLIR	Forward-looking infrared
FOIA	Freedom of Information Act
FOSC	Federal On-Scene Coordinator
FV	Fishing Vessel
FWPca	Federal Water Pollution Prevention and Control Act
GAO	U.S. Government Accountability Office
GIS	Geographic Information System
GOA	Gulf of Alaska
GPS	Global Positioning System
GRS	Geographical Response Strategies
HAPs	Hazardous Air Pollutants
HAZWOPER	Hazardous Waste Operation and Emergency Response
HERO	Hinchinbrook Entrance Response Options
IAP	Incident Action Plan
IAP2	International Association of Public Participation
ICCOPR	Interagency Coordinating Committee on Oil Pollution Research
IC	Incident Command
ICS	Incident Command System
IEC	Information & Education Committee (PWSRCAC Committee)
IMO	International Maritime Organization
IMT	Incident Management Team
IOSC	International Oil Spill Conference
IRIC	Initial Response Incident Commander
ISAC	Invasive Species Advisory Committee
IWWS	Industrial Waste Water System
JIC	Joint Information Center
JPO	Joint Pipeline Office
LEPC	Local Emergency Planning Committee
LAC	Legislative Affairs Committee (PWSRCAC Committee)
LIO	Legislative Information Office
LOSC	Local On-Scene Coordinator
LRP	Long Range Plan
LTEMP	Long Term Environmental Monitoring ~~Program~~ Project

MAC	Multi-stakeholder Agency Committee
MARPOL	International Convention for Prevention of Pollution from Ships
MEPC	Marine Environmental Protection Committee (IMO)
MIS	Marine Invasive Species
MMS	Minerals Management Service
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MSO	Marine Safety Office
MSDS	Material Safety Data Sheets
MSU	Marine Safety Unit
NDBC	National Data Buoy Center
NEPA	National Environmental Policy Act
NESHAP-OLD	National Emission Standard for Hazardous Air Pollutants – Organic Liquid Distribution
NIIMS	National Interagency Incident Management System
NIS	Non-Indigenous Species
NISA	National Invasive Species Act
NOAA	National Oceanographic & Atmospheric Administration
NOBOB	No Ballast on Board
NPDES	National Pollutant Discharge Elimination System
NPREP	National Preparedness & Response Exercise Program
NRDA	Natural Resource Damage Assessment
NSF	National Science Foundation
OCC	Operations Control Center
OHMSETT	Oil and Hazardous Materials Simulate Environmental Test Tank
OMS	Oil Movements and Storage
OPA 90	Oil Pollution Act of 1990
OSC	On-Scene Coordinator
OSLTF	Oil Spill Liability Trust Fund
OSRB	Oil Spill Response Barge
OSPR	Oil Spill Prevention and Response Committee (PWSRCAC Committee)
OSREC	Oil Spill Region Environmental Coalition
OSRI	Oil Spill Recovery Institute
OSRL	Oil Spill Response Limited
OSRO	Oil Spill Response Organization

OSRV	Oil Spill Response Vessel
PAH	Polycyclic Aromatic Hydrocarbon
POD	Physical Oceanography Data
POVTS	Port Operations and Vessel Traffic System (PWSRCAC Committee)
PPE	Personal Protective Equipment
PRAC	Primary Response Action Contractor
PRT	Prevention and Response Tug
PS	Pump Station
PV	Power Vapor
PWS	Prince William Sound
PWSAC	Prince William Sound Aquaculture Corporation
PWSC	Prince William Sound College
PWSEDD	Prince William Sound Economic Development District
PWSRAS	Prince William Sound Risk Assessment Study
PWSRCAC	Prince William Sound Regional Citizens' Advisory Council
PWSSC	Prince William Sound Science Center
PWSTA	Prince William Sound Tanker Association
RC	Response Center or Response Coordinator (SERVS)
RCAC	Regional Citizens' Advisory Council
RCM	Reliability Centered Maintenance
RFAI	Request for Additional Information
RFI	Request for Information
RFP	Request for Proposal
RFQ	Request for Qualifications
RMROL	Realistic Maximum Response Operating Limitations
RPG	Response Planning Group
RP	Responsible Party
RPOSC	Responsible Party's On-Scene Coordinator
RPS	Response Planning Standard
RRT	Regional Response Team
RSC	Regional Stakeholders Committee
SAC	Scientific Advisory Committee (PWSRCAC Committee)
SCAT	Shoreline Cleanup Assessment Team
SERC	State Emergency Response Commission (or) Smithsonian Environmental Research Center

SERVS	Ship Escort/Response Vessel System
SETAC	Society of Environmental Toxicology and Chemistry
SOS	Seldovia Oil Spill Response
SOSC	State On-Scene Coordinator
SPAR	Spill Prevention and Response (A division within ADEC)
SPO	State Pipeline Coordinator's Office
SRP	Scientific Response Plan
ST	Strike Team
SWAPA	Southwest Alaska Pilots Association
TAG	Technical Advisory Group
TAPS	Trans Alaska Pipeline System
TF	Task Force
TOEM	Terminal Operations & Environmental Monitoring (PWSRCAC Committee)
TOO	Tanker of Opportunity
TROG	Total Recoverable Oil and Grease
TVCS	Tanker Vapor Control System
UC	Unified Command
UP	Unified Plan
USCG	United States Coast Guard
USF&WS	United States Fish & Wildlife Service
VBU	Valdez Business Unit, Alyeska
VDZ	Valdez
VERP	Prince William Sound Vessel Escort & Response Plan
VEOC	Valdez Emergency Operations Center
VIDA	Vessel Incidental Discharge Act
VMT	Valdez Marine Terminal
VOCs	Volatile Organic Compounds
VOO	Vessel of Opportunity
VTC	Vessel Traffic Center
VTS	Vessel Traffic System
XCOM	PWSRCAC Executive Committee

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Prince William Sound Regional Citizens' Advisory Council
Budget Status Report -- FY 2022

	Budget			Actual and Commitments			Remaining	
	Original	Modifications	Revised	Actual	Commitments	Total	Amount	Percent
INCOME								
Alyeska Contract	$3,716,244.00		$3,716,244.00	$1,858,121.83		$1,858,121.83	$1,858,122.17	50.0%
Interest Income								
In-Kind Donations	$22,800.00		$22,800.00			$0.00	$22,800.00	100.0%
Book Royalties and Sales								
Miscellaneous								
Total Income	***$3,739,044.00***	***$0.00***	***$3,739,044.00***	***$1,858,121.83***	***$0.00***	***$1,858,121.83***	***$1,880,922.17***	***50.3%***
EXPENSES								
Programs and Projects								
3100--Public Information	$1,505.00		$1,505.00		$0.00	$0.00	$1,505.00	100.0%
3200--Observer Newsletter	$6,000.00		$6,000.00	$1,879.61	$0.00	$1,879.61	$4,120.39	68.7%
3300--Annual Report	$7,400.00		$7,400.00		$4,200.00	$4,200.00	$3,200.00	43.2%
3410--Fishing Vessel Outreach Pilot	$15,000.00		$15,000.00		$0.00	$0.00	$15,000.00	100.0%
3500--Community Outreach	$48,800.00		$48,800.00	$149.00	$0.00	$149.00	$48,651.00	99.7%
3530--Youth Involvement	$45,750.00		$45,750.00		$9,935.00	$9,935.00	$35,815.00	78.3%
3600--Public Communications Program	$1,699.00		$1,699.00		$0.00	$0.00	$1,699.00	100.0%
3610--Website Presence BAT	$7,080.00		$7,080.00		$0.00	$0.00	$7,080.00	100.0%
3620--Connecting With Our Communities			$0.00		$0.00	$0.00	$0.00	0.0%
3903--Youth Internship	$3,300.00		$3,300.00		$0.00	$0.00	$3,300.00	100.0%
4000--Program and Project Support	$1,609,573.00		$1,609,573.00	$130,728.44	$0.00	$130,728.44	$1,478,844.56	91.9%
4010--Digital Collections Program	$7,850.00		$7,850.00	$200.00	$2,300.00	$2,500.00	$5,350.00	68.2%
4400--Federal Government Affairs	$51,600.00		$51,600.00		$0.00	$0.00	$51,600.00	100.0%
4410--State Government Affairs	$30,000.00		$30,000.00		$0.00	$0.00	$30,000.00	100.0%
4500--DR&R Research			$0.00		$0.00	$0.00	$0.00	0.0%
5000--Terminal Operations Program	$15,000.00		$15,000.00		$0.00	$0.00	$15,000.00	100.0%
5056--Tank 8 Internal Inspection Review	$11,000.00		$11,000.00		$0.00	$0.00	$11,000.00	100.0%
5057--APSC Appeal of Air Quality Rule	$60,000.00		$60,000.00		$39,200.00	$39,200.00	$20,800.00	34.7%
5081--Crude Oil Tank 7 + BWT Tank 94	$96,000.00		$96,000.00		$0.00	$0.00	$96,000.00	100.0%
5640--ANS Crude Oil Properties	$5,000.00		$5,000.00		$0.00	$0.00	$5,000.00	100.0%
5640--ANS Crude Oil Propeties Donated Services	$22,800.00		$22,800.00		$0.00	$0.00	$22,800.00	100.0%
6000--Oil Response Program	$10,800.00		$10,800.00		$0.00	$0.00	$10,800.00	100.0%
6510--State Contingency Plan Reviews	$85,000.00		$85,000.00		$53,395.00	$53,395.00	$31,605.00	37.2%
6511--History of Contingency Planning	$50,000.00		$50,000.00		$20,000.00	$20,000.00	$30,000.00	60.0%
6530--Weather Data/Sea Currents	$14,400.00		$14,400.00		$400.00	$400.00	$14,000.00	97.2%
6531--Port Valdez Weather Buoys	$42,500.00		$42,500.00	$2,258.41	$25,000.00	$27,258.41	$15,241.59	35.9%
6531--Port Valdez Weather Buoys City of Valdez Grant Funds	$8,700.00		$8,700.00	$80.70	$7,500.00	$7,580.70	$1,119.30	12.9%
6531--Port Valdez Weather Buoys Donation	$20,000.00		$20,000.00	$1,666.67	$0.00	$1,666.67	$18,333.33	91.7%
6534--Cape Hinchinbrook Weather	$500.00		$500.00		$0.00	$0.00	$500.00	100.0%
6536--Analysis of Weather Buoy Data	$15,000.00		$15,000.00		$0.00	$0.00	$15,000.00	100.0%
6540--Copper River Delta/Flats GRS History	$20,000.00		$20,000.00		$0.00	$0.00	$20,000.00	100.0%
6560--Peer Listener Training	$35,000.00		$35,000.00		$0.00	$0.00	$35,000.00	100.0%

As of July 31, 2021

Prince William Sound Regional Citizens' Advisory Council
Budget Status Report -- FY 2022

	Budget			Actual and Commitments			Remaining	
	Original	Modifications	Revised	Actual	Commitments	Total	Amount	Percent
7000--Oil Spill Response Operations Program	$1,050.00		$1,050.00		$0.00	$0.00	$1,050.00	100.0%
7030--Contracted Fleet Readiness			$0.00		$0.00	$0.00	$0.00	0.0%
7520--Preparedness Monitoring	$33,500.00		$33,500.00		$0.00	$0.00	$33,500.00	100.0%
8000--Maritime Operations Program	$12,000.00		$12,000.00		$0.00	$0.00	$12,000.00	100.0%
8012--Line Throwing Device Trials			$0.00		$24,500.00	$24,500.00	($24,500.00)	0.0%
8013--AIS/Radar Whitepaper			$0.00		$12,500.00	$12,500.00	($12,500.00)	0.0%
8014--USCG Basic/Advanced Emergency Ship	$30,000.00		$30,000.00		$30,000.00	$30,000.00	$0.00	0.0%
9000--Environmental Monitoring Program	$12,100.00		$12,100.00	$1,234.04	$0.00	$1,234.04	$10,865.96	89.8%
9110--Spatial Variability of Marine Birds	$40,400.00		$40,400.00		$9,250.00	$9,250.00	$31,150.00	77.1%
9510--Long Term Environmental Monitoring Program	$154,980.00		$154,980.00	$6,449.70	$42,897.50	$49,347.20	$105,632.80	68.2%
9511--Herring/Forage Fish Survey	$46,300.00		$46,300.00		$3,800.00	$3,800.00	$42,500.00	91.8%
9512--Oxygenated Hydrocarbons	$70,400.00		$70,400.00		$0.00	$0.00	$70,400.00	100.0%
9513--Hydrocarbon Sensor	$4,700.00		$4,700.00		$0.00	$0.00	$4,700.00	100.0%
9520--Marine Invasive Species	$56,870.00		$56,870.00	$7,464.04	$46,870.00	$54,334.04	$2,535.96	4.5%
9550--Dispersants	$32,000.00		$32,000.00		$0.00	$0.00	$32,000.00	100.0%
Subtotals	**$2,841,557.00**	**$0.00**	**$2,841,557.00**	**$152,110.61**	**$331,747.50**	**$483,858.11**	**$2,357,698.89**	**83.0%**
Board of Directors								
1350--Information Technology	$2,000.00		$2,000.00	$42.39	$0.00	$42.39	$1,957.61	97.9%
2100--Board Administration	$120,941.00		$120,941.00	$9,551.91	$0.00	$9,551.91	$111,389.09	92.1%
2150--Board Meetings	$92,500.00		$92,500.00		$0.00	$0.00	$92,500.00	100.0%
2200--Executive Committee			$0.00		$0.00	$0.00	$0.00	0.0%
2220--Governance Committee			$0.00		$0.00	$0.00	$0.00	0.0%
2222--Finance Committee			$0.00		$0.00	$0.00	$0.00	0.0%
2700--Legislative Affairs Committee			$0.00		$0.00	$0.00	$0.00	0.0%
Subtotals	**$215,441.00**	**$0.00**	**$215,441.00**	**$9,594.30**	**$0.00**	**$9,594.30**	**$205,846.70**	**95.5%**
Committees and Committee Support								
2250--Committee Support	$176,407.00		$176,407.00	$10,309.48	$0.00	$10,309.48	$166,097.52	94.2%
2300--Oil Spill Prevention & Response	$1,600.00		$1,600.00		$0.00	$0.00	$1,600.00	100.0%
2400--Port Operations & Vessel Traffic System	$1,600.00		$1,600.00		$0.00	$0.00	$1,600.00	100.0%
2500--Scientific Advisory Committee	$1,600.00		$1,600.00		$0.00	$0.00	$1,600.00	100.0%
2600--Terminal Operations & Environmental Monitoring	$1,600.00		$1,600.00		$0.00	$0.00	$1,600.00	100.0%
2800--Information and Education Committee	$1,600.00		$1,600.00		$0.00	$0.00	$1,600.00	100.0%
Subtotals	**$184,407.00**	**$0.00**	**$184,407.00**	**$10,309.48**	**$0.00**	**$10,309.48**	**$174,097.52**	**94.4%**
General and Administrative								
1000--General and Administrative	$515,477.00		$515,477.00	$32,947.67	$0.00	$32,947.67	$482,529.33	93.6%
1050--General and Administrative--Anchorage	$138,803.00		$138,803.00	$12,551.93	$65,460.45	$78,012.38	$60,790.62	43.8%
1100--General and Administrative--Valdez	$180,180.00		$180,180.00	$12,608.38	$63,609.26	$76,217.64	$103,962.36	57.7%
1300--Information Technology	$106,390.00		$106,390.00	$6,906.94	$0.00	$6,906.94	$99,483.06	93.5%

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Prince William Sound Regional Citizens' Advisory Council
Budget Status Report -- FY 2022

	Budget			Actual and Commitments			Remaining	
	Original	Modifications	Revised	Actual	Commitments	Total	Amount	Percent
Subtotals	**$940,850.00**	**$0.00**	**$940,850.00**	**$65,014.92**	**$129,069.71**	**$194,084.63**	**$746,765.37**	**79.4%**
Subtotals	**$4,182,255.00**	**$0.00**	**$4,182,255.00**	**$237,029.31**	**$460,817.21**	**$697,846.52**	**$3,484,408.48**	**83.3%**
Contingency (Current Year Budget)	**$100,000.00**		**$100,000.00**			**$0.00**	**$100,000.00**	**100.0%**
Total Expenses	***$4,282,255.00***	***$0.00***	***$4,282,255.00***	***$237,029.31***	***$460,817.21***	***$697,846.52***	***$3,584,408.48***	***83.7%***
Increase (Decrease) in Net Assets	***($543,211.00)***	***$0.00***	***($543,211.00)***	***$1,621,092.52***	***($460,817.21)***	***$1,160,275.31***		

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PWSRCAC Director Attendance Record

September 2021
(Attendance recorded through April 2, 2021 Special Board Meeting)

Board Member *(date appointed)*	***Overall Attendance*** *# attended / # missed*	***Last 3 Mtgs.**** *# attended / # missed*	***Term Expires***
Andersen-Faulkner, Patience *(Dec. 1998)*	110/11	2/1	5/22
Ben Cutrell *(Jan. 2020)*	9/0	3/0	5/22
Archibald, Robert *(May 2015)*	33/1	2/1	5/23
Bauer, Amanda *(May 2012)*	48/1	3/0	5/23
Beedle, Robert *(May 2013)*	41/3	3/0	5/22
Bender, Mike *(Sept. 2015)*	30/3	2/1	5/22
Patrick Domitrovich *(May 2021)*	1/1	1/1	5/23
Crump, Nick *(May. 2021)*	2/0	2/0	5/23
Donaldson, Wayne *(Jan. 2015)*	33/2	3/0	5/23
Haggarty, Mako *(May 2015)*	25/7	2/1	5/23
Hasenbank, Luke *(May 2016)*	25/5	2/1	5/22
Jackson, Elijah *(May 2021)*	2/0	2/0	5/23
Malchoff, Melvin *(Sept. 2016)*	15/11	2/1	5/22
Moore, Dorothy *(Jan. 2007)*	74/1	3/0	5/22
Shavelson, Bob *(Sept. 2014)*	43/4	3/0	5/22
Skinner, Rebecca *(May 2018)*	16/2	3/0	5/22
Totemoff, Angela *(May 2021)*	2/0	2/0	5/23
Vigil, Michael *(Sept. 2015)*	24/9	3/0	5/22
Kirk Zinck *(May 2019)*	13/1	2/1	5/23

* PWSRCAC policy states that member groups will be notified in writing if their appointed Board member misses three consecutive Board meetings.

Note: Overall attendance includes all voting meetings (quarterlies and special Board teleconferences), but does not include non-voting meetings (e.g. LRP, budget workshops or Board retreats).

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PRINCE WILLIAM SOUND
REGIONAL CITIZENS' ADVISORY COUNCIL

PWSRCAC Committee Member Attendance Record

Port Operations and Vessel Traffic Systems (POVTS)			
Committee Member	**Overall**	**Last 3 mtgs**	**Term Expires**
Robert Archibald (Director)	20/0	3/0	5/22
Amanda Bauer (Director) (Vice Chair)	32/6	2/1	5/22
Steve Lewis (Chair)	16/0	3/0	5/23
Orson Smith (Director)	45/14	3/0	5/22
Gordon Terpening	10/1	3/0	5/22

Oil Spill Prevention and Response (OSPR)			
Committee Member	**Overall**	**Last 3 mtgs**	**Term Expires**
Robert Beedle (Director)	31/13	2/1	5/23
Mike Bender (Director)	23/10	1/2	5/22
Jerry Brookman	118/4	3/0	5/22
Dave Goldstein	68/21	1/2	5/22
Jim Herbert (Chair)	46/0	3/0	5/23
John LeClair (Vice Chair)	73/27	2/1	5/23
Gordon Scott	67/70	3/0	5/23
Skye Steritz	4/1	2/1	5/23

Terminal Operations & Environmental Monitoring (TOEM)			
Committee Member	**Overall**	**Last 3 mtgs**	**Term Expires**
Amanda Bauer (Director) (Chair)	50/7	3/0	5/22
Harold Blehm	45/9	3/0	5/21
Matt Cullin	14/6	2/1	5/22
Mikkel Foltmar	29/10	2/1	5/21
Steve Goudreau	26/12	2/1	5/21
Tom Kuckertz	31/8	3/0	5/21
George Skladal (Vice Chair)	127/11	3/0	5/22
Patrick Tomco	5/6	1/2	5/21

Ratios are # meetings present/ # of absences

Scientific Advisory Committee (SAC)			
Committee Member	**Overall**	**Last 3 mtgs**	**Term Expires**
Sarah Allan	69/6	3/0	5/22
Wei Cheng	38/4	3/0	5/23
Wayne Donaldson (Director)	55/5	3/0	5/23
Roger Green	136/17	3/0	5/23
Davin Holen (Chair)	47/4	3/0	5/22
John Kennish	126/12	3/0	5/23
Dorothy Moore (Director)	114/8	3/0	5/23
Debasmita Misra	54/45	1/2	5/22

Information & Education Committee (IEC)			
Committee Member	**Overall**	**Last 3 mtgs**	**Term Expires**
Patience Anderson Faulkner (Director)	64/14	3/0	5/23
Trent Dodson (Chair)	20/23	2/1	5/23
Jane Eisemann (Vice Chair)	68/10	3/0	5/23
Cathy Hart	60/20	3/0	5/23
Andrea Korbe	25/16	2/1	5/23
Ruth E. Knight	63/8	3/0	5/22
Savannah Lewis **since recommital date*	30/0*	3/0	5/23
Kate Morse	46/24	1/2	5/22

Ratios are # meetings present/ # of absences

Current List of Board Committee Members

As of May 2021

Executive Committee

- Robert Archibald, President
- Amanda Bauer, Vice President
- Wayne Donaldson, Treasurer
- Bob Shavelson, Secretary
- Rebecca Skinner, Member-at-Large
- Ben Cutrell, Member-at-Large
- Robert Beedle, Member-at-Large

Board Governance Committee

- Dorothy Moore (Chair)
- Patience Andersen Faulkner
- Luke Hasenbank
- Mike Bender
- Robert Beedle

Finance Committee

- Wayne Donaldson (Treasurer)
- Robert Archibald
- Rebecca Skinner
- Mako Haggerty
- Angela Totemoff

Long Range Planning Committee

- Robert Archibald
- Amanda Bauer
- Patience Andersen Faulkner
- Elijah Jackson
- Davin Holen (SAC Chair)
- Amanda Bauer (TOEM Chair)
- Trent Dodson (IEC Chair)
- Jim Herbert (OSPR Chair)
- Steve Lewis (POVTS Chair)
- Cathy Hart (IEC)

Legislative Affairs Committee

- Dorothy Moore
- Robert Archibald
- Rebecca Skinner
- Mako Haggerty
- Robert Beedle
- Angela Totemoff
- Kirk Zinck

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Prince William Sound Regional Citizens' Advisory Council
One-Page Strategic Plan

Mission Statement: Citizens promoting the environmentally safe operation of the Alyeska terminal and associated tankers

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Core Purpose: Citizen oversight to prevent oil spills, minimize environmental impacts and promote response readiness

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Core Values

- Represent the interests of our stakeholders by providing an effective voice for citizens
- The foundation of PWSRCAC is volunteerism
- Promote vigilance and combat complacency
- Organizational transparency and integrity through truth and objectivity
- Foster environmental stewardship

Overarching Goals and Objectives (see pages 14-16 for a more complete list of objectives)

- **Compliance with OPA90 and Alyeska contractual requirements.**
  - ❖ Annual re-certification and funding
  - ❖ Maintain regional balance
  - ❖ Link projects and programs to OPA90 and Alyeska contract

- **Continue to improve environmental safety of oil transportation in our region.**
  - ❖ Monitor and review development of, and compliance with, laws and regulations
  - ❖ Pursue risk-reduction measures and promote best available technologies and best practices
  - ❖ Monitor operations and promote a safe and clean marine terminal
  - ❖ Monitor and review the condition of the tanker fleet/maritime operations
  - ❖ Monitor and promote the safe operation of all Alyeska/SERVS-related on-water assets
  - ❖ Monitor and review environmental indicators
  - ❖ Promote and facilitate effective research for scientific, operational and technical excellence

- **Develop and maintain excellent external and internal communication.**
  - ❖ Advocate for government and industry measures to improve the environmental safety of oil transportation
  - ❖ Maintain and improve relationships with government, industry and communities
  - ❖ Be the model for citizen oversight and provide support for other citizens' advisory groups
  - ❖ Ensure availability of PWSRCAC information
  - ❖ Work to improve availability of information to PWSRCAC from industry sources

- **Achieve organizational excellence.**
  - ❖ Effective short and long term planning, with clear and measurable goals for projects
  - ❖ Fiscally responsible, efficient, and easily understood financial procedures and reporting
  - ❖ Committed to continuous improvement
  - ❖ Recognize people as the most important asset of the organization
  - ❖ Recruit and develop knowledgeable and committed Board members, volunteers and staff
  - ❖ Strong volunteer structure and support for volunteers

PWSRCAC Board and Executive Committee Actions

PRINCE WILLIAM SOUND
REGIONAL CITIZENS' ADVISORY COUNCIL

Meeting	Date	Action Item	
XCOM	8/12/2021	**Acceptance of Alaska Ocean Observing System Grant:** The Executive Committee accepted the $20,000 grant from the Alaska Ocean Observing System for purchase and installation of Conductivity, Temperature, Depth (CTD) sensors for use in Port Valdez, contingent upon staff review for the final grant documentation. Is this grant in place?	**File Code** (if any) **Responsible** Sorum **Disposition** Pending
XCOM	8/12/2021	**Contract Approval - Marine Bird Winter Survey Project:** The Executive Committee approved a sole source contract with the Prince William Sound Science Center to conduct Project 9110 - Prince William Sound Marine Winter Bird Survey at tan amount not to exceed $40,400. Is this contract in place?	**File Code** (if any) **Responsible** Verna **Disposition** Pending
XCOM	8/12/2021	**Report Acceptance: Vessel Traffic Services, Use of Automatic Identification System and Radar:** The Executive Committee accepted the report titled "Vessel Traffic Services, Use of Automatic Identification System and Radar" by C-Core dated July 1, 2021 as meeting the terms and conditions of contract number 8013.21.01, with direction to staff to forward the report to the Alaska Delegation and others. Is this report in place?	**File Code** (if any) 801.431.210701.CCoreVTSais **Responsible** Sorum **Disposition** Done
XCOM	6/16/2021	**Approval of Contract with John Beath Environmental, LLC:** The Executive Committee approved a contract with John Beath Environmental, LLC, for for an amount not to exceed $19,000, to execute Council project #5057.21.01. Is this contract in place?	**File Code** (if any) **Responsible** Love **Disposition** Done
XCOM	6/16/2021	**Council December 2021 and January 2022 Events:** The Executive Committee decided to hold the December 2021 Volunter Workshop virtually, with no Volunteer Party and Science Night, and January 2022 events in-person with conditions to be decided upon later this year. Have the PWSRCAC staff and volunteers been made aware of these decisions?	**File Code** (if any) **Responsible** Fleming **Disposition** Done
Board	5/21/2021	**Approval of FY2022 Budget:** The Board adopted the FY2022 budget as presented during the budget workshop on May 19, 2021, and as described in the Proposed FY2022 Budget Book dated April 27, 2021, including the adjustments outlined during the workshop (total income is ($3,739,044, total expenses are $4,182,255, contingency is $100,000, and net assets used are $543,211). Is this budget in place?	**File Code** (if any) **Responsible** Dixon **Disposition** Done
Board	5/21/2021	**Approval of FY2022 C-Plan Contractor Poll & Contractor:** The Board authorized individual contracts with Attorney Breck Tostevin; Nuka Research & Planning Group, LLC.; Polaris Applied Sciences, Inc.; and Shannon & Wilson for professional services with the aggregate total not to exceed the amount approved for 651 Contingency Plan Review in the Final FY2022 budget, and delegated authority to the Executive Director to enter into individual contracts with these selected consultants. Are these contracts in place?	**File Code** (if any) **Responsible** Swiss **Disposition** Done

PWSRCAC Board and Executive Committee Actions

PRINCE WILLIAM SOUND REGIONAL CITIZENS' ADVISORY COUNCIL

Meeting	Date	Action Item	File Code (if any)	Responsible	Disposition
Board	5/21/2021	**Approval of Fy2022 LTEMP Contractors:** The Board Authorized individual contracts with Newfields Environmental Forensics Practice, Oregon State University, and the United States Geological Survey (USGS) with the aggregate total not to exceed the amount approved in the final FY2022 LTEMP budget (project $9510) for contract expenses, and delegated authority to the Executive Director to enter into individual contracts with the aforementioned consultants; and authorized that the contract work to commence prior to the start of FY2022 as approximately $30,000 of these funds will need to be expended in May and June 2021.		Love	Done
Board	5/21/2021	**Board Committee Appointments:**The Board appointed Patience Andersen Faulkner and Luke Hasenbank to the Board Governance Committee and Patience Andersen Faulkner to the Long Range Planning Committee. Are these appointments in place?		Fleming	Done
Board	5/21/2021	**Amicus Curiae** Brief In Support Of The Appeal of RCA Order P-19-017: The Board delegated authority to the Executive Committee to approve amendments to the amicus curiae brief that was approved by the Board at the January 2021 meeting to incorporate components of the Regulatory Commission of Alaska's Order 17. The amicus curiae brief is in support of the City of Valdez's Appeal of the Regulatory Commission of Alaska's ruling relating to the disclosure of Hilcorp/Harvest Alaska's financial information. Is the Executive Committee aware of this action?		Lally	Done
Board	5/6/2021	**Director Appointments:** The Board approved the confirmation of the two-year terms of the selected representatives for each of the member entities as follows: R. Archibald (Homer); W. Donaldson (Kodiak); K. Zinck (Seldovia); P. Domitrovich (Seward); A. Bauer (Valdez); M. Haggerty (Kenai Peninsula Borough); N. Crump (PWSAC); and, A. Totemoff (Tatitlek Corp & IRA Council). Are these appointments in place?		Fleming	Done
Board	5/6/2021	**Election of Officers and Executive Committee Members-At-Large:** The Board elected the following: Archibald as President; Bauer as Vice President; Donaldson as Treasurer; Shavelson as Secretary; and Skinner, Cutrell and Beedle as Members-at-Large. Are these appointments in place?		Fleming	Done
Board	5/6/2021	**Resolution Designating PWSRCAC Check Signers:** The Board adopted the resolutions provided by First National Bank Alaska to update the list of authorized individuals to sign checks and conduct financial transactions on PWSRCAC's accounts. Is the resolution in place?		Dixon	Done
Board	5/6/2021	**Approval of FY2021 Budget Modifications:** The Board approved the proposed budget modifications reducing expenses by $121,160. Are these modifications in place?		Dixon	Done

PWSRCAC Board and Executive Committee Actions

PRINCE WILLIAM SOUND REGIONAL CITIZENS' ADVISORY COUNCIL

Meeting	Date	Action Item	File Code (if any)	Responsible	Disposition
Board	5/6/2021	**Approval of Amendments to Policy 106 Pertaining to Executive Session:** The Board approved the proposed amendment to Board Policy 106 as recommended by the Board Governance Committee. Are these changes in place?		Fleming	Done
Board	5/6/2021	**Approval of Amendments to Policy 604 Pertaining to Employee Pay Dates:** The Board approved the proposed amendments to Board Policy 604 changing the semi-monthly pay dates from the 8th and the 22nd of each month to the 10th and the 24th, to take effect the first payroll of June 2021. Are these changes in place?		Fleming	Done
Board	5/6/2021	**Approval of Technical Committee Appointments:** The Board made the following two-year technical committee appointments W. Donaldson, J. Kennish, W. Chang, D. Moore, and R. Green to SAC; H. Blehm, M. Foltmar, S. Goudreau, T. Kuckertz and P. Tomco to TOEM; J. Herbert, J. LeClair, G. Scott and S. Steritz to OSPR; C. Chambers, and S. Lewis to POVTS, and, T. Dodson, J Eisemann, C Hart, A. Korbe, S. Lewis, and P. Faulkner to IEC. Are these appointments in place?		Vanderburg &	Done
Board	5/6/2021	**Contract Approval for Smithsonian Environmental Research Center:** The Board authorized a contract with Smithsonian Environmental Research Center (SERC) for work to be performed under the 920 Marine Invasive Species Project FY2021 budget, at an amount not to exceed $46,450. Is this contract in palce?		Love	Done
Board	5/6/2021	**Approval of Contract Compliance Verification Report:** The Board accepted the PWSRCAC/Alyeska Annual Contract Compliance Verification Report. Is the report in place?	100.109.210310.ContrComplRpt	Dixon	Done
Board	5/6/2021	**Review of Cathodic Protection Systems at the Valdez Marine Service:** The Board accepted the report titled "Review of Cathodic Protection Systems at the Valdez Marine Terminal" by Keith Boswell of National Pipeline Services as meeting the terms and conditions of Contract 5998.19.02, with direction to staff to forward the report to Alyeska and state and federal regulators accompanied by a cover letter summarizing the findings and recommendations with request for appropriate action. Are these steps in place?	500.431.210414.NPScpVMT 500.105.210614.AlyeskaCPS	Love	Done
Board	5/6/2021	**Crude Oil Storage Tank 8 Maintenance Review:** The Board accepted the report titled "Crude Oil Storage Tank 8 Maintenance Review" by William Mott of Taku Engineering, dated April 2021, as meeting the terms and conditions of Contract 5056.20.01, with direction to staff to forward the report to Alyeska and state and federal regulators accompanied by a cover letter summarizing findings and recommendations with requests for appropriate action. Are these steps in place?	500.431.210401.TakuTank8Maint 500.105.210614.AlyeskaTank8	Love	Done

PWSRCAC Board and Executive Committee Actions

PRINCE WILLIAM SOUND REGIONAL CITIZENS' ADVISORY COUNCIL

Meeting	Date	Action Item	
Board	5/6/2021	**Rescue Tugboat Best Available Technology Assessment:** The Board accepted the report titled "Best Available Technology Assessment for the Hinchinbrook Entrance ETB" by Glosten as meeting the terms and conditions of Contract 8010.21.01 and allowing distribution of the report to the public. Are these steps in place?	**File Code** (if any) 801.431.210421.GlostenHEetvBAT **Responsible** Sorum **Disposition** Done
Board	5/6/2021	**Web-Based Regional Stakeholder Committee Project:** The Board accepted the Web-Based Regional Stakeholder Committee Resources project, led by contractor Nuka Planning and Research as having met all the contractual terms set forth in the contract.	**File Code** (if any) https://www.pwsrcac.org/rsc/ **Responsible** Robida **Disposition** Done
Board	5/6/2021	**Approval of IRS Form 990:** The Board authorized the Executive Director to sign form 990 on behalf of PWSRCAC and submit it to the IRS on or before May 15, 2021. Has the form been filed?	**File Code** (if any) **Responsible** Dixon **Disposition** Done
Board	5/6/2021	**Coping with Technological Disasters Guidebook & Appendices:** The Board accepted the document titled "Coping with Technological Disasters: A User Friendly Guidebook" Version 4 and the 11 associated appendices, titled as Appendices A-K, as final and to be distributed publicly. Are these documents in place?	**File Code** (if any) 656.431.210501.CopeTechDstrsR4 **Responsible** Love **Disposition** Done
Board	5/6/2021	**LTEMP 2020 Sampling Results & Interpretations Report Approval:** The Board accepted the reports titled "Long Term Environmental Monitoring Program: 2020 Sampling Results & Interpretations," by Dr. James R. Payne and William Driskell, dated March 2021 as meeting the terms and conditions of contract 951.21.04, and for distribution to the public. Is this report in place?	**File Code** (if any) 951.431.210401.2020AnnualRpt **Responsible** Love/Verna **Disposition** Done
Board	5/6/2021	**Port Valdez Mussel Transcriptomics Monitoring Report Approval:** The Board accepted the report titled "Using Mussel Transcriptomics for Environmental Monitoring in Port Valdez, Alaska 2019 and 2020 Pilot Study Results" dated February 17, 2021, as meeting the terms and conditions of Contract 951.21.06 and for distribution to the public. Is this report in place?	**File Code** (if any) 951.431.210217.MusslTrnscriptRpt **Responsible** Love/Verna **Disposition** Done
Board	5/6/2021	**Scheduling of September 2021 Board Meeting:** The Board approved a deviation from the Board-approved regular meeting schedule by holding the September 16-17, 2021 PWSRCAC Board meeting virtually, shifting the rotation of the annual community meeting so that the September 2022 meeting is held in Seward, and delegated authority to the Executive Committee to make decisions regarding future in-person Council events. Are theses steps in place?	**File Code** (if any) **Responsible** Fleming **Disposition** Done

PWSRCAC Board and Executive Committee Actions

PRINCE WILLIAM SOUND REGIONAL CITIZENS' ADVISORY COUNCIL

Meeting	Date	Action Item	File Code (if any)	Responsible	Disposition
Board	5/6/2021	**Annual Board Committee Appointments:** The Board made the following appointments: Donaldson (Treasurer and chair) A. Totemoff, Skinner, Haggerty and Archibald to the Finance Committee; Bauer, E. Jackson, Archibald, the five chairs of the technical committees, and C. Hart to the Long Range Planning Committee; Moore, Beedle and Bender to the Board Governance Committee; and, Moore, Skinner, Zinck, Beedle, Haggerty, Archibald, and A. Totemoff to the Legislative Affaris Committee. Are these appointments in place?		Fleming	Done
XCOM	4/27/2021	**Revised Temporary COVID 19 Travel Restrictions:** The Executive Committee approved rescinding the Temporary Travel Restrictions on Board Travel Policies (the 700 series) approved by the Executive Committee on April 30, 2020, with the following exceptions and guidance: a) The suspension of in-person meetings remains in effect until lifted by the Board or the Executive Committee. b) Individual Board or committee member travel to conferences, business meetings, trainings, or other Council-related business will be approved by the Board or the Executive Committee on a case by case basis, with careful consideration given to the individual circumstances of each request and the most recent and relevant CDC, state, and local travel advisories and mandates. Are these amendments in place?		Wrede	Done
XCOM	4/27/2021	**Scheduling for September 2021 Board Meeting:** The Executive approved sending a recommendation to the Board to hold the September 2021 meeting virtually, and requested that the Board delegate authority to the Executive Committee to make the decision on future in-person Council events. Are these steps in place?		Fleming	Done
XCOM	4/27/2021	**Agenda for Upcoming PWSRCAC Board Meeting:** The Executive Committee approved the agenda for the PWSRCAC Board meeting teleconference scheduled for May 6-7, 2021, as amended. Has the agenda been distributed?		Fleming	Done
Board	4/2/2021	**Contract increase and budget Modification for Project 8010 Rescue Tugboat Best Available Technology Assessment:** The Executive Committee approved a contract increase and change order with Glosten for project 8010 Rescue Tugboat Best Available Technology Assessment in the amount of $2,745, bringing the total contract amount to $66,220, and authorized a budget modification from the contingency fund to project 8010 to cover this increase. Are these steps in place?		Sorum	Done
Board	4/2/2021	**Reinstatement of Environmental Monitoring Project Manager Position:** The Board approved reinstating the Environmental Monitoring Project Manager position into the operating budget and organizational chart and authorized the Executive Director to temporarily waive Policy 618 that addresses the Cost of Living differential paid to Valdez-based to include Cordova. Are these steps in place?		Lally	Done

PWSRCAC Board and Executive Committee Actions

PRINCE WILLIAM SOUND REGIONAL CITIZENS' ADVISORY COUNCIL

Meeting	Date	Action Item	File Code (if any)	Responsible	Disposition
Board	4/2/2021	**Executive Director Annual Evaluation:** The Board extended the Executive Director's contract for one year, and awarded her a $2,000 bonus to be paid from the FY2021 budget. Are these steps in place?		Dixon	Done
XCOM	3/1/2021	**Field Trials of Messenger Line Throwing Devices Contract Approval:** The Executive Committee approved a sole source contract with Glosten for Project 8012 - Field Trials of Messenger Line Throwing Devices for a total cost of $73,500. Is this contract in place?		Sorum	Done
Board	1/28/2021	**Approval of FY2021 Budget Modifications:** Approval of the FY2021 budget modifications as listed on the attachment to the briefing sheet under Item 3-1, with a total revised contingency in the amount of $295,429. Are these modification is place?		Dixon	Done
Board	1/28/2021	**Approval of Prince William Sound Forage Fish Survey Contract**: Authorization for the Executive Director to negotiate and execute a contract with the Prince William Sound Science Center to conduct the FY2021 Prince William Sound Forage Fish Surveys Project at an amount not to exceed $43,600. Is this contract in place?		Love	Done
Board	1/28/2021	**Approval of Proposed FY2022 Projects to Begin in FY2021**: Approval of the following list of projects to commence in FY2021 along with corresponding budget modifications, and delegation of authority to the Executive Committee to authorize contracts as indicated: a) Approve Project 8013 – AIS/Radar Whitepaper in the amount of $35,000 to commence in FY2021. Authorize a budget modification from the contingency fund in the amount of $35,000. b) Approve Project 5057 – APSC'S Appeal Of Epa Air Quality Rule (NESHAP-OLD) in the amount of $60,000 to commence in FY2021. Authorize a budget modification from the contingency fund in the amount of $60,000. Delegate authority to the Executive Committee to approve a contract for this work up to $60,000. c) Approve Project 8012 – Line Throwing Device Trials in the amount of $77,500 to commence in FY2021. Authorize a budget modification from the contingency fund in the amount of $77,500. Delegate authority to the Executive Committee to approve a contract for this work up to $77,500. d) Approve Project 6540 – Copper River Delta and Flats GRS History in the amount of $20,000 to commence in FY2021. Authorize a budget modification from the contingency fund in the amount of $20,000. e) Approve Project 6560 – Peer Listener Training Literature Review in the amount of $10,000 to commence in FY2021. This project will encompass the first part of Peer Listener Training project slated for FY2022, and that has a total budget modification from the contingency fund in the amount of $10,000. Are these modifications in place?		Dixon	Done

PWSRCAC Board and Executive Committee Actions

PRINCE WILLIAM SOUND REGIONAL CITIZENS' ADVISORY COUNCIL

Meeting	Date	Action Item	File Code (if any)	Responsible	Disposition
Board	1/28/2021	**Report Acceptance - Recovery of A Subsistence Way Of Life**: Acceptance of the report and report summary titled "Recovery of a Subsistence Way of Life: Assessments of Resource Harvests in Cordova, Chenega, Tatitlek, Port Graham, and Nanwalek, Alaska since the Exxon Valdez Oil Spill" by the Alaska Department of Fish and Game, Division of Subsistence, dated December 2020, as meeting the terms of Council Contract 966.21.01 and for distribution to the public. Is this report in place?	900.431.201201.adfgSSWOLfull and 900.431.201201.adfgSWOLsummary	Love	Done
Board	1/28/2021	**Report Acceptance - Prince William Sound Forage Fish Survey**: Acceptance of the report "2020 Prince William Sound Forage Fish Observations" by Dr. Scott Pegau of the Prince William Sound Science Center dated September 10, 2020, as meeting the terms and conditions of Contract 9511.20.01 and for distribution to the public. Is this report in place?	900.431.200910.PegauForageFish	Love	Done
Board	1/28/2021	**An Amicus Curiae Brief In Support Of The Appeal of RCA Order P-19-017(6):** Authorization for PWSRCAC legal counsel, Levesque Law Group, to file an Amicus Curiae Brief as discussed in executive session in support of the City of Valdez's Appeal of the Regulatory Commission of Alaska's ruling relating to the disclosure of Hilcorp/Harvest Alaska's financial information. Is his brief in place?		Lally	Done
Board	1/28/2021	**Report Acceptance - 2020 Drill Monitoring Annual Report**: Acceptance of the 2020 Annual Drill Monitoring Report for distribution. Is this report in place?	752.431.210101.DrillMon2020	Robertson	Done
Board	1/28/2021	**Approval of PWSRCAC'S FY2022-2026 Five-Year Long Range Plan:** Approval of the Five-Year Long Range Plan for Fiscal Years 2022-2026 as developed and finalized for consideration by the Board at the January 27, 2021 Long Range Plan work session. Is this report in place?	210.101.210128.FiveYearLRP	Lally	Done
Board	1/28/2021	**Scheduling of PWSRCAC May 2021 Events**: Deviation from the Board-approved regular meeting schedule by holding the May 6-7, 2021 PWSRCAC Board meeting and associated events remotely through video and teleconference because of COVID-19 and COVID-19 restrictions. Is this deviation in place?		Fleming	Done
XCOM	1/20/2021	**Planning and Process for Executive Director Evaluation:** The Executive Committee approved a recommendation to not amend the Executive Director performance goals, as outlined in the Executive Director's job description. Is this recommendation in place?		Schantz	Done

PWSRCAC Board and Executive Committee Actions

PRINCE WILLIAM SOUND REGIONAL CITIZENS' ADVISORY COUNCIL

Meeting	Date	Action Item	File Code (if any)	Responsible	Disposition
XCOM	1/20/2021	**Agenda for Upcoming PWSRCAC Board Meeting:** The Executive Committee approved the agenda for the PWSRCAC Board meeting, January 28-29, 2021 with changes and flexibility as discussed at this meeting. Is this agenda n place?		Fleming	Done
XCOM	12/11/2020	**Comments Regarding Exxon Valdez Oil Spill Trustee Council Resolutions:** The Executive Committee approved sending a comment letter to the Exxon Valdez Oil Spill Trustee Council regarding their draft resolutions for public comment as amended. Has the letter been sent?	400.105.201214.EVOSTCresolutions	Lally	Done
XCOM	12/11/2020	**Temporary Suspension of Board Policy 614 (Vacation Leave Accrual) and Temporary Modification of Board Policy 622 (Vacation Leave Cash-In Policy) for Calendar Year 2021:** The Executive Committee approved temporarily suspending Policy 614 from December 11, 2020 until December 31, 2021 enabling employees to carry more than 240 accrued vacation hours beyond the end of this year and into 2021. Employees are expected to reduce the number to 240 hours or less by December 31, 2021. On January 1, 2022, the temporary suspension will expire, Policy 614 is restored, and the limit on accrued leave returns to 240 hours at the end of each calendar year; and approved temporarily suspending and amending Policy 622 Limitation number two from December 11, 2020 until December 31, 2021 allowing employees to cash-in accrued leave two times in calendar year 2021 up to a maximum of 150 hours. On January 1, 2022, Limitation Two of Policy 622 goes back into effect and the maximum number of hours that can be cashed-in per fiscal year reverts back to 100. Are these actions in place?		Wrede	Done
XCOM	12/11/2020	**2020 Holiday Bonus for the Executive Director:** The Executive Committee authorized a one-time 2020 holiday bonus for Executive Director Donna Schantz in the amount of $400. Is this bonus in place?		Dixon	Done
XCOM	10/22/2020	**Approval of Contract Increase for Port Valdez Weather Buoy Power System Upgrades:** The Executive Committee approved an increase to contract 6531.21.01 with JOA in an amount of $20,000, to upgrade the power systems on the Port Valdez metocean buoys, bringing the total contract to an amount not to exceed $42,220, and approve a budget modification in the amount of $20,000 from the contingency fund to project 6531 for the buoy upgrades. Is this contract increase in place?		Sorum	Done
XCOM	10/22/2020	**Approval of In-State Travel:** The Executive Committee authorized a waiver of the COVID-19 temporary travel restrictions put in place by the Executive Committee in April, 2020 and to approve in-state travel for OSPR Chair, Jim Herbert, to travel to Valdez to assist with the Port Valdez weather buoy power system upgrades in an approximate amount of $2,402. Has the travel taken place?		Fleming	Done (travel did not

PWSRCAC Board and Executive Committee Actions

PRINCE WILLIAM SOUND REGIONAL CITIZENS' ADVISORY COUNCIL

Meeting	Date	Action Item	File Code (if any)	Responsible	Disposition
XCOM	10/22/2020	**Approval to Withdraw the Request for Adjudicatory Hearing on the 2019 VMT C-Plan**: The Executive Committee directed staff to withdraw the December 16, 2019 Request for Adjudicatory Hearing submitted to the Alaska Department of Environmental Conservation on behalf of PWSRCAC, the City of Valdez, Prince William Sound Aquaculture Corporation, and Valdez Fisheries Development Association as Requesters. Is this withdraw in place?	651.105.201124.ADECwithdrawAH	Schantz	Done
Board	9/17/2020	**Rescue Tugboat Best Available Technology Assessment Contract Approval:** The Board approved a contract for project 8010 Rescue Tugboat Best Available Technology Assessment with Glosten in an amount not to exceed $63,475. Is this contract in place?		Sorum	Done
Board	9/17/2020	**Marine Winter Bird Survey Contract Approval:** The Board authorized a contract negotiation with the Prince William Sound Science Center to conduct the scope of work for project 9110 Marine Winter Bird Survey at an amount not to exceed $39,000. Is this contract in place?		Love	Done
Board	9/17/2020	**Report Acceptance - Metagenetic Analysis of Prince William Sound Plankton Samples:** The Board accepted the report titled "Metagenetic Analysis of 2018 and 2019 Plankton Samples from Prince William Sound, Alaska" by Dr. Jonathan Geller, Melinda Wheelock, and Martin Guo dated April 13, 2020, as meeting the terms and conditions of Purchase Order 17255, and for distribution to the public.	952.431.200413.MLMetagenetic	Love	Done
Board	9/17/2020	**Report Acceptance - 2020 Drill Monitoring Annual Report:** The Board accepted the 2019 Annual Drill Monitoring Report for distribution.	752.431.200101.DrillMon2019	Robertson	Done
Board	9/17/2020	**Connecting With Our Communities Logo Adjustment:** The Board adopted the presented "Version 1" as the new logo for the Prince William Sound Regional Citizens' Advisory Council; and approved keeping the apostrophe in the Council's name. Are these actions in place?		Taylor	Done
Board	9/17/2020	**FY2020 Financial Audit Acceptance:** The Board accepted the June 30, 2020 audited financial statements and audit report. Are these reports in place?		Dixon	Done

PWSRCAC Board and Executive Committee Actions

PRINCE WILLIAM SOUND REGIONAL CITIZENS' ADVISORY COUNCIL

Meeting	Date	Action Item	File Code (if any)	Responsible	Disposition
Board	9/17/2020	**Approval of FY2021 Budget Modifications:** The Board approved the modifications to the FY2021 budget as presented in the attachments to Item 4-11 briefing sheet, with a total revised contingency in the amount of $102.079. Are these modifications in place?		Dixon	Done
Board	9/17/2020	**Long Range Planning:** The Board approved the protected project list for the upcoming LRP process as presented in Attachment A to the Item 4-7 briefing sheet. Each Director is asked to take individual action over the next several months by participating in the LRP process. Are these steps in place?		Lally	Done
Board	9/17/2020	**Approval of Proposed Amendments to the PWSRCAC Bylaws:** The Board adopted the proposed amendment to Section 3.8 of the PWSRCAC Bylaws as presented in the Attachment to the Item 4-8 briefing sheet as recommended by the Board Governance Committee. Are these amendments in place?		Wrede &	Done
Board	9/17/2020	**Approval of Board Policy Amendments:** The Board adopted the amendments to the Board policies as proposed by the Board Governance Committee, as presented in the attachment to Item 4-9 briefing sheet. Are these amendments in place?		Wrede &	Done
Board	9/17/2020	**Scheduling of PWSRCAC December 2020 Events:** The Board approved the cancellation of all the December 2020 in-person events (Science Night, Volunteer Workshop, and Volunteer Party) and the in-person January 2021 Board meeting because of COVID-19 and COVID-19 restrictions; staff to work on holding these events virtually. Is this amendment in place?		Fleming	Done
XCOM	9/9/2020	**OSPR Committee Appointment:** The Executive Committee appointed Skye Steritz to the OSPR Committee with a term set to expire at the May 2021 annual Board meeting. Donaldson seconded. Is this appointment in place?		Fleming	Done
XCOM	9/9/2020	**Appointment to LRP Committee:** The Executive Committee appointed IEC Committee Member Cathy Hart to the FY2022/2023 Long Range Planning Committee. Is this appointment in place?		Fleming	Done

PWSRCAC Board and Executive Committee Actions

PRINCE WILLIAM SOUND
REGIONAL CITIZENS' ADVISORY COUNCIL

Meeting	Date	Action Item	File Code (if any)	Responsible	Disposition
XCOM	9/9/2020	**Agenda for PWSRCAC Board Meeting:** The Executive Committee approved the agenda for the September 17-18, 2020 virtual board meeting. Has the agenda been distributed?		Fleming	Done

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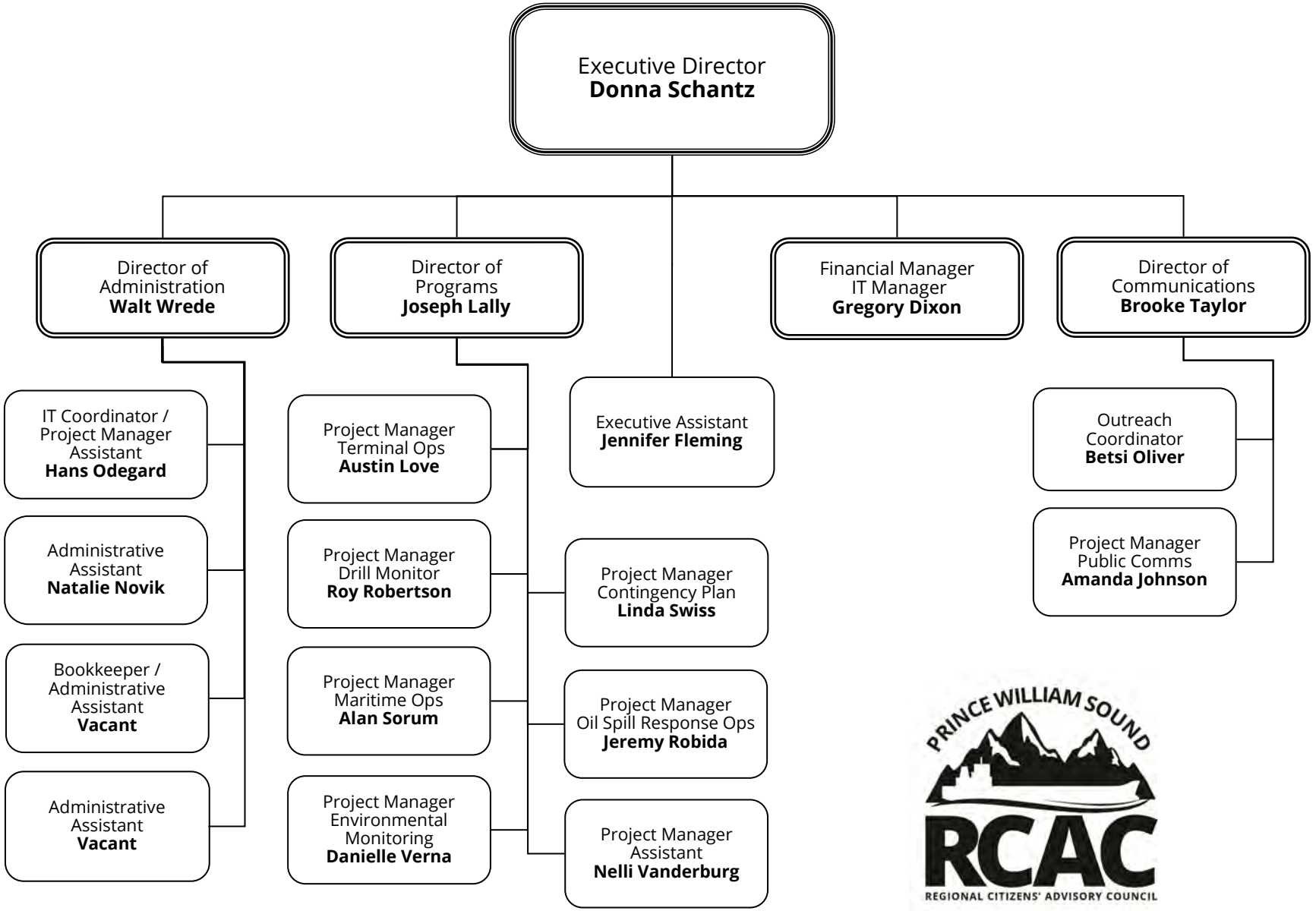

PRINCE WILLIAM SOUND
RCAC
REGIONAL CITIZENS' ADVISORY COUNCIL

Double lines around position indicate that the position supervises other employees.

Updated August 2021

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REVISED BRIEFING

Contract Approval: Oxygenated Hydrocarbons Contract Approval 3-1

Consent Item Briefing for PWSRCAC Board of Directors – September 2021

ACTION ITEM

Sponsor: Danielle Verna, Austin Love and the Scientific Advisory Committee

Project number and name or topic: 9512 – Determining Concentration and Composition of Oxygenated Hydrocarbons from the VMT

1. **Description of agenda item:** This agenda item requests Board approval of a contract with the University of New Orleans to complete the scope of work for the project Determining Concentration and Composition of Oxygenated Hydrocarbons from the Valdez Marine Terminal (VMT), as presented and approved by the Board in the FY2022 budget. This project is planned to be a sole source contract with the University of New Orleans given their experience and expertise related to the field of oxygenated hydrocarbons. This project is tentatively planned to take place from October 2021 to May 2023 pending support and coordination from Alyeska.

2. **Why is this item important to PWSRCAC:** This project will enable the Council to monitor "the environmental impacts of the operation of the terminal facilities and crude oil tankers" as directed by OPA 90 by assessing the type and amount of oxygenated hydrocarbons that are discharged from the Ballast Water Treatment Facility (BWTF). Tankers offload ballast water carried in cargo tanks to the BWTF for treatment prior to discharge into Port Valdez. Preliminary research conducted in 2016/2017 indicates that oxygenated hydrocarbons are a component of that discharge. Oxygenated hydrocarbons are as toxic or more toxic than non-oxygenated hydrocarbons but there has been much less research on the fate, transport, and toxicity of oxygenated hydrocarbons. The findings from this project may be used to inform treatment of oil contaminated water and in-situ monitoring strategies. Furthermore, the results and recommendations of this project could set the stage for future research on the environmental effects of oxygenated hydrocarbons.

3. **Previous actions taken by the Board on this item:**

Meeting	Date	Action
Board	May 21, 2021	FY2022 Budget Approval: The Board approved the FY2022 budget as presented in the draft dated May 12, 2021, which included funding for the Oxygenated Hydrocarbons project.

4. **Summary of policy, issues, support or opposition:** This project will require coordination and cooperation from Alyeska. Staff and the contractor intend to collect 12-18 samples from the Ballast Water Treatment Facility at the VMT over a period of up to 12 months. At this meeting, staff Danielle Verna and Austin Love will present a status update to the Board on discussions with Alyeska to obtain their support for this project. The

REVISED BRIEFING

presentation will include a brief overview of the goals and sampling strategy for this project and a summary of past work conducted by the Council where samples were collected from the BWTF.

5. **Committee Recommendation:** The Scientific Advisory Committee supports the approval of this contract with the University of New Orleans and recommends obtaining support from Alyeska before entering into a contract.

6. **Relationship to LRP and Budget:** Project 9512 is in the approved FY2022 budget and annual workplan.

9512--Oxygenated Hydrocarbons
As of July 31, 2021

FY-2022 Budget	
Original	$70,400.00
Modifications	
Revised Budget	$70,400.00
Actual and Commitments	
Actual Year-to-Date	
Commitments (Professional Services)	
Actual + Commitments	
Amount Remaining	$70,400.00

7. **Action Requested of the Board of Directors:** Authorize a contract with the University of New Orleans for project 9512, Determining Concentration and Composition of Oxygenated Hydrocarbons from the VMT, in an amount not to exceed $70,400.

8. **Alternatives:** None.

9. **Attachments:** FY2022 Budget Briefing for this project.

Prince William Sound Regional Citizens' Advisory Council
Budget Briefing Sheets FY-2022

Type:
☐ Capital project (separate capital projects checklist required)
☐ Program ☐ Protected
☒ Project ☐ Protected
☐ Program/Project Support

Project Number: 9512
Project Title: Determining the Concentration and Chemical Composition of Oxygenated Hydrocarbons Released from the Valdez Marine Terminal
Lead Staff: Danielle Verna
Project Team Members: Scientific Advisory Committee
Cross Committee Interest: TOEM Committee

1. Description
    a. This project will investigate the chemical composition and concentration of oxygenated hydrocarbons that are released from the Valdez Marine Terminal's Ballast Water Treatment Facility into the marine waters of Port Valdez.
    b. Oxygenated hydrocarbons are oil molecules with an oxygen atom attached to them, and they have been shown to be as toxic or more than their non-oxygenated counterparts. However, much less research has been done to understand the fate, transport, and toxicity of oxygenated hydrocarbons compared to non-oxygenated hydrocarbons. The Ballast Water Treatment Facility treats oily water from tanker ships and other sources at the Valdez Marine Terminal before discharging the treated water into Port Valdez. Currently, state water quality regulations only govern the discharge of non-oxygenated hydrocarbons. Oxygenated hydrocarbons are not regulated because research pertaining to these toxic oil byproducts is scarce. From preliminary research, oxygenated hydrocarbons are known to be discharged from the Ballast Water Treatment Facility. By more thoroughly investigating the chemical concentration and composition of oxygenated hydrocarbons from the Ballast Water Treatment Facility, this project will improve our limited understanding of what types and how much oxygenated hydrocarbons are being discharged from the terminal into Port Valdez.
    c. Information from this project could lead to better treatment of oil contaminated water and environmental monitoring strategies. The results from this project will be shared with the Council, industry and regulatory stakeholders, and the public via a comprehensive report of the findings and future research recommendations. The results will be submitted to a peer-reviewed journal for publication.
    d. The success of this project will be measured by the delivery of a report to the PWSRCAC Board and ex-officio members, and by the submission of peer-reviewed journal article pertaining to the findings of this research project.
2. Program/project goals and objectives [Should be clear, specific, and measurable with starting and ending dates.]

   a. Collect water samples from the various points throughout the Ballast Water Treatment Facility and Port Valdez on a monthly basis (August 2021 – March 2022)
   b. Analyze chemical composition and concentration of oxygenated hydrocarbons in collected water samples (August 2021 – April 2022)
   c. Report results and future research and monitoring recommendations to the Board of Directors and ex-officio members (September 2023)

3. Strategic plan and mission
   a. This project would support the Council's strategic goal to "Continue to improve environmental safety of oil transportation in our region" by the objective to "Promote and facilitate effective research for scientific, operational and technical excellence."
   b. This project will provide new information about understudied and little understood byproducts of crude oil contamination and oxygenated hydrocarbons. These byproducts may pose significant risks to the environment. Oxygenated hydrocarbons are released from the Valdez Marine Terminal's Ballast Water Treatment Facility but have never been chemically analyzed before. Therefore, information from this project will help the Council achieve its mission, to promote the safe transportation of oil in Prince William Sound, by providing new information about potentially harmful chemicals being discharged from the terminal's Ballast Water Treatment Facility, and that information could be used to inform future recommendations to reduce the introduction of oxygenated hydrocarbons into Port Valdez.
   c. This project would address the OPA 90 requirement to monitor "the environmental impacts of the operation of terminal facilities and crude oil tankers." This project would address the Alyeska contract stipulation to "Provide local and regional input, review and monitoring of Alyeska's oil spill response and prevention plans and capabilities, environmental protections capabilities, and the actual and potential environmental impacts of the terminal and tanker operations."

4. Project Implementation
   a. An outside contractor will mostly complete this project. Specifically, professors and graduate students from the University of New Orleans will conduct the bulk of the work. PWSRCAC staff may complete some of the work needed. For example, PWSRCAC staff may participate in or conduct the water sampling over at the terminal and in Port Valdez. The possibility of PWSRCAC staff conducting the sampling will be discussed with the University of New Orleans researchers. It is estimated that 50 hours of Council, project manager time would be needed to support the work by the University of New Orleans.
   b. This project will not require shipper cooperation, but it will require Alyeska cooperation to obtain water samples from the Valdez Marine Terminal's Ballast Water Treatment Facility. Additionally, Alyeska and USCG cooperation would be needed to collect water samples from Port Valdez within the terminal's security zone. Alyeska has been cooperative in the past when the Council had projects in which water samples from the Ballast Water Treatment Facility were needed. Typically, those water samples were gathered in a relatively short amount of time (e.g. on one day or within one month). This project proposes to gather regular samples over a period of eight months so it will be very important to communicate that with Alyeska and work out a plan with them to make that happen effectively. Additionally, it may be necessary to get a long-term permit from the USCG to enter the security zone to collect water samples – the USCG issued a similar permit to the Council for work pertaining to the April 12, 2020 oil spill

from the terminal. However, perhaps the Port Valdez water samples could be obtained off a terminal structure like Berth 3 instead of from a boat. This would eliminate the need for a USCG security zone permit, so that sampling possibility will be considered.

c. This is not an ongoing project, but it is expected to be carried out over two fiscal years, 2022 and 2023. The water sampling and analytical chemistry work would be done in FY 2022, while the final report and presentation to the Board would be finished in FY 2023.
d. This project does not involve cost sharing or partnerships with other organizations. However, it would be beneficial, but not necessary, to execute this project at the same time as another potential Council project – the Toxicity of Treated Ballast Water Effluent to Copepods: Implications for Food Webs in Prince William Sound project. These two projects could share water samples collected from the terminal and data that would be mutually beneficial.

5. Budget
   a. In FY 2022, the total costs of this project would be $70,400.00 in contract expenses for services provided by the University of New Orleans to complete the objectives of this project. That budget estimate was provided by University of New Orleans researchers and could be subject to change based on negotiations between them and PWSRCAC before a final contract is agreed upon. The contract with the University of New Orleans would be a sole source contract.
   b. No money was previously spent on this project.

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Budget

Account #	Account Title	FY-2022	FY-2023	FY-2024
50000	Salaries and Wages			
50100	Employer Payroll Taxes			
50500	Rents			
50600	Utilities—Telephone and Fax			
50650	Conference Calls			
50700	Supplies (consumable)			
50800	Equipment Leases			
50850	Software			
50900	Internet & E Mail Access			
51000	Equipment Purchases			
51100	Dues and Subscriptions			
51200	Accounting			
51300	Legal Fees			
51400	Contract Labor			
51450	Professional Fees -- Other			
51600	Advertising			
51700	Education			
51800	Printing & Reproduction			
51900	Postage & Delivery			
52300	Conference & Conventions			
52400	Equipment Maintenance			
53000	Insurance			
54000	Library & Reference Materials			
58000	Depreciation & Amortization			
59000	Miscellaneous			
59500	Contracts	$70,400.00		
60000	Travel			
61000	Business Meals			
62000	Meeting Expenses			
	Total	$70,400.00		

Prince William Sound Regional Citizens' Advisory Council
One-Page Strategic Plan

Mission Statement: Citizens promoting the environmentally safe operation of the Alyeska terminal and associated tankers

Link to full FY2020-FY2024 Long Range Strategic Plan

Core Purpose: Citizen oversight to prevent oil spills, minimize environmental impacts, and promote response readiness

Core Values

- The foundation of PWSRCAC is volunteerism
- Promote vigilance and combat complacency
- Organizational transparency and integrity through truth and objectivity
- Foster environmental stewardship
- Represent the interests of our stakeholders by providing an effective voice for citizens

Overarching Goals and Objectives (see pages 14-16 for a more complete list of objectives)

- Compliance with OPA90 and Alyeska contractual requirements.
  - ☐ (1) Annual re-certification and funding
  - ☐ (2) Maintain regional balance
  - ☐ (3) Link projects and programs to OPA90 and Alyeska contract

- Continue to improve environmental safety of oil transportation in our region.
  - ☐ (4) Monitor and review development of, and compliance with, laws and regulations
  - ☐ (5) Pursue risk-reduction measures and promote best available technologies and best practices
  - ☐ (6) Monitor operations and promote a safe and clean marine terminal
  - ☐ (7) Monitor and review the condition of the tanker fleet/maritime operations
  - ☐ (8) Monitor and promote the safe operation of all Alyeska/SERVS-related on-water assets
  - ☐ (9) Monitor and review environmental indicators
  - ☒ (10) Promote and facilitate effective research for scientific, operational and technical excellence

- Develop and maintain excellent external and internal communication.
  - ☐ (11) Advocate for government and industry measures to improve the environmental safety of oil transportation
  - ☐ (12) Maintain and improve relationships with government, industry and communities
  - ☐ (13) Be the model for citizen oversight and provide support for other citizens' advisory groups
  - ☐ (14) Ensure availability of PWSRCAC information
  - ☐ (15) Work to improve availability of information to PWSRCAC from industry sources

- Achieve organizational excellence.
  - ☐ (16) Effective short and long term planning, with clear and measurable goals for projects
  - ☐ (17) Fiscally responsible, efficient, and easily understood financial procedures and reporting
  - ☐ (18) Committed to continuous improvement
  - ☐ (19) Recognize people as the most important asset of the organization
  - ☐ (20) Recruit and develop knowledgeable, involved, and interested people as Board members, volunteers, and staff
  - ☐ (21) Strong volunteer structure and support for volunteers

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OPA 90 and Alyeska Contractual Requirements

PWSRCAC's structure and responsibilities stem from the Oil Pollution Act of 1990 (OPA 90) and our contract with Alyeska Pipeline Service Company (Alyeska). These documents guide our organization and it is important to review the following requirements, and if possible the source documents, when developing proposed projects for Board consideration and approval. Following are abbreviated summaries of some of the major requirements from both documents. Please check the box next to each requirement that the proposed project addresses.

Link to full text of OPA 90 Sec 5002: Terminal and Tanker Oversight and Monitoring, August 18, 1990
Link to full text of contract between PWSRCAC and Alyeska, February, 1990

OPA 90 Contractual Requirements

☐ (1) Regional Balance, broadly representative of communities and interests in the region.

☐ (2) Provide advice to regulators on the federal and state levels.

☐ (3) Provide advice and recommendations on policies, permits, and site-specific regulations relating to the operation and maintenance of terminal facilities and crude oil tankers.

☒ (4) Monitor the environment impacts of the operation of terminal facilities and crude oil tankers, as well as operations and maintenance that affect or may affect the environment in the vicinity of the terminal facilities.

☐ (5) Review the adequacy of oil spill prevention and contingency plans for the terminal facilities and crude oil tankers operating in Prince William Sound and review the plans in light of new technological developments and changed circumstances.

☐ (6) Provide advice and recommendations on port operations, policies, and practices.

☐ (7) Conduct scientific research and review scientific work undertaken by or on behalf of the terminal or oil tanker operators or government entities.

☐ (8) Devise and manage a comprehensive program of monitoring the environmental impacts of the operations of the terminal facility and crude oil tankers.

☐ (9) Monitor periodic drills and testing of oil spill contingency plans.

☐ (10) Study wind and water currents and other environmental factors in the vicinity of the terminal that may affect the ability to prevent, respond to, contain, and clean up an oil spill.

☐ (11) Identify highly sensitive areas that may require specific protective measures.

☐ (12) Monitor developments in oil spill prevention, containment, response, and cleanup technology.

☐ (13) Periodically review port organizations, operations, incidents, and the adequacy and maintenance of vessel traffic service systems designed to ensure safe transit of crude oil tankers pertinent to terminal operations.

☐ (14) Periodically review the standards for tankers bound for, loading at, exiting from, or otherwise using the terminal facilities.

☐ (15) Foster partnerships among industry, government, and local citizens.

Alyeska Contractual Requirements

☒ (1) Provide local and regional input, review and monitoring of Alyeska's oil spill response and prevention plans and capabilities, environmental protections capabilities, and the actual and potential environmental impacts of the terminal and tanker operations.

☐ (2) Increase public awareness of subjects listed above.

☐ (3) Provide input into monitoring and assessing the environmental, social, and economic consequences of oil related accidents and actual or potential impacts in or near Prince William Sound.

☐ (4) Provide local and regional input into the design of appropriated mitigation measures for potential consequences likely to occur as a result of oil or environmental related accidents or impacts of terminal and tanker operations.

☐ (5) Provide recommendations and participate in the continuing development of the spill prevention and response plan, annual plan review, and periodic review of operations under the plan including training and exercises.

☐ (6) Other concerns: comment on and participate in selection of research and development projects.

☐ (7) Review other important issues related to marine oil spill prevention and response concerns that were not obvious with the contract was signed.

☐ (8) Review other concerns agreed upon by the Council regarding actual or potential impacts of terminal or tanker operations.

Contract Approval: Crude Oil Tank 7 & BWT Tank 94 Maintenance Review 3-2

Consent Item Briefing for PWSRCAC Board of Directors – September 2021

ACTION ITEM

Sponsor: Austin Love and the Terminal Operations and Environmental Monitoring Committee

Project number and name or topic: 5081 – Crude Oil Tank 7 and Ballast Water Tank 94 Maintenance Review

1. **Description of agenda item:** This agenda item requests Board approval of a contract with Taku Engineering LLC for work associated with the Council's Crude Oil Tank 7 and Ballast Water Tank 94 Maintenance Review project. The specific action for the Board's consideration includes:

- Authorize a contract with Taku Engineering LLC for work on project 5081 Crude Oil Tank 7 and Ballast Water Tank 94 Maintenance Review in an amount not to exceed $75,088.

2. **Why is this item important to PWSRCAC:** The Oil Pollution Act of 1990 instructs the Council to "monitor those aspects of terminal facilities' and crude oil tankers' operations and maintenance which affect or may affect the environment in the vicinity" of the Valdez Marine Terminal (VMT). This project is focused on monitoring the maintenance of storage tanks at the terminal. In 2021, crude oil storage Tank 7 and ballast water storage Tank 94 are undergoing scheduled, comprehensive internal inspections and repair. That internal inspection and repair work is essential in order to prevent a spill from Tank 7 or 94. Tank 7 can store about 500,000 barrels of crude oil while Tank 94 can store about 500,000 barrels of oil-contaminated water. These comprehensive tank inspections typically occur every 10-20 years, and they provide an opportunity to review not only the results of the internal inspections, but also other important tank maintenance aspects that have occurred since each tanks last internal inspection. Tank 7's last internal inspection occurred in 2008, and Tank 94's last internal inspection occurred in 2012. This project generally involves conducting a third party, technical review of the work that's been done to maintain Tank 7 and 94 since their last internal inspections, as well as the results of their 2021 internal inspections, and identifying recommendations that could improve the maintenance of these two tanks.

3. **Previous actions taken by the Board on this item:**

Meeting	Date	Action
XCOM	9/18/06	Tank Weld Issues at Alyeska's VMT: The Board of Directors approved and directed that 1) Contractor Susan Harvey will complete her report; 2) A PWSRCAC project team will be formed to review the Harvey report. The Board will receive the report simultaneously with the project team; 3) Alyeska & regulators will receive a copy of the report after the project team review & possible revision; and 4) it is anticipated that the final report be submitted to the Board for approval at its January meeting.

Board	5/2/07	Tank Integrity Issues Report: The Board of Directors accepted the four reports on tank integrity issues prepared by Harvey Consulting, LLC, on Tanks 55, 5, 16, and 93 as meeting the terms and conditions of the contract 505.2007.01 and for public distribution; and referral of the reports to the TOEM Committee for further review and any additional follow-up.
XCOM	2/9/12	VMT Tank 5 Report Approval: The Executive Committee approved the report titled "Valdez Marine Terminal Crude Oil Storage Tank 5" dated January 25, 2012 by HCLLC, and directed staff to provide the report to ADEC requesting that the inspection wavier granted for tank 5 be reconsidered.
XCOM	4/28/15	Tank 13 Internal & External Inspection Review: The Executive Committee approved the report titled, "VMT Crude Oil Tank 13 Inspection Review," completed by Harvey Consulting, LLC, for distribution to industry, regulatory, and public stakeholders and to be posted and available for download on the PWSRCAC website.
XCOM	6/26/15	Tank 13 Internal & External Inspection Review: The Executive Committee approved the revised report, "VMT Crude Oil Tank 13 Inspection Review," completed by Harvey Consulting, LLC, for distribution to industry, regulatory, and public stakeholders and to be posted and available for download on the PWSRCAC webpage.
Board	7/31/15	Tank 14 Internal & External Inspection Review: The Executive Committee approved the report titled "VMT Crude Oil Tank 14 Inspection Review" by Harvey Consulting, LLC, for distribution.
Board	5/21/20	Approval of FY2020 Contract and Budget Modification for Project 5056 Tank 8 Internal Inspection Review: The Board authorized a budget modification adding $56,233 to the Tank 8 Internal Inspection Review Project 5056 in the FY2020 PWSRCAC budget; and authorizing the Executive Director to enter into a contract with Taku Engineering LLC., for work to review the inspection and repair of Tank 8, at an amount not to exceed $71,233.
Board	5/6/2021	Crude Oil Storage Tank 8 Maintenance Review: The Board accepted the report titled "Crude Oil Storage Tank 8 Maintenance Review" by William Mott of Taku Engineering, dated April 2021, as meeting the terms and conditions of Contract 5056.20.01, with direction to staff to forward the report to Alyeska and state and federal regulators accompanied by a cover letter summarizing findings and recommendations with requests for appropriate action.

4. **Summary of policy, issues, support or opposition:** Six (out of eight) members of the Terminal Operations and Environmental Monitoring Committee and three Council staff reviewed five proposals that were received in response to the request for proposals for this project. The results of that review identified Taku Engineering LLC as best suited to complete this project for the Council. All committee members and Council staff present at the August 11, 2021 proposal review meeting supported working with Taku Engineering for this project.

5. **Committee Recommendation:** None.

6. **Relationship to LRP and Budget:** Project 5081 – Crude Oil Tank 7 and Ballast Water Tank 94 Maintenance Review is included in the FY2022 budget and $96,000 was allocated for use on a contract for professional services, such as the one being presented here.

5081--Crude Oil Tank 7 & BWT Tank 94
As of July 31, 2021

FY-2022 Budget

Original	$96,000.00

Modifications	
Revised Budget	$96,000.00
Actual and Commitments	
Actual Year-to-Date	
Commitments (Professional Services)	
Actual + Commitments	
Amount Remaining	$96,000.00

7. **Action Requested of the Board of Directors:** Authorize a contract with Taku Engineering LLC for work on project 5081 Crude Oil Tank 7 and Ballast Water Tank 94 Maintenance Review in an amount not to exceed $75,088.

8. **Alternatives:** None recommended.

9. **Attachments:** None.

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Consent Item Briefing for PWSRCAC Board of Directors – September 2021

ACTION ITEM

Sponsor: Legislative Affairs Committee
Project number and name or topic: 4410.22.01 State Legislative Affairs / Legislative Monitor Contract

1. **Description of agenda item:** Kate Troll, the Council's state legislative monitor has decided not to seek renewal of her contract. The Legislative Affairs Committee (LAC) is recommending that the Board approve a new state legislative monitoring contract with Mr. Gene Therriault. The proposed contract is for a term of two years at a not to exceed amount of $24,000 per year.

2. **Why is this item important to PWSRCAC:** The Council has benefitted from the services of a state legislative monitor for the past 25 years. Legislative monitors provide value because they track legislation, agency budgets, and administrative actions that may have impacts upon the safe storage and transportation of oil at the Valdez Marine Terminal. Monitors also provide strategic advice, recommend action plans, assist in the drafting of letters and briefing sheets, arrange contacts with legislators and administration officials, and provide reports and updates to staff, LAC, and the Board. Legislative monitors have played a big role in helping the Council achieve its legislative priorities. Legislative priorities are directly tied to the Council's mission, its contract with the Alyeska Pipeline Service Company, and the Oil Pollution Act of 1990.

3. **Previous actions taken by the Board on this item:**

Meeting	Date	Action
Board	9/19/19	Approved one year contract with Kate Troll in an amount not to exceed $15,000.
Board	5/21/20	Approved one year contract with Kate Troll for FY2021 in an amount not to exceed $30,000.

4. **Summary of policy, issues, support or opposition:** The Legislative Affairs Committee was deeply involved in every step of the legislative monitor selection process. All seven members participated. A project team was formed that included the seven members of the committee plus Donna Schantz, Walt Wrede, and Joe Lally. The project team reviewed the draft request for proposals, evaluated and scored the proposals received, interviewed the top candidates, reviewed the answers to follow-up questions, discussed the results of reference checks, and made the final selection based upon the information received.

5. **Committee Recommendation:** The Legislative Affairs Committee recommends that the Board approve a new two-year contract with Gene Therriault, dba GT Services, in an amount not to exceed $24,000 per year.

6. **Relationship to LRP and Budget:** The approved budget for FY2022 contains $30,000 for the state legislative monitor. This is sufficient to cover the cost of the contract and any unanticipated contingencies.

7. **Action Requested of the Board of Directors:** Authorize the Executive Director to enter into a contract for state legislative monitor services with Gene Therriault, dba GT Services, for a term of two years and compensation not to exceed $24,000 per year.

8. **Alternatives:** None Recommended. The Board has the option of sending this back to the Legislative Affairs Committee for further consideration or declining to contract for monitoring services.

9. **Attachments:** None.

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Briefing for PWSRCAC Board of Directors – September 2021

ACTION ITEM

Sponsor: Gregory Dixon and Wayne Donaldson for the Finance Committee

Project number and name or topic: FY2021 Financial Statement Audit

1. **Description of agenda item:** Joy Merriner, audit partner with PWSRCAC's independent auditor, BDO, LLP, will present the June 30, 2021 audited financial statements and report and be available to answer Board members' questions. Joy is expected to meet with the Finance Committee prior to the Board meeting to review in detail the results of the audit for this year. The Board is asked to accept the June 30, 2021 audited financial statements and report.

2. **Why is this item important to PWSRCAC:** Board members are responsible for overseeing the financial condition of PWSRCAC and verifying that funds are used appropriately for the Council's work. Each year an independent certified public accounting firm is engaged to audit the financial statements so that the Board will have independent assurance that the statements provide an accurate representation of PWSRCAC's financial condition and financial results over the last year.

3. **Committee Recommendation:** The Finance Committee will review with audit staff the statements and reports following the completion of audit field work and prior to the Board meeting. The Committee will provide a recommendation for acceptance of the audited statements and report by the full Board of Directors.

4. **Action Requested of the Board of Directors:** Accept the June 30, 2021 audited financial statements and audit report.

5. **Attachments:** The audited June 30, 2021 financial statements and report will be distributed during the Board meeting.

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Report Acceptance: Field Trials of Messenger Line Throwing Devices 4-2

Briefing for PWSRCAC Board of Directors – September 2021

ACTION ITEM

Sponsor: Alan Sorum, Joe Lally, and the Port Operations and Vessel Traffic Systems Committee

Project number and name or topic: 8012 – Field Trials of Messenger Line Throwing Devices

1. **Description of agenda item:** This last year, the Council contracted the maritime research firm Glosten to evaluate the technologies available to pass or deploy towing lines to vessels in distress to determine what constitutes best available technology (BAT) and then, using a similar approach, compare currently used line handling technologies with alternatives identified by the consultant.

This project evaluated the effectiveness of the line throwing devices identified as being best available technology in a previous study. Field trials of this equipment underscore the best techniques in their use and will improve user experiences with the equipment. Results will be used to develop a set of recommended practices that will be shared with industry. A final report on the project findings is being presented to the Board.

2. **Why is this item important to PWSRCAC:** The final report for Glosten's Tanker Towline Deployment BAT Review (approved by the Board at the May 2020 meeting) was well received and should prove useful in the future. One key recommendation of the study was the need to carry out a practical field trial of line throwing devices identified in the report.

> *"…as a follow-on phase of this study, is a practical trial/demonstration of the top three to five technologies identified in this review, with SERVS/TAPS vessel operators and individuals from PWSRCAC in attendance. Devices could be obtained from system manufacturers or licensed distributors to test their performance on actual vessels in Prince William Sound, or similar operating environment…This combination of practical experience and data collection could prove vital for validation of the findings of this report, and to facilitate adoption of the BAT for emergency towline deployment in Prince William Sound."*

The report presented at this meeting for acceptance, "PWSRCAC Emergency Towline Deployment Practical Trials: Practical Trial Summary Report" covered the practical field trial conducted per the recommendation from the May 2020 report.

3. **Previous actions taken by the Board on this item:**

Meeting	Date	Action
Board	1/28/20	Approved budget modification from contingency fund in the amount of $77,500 for project 8012, and delegated authority to the Executive Committee to approve a contract for this work in an amount not to exceed $77,500.
XCOM	3/1/21	Approved Sole Source Contract with Glosten in the amount of $73,500.

4. **Summary of policy, issues, support or opposition:** The practical trial confirmed the abilities of some of the best performing line throwing devices and brought attention to aspects of device design that had not previously been evaluated, including device build quality and the effect of crosswinds on trailing shot lines/cordage.

The results of the trial and subsequent analysis showed that the highest scoring devices were the PLT-SOLAS and PLT-Multi manufactured by Restech Norway, followed closely by the Ikaros Line Thrower. The Samson Rope Technologies EVATS retrieving line system was tested and also performed very well in a deployment trial.

5. **Committee Recommendation:** The POVTS Committee recommends that the Board accept the final report as meeting the terms and conditions of the contract with Glosten and release the report to the public.

6. **Relationship to LRP and Budget:** Project 8012 Line Throwing Device Trials was funded by the Council in FY2021. Since all the deliverables were not completed by the Contractor in FY2021, a portion of the contractual commitments were carried over into FY2022. The deficiencies noted below will be addressed in the proposed FY2022 budget modifications once the FY2021 audit has been accepted by the Board.

8012--Line Throwing Device Trials
As of July 31, 2021

FY-2022 Budget	
Original	$0
Modifications	
Revised Budget	$0
Actual and Commitments	
Actual Year-to-Date	
Commitments (Professional Services)	$24,500.00
Actual + Commitments	$24,500.00
Amount Remaining	($24,500.00)

7. **Action Requested of the Board of Directors:** Accept the report titled "PWSRCAC Emergency Towline Deployment Practical Trials: Practical Trial Summary Report" by Glosten, dated August 6, 2021, as meeting the terms and conditions of the contract and for distribution to the public.

8. **Alternatives:** None.

9. **Attachments:** Draft report titled "PWSRCAC Emergency Towline Deployment Practical Trials: Practical Trial Summary Report" by Glosten.

PWSRCAC EMERGENCY TOWLINE DEPLOYMENT PRACTICAL TRIALS
Practical Trial Summary Report

PREPARED FOR: Prince William Sound RCAC Valdez, Alaska			BY: Kevin P. Raleigh PROJECT ENGINEER
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DOC: 21024.02	REV: -	FILE: 21024.01	DATE: 6 August 2021

References

1. Tanker Towline Deployment BAT Review, Glosten, Rev. B, 12 May 2020.
2. Test Program Interim Report, Glosten, Rev. 1, 18 June 2021.

Executive Summary

A practical trial of devices for passing a towline between a disabled ship and a rescuing tug was conducted to better understand the practical characteristics of previously defined best available technologies. The trial tested four line throwing devices and one surface float line system. Each device was scored based on how safely and effectively it was able to deploy in a simulated emergency scenario.

The practical trial confirmed the abilities of some of the best performing devices and brought attention to aspects of device design that had not previously been evaluated, including device build quality and the effect of crosswinds on trailing shot lines/cordage.

The results of the trial and subsequent analysis showed that the highest scoring devices were the PLT-SOLAS and PLT-Multi manufactured by Restech Norway, followed closely by the Ikaros Line Thrower. The Samson Rope Technologies EVATS retrieving line system was tested and also performed very well in a deployment trial.

Background

In May of 2020, a report prepared for the Prince William Sound Regional Citizens' Advisory Council (PWSRCAC) evaluated the best available towline deployment technologies based on advertised device specifications (Reference 1). The report discussed the advantages and disadvantages of various devices designed to pass a small-diameter line between vessels. Based on the results of that report, a trial was proposed to practically test the highest-rated devices in a mock emergency scenario. A test program was proposed to PWSRCAC to evaluate each technology according to a set of practical criteria (Reference 2).

This report contains the details of the trial decided upon in the test program, a description of the trial itself, and the conditions of the event, as well as a presentation of the results of the test program and a discussion of the significance of the outcome to PWSRCAC.

Test Characteristics

Four line throwing devices and one surface float line system were evaluated:

- Restech Norway PLT-SOLAS pneumatic line thrower.
- Restech Norway PLT-Multi pneumatic line thrower.

- Delmar Safety/Bumerang BLT 250 Pneumatic Line Thrower.
- Hansson Pyrotech/Ikaros Line Thrower pyrotechnic device.
- Samson Rope Technologies EVATS retrieving line system – paired with a representative (mock) synthetic towing hawser.

The practical performance of each device was evaluated on four aspects of performance: ease of use, effectiveness, reliability, and safety. Each aspect was further broken down into specific device criteria and a scoring system was developed for objective analysis of each device. The breakdown of criteria decided upon prior to the trial is as follows:

- Ease of Use:
  - Ergonomics.
  - Weight.
- Effectiveness:
  - Range.
  - Accuracy and wind deflection.
- Reliability:
  - Range uniformity.
  - Ease of reload.
- Safety:
  - Firing control.

For the surface float line, the criteria of interest are as follows:

- Behavior of deployed surface line.
- Ease of retrieval.
- Time to complete retrieval operations (connection of towline to tow wire on tug).

In addition to the line throwing device criteria discussed in the interim report (Reference 2), this report also discusses two additional criteria recognized upon practical deployment: device build quality and shot line/cordage deflection independent of projectile flight-deflection.

Conditions on the Date of the Trial

The trial was conducted on Tuesday, 15 June 2021. The final date was chosen for predicted moderate wind speeds, which allowed for projectile deflections in crosswinds, and minimal chance of precipitation, which enabled drone flight for aerial videography. All tests took place in central Puget Sound, east of the traffic separation scheme between Meadow Point and Point Wells. The trial made use of two azimuthing stern drive (ASD) tugs, T/V *Bering Titan* and T/V *Mariner*, and a flat-deck cargo barge, *Kenai Trader*, chartered from Alaska Marine Lines. The principal characteristics of each vessel are presented in Table 1.

Table 1 Tug and barge general characteristics

Vessel	*Bering Titan*	*Mariner*	*Kenai Trader*
Length (ft)	120	80	285
Beam (ft)	35	32	78
Horsepower	5000	4000	-

The barge was used (in an empty condition) to simulate a disabled oceangoing vessel in a free drift state. One tug was made up to the barge to control its movement and heading while the

second tug performed the role of the responding emergency towing vessel, or rescue tug. The tugs have been designated as the Control Tug, referring to T/V *Mariner*, and the Emergency Towing Vessel (ETV), meaning T/V *Bering Titan*, for the purposes of this report.

The trial was attended by four Glosten engineers, two photographers/drone operators, representatives from each device manufacturer, a member of the PWSRCAC, a representative from Alyeska Pipeline Service Company, and the crew of each of the chartered tugs. The day of the trial, representatives from each device manufacturer were given the opportunity to prepare their device to be tested and provide input for best practices to ensure successful deployment.

For repeatability, a digital inclinometer was fitted to each device to measure its angle of inclination. For the Ikaros device, the inclinometer was held alongside its horizontal reference line to ensure a proper angle. A handheld laser range finder was used to confirm the distance between the ETV and the barge, and the tugs' anemometers were used to obtain and record wind speed data. Additionally, all devices were activated/fired from the same position on the ETV, with the pneumatic devices held against a padeye welded to the deck, as shown in Figure 1, and the pyrotechnic device fired while standing beside it. Each device was fired according to the procedure described in the Test Procedure section of this report. The Ikaros pyrotechnic device was fired with and without a buoyant head fitted on the projectile.

Figure 1 PLT-SOLAS being fired from padeye installed on the ETV aft deck

Test Criteria

Prior to the towline deployment trial, an interim report was developed and distributed containing a description of the tests to be performed, the criteria being evaluated, and the reasoning behind those criteria. The following section describes the test criteria that were analyzed, the way each criterion was scored, and the rubric used to develop overall scores for each device. Following the rubric is the final test procedure as followed on the day of the trial.

Test Criteria Evaluated – Line Throwing Devices

Ergonomics

Ease of use is critical during emergency operations where efficiency and timeliness are often critically important. Each device was evaluated based on the impact of its design (the body of the launching device itself) on accurately aiming and firing the projectile. The score for this criterion was determined on a scale from 1 to 3, with a score of 1 representing a device whose design hampers an operator's ability to hold, take aim, and resist device recoil, and a score of 3 representing a device whose design assists an operator in performing these actions with ease. SOLAS requires that devices be able to be fired while wearing working gloves and this was considered in the evaluation of ergonomics.

Weight

As with ergonomics, weight was evaluated as part of a combined ease of use score. Each device received a score between 1 and 3 corresponding to the effect that its weight had on successful device operation. A score of 1 corresponds with a device that weighs enough to negatively impact operator aim and/or firing, or one that does not weigh enough to aid control during firing.

Range

It is important during rescue operations, particularly in higher sea states, that a rescuing vessel is not forced to approach too closely to the disabled vessel; therefore, achieving a distance close to the maximum rated distance is a necessary criterion. Each line throwing device is rated to fire a projectile at least 230 meters. Accounting for the height of the barge deck in a light condition, all devices were expected to achieve a firing range of at least 200 meters during the test. Barge distance from the ETV was measured using a laser range finder so that an approximate projectile range could be recorded. Based on each device's average distance fired, a range score was assigned between 1 and 5. A score of 5 represents a device that achieved an average range within 80% to 100% of the stated maximum range or greater. A score of 4 represents the next highest 20% (60-80%), and so on until a score of 1 corresponding to a device achieving less than 20% of the maximum range. A device with an average firing distance over and beyond the barge received a 5.

Accuracy and Wind Deflection

Emergency towing scenarios can occur in a variety of weather conditions, which makes projectile wind deflection a serious concern. Lack of accuracy due to wind conditions could lead to longer rescue evolutions as rescue crews attempt to establish a messenger line connection. For this reason, devices were tested in both downwind and crosswind orientations. During crosswind tests, projectile deflection was observed as an angle measured from the intended firing line. Scores were assigned between 1 and 3. A score of 1 indicates significant deflection (>10°) in crosswinds, and a score of 3 indicates very little or no deflection (<5°) in crosswinds.

Range Uniformity

For nearshore rescues, where collision or grounding are threats to a vessel, time is of the essence in attempting to take a ship in tow, therefore the ability to quickly hit the target ship with the line throwing device is of the utmost importance. In addition to the overall range of each projectile, the difference in range between multiple tests was evaluated to better understand the uniformity between shots. A score between 1 and 3 was assigned based on the spread of distances each line achieved. Distance spread was analyzed based on the scores given for the *Range* criterion, as described above. The point spread was defined as the difference between the highest and lowest

Range scores achieved by a device in each testing scenario. A spread of two points or more resulted in a score of 1, a spread of one point resulted in a score of 2, and a spread less than a point resulted in a score of 3.

Ease of Reload

Another aspect of reliability that was evaluated is the time and effort it takes to reload the device and queue up a repeat shot/attempt. If the first shot from a device misses the target vessel, the time it takes to set up for another attempt should be minimal. For this reason, the time required to ready each device for repeat shots and the ease of reload was recorded. The devices received a score based on these two metrics between 1 and 3. A device received a 3 if it could be easily prepped for a repeat shot with minimal effort within 2 minutes. A reload time between 2 and 3 minutes achieved a score of 2. A score of 1 was indicative of a device that took more than 3 minutes or a considerable amount of effort to reload between shots.

Firing Control Safety

Safety is a critical aspect for evaluating best available technology. It is impacted by projectile type, propellant type, and device design. For practical trials, safety was assessed in terms of an operator's ability to safely control each device while firing it. Operators gave a score from 1 to 3 to each device based on their perception of how safe the device was to manage during firing, with a score of 3 representing a device that is easy/safe to control and a score of 1 representing a device that is difficult/unsafe to control. A list of anticipated risks and their likelihoods was developed for each device. The practical firing control score was combined with the risk consequence matrix to provide an overall safety rating for each device. The risk consequence matrix developed is shown in Appendix B.

Device Build Quality

It is critical to the success of a towline deployment that an operator can reliably fire the device, often multiple times. A deployment which results in a damaged firing device or projectile can result in difficulty aiming accurately, reduced projectile flight performance, or even inability to continue device use. For this reason, the construction quality and robustness of each device was evaluated after the full series of deployments. Each device was given a binary pass/fail score based on its ability to reliably fire each projectile without firing failure or impact on performance. Failure of projectiles to fire or device damage from ordinary usage resulted in a failure.

Line Deflection from Projectile Path

Ideally a device deployment will result in a projectile arc that crosses the disabled vessel so that the line/cordage trailing the projectile falls to the deck where it can be retrieved. In crosswinds, however, the trailing line, or "shot line," can become "caught in the wind" resulting in a significant downwind deflection, even when the projectile's path is minimally affected. It is possible, especially when firing long range devices over short distances or at small targets, for the trailing line to deflect downwind around the target, even if the projectile follows an arc directly over it. Multiple shots during the trial resulted in lines that deflected around the barge in a crosswind. Each device's maximum line deflection away from the projectile was examined to evaluate the distance between the projectile path and the deviation of the line in wind. A device passed this criterion if its average line deviation maximum was less than 30 meters.

Test Criteria Evaluated – Surface Float Line

Behavior of Deployed Surface Line

The effectiveness of a surface float line is greatly affected by the behavior of the line once released from the disabled vessel. Ideally the line will stream out in a straight upwind and/or downcurrent direction from the disabled vessel to allow a responding vessel to retrieve the line without having to make a close approach. The behavior of the surface float line was observed as downwind drift of the disabled vessel, simulated through barge maneuvering by the Control Tug. Drift simulation was accomplished by walking the barge downwind between 1 and 2 knots, which allowed the surface line to properly deploy.

Ease of Retrieval

The most difficult aspect of a float line scenario for a rescuing vessel is the retrieval of the line from the water. Difficulty picking up the line can result in increased rescue times and increasingly complex scenarios for the responding vessel as the disabled vessel continues to drift in the water. Additionally, an unsecured line floating near a tug's stern poses the risk of becoming entangled with a propeller. Retrieval of the line was attempted with the PLT-Multi grapple attachment, with a pike pole on standby in the event of a miss.

Time to Complete Retrieval Scenario

The previous best available technology study identified surface float line systems as being well suited to heavy weather scenarios because of their unique ability to quickly deploy and establish a connection without need for an intermediate lightweight messenger line. To verify that such a system could be deployed as rapidly as expected, the time to complete a deployment scenario was evaluated. The time required to establish an emergency towing connection is a criterion that should ideally be minimized, as a disabled vessel poses risk to its crew, the cargo on board, and the surrounding environment. From the time the float line was deployed from the barge, the time required to complete line retrieval, establish a connection, and begin towing the vessel was recorded to understand total elapsed time.

Back to Agenda

Test Scoring and Rubric

Score	Ease of Use		Effectiveness		Reliability		Safety	Added Criteria	
	Ergonomics	**Weight**	**Range**	**Accuracy and Wind Deflection**	**Range Uniformity**	**Ease of Reload**	**Firing Control**	**Build Quality**	**Line Deflection**
1	Form negatively impacts aiming or firing ability	Mass negatively impacts aiming or firing ability	Device achieved an average of 0-20% maximum range	Significant wind deflection, >10°	*Range* score spread ≥2	Considerable time/effort required to reload	Difficult to control while firing/ unsafe	Build quality impacts firing	Significant deviation from rocket arc, >30 m
2	Form has no significant positive or negative effect on operation	Mass has no significant positive or negative effect on operation	Device achieved an average of 20-40% maximum range	Moderate wind deflection, 5-10°	*Range* score spread 1	Moderate time/effort required to reload	Moderate effort to control while firing	Quality of device is reliable and secure	No/ minimum deviation from rocket arc, <30 m
3	Form positively impacts aiming or firing ability	Mass positively impacts aiming or firing ability	Device achieved an average of 40-60% maximum range	Little/no wind deflection, <5°	*No Range* score spread	Little time/effort required to reload	Easy to control while firing/safe design		
4			Device achieved an average of 60-80% max range						
5			Device achieved an average of 80-100% max range						
Weighting	1	1	3	3	2	2	2	1	1

Test Procedure

The test procedures followed on the day of the trial:

1. Line Throwing Device Downwind Testing
    a. Maneuvered by the Control Tug, the barge was positioned 200 meters downwind of ETV.
    b. The distance to the barge, wind speed, and the inclination angle of Device 1 were measured and recorded.
    c. Device 1 was fired across the mid-body of the barge from the ETV.
        i. *Ease of Use*, *Range,* and *Safety* criteria were recorded.
    d. Device 1 was reloaded.
        i. *Ease of Reload* criteria were assessed and recorded.
    e. Steps b through d were repeated twice with a new test engineer for Device 1 for a total of 3 shots.
        i. *Range Uniformity* data were recorded.
    f. All Downwind Testing steps were repeated for the remaining devices.
2. Line Throwing Device Crosswind Testing
    a. Maneuvered by the Control Tug, the barge was positioned in a crosswind orientation 200 meters from the ETV.
    b. The distance to the barge, wind speed, and the inclination angle of Device 1 were measured and recorded.
    c. Device 1 was fired across the mid-body of the barge from the ETV.
        i. *Ease of Use*, *Accuracy and Wind Deflection,* and *Safety* criteria were recorded.
    d. Device 1 was reloaded.
        i. *Ease of Reload* criteria were assessed and recorded.
    e. Steps b through d were repeated twice with a new test engineer for Device 1 for a total of 3 shots.
        i. *Range Uniformity* data were recorded.
    f. All Crosswind Testing steps were repeated for the remaining devices.
3. Line Throwing Device Simultaneous Firing
    a. The distance to the barge and the wind speed were measured and recorded.
    b. All devices were fired simultaneously from the ETV.
        i. Video footage was analyzed post-test to evaluate wind deflection and range.
4. Surface Float Line System Testing
    a. A positively buoyant synthetic line with the EVATS retrieving line system attached to the distal end was deployed from the barge to simulate an emergency towing hawser. At the proximal (barge) end, the line was attached to a bitt for towing.
    b. Barge drift was simulated by the Control Tug, which walked the barge sideways to mimic a disabled vessel laying in the trough, perpendicular to wave heading. The Control Tug made use of natural environmental forces to augment the drift state and provide more realistic motion.
    c. The ETV attempted to recover the retrieving line with the PLT-Multi grapple projectile, haul aboard the synthetic line, and shackle the eye-splice of the hawser directly to the end of the tow wire. A pike pole was used to retrieve the line after the PLT-Multi failed to successfully grapple the line.
        i. Line behavior and ease of retrieval and time elapsed data were recorded.

d. The ETV commenced towing procedures and began a mock tow of the barge.

Analysis Methodology

As each deployment occurred, wind speed, distance to the barge, device inclination angle, and operator comments were recorded. After aerial video footage was received, distances and angles were evaluated to generate scores based on the scoring matrix. Figure 2 provides an example of an aerial video still after analysis markup. Here, the attitude of the trailing line at the time of projectile touchdown is outlined in blue and the distances to the touchdown point and the midpoint of the barge are drawn in green.

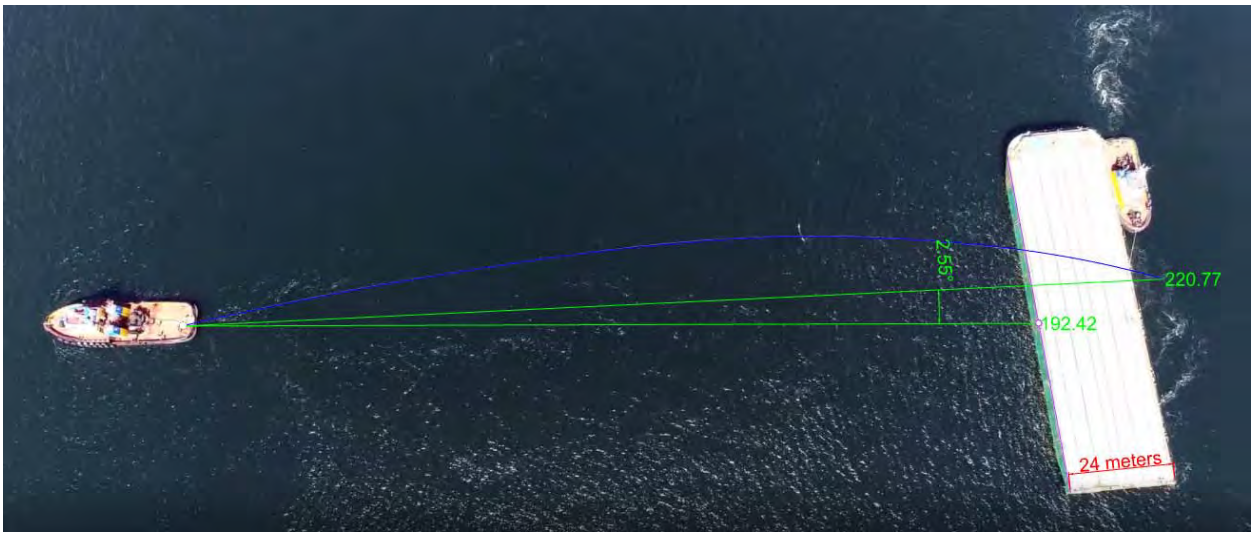

Figure 2 Crosswind deployment analysis markup

To assess the maximum deviation of the shot line from the projectile path, a curve deviation function was run. An example of the outcome of this is shown in Figure 3.

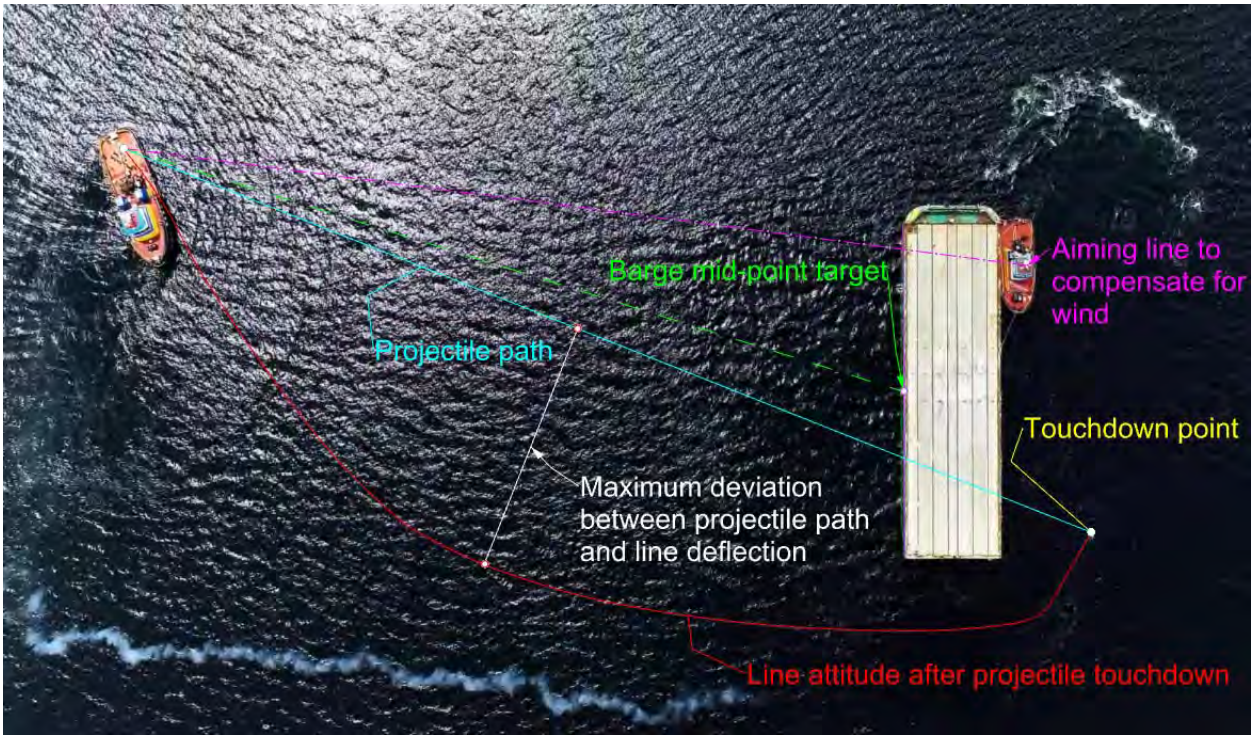

Figure 3 Example of maximum shot line deflection analysis

The average distance to the barge for each device was between 193 and 212 meters for all testing. The average wind speed for downwind tests was between 11 and 13 knots, and the average wind speed for crosswind tests was between 16 and 19 knots for each device.

To ensure that differences in environmental conditions between shots did not skew the results of the testing, a comparison was made between wind speed and projectile angle, meaning the angle between the mid-point of the barge and the projectile's actual trajectory. Figure 4 shows the wind speed against the projectile deflection angle for all the crosswind tests. The projectile deflection angle refers to the angle between the projectile's intended target, the barge mid-body, and its actual touchdown point. There is no clear correlation between higher wind speeds and larger deflection angles between the tests. This may have been caused by fluctuations in wind speed mid-flight or by different operators leading the target more to account for increases in wind speed.

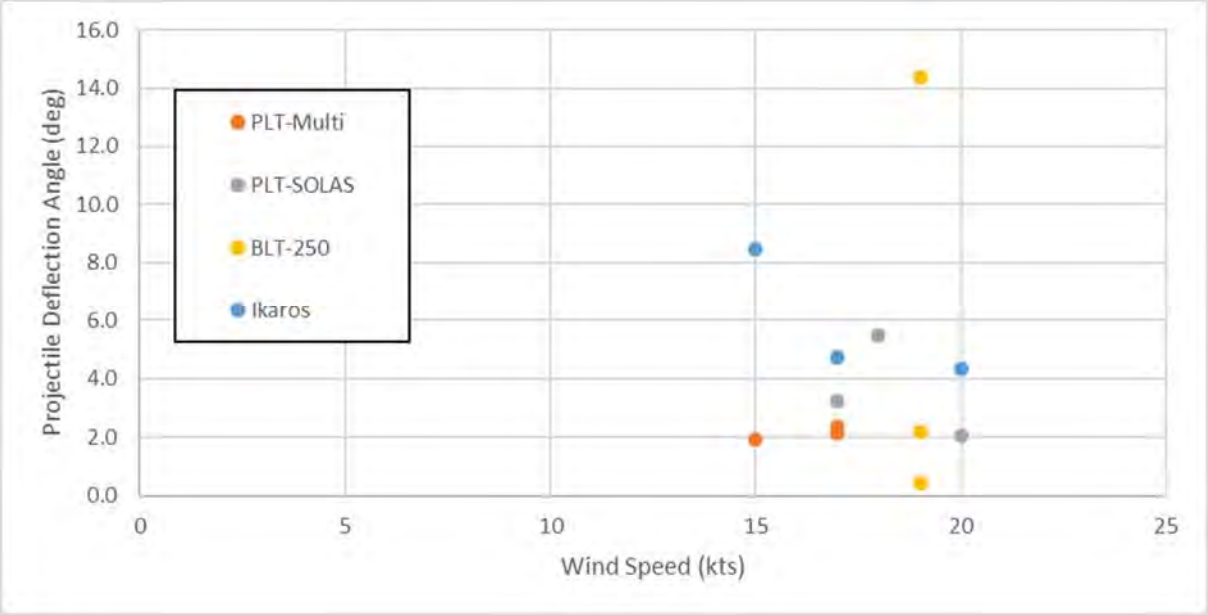

Figure 4 Wind speed to firing angle comparison for crosswind tests

Results

Line Throwing Device Tests

Based on evaluation of the data and analysis of the footage collected during the trial, the results of the scoring matrix are as shown in Table 2 and Table 3 for downwind and crosswind testing, respectively. The overall scores for each device were calculated by summing the score in each category multiplied by its weight.

Table 2 Downwind testing matrix results

	Ergonomics	Weight	Range Score	Accuracy	Range Uniformity	Ease of Reload	Firing Control	Overall
Multi	3	3	5	3	3	3	3	48
SOLAS	3	3	5	2.67	3	3	3	47
BLT-250	3	3	5	3	3	3	3	48
Ikaros	3	3	5	2.33	3	3	3	46
Weight	1	1	3	3	2	2	2	

Table 3 Crosswind testing matrix results

	Ergonomics	Weight	Range Score	Wind Deflection	Range Uniformity	Ease of Reload	Firing Control	Overall
Multi	3	3	4.67	3	2	3	3	45
SOLAS	3	3	5	2.67	3	3	3	47
BLT-250	3	3	4	2.33	1	3	3	39
Ikaros	3	3	5	2.67	3	3	3	47
Weight	1	1	3	3	2	2	2	

The results of the evaluation of the added criteria are shown in Table 4.

Table 4 Added criteria results

Device	Manufacture Quality	Line Deviation from Projectile Path
PLT-Multi	2	2
PLT-SOLAS	2	1
BLT-250	1	2
Ikaros	2	1

Considering the downwind scores, crosswind scores, and the scores for the added criteria, the overall scores out of 100 for each device are captured in Table 5.

Table 5 Overall matrix results for each line throwing device

Device	Overall Score
PLT-Multi	97
PLT-SOLAS	97
BLT-250	90
Ikaros	96

Full results for each device are presented in Appendix A.

Surface Float Line Exercise

The surface float line trial was carried out using a positively buoyant line attached to the EVATS retrieving line assembly. Figure 5 shows the EVATS retrieving line deployed in the water. The line was deployed from a port side bitt off the bow of the barge while the Control Tug walked the barge downwind at approximately 1.5 knots to simulate drift. It took about 6 minutes for the line to unfurl enough for the ETV to position for retrieval. The tug moved into place and the PLT-Multi was deployed, affixed with a grapple hook projectile. The projectile was properly aimed and landed in the water correctly positioned, however was not able to hook the line, instead passing over it. A pike pole was then used to hook the line, haul it aboard, and shackle the hawser to the tow wire on the tug. The total elapsed time between the start of the exercise and the towline coming under tension was 14 minutes and 45 seconds.

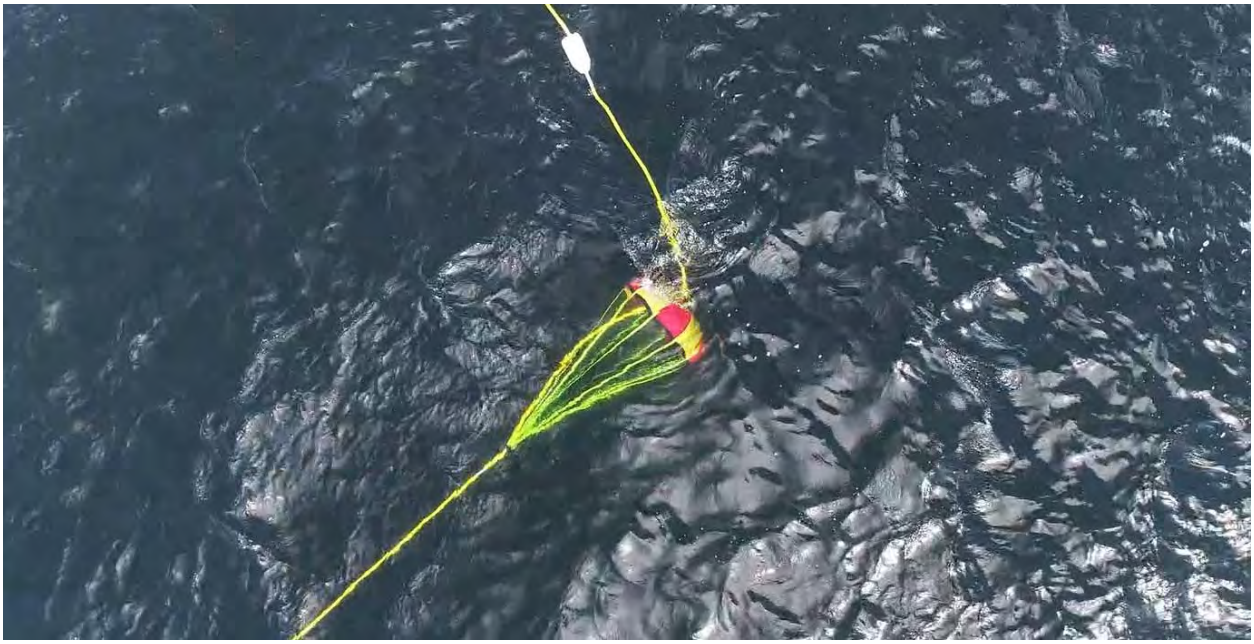

Figure 5 EVATS float line system after deployment

Overall, the float line system behaved as expected, unfurling upwind of the barge such that the ETV could safely move in to retrieve the line. The pilot anchor inflated immediately once pulled by the movement of the drifting barge and the line unfurled completely shortly thereafter. While under tension the anchor dove below the surface, while the two foam floats on the line remained on the surface, visible from the barge and accessible for recovery. The PLT-Multi accurately fired its projectile, though it was noted that the clearance in its hooks would need to be increased, or a smaller diameter line would need to be used to ensure successful recovery.

Discussion of Device Performance

Additional Matrix Criteria

In addition to enabling an objective evaluation of the performance of each device, the trial was highly informative as to the actual operating characteristics of these technologies. Two important takeaways that were apparent from reviewing technical datasheets have already been mentioned: build quality and shot line deflection.

Build quality became a clear criterion to consider only after firing each device. The BLT-250 showed design/manufacturing problems most clearly. The projectiles consistently failed to launch without splitting or fracturing upon activation; and after multiple shots the trigger assembly broke off the body of the device. The Ikaros pyrotechnic device was more reliable; however, it too had one failure related to manufacturing quality. During one of its deployments, the projectile shot line broke away the point where it was “dead ended” on the device and was pulled completely off the deck of the ETV. In a nearshore emergency scenario, losing the line, even after an accurate shot, can result in the loss off critical time.

The line deflection criterion was added to the analysis after observing the crosswind tests. Deployments, even those that accounted for the wind (“leading” the target), resulted in line deflections that were impacted significantly by crosswinds. For multiple deployments, the shot line deflected so much that although the projectile travelled over its intended target, the trailing line was carried downwind to such an extent that it passed completely over the end of the barge and into the water (not retrievable). This represents a shortcoming of long-range devices or those

with lines whose windage was larger as they were more prone to catch the wind and be pulled off course. Operators should consider that the smallest amount of deviation in the line is experienced near the touchdown point of the projectile. Therefore, well-aimed deployments at or near the maximum range of a device are most likely to result in a line landing on board the disabled vessel.

One aspect of device design that related to both build quality and line deflection was the quality of the line fitted on each projectile. For example, the Ikaros device was equipped with a 3-strand nylon line that tended to twist as the projectile rotated mid-flight. This resulted in twists at intervals of approximately 30 ft over the length of the line, which increased the windage of the line considerably, resulting in large line deflections during crosswind tests. This effect was further exacerbated by the lack of fins on the incendiary device, which left the projectile without rotational stability in flight.

Commentary on Matrix Scores

For the ergonomics, weight, ease of reload, and firing control categories, all four devices received perfect scores. Though the four devices received equal scores, it should be noted that there were slight differences between them in these categories.

All the devices received top marks on ergonomics and weight, as each of them had been designed with ease of firing in mind. The compressed air devices were heavier than the pyrotechnic device but were fired from the deck, so no points were deducted. The pyrotechnic device, though ergonomic, was considered the most difficult to aim due to its large diameter and firing stance. An operator is required to fire the device with one foot ahead of the other and the device propped against their thigh. Figure 6 shows the Ikaros being fired from the recommended stance.

Figure 6 Ikaros Line Thrower deployment

All devices were reloaded, or replaced, easily within two minutes, so they all received top scores on ease of reload. Being able to pick up a new device like the Ikaros after a failed shot could save a tremendous amount of time but comes with an increased cost over the reloadable compressed air devices.

Finally, each device received a top score on firing control. All the devices felt safe to use and seemed to pose little danger to those firing if they were used properly in accordance with manufacturer guidance. The compressed air devices experienced some slight recoil upon firing and pulled the operator slightly when the projectile caught the target. The pyrotechnic device made use of a multi-stage rocket that generated its own thrust, so the recoil/impact on the user was very small.

The difference in device scores came from the remaining three categories: range, accuracy/wind deflection, and range uniformity.

The range score showed some differences between the devices and highlighted the importance of practicing with each device. For most tests, each device achieved a touchdown distance that was at least 80% of its maximum specified range, at least 200 meters for the pneumatic devices or 240 meters for the pyrotechnic device. Upon not reaching the barge, operators were able to adjust their firing angle to improve the range of the device. Though this may be more difficult to

do without a digital inclinometer, it demonstrates the importance of a fast reload to allow for follow up shots with adjustments.

Accuracy and wind deflection were the scoring criterion that revealed the most variation between devices and between conditions. It was assumed that each operator targeted the mid-body of the barge and that any deviation from that was because of the device's inherent inaccuracies or the action of the wind. During downwind tests, device operators aimed directly at the mid-body of the barge, and to accurately target the mid-body during cross wind tests, operators aimed upwind toward the Control tug to compensate for wind action.

Range uniformity was used to assess the reliability of each device and, here again, there were observed differences between the technologies. The Ikaros device, with the longest firing range, was consistently reaching distances greater than 240 meters, 80% of its maximum range. The PLT devices were almost always above 80% of their maximum range, and the PLT-Multi, upon not achieving the required distance on one occasion, was responsive to small changes in inclination angle. The BLT had the most variability in its achieved ranges and for that reason received the lowest range uniformity score.

Comparison to Previous Report

Reference 1 addressed the advantages and disadvantages of several towline deployment technologies from the perspective of their advertised characteristics. Many of the conclusions drawn then have been confirmed by the practical trial. Similarly, some of the considerations that the previous report mentioned must be considered when fully examining the devices tested in the trial.

The previous report recommended the PLT-SOLAS as the top choice towline deployment device and cited several specific advantages. Among the advantages mentioned, the practical trial allowed us to confirm that the high muzzle speed on the projectile does allow for high accuracy and the ability of the projectile to resist wind deflection. In addition, the ability to rapidly fire a new projectile after taking a shot was shown by how quickly the PLT-SOLAS was reloaded and fired again.

The next recommended device was a surface float line system. It was noted that surface float lines could be most well-suited for use in high wind and wave conditions where line throwing devices face the most difficulty hitting their target reliably. The surface float line's effective "range" and its ability to be deployed and recovered quickly were confirmed by how smoothly the surface float line exercise was completed.

The BLT-250 was recommended after the SOLAS and surface line system. Notably, it was given a high rating for its low cost and similarity to the PLT-SOLAS but did not score as highly due to its lower operating pressure and lack of a floating or illuminated line. As shown by the results of this testing, the lower pressure may have resulted in a slightly less reliable firing distance and the lower cost comes with overall lower quality.

Finally, the Ikaros was the next recommended device. Its high effective range was shown clearly by its exceptionally long touchdown distances. The device performed very well in testing with remarkable range and a strong feeling of safety, though the previous report does note some of the disadvantages of working with pyrotechnic devices. The difficulty finding and shipping them, as well as the danger they pose not only to the user but also to the target vessel and the environment, are problems that should not be overlooked when selecting a device. The Ikaros is the only device of those tested that makes use of an active propellant in the projectile - in contrast to the pneumatic devices which use impulse projected projectiles (from compressed air). An active projectile is inherently more dangerous because of its potential to continue discharging

propellant after landing, resulting in increased risk to vessel crews, cargoes, and the environment.

Summary and Recommendations

The results of the practical deployment trial demonstrate that the devices identified as best available technology during the previous report are competitive, though there are certainly leading technologies for different scenarios. Additionally, the practical trial provided perspective on the results of the previous study, revealing device characteristics that were not evident from technical specifications/datasheets alone.

The BLT-250 scored well in the previous study, having performance characteristics similar to the PLT-SOLAS. However, upon testing the device practically, its shortcomings in terms of reliability and build quality became evident. Though the device did achieve many of the range and accuracy goals laid out by the test program, its consistent projectile breakages and eventual trigger assembly fracture are problematic for its intended use as an emergency/life-saving device at sea.

The PLT-Multi and PLT-SOLAS are comparable to one another from a capability standpoint. Both devices are highly accurate, well-made, and relatively low-cost, and have the ability to fire not less than four (4) repeat shots before the air cylinder must be replaced or recharged. In the case of the PLT-Multi, there is the added benefit of having multiple interchangeable projectile options, which enhances the usefulness of this device for a range of possible scenarios. Projectile options include: a spherical floating projectile head (useful for small craft recoveries) and a grapple hook projectile head (useful for recovering small diameter lines from the water surface). The passive, non-incendiary projectile on the Restech devices makes them a relatively safe choice for tank vessel operations or situations where crew may be near the landing area of the projectile.

The Ikaros pyrotechnic device clearly offers the best range of the devices tested, however its size and shape make it the most difficult to aim accurately. In a rescue situation, especially one where maneuvering in close proximity may not be feasible, the Ikaros device could provide the additional range necessary to reach an intended target. However, as mentioned previously, because pyrotechnic devices make use of an active incendiary propellant *in* the projectile itself, they carry the risk of igniting flammable or explosive materials/cargoes or injuring crewmembers on deck. The incendiary propellant also leads to difficulties transporting and storing the device. The nature of incendiary devices, generally, makes them a rather inappropriate choice for tank vessel applications.

The surface float line performed as intended, allowing for a safe, effective deployment. In a scenario where line throwing devices cannot feasibly be used, the float line offers a way for a drifting ship to be quickly taken in tow without putting its crew or the crew of a rescuing tug in harm's way. Surface float line systems provide the added benefit of "skipping a step" in establishing the towing connection, as the messenger line is passed directly between vessels with no need for an initial connection with a shot line or other light cordage.

This trial demonstrated that compressed air devices and surface float line systems both provide safe and effective ways for a tug to make initial contact and pass a line to a disabled vessel in an emergency. Surface float line systems may be more consistently usable in foul weather as they offer simplicity in passing a messenger line without need for small diameter cordage. However, they do require deployment from the bow of the disabled vessel. Though pyrotechnic devices offer advantages in range and projectile velocity, for tanker applications, a passive projectile can more safely accomplish this task. Pneumatic line throwers are valuable not only due to their

increased safety, but because they allow crews to routinely practice their operation without additional cost or equipment. This routine practice is critical in helping to avoid unprepared operators during an emergency scenario.

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Appendix A Line Thrower Deployment Data

Table 6 Line thrower deployment data for downwind and crosswind tests

Condition	Device	Wind [kts]	Barge Distance [m]	Touchdown Distance [m]	Line Angle [deg]	Max Curve Deviation [m]
Downwind	Multi	12	187.9	223.0	2.5	3.0
	Multi	13	192.2	230.7	1.5	2.3
	Multi	13	199.3	233.4	2.0	4.7
	SOLAS	12	192.4	220.8	2.6	13.6
	SOLAS	11	200.2	231.5	0.1	8.6
	SOLAS	12	222.4	238.1	6.6	0.5
	BLT-250	12	193.3	231.6	0.3	9.9
	BLT-250	10	201.1	229.9	1.7	1.6
	BLT-250	11	201.6	238.2	1.4	0.9
	Ikaros	9	200.9	>266.79*	5.3	1.5
	Ikaros	13	200.7	325.4	5.1	0.6
	Ikaros	12	200.2	328.5	1.0	1.5
Crosswind	Multi	15	200.0	196.8	1.9	N/A
	Multi	17	195.3	240.3	2.1	32.6
	Multi	17	209.7	237.2	2.3	27.0
	SOLAS	20	209.8	234.0	2.0	42.0
	SOLAS	18	217.0	234.6	5.5	28.1
	SOLAS	17	211.8	234.5	3.2	42.1
	BLT-250	19	206.3	186.5	2.2	11.2
	BLT-250	19	193.0	232.1	14.4	26.8
	BLT-250	19	202.1	158.9	0.4	1.9
	Ikaros	20	202.3	257.7	4.3	62.8
	Ikaros	17	207.1	295.4	4.7	47.1
	Ikaros	15	195.0	261.8	8.5	58.9

*Projectile range exceeded the field of view of the aerial drone

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Appendix B Risk Consequence Matrix

Table 7 Line thrower risk consequence matrix

	Negligible	Marginal	Critical	Catastrophic
Certain				
Likely		Inability to establish ideal downwind firing angle		
Possible	Failure to make contact during initial shot (Far offshore)	Failure to make contact during initial shot (Nearshore)		
Unlikely		Operator injury upon firing or personnel injury on disabled ship (Minor)	Device or projectile damage affecting device usage/ability to fire Personnel injury upon firing or personnel injury on disabled ship (Severe)	
Rare			Premature detonation of incendiary projectile	Ignition of disabled ship cargo Complete failure to make contact with disabled vessel

Briefing for PWSRCAC Board of Directors – September 2021

INFORMATION ITEM

Sponsor: Betsi Oliver and the Information and Education Committee

Project number and name or topic: Alaska Oil Spill Lesson Bank

1. **Description of agenda item:** The Council has long hosted the Alaska Oil Spill Lesson Bank, a series of lesson plans and other educational resources that introduce a foundational understanding of the marine ecosystem, oil spill science, and citizen engagement principles to students K-12. The resources have received a major update and new searchable database platform on the Council's website. This has been a large multiyear project including work by the Information and Education Committee, volunteers Jane Eisemann and Kate Morse, intern Rosie Brennan, contractor Katie Gavenus, and multiple staff, particularly Amanda Johnson and Betsi Oliver. Here is a summary of the recent work:

- The resources were renamed Lesson Bank, instead of the previous Curriculum, to better represent the content and appeal to educators.
- All the lesson plans were reviewed, refined, and, where possible, tagged with relevant science standards. There are about 50 lessons for students grades K-12.
- Improvements included adding "educator tips" about how to make the lessons flow more smoothly based on experiences in the classroom, adding assessment tools and grading rubrics to help teachers know if students met the learning objectives, and checking/updating links to external resources.
- Lessons that teachers have developed in workshops over the years were polished and added, while other outdated lessons were retired.
- All the lessons were formatted into a template to enable teachers to quickly review and find relevant information, improving our professionalism with a polished, consistent look.
- Council wrote a how-to guide for future educators who want to use our template and create standards-aligned lessons that we can include in our resources.
- Access to the lesson plans has also been improved by creation of a searchable database on our website. Every lesson was identified according to various filter terms, such as grade level, subject, and key word. Educators can now more easily find relevant lessons to meet their needs.
- This webtool was tested with an audience of teachers in June and final refinements are being made over the summer and fall. A draft demonstration version of the tool is available on our website: https://www.pwsrcac.org/new-2021-curriculum-demo/.

2. **Why is this item important to PWSRCAC:** Since 2010, the Council has invested in youth involvement programs as a way to connect with young people in our region and keep the mission of the Council relevant to current and future generations. The Alaska Oil

Spill Lesson Bank is a low-cost way to provide resources to teachers, homeschool parents, and other educators.

Through education, youth develop understanding, awareness, and care for the ecosystem and systems that protect it from oil spills. The lessons have been used in classrooms, camps, field programs, and festivals. Many of the funded Youth Involvement projects use resources from the curriculum and educators who are not relying on funds from the Council are also using them to spread our message. Educators and organizations serving youth look to the Council as leaders in oil spill and marine education because of this resource.

3. **Previous actions taken by the Board on this item:** Not applicable.

4. **Summary of policy, issues, support or opposition:** None known.

5. **Committee Recommendation:** The IEC actively participated in this update and endorses the resulting materials.

6. **Relationship to LRP and Budget:** The Alaska Oil Spill Lesson Bank is not a budgeted project but is supported under the Council's 3530 Youth Involvement Project and the Council's 3903 Internship project, which are both in the approved FY2022 budget and annual workplan.

7. **Action Requested of the Board of Directors:** None, item is for information only.

8. **Attachments:** None.

Briefing for PWSRCAC Board of Directors – September 2021

ACTION ITEM

Sponsor: Danielle Verna and the Scientific Advisory Committee

Project number and name or topic: 9110 - Marine Winter Bird Surveys in Prince William Sound

1. **Description of agenda item:** This agenda item is seeking Board acceptance of the final report titled "Marine Winter Bird Surveys in Prince William Sound" by Anne Schaefer and Dr. Mary Anne Bishop of the Prince William Sound Science Center. In March 2021, staff from the Prince William Sound Science Center conducted surveys of marine birds in Prince William Sound, including the Valdez Arm, the Valdez Narrows, and other locations. This report describes the methods and findings of that survey and recommendations for continued monitoring. This was the first of three planned years of the project; funding for fiscal year 2022 has been approved by the Board, and fiscal year 2023 will be pending approval. Contractors Anne Schaefer and Dr. Bishop will provide a brief presentation to the Board on the report and will be available to answer questions, along with Council project manager Danielle Verna.

2. **Why is this item important to PWSRCAC:** These surveys of marine birds within Prince William Sound will help PWSRCAC fulfill two of its OPA 90 responsibilities. OPA 90 tasks the Council with monitoring “the environmental impacts of the operation of the terminal facilities and crude oil tankers” as well as “identifying highly sensitive areas which may require specific protective measures in the event of a spill in Prince William Sound.” The timing and location of these surveys is valuable because they add depth to our understanding of bird populations, risk posed to birds from an oil spill, and where special monitoring or protection may be needed. Additionally, these surveys provide baseline monitoring information that can be used to understand the environmental impacts of the operation of the terminal and tankers on marine bird species. The surveys were conducted in winter months, which is an important time for marine bird survival given the typically harsh conditions. Although other marine bird surveys are conducted in Prince William Sound as part of the Gulf Watch Alaska program, the location of the surveys sponsored by the Council cover new geographic areas and fill in spatial gaps. The results of the survey will be made publicly available through the Alaska Ocean Observing System, and combined with other survey data, can help form models of bird distribution in Prince William Sound that will be useful for future monitoring and response in the event of an oil spill.

3. **Previous actions taken by the Board on this item:**

Meeting	Date	Action
Board	5/2/19	Board adopted the FY2020 budget as presented. This project was approved as part of the FY2020 budget and was presented as a sole source contract with

		the Prince William Sound Science Center. However, the project did not take place in FY2020.
Board	5/21/20	Board adopted the FY2021 budget as presented. This project was approved as a part of the FY2021 budget.
Board	9/17 20	Board authorized a contract negotiation with the Prince William Sound Science Center to conduct the scope of work for project 9110 Marine Winter Bird Survey at an amount not to exceed $39,000.

4. **Summary of policy, issues, support or opposition:** None.

5. **Committee Recommendation:** The Scientific Advisory Committee recommends that the Board of Directors accept this report.

6. **Relationship to LRP and Budget:** Project 9110 Spatial Variability of Marine Birds is in the approved FY2022 budget and annual workplan.

9110--Spatial Variability of Marine Birds
As of July 31, 2021

FY-2022 Budget	
Original	$40,400.00
Modifications	
Revised Budget	$40,400.00
Actual and Commitments	
Actual Year-to-Date	
Commitments (Professional Services)	$9,250.00
Actual + Commitments	$9,250.00
Amount Remaining	$31,150.00

7. **Action Requested of the Board of Directors:** Accept the report titled "Marine Winter Bird Surveys in Prince William Sound" by the Prince William Sound Science Center, dated July 19, 2021, as meeting the terms and conditions of Council contract 9110.21.01, and for distribution to the public.

8. **Alternatives:** None.

9. **Attachments:** Draft report titled "Marine Winter Bird Surveys in Prince William Sound" by Anne Schaefer and Dr. Mary Anne Bishop of the Prince William Sound Science Center.

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Marine Winter Bird Surveys in Prince William Sound

August 10, 2021

A. Schaefer and M.A. Bishop

Prince William Sound Science Center, PO Box 705, Cordova, AK

Contract 9110.21.01

Executive Summary

This project provided funding for at-sea marine bird and marine mammal surveys in under-surveyed areas in and around the tanker escort zone in Prince William Sound (PWS), Alaska. It complements the Exxon Valdez Oil Spill Trustee Council (EVOSTC)-funded Gulf Watch Alaska surveys conducted by the PWS Science Center. Marine bird and mammal distribution and density around much of the tanker lane, Valdez Arm, and Port Valdez is largely unknown as current surveys do not cover these regions and many of these areas have not been surveyed in over a decade.

At-sea surveys were conducted 1-6 and 16 March 2021, during daylight hours from the PWS Science Center's research vessel, the R/V New Wave. All marine birds and marine mammals observed within a 300-meter (m) survey strip in a series of transects varying in length from 7.3 kilometers (km) (Rocky Bay) to 25.7 km (Valdez Arm), for a total of 184.5 km, were recorded. Across all transects, 707 birds representing 21 species were counted. Marine bird observations were dominated by marbled murrelet (*Brachyramphus marmoratus*), followed by common murre (*Uria aalge*), pelagic cormorant (*Phalacrocorax pelagicus*), black-legged kittiwake (*Rissa tridactyla*), and glaucous-winged gull (*Larus glaucescens*). Additionally, 168 marine mammals of 6 species were recorded (including individuals observed beyond the 300-m survey strip). Marine mammal observations were comprised primarily of sea otter (*Enhydra lutris*) and harbor seal (*Phoca vitulina*).

It is challenging to draw conclusions from a single survey. However, the results of this survey emphasize the importance of protected nearshore habitat for marine birds and mammals during the winter. The results suggest priority areas for safeguarding in the event of anthropogenic disturbance, including the areas around Hinchinbrook Entrance (Port Etches and Zaikof Bay), the head of Port Valdez between the Valdez Container Terminal and the outflow of Valdez Glacier Stream, and nearshore areas in southeastern Port Fidalgo. While these surveys do not include all areas that potentially may be impacted by an oil spill, nor do they capture all marine bird winter habitat, continued monitoring efforts in and around the tanker escort lane are important for understanding marine bird and mammal vulnerability to environmental change and anthropogenic disturbance and could be used to refine oil spill response efforts during the nonbreeding season.

Introduction

In Alaska, and specifically Prince William Sound (PWS), most studies on marine birds are conducted during the breeding season when marine birds congregate at or near colonies to nest and forage. However, breeding season dynamics are not representative of the community composition or spatial distribution during the winter. The non-breeding season is a critical period of survival for marine birds overwintering

at higher latitudes as food tends to be relatively scarce or inaccessible, the climate more extreme, light levels and day-length reduced, and water temperatures cooler.

As part of the Exxon Valdez Oil Spill Trustee Council (EVOSTC)-funded Gulf Watch Alaska (GWA) program, Dr. Mary Anne Bishop (PWS Science Center) has been conducting marine bird surveys in PWS during fall and winter since 2007. During this time, consistent temporal and spatial patterns in abundance and distribution for the most abundant marine bird species have been documented, including common murre (*Uria aalge*), marbled murrelet (*Brachyramphus marmoratus*), black-legged kittiwake (*Rissa tridactyla*), and large gulls (*Larus* spp; Schaefer et al. 2020, Stocking et al. 2018, Dawson et al. 2015, Zuur et al 2012). However, many regions of PWS remain under-surveyed during winter, including the areas in and around the Alyeska Pipeline Service Company's Valdez Marine Terminal and the associated tanker escort zone. Marine bird distribution and density around much of the tanker lane, Valdez Arm, and Port Valdez is largely unknown as current surveys do not cover these regions and many of these areas have not been surveyed since 2010.

This report describes the density, distribution, and community composition of marine birds and marine mammals in and around the tanker escort zone in PWS as observed during March 2021 at-sea surveys. The report also provides recommendations for prioritizing oil spill response efforts in and around the tanker escort lane.

Methods

At-sea marine bird and mammal surveys were conducted during daylight hours along fixed transects in and around the tanker escort zone in PWS and followed established U.S. Fish and Wildlife Service (USFWS) protocols (USFWS 2007). One observer using 10x binoculars recorded the number, species, and behavior of all marine birds and mammals occurring within a 300-meter (m) fixed-width strip (150-m both sides and ahead of boat) from a clear observation platform ~3 m above the water line while the vessel traveled at a constant speed between 5 and 10 knots. Noteworthy observations (e.g., marine mammals, forage flocks) were recorded out to 1 kilometer (km). For this study, a forage flock is defined as an aggregation of greater than 10 individuals of one or more species actively foraging or flying but showing a clear interest in the water surface by either circling or hovering (Anderwald et al. 2011). Observations were recorded into a laptop computer integrated with a global positioning system (GPS) using the program dLOG (Ford 1999). Location data (latitude, longitude) were automatically recorded at 15-second (s) intervals and for every entered observation. Additionally, sea and weather conditions were tracked on-site by the observer.

We divided each transect into 3-km segments and aggregated marine bird observations within each segment for summary. We grouped taxonomically similar species into 14 groups (Table 1) and calculated relative density (birds/km^2) for each 3-km segment. Data processing was performed using QA/QSea (ABR, Inc) and program R, and mapping was performed using ArcMap 10.8.1. Marine mammals were not aggregated by 3-km segment, but are presented as recorded along the transect and in some instances beyond the survey strip out to 1-km.

Table 1. Taxonomically similar species combined for density analysis and mapping, Prince William Sound, March 2021.

Species group	Common Name(s)
Cormorants	Double-crested, Pelagic
Grebes	Horned, Red-necked
Guillemots	Pigeon
Harlequin Ducks	Harlequin
Inshore Ducks	Barrow's Goldeneye, Common Goldeneye, Bufflehead
Kittiwakes	Black-legged
Large Gulls	Glaucous-winged, Herring
Loons	Common, Pacific
Long-tailed Ducks	Long-tailed
Mergansers	Common, Red-breasted
Murrelets	Marbled
Murres	Common
Scoters	Surf, White-winged
Small Gulls	Mew

Results & Discussion

At-sea marine bird and mammal surveys were conducted in and around the tanker escort zone in PWS 1-6 and 16 March 2021 from the PWS Science Center's research vessel, the R/V New Wave (Fig. 1). Data from this survey have been uploaded to the Alaska Ocean Observing System (AOOS) data portal and are available at https://gulf-of-alaska.portal.aoos.org/#metadata/771492cd-94b6-47ab-952a-02b152a535cf/project/folder_metadata/2660866. Overall, we surveyed along 184.5 km of transects (Table 2). Sea conditions during surveys were mostly calm (sea state 1: ¼ foot (ft) waves) but ranged up to Beaufort sea state 3 (2 ft waves) (Table 2). Surveys are not conducted when sea states are greater than sea

state 3, which presented a challenge when trying to complete the Valdez Arm transect. Due to a persistent 25-35-knot wind and small craft advisories, sea conditions in this area were unfavorable until March 16, a full 10 days after the rest of the survey had been completed. During the survey, the weather was mostly clear or partly cloudy (weather state 0), but we also experienced overcast skies (weather state 1) and snow (weather state 7) (Table 2).

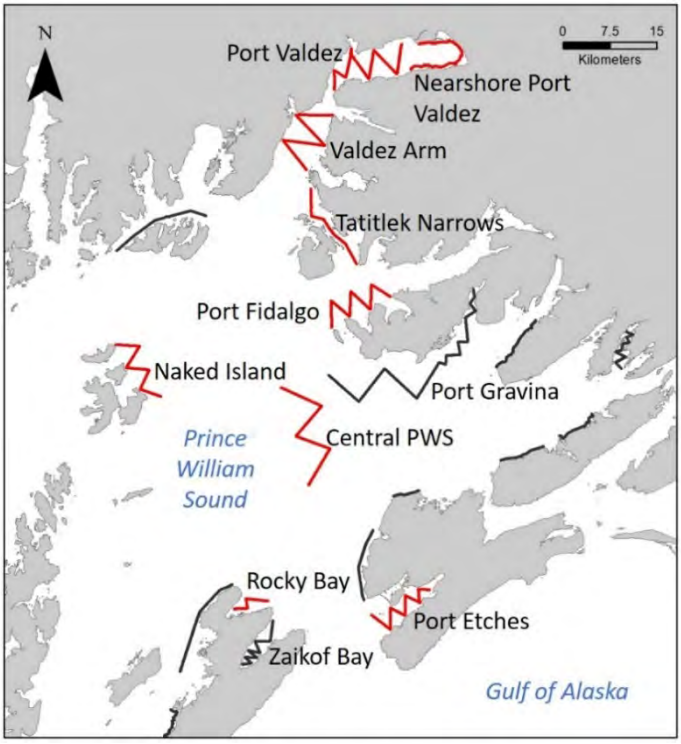

Figure 1. Map of marine bird and marine mammal transects in and around the tanker lanes surveyed in Prince William Sound, March 2021. The black lines indicate the areas around the tanker lanes surveyed each March and November as part of EVOSTC Gulf Watch Alaska-funded surveys. The red lines show the transects completed for the Prince William Sound Regional Citizens' Advisory Council (PWSRCAC) during March 2021.

Table 2. Transects surveyed for PWSRCAC in PWS during March 2021. Sea conditions were mostly calm (sea state (SS) 1: ¼ ft waves) but ranged up to SS 3 (2 ft waves). The weather was mostly clear (weather state (WS) 0), but we also experienced overcast skies (WS 1) and snow (WS 7). The mode for SS and WS on each transect is reported.

Transect Name	Length (km)	Area Sampled (km^2)	Sea State	Weather State	Bird density ($birds/km^2$)	# Mammals (within 1 km)
Central PWS	25.0	7.79	3	0	0.8	2
Port Etches	19.7	5.91	1	7	39.3	27
Port Fidalgo	23.9	7.17	1	0	18.3	8
Naked Island	18.4	5.53	1	0	9.5	4
Nearshore Port Valdez	18.2	5.46	1	0	26.3	78
Port Valdez	30.8	9.23	1	0	4.6	7
Rocky Bay	7.3	2.19	1	0	8	6
Tatitlek Narrows	15.4	4.63	1	1	12	21
Valdez Arm	25.7	7.71	2	1	0	15

Marine Birds

We recorded 707 birds representing 21 species within the 300-m survey strip (Table 3). The avian community was dominated by murrelets (31.1%; marbled and unidentified *Brachyramphus*), followed by common murre (12.4%), pelagic cormorant (*Phalacrocorax pelagicus;* 11.9%), black-legged kittiwake (10%), and glaucous-winged gull (*Larus glaucescens;* 8.5%). The marine bird community during the March EVOSTC GWA transects was also dominated by murrelets (21%), followed by Barrow's goldeneye (*Bucephala clangula*; 13%), surf scoter (*Melanitta perspicillata*; 12%), common murre (10%), and mew gull (*L. canus*; 9%). Murres have historically been the dominant species group during March surveys (Stocking et al. 2018, Dawson et al. 2015). However, since experiencing a die-off event beginning during the winter of 2014/15 and ending in the spring of 2016 (Piatt et al. 2020), murre densities have remained below the long-term average (Bishop, unpublished data). Two additional species, mallard (*Anas platyrhynchos)* and trumpeter swan (*Cygnus buccinator*), were only observed beyond the survey strip. Observations beyond the 300-m survey strip are not recorded consistently, thus any inference from these observations should be limited. The mallards and swans were both observed at the head of Port Valdez between the Valdez Container Terminal and the outflow of Valdez Glacier Stream. In this area,

our vessel remained 500-800 m from the shoreline due to the extended shallow mudflats emanating from the Lowe and Valdez Glacier rivers.

Areas of high marine bird densities on the PWSRCAC transects included the nearshore transect at the head of Port Valdez, Shoup Bay, the head of Port Etches, and nearshore Port Fidalgo (Table 2). Other areas in and around the tanker escort zone with high marine bird densities that were also surveyed in March 2021 as part of the EVOSTC GWA program included the head of Zaikof Bay, near Red Head in Port Gravina, northern Hinchinbrook Island, and Hawkins Island. Refer to Appendix I for distribution maps of each species group.

Areas with relatively low marine bird concentrations included Valdez Arm, Port Valdez (excluding Shoup Bay), and central PWS. Surprisingly, no birds were observed on the Valdez Arm transect. The most common sea state conditions reported during the Valdez Arm transect was sea state 2 (1/2 ft waves; Table 2) but varied up to sea state 3 (2 ft waves) at times. Marine birds may have been taking shelter in more protected areas with calmer waters. Unfortunately, previous surveys by PWS Science Center and USFWS have not covered this area, so it is challenging to know if these low-density conditions are unusual.

Only two forage flocks were observed in and around the tanker escort zone and both occurred in Port Etches. One flock consisted of 35 birds total and included glaucous-winged gulls, black-legged kittiwakes, common murres, and marbled murrelets. The second flock was comprised of 13 birds total, including black-legged kittiwakes, glaucous-winged gulls, and pelagic cormorants. Only a single other forage flock was observed in PWS during March 2021 EVOSTC GWA surveys. The flock consisted of 15 black-legged kittiwakes and was recorded in Elrington Passage.

Table 3. Total number of birds observed by species on PWSRCAC transects within and beyond the 300-m survey strip, March 2021, Prince William Sound, AK.

Common name	**Scientific name**	**Count (within 300 m strip)**	**Count (including observations beyond 300 m)**
Bald Eagle	*Haliaeetus leucocephalus*	3	4
Barrow's Goldeneye	*Bucephala islandica*	5	11
Black-legged Kittiwake	*Rissa tridactyla*	71	73
Brachyramphus Murrelet		67	78
Bufflehead	*Bucephala albeola*	5	44

Common Goldeneye	*Bucephala clangula*	6	7
Common Merganser	*Mergus merganser*	12	12
Common Murre	*Uria aalge*	88	109
Common Raven	*Corvus corax*	2	2
Double-crested Cormorant	*Phalacrocorax auritus*	2	2
Glaucous-winged Gull	*Larus glaucescens*	60	61
Harlequin Duck	*Histrionicus histrionicus*	2	2
Horned Grebe	*Podiceps auritus*	16	16
Long-tailed Duck	*Clangula hyemalis*	6	10
Mallard	*Anas platyrhynchos*		85
Marbled Murrelet	*Brachyramphus marmoratus*	153	156
Mew Gull	*Larus canus*	13	13
Pacific Loon	*Gavia pacifica*	1	1
Pelagic Cormorant	*Phalacrocorax pelagicus*	84	104
Pigeon Guillemot	*Cepphus columba*	13	14
Red-breasted Merganser	*Mergus serrator*	3	3
Surf Scoter	*Melanitta perspicillata*	36	36
Trumpeter Swan	*Cygnus buccinator*		3
Unidentified Cormorant		5	48
Unidentified Duck			105
Unidentified Goldeneye		36	42
Unidentified Grebe		4	4
Unidentified Loon		1	7
Unidentified Merganser		10	10
Unidentified Murre		2	2
Unidentified Scoter		1	14
Unidentified Small Gull			1
White-winged Scoter	*Melanitta fusca*		3
Grand Total		**707**	**1082**

Marine Mammals

In addition to marine birds, we also recorded marine mammals within the 300-m strip during the surveys. When possible, we recorded mammal observations out to 1 km, but this is not uniform across all species as whales are much easier to observe at longer distances compared to sea otter (*Enhydra lutris*), harbor seal (*Phoca vitulina*), Steller sea lion (*Eumetopias jubatus*), or porpoises (*Phocoenoides dalli* or *Phocoena phocoena*). Observations recorded beyond the 300-m strip should be considered minimum counts for these species in these areas.

Sea otter was the most abundant marine mammal observed during the survey and occurred in most nearshore areas (Table 4). We counted 51 harbor seals at a haul-out at the head of Port Valdez south of the Mineral Creek Islands (Table 4). Small numbers of harbor seal were also observed in Port Etches, Port Fidalgo, and St. Matthews Bay. We counted 17 porpoises total on the PWSRCAC transects, most of which (15) could be identified as Dall's porpoise (*Phocoenoides dalli;* Table 4). Porpoises were observed primarily in Port Valdez and Valdez Arm, but also recorded in Port Etches, St. Matthews Bay, and Zaikof Bay. Steller sea lions were observed at a haul-out in Port Etches, as well as in Zaikof Bay and along the western shore of Hawkins Island. Two killer whales (*Orcinus orca)* were observed on the central PWS transect heading from the entrance into PWS. Only one humpback whale (*Megaptera novaengliae)* was recorded during this survey, which was observed near the head of Port Etches (Table 4). Please refer to Appendix II for distribution maps of each species.

Table 4. Total number of marine mammals observed by species on PWSRCAC transects within and beyond the 300-m survey strip, March 2021, Prince William Sound, AK.

Common name	**Scientific name**	**Count (within 300 m strip)**	**Count (including observations beyond 300 m)**
Dall's Porpoise	*Phocoenoides dalli*	15	15
Harbor Seal	*Phoca vitulina*	3	56
Humpback Whale	*Megaptera novaengliae*		1
Killer Whale	*Orcinus orca*		2
Sea Otter	*Enhydra lutris*	54	72
Steller Sea Lion	*Eumetopias jubatus*	3	20
Unidentified Porpoise		2	2
Grand Total		77	168

Conclusions

It is challenging to draw conclusions or make large inferences from the results of a single survey. Species composition and density can vary widely across years, so multiple years of surveys are necessary to understand natural variation during the non-breeding season. However, the patterns observed during this survey are consistent with patterns reported previously for PWS during the non-breeding season. Marine birds tend to prefer shallow and protected habitats that are nearer to shore compared to deep offshore habitats (Schaefer et al. 2020, Stocking et al. 2018, Dawson et al. 2015). During this survey, the highest densities of birds were indeed observed in bays and nearshore areas (e.g., head of Port Valdez), while the lowest densities were observed in more exposed habitats that were farther from shore (e.g., Valdez Arm, central PWS).

Based on observations from this survey, the region around the Hinchinbrook Entrance could warrant prioritization for protection in the event of a perturbation, such as an oil spill. Importantly, Port Etches and Zaikof Bay were high density areas for both birds and marine mammals, including kittiwakes, large gulls, murrelets, murres, sea lions and humpback whales. Port Etches was also one of the only areas in PWS with observations of foraging activity, indicating the presence of forage fish. Age-1 herring (*Clupea pallasii*) have consistently been documented in Port Etches during aerial surveys conducted during June (Pegau 2020) and are an important prey source for murres (Ainley et al. 1996), murrelets (Nelson 1997), kittiwakes (Hatch et al. 2009), and glaucous-winged gulls (Hayward and Verbeek 2008).

Porpoise Rocks, located at the mouth of Port Etches, hosts breeding colonies for black-legged kittiwake, glaucous-winged gull, and common murre (see North Pacific Seabird Data Portal https://axiom.seabirds.net) and is a haul-out site for Steller sea lions. Murres tend to return to nearshore areas well before breeding (Ainley et al. 2002), while kittiwakes tend to return to PWS in March and April, so kittiwake densities can fluctuate widely this time of year (Stocking 2018). Gulls, murres, and kittiwakes observed in Port Etches may be staging near their colonies in preparation for the upcoming breeding season.

Further, high numbers of marbled murrelets and pigeon guillemots, two species that were initially injured by the Exxon Valdez oil spill and whose populations have not yet recovered (EVOS 2014), were also observed in Port Etches and Zaikof Bay. Murrelets were also present in high numbers in Port Fidalgo and the head of Port Valdez, while guillemots were also recorded in Port Fidalgo and Tatitlek Narrows.

While these surveys do not include all areas that potentially may be impacted by an oil spill, nor do they capture all marine bird winter habitat, continued monitoring of marine birds in and around the tanker escort lane during late winter will help determine marine bird and mammal vulnerability to environmental

change and future perturbations, including oil spills. In addition, these surveys could be used to guide and refine oil spill response efforts in and around the tanker escort lane during the nonbreeding season.

Recommendations

Due to the high numbers of marine birds and marine mammals, including species that have yet to recover from the oil spill, and evidence of forage fish presence, we suggest the areas around Hinchinbrook Entrance for special protection in the event of a perturbation. Fortunately, there is already an oil spill response barge staged in Port Etches, which should facilitate rapid and efficient response in the event of a spill. Based on our surveys, other areas with high densities of marine birds that could warrant priority protection include the head of Port Valdez and nearshore areas of southeastern Port Fidalgo. Continued monitoring of marine birds in and around the tanker escort lane during winter will help determine marine bird and mammal vulnerability to environmental change and future perturbations, including oil spills, and can be used to guide and refine spill response efforts.

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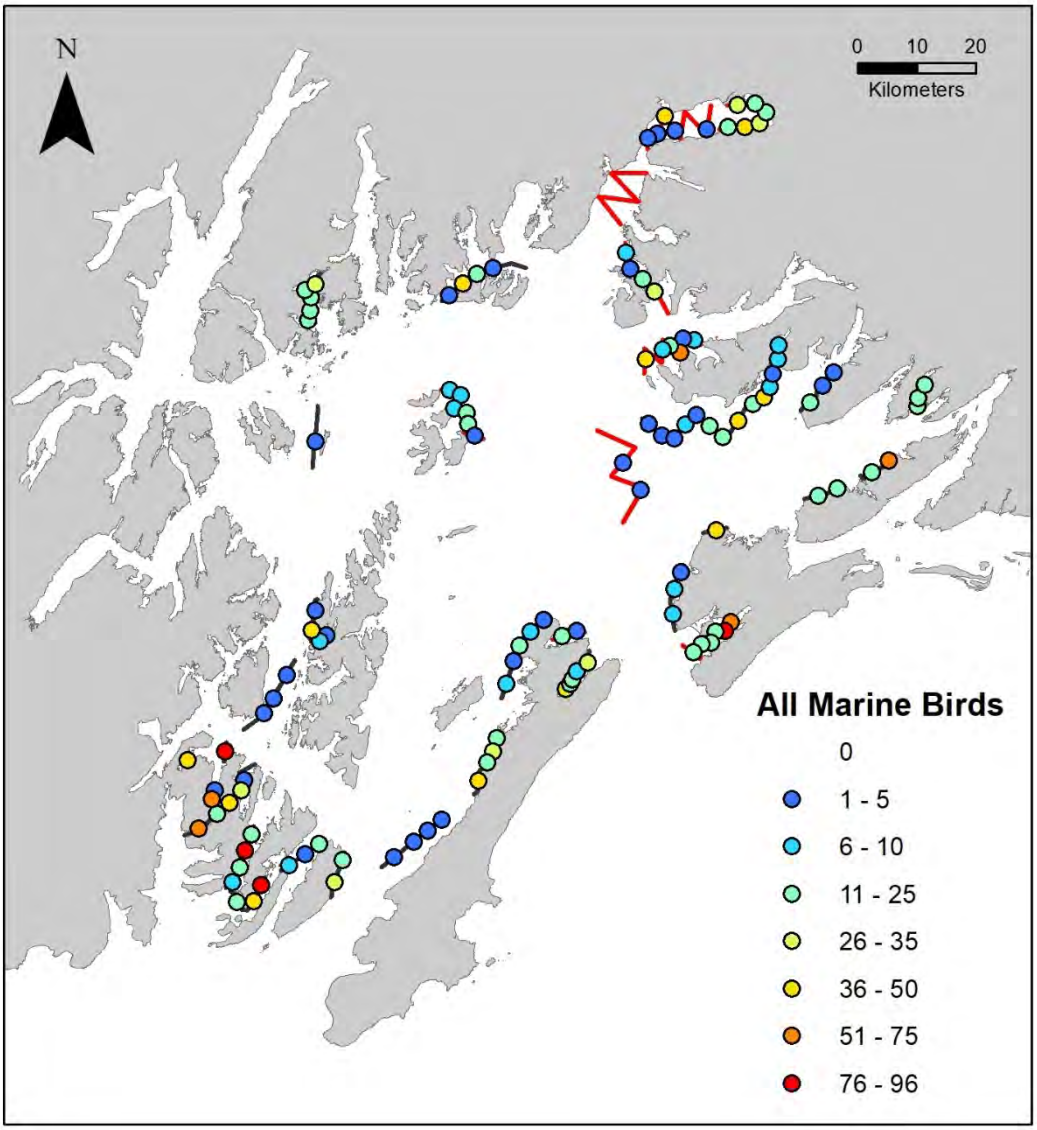
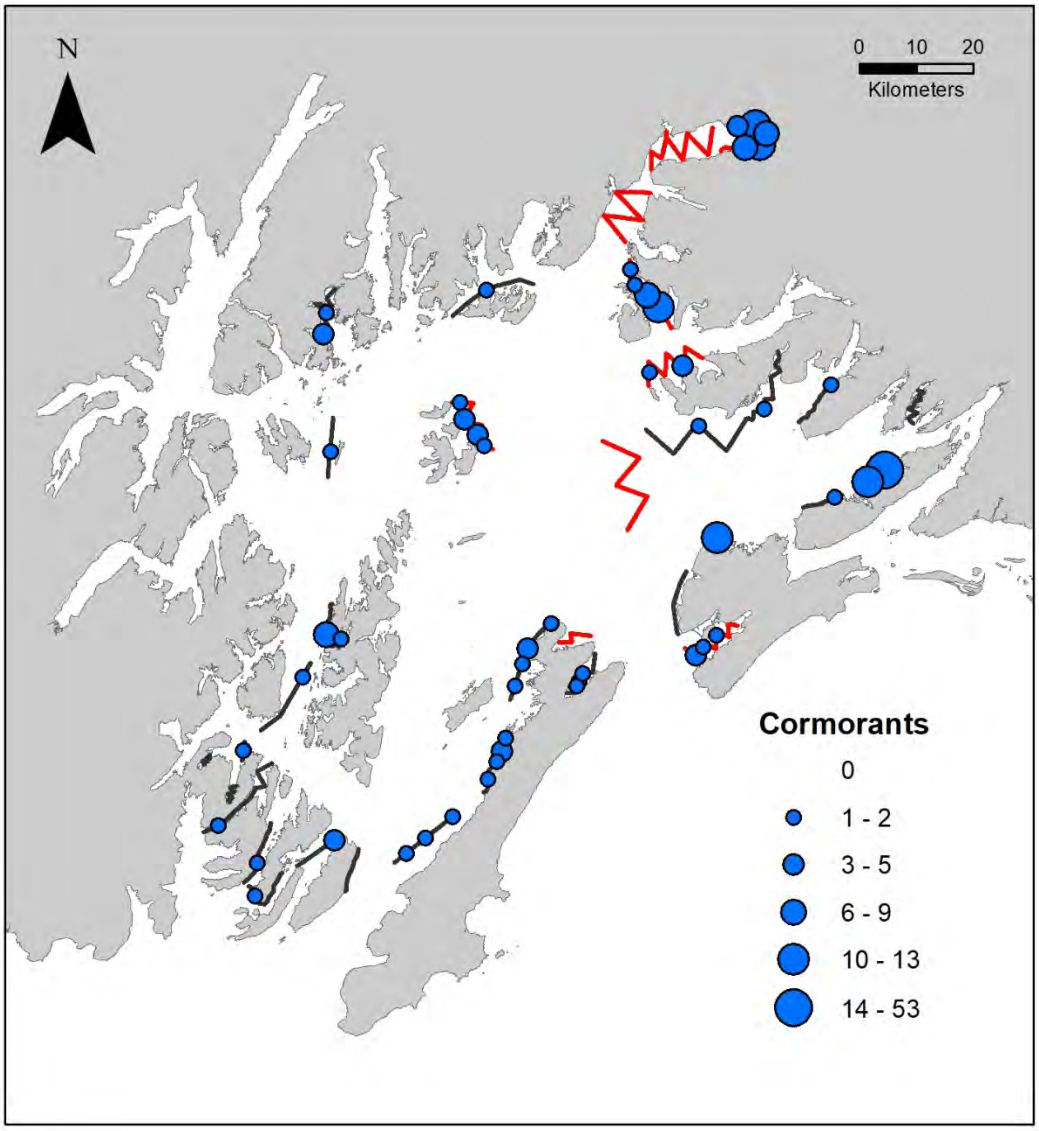
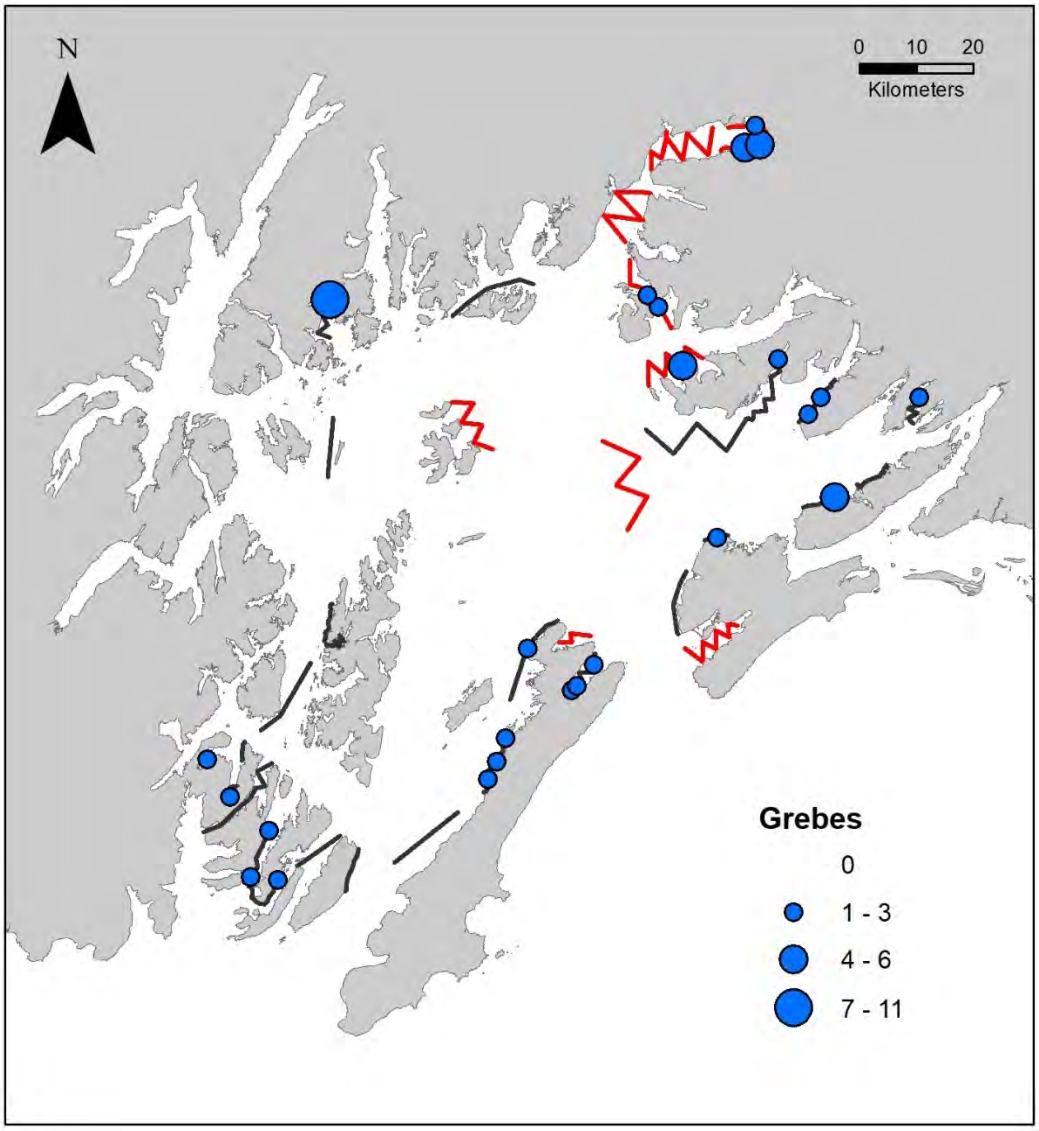
Appendix I: Marine bird density and distribution in Prince William Sound, AK, March 2021.



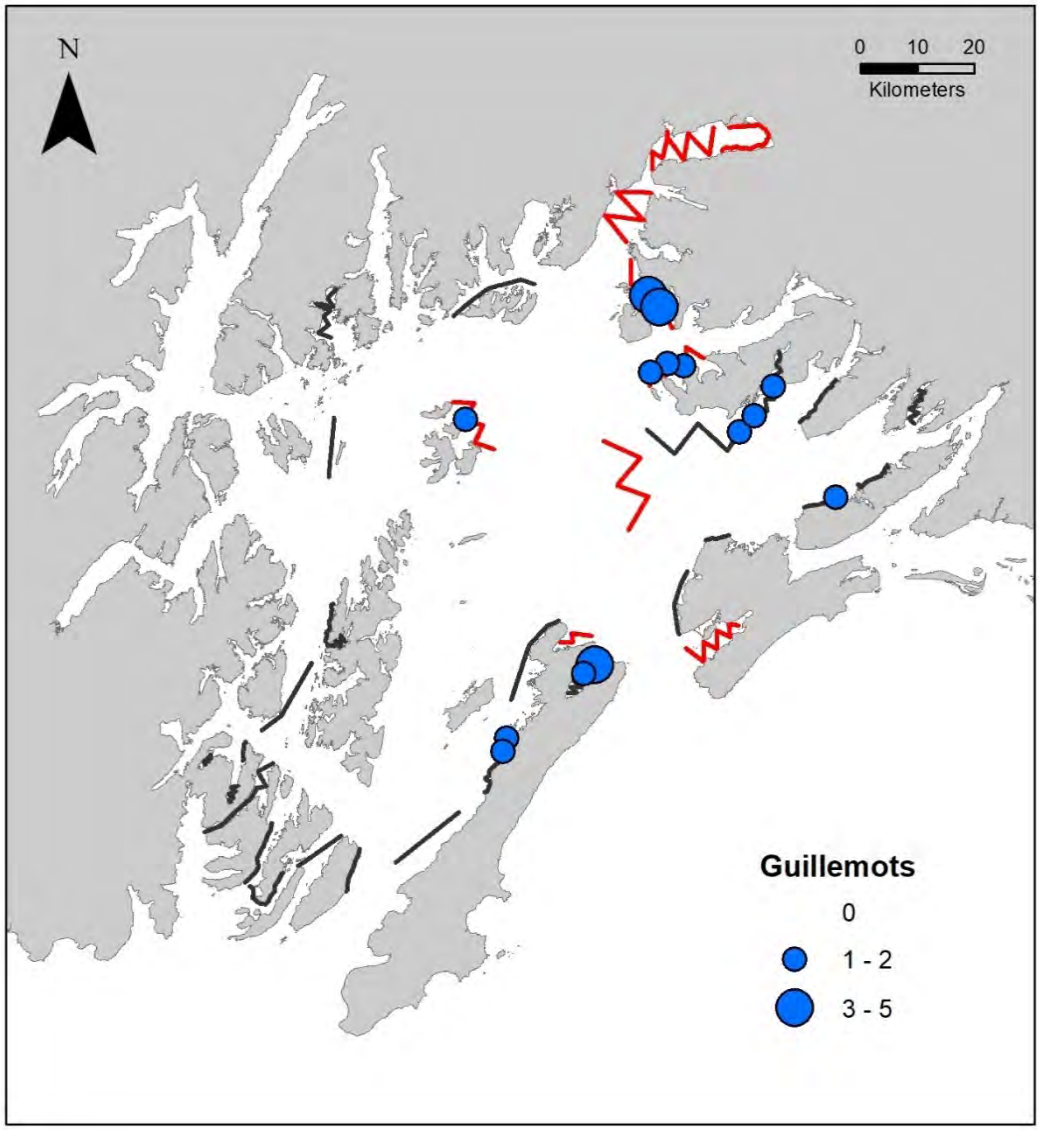
Total marine bird distribution and density (birds/km^2) observed in the 300 m survey strip in Prince William Sound, AK, March 2021. The black lines indicate the areas around the tanker lanes surveyed as part of the EVOSTC Gulf Watch Alaska surveys. The red lines show the transects completed for PWSRCAC.



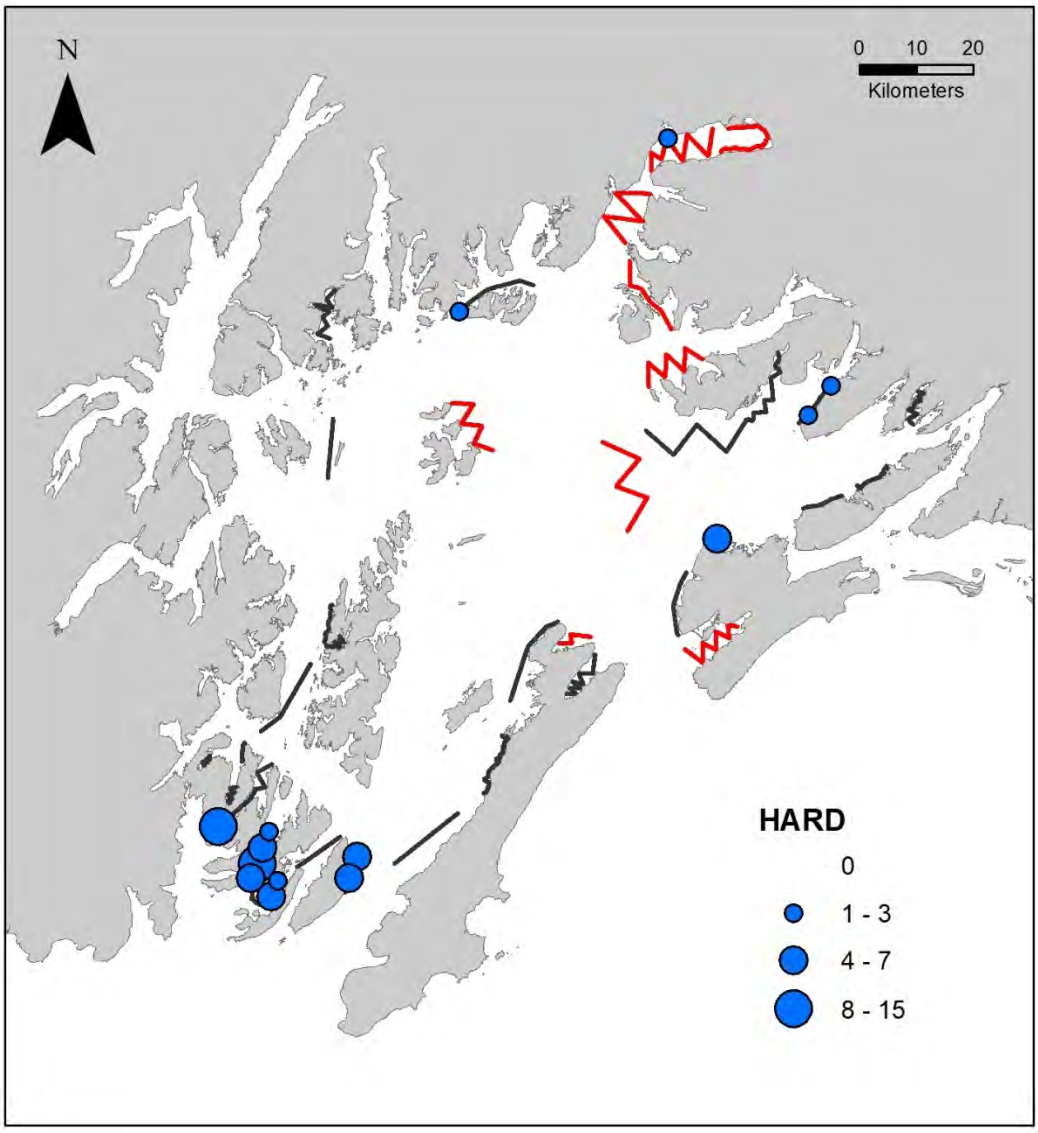
Distribution and density (birds/km^2) of cormorants (double-crested, pelagic, unidentified) observed within the 300 m survey strip in Prince William Sound, AK, March 2021. The black lines indicate the areas around the tanker lanes surveyed as part of the EVOSTC Gulf Watch Alaska surveys. The red lines show the transects completed for PWSRCAC.



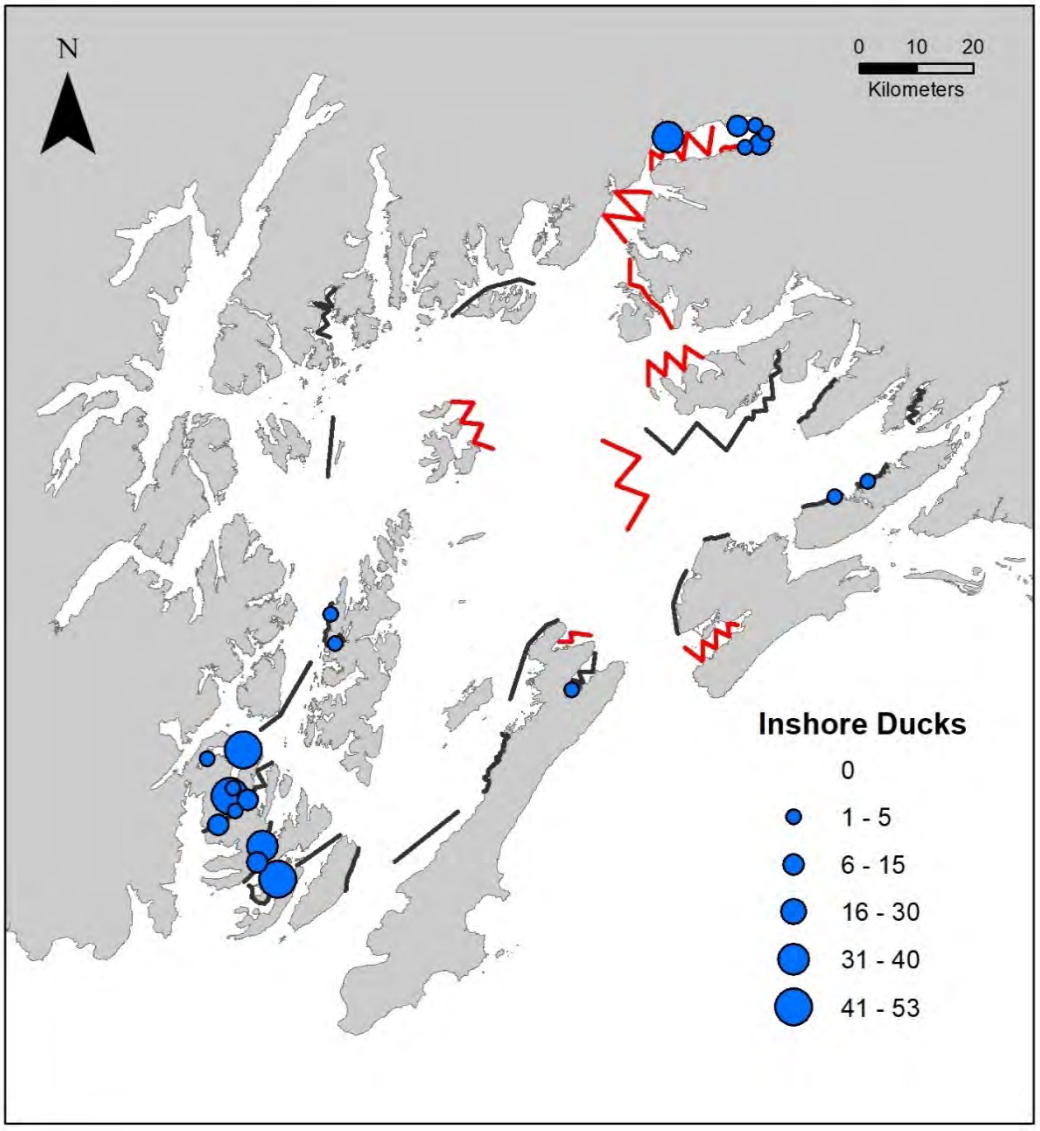
Distribution and density (birds/km^2) of grebes (horned, red-necked, unidentified) observed within the 300 m survey strip in Prince William Sound, AK, March 2021. The black lines indicate the areas around the tanker lanes surveyed as part of the EVOSTC Gulf Watch Alaska surveys. The red lines show the transects completed for PWSRCAC.



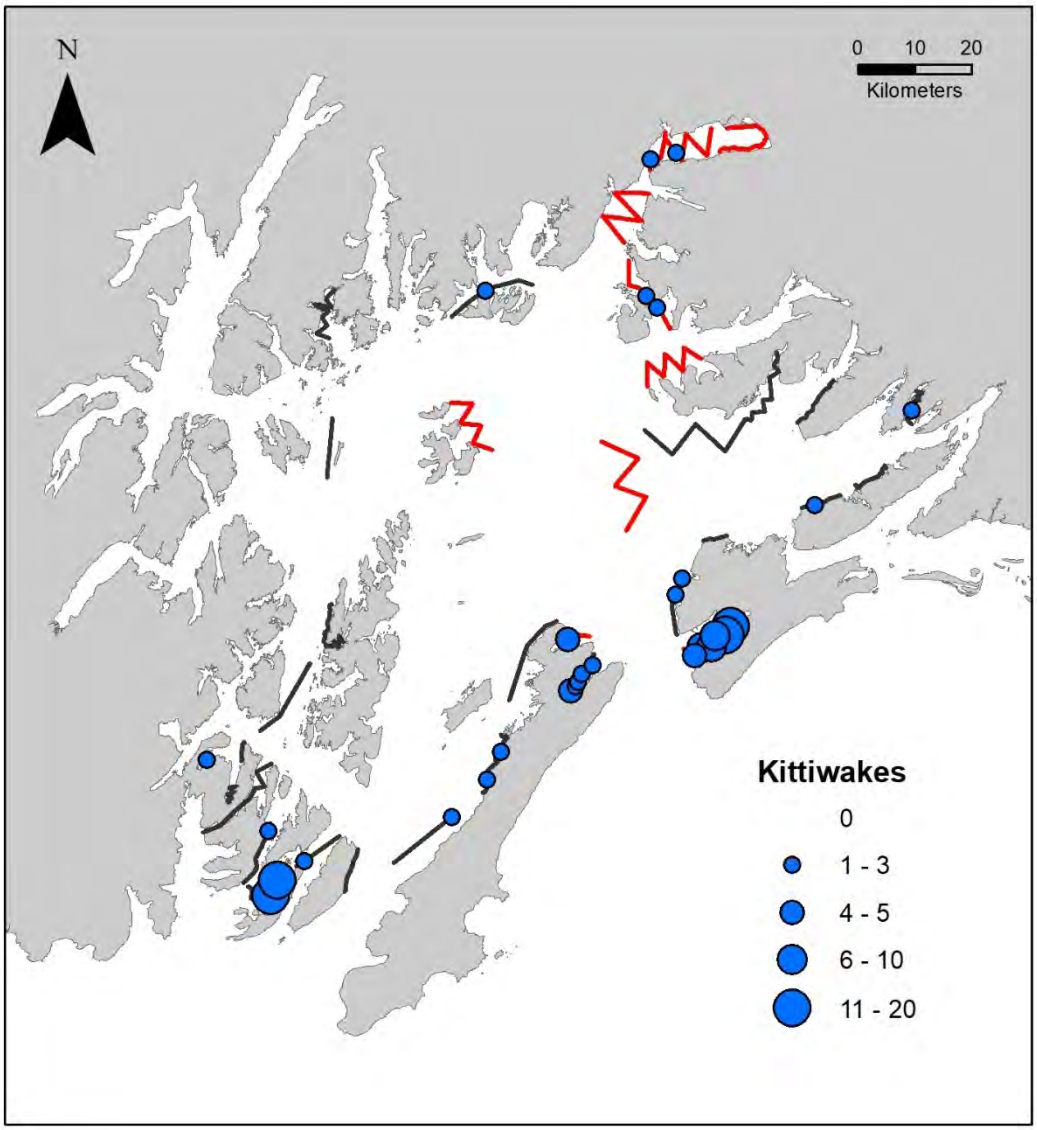
Distribution and density (birds/km^2) of pigeon guillemots observed within the 300 m survey strip in Prince William Sound, AK, March 2021. The black lines indicate the areas around the tanker lanes surveyed as part of the EVOSTC Gulf Watch Alaska surveys. The red lines show the transects completed for PWSRCAC.



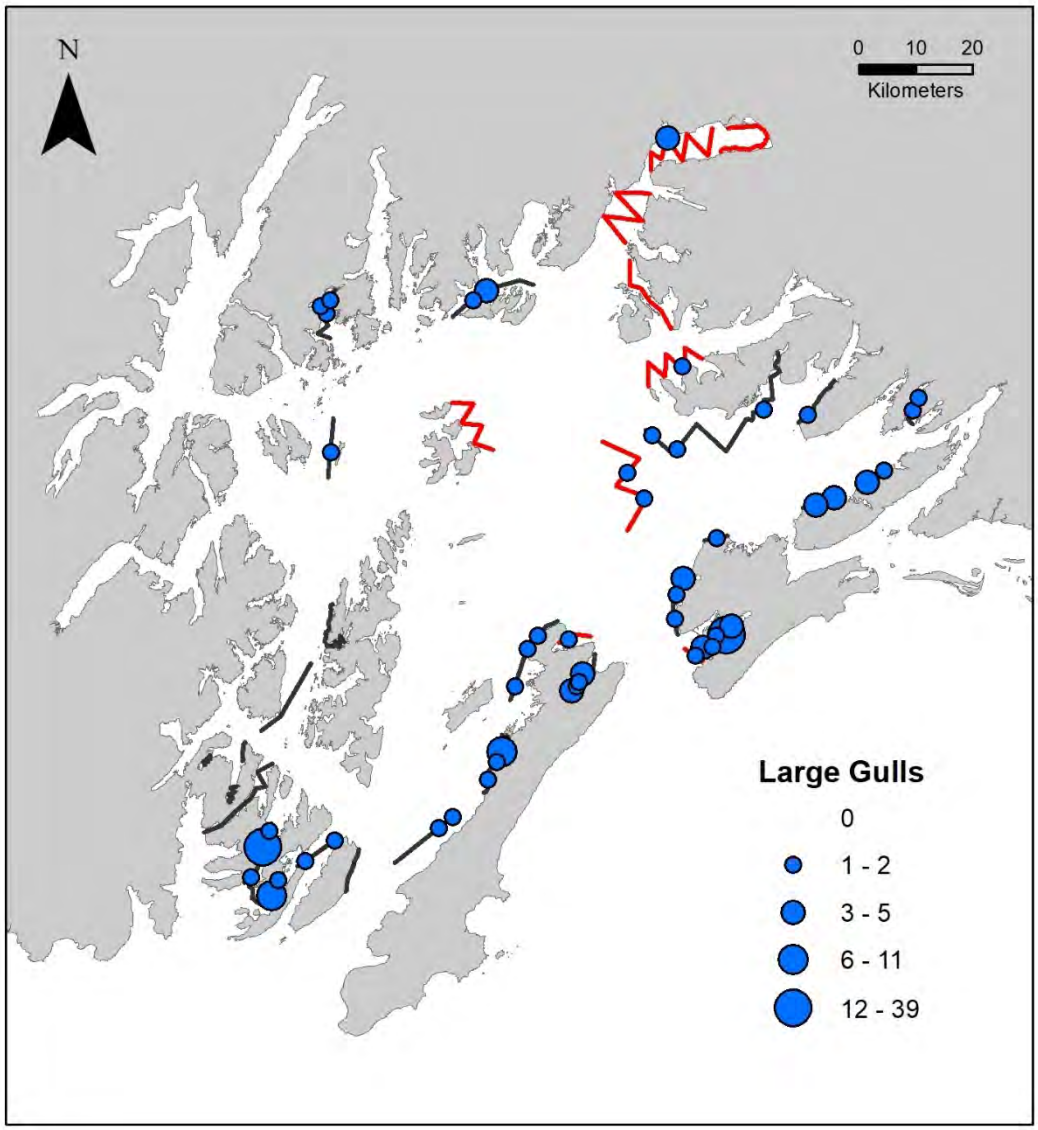
Distribution and density (birds/km^2) of harlequin ducks (HARD) observed within the 300 m survey strip in Prince William Sound, AK, March 2021. The black lines indicate the areas around the tanker lanes surveyed as part of the EVOSTC Gulf Watch Alaska surveys. The red lines show the transects completed for PWSRCAC.



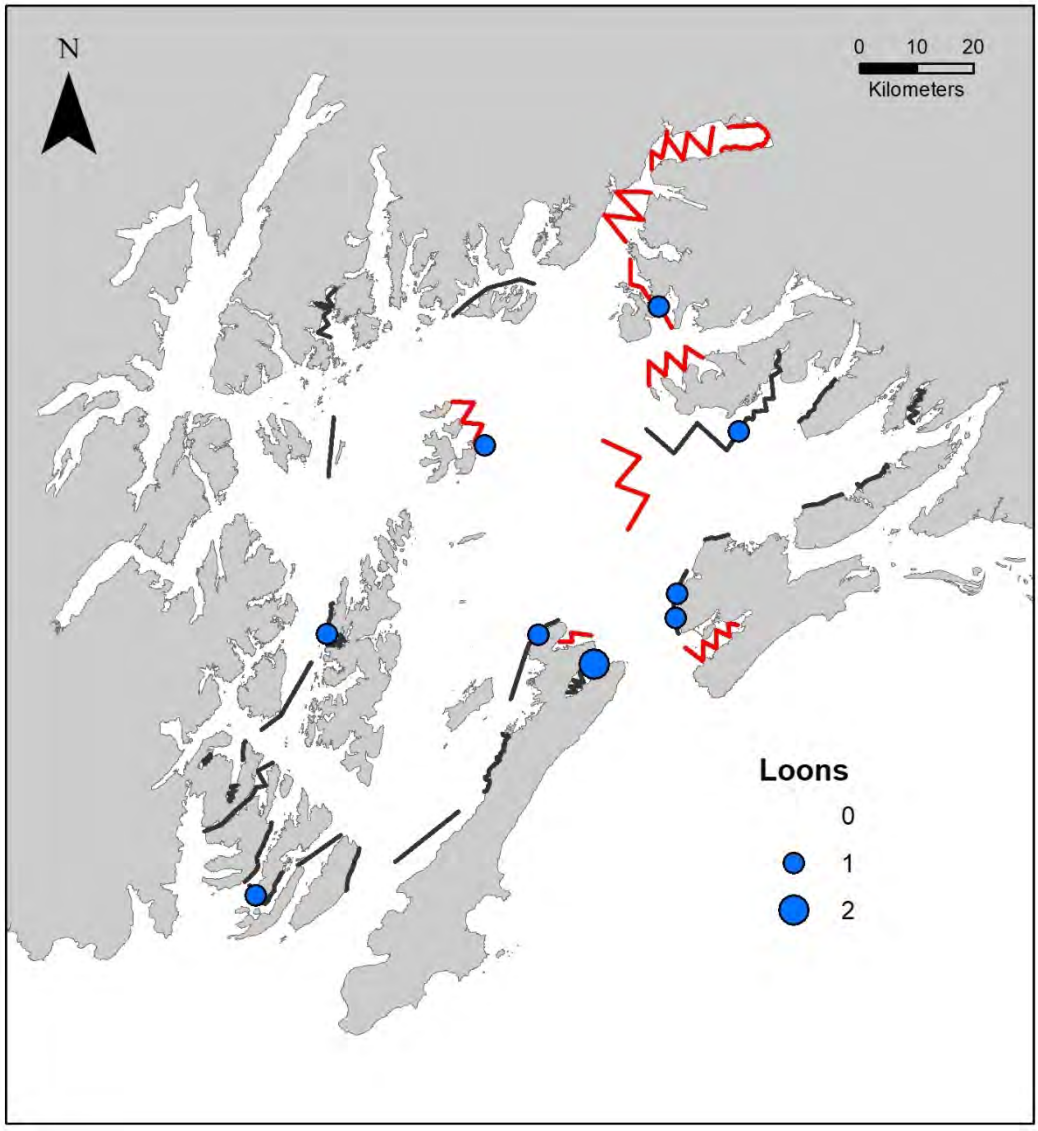
Distribution and density (birds/km^2) of inshore ducks (Barrow's goldeneyes, common goldeneyes, unidentified goldeneyes, buffleheads) observed within the 300 m survey strip in Prince William Sound, AK, March 2021. The black lines indicate the areas around the tanker lanes surveyed as part of the EVOSTC Gulf Watch Alaska surveys. The red lines show the transects completed for PWSRCAC.



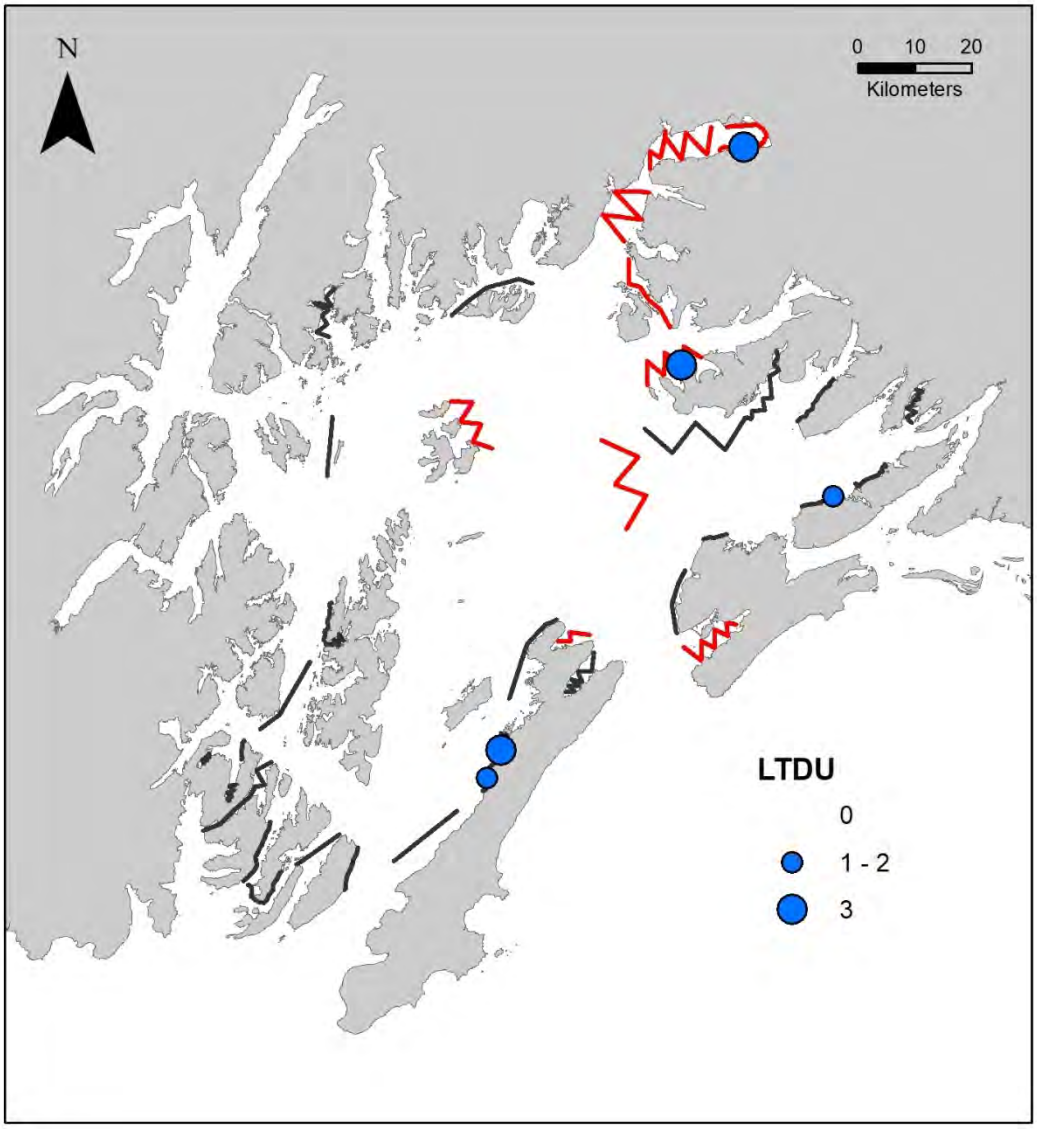
Distribution and density (birds/km^2) of black-legged kittiwakes observed within the 300 m survey strip in Prince William Sound, AK, March 2021. The black lines indicate the areas around the tanker lanes surveyed as part of the EVOSTC Gulf Watch Alaska surveys. The red lines show the transects completed for PWSRCAC.



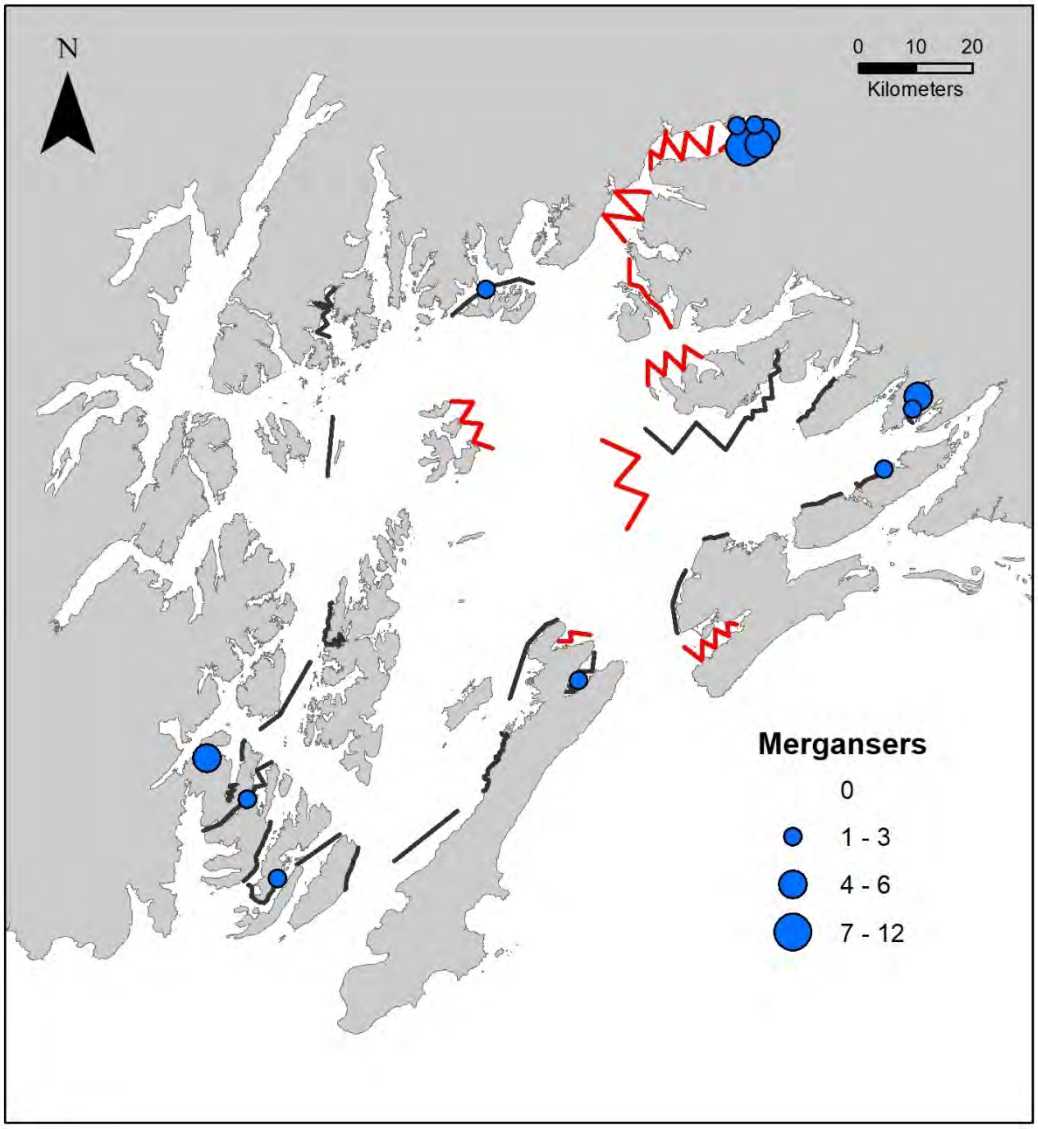
Distribution and density (birds/km^2) of large gulls (glaucous-winged, herring, unidentified) observed within the 300 m survey strip in Prince William Sound, AK, March 2021. The black lines indicate the areas around the tanker lanes surveyed as part of the EVOSTC Gulf Watch Alaska surveys. The red lines show the transects completed for PWSRCAC.



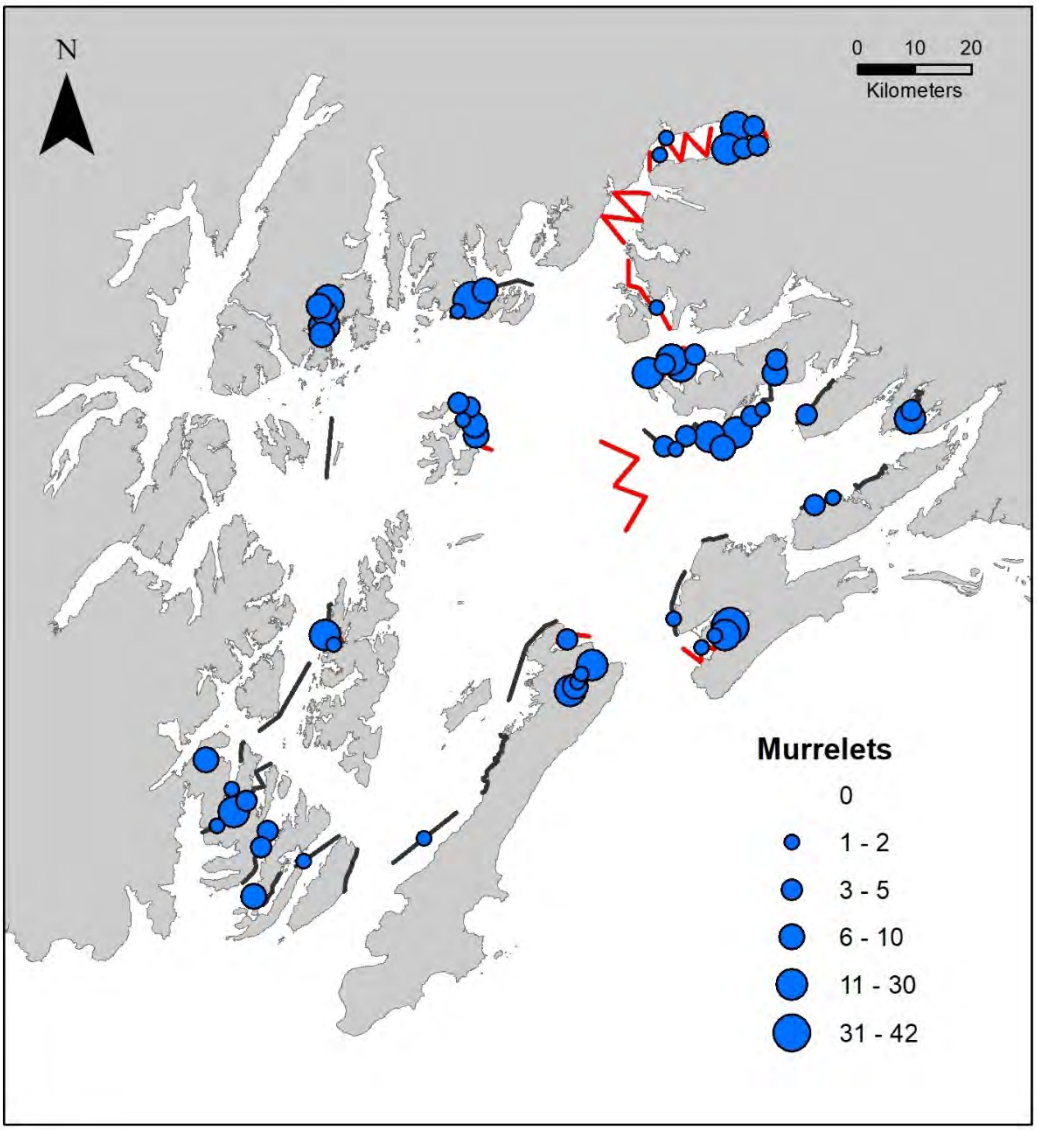
Distribution and density (birds/km^2) of loons (common, Pacific, unidentified) observed within the 300 m survey strip in Prince William Sound, AK, March 2021. The black lines indicate the areas around the tanker lanes surveyed as part of the EVOSTC Gulf Watch Alaska surveys. The red lines show the transects completed for PWSRCAC.



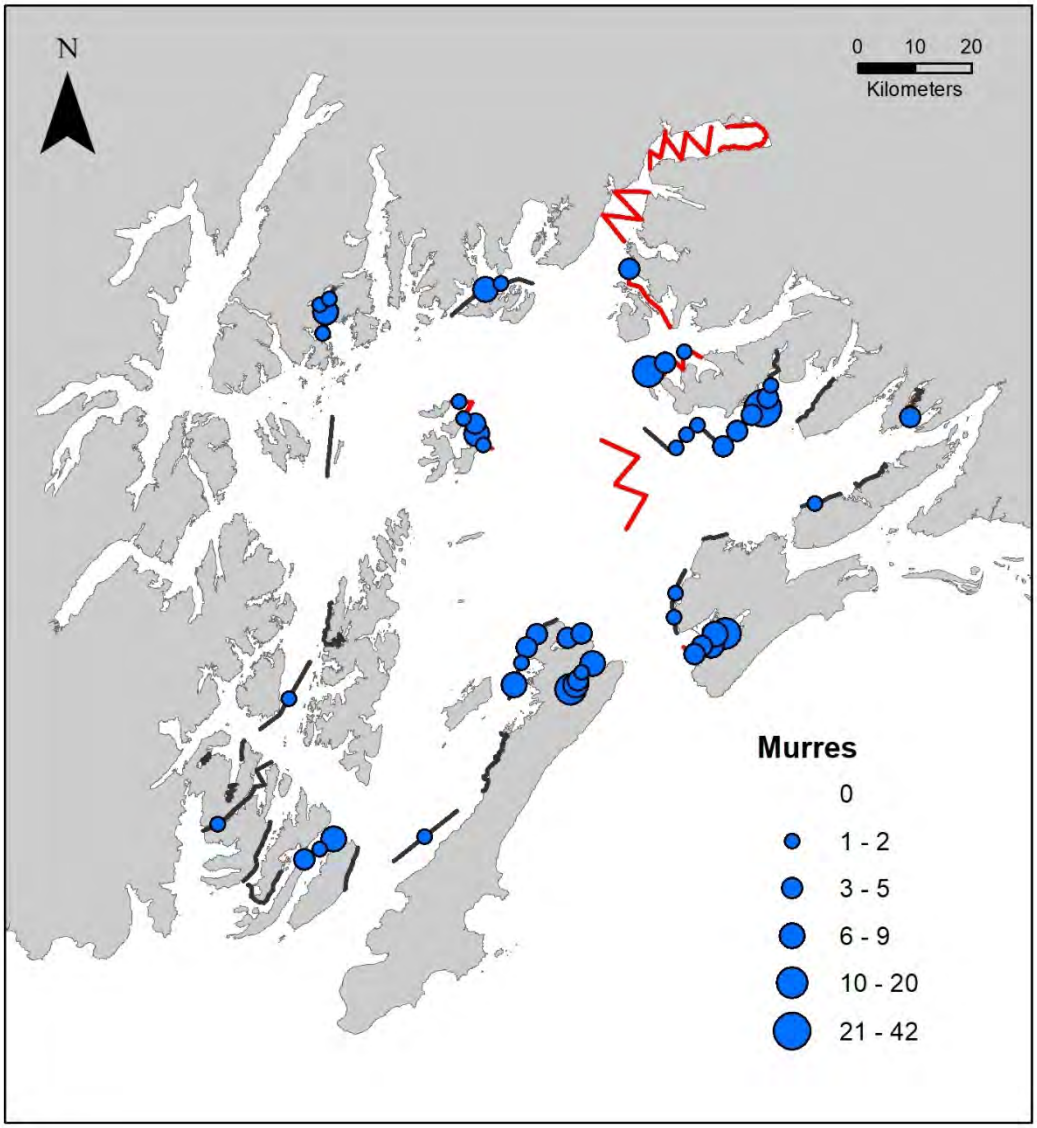
Distribution and density (birds/km^2) of long-tailed ducks (LTDU) observed within the 300 m survey strip in Prince William Sound, AK, March 2021. The black lines indicate the areas around the tanker lanes surveyed as part of the EVOSTC Gulf Watch Alaska surveys. The red lines show the transects completed for PWSRCAC.



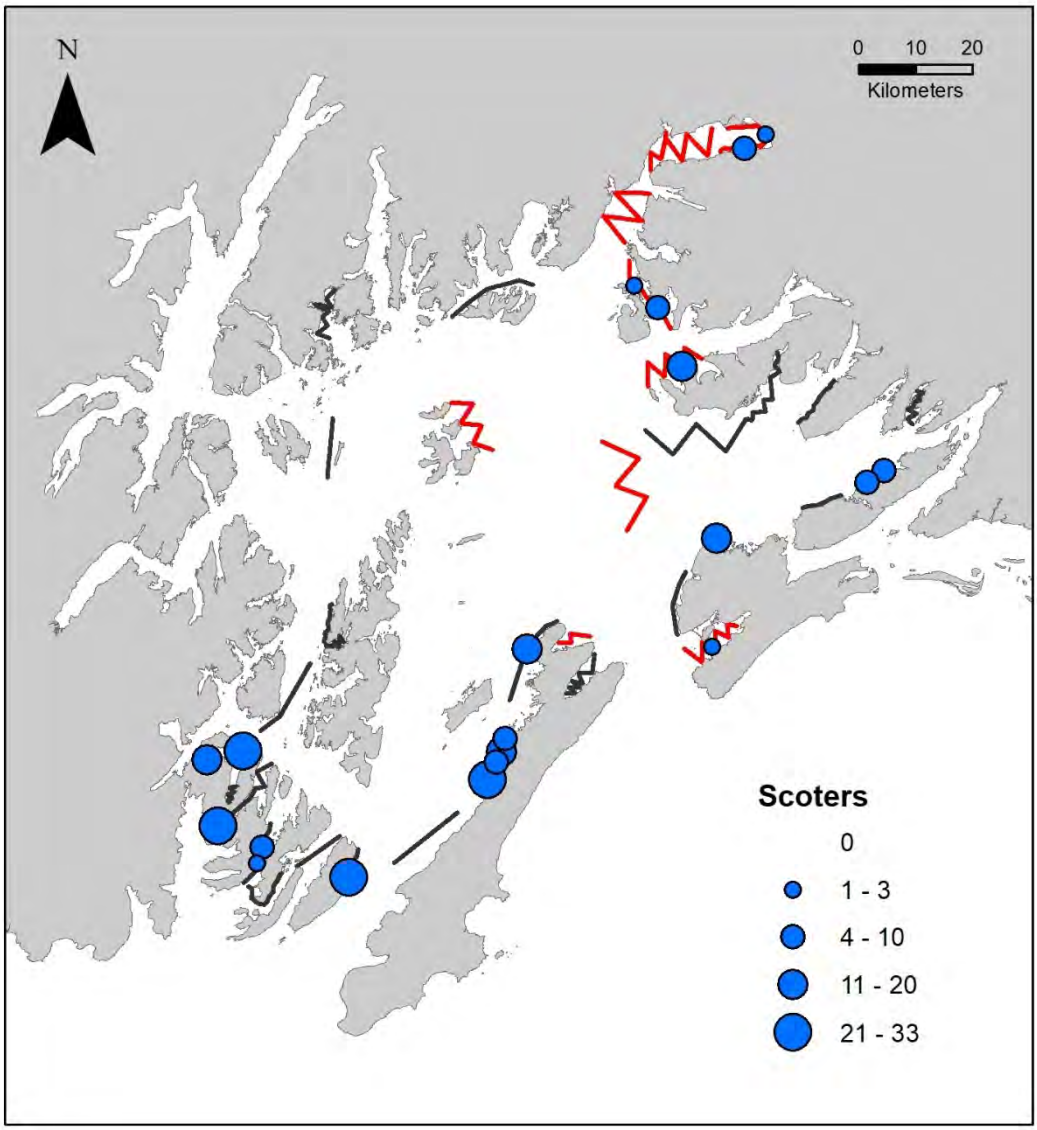
Distribution and density (birds/km^2) of mergansers (common, red-breasted, unidentified) observed within the 300 m survey strip in Prince William Sound, AK, March 2021. The black lines indicate the areas around the tanker lanes surveyed as part of the EVOSTC Gulf Watch Alaska surveys. The red lines show the transects completed for PWSRCAC.



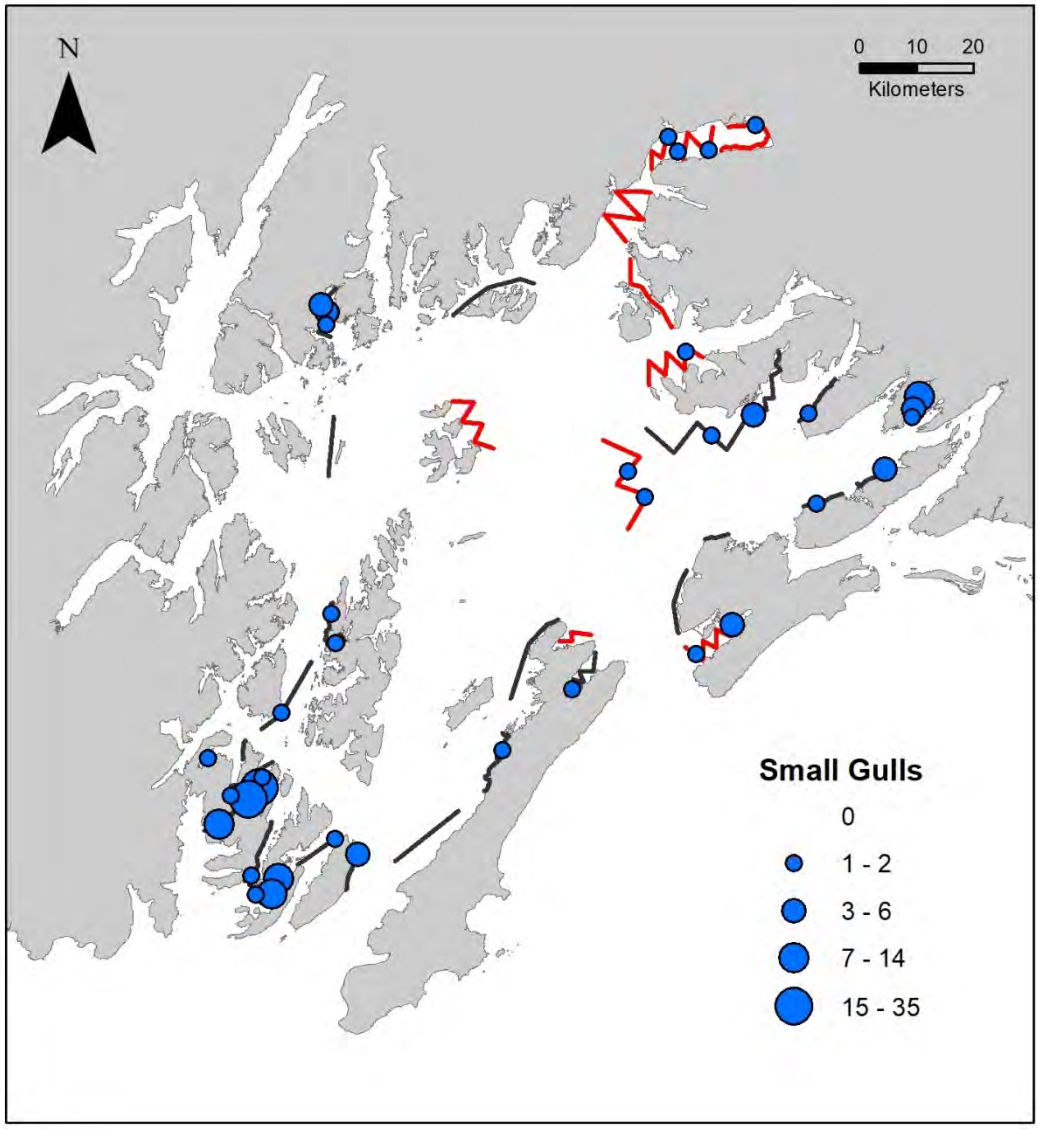
Distribution and density (birds/km^2) of murrelets (marbled, unidentified) observed within the 300 m survey strip in Prince William Sound, AK, March 2021. The black lines indicate the areas around the tanker lanes surveyed as part of the EVOSTC Gulf Watch Alaska surveys. The red lines show the transects completed for PWSRCAC.



Distribution and density (birds/km^2) of common murres observed within the 300 m survey strip in Prince William Sound, AK, March 2021. The black lines indicate the areas around the tanker lanes surveyed as part of the EVOSTC Gulf Watch Alaska surveys. The red lines show the transects completed for PWSRCAC.

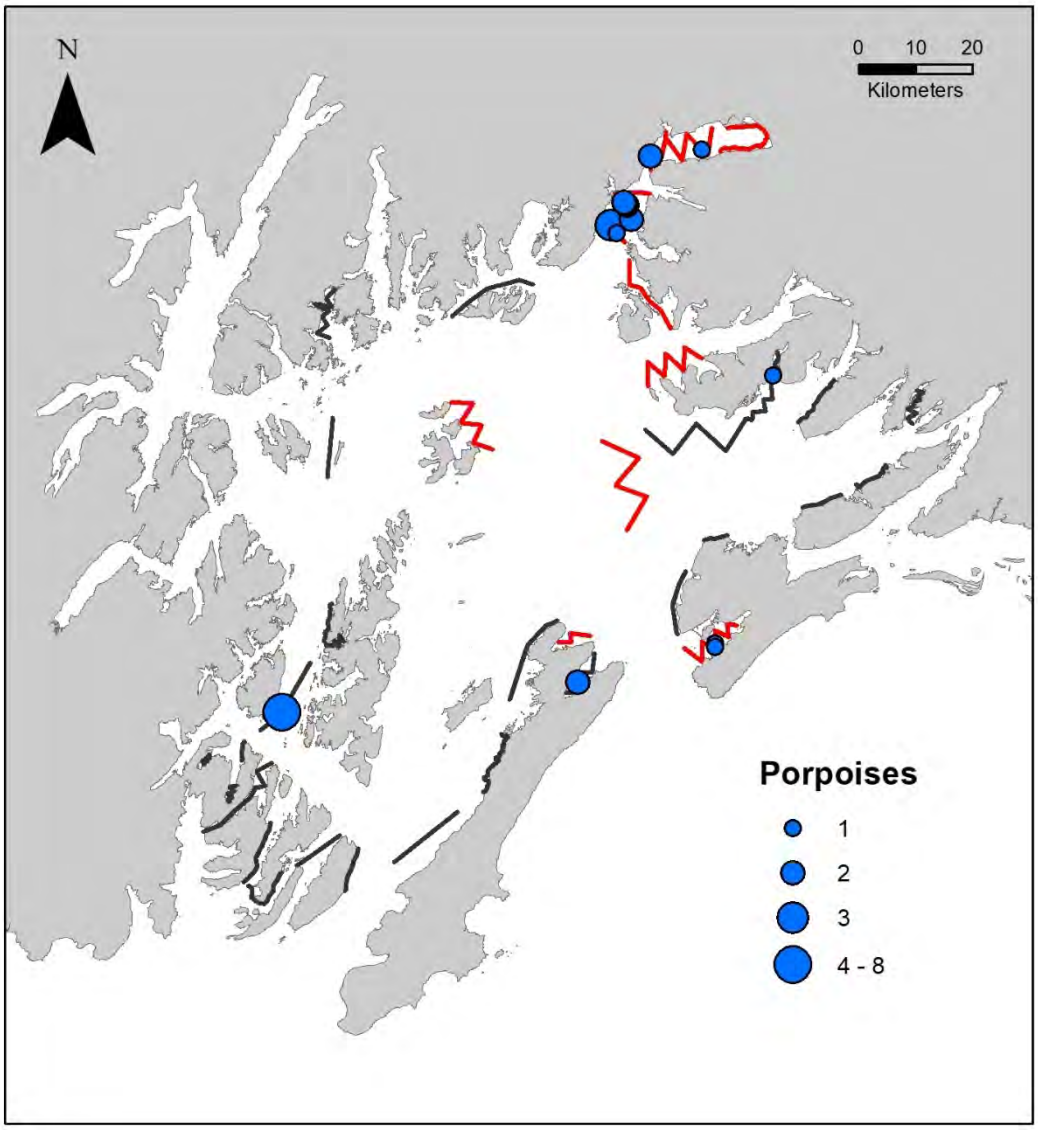


Distribution and density (birds/km^2) of scoters (surf, white-winged, unidentified) observed within the 300 m survey strip in Prince William Sound, AK, March 2021. The black lines indicate the areas around the tanker lanes surveyed as part of the EVOSTC Gulf Watch Alaska surveys. The red lines show the transects completed for PWSRCAC.

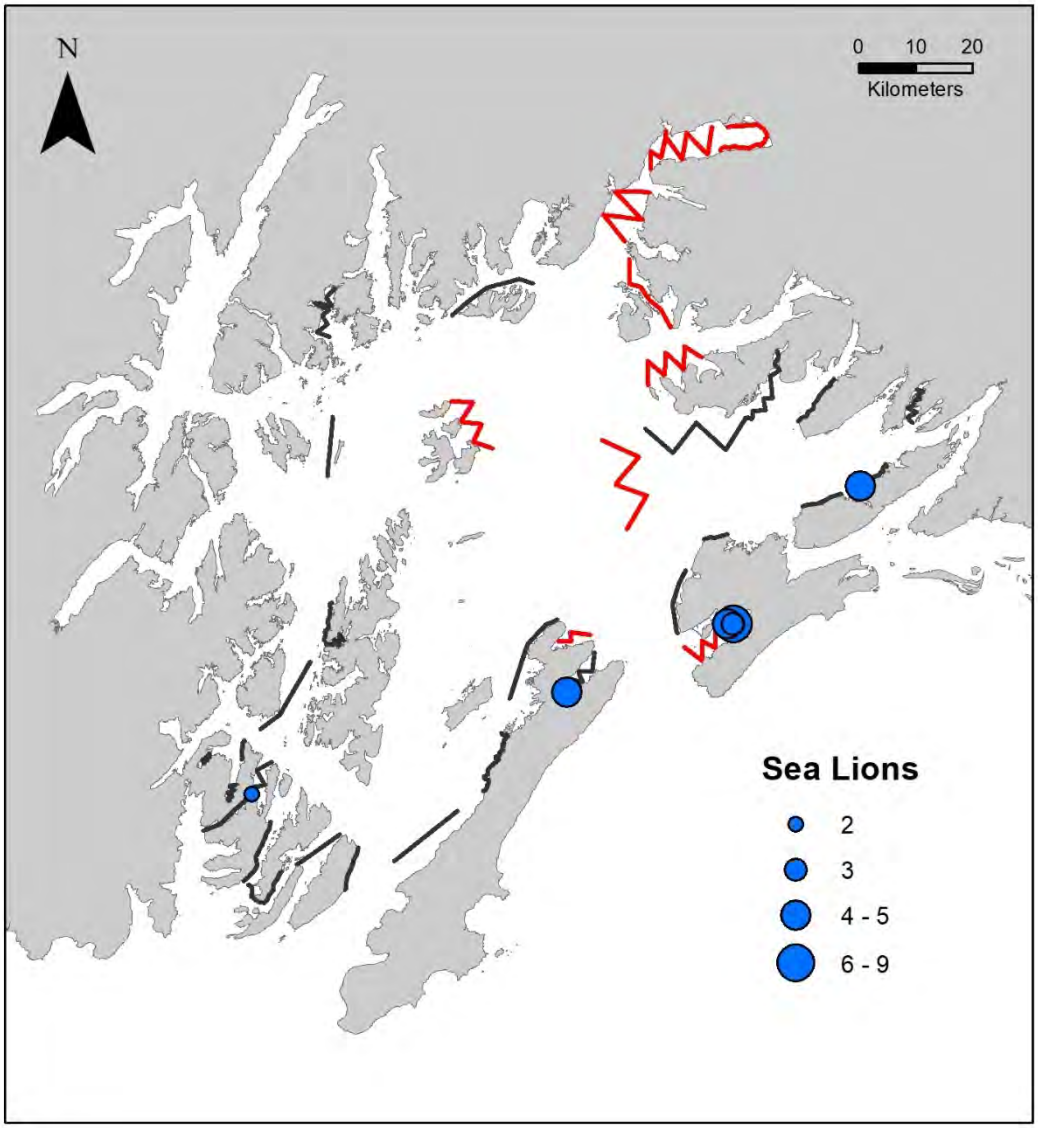


Distribution and density (birds/km^2) of small gulls (mew, unidentified) observed within the 300 m survey strip in Prince William Sound, AK, March 2021. The black lines indicate the areas around the tanker lanes surveyed as part of the EVOSTC Gulf Watch Alaska surveys. The red lines show the transects completed for PWSRCAC.

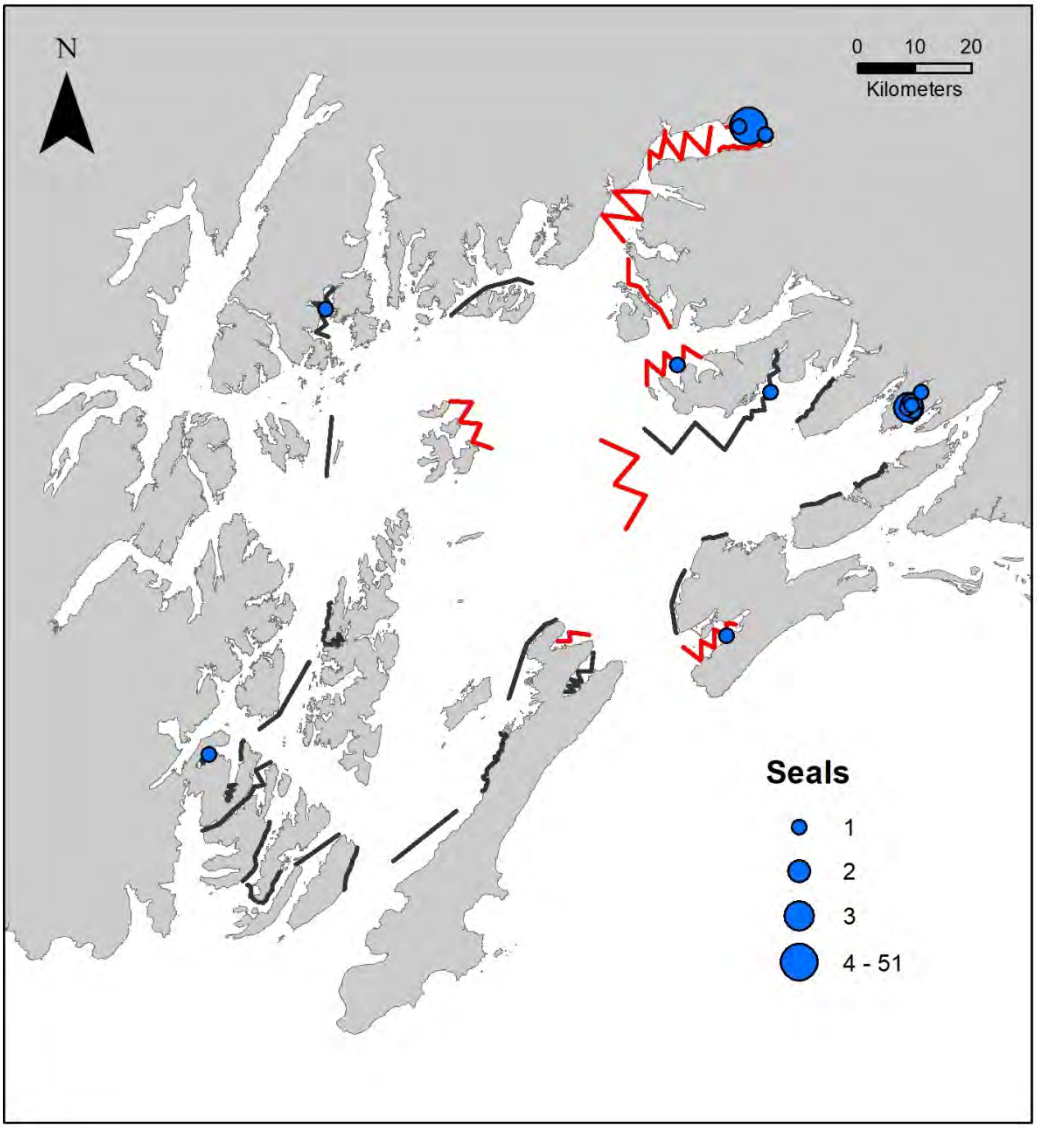
<u>Appendix II:</u> Marine mammal counts and distribution in Prince William Sound, AK, March 2021.



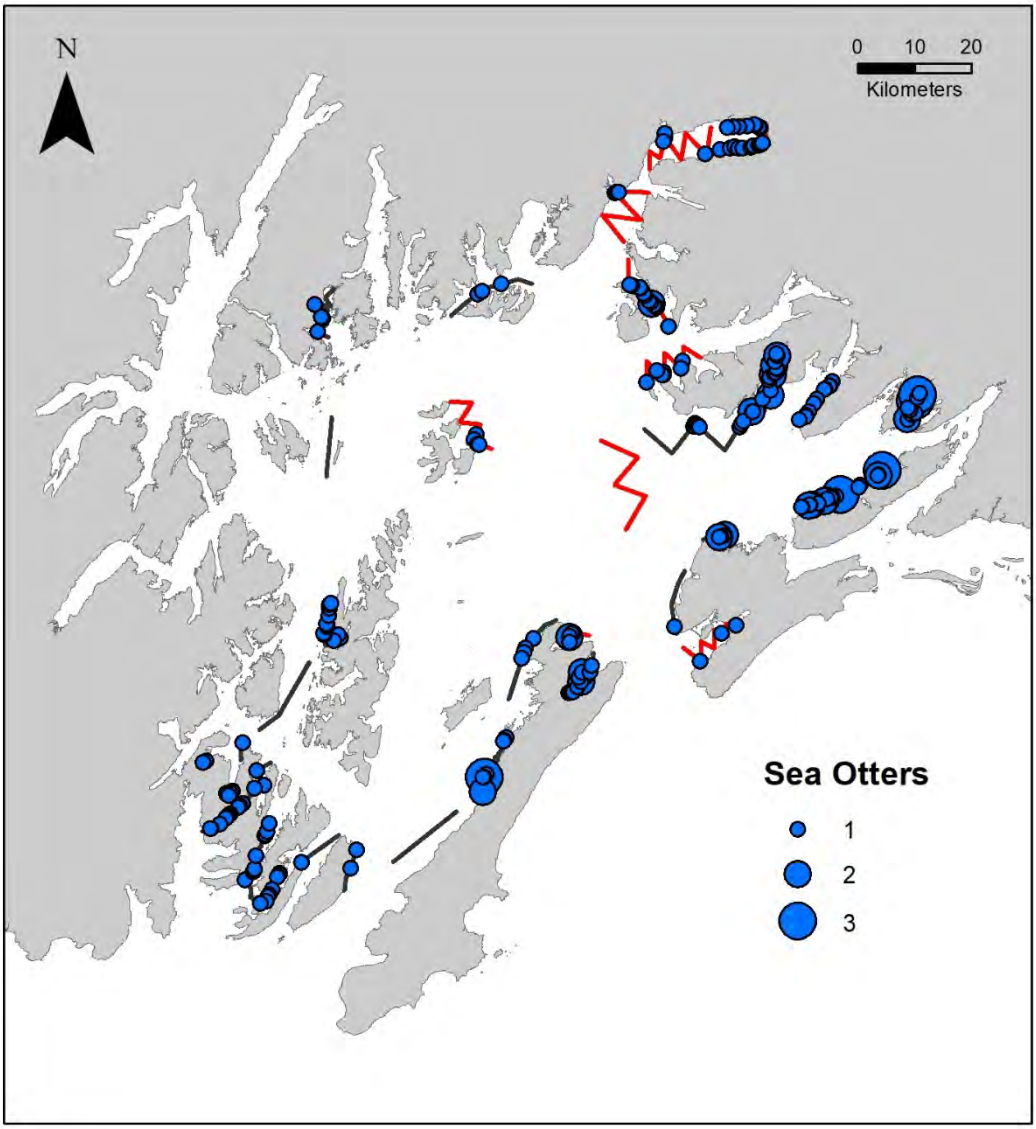
Distribution and number of porpoises (Dall's, unidentified) observed in Prince William Sound, AK, March 2021 (including beyond the 300 m survey strip). The black lines indicate the areas around the tanker lanes surveyed as part of the EVOSTC Gulf Watch Alaska surveys. The red lines show the transects completed for PWSRCAC.



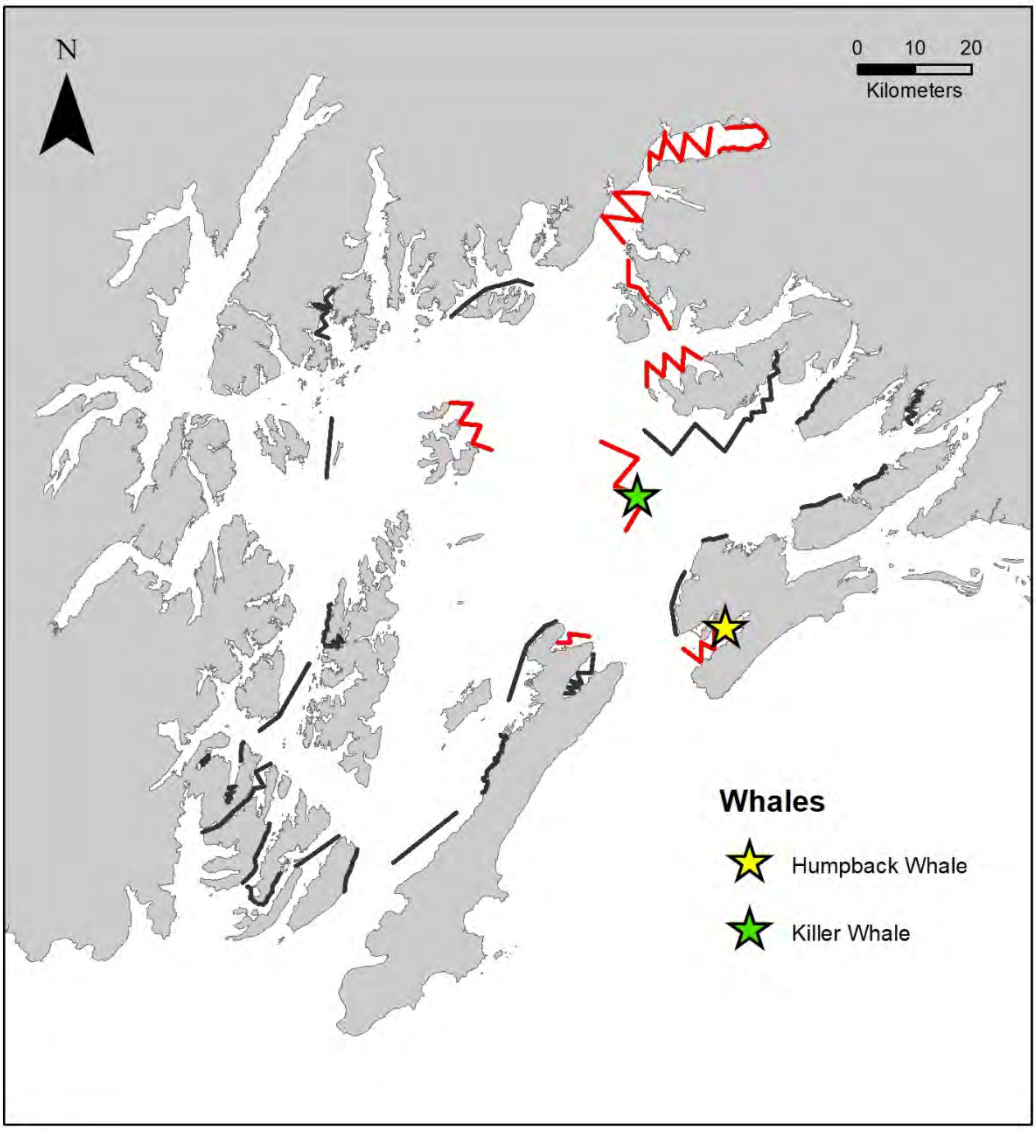
Distribution and number of Steller sea lions observed in Prince William Sound, AK, March 2021 (including beyond the 300 m survey strip). The black lines indicate the areas around the tanker lanes surveyed as part of the EVOSTC Gulf Watch Alaska surveys. The red lines show the transects completed for PWSRCAC.



Distribution and number of harbor seals observed in Prince William Sound, AK, March 2021 (including beyond the 300 m survey strip). The black lines indicate the areas around the tanker lanes surveyed as part of the EVOSTC Gulf Watch Alaska surveys. The red lines show the transects completed for PWSRCAC.



Distribution and number of sea otters observed in Prince William Sound, AK, March 2021 (including beyond the 300 m survey strip). The black lines indicate the areas around the tanker lanes surveyed as part of the EVOSTC Gulf Watch Alaska surveys. The red lines show the transects completed for PWSRCAC.



Locations of humpback and killer whales observed in Prince William Sound, AK, March 2021. One humpback and two killer whales were recorded. The black lines indicate the areas around the tanker lanes surveyed as part of the EVOSTC Gulf Watch Alaska surveys. The red lines show the transects completed for PWSRCAC.

Briefing for PWSRCAC Board of Directors – September 2021

ACTION ITEM

Sponsor: Betsi Oliver, Danielle Verna, and the Scientific Advisory Committee

Project number and name or topic: 9550 Dispersant

1. **Description of agenda item:** Detailed reviews of dispersant research were carried out for the Council by Dr. Merv Fingas in 2002, 2008, 2014, and 2017. A 2021 summary review by Dr. Fingas briefly covers published literature since the last review in 2017. The report identifies recent advances in a wide variety of topics related to oil dispersion and focuses on dispersant effectiveness, toxicity, and biodegradation. Emphasis in this report is placed on aspects that relate to Alaska and Prince William Sound specifically. The report does not cover all aspects of dispersant knowledge but rather focuses on newly published developments.

This summary document will inform the Council's project to review and potentially update its position regarding the use of dispersants. The current position, adopted in 2006, states:

> *"After years of observing dispersant trials, dispersant effectiveness monitoring, advising and sponsoring independent research regarding chemical dispersant use, it is the position of the Prince William Sound Regional Citizens' Advisory Council that dispersants should not be used on Alaska North Slope crude oil spills in the waters of our region.*
>
> *Until such time as chemical dispersant effectiveness is demonstrated in our region and shown to minimize adverse effects on the environment, the Council does not support dispersant use as an oil spill response option.*
>
> *Mechanical recovery and containment of crude oil spilled at sea should remain the primary methodology employed in our region."*

An appendix to this summary report gives notes on the published papers reviewed in its development and is available upon request. PWSRCAC maintains a comprehensive list of peer reviewed research related to dispersants on its website.

2. **Why is this item important to PWSRCAC:** Under the Oil Pollution Act of 1990 (OPA 90), PWSRCAC is authorized to participate in the development of plans and policy guidelines used in oil spill response. Chemical dispersant use has been a longstanding controversial topic. The use of dispersants may impact both the health of marine resources and human health. The use of dispersants also may compete with mechanical response for resources. PWSRCAC has invested significant time and resources in efforts to sponsor dispersant research, monitor dispersant research, and keep track of relevant regulations and policies governing dispersant use in the Prince William Sound region.

The Council's current dispersant use position was enacted in 2006. Since then, much more scientific research on dispersants has been conducted and many lessons learned have resulted from using dispersants during major spills such as the 2010 BP Deepwater Horizon incident. This project to review and potentially update the Council's 2006 dispersant use position and supporting documentation is timely due to how much more is known about dispersants today.

3. **Previous actions taken by the Board on this item:**

Meeting	Date	Action
Note: Please request a list of actions prior to 2006 from staff.		
Board	5/2/06	Approved PWSRCAC Dispersant Use Statement.
XCOM	6/13/06	Approved the reported "Observers' Report: MMS Cold Water Dispersants Test conducted at the OHMSETT testing facility, February 28-March 3, 2006."
XCOM	12/11/06	Approved the report "Field Notes and Critical Observations from the OHMSETT Heavy Oil Dispersant Trials, October 13-16, 2003."
Board	1/22/09	Approved the dispersants literature surveys "A Review of Literature Related to Oil Spill Dispersants 1997-2008," "A Review of Literature Related to Oil Spill Dispersants Especially Related to Alaska 2002-2003," and the Solidifers Literature Review titled "A Review of Literature Related to Oil Spill Solidifers 1990-2009."
Board	9/16/10	Approved the issue paper on the use of dispersants in the BP Deepwater Horizon spill.
Board	9/15/11	Approve contracting with University of Southern Maine not to exceed $70,000 for work on the toxicology of chemical dispersants in Alaska whales.
Board	9/15/11	Approve contracting with the Skidaway Institute of Oceanography at a cost of $14,520 for work on the uptake and effects of dispersed oil droplets by zooplankton.
Board	5/3/12	Approved contracting with Spill Science for a comprehensive monitoring program for a cost of $48,000.
Board	7/23/12	Approve contracting with NJIT for $183,100 for dispersed oil biodegradation.
Board	5/2-3/13	Accept DFO final report on dispersed oil effects on salmon, cod, and herring.
Board	5/2-3/13	Accept final report on hydrocarbon uptake by spot shrimp from Dick Lee of the Skidaway Institute of Oceanography.
Board	1/23/14	Accept "Analysis of Oil Biodegradation Products" by Merv Fingas.
XCOM	4/16/15	Approve comments to EPA on Subpart J, Dispersants.
Board	5/17/16	Approved the report titled "Toxicology of Chemical Dispersants in Alaskan Whales."
Board	5/2016	Accept Dispersants SMART Monitoring Protocol document.
Board	3/7/17	Authorized a contract with Merv Fingas for the development of a comprehensive synthesis of dispersants research in an amount not to exceed $65,000.
Board	5/3/18	Accepted the report titled "A Review of Literature Related to Oil Spill Dispersants, June 2017" by Merv Fingas of Spill Science, and the general version of the report titled "A Review of Literature Related to Oil Dispersants, September 2017" by Elise DeCola of Nuka Research & Planning Group, LLC.
XCOM	6/14/18	Approved report titled "A Review of Literature Related to Human Health and Oil Spill Dispersants."

4. **Summary of policy, issues, support or opposition:** In June 2020, a U.S. District Court Judge ruled that the Clean Water Act imposes on the EPA a mandatory duty to maintain an up-to-date oil spill response plan that reflects current science and technology. In August 2021, the court ruled that the EPA violated that duty since the relevant

regulations have not been updated in more than 25 years. The EPA must now update and finalize its regulations, which includes the use of dispersants, by May 31, 2023. In July 2021, the EPA released a final rule on monitoring requirements for use of dispersants in Subpart J of the National Oil and Hazardous Substances Pollution Contingency Plan effective January 2022.

PWSRCAC provided extensive comments during the Alaska Regional Response Team planning effort to establish new policy for use of dispersants in state waters, which was adopted in January 2016, and presented to the Board by Linda Swiss in May 2016.

There appears to be strong support in updating the Board's position based on new information and science, and on the fairly high ranking this project received by the Board in the Long Range Planning process (rank 5 out of 17).

5. **Committee Recommendation:** The Scientific Advisory Committee recommends that the Board of Directors accept this report.

6. **Relationship to LRP and Budget:** Project 9550 Dispersants is in the approved FY2021 budget and annual workplan.

9550--Dispersants
As of July 31, 2021

FY-2022 Budget	
Original	$32,000.00
Modifications	
Revised Budget	$32,000.00
Actual and Commitments	
Actual Year-to-Date	
Commitments (Professional Services)	
Actual + Commitments	
Amount Remaining	$32,000.00

7. **Action Requested of the Board of Directors:** Accept "A Summary of Dispersants Research: 2017-2021" by Dr. Merv Fingas, dated May 2021, as meeting the terms and conditions of contract number 955.21.01, and for distribution to the public.

8. **Alternatives:** None.

9. **Attachments:** Draft report titled "A Summary of Dispersants Research: 2017-2021" by Merv Fingas, dated May 2021.

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A Summary of Dispersants Research: 2017-2021

Prepared by Dr. Merv Fingas for PWSRCAC, May 2021

Foreword

This is an update report on dispersants and dispersant research. Detailed reviews were carried out for Prince William Sound Regional Citizens' Advisory Council (PWSRCAC) in 2002, 2008, 2014, and 2017. This summary review briefly covers published literature since the last review in 2017. The report identifies recent advances in all topics of dispersion and focuses on dispersant effectiveness, toxicity, and biodegradation. Emphasis in this report is placed on aspects that relate to Alaska and Prince William Sound specifically. The report does not cover all aspects of dispersant knowledge but rather focuses on newly published developments.

An appendix to this summary report gives notes on the published papers reviewed in its development, and is available upon request. PWSRCAC maintains a comprehensive list of peer reviewed research related to dispersants on its website.

Abstract

The prime motivation for using dispersants is to reduce the impact of oil on shoreline. To accomplish this, the dispersant application must be successful and its effectiveness high. As some oil would come ashore, there is much discussion on what effectiveness is required to significantly reduce the shoreline impact. A major question that remains is the actual effectiveness during spills so that these values can be used in estimates and models in the future. These major topics are affected by issues as described below.

There were three 'issue pillars' for dispersants: effectiveness, toxicity, and biodegradation. Effectiveness, that percentage of oil that is put into the water by the use of dispersants, includes the focus that dispersants must be highly effective to meet the stated objectives of protecting wildlife on the water surface and keeping oil from the shoreline. Secondly, the toxicity of the dispersed oil and the dispersant itself must not lead to environmental damage above and beyond that of undispersed oil. Finally, the biodegradation of oil should be aided and not hindered by the application of dispersants.

In recent years, two new pillars have been added, that of the effects of dispersants and dispersed oil on human health and the effect of dispersants on marine snow and sedimentation. These factors have become important considerations. Sometimes subsea dispersant effectiveness is added to the effectiveness pillar.

Effectiveness remains a major issue with oil spill dispersants. It is important to recognize that many factors influence dispersant effectiveness, including oil composition, sea energy, state of oil weathering, the type of dispersant used and the amount applied, temperature, and salinity of the water. The most important of these is the composition of the oil, followed closely by sea energy. It is equally important to note that the only thing that is important is effectiveness on real spills at sea. Ideally, oil should not come ashore if dispersants are used. Nor should birds and other biota be oiled if dispersants are highly effective. A new facet to this is the effectiveness of subsea dispersant injection. This will remain controversial for years. In the past years more and more articles indicate that the application during the BP Deepwater Horizon spill was **not** effective. This includes both subsea and surface applications to oil. Studies of the mass balances of the oil following the BP Deepwater Horizon spill show most of the oil is accounted for using only those amounts burned, sunken, recovered, or lost through other known physical processes. Dispersant effectiveness does not account for any oil loss in some calculations. This fact raises the question of the true dispersant effectiveness.

The results of dispersant toxicity testing are similar to that found in previous years, namely that dispersants vary in their toxicity to various species. Dispersant toxicity alone is typically less than the toxicity of dispersed oil. Of the recent toxicity studies of dispersed oil, most researchers found that chemically-dispersed oil was more toxic than physically-dispersed oil. Some researchers found that the cause for this was the increased PAHs (Polyaromatic Hydrocarbons, a more toxic component of oil), typically about 10 to 100 times, in the water column as a result of dispersant use. Others noted the increased amount of total oil in the water column. No researchers in this time period found that the toxicity of chemically-dispersed oil was equal to or less than physically-dispersed oil.

The effect of dispersants on biodegradation is still a matter of dispute, however, most studies showed dispersants inhibit biodegradation. Some industry-sponsored studies find the opposite. The reason that dispersants may inhibit biodegradation appears to be selective toxicity of some dispersant ingredients to certain oil-degrading microorganisms. This selective toxicity results in a population shift which changes the types and rates of hydrocarbons degraded, with the frequent overall result that biodegradation is slowed compared to that of situations where dispersant was not used.

Several important sub-topics are included in this review. The formation of marine snow, a natural aggregate with oil droplets which sinks to the bottom, is enhanced by the presence of dispersants. The interaction of oil droplets, particularly chemically-dispersed droplets, with mineral particles appears to be an

important facet of oil fate. Several other facets of dispersants are summarized in this review.

Executive Summary

What's New?

Increasingly it is becoming clear that dispersant injected during the BP Deepwater Horizon spill was not effective in either reducing the amount of oil that reached the surface nor in increasing biodegradation at depth. New books published on deep water spills show that there are almost no relevant studies covering the effect of high pressure. Most studies extrapolated surface study results to deep water situations; this is incorrect.

The other main trends continue, and the five pillars of oil spill dispersants and their research continue on the same themes. These will be summarized below.

Effectiveness

In recent times, effectiveness studies have not been pursued as intensely as before. Work in the area is very low compared to the previous reviews. There are only a few studies on effectiveness. This is unfortunate, as this is a major problem with dispersants.

One of the major confusions that persist is the relationship of effectiveness to viscosity. There is a certain belief that a 'viscosity cutoff' of effectiveness for dispersants exists. In fact, certain components of oil, such as resins, asphaltenes, and larger aromatics or waxes, are barely dispersible, if at all. Oils that are made up primarily of these components will disperse poorly when dispersants are applied. On the other hand, oils that contain mostly saturates, such as diesel fuel, will readily disperse both naturally and when dispersants are added. The additional amount of diesel dispersed when dispersants are used, compared to the amount that would disperse naturally, depends primarily on the amount of sea energy present. In general, less sea energy implies that a higher dose of dispersant is needed to yield the same degree of dispersion as when the sea energy is high. This should not be attributed to viscosity alone, but primarily to oil composition. Oils that typically contain larger amounts of resins, asphaltenes, and other heavier components are typically more viscous and less dispersible. Alaska North Slope (ANS) crude oil is a 'medium' oil in terms of this category and is moderately dispersible. Viscosity, however does not track composition very well and thus is only an indicator of dispersibility. Strictly speaking, a 'viscosity cut-off' does not exist as a global value.

While it is easier to measure the effectiveness of dispersants in the laboratory than in the field, laboratory tests may not be representative of actual conditions. Important factors that influence effectiveness, such as sea energy and salinity, may not be accurately reflected in laboratory tests. Results obtained from laboratory testing should therefore be viewed as representative only and not necessarily reflecting what would take place in actual conditions. Laboratory tests are quite useful in studying chemical and physical parameters of dispersion on controlled conditions. Currently, the only extensive work is being carried out in laboratories.

Considerable interest is still shown in subsea dispersant injection. No quantitative studies have shown that this is actually useful.

Laboratory Testing

Some laboratory testing was carried out in this time period, less than in previous literature review time periods. Physical studies were largely carried out in the swirling flask test, which is known for high repeatability and ability to discriminate widely between differing conditions, dispersants, and oils. Some effectiveness studies have been carried out in the baffled flask; a test known to yield higher effectiveness values due to its higher energy. The differences between the two tests revolve around the fact that the baffled flask has a much higher turbulent energy than the swirling flask. The difference is sometimes exaggerated by some authors who used non-standard analytical means such as colorimetry or spectrophotometric means. These methods are known to produce high and variable results compared to the standard chromatographic methods. During the last time period, American Society for Testing and Materials (ASTM) released a new standard using standard chromatographic analysis for the baffled flask. A similar standard for the swirling flask has been extant for about 20 years.

In addition, there are several points that can be made about laboratory effectiveness testing:

- There have not been strong attempts to relate effectiveness results to at-sea results in any of the studies in this or the last literature reviews; however, previous comparisons to at-sea tests showed the swirling flask was much closer than others, albeit it still showed too high effectiveness. The other tests yield far too high effectiveness values.
- The purpose of laboratory testing was, and still is, to screen oil and dispersant combinations for effectiveness and to conduct specific physical studies.
- Laboratory tests show that viscous oils are largely not dispersible.

- The dispersibility in the swirling flask can be correlated to physical and chemical properties of oils.
- The rising time, or destabilization time, in laboratory tests is a critical component. Studies show that at least 20 minutes is required to provide a stable sampling time. This rising time and the results of variable sampling times show the relative instability of dispersions with time.
- The effect of dispersant ingredients should be examined further. One study showed that there were concerns with effectiveness and droplet size with differing combinations of dispersant ingredients.
- There were no new testing results for ANS crude.

Tank Tests

While tank tests continued during the time period of this review, there was not a full consideration of the testing factors noted in previous reviews. There are several findings that might be noted:

- Salinity is an important factor in oil dispersibility; dispersibility decreases with decreasing salinity. Prince William Sound has low salinities in several areas, particularly areas affected by river inflows.
- Paraffinic crudes are less dispersible.
- As weathering increases for crude oils, dispersants become increasingly ineffective.

Analytical Techniques for Effectiveness

Analytical techniques as applied to dispersant effectiveness are a major issue. It should be noted that only ASTM or U.S. Environmental Protection Agency (EPA) standard chromatographic methods are considered valid for the measurement of oil in water. No spectrophotometric or fluorimetric methods will yield reliable quantitative results. These optical methods yield near-random and high results. There are standard ASTM methods of analysis and measurement of laboratory effectiveness. There are no simple ways to measure dispersant alone in water, however, there are sophisticated methods.

General Analytical Techniques

Major steps have been made in recent years in the analysis of dispersant components, especially for dioctyl sodium sulfosuccinate (DOSS) or bis-(2-ethylhexyl) sulfosuccinate, which is a major component of Corexit dispersants. Further, this component can now be measured in water or environmental samples such as bird eggs, down to parts per billion quantities, allowing for several

important environmental fate studies. Methods have also been developed for other dispersant components such as solvents and proprietary surfactants called Tweens and Spans, however, the sensitivity is not as great. Studies in the case of the BP Deepwater Horizon spill have been able to track DOSS over dozens to hundreds of kilometers, however not so for the Tweens, Spans, and solvents, leading to speculation on the fate of these particular components.

Toxicity to Biota

The second important issue when discussing dispersants is toxicity, both of the dispersant itself and of the dispersed oil droplets. Toxicity became an important issue in the late 1960s and early 1970s when application of toxic products resulted in substantial loss of sea life. For example, the use of dispersants during the *Torrey Canyon* episode in Great Britain in 1967 caused massive damage to intertidal and subtidal life. Since that time, dispersants have been formulated with lesser aquatic toxicity. The issue may not be the toxicity of the dispersant itself but the large increase in the oil droplets and the large increase in PAHs in the water column as a result of dispersant use.

Aquatic Toxicity of Dispersants with Oil

Toxicity studies in the period of 2017-2021 (current period of this report) involved more than 27 individual studies conducted by more than 25 separate study groups. This is the most in such a short time period and this abundance is no doubt the result of the BP Deepwater Horizon spill which attracted a large amount of interest and subsequent funding. All of the studies found that chemically-dispersed oil was more toxic than mechanically-dispersed oil.

The many toxicity studies of water-accommodated fractions (WAF) (oil mechanically dispersed into water) versus chemically-enhanced water-accommodated fractions (CEWAF) (oil plus dispersants) show the following generalizations:

a) The results of the studies depend very much on the type of study, the species, life stage, and the conditions of exposure and measurement.
b) Results may appear to be variable; however, patterns emerge in the results. Patterns may be specific to a study, or generalizations will be captured in this review.
c) For a few measurements, the toxicity of the CEWAF was about the same as the WAF at the same concentrations. However, the concentrations of CEWAF would initially be 10 to 100 times that of the WAF for an effective dispersion at sea.

d) It was found that CEWAF was from slightly to 1.5 to 100 to as much as 500 times more toxic than the WAF, depending on the variables.
e) Some studies showed that the CEWAF toxicity was a result of the increase of PAHs compared to WAF which puts less PAHs into the water. The PAHs sometimes corresponded to the toxicity increase shown in d) above. Other times, the increase in PAHs does not correspond to the increase in toxicity.
f) The use of CEWAF protocols is being re-evaluated by toxicologists.
g) There appear to be some species or life stages that are sensitive to CEWAF and less sensitive to WAF.
h) The question of why some chemically-dispersed oil appears to be more toxic than mechanically-dispersed oil may relate to the increased amounts of PAHs in the water with chemical dispersions. This is especially true of the aquatically-toxic 2-ring and 3-ring PAHs.
i) Some workers have suggested that CEWAF is more bioavailable than mechanically-dispersed oil.
j) Juvenile forms of most species are much more susceptible than adults of the same species to both CEWAF and WAF.
k) Although weathered oil (chemically- or mechanically-dispersed) is generally shown to be less toxic to species, calculation of its PAH content may make it appear as toxic or more toxic than un-weathered oil. It is suggested here that, irrespective of the PAH calculations, weathered oil is almost always less aquatically toxic than its un-weathered counterparts.
l) Some species are more susceptible to oil droplets than others, thus these species are more susceptible to chemically-dispersed oil than those species which are not susceptible to oil droplets.
m) Generalizations about dispersants should not be made if the dispersant itself is different from those in other studies. Many studies used Corexit 9500, however, other studies did not use Corexit and in some cases used relatively unknown and unstudied dispersants.

General Effects on Biota and Wildlife

Several studies on wildlife and other biota were carried out in this review's time period. Studies from 2017 to 2021 showed similar results to previous studies that corals are very sensitive to oil and particularly to dispersants and dispersed oil. The external membrane of coral is permeable to oil components and dispersants. Studies in the past two decades have repeated these findings. This should be cause

to reexamine the use of dispersants in any area where the dispersed oil or dispersant can be carried to corals, such as in the deep sea areas off Alaska.

Photo-enhanced Toxicity

Certain biota have transparent life phases and spend portions of their life near or on the sea surface. Some of these biota are prone to photo-enhanced toxicity of oil. Photo-enhanced toxicity consists of two mechanisms, the more important being photosensitization. This occurs when a PAH absorbs energy from the light and then transfers this to dissolved oxygen. This results in enhanced toxicity to many organisms. The tests show that photo-enhanced toxicity of oil, and especially dispersed oil, is increased by UV light. Increases of 1.5 to 4 times were noted for physically-dispersed oil and from about 4 to 48 times for chemically-dispersed oil. Photo-enhanced toxicity is particularly applicable to organisms in the upper part of the water column.

Testing Protocols

Chemical Response to Oil Spills: Ecological Effects Research Forum (CROSERF) aquatic testing protocols have been around for more than two decades and were developed in an era of lesser analytical capability. These protocols have never been fully characterized in terms of modern analytical standards. It is suggested that the protocols be reevaluated with the current analytical and droplet size measurement capabilities. There is now some work ongoing.

Biodegradation

One of the stated objectives of using dispersants is to increase biodegradation. The effects of surfactants and oil dispersants on the rate and extent of biodegradation of crude oil and individual hydrocarbons have been extensively investigated, with mixed results. In some studies biodegradation is shown to be stimulated, in many there is inhibition, and others observed no effects with the addition of dispersants. The effect of surfactants and dispersants depends on the chemical characteristics of the dispersants, the hydrocarbons, and the microbial community. Other factors such as nutrient concentrations (e.g., necessary nutrients for growth, such as certain nitrogen compounds), oil-water ratios, and mixing energy also affects the observed biodegradation rate. Many of the older studies that observed stimulation may have been confounded by the growth on the dispersants themselves as some of the surfactants are readily biodegradable. The effect of the dispersants on the oil biodegradation rate is most sensitive to the characteristics of the dispersant itself, even if all other factors are kept constant.

The variable effects of dispersants and surfactants on oil biodegradation are probably due to their effect on microbial uptake of hydrocarbons. It is clear that surfactants can interfere with the attachment of hydrophobic bacteria to oil droplets, making the process very complex to understand. Biodegradation of PAHs, the most toxic component of oil, has never been shown to be strongly stimulated by dispersants.

Overall, many of the experimental systems used to investigate biodegradation might be considered inappropriate to represent the environment. They apply high mixing energy in an enclosed, nutrient-sufficient environment and allow sufficient time for microbial growth. Microbial growth on open-ocean slicks is likely to be nutrient-limited and may be slow relative to other fate processes. Only PAH mineralization (that is complete degradation to CO_2) can be equated with toxicity reduction. Stimulation of alkane biodegradation is not meaningful in the overall effects of oil spills. Alkanes are the easiest portion to biodegrade, but also the least toxic.

Another issue is the measurement of biodegradation. Several recent studies have shown that the use of simple gas chromatographic techniques for measurement are inappropriate. It has been shown that oil that has undergone biodegradation or photooxidation contains oxygenated compounds. The end products of biodegradation include acids, esters, ketones, and aldehydes. Some of these compounds cannot be analyzed by standard extraction and gas chromatographic methods. Conventional methods would not count these polar compounds in the analytical results. Studies have shown that highly oxidized oil, including that undergoing biodegradation and photooxidation, is not properly analyzed by conventional techniques. Conventional analytical techniques may miss as much as 75% of the oil mass. Therefore, conventional techniques may overstate biodegradation by as much as four times.

This present review found that most authors conclude that dispersants suppress biodegradation. These results are consistent with past reviews.

In addition, the following points are noted:

- When components of dispersants were tested separately, often these components had differing effects on the inhibition or promotion of biodegradation.
- Toxicity to some species of microbial biodegraders may be a factor that causes these varying results.
- There is a species shift with dispersants involved, as will be shown in the next section.

- Deep sea biodegradation may involve different dynamics than surface biodegradation and may require separate tools to investigate this phenomenon further.

Bacterial Population Shifts

New studies have shown that when oil and dispersants are involved, especially dispersants, there is typically a shift in the population of microbes that degrade oil. This shift can be minor or can be very major. This shift has a strong influence on the amount of degradation that takes place and on the type of compounds that are degraded. For example, the population of alkane degraders (those microbiota that degrade the alkanes, the simple oil compounds) may be increased or decreased and the population of PAH degraders may be altered in a different direction. Further, the natural successions that occur during biodegradation may be shifted or altered.

Several studies have shown that the presence of dispersants alters both the numbers and succession of hydrocarbon degrading organisms. This appears to be the result of selective toxicity of dispersants to some species while other species are tolerant of dispersants. This effect is different for different dispersants and different dispersant constituents. The end result of this number and succession shift is generally a reduction in biodegradation compared to a situation where dispersants are not used. The other result is that certain components of oil are degraded faster or slower than they would be if dispersants were not used.

Marine Snow Formation

Marine snow is a mucous-like agglomerate of organic material that can include oil. Marine snow, without oil present, serves as an important food source for benthic organisms. Marine snow production increases during spills and is further increased by the presence of dispersants. Marine snow results in the sedimentation of oil to the sea floor, where its fate is relatively unknown. Studies of the BP Deepwater Horizon spill shows that as much as 14% of all the oil may have been sedimented to the sea floor as marine snow. A new study shows that this number may be as high as 20%.

Fate Impacted by Dispersant Use

The studies dealing with the oil fate as impacted by dispersants show that dispersants increase the amount of benzene, toluene, ethylbenzene, and xylenes (BTEX) into the water column, as is already known. Further, one study shows that

dispersions also change the processes of fecal pellets in copepods by incorporating smaller oil droplets.

Other Topics

Dispersant Use in Recent Times and NEBA

Much of the discussion still revolves around the use of dispersants during the Deepwater Horizon spill. Re-evaluation of this spill should consider the fact that neither sub-sea nor on-sea dispersion was evaluated in detail for effectiveness. Discussion will continue on how effective these applications really were. This is especially true considering the large amounts of oil observed to have impacted the shoreline and to have sedimented to the seafloor. Further, mass balance studies show that there is little room left for dispersant effectiveness.

Dispersant proponents have often cited the Montara spill in Australia as an example of dispersant effectiveness. A recent court ruling on the spill has shown that there was no or very little effectiveness of dispersants in this case and that the oil impacted neighboring Indonesian islands.

Net Effects Benefit Analysis (NEBA) has now changed its name to Spill Impact Mitigation Assessment (SIMA), which is the same as NEBA but purportedly adds some features. Most of these were already in various implementations of NEBA. Another variation on the theme is Comparative Risk Assessment (CRA), which looks mostly at risk.

Monitoring Dispersant Effectiveness

Improved dispersant effectiveness monitoring protocols have been suggested and published. These include the following advances: use of a field effectiveness test to prescreen slicks for effectiveness, new guidelines for visual observation of effectiveness along with required times, use of modern instruments that measure particle size and with the ability to integrate these into total oil measurements, sampling and analysis of water below slicks, and shipboard toxicity measurements. Some of these have been implemented.

Interaction with Sediment Particles

Several studies continued on oil-sediment interaction. Results are conclusive that dispersants increase the oil-sediment aggregates formed; this happens because more droplets of oil are in the water column. It should be noted that much of the Prince William Sound water has high sediment content. The mineral aggregates thus formed will sediment to the sea bottom, given time and quiescence. There are variabilities in these processes with temperature, oil type, oil

viscosity, and oil weathering. A recent study on oil-sediment interactions suggests that as much as 20% of the oil from the BP Deepwater Horizon spill may have sedimented. It is important to note the difference between sedimentation by interaction with sediment particles, and that of marine snow which is interaction with organic particles.

Dispersed Oil Stability and Resurfacing

Consideration of water-in-oil dispersion stability is an important matter. It is known that oil spill dispersions are sometimes temporary and resurfaced slicks can appear. Further, the amount of oil entering the water has been shown to be highly variable, which has been observed to be related to the oil properties and the sea energy. An important facet of the problem is the slow rise and coalescence of droplets to the surface after dispersion. Gravitational separation is the most important force in the resurfacing of oil droplets from crude oil-in-water emulsions such as dispersions and is therefore the most important destabilization mechanism. Droplets in an emulsion tend to move upwards when their density is lower than that of water. This is true for all crude oil and petroleum dispersions that have droplets with a density lower than that of the surrounding water. The rate at which oil droplets will rise due to gravitational forces is dependent on the difference in density of the oil droplet and the water, the size of the droplets (Stokes' Law), and the rheology of the continuous phase. There is one paper during this review period which addresses this and models the entire process of spill dispersion.

Subsurface Application and Subsurface Behavior

Studies on the results of deep sea injection of dispersants, especially the effect on droplet size, have not used directly scalable simulative studies. The results vary and to date there has been no definitive answer if the injection of dispersants during the BP Deepwater Horizon spill reduced droplet size or had any other effect. In fact, there is growing evidence that there was little effectiveness of the subsea injection.

Human Health Aspects

Several studies of different types were applied. Many of the results could be considered preliminary since they were one-off studies and many indicated marginal results.

Application of several standard procedures indicated that:

- The health risk to children from touching beach sand that had been contaminated by oil and/or dispersant was low.
- The health risk from approved seafood was low and maybe less than the risk from inland seafood.
- There was low risk to cleanup workers of exposure to inhalation of high levels of toxicants from oil, however, blood levels of some oil constituents were found in workers.
- There was lung epithelial tissue toxicity from Corexit dispersants.
- Corexit was found to be somewhat cytotoxic.
- It was found that there were stress symptoms such as depression and anxiety among cleanup workers as well as their families, with no particular relation to the use of dispersants.
- DOSS, an ingredient of Corexit, was found to be an obesogen; however, one would need to ingest DOSS to cause this effect.
- One study showed evidence that dispersion of the crude oil increased the emission rates of fine particulate matter that may carry toxic compounds.
- Another study showed that total number concentrations of airborne particles originating from the oil-dispersant mixture are one to two orders of magnitude higher than those of crude oil alone, across the entire nano-scale range, reaching 100 times for 20 nm particles (the smallest range).
- An epidemiological study showed that symptoms of dispersant exposure included coughing as the most prevalent symptom (19.4%), followed by shortness of breath (5.5%), and wheezing (3.6%).
- One study concluded that the large quantity of dispersants used in the oil cleanup have been associated with human health concerns, including through obesogenicity, toxicity, and illnesses from aerosolization of the agents.
- A group of researchers studied the blood brain barrier (BBB) in mice, noting that oil spill-related compounds markedly affect BBB function and that these changes may underlie the observed behavioral changes due to crude oil exposure.

Modeling

Modeling is increasing and becoming a source of information beyond its traditional provision of predictions. In this review, almost every conceivable facet of oil spill and oil spill fate and behavior was modeled. If modeling results are accurate, these data are very useful. Some of the studies have involved obtaining data, typically from laboratory model systems, to develop the modeling algorithms.

There are several types of models summarized in this review. The following points can be made:

- Many three-dimensional (3-D) oil spill models are published, whereas before, most were two-dimensional (2-D). This 3-D capability enables the calculation of dispersion. 3-D models include consideration of the water column, whereas 2-D models consider only the surface.
- More models now include a variety of facets including movement, impact, fate, and effects.
- An important field of modeling is the understanding of processes. In this time period, there was much focus on understanding the production of oil droplets and their sizes and size ranges.
- Extensive effort was placed on studying the dynamics of the BP Deepwater Horizon spill, especially that of the subsea discharge.
- There are now chemical dispersion models with some empirical basis, albeit rather old inputs.
- There exists a strong need for more actual data at full scale to calibrate and develop models.
- Overreliance on models to understand natural systems can occur in the absence of actual data.
- The models used on the BP Deepwater Horizon spill show contradictory results when it comes to effectiveness of deep sea injection of dispersants.

New Dispersants

In this review, several ideas on new products are summarized. Most of these products are based on natural products such as chitosan, xanthum, or lecithin. Most of these products were not tested in a standard way and most were never developed further than a laboratory idea and a subsequent paper.

Surface Application

Aerial application is largely the current application method, whereas ship application work has largely been sidelined. Few new application packages have been developed in recent years.

Fate of Dispersants

Several studies on the fate of dispersants and how they influence the fate of oil have been carried out. Findings include:

- DOSS and dipropylene glycol butyl ether (DGBE), two ingredients of Corexit 9500, may be subject to photolysis and photodegrade in near-surface waters.

- The dispersant Corexit 9500 appears to inhibit the photodegradation of PAHs.
- Span 80, a surfactant ingredient in Corexit 9500, may increase the aerosolization of oil.
- Dispersants increase the sediment uptake of PAHs.

NAS Dispersant Review

The U.S. National Academy of Sciences conducted a review of dispersants in the past year (NAS 2019). This was a limited review because the literature body is extensive (greater than 2,500 papers) and it would be difficult to review it all. Instead, the Academy members reviewed issues and addressed questions posed to the committee based on the experts' knowledge and using some of the published reviews.

There are several shortcomings of the report. It should be noted that this was not an independent study but was funded by a number of government agencies and the American Petroleum Institute. Members of the panel were chosen with assistance from the sponsors, they were not chosen independently.

Secondly, the exercise was not a detailed review of the literature, rather it was addressing a number of issues set by the sponsors. A detailed look at some of the prime issues identified by PWSRCAC reviews in the past (Fingas 2014, 2017) shows that only some of this literature was used. Specific examples of this will be detailed below.

The issues surrounding dispersants remain the same: effectiveness, toxicity, and long-term benefits. In recent years, the biodegradation of oil and the health effects on humans have been added as serious concerns. Specific comments and comparisons on each of these facets appear below:

1. Effectiveness - Effectiveness is largely unaddressed in the NAS 2019 report. It did not form part of the task. This is not optimal, as effectiveness is a major issue and a cornerstone issue in the use of dispersants. Lack of effectiveness in many cases makes the application considerations inappropriate.
2. Aquatic Toxicity - Much of the literature noted in the reviews by Fingas in 2014 and 2017 was not mentioned, analyzed, or noted. This is important as the data in reports such as Fingas 2017 were extensive and found that dispersant addition to oil caused further toxicity, above the oil itself. Further there is great emphasis on the Toxic Units Model, a minority model which is known to be not representative of hydrocarbon toxicity. It always predicts that weathered oil is much less toxic than fresh oil.
3. Human Health - Human health is reviewed briefly and only the Gulf of

Mexico workers studies are mentioned in detail of the many new studies noted in the Fingas 2017 review. Most of the other (about 20) references are not dealt with.

4. Literature Review - Very little of the current literature was reviewed; most references were made to dispersant-positive studies. The Fingas 2017 review noted dozens of data tables and corresponding discrepancies. These discrepancies in the literature were barely mentioned, or written off as bad research.
5. In-depth Analysis - There was no in-depth analysis of any topic. The report simply looked at an issue (or question) and made summary statements about it. Only in the case of biodegradation was any literature cited, and then it was an incomplete summary. An example of data found in the Fingas 2017 report is shown in Table 1. It should be noted that this is part 1 of 6 of the table and the full table can be found in the 2017 report. None of these aquatic data points were specifically noted in the NAS 2019 report nor were any of about 20 researchers cited in the Fingas 2017 report cited in the NAS report.
6. The large number of references listed are not actually used, just noted.
7. One telling quote: “the effect of SSDI [Subsea dispersants injection] on biodegradation of liquid oil in the subsurface intrusion layers is minor insomuch as only a small fraction of liquid oil was trapped in the layers with and without SSDI.” This basically says that SSDI did not work! The summary statements later on do not mention this fact.

Research Needs (based on this summary report)

1. Continuing research on human and environmental toxicity
2. Re-examine effectiveness tests, continue effectiveness testing using standard protocols
3. Re-examine old research before proceeding with new research
4. Examine in more detail the applicability of dispersants to Alaska and Prince William Sound in particular
5. Focus on using real data rather than modelled data and small-scale tests

Table 1 Biodegradation Studies							
Author(s)	**Year**	**Oil Type**	**Time**	**Dispersant**	**Notes**	**Funder**	**Effect**
Bacosa et al.	2015a	Louisiana	36 d	Corexit 9500		Gov't & Res.	neut.
Bacosa et al.	2015b	Louisiana	36 d	Corexit 9500	Corexit inhibited some bacteria	Gov't & Res.	neg
Bagby et al.	2015	Macondo		none		Gov't	
Bookstaver et al	2015	Octane	72 h	Corexit 9500	Corexit inhibited the bacteria	Gov't & Res.	neg.
Brakstad et al.	2015	Macondo	64 d	Corexit 9500	smaller droplets degraded more	Industry	pos.
Cappello et al.	2014	Arabian	2 d	Biosurfacant	Biosurfactant increased microbes	Gov't & Res.	
Crisafi et al.	2016	Arabian	14 d	not specified	Washing agent decreased microbes	Gov't & Res.	neg.
Cuny et al.	2015	Russian	286 d	Finasol	Dispersant did not increase biodegradation	Gov't & Res.	neg.
Kleindienst et al	2016c	Macondo	6 wk	Corexit 9500	over 31 wks, dispersant suppressed biodegradation	Gov't & Res.	neg.
Olson et al.	2017	Macondo	28 d	Corexit 9500	natural seawater degraded, little diff with disp.	Gov't & Res.	neut.
Ortmann and Lu	2015	Macondo	5 d	Corexit 9500	Dispersant and oil changed microbial composition	Gov't & Res.	neg.
Overhold et al.	2016	Marlin	14 d	Corexit 9500	Growth and biodegradation inhibited t by 34% and 40%	Gov't & Res.	neg.
Overhold et al.	2016	Marlin	14 d	Corexit 9500	Growth increased by 10%	Gov't & Res.	neg.
Pietroski et al.	2015	Macondo	5 d	Corexit 9500	initial reduced mineralization by 12%	Gov't & Res.	neg.
Pietroski et al.	2015	Macondo	5 d	Corexit 9500	after 2 weeks reduced mineralization by 88%	Gov't & Res.	neg.
Prince et al.	2015	Alaskan NS	62 d	Corexit 9500	increased biodegradation over slick	Industry	pos.
Prince et al.	2015	Alaskan NS	62 d	Finasol	increased biodegradation over slick	Industry	pos.
Prince et al.	2015	Alaskan NS	62 d	Slickgone	increased biodegradation over slick	Industry	pos.
Rahsepar et al.	2016	Macondo	30-50 d	Corexit 9500	decreased biodegradation/ increased aromatics	Gov't & Res.	neg.
Rahsepar et al.	2016	Macondo	30-50 d	Corexit 9500	decreased biodegradation/ increased aromatics	Gov't & Res.	neg.
Seidel et al.	2016	Marlin	6 wk	Corexit 9500	Decreased biodegradation/ Little DOSS deg	Gov't & Res.	neg.
Størdal et al.	2015a	Troll	48 h	Natural disp.	feces slowed biodegradation	Gov't & Res.	
Størdal et al.	2015a	Troll	48 h	Natural disp.	oiled feces increased biodegradation	Gov't & Res.	
Størdal et al.	2015b	Troll	48 h	Natural disp.	feces slowed biodegradation	Gov't & Res.	
Størdal et al.	2015b	Troll	48 h	Natural disp.	oiled feces increased biodegradation	Gov't & Res.	

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Report Acceptance: Port Valdez Weather Buoy Data Analysis 4-6

Briefing for PWSRCAC Board of Directors – September 2021

ACTION ITEM

Sponsor: Roy Robertson and the Oil Spill Prevention and Response Committee

Project number and name or topic: 6536 Port Valdez Weather Buoy Data Analysis

1. **Description of agenda item:** PWSRCAC installed two weather buoys in Port Valdez in 2019, one in the vicinity of the Valdez Marine Terminal and the other near the Valdez Duck Flats. These buoys are expected to collect weather data for at least five years. This project is the first of possibly five projects that would take the data collected in each of the five years and perform an analysis to determine any weather trends throughout the year and seasonally in both locations. The analysis includes current and wind direction and speed information, wave direction and heights, and other pertinent information that can be obtained from the weather data. Dr. Robert Campbell was contracted to analyze the weather buoy data collected from 2019 to the end of 2020, and provide a report of his findings.

2. **Why is this item important to PWSRCAC:** In addition to providing real time weather information, the Port Valdez weather buoy websites also provide weather information for the last five days. The data from these buoys is collected and stored, but without periodically analyzing the data much of the value from the buoys will not be realized. This project provides trend analysis of the weather and currents at the two buoy locations from the time the data started being produced to December 31, 2020. While this is a relatively short window of time for this first analysis, the analyses of future years will build on this analysis and provide better information on the Port Valdez weather and current trends.

3. **Previous actions taken by the Board on this item:**

Meeting	Date	Action
Board	9/X/2020	Approved a budget modification to include project 6536 in the FY2021 budget in the amount of $15,000.
Board	5/21/2021	Approval of project 6536 in the FY2022 budget in the amount of $15,000.

4. **Summary of policy, issues, support or opposition:** This project allows PWSRCAC to provide support for several of our mandates as part of OPA 90 and the Alyeska contract. Over time, the weather and current trend analysis gathered by this project and future projects will allow PWSRCAC to provide information to support environmental monitoring, oil spill contingency and response planning, trajectory modeling, and information to support the safe transportation of oil in Port Valdez. No opposition to this project has been identified.

5. **Committee Recommendation:** The Oil Spill Prevention and Response Committee recommended acceptance of this report at their meeting on August 5, 2021.

6. **Relationship to LRP and Budget:** Project 6536 Analysis of Port Valdez Weather Buoy Data is in the approved FY2022 budget and annual workplan.

6536--Analysis of Weather Buoy Data
As of July 31, 2021

FY-2022 Budget	
Original	$15,000.00
Modifications	
Revised Budget	$15,000.00
Actual and Commitments	
Actual Year-to-Date	$0
Commitments (Professional Services)	$0
Actual + Commitments	$0
Amount Remaining	$15,000

7. **Action Requested of the Board of Directors:** Accept the report titled "Port Valdez Weather Buoy Data Analysis" by Robert W. Campbell, Ph.D., dated August 2, 2021, as meeting the terms and conditions of the contract number 6536.21.01, and for distribution to the public.

8. **Alternatives:** None.

9. **Attachments:** Draft report titled "Port Valdez Weather Buoy Data Analysis" by Robert W. Campbell, Ph.D., dated August 2, 2021.

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Port Valdez Weather Buoy Data Analysis

Report submitted by:

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August 2, 2021

Contents

List of acronyms used in this report

GS16	De-tiding method developed by Gargett and Savidge (2016)
NOAA	National Oceanic and Atmospheric Administration
CO-OPS	Center for Operational Oceanographic Products and Services, NOAA
PWS	Prince William Sound
PWSRCAC	Prince William Sound Regional Citizens' Advisory Council
QA/QC	Quality Assurance / Quality Control
VDZA2	NOAA tide station in Valdez Harbor
VMT	Valdez Marine Terminal
WMO	World Meteorological Organization

Executive summary

Two buoys were deployed in Port Valdez in 2019 by PWSRCAC, one adjacent to the Valdez Marine Terminal (VMT), and one near the Valdez Duck Flats. Time series of the meteorological and oceanographic observations at each of the buoys were analyzed for seasonal, intra-, and interannual patterns. Solar radiation, air, and water temperatures all showed a cyclical seasonal progression typical to subarctic regions, with minima in February and maxima in August. Relative humidity was high, as befits a coastal region with a large amount of annual precipitation, and tended to follow temperature trends. Air pressure, driven by large scale atmospheric circulations, was similar between the two sites. Winds were primarily from the east in autumn and winter, again driven by the large scale atmospheric patterns that create a low pressure system over the Gulf of Alaska during that time. In late spring and summer, daily westerly sea breezes were common. A 112-year-long temperature climatology was constructed for the Valdez region, which showed a steady and persistent warming trend. Temperatures in 2019 tended towards warmer than average and transitioned towards cooler than average in 2020, as did much of the North Pacific, in response to a La Niña event. Although surface currents have a tidal component, several attempts to remove high frequency tidal variability and examine low frequency circulations were not particularly successful, in part due to gaps in the time series and perhaps also due to other high frequency components such as winds. Residual circulations that were extracted were very small. Compared to the VMT, currents at the Duck Flats location were quite weak. Cross covariance analysis comparing the timing of currents at the buoys compared to the tides at the Port Valdez tide station showed that surface currents tended to lag the tides by approximately 45 minutes.

Introduction

The Prince William Sound Regional Citizens' Advisory Council (PWSRCAC) operates two weather buoys in Port Valdez, one offshore of the Valdez Marine Terminal (VMT) at Jackson Point that was deployed in May 2019, and one adjacent to the Valdez Duck Flats that was deployed in September 2019 (figure 1). Both buoys have been uploading meteorological and oceanographic observations on an hourly basis (with some interruptions due to hardware/software failures and service visits) since their deployment.

Standard equipment on each buoy includes an anemometer, relative humidity sensor, three temperature thermistors (one dedicated for air temperature, a secondary included in the relative humidity sensor, and one to measure sea surface temperature mounted ~1 meter (m) below the

waterline), barometer, radiometer, Acoustic Doppler Current Meter (for surface currents), and a wave sensor (only on the VMT buoy at present). An onboard electric compass is used to measure the buoy heading to adjust direction measurements (wind, waves, and current) to true north. The measured parameters of interest, their units, and recording period are listed in Table 1.

Table 1: Meteorological and oceanographic parameters collected by the buoys.

Parameter	Instrument Make/Model	Units	Recording period
Wind speed	RM Young 05103-L	m/s	6 minutes
Wind gust speed	RM Young 05103-L	m/s	6 minutes
Wind direction	RM Young 05103-L	Deg. True	6 minutes
Air temperature	Campbell Scientific 109	°C	15 minutes
Relative humidity	Campbell Scientific HC2S	%	15 minutes
Barometric pressure	Setra CS100-QD	mbar	15 minutes
Solar radiation	Hukseflux LP02	W/m²	15 minutes
Current speed	Nortek Aquadopp 2 MHz	m/s	20 minutes
Current direction	Nortek Aquadopp 2 MHz	Deg. True	20 minutes
Significant wave height	Axys TriAXYS	m	Hourly
Maximum wave height	Axys TriAXYS	m	Hourly
Wave period	Axys TriAXYS	s	Hourly
Wave direction	Axys TriAXYS	Deg. True	Hourly

The high frequency of sampling by the buoys has already created large archive of observations, approximately 3.7 million primary data points for the VMT buoy and 3.3 million data points for the Duck Flats buoy, plus a similar amount of associated metadata. The purpose of this report is to provide a preliminary analysis of some of the seasonal and higher frequency patterns found in the data.

This report is structured around the different data types produced by the buoys. Following discussion with PWSRCAC staff and committee members, the basic averaging period was decided to be monthly. In some cases higher frequencies have been used where appropriate to provide a higher level of detail. Given the very broad backgrounds of the many PWSRCAC stakeholders, it has been attempted to avoid or explain technical jargon where possible to provide a plain language interpretation for that large and diverse audience. Rather than the usual methods/results/discussion format featured in the scientific literature, a more narrative structure was adopted and explanations of methods, highlighting of the results and discussion of them, have been done all at the same time for the many different data collected. The metric units used by the buoys have also been mostly converted to imperial units. Graphical presentations of the data have been used as much as possible and a tabular compilation of monthly averages at both buoys has also been included in appendices.

Data operations, notes, and QA/QC

All data was downloaded directly from the buoy servers. Each time series was examined with automated and manual methods for anomalous spikes. Relative humidity values prior to January 2020 at the VMT were removed (the sensor was damaged) and occasional bad water temperature

observations at the buoys (less than 28°F) were removed. On or about March 11, 2020, the VMT buoy had a power issue which tripped the main fuse from the battery, which resulted in intermittent daytime-only data (when the solar panels produced enough voltage to power up the data logger) until the buoy was repaired on April 29.

A primer on the visualization of vector data

Meteorological and oceanographic data are either scalar observations (magnitude only, e.g., temperature) or vector observations (magnitude and direction, e.g., winds). Scalar data may be visualized with a standard x-y plot that should be familiar to most. Vector data, having two components, is more complicated to visualize. A vector may be visualized as an arrow, with the direction indicated by the direction the arrow is pointed, and the magnitude indicated by the length of the arrow (figure 2A). When doing mathematical operations on a vector, vectors are usually broken up into components that correspond to the dimensions of the vector. The red and blue arrows in figure 2A indicate those two components for the two dimensional vector shown: there is a horizontal component and a vertical component. Those components are usually designated as 'u' and 'v' in the technical literature and in the context of meteorological data are referred to as the zonal (i.e., "east-west") and meridional (i.e., "north-south") components. In this context positive numbers mean one direction and negative numbers mean the opposite. For example, on the east-west axis a positive number is eastward and a negative number is westward.

Averaging of vector observations is usually done on the components and then may be visualized in a number of ways. The two methods used in this report are roses and quiver plots. A rose is a good way to summarize a large number of observations and may be thought of as something similar to a bar chart, but arranged in a circle to indicate directions. An example of a rose plot is shown in figure 2B, which represents all the wind observations made by the VMT buoy in the month of June 2020. The wind directions (the direction the wind is blowing from) are broken up into 10-degree "bins" that are shown by the bars. The length of the bars is proportional to the frequency of winds blowing from that direction and the colors indicate bins of wind speeds, which are shown in the color scale to the right. Figure 2B shows us that most of the winds in June 2020 were primarily in the east-west direction. The median wind direction (i.e., the most frequent, shown by the longest bar) was just south of westerly. The four largest bars showing westerly to southwesterly winds can be summed up on the circular scale and show that something like half (50%) of winds were in those westerly to southwesterly directions. The color scale shows that the strongest winds were westerlies with a small proportion blowing 15-20 knots (green bars), slightly more blowing 10-15 knots (cyan bars), and more still blowing 5-10 knots (light blue bars). One can also see that easterly winds were generally weak, being mostly 0-5 knots (dark blue bars).

Quiver plots allow examining finer scale patterns that would be impractical with rose plots; quiver plots show a vector as an arrow or a line. An example quiver plot is shown in figure 2C, again using wind data from June 2020 at the VMT buoy, but with daily average wind speed and direction shown. Each arrow in the plot is the daily average wind velocity with the angle of the stick showing the direction of the wind vector and the length of the stick indicating the wind speed. The axis is scaled such that the length of the stick is proportional to the ticks on the bottom axis. Because the winds, waves, and currents in Port Valdez are primarily oriented in the east-west direction, the

plots were produced with time shown vertically. Arrowheads are shown in the example plot, but are not shown in the rest of plots in this report because they show a great deal more data and the arrowheads tended to add clutter that made the plots more difficult to read.

Meteorologists and oceanographers use different conventions when speaking of directions: meteorologists speak of the direction that winds are coming from (e.g., a northerly wind is coming from the north), while oceanographers speak of the direction water is traveling too (e.g., an eastward current is travelling to the east). This convention has been adhered to in this report for the rose plots, but has not for the quiver plots, because the quiver plots are a direct representation of the vector in question (the average movement of the air or water). This is why the rose in figure 2B has bars pointing to the left ("winds from"), while the quiver plot in figure 2C has vectors pointing to the right ("direction air is moving to"). In the text of this report both "from" and "to" notation is used depending on the convention (meteorological vs oceanographic).

Results and discussion

Air and Sea Surface Temperature

Monthly air and water temperatures at both buoys showed the typical sinusoidal seasonal cycle expected in a subarctic environment (figures 3 and 4), with maxima in August and minima in February and considerable day-to-day departures from monthly means. Air temperatures tended to be slightly higher at the VMT buoy (figure 3) than at the Duck Flats buoy (figure 4), which may indicate a slightly more terrestrial influence at the Duck Flats buoy (e.g., downsloping winds from the Valdez Glacier Valley, see winds discussion below). Water temperatures were also slightly cooler at the Duck Flats, which likely reflects potential source waters from the Lowe and Valdez Glacier Rivers, which can be expected to be cooler than seawater given the presence of year-round ice in their watersheds.

Relative humidity

Relative humidity was variable at both sites (figures 3 and 4). Much of the time relative humidity was quite high, greater than 70%, as befits the coastal climate both buoys are measuring. Part of the data record from the VMT was removed for data quality issues, but both buoys have an almost complete record from 2020, and the patterns between the buoys are quite similar, suggesting that although noisy, the observations are likely valid. Relative humidity was highest in August and lowest in March, following the temperature cycle.

Barometric pressure

Air pressure was very similar between both sites, as would be expected because air pressure is largely driven by large scale atmospheric circulations (figures 3 and 4). There was not a strong seasonal cycle in air pressure. Air pressure in summer 2019 was quite high, and likely driven by a large scale atmospheric ridge that set up over the north Gulf Coast that year (Amaya et al., 2020). A similar pattern set up in 2020. Pressure was more variable in the autumn months, with the onset of so-called "equinox weather" which tends to feature large cyclonic circulations driven by the Aleutian Low, which usually sets up in the Gulf of Alaska in autumn and winter and determines the storm tracks to the region (Rodionov et al., 2007).

Solar radiation

As to be expected given the latitude of the sites, solar radiation was strongly seasonal, peaking in June and with a nadir during the winter months (figures 3 and 4). Both buoys are shaded by the mountains fringing Port Valdez during the late autumn and winter months, which has created some power issues (both buoys are powered by solar panels), particularly at the VMT. The intermittent values in March and April 2020 (collected only during days when the solar panel energized the logger) resulted in spuriously large averages for those months because only daytime values were collected.

Wind speed and direction, wind gusts

Winds are summarized as monthly wind roses (figures 5 and 6), and following meteorological convention are shown as the direction the wind is blowing from (i.e., an east wind blows from the east). The anemometers on the buoys are very sensitive and usually move slightly in all but the calmest conditions. They are also subject to freezing up after heavy snow and rain events followed by freezing temperatures. This manifests as a zero wind speed from exactly true north (vector multiplication on the 0 wind speed results in a direction of 0 as well) and can be seen on the wind roses as a spike in observations at the 0-degree band only. Those spikes may be used as an indicator of the frequency of calms during summer months and freeze-up events in winter.

Both the roses and the quiver plots (figures 7 and 8) show that most winds were easterly during autumn and winter and transitioned to westerlies from May until August at both buoys. The strongest winds were easterlies, during the autumn and winter months, likely driven by outflow winds caused by the large scale atmospheric features that set up in autumn/winter (the Aleutian Low offshore and high pressure over the interior). The summer westerlies are a daily sea breeze caused by localized heating and cooling that is familiar to mariners in the region (Lethcoe and Lethcoe, 2009). During the day, the sun heats the land faster than the ocean, creating upward convection and low air pressure over land; this draws air in from the ocean and creates a landward breeze (from the west in Port Valdez). At night, the land cools faster than the ocean, creating convection in the opposite direction. To illustrate this, hourly average winds in the east-west direction in May and June 2020 are shown in figure 9. Westerly winds are depicted with a green color scale and easterly winds are depicted with a blue color scale. On most days, winds were easterly from midnight until approximately 10 a.m., then switched to westerlies into the afternoon and evening.

The roses and quiver plots also show that wind directions were not completely symmetrical. There was a northerly component as well, regardless of if the winds were primarily from the east or west. That slight northerly tendency may have been caused by topographic steering of the winds by the steep terrain of Port Valdez, with westerly winds blowing out of Shoup Bay to the northwest. The northeastern cant of easterly winds may indicate that winds from Valdez Glacier valley tend to predominate over those of the Lowe river valley at the Duck Flats location.

Following the World Meteorological Organization (WMO) standard, the buoys also recorded a running 3 second average wind speed and reported the maximum of that 3 second average in each 6 minute wind recording period as the wind gust speed. Upon examination, a number of unrealistic (greater than 200 knots) gust observations were found in the gust time series, those values have been traced to an incorrect setting in wind measurement lines in the original data logger program

provided by the builder of the buoys (the setting was corrected in February 2021). The relationship between wind speed and wind gusts at National Data Buoy Center weather buoys in Prince William Sound (PWS) and at shore stations in Port Valdez were examined and it was found that wind gusts exceeding 3 times the wind speed were exceedingly rare. Gusts exceeding 3 times the wind speed in the buoy time series were accordingly discarded. The wind gust time series at the buoys (figure 10) followed the same pattern as sustained winds, with maximums during the winter months and elevated gusts during the summer westerly season. Summer gust speeds were in the 15-20-knot range and 40-50-knot gusts occurred during autumn and winter storms.

Wave height and direction

Wave observations have also been summarized as roses (figures 11 and 12) and quiver plots (figures 13 and14). Wind makes waves and the wave observations reflect the wind observations, with most waves, and the largest waves, from the east at the VMT during the winter months and from the west in spring and summer. The time series at the Duck Flats is quite short as the wave sensor was destroyed by the April 2020 power spike and has not been replaced. Waves at the Duck Flats were also primarily from the west and from the northeast in winter. Being deployed at the extreme eastern end of Port Valdez, the Duck Flats buoy has essentially no fetch to the east (it is approximately 1/10th of a mile from shore: figure 1). The waves from the southeasterly direction thus likely represent refraction of waves created in the southeast corner of Port Valdez during strong winter easterlies. Wave heights at the Duck Flats were also smaller than at the VMT as the Duck Flats site is partially protected from winds from the northwest.

The largest maximum wave height observed in the time series was an observation of just under 7 feet in March 2020 at the VMT. Maximum summertime wave heights at the VMT ranged between 1 and 3 feet and were slightly higher during winter storms. The short time series at the Duck Flats spanned the 2019/2020 winter and maximum wave heights in the 3-4-foot range were observed.

Temperature climatology

Although the buoys have a fairly short time series, in order to put the buoy observations into a climatological context it is possible to convert observations into anomalies (i.e., departures from the long-term average) using observations from nearby stations, with the assumption that they are reasonably similar. There is a National Oceanic and Atmospheric Administration (NOAA) Center for Operational Oceanographic Products and Services (CO-OPS) weather and water level station in Valdez harbor, named VDZA2, which has a record of water temperatures that goes back to 2009. An average annual temperature cycle based on weekly averages was created from the VDZA2 time series (figure 16) to use as a long-term average.

Water temperatures at the buoys may then be averaged by each week and subtracted from the weekly averages at VDZA2 to produce an anomaly plot (figure 17), which depicts the departure of observations from the long-term average and with the seasonal cycle removed. The anomaly plot shows that relative to the 2009-2020 average, surface waters were much warmer than average in the early summers of both 2019 and 2020 at the VMT but tended to be cooler than average in autumn in both years. This matches with larger scale oceanographic patterns seen elsewhere, including a Gulf of Alaska wide marine heat wave in 2019 (Amaya *et al.* 2020) and warm surface waters observed in PWS in 2020 (Campbell, *unpubl. obs*); the trend towards cooler temperatures

in the latter portion of 2020 may be related to the ongoing La Niña event (NOAA CPC 2020). La Niña events are usually correlated with cooler surface temperatures in the North Pacific (Papineau, 2001; Newman et al., 2016), but PWS tends to lag the Gulf of Alaska by about a year in terms of temperature responses (Campbell, 2018). The difference between the anomalies at the two buoys may be attributed in part to the differences in water temperatures observed by the buoys with cooler temperatures found at the Duck Flats (see above, figures 3 and 4).

Although the water temperature record is comparatively short, a longer climatology is available for monthly average air temperatures in Valdez that was compiled by the Berkeley Earth database (http://berkeleyearth.org/). The Berkeley Earth time series spans from 1908 to 2013, using data from several National Weather Service and Federal Aviation Administration weather stations that have existed in the Valdez area over the years. To bring the climatology all the way to present day, the VDZA2 air temperature time series was appended to the Berkeley Earth one. The Berkeley Earth climatology overlaps with the VDZA2 time series for several years, which permits examining for offsets between the two time series. A linear regression comparing monthly averages at the VDZA2 station to the Berkeley Earth averages (figure 18) showed a very tight relationship between the two (with the exception of one outlier), but with a significant slope and offset. This suggests that although the two data sets showed the same pattern, there were slight differences in the temperatures that they estimated. The Berkeley Earth averages were therefore adjusted with the slope and intercept to make them consistent with the contemporary VDZA2 record.

The complete time series of air temperature anomalies from 1908 to 2020 (figure 19) shows a consistent warming trend of just under a half of a degree Fahrenheit per decade over the last 112 years, an overall increase in average temperatures of 5 degrees. This is consistent with trends observed elsewhere in the region (e.g., Campbell, 2018). A pattern of cold winters and the occasional warmer than average summer early in the 20th century has transitioned to both warmer winters and summers, with occasional short stanzas (3-4 months) of cooler temperatures.

Air temperature anomalies at the buoys (figure 20) showed a similar pattern to water temperatures, with warm anomalies trending towards cooler in late 2019, and again in late 2020. The patterns between the buoys were similar, but again offset, with anomalies lower at the Duck Flats. Again, that offset was partially because air temperatures tended to be cooler at the Duck Flats buoy (figures 3 and 4), if that offset is considered the overall pattern can be seen to be similar.

Surface Currents

Surface currents at the VMT were as high as 1.5 knots and considerably smaller at the Duck Flats (figure 21), which is not surprising given the different locations. The Duck Flats buoy is deployed in shallow water near the head of Port Valdez, while the VMT buoy is deployed in deeper water over a steeply-sloped bottom mid-Port, where tidal currents will be stronger as the tides slosh back and forth.

Tide heights from station VDZA2 are routinely overlaid on the current data at both sites on the buoy websites (e.g., http://www.pwswx.pwssc.org/VMT/VMT.html) and there is clearly a

correlation between current direction and stage of the tide, as is to be expected given the large tidal ranges that are a feature of the region. As well as the semidiurnal (i.e., twice daily) tidal circulations there can also be longer period flows driven by winds and buoyancy currents (currents driven by freshwater entering saltwater). In order to examine those longer period motions the influence of the tidal currents must be removed. The standard method to detide a time series is to fit a series of tidal constituents to the time series (Foreman et al., 1995), as is done with water height observations from tide stations to produce tidal predictions. The tidal constituents correspond to the periods of orbital parameters of the celestial bodies (e.g., the sun and moon) that drive the tides. The model tide can then be subtracted from the observations to remove the high frequency tidal variability. This method works best with long time series (greater than 1 year) without any significant gaps (which can complicate fitting to the specific frequencies of the different components). A harmonic tidal analysis was conducted on the currents time series from both buoys with the T-Tide toolbox (Pawlowicz et al., 2002), but the resulting model fit was very poor, only explaining 33% of the variance at the VMT and 5% of the variance at the Duck Flats. The resulting model did not describe tidal currents well, with considerable remaining high frequency variability. It appears likely that the many gaps in the time series, as well as the considerable high frequency variability in surface currents (compared to the pressure or water height observations used at tide stations) gave poor results. Breaking the time series up into gap-free periods did not improve the result.

There are other methods to remove high frequency variability, including moving averages (Godin, 1972) and lowpass filters (reviewed Foreman et al., 1995), but the gaps in the time series created problems for those methods as well. Finally, the "Multiple Decimate and Interpolate" and "Peak Identification and Interpolation" methods of Gargett and Savidge (2016; GS16 hereafter) were adapted. Those methods are specifically for high frequency observations (less than hourly), such as those collected by the buoys.

The GS16 method uses successive decimations to remove high frequency variability and a peak identification method to identify the timing of the high and low tides; interpolation is then used to determine mean flows. The original GS16 method uses the Matlab 'decimate' function to resample the original time series at lower frequencies following filtering the data with a lowpass filter. The gaps in the buoy time series created problems with using 'decimate', so the more robust 'resample' function was used. Following GS16, the buoy time series were resampled 3 times by a factor of 2 to produce the low frequency time series. The 'peakfinder' peak identification function (Yoder, 2021) was then used to detect the timing of the low and high tides and the mean flow fit with a cubic spline. The residual mean flow was then averaged over each day to produce an average daily mean flow. The low and high tide peaks were not always detected by the peakfinder algorithm, and only instances where two successive low and high peaks were identified were used.

The GS16 method worked best at detecting residual mean flows when currents were highest and did not do well at the Duck Flats (where currents were usually low) and the parts of the year at the VMT when currents were at their lowest (fig. 22). Residual currents at the VMT were quite variable in 2019, and did not correspond to any wind events (fig. 7), the pattern is difficult to explain given the other observations. Residual currents in May-July 2020 were consistent with

eastward alongshore flow, which one might expect given freshwater driven currents: surface freshwater inputs are less dense than saltwater and tend to ride above saltwater for some distance before being mixed. In the northern hemisphere the Coriolis force will act upon freshwater flows and turn them to the right, which tends to create counterclockwise circulations. Prior work with drifters and current meters did show an eastward circulation along the southern shore (Gay, 2018). One might expect to see north or westward currents at the Duck Flats from the Lowe River or Valdez Glacier River, prior work with drifters and ship based current meters showed westward current along the northern margin of Port Valdez (Gay, 2018) but there were no periods of mean flow that corresponded to outflows at either river, despite both hydrographs showing several outflow events that may have been caused by precipitation events or glacial outburst floods (figure 23). Surface currents in Port Valdez are also strongly influenced by winds (Gay, 2018) and untangling wind and tidal effects without a more elaborate tidal model may not be possible.

In order to examine how the timing of currents at the two buoys varied compared to the water height observations at the VDZA2 tide station, a cross covariance analysis was done. The covariance between two quantities measures how much in concert the quantities change (i.e., "if one goes up how much does the other go up" and vice versa). In a cross covariance analysis the covariance between the quantities is examined at several different times to see if one lags or leads the other. The results of the cross covariance analysis showed that the surface currents at the buoys tended to lag the tidal height by about 45 minutes (figure 24). In other words, slack currents occurred about 45 minutes after the time of the high and low tides.

Conclusions

The analysis done here shows the patterns one would expect of meteorological and oceanographic observations in a subarctic region with a large tidal range. The main observations may be summarized as follows:

- Air and water temperatures, and solar radiation followed a seasonal sinusoid with maxima in August and minima in February. Temperatures were slightly cooler at the Duck Flats buoy than at the VMT buoy.
- Relative humidity was high at both sites and followed the seasonal temperature pattern.
- Air pressure was similar between both sites and driven by large scale atmospheric circulations.
- Winds were mostly from the east in autumn and winter, transitioning to weak easterly and stronger westerly sea breezes during the summer months.
- Wave directions tended to match wind directions. The highest waves were observed during autumn/winter storms and spring/summer sea breeze generated waves were on order of one foot.
- A temperature climatology was constructed that shows a persistent warming pattern over the past 112 years.
- Air and water temperatures at the buoy sites were warmer than average in 2019 and tended towards cooler than average in 2020, likely reflecting large scale climate fluctuations.
- Surface currents had a tidal component, but several attempts to remove the high frequency tidal variability to examine circulation patterns did not produce useful results, likely due to gaps in the time series and non-tidal variability (e.g., winds). Currents at the Duck Flats buoy were much weaker than at the VMT buoy.

- Cross covariance analysis comparing the timing of currents at the buoys compared to the tides at the Port Valdez tide station showed that surface currents tended to lag the tides by approximately 45 minutes.

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Figures

Figure 1: Satellite photo of Port Valdez showing the location of the two buoys.

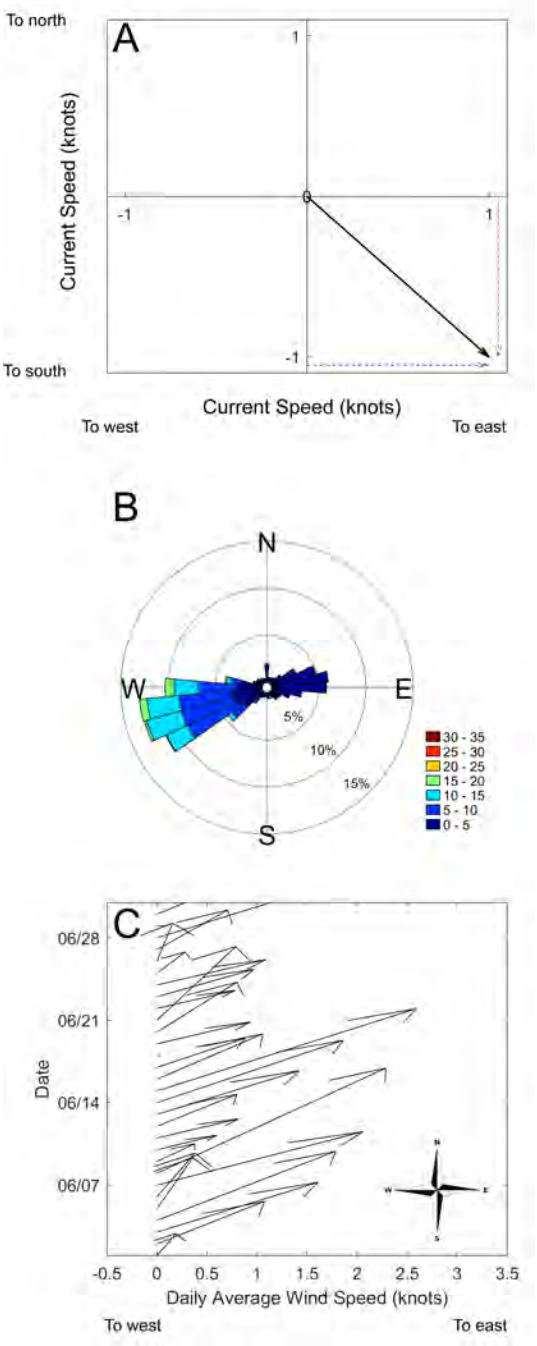

Figure 2: Examples of the visualization of vector data. Panel A shows an example of a vector observation, for example a 1 knot current to the southeast. The vector may be broken up into two components, an east-west component (blue arrow) and a north-south component (red arrow). Panel B: An example wind rose summarizing wind observations made in June 2020. The bars indicate 10-degree bands of wind directions (direction from), the lengths of the bars indicate frequency (how often winds in each band were observed) and the color encodes wind speeds. Panel C: An example of a quiver plot, showing daily average wind vectors (direction in which the air is traveling) for June 2020. The angle of the arrow indicates the direction on the compass rose and the length of the arrow indicates average wind speed, scaled to match the bottom axis.

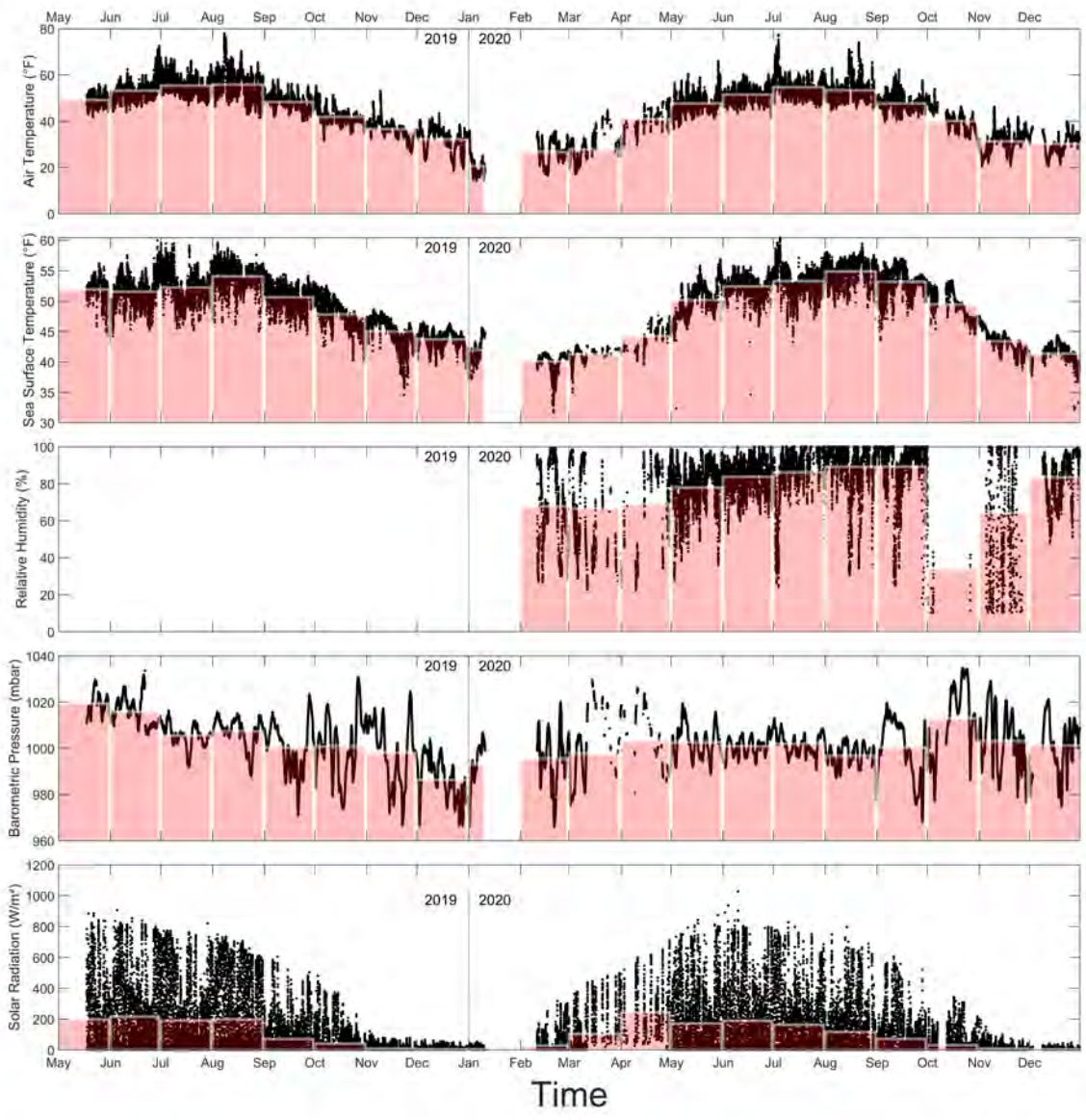

Figure 3: Scalar observations at the VMT buoy, including air (top panel) and water (2nd panel) temperatures, relative humidity (3rd panel), barometric pressure (4th panel) and solar radiation (bottom panel). Black dots are observations, bars indicate monthly averages.

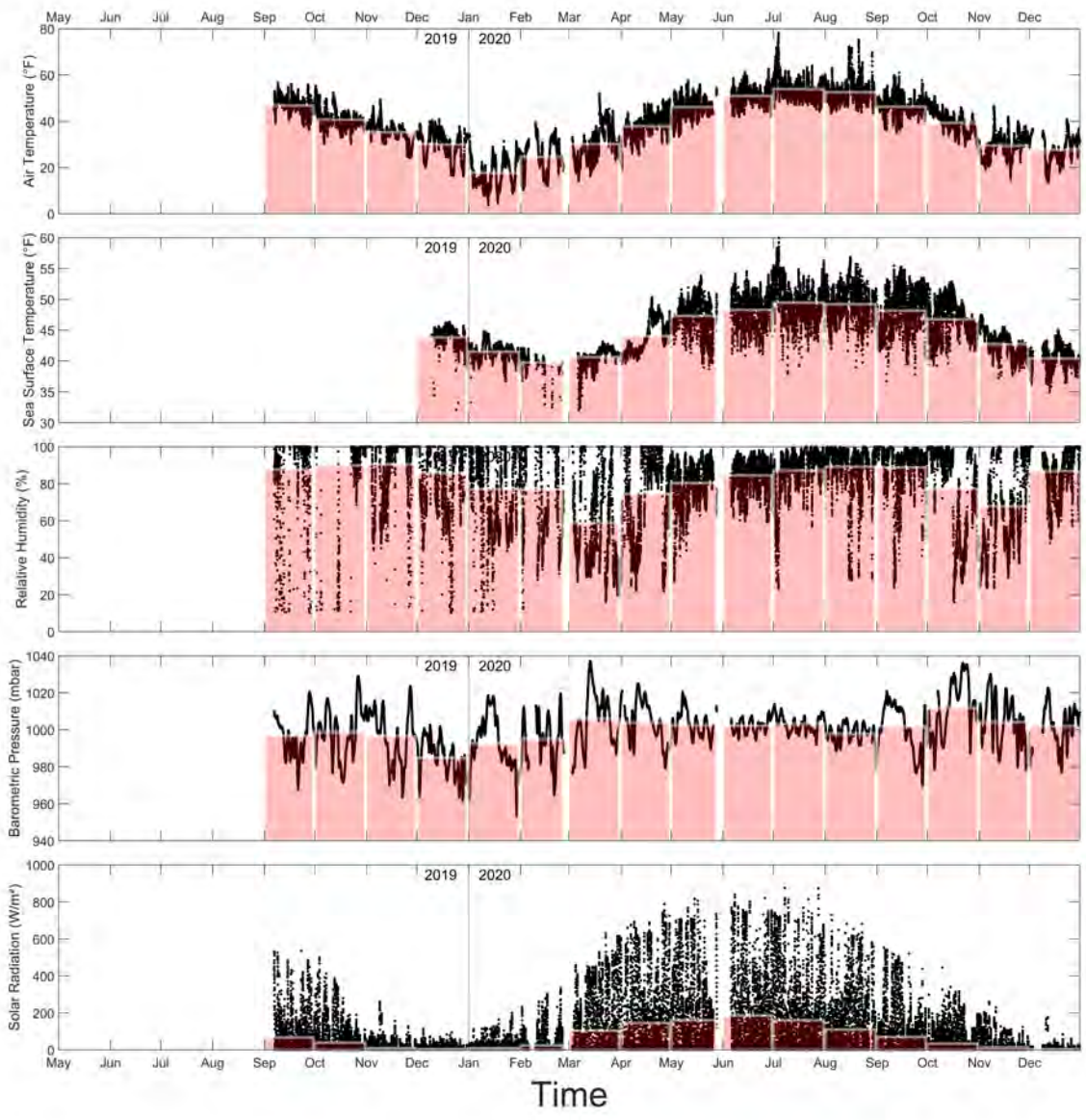

Figure 4: Scalar observations at the Duck Flats buoy, including air (top panel) and water (2nd panel) temperatures, relative humidity (3rd panel), barometric pressure (4th panel) and solar radiation (bottom panel). Black dots are observations, bars indicate monthly averages.

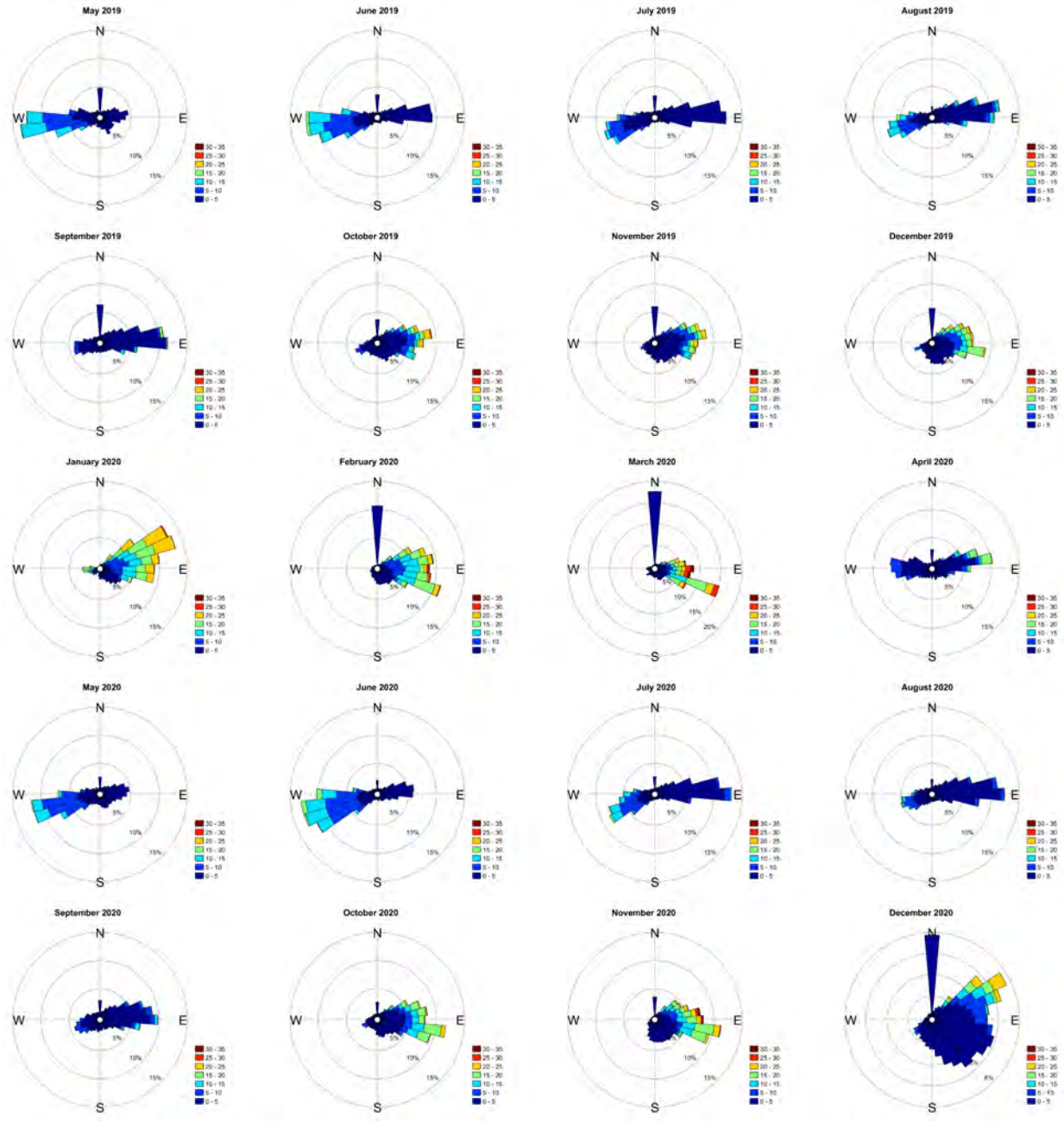

Figure 5: Monthly wind roses at the VMT buoy. Bars indicate the direction from and the color scale indicates wind velocities. Color scale is equivalent among the figures (i.e., all the figures are directly comparable).

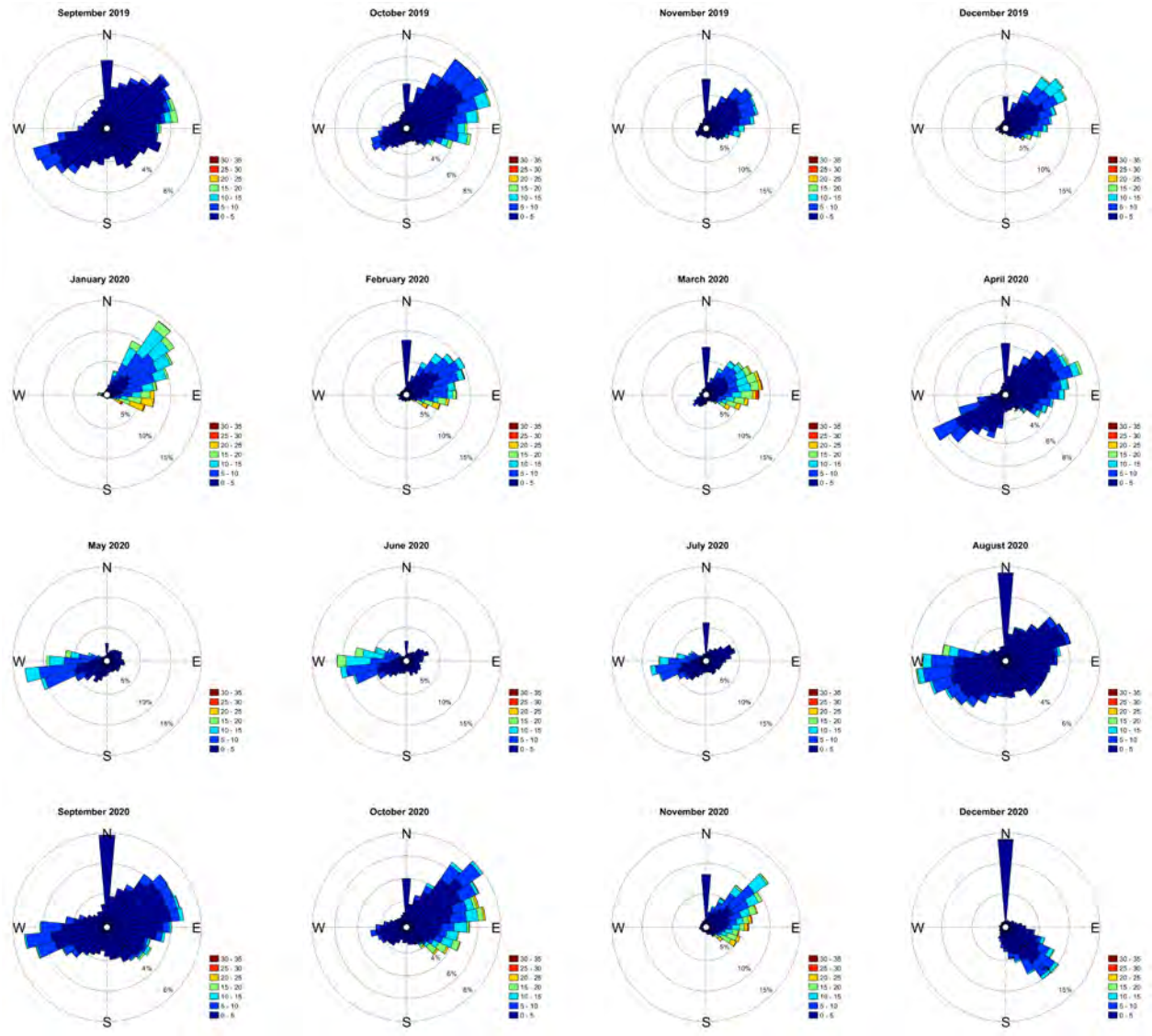

Figure 6: Monthly wind roses at the Duck Flats buoy. Bars indicate the direction from and the color scale indicates wind velocities. Color scale is equivalent among the figures (i.e., all the figures are directly comparable).

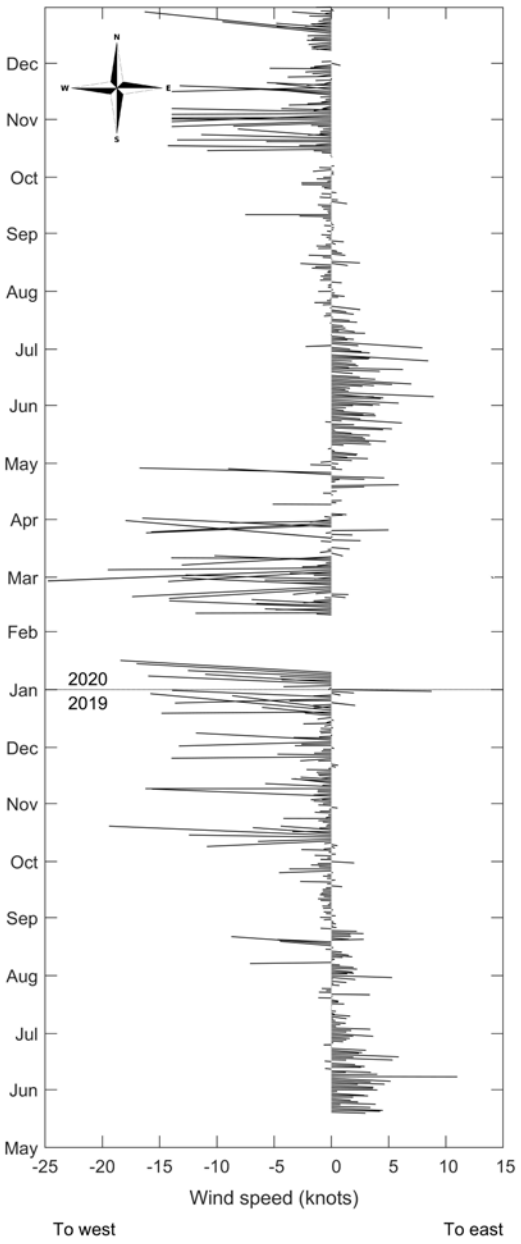

Figure 7: Quiver plot of average daily wind vectors at the VMT buoy. The length of each stick indicates wind speed and the angle indicates the direction from.

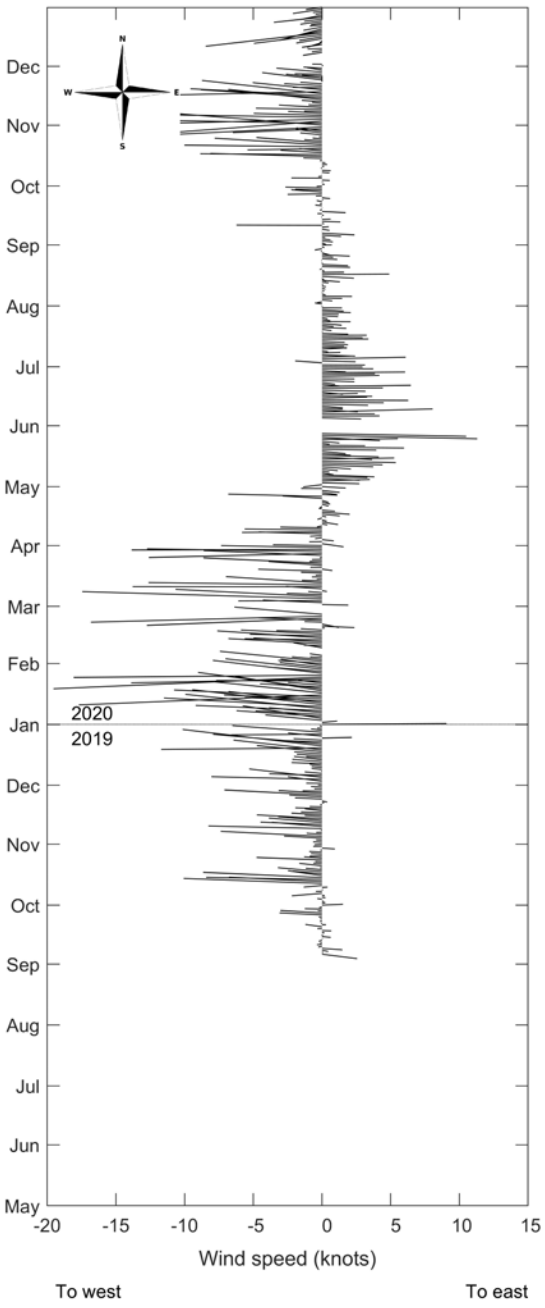

Figure 8: Quiver plot of average daily wind vectors at the Duck Flats buoy. The length of each stick indicates wind speed and the angle indicates the direction from.

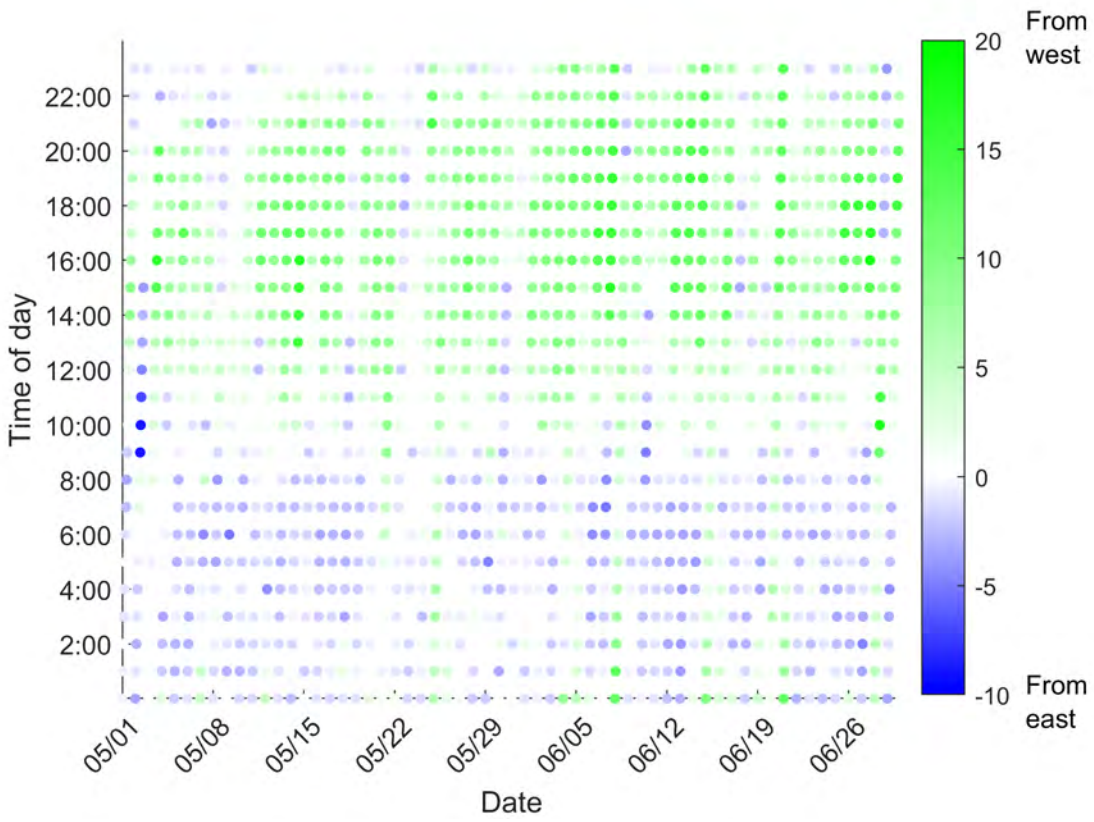

Figure 9: Daily east-west sea breezes at the VMT buoy in May-June 2020. Only the east-west component of the winds are shown. Green colors scale with the strength westerly winds and blue color scale with the strength of easterly winds.

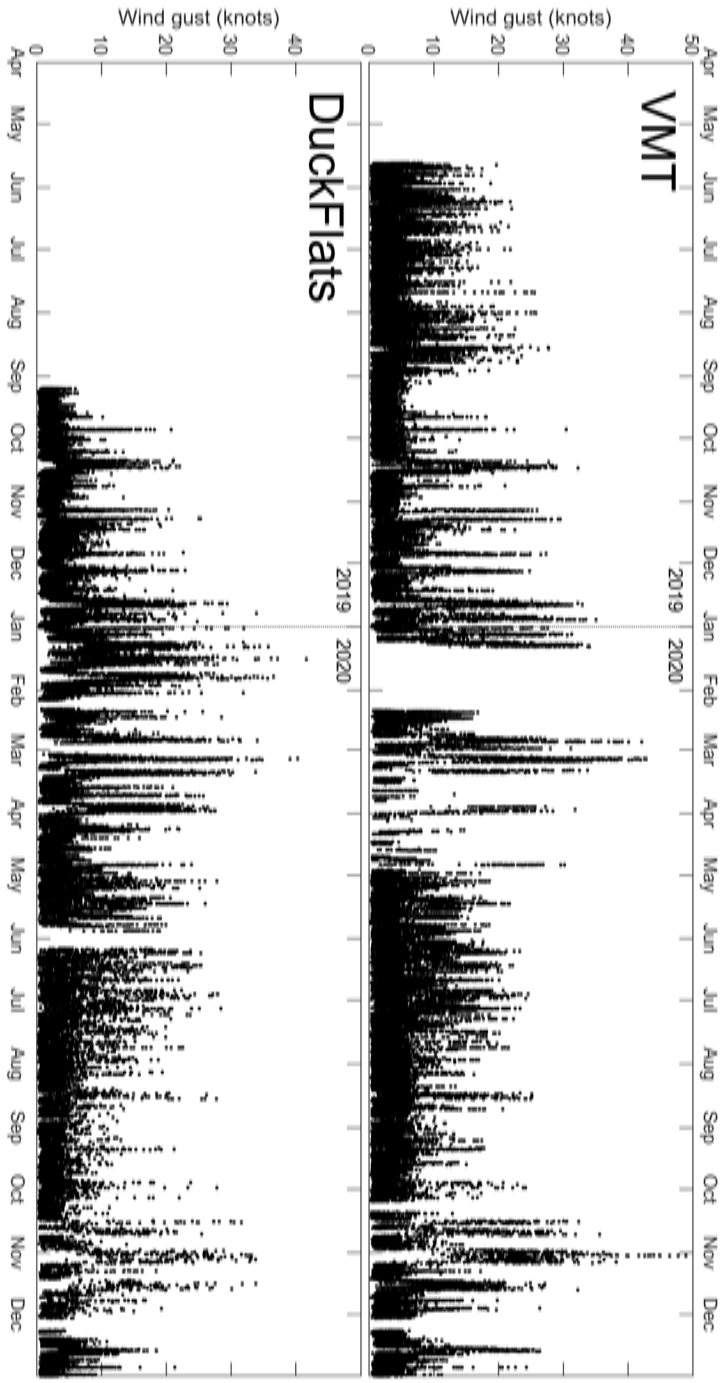

Figure 10: Wind gust time series at the VMT (top panel) and Duck Flats (bottom panel).

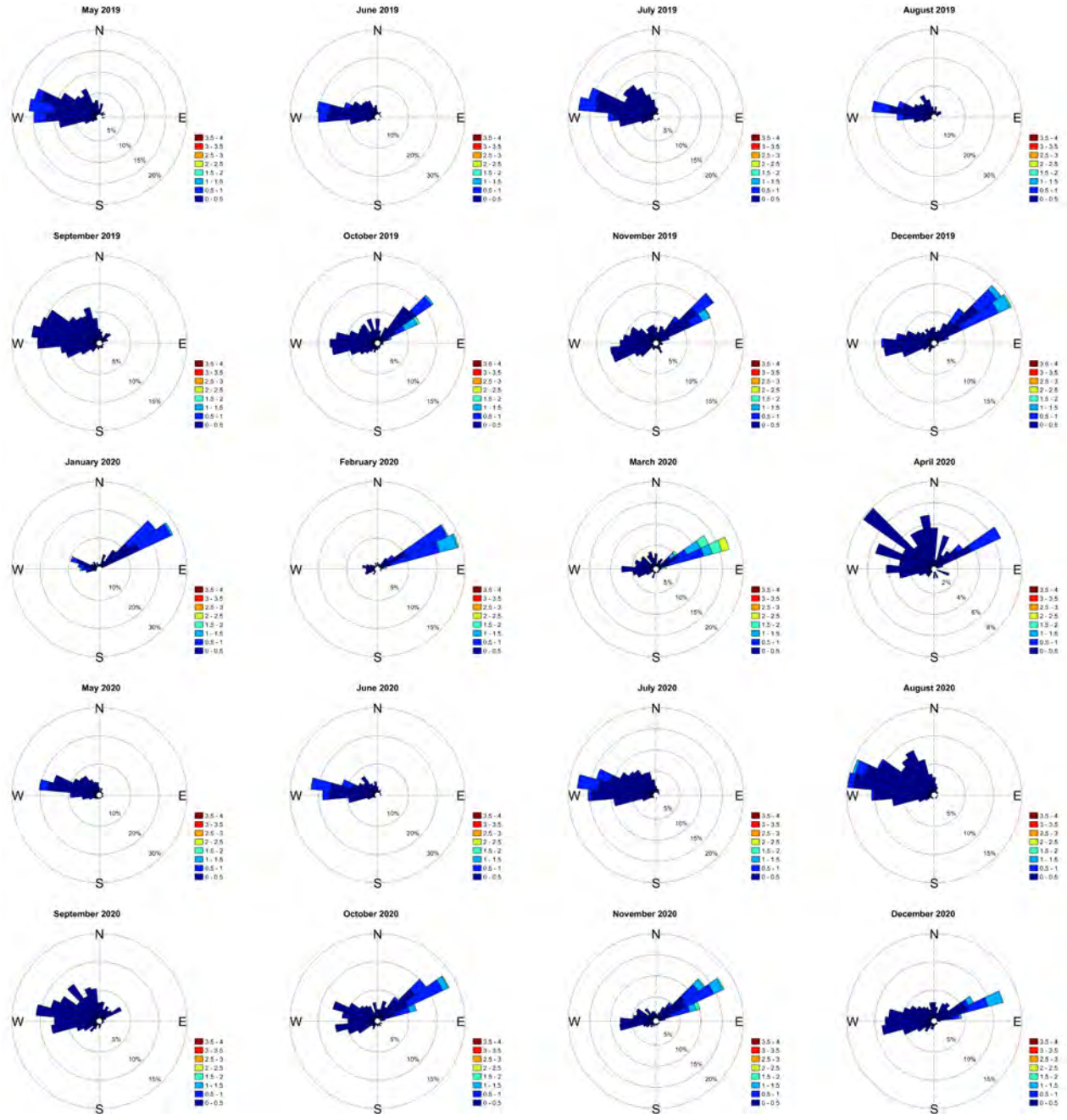

Figure 11: Monthly wave roses at the VMT buoy. Bars indicate the direction to and the color scale indicates significant wave heights. Color scale is equivalent among the figures (i.e., all the figures are directly comparable).

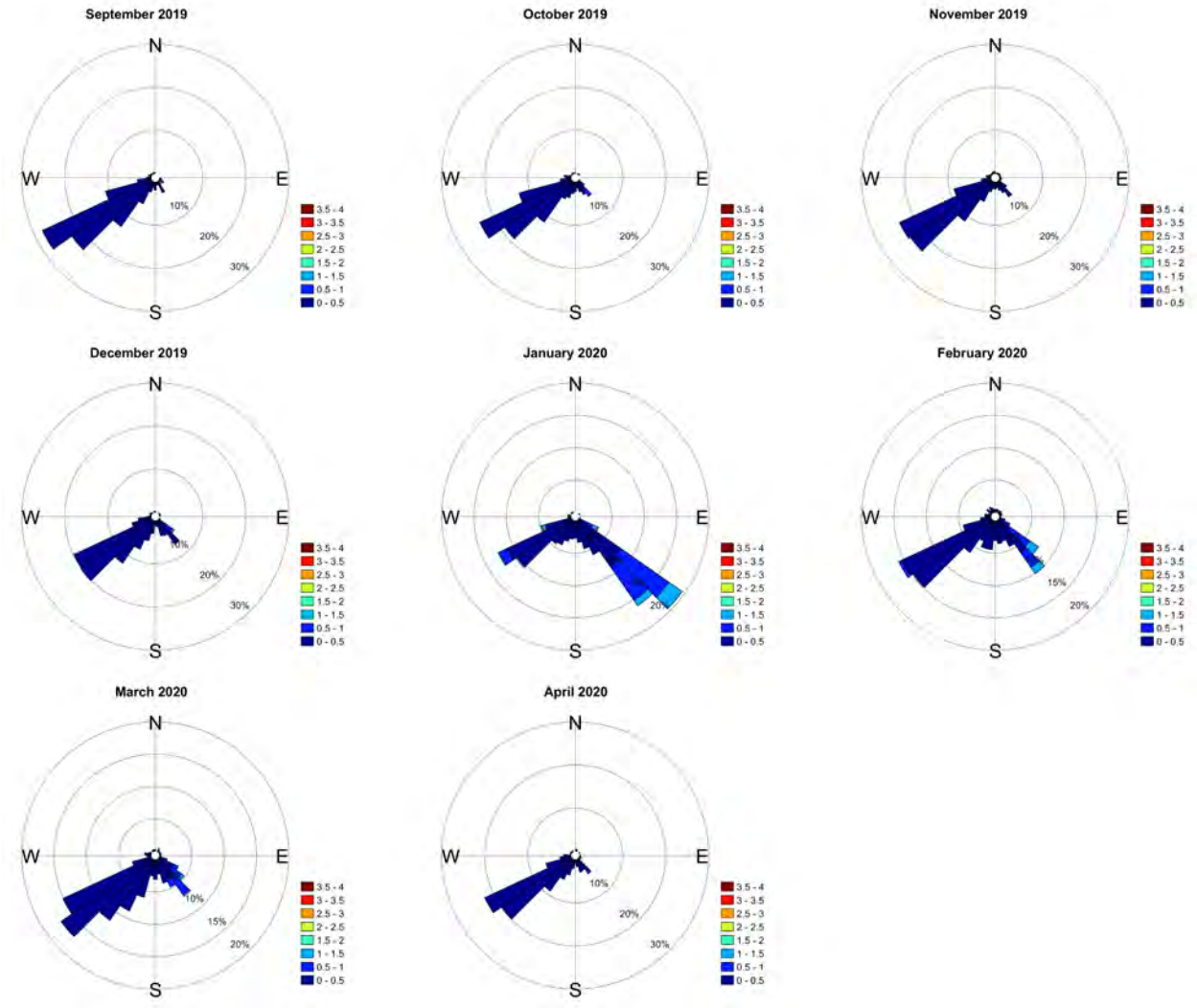

Figure 12: Monthly wave roses at the Duck Flats buoy. Bars indicate the direction to and the color scale indicates significant wave heights. Color scale is equivalent among the figures (i.e., all the figures are directly comparable).

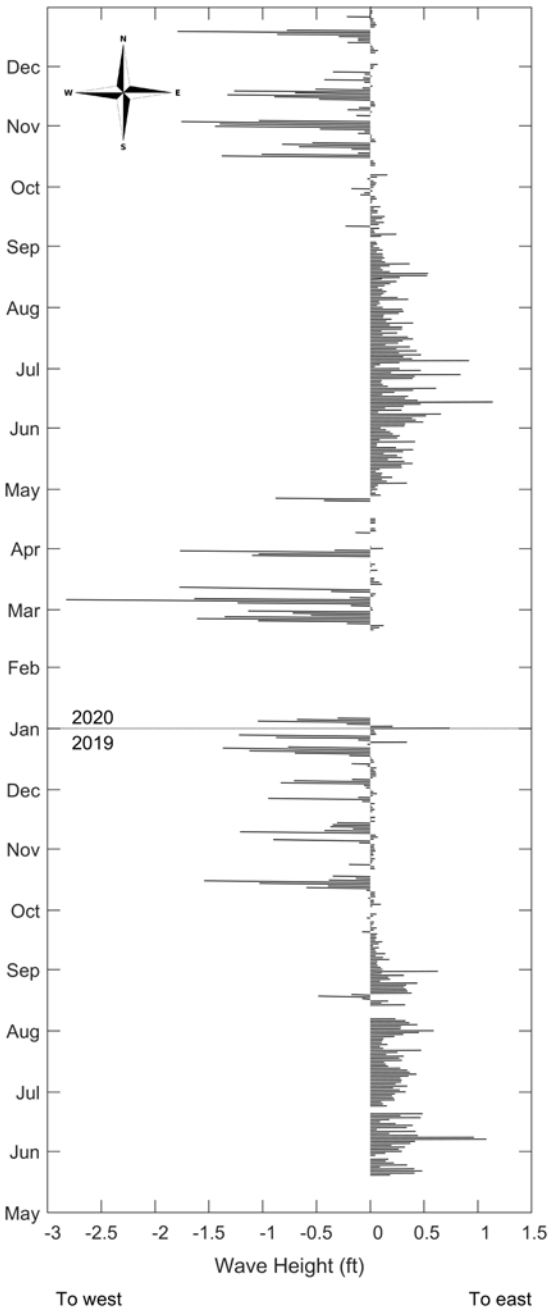

Figure 13: Quiver plot of average daily wave vectors at the VMT buoy. The length of each stick indicates wave height and the angle indicates the direction to.

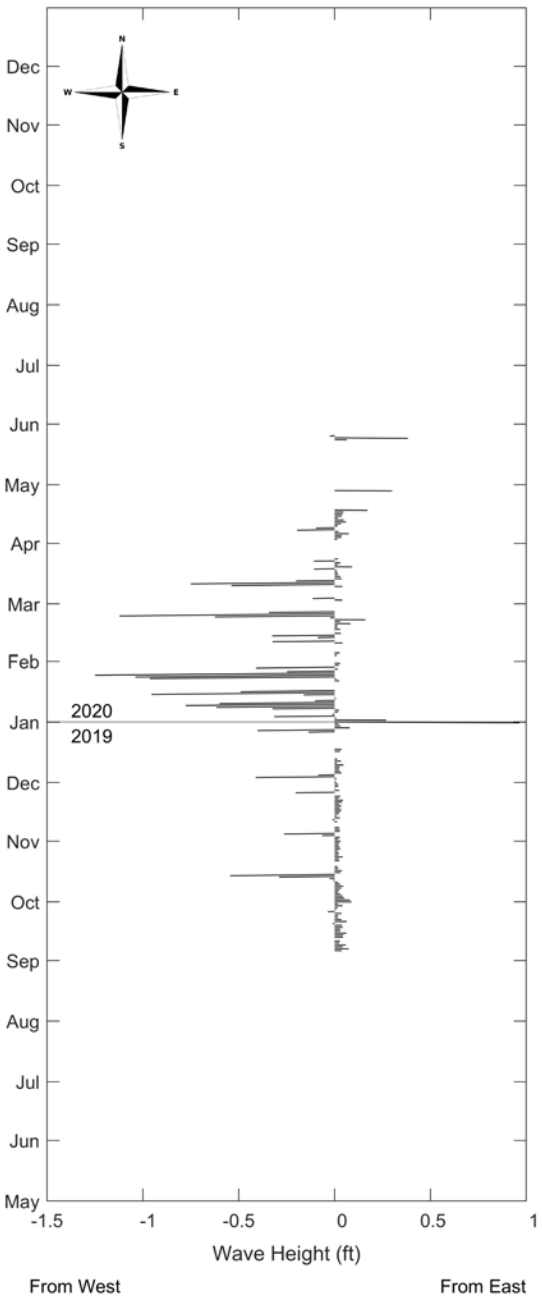

Figure 14: Quiver plot of average daily wave vectors at the Duck Flats buoy. The length of each stick indicates wave height and the angle indicates the direction to.

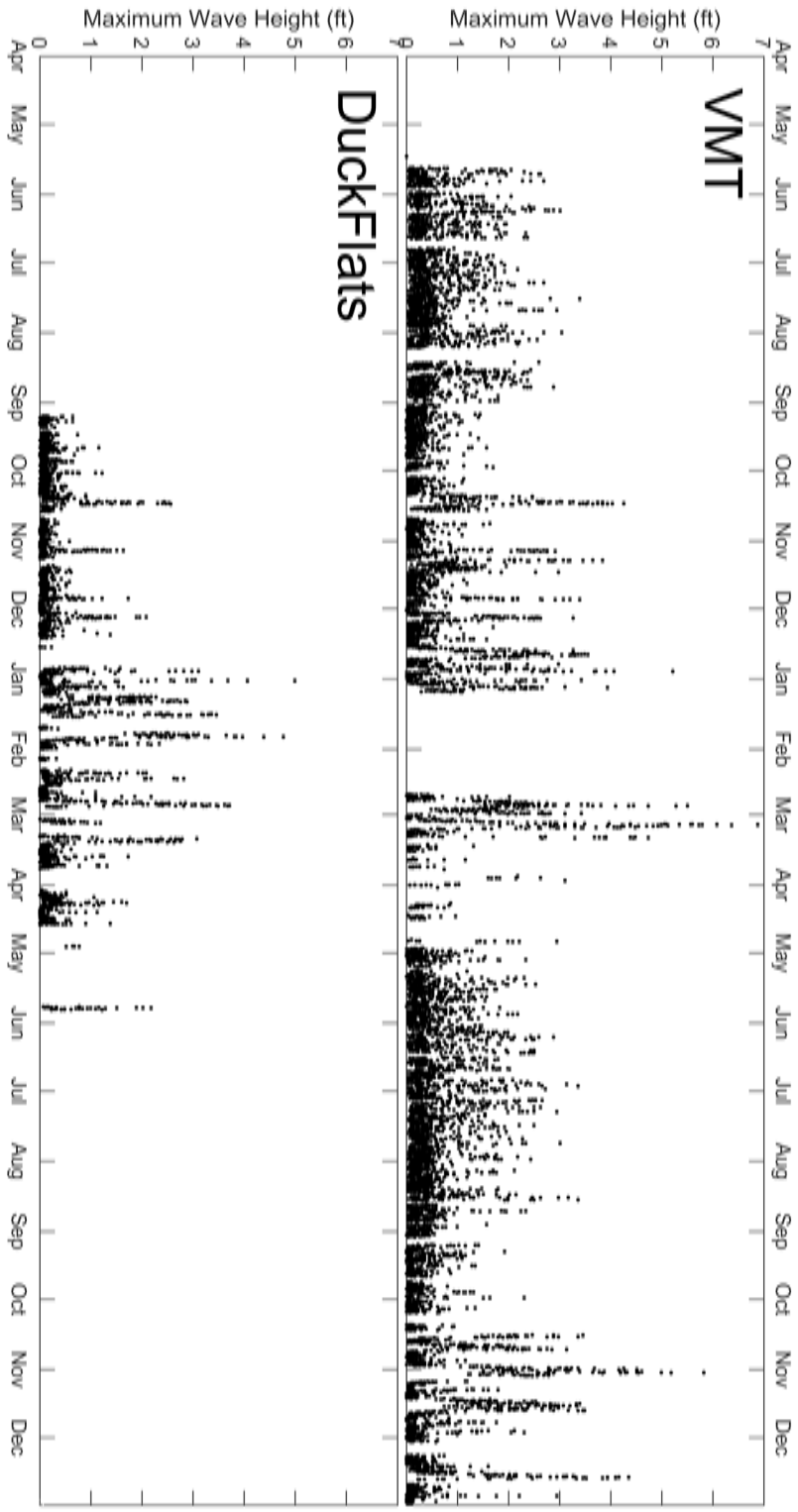

Figure 15: Time series of maximum wave heights observed at the VMT (top panel) and Duck Flats (bottom panel) buoys.

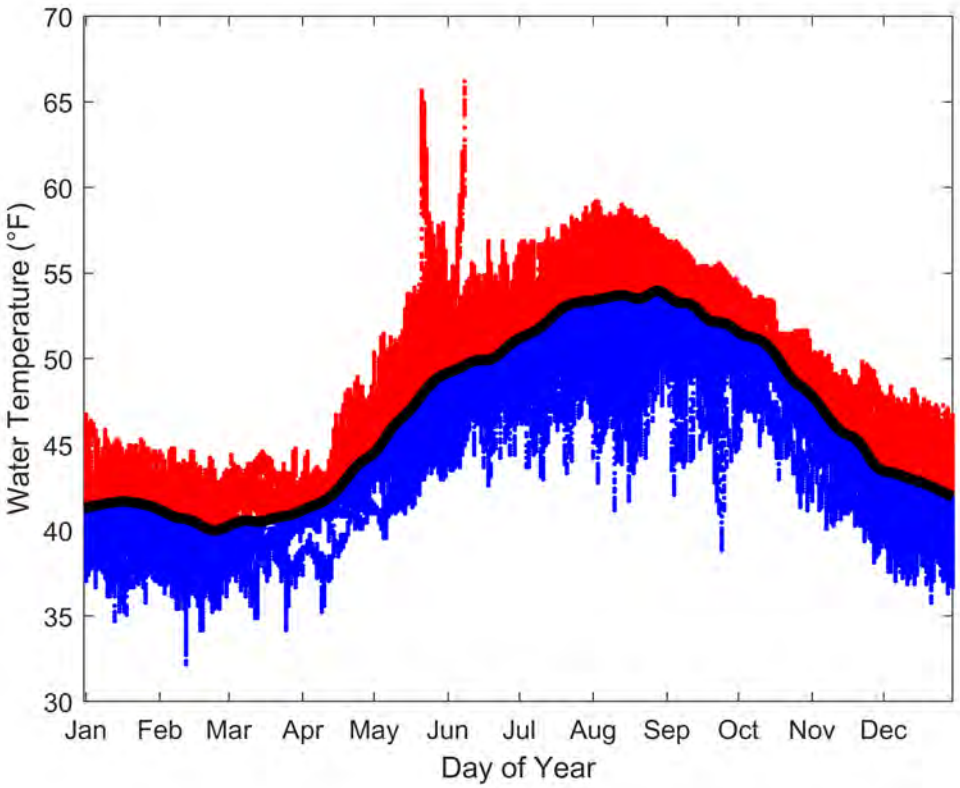

Figure 16: Annual average temperature cycle at the NOAA tide station VDZA2 in Valdez harbor. Air temperature data was overlaid from all years (2009-present) by day of year. Dots (red and blue) indicate observations and the black line indicates the weekly average.

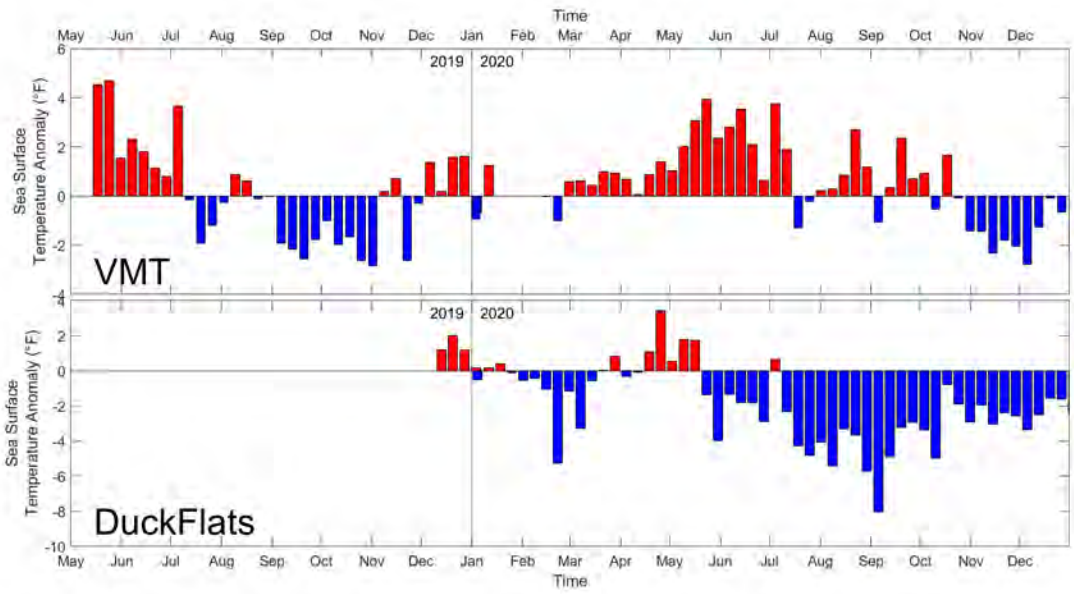

Figure 17: Weekly sea surface temperature anomalies at the VMT (top panel) and Duck Flats (bottom panel) buoys. Anomalies are the departure of weekly average temperatures from the weekly average at the VDZA2 tide station.

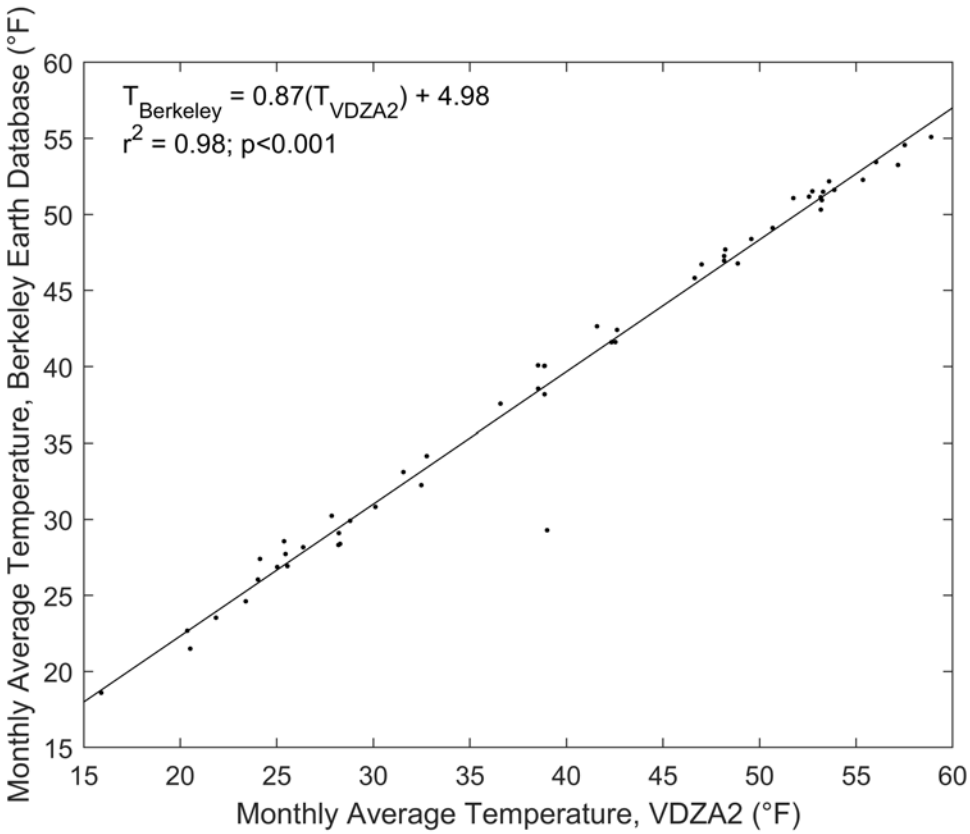

Figure 18: Comparison of monthly average air temperature estimates from the Berkeley Earth database and monthly average temperatures calculated at the VDZA2 station on months where the two time series overlapped (2009-2013). The regression line was fit by least squares.

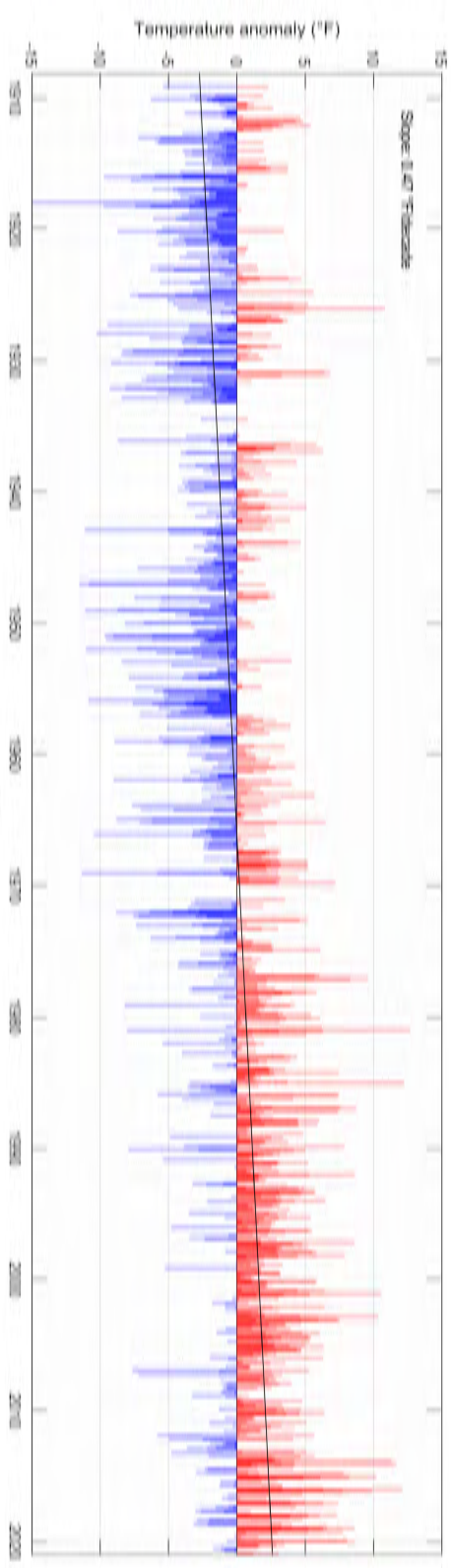

Figure 19: Air temperature anomalies from the combined Berkeley Earth database/VDZA2 monthly temperature estimates, 1908 - 2020.

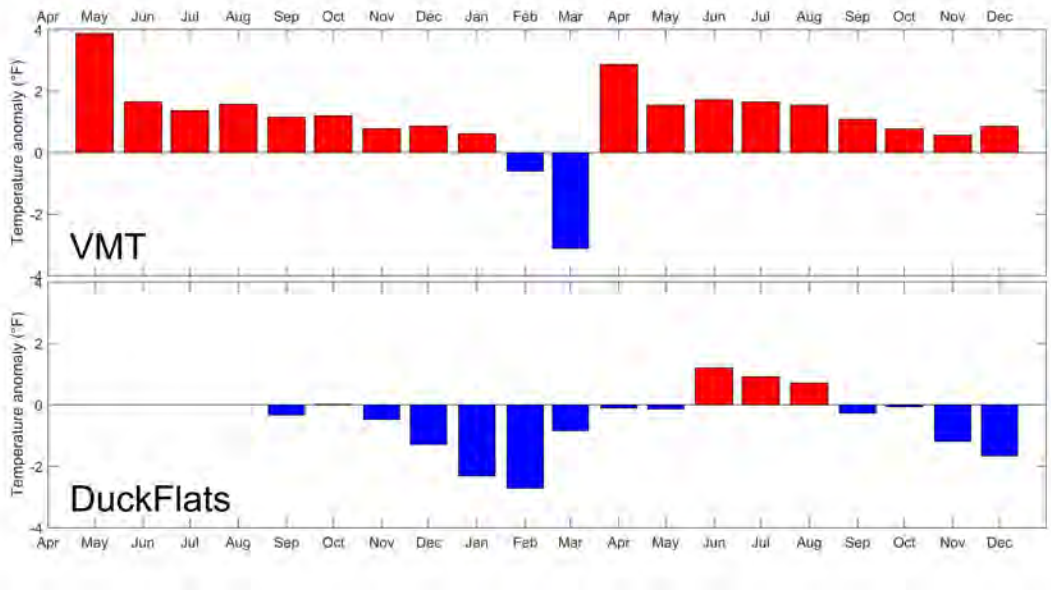

Figure 20: Monthly average air temperature anomalies at the VMT (top panel) and Duck Flats (bottom panel) buoys using the Berkeley Earth/VDZA2 climatology.

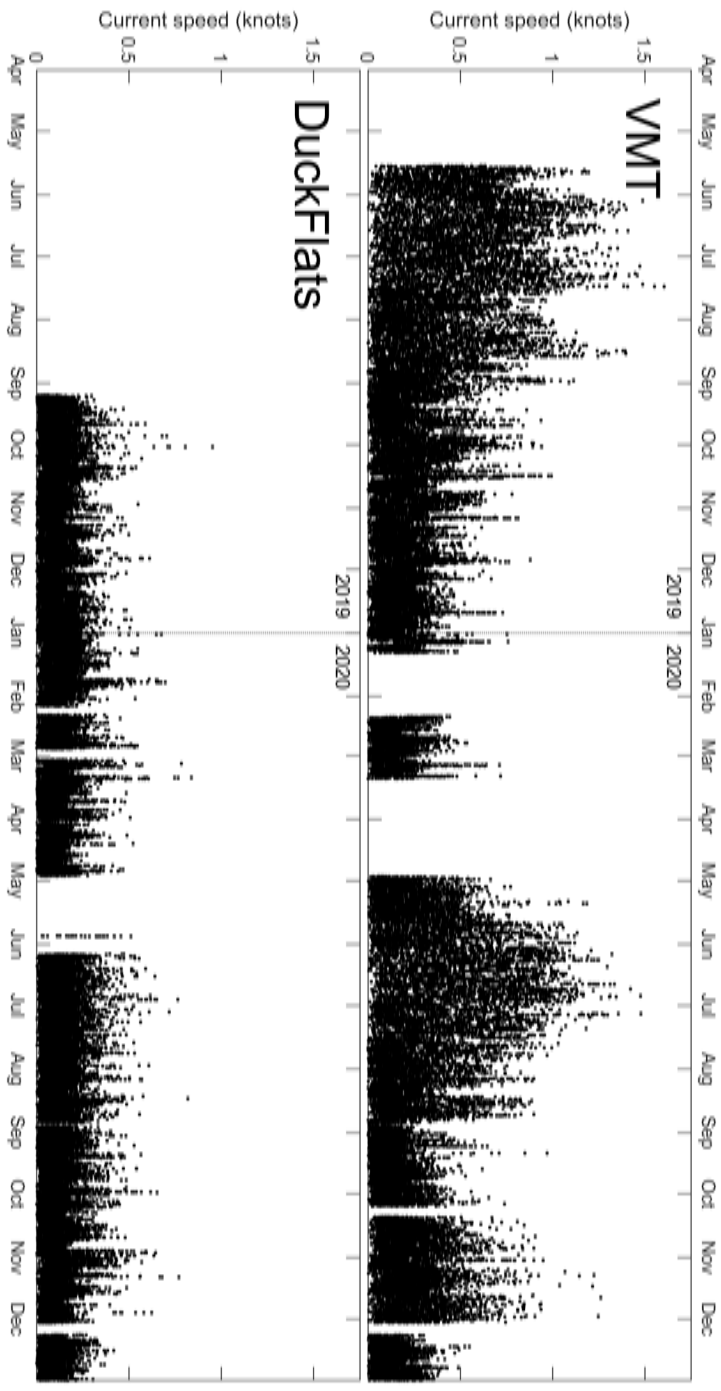

Figure 21: Current speed time series at the VMT (top panel) and Duck Flats (bottom panel).

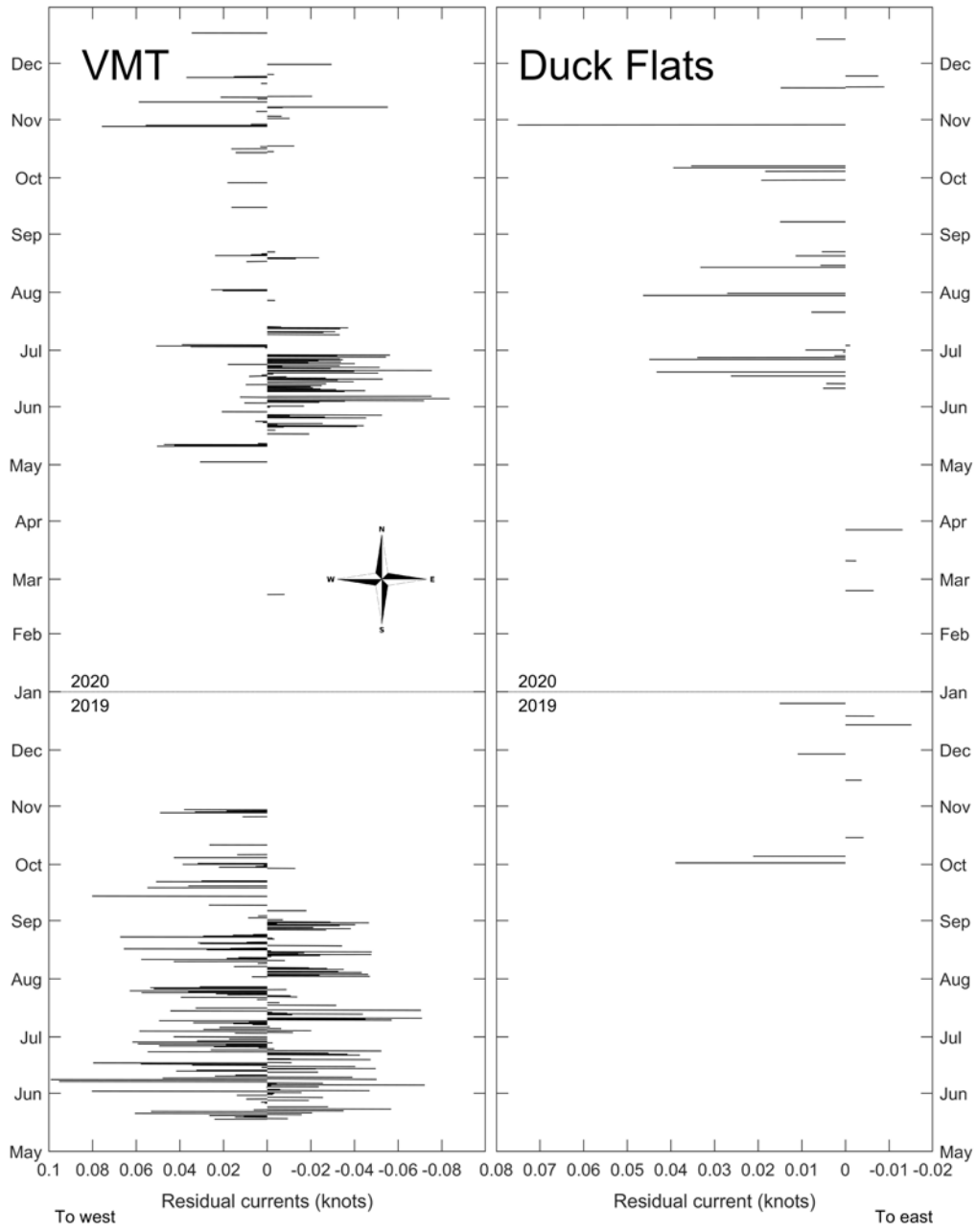

Figure 22: Quiver plot of residual mean flow (residual currents after tidal effects were removed - see text). Length of the sticks indicate velocity and angle of the stick indicates direction to.

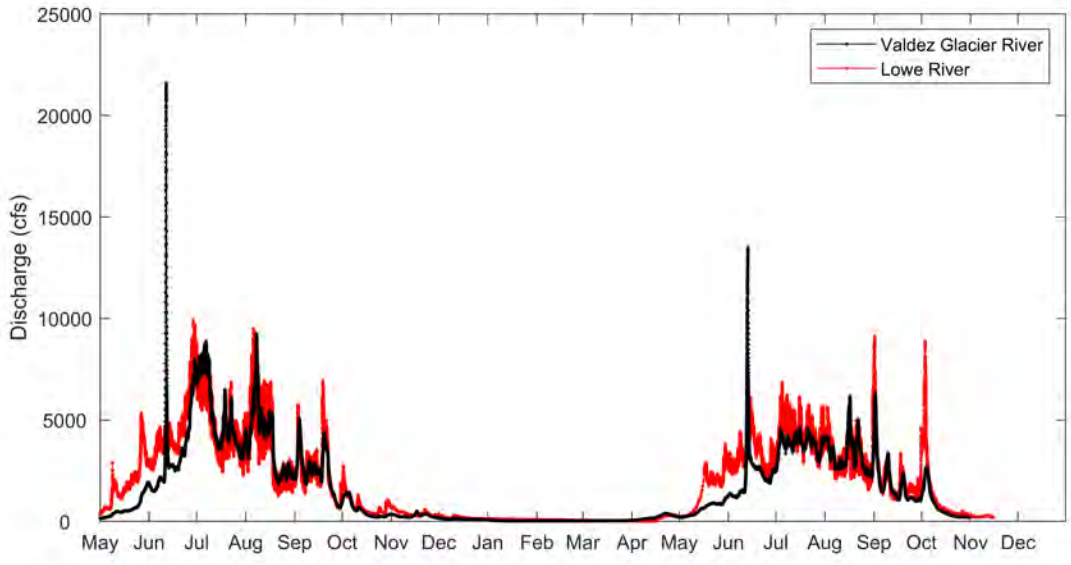

Figure 23: Hydrograph of discharge at the Lowe River (USGS station 15226620) and Valdez Glacier River (USGS station 15227090). Discharge data was downloaded from waterdata.usgs.gov.

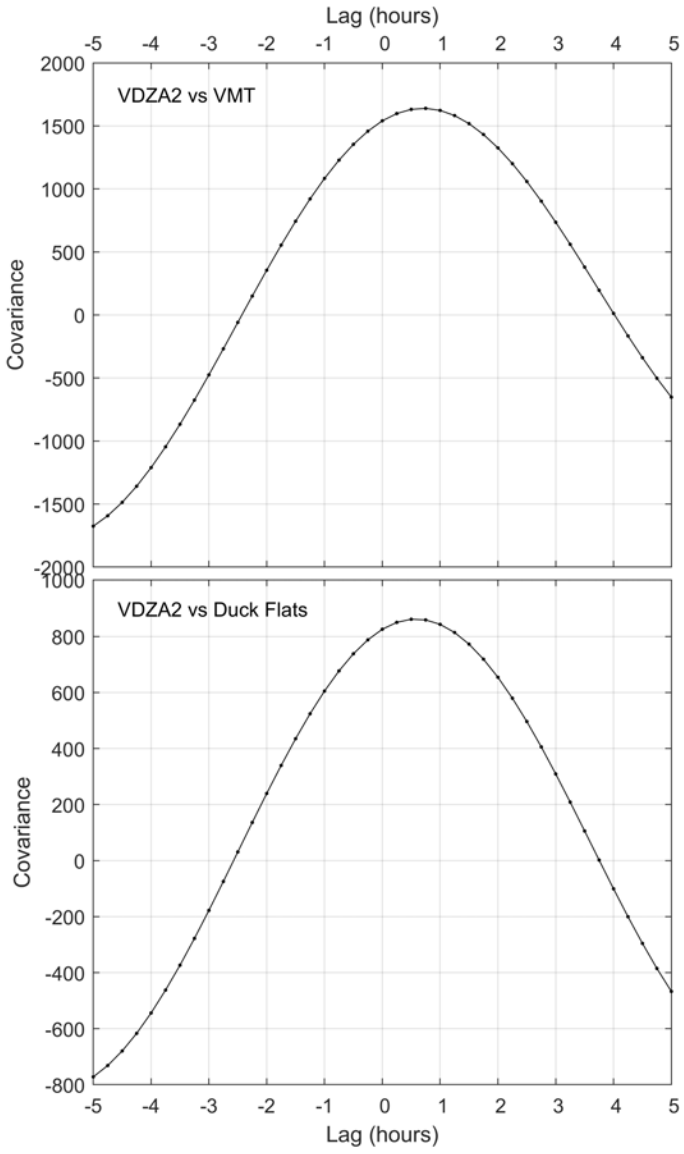

Figure 24: Cross covariance between tidal currents at the VMT (top panel) and Duck Flats (bottom panel) buoys and water heights at station VDZA2. Lags are relative to the time at VDZA2.

Appendix 1: Table of averages and minimum/maximum values at the VMT buoy, by month.

Month	Air Temperature (°F)	Water Temperature (°F)	Relative Humidity (%)	Barometric Pressure (%)	Solar Radiation (W/m^2)	Wind Speed (knots)	Wind Gust (knots)	Significant Wave Height (ft)	Maximum Wave Height (ft)	Current Speed (knots)
January	21.00	41.72	79.03	991.72	4.39	8.78	20.36	0.52	0.94	0.18
	13.91 - 35.88	33.86 - 45.64	62.93 - 98.00	966.18 - 1007.21	0.00 - 53.30	0.00 - 26.63	0.00 - 66.17	0.00 - 2.08	0.00 - 3.94	0.00 - 0.76
February	26.61	40.08	67.70	995.48	28.67	7.61	13.93	0.82	1.44	0.15
	16.48 - 35.77	31.75 - 41.78	26.78 - 99.50	966.15 - 1020.00	0.00 - 317.39	0.00 - 34.77	0.00 - 81.85	0.00 - 3.26	0.00 - 5.50	0.00 - 0.54
March	27.70	41.27	66.56	997.59	103.11	7.88	16.94	0.70	1.22	0.14
	16.99 - 44.64	35.00 - 42.80	22.86 - 98.50	975.08 - 1029.62	0.00 - 497.85	0.00 - 34.77	0.00 - 83.18	0.00 - 3.78	0.00 - 6.88	0.00 - 0.72
April	40.92	44.24	68.98	1003.30	243.49	3.42	9.11	0.21	0.42	0.20
	29.30 - 50.07	39.61 - 47.64	22.55 - 98.70	980.56 - 1026.09	0.00 - 709.01	0.00 - 21.83	0.00 - 58.66	0.00 - 1.34	0.00 - 2.94	0.01 - 0.66
May	48.16	50.71	77.92	1007.92	180.08	3.90	8.32	0.25	0.49	0.35
	36.80 - 65.95	32.38 - 56.86	27.63 - 98.70	988.68 - 1029.65	0.00 - 885.68	0.00 - 18.02	0.00 - 42.16	0.00 - 1.47	0.00 - 2.69	0.00 - 1.20
June	52.32	52.01	83.74	1008.29	203.22	4.79	9.70	0.35	0.66	0.51
	41.35 - 72.50	34.67 - 59.99	53.15 - 100.00	991.38 - 1033.57	0.00 - 1027.90	0.00 - 19.90	0.00 - 47.76	0.00 - 1.86	0.03 - 3.36	0.00 - 1.49
July	55.04	52.78	86.08	1003.74	177.40	3.41	7.50	0.30	0.57	0.40
	45.95 - 77.36	43.27 - 60.44	24.08 - 100.00	990.72 - 1016.45	0.00 - 828.67	0.00 - 21.23	0.00 - 49.66	0.00 - 1.73	0.03 - 3.39	0.00 - 1.61
August	54.64	54.48	89.23	1002.07	158.09	3.79	8.77	0.29	0.55	0.31
	41.47 - 77.86	45.06 - 59.65	30.71 - 100.00	977.82 - 1015.77	0.00 - 797.59	0.00 - 22.66	0.00 - 53.90	0.00 - 2.08	0.03 - 3.36	0.00 - 1.40
September	47.97	51.92	89.28	1000.47	70.72	2.56	5.64	0.11	0.23	0.19
	39.56 - 62.37	43.67 - 57.07	14.78 - 100.00	968.33 - 1023.27	0.00 - 606.41	0.00 - 21.28	0.00 - 59.19	0.00 - 0.96	0.00 - 2.30	0.00 - 0.97
October	41.05	48.54	33.91	1006.34	36.49	4.71	10.34	0.29	0.54	0.24
	28.14 - 55.35	40.02 - 53.44	10.22 - 93.30	973.84 - 1034.70	0.00 - 480.61	0.00 - 28.59	0.00 - 70.35	0.00 - 2.59	0.00 - 4.51	0.00 - 1.00
November	33.91	44.18	64.25	1000.61	8.67	5.58	10.73	0.38	0.68	0.23
	20.52 - 53.08	34.60 - 48.60	10.01 - 100.00	966.61 - 1029.09	0.00 - 192.75	0.00 - 33.98	0.00 - 95.11	0.00 - 3.23	0.00 - 5.82	0.00 - 1.26
December	31.19	42.68	83.42	993.02	3.81	4.79	10.50	0.34	0.60	0.16
	18.75 - 43.48	32.16 - 46.51	48.09 - 99.60	966.48 - 1021.19	0.00 - 65.93	0.00 - 29.31	0.00 - 68.13	0.00 - 2.66	0.00 - 5.22	0.00 - 0.75

Appendix 2: Table of averages and minimum/maximum values at the Duck Flats buoy, by month.

Month	Air Temperature (°F)	Water Temperature (°F)	Relative Humidity (%)	Barometric Pressure (%)	Solar Radiation (W/m^2)	Wind Speed (knots)	Wind Gust (knots)	Significant Wave Height (ft)	Maximum Wave Height (ft)	Current Speed (knots)
January	17.75	41.27	77.91	992.19	9.65	9.00	16.55	0.50	0.90	0.14
	3.81 - 34.39	33.30 - 44.83	10.86 - 100.00	953.29 - 1018.67	0.00 - 200.66	0.00 - 30.30	0.00 - 80.90	0.00 - 2.69	0.00 - 4.99	0.00 - 0.70
February	24.51	39.77	76.93	994.93	24.92	5.89	10.83	0.29	0.52	0.12
	10.29 - 39.47	32.50 - 42.13	12.38 - 100.00	964.57 - 1019.60	0.00 - 333.36	0.00 - 28.46	0.00 - 66.17	0.00 - 2.14	0.00 - 3.71	0.00 - 0.55
March	29.97	40.65	58.99	1005.70	104.42	6.95	14.23	0.22	0.41	0.13
	14.09 - 51.96	32.02 - 43.13	15.90 - 100.00	976.47 - 1037.18	0.00 - 630.10	0.00 - 31.10	0.00 - 78.30	0.00 - 1.73	0.00 - 3.07	0.00 - 0.84
April	37.95	44.05	74.58	1004.07	145.99	3.53	7.29	0.09	0.18	0.09
	18.96 - 49.77	39.47 - 50.36	21.97 - 100.00	979.17 - 1025.10	0.00 - 787.33	0.00 - 19.57	0.00 - 46.42	0.00 - 1.06	0.00 - 1.70	0.00 - 0.52
May	46.03	47.34	80.39	1002.77	161.07	4.32	12.07	0.37	0.68	0.25
	33.36 - 57.67	38.69 - 53.87	27.24 - 98.50	989.29 - 1020.53	0.00 - 816.81	0.00 - 23.97	0.00 - 54.04	0.03 - 1.34	0.06 - 2.18	0.03 - 0.51
June	50.91	48.28	84.53	1002.26	186.44	4.81	12.72	-	-	0.14
	41.79 - 62.56	40.88 - 54.64	59.24 - 98.10	994.11 - 1011.15	0.00 - 839.45	0.00 - 23.83	0.00 - 54.35			0.00 - 0.77
July	53.96	49.47	87.15	1003.09	160.91	3.53	8.82	-	-	0.14
	44.37 - 78.12	37.97 - 59.95	23.19 - 100.00	991.91 - 1014.06	0.00 - 875.80	0.00 - 22.12	0.00 - 55.24			0.00 - 0.72
August	52.49	49.22	89.20	997.72	110.50	2.92	6.12	-	-	0.13
	43.35 - 75.22	38.99 - 56.84	27.67 - 100.00	978.77 - 1006.33	0.00 - 731.37	0.00 - 25.42	0.00 - 53.90			0.00 - 0.82
September	46.53	48.18	88.43	999.47	69.23	2.58	4.26	0.06	0.11	0.13
	35.06 - 61.00	36.72 - 55.45	10.09 - 100.00	967.75 - 1021.05	0.00 - 553.97	0.00 - 19.90	0.00 - 54.04	0.00 - 0.51	0.00 - 1.15	0.00 - 0.71
October	39.97	46.76	80.48	1005.41	37.05	3.87	6.66	0.11	0.20	0.12
	25.21 - 55.20	39.26 - 52.92	10.84 - 100.00	971.36 - 1036.23	0.00 - 500.47	0.00 - 25.31	0.00 - 61.40	0.00 - 1.47	0.00 - 2.56	0.00 - 0.95
November	32.40	42.74	79.14	1000.36	12.49	5.09	7.12	0.07	0.14	0.12
	14.68 - 49.33	37.27 - 47.50	13.65 - 100.00	963.49 - 1030.19	0.00 - 260.51	0.00 - 30.98	0.00 - 65.72	0.00 - 0.86	0.00 - 1.73	0.00 - 0.77
December	28.86	41.91	86.27	992.52	4.56	4.02	7.62	0.13	0.25	0.11
	13.50 - 40.86	32.10 - 46.36	10.22 - 100.00	961.57 - 1022.70	0.00 - 176.74	0.00 - 23.33	0.00 - 65.91	0.00 - 1.66	0.00 - 3.10	0.00 - 0.51

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Briefing for PWSRCAC Board of Directors – September 2021

ACTION ITEM

Sponsor: Linda Swiss and the Oil Spill Prevention and Response Committee

Project number and name or topic: 6511 – History of Contingency Planning

1. **Description of agenda item:** This agenda item seeks Board acceptance of three documents on the history of the Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan (PWS Tanker C-Plan) by Nuka Research and Planning Group. These reports provide a summary, timeline of key plan changes and related efforts, a compendium of summaries of plan renewals and key amendments, and tables listing the findings and conditions of approval issued by the Alaska Department of Environmental Conservation. These documents are:

- Prince William Sound Tanker Oil Discharge Prevention & Contingency Plan: Summary (1995-2020), DRAFT (August 10, 2021);
- Prince William Sound Tanker Oil Discharge Prevention & Contingency Plan: Compendium of Event Summaries (1995-2020), DRAFT (August 10, 2021); and
- Prince William Sound Tanker Plan History Timetable

Sierra Fletcher of Nuka Research and Planning Group will present to the Board on their approach in identifying key contingency planning issues for the Prince William Sound tankers as well as the organization of the information complied for these reports.

2. **Why is this item important to PWSRCAC:** Review of contingency plans is a major task for PWSRCAC as outlined in both the PWSRCAC/Alyeska contract and the Oil Pollution Act of 1990. As over 30 years have passed since the *Exxon Valdez* oil spill, it is important to capture and document the evolution of contingency planning for the tankers that transit Prince William Sound. This project has taken a long-term view of contingency planning in the years since the *Exxon Valdez* spill.

In recent years, PWSRCAC has observed rollbacks in regulatory oversight of the oil spill prevention and response system in Prince William Sound with the potential to reduce the level of safety many have worked to create here. To combat and prevent the complacency that led to the 1989 spill, it is important to identify where progress has been made and where protections may have decreased over time. Documenting changes to oil spill contingency plans, including changes in regulatory philosophy and industry commitments, provide a measure of progress. Contingency plan approvals include important issues that could potentially impact every member organization for the Council, as these plans outline prevention and response commitments by industry approved through regulatory agencies.

3. **Previous actions taken by the Board on this item:**

Meeting	Date	Action
Board	May 2020	Approved contract with Nuka Research and Planning Group

4. **Summary of policy, issues, support, or opposition:** The history of the PWS Tanker C-Plan will be used as a reference document for plan renewals and amendments. Tracking the history of issues addressed over the last three decades will help current and future plan reviewers understand the evolution of contingency planning in Alaska.

5. **Committee Recommendation:** The OSPR Committee recommended the Board of Directors accept the reports generated by this project.

6. **Relationship to LRP and Budget:** Project 6511 History of Contingency Planning is included in the FY2022 budget.

6511--History of Contingency Planning
As of July 31, 2021

FY-2022 Budget	
Original	$50,000.00
Modifications	
Revised Budget	$50,000.00
Actual and Commitments	
Actual Year-to-Date	
Commitments (Professional Services)	$20,000.00
Actual + Commitments	$20,000.00
Amount Remaining	$30,000.00

7. **Action Requested of the Board of Directors:** The Board is asked to accept the following documents written by Nuka Research and Planning Group:

- Prince William Sound Tanker Oil Discharge Prevention & Contingency Plan: Summary (1995-2020), DRAFT (August 10, 2021);
- Prince William Sound Tanker Oil Discharge Prevention & Contingency Plan: Compendium of Event Summaries (1995-2020), DRAFT (August 10, 2021); and
- Prince William Sound Tanker Plan History Timetable.

8. **Alternatives:** None recommended.

9. **Attachments:**

- Prince William Sound Tanker Oil Discharge Prevention & Contingency Plan: Summary (1995-2020), DRAFT (August 10, 2021);
- Prince William Sound Tanker Oil Discharge Prevention & Contingency Plan: Compendium of Event Summaries (1995-2020), DRAFT (August 10, 2021); and
- Prince William Sound Tanker Plan History Timetable

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PRINCE WILLIAM SOUND TANKER OIL SPILL PREVENTION & CONTINGENCY PLAN

Summary (1995-2020)

Report to Prince William Sound Regional Citizens' Advisory Council
August 2021 DRAFT

Sharry Miller, Sierra Fletcher, Breck Tostevin, and Haley Griffin

nuka RESEARCH & PLANNING GROUP, LLC.
NK Nielsen | Koch PLLC

ACKNOWLEDGEMENTS

The authors take full responsibility for any errors or inaccuracies in this document. We extend our appreciation to the PWSRCAC staff who assisted us in accessing the numerous documents on which this report and the associated compendium document are based. PWSRCAC carries the records of more than 30 years of collaboration, cooperation, and, at times, conflict over how to ensure that oil spill prevention and response plan requirements put in place after the *Exxon Valdez* oil spill are fulfilled. Maintaining this record is not an insignificant effort but an important one.

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Executive Summary

Prince William Sound Regional Citizens' Advisory Council (PWSRCAC) contracted Nuka Research and Planning Group, LLC and Nielsen Koch, PLLC to compile a history of the oil spill prevention and response plan for crude oil tankers operating in Prince William Sound. That history has played out through thousands of pages of documents, meetings and workgroups, and drills and exercises. This project spans the first plan developed under then-new state requirements put in place following the *Exxon Valdez* oil spill up through the State-approved plan that was in place in 2020. The plan structure, commitments, owners, and content has changed in that time under both State of Alaska requirements and State-approved operator-initiated revisions.

Under its Oil Pollution Act of 1990 mandate, PWSRCAC has been an active advisor on plans for oil spill prevention and response associated with crude oil operations in Prince William Sound this whole time.

The history compiled through this project focuses on issues and changes associated with Alaska Department of Environmental Conservation findings that elements of the plan are adequate and meet state regulations and the conditions of approval issued when the Department does not consider an issue to resolve at the time of plan approval. PWSRCAC comments are identified throughout the materials compiled which include: this summary report, a timeline of key plan changes and related efforts (e.g., workgroups), a compendium of summaries of plan renewals and key amendments, and tables listing the findings and conditions of approval. Together, these materials are intended to provide a resource for those interested in understanding how issues have been addressed over time and why certain elements of the plan are the way they are today. In many cases, they are the result of extensive, and often collaborative, effort by the plan holders, State, and PWSRCAC on behalf of its members.

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Contents

Note: Two of the appendices referenced in this document are being circulated as separate documents for ease of review. These are:
1) a timeline (11 x 17 graphic) and
2) a compendium of summaries of the events identified on the timeline, many of which are mentioned in this summary report as well

PRINCE WILLIAM SOUND TANKER OIL DISCHARGE PREVENTION AND CONTINGENCY PLAN

Summary (1995-2020)

February 2021 - DRAFT

1. Introduction

As part of its Oil Pollution Act of 1990 mandate, the Prince William Sound Regional Citizens' Advisory Council (PWSRCAC) has been an active advisor on plans for oil spill prevention and response associated with crude oil operations in Prince William Sound for more than 30 years. The plan structure, commitments, owners, and content has changed in that time as regulations, oil shippers, equipment and vessels, and planning assumptions have evolved.

PWSRCAC contracted Nuka Research and Planning Group, LLC and Nielsen Koch, PLLC to compile a history of the oil spill prevention and response plan for crude oil tankers operating in Prince William Sound. This project documents the history of the plan from 1995-2020 that has played out through thousands of pages of documents, meetings and workgroups, drills and exercises both in rooms and on the water, and, most important, in ensuring that significant improvements in oil spill response preparedness in Prince William Sound developed shortly after the *Exxon Valdez* oil spill are sustained, effective, and, ideally, improved over time.

The project outputs are 1) a timeline of events related to plan development (with other events included for context), 2) a compendium of summaries of those events with references to the relevant documents and PWSRCAC comments, and 3) this summary report.

Background

The first oil spill contingency plan for crude oil tankers shipping oil through Prince William Sound was developed in 1976, in a document that covered spill response for the length of the Trans Alaska Pipeline System (TAPS) route, Valdez Marine Terminal, and oil tankers shipping crude oil from Valdez out through Prince William Sound. The U.S. government approved that plan in 1977, the same year that TAPS started flowing and Alaska enacted its first state regulations for oil spill contingency planning (DeCola and Robertson, 2018). [1]

The *Exxon Valdez* oil spill of March 24, 1989 triggered new federal and state laws governing oil spill prevention and response. Within two weeks, the Alaska Department of Environmental

[1] Earlier background on oil spill contingency plans for crude oil operations related to TAPS and associated tankers, state and federal requirements, and the legislative process and negotiations that ensued in the immediate aftermath of the *Exxon Valdez* can be found in *Alaska's Oil Spill Response Planning Standard: History and Legislative Intent* (DeCola and Robertson, 2018), also produced under contract to PWSRCAC.

Conservation (ADEC) had issued an Emergency Order requiring a significantly revised contingency plan to be developed within 38 days. Within a year, Alaska had enacted a new law that required separate planning for different elements of the TAPS system and established planning standards and other requirements for oil spill prevention and response for vessels and facilities operating statewide. The first Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan was approved in 1995 under the regulations stemming from that new law (DeCola and Robertson, 2018). While the plan has changed over time, the version that exists today stems from that 1995 version.[2]

Under ADEC regulations, the plan serves seven important functions. It is:

1. A "working" emergency plan;
2. A detailed long-term response plan with procedures;
3. A compliance demonstration of the access to equipment and resources required to meet the facility's or vessel's response planning standard and the separate ability to protect environmentally sensitive areas;
4. An assessment of past and potential spills at the facility and how they can be prevented;
5. A description of spill prevention measures required by the Article 1 regulations (18 AAC 75.005 - .085), federal prevention requirements, and company spill prevention measures at use at the facility;
6. A demonstration of the use of best available technology by the plan holder; and
7. A permit to operate that, if not followed, is a violation of law.

Alaska regulations require contingency plans that are very specific about how the operator of a particular facility and operator-specific descriptions and details on how oil spill containment and response will occur. An Alaska contingency plan is not a generic plan on how to respond to spills. Unlike federal response plans, Alaska's contingency plans do not simply rely on contracting with an oil spill removal organization with a specific level of resources. Nor is an Alaska contingency plan simply a "strategy and tactics" manual of an oil spill response contractor. Details matter when it comes to what an operator plans to do in the event of a spill. Alaska's contingency plans are operator-specific and facility-specific plans that address all seven critical objectives of a contingency plan.

Operators must renew their plan every 5 years (changed from every 3 years in 2003). Alaska regulations require plan holders to share plans for public review and comment upon submitting a renewal or a major amendment (see Section 3). Plan documents are also now posted on the ADEC website. Having this information available to the public is critical to allowing those concerned about an oil spill – or those who would bear the brunt of the impacts – able to review and understand how operators are preventing or preparing to respond to spills.

[2] The tanker plan has changed form over time but has always consisted of more than one volume. This report references the plan with the intent of encompassing the associated documents (multiple volumes or referenced technical manuals, for example) that, combined, indicate how those responsible will prevent, prepare for, and respond to an oil spill from a TAPS-trade tanker.

Project Approach

For this project, the team compiled a list of events that were in some way pivotal in the history of the plan from 1995-2020. These events included plan approvals, renewals, major amendments, legal action (court cases, adjudicatory hearings), work groups, and exercises. Not all work groups and exercises were included, but only those which either led to changes in or significantly validated the plan contents.

The events are identified on a timeline figure (Appendix A) and summarized in a compendium of event summaries (Appendix B). Input on the events was received from individuals familiar with the plan over the years including current and past PWSRCAC staff, board members, and volunteers. It is important to note, however, that the event summaries were developed based on review of extensive documentation and do not rely on recollections. This review was possible due to the to the tremendous effort by PWSRCAC staff to develop and maintain a comprehensive document management system which allowed the authors to search for necessary documents and helped to identify some missing events to complete the timeline.

2. Prince William Sound Tanker Plan

Formally known as the Prince William Sound Oil Discharge Prevention and Contingency Plan (ODPCP), the document has been colloquially called the plan, the c-plan, the tanker plan, and so on. For the purposes of this report, it will be called the plan. Other plans or subsections of this plan are designated with more specific titles.

Ownership/Roles

The plan is officially owned by the shipping companies that transport crude oil through PWS; they are required under State of Alaska statutes and regulations to have an approved oil discharge prevention and contingency plan in order to operate within the state. By statute, the crude oil shippers in PWS are required to use APSC as a common primary response action contractor [AS 46.04.030(q)]. The shipping companies have one common plan that describes how an oil spill would be prevented and, if necessary, responded to in PWS.

Under state regulations, however, each plan holder must have its plan approved separately by ADEC. Additionally, there are some operational differences between the shipping companies. Therefore, each plan holder separately and individually submits its plan to ADEC for approval. How those plans have been organized over time is discussed below.

Plan Organization and Changes over Time

State of Alaska regulations at 18 AAC 75.425 dictate what information must be included in a plan. The regulations divide the information into five parts:

1. Response Action Plan,
2. Prevention Plan,
3. Supplemental Information,
4. Best Available Technology Review, and
5. Response Planning Standard.

The way this information has been organized in the plan has changed over time. From 1995 to 2007, the plan consisted of three parts: Part 1. Response Action Plan, Part 2. Prevention Plan, and Part 3. Supplemental Information Documents (there were four "SIDs" in the plan). In print form, the plan filled several large three-ring binders.

For the 2007 renewal, the plan holders completely restructured the plan. They created what became known as the "core plan" which was divided into five sections to address the specific parts required by Alaska regulations (listed above). It is titled the *Prince William Sound Oil Discharge Prevention and Contingency Plan*. In addition, they created the *SERVS Technical Manual* which includes lists of the equipment and resources owned by APSC/SERVS as well as descriptions of the tactics showing how that equipment would be used during a response. These two volumes make up the plan that is the focus of this report.

Because the shipping companies have some operational differences, they are additionally each required to submit for approval a company-specific Vessel Response Plan. As a result, when a PWS crude oil shipping company submits a contingency plan for approval, it must submit three volumes: their Vessel Response Plan, the PWSODPCP, and the SERVS Technical Manual.

Related Documents

In addition to the plan, several other documents which describe prevention and response operations in PWS. Some of these are incorporated by reference into the plan.

- Vessel Escort and Response Plan (VERP): the VERP governs the ship escort guidelines and procedures in PWS in compliance with the requirements set out in OPA 90.
- Gulf of Alaska Agreement: an agreement between APSC and the shipping companies to provide oil spill response actions in the Gulf of Alaska region, the area of the USCG Prince William Sound Captain of the Port Zone, outside the three-mile limit of State waters, but including State waters in the area of Copper River Delta and Flats, extending to the 200 nautical mile offshore extent of the Exclusive Economic Zone.
- PWS Area Contingency Plan: a government plan intended to provide a coordinated and cooperative marine pollution response in PWS under the responsibility of ADEC and the USCG as co-chairs of the PWS Area Committee. (U.S. Coast Guard and ADEC, 2020)
- Alaska Regional Contingency Plan: a government plan for a coordinated federal, state, Tribal, and local response to a pollution discharge or threat of a discharge anywhere in Alaska, maintained by the Alaska Regional Response Team under ADEC, USCG, and U.S. Environmental Protection Agency (ARRT, 2018).
- Guidance documents: ADEC-issued guidance documents for operators subject to Alaska's oil spill prevention and response requirements. These are non-regulatory documents that provide further explanation and discussion of the regulations. The first was completed in 1994, with a new version in 2016 (ADEC, 1994; 2020).

3. Mechanisms for Plan Changes Over Time

Once a plan has been approved by ADEC, the plan holders cannot make any changes to it, no matter how insignificant, without applying for an amendment or renewal which must be approved by ADEC before the changes are made. A plan must be renewed every five years and undergoes the public review process defined at 18 AAC 75.455. Plan holders can elect to renew their plan sooner, but most plan changes between renewals are made by amendment. State regulations at 18 AAC 75.415 describe the amendment application procedures and distinguish between minor and major amendments. The regulations have been amended several times between 1995 and 2018 to delineate what are routine "minor" or major amendments.

An amendment is defined as major if it includes any of the following: an increase of the RPS volume; changes to the scenarios; expansion of operations to new physical environments; reductions to the amount or quality of prevention, response resources, or training; or changes that require an increase in prevention, response resources, or training. All major amendments must follow a public review process (as all plan renewals do).

Any changes that do not qualify as "major" can be approved by ADEC as minor amendments without public review.

Additionally, two amendment types are specifically defined as routine plan updates at 18 AAC 75.415: a deletion of a vessel operating under a plan that is not required as a response asset and a revision to spill command and response personnel contact information. These changes do not require ADEC approval, although ADEC must be notified of the changes within five days of when they go into effect.

Changes to the plan can also result from regulatory revisions, changes made during renewal of the plan, or when ADEC requires a change as a condition of approval. Conditions of approval typically require information to clarify or verify information that is already in the plan, not to add new analysis. In some circumstances, however, DEC has imposed conditions of approval requiring analysis of information not available at the time of renewal and later changes to the plan that then go through public review as major amendments. Appendix C includes all Conditions of Approval on the PWS tanker plan from 1995-2020.

The plan history timeline contained in this report includes references to numerous renewals and amendments, both major and minor. Summaries for these events describe the most important changes made with the actions. Some of these amendments were prompted by exercises or work groups which identified the need for change, and in most cases, summaries are included for those activities as well with references to the subsequent amendments where possible.

4. Key Topics in Plan Changes

More than four decades have passed since the first PWS tanker plan was approved, and regulations, operations, and the plan itself have undergone immeasurable changes. This history project has focused on changes to the plan since the first iteration of the current oil spill contingency planning regulations were adopted, but even in that shorter span of 25+ years, there have been myriad changes to the plan and operations.

To help make sense of all those changes, an attempt was made to characterize each of the events in the timeline by the most relevant topics addressed by the event. Once characterized, those topics that occurred repeatedly were identified as they were clearly ones of recurring concern over the years. The 17 topics identified are listed in the table below. Each topic was assigned an abbreviation which is used in the timeline and COA (Appendix C) and Findings (Appendix D) tables in this report to aid the reader in tracking the topics through history and the report. Brief descriptions of each topic and how they have played out over time follow the table.

Table 1: Event Topics

Topic	Abbreviation
Air Logistics	AL
Barges	B
Best Available Technology	BAT
Contracts/MOU/MOA	C
Escort Tugs	ET
Fishing Vessel Program	FV
Lightering	L
Nearshore	NS
Non-mechanical	NM
Oil Properties	OP
Personnel Numbers	PN
Response Equipment	RE
Realistic Maximum Response Operation Limitations	RMROL
Sensitive Area Protection and Geographic Response Strategies	SAP
Scenarios	S
Training	TR

Air Logistics (AL). The need for aircraft to support an oil spill response in PWS has been identified since the first plan approval in 1995. Indeed, aircraft are specifically listed in State of Alaska regulations as part of the equipment which must be identified for logistical support. [18 AAC 75.425(e)(3)(E)] Aircraft are needed for transportation, field monitoring, dispersant application, and more. Over the years, the plan holders have been asked to identify sources of aircraft, verify contracts for the service providers, and demonstrate the suitability of those aircraft for the intended purpose.

Barges (B). Response barges are a critical part of oil spill recovery operations in PWS, and serve a variety of purposes, including open water oil recovery and storage, secondary storage for nearshore response, lightering, and equipment storage and distribution sites. The suitability of the

barges for their tasks has been questioned several times during the life of the plan, particularly in the arenas of storage capacity, lightering, and nearshore response.

Best Available Technology (BAT). State of Alaska regulations require a BAT analysis and use of BAT in the areas of communications; source control procedures; trajectory analyses and forecasts; wildlife capture, treatment, and release; measure to assure prompt detection of an oil spill; operation of a tank vessel under escort; and escort vessels. [18 AAC 75.425(e)(4)]

Regulations for how the technologies are to be evaluated in the plan are located at 18 AAC 75.445. They require that a BAT review include comparisons to technology used in other comparable situations, transferability of the technology, reasonable expectation of improved prevention or environmental benefit protection, cost, age and condition of the technology, compatibility, feasibility, and environmental impacts.

The identification, definition, and inclusion of BAT in the plan has been a continual source of disagreement. Numerous RFAI have been written and addressed in findings documents, and court cases have been settled around the subject. The BAT review regulations are multi-layered and subjective, and it is up to ADEC's discretion whether or not an alternative technology must be considered BAT and adopted into the prevention or response system. Questions are still frequently raised about BAT, but changes in technology are seldom required.

One important determination that has been made about BAT is that it can be addressed through a "system approach" rather than by examining each individual piece of equipment or procedure used. The understanding is that if the response system, for example, is, as a whole, sufficient to meet regulatory requirements for containing, controlling, and cleaning up an RPS-sized oil spill then the system is considered BAT. The individual components of the system do not need to be subjected to a BAT review under regulation. The tanker escort tugs can also be evaluated under the systems approach, and the individual components on a tug (winches, bitts, etc.) are not individually subject to a BAT analysis.

Contracts, MOU, MOA (C). Alaska regulations require that "the plan holder shall maintain or have available under contract within the plan holder's region of operation or another approved location, sufficient oil discharge containment, storage, transfer, and cleanup equipment, personnel, and other resources" to contain, control and clean up an RPS volume of spilled oil. (18 AAC 75.432) Whether or not sufficient and/or appropriate contracts, MOUs, and MOAs have been in place to assure compliance has been questioned and answered repeatedly.

Escort Tugs (ET). Like barges, tugs in the system are critical to response operations, but they also play an important role in preventing oil spills. The tugs are used to move barges, carry equipment, and escort laden tankers through PWS. This last role is required by both the state and federal governments, and has been a source of close scrutiny, primarily from a BAT standpoint with regards to the general suitability of the tugs for the purpose, as well as the fitness of the tug components mentioned under BAT above.

Fishing Vessels (FV). The backbone of spill response in PWS could arguably be said to be the SERVS Fishing Vessel Program. This program has more recently been called the Vessel of Opportunity Program by APSC, but this is technically a misnomer as the vessels are under contract continuously, not just when opportunity arises. Over 400 FV are under contract to contain, control, and recover oil, protect sensitive areas, carry out wildlife operations, provide logistical support, and more. The numbers of vessels and training of crews has been analyzed carefully and repeatedly, and many important improvements have been made as a result.

Lightering (L). Although technically any movement of oil from one vessel or barge to another is lightering, in the context of this plan, the lightering of interest is the removal of retained (unspilled) oil from the stricken tanker to a barge or another tanker. The suitability and availability of a lightering barge and tanker (both are required in the plan scenarios) has been questioned repeatedly. APSC maintains, through their contracted tug and barge provider, a barge that is outfitted with lightering equipment. The capability of the barge has been assessed, but often of more interest is the availability of a tanker of opportunity to take over lightering duties before the barge is required to support nearshore response activities.

Nearshore Response (NS). The vast majority of SERVS resources are assigned to the nearshore response system, including most of the FV fleet. These resources are responsible for containing, controlling, and cleaning up oil that has escaped the open water recovery fleet and is in shallower or more constrained waters closer to shore, if not on shore already. Because they are working in more difficult areas and with a wider variety of equipment than the open water fleet, excellent training of the FV crews is especially important, and is indeed the focus of SERVS' annual training for FV crews. The quality of training, choice and maintenance of nearshore response equipment, and availability of vessels has been scrutinized closely and has been the subject of modeling and analysis, RFAI, work groups, exercises, and amendments.

Nonmechanical Response (NM). Perhaps the most contentious of all topics included here is that of nonmechanical response, namely the use of dispersants and *in situ* burning. Concerns have been repeatedly raised about the necessity, safety, efficacy, and monitoring of these response tactics, particularly dispersants. In addition, there has been a fear that dispersing the oil into the water column or the air would end up being prioritized over mechanical removal of oil from water. The plan holders and ADEC have asserted that non-mechanical response options are simply tools in the toolbox and will not be relied on preferentially over mechanical response options. The timeline includes amendments, work groups, exercises, and reports related to non-mechanical response operations.

Oil Properties (OP). The characteristics (API gravity, viscosity, temperature, etc.) of Alaska North Slope (ANS) crude oil have changed over time and depending on from which field on the North Slope the oil is produced. These characteristics can impact the way in which mechanical and non-mechanical spill response activities need to be carried out to be most efficacious, as well as storage requirements for emulsified oil. Oil properties were first discussed in the 1993 Anvil Study, and have been reexamined by work groups in subsequent years. The plan holders have committed to reexamining oil properties and any potential impacts on response operations prior to each plan renewal.

Personnel Numbers (PN). As noted earlier, the regulations at 18 AAC 75.432 require not only sufficient equipment to contain, control, and clean up spilled oil, but also sufficient people trained to carry out the response activities. These people have to be maintained within the region of operation, just as the equipment does. Significant effort has been expended by the plan holders, contractors, and work group participants to ensure that all personnel requirements are accounted for in the plan and that there are appropriate plans in place to ensure that those hundreds of people will be available and trained if and when needed.

Response Equipment (RE). As with personnel, substantial work by all parties has gone into ensuring that there will be enough of the right mechanical response equipment available for use during an oil spill cleanup. Equipment availability, types, BAT, maintenance, and more have been scrutinized annually since the first plan was written, scrutiny that is evident in the number of events on the

history timeline that include RE as a relevant topic. Although the BAT regulations are applied to the response system as a whole, the plan holders and their contractors have elected to make significant improvements in specific recovery equipment used as new innovations have come onto the market, particularly in the areas of boom and skimmers.

Realistic Maximum Response Operation Limitations (RMROL). The situations in which a plan holder could not successfully operate mechanical response equipment or escort tugs due to environmental limitations (weather, sea states, etc.) are known as RMROL. Alaska regulations require that plan holders be able to describe RMROL conditions that might be encountered and specify "additional temporary prevention or response measures that will be taken to reduce the environmental consequences of a discharge" during RMROL conditions. [18 AAC 75.425(e)(3)(D)] Defining what these situations are and how a response might be altered to allow oil recovery or a tanker rescue to still occur have been the focus of much debate and study over the life of the plan. Work groups, plan holders, PWSRCAC, and ADEC have repeatedly examined the frequency of RMROL conditions in PWS, what the limitations of different equipment types are, and alternate response options that might be considered.

Sensitive Area Protection (SAP). Alaska regulations require the identification and protection of environmentally sensitive areas and areas of public concern that may be impacted by an RPS-sized spill. [18 AAC 75.425(e)(3)(J)] In PWS, plan holders, stakeholders, and ADEC have worked to identify many of these locations and, where possible, pre-plan for the protection of them. The resulting Geographic Response Strategies (GRS) are maintained by ADEC and are used by the plan holders for SAP planning and training. In some cases, such as at salmon hatcheries, protection equipment has been pre-staged for immediate use. Plan holders have committed to testing sensitive area protection strategies annually, and updates are submitted when appropriate. The timeline contains many instances of work groups, exercises, and amendments which have impacted how SAP is described in the plan.

Scenarios (S). While it is important for the plan holders to have equipment and personnel available to respond to an oil spill, it is equally important for them to have planned for how those resources will be used during a spill so that a response is carried out efficiently and effectively. The scenarios in Section 1 of the plan describe how the plan holders will carry out a response to an RPS-sized spill as well as smaller spills, and are required by the State of Alaska in 18 AAC 75.425(e). Many of the other topics listed here (AL, PN, RE, etc.) focus on information that is located in the scenarios. Additionally, there has been effort put forth by stakeholders, plan holders, and ADEC towards determining what are the right scenarios and what level of information is required by them. Scenarios receive close scrutiny with every plan renewal.

Training (T). The best prevention and response equipment is useless if the people who are operating it don't know how to do so properly. Training of SERVS and contractor personnel and FV crews is continual and is carefully examined to ensure that effective training is being conducted in the correct areas. State regulations in this area are vague, requiring only "a detailed description of the training programs for discharge response personnel [18 AAC 75.425(e)(3)(I)] and written discharge prevention programs that include oil discharge prevention training [18 AAC 75.425(e)(2)(A)]. Under its regulatory discretion, ADEC has generally interpreted these regulations to mean that personnel have to be trained to carry out all prevention and response activities described in the plan. Exercises are conducted to both provide training and to test the capabilities of the responders. Plan holders, stakeholders, and ADEC all participate in or evaluate these exercises and make recommendations for further training.

Wildlife (W). Per Alaska regulations, plan holders are required to include in their scenarios "procedures and methods for the protection, recovery, disposal, rehabilitation, and release of potentially affected wildlife…." [18 AAC 75.425(e)(1)(F)(xi)] and those procedures and methods are subject to the BAT requirements of 18 AAC 75.425(e)(4). In PWS these requirements have led to the development of wildlife response plans, staging of dedicated equipment, construction of an otter rescue center, and designation of wildlife FV task forces.

5. PWSRCAC Comments

PWSRCAC has a responsibility to review contingency plans under its OPA 90 mandate and is one of a few named reviewers in state regulations. The organization has provided comments on every plan renewal and major amendment since 1995. Additionally, PWSRCAC staff and volunteers have engaged in work groups, observed and evaluated drills and exercises, and conducted their own technical analyses of myriad elements of the prevention and response system.

PWSRCAC has submitted hundreds of pages of plan comments. These have ranged from requesting minor edits for clarity to bigger questions, such as whether the escort vessels are sufficiently equipped and crews adequately trained to achieve a challenging save of a laden tanker in bad weather. While PWSRCAC has weighed in on all the key topics identified in the preceding section, and more, some of the key areas of concern expressed since the first renewals in 1995 and 1999 have been:

- Best available technology for all equipment, including a focus on the escort system in more recent years,
- Ensuring that plan holders are prepared to bring equipment in from outside PWS – and to respond to a spill that *leaves* PWS as the *Exxon Valdez* spill did,
- Seeking ongoing assurance that there are sufficient vessels of the necessary types available through the Fishing Vessel program and that personnel numbers and training are adequate,
- Attention to wide-ranging details in the response scenarios, from use of specific equipment to personnel numbers, and
- Ensuring opportunities for public review of referenced documents, e.g., the VERP, with plan reviews.

While some comments may be considered to represent on-going disagreements or discussion, others over the years have become obsolete, such as concerns raised about Y2K computer glitches or details regarding equipment that is no longer used in the system. Many, many PWSRCAC comments were resolved by work groups or simply by text changes in the plan.

PWSRCAC comment documents are listed for reference in the event summaries in the compendium so those seeing further information on any particular event may also trace back to the organization's comments at that time. (Appendix B).

6. Conclusion

It is expected that the processes and issues would evolve over the 25-year life of the tanker plan. In the early years of the plan, there were conditions of approval still being implemented and major decisions being made about the process (e.g., the ruling in 1998 regarding what constitutes "phasing" and what is an acceptable "condition of approval") from the 1995 plan even as the 1998 plan renewal got underway. Two substantive changes to regulations have occurred, both of which can be seen as reducing the requirements for operators. In 1997, ADEC promulgated BAT regulations which deemed any equipment used to meet a response planning standard as BAT. This eliminated any consideration of skimmers and containment systems in future BAT analyses. In 2004, regulations were changed such that plan holders could identify either prevention measures or non-mechanical response options they would use in the event that conditions were not conducive to mechanical recovery. (The regulations are silent on the potential for conditions to preclude non-mechanical options.) The years 1996-2010 saw two significant rounds of workgroup efforts, one of which could be associated with the early plan submittals, 1995 and 1998, while another began with the 2007 renewal. Work groups were used to advance specific issues and ensure all parties were involved in the process. Since 2012, there have been no new work group efforts but multiple amendments initiated by the plan holders.

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Appendix A – Timeline (see separate doc)

Appendix B – Compendium of event summaries (see separate doc)

Appendix C – Conditions of Approval 1995-2020

Approval Year	Renewal or Amendment	COA #	COA Description	Topics	Applicable Alaska Statutes and Regulations	Related Events
1995	R	1	Notify ADEC of any change in contractual relationship with response contractor.	administrative	18 AAC 75.425(e)(3)(H); 18 AAC 75.445(i)	
1995	R	2	Submit vessel escort improvement proposals.	ET		1998 Tanker Escort Improvements
1995	R	3	Submit a report demonstrating effectiveness of the Near Shore Response Plan.	NS	18 AAC 75.425(e)(1)(F)(vi), (vii) and (ix); AS 46.04.030(e); 18 AAC 75.445(g)(2)	1996 Nearshore Response Plan
1995	R	4	Provide supplemental data to PWS air logistics study.	AL	AS 46.040.03(k)(3); 18 AAC 75.438(c)	1996 Supplemental Data for PWS Air Logistics Study and Water Cargo Transportation into Kodiak and Cordova
1995	R	5	Provide a final date for the completion of identification of sensitive areas in PWS, Kodiak, and Kenai Peninsula.	SAP	18 AAC 75.425 (e)(3)(J); 18 AAC 75.445 (d)(4)	1996 ESAs for Prince William Sound, Kodiak, and Kenai Peninsula areas
1995	R	6	Identify primary recreational use areas in PWS, put them in the plan, and create protection procedures for these areas.	SAP	18 AAC 75.425 (e)(3)(J)	1996 Recreational Areas in PWS
1995	R	7	Submit compliance schedule for wildlife handling, complete wildlife training, and complete otter treatment facility construction.	W	18 AAC 75.425(e)(1)(F)(xi) and .445	1996 Wildlife Training and Otter Hospital Compliance Schedule
1995	R	8	Submit oil spill trajectory analysis for two hypothetical spill incidents to determine the forseeable likelihood of	S	6 AAC 80; 18 AAC 785.425 (e)(3)(J); 18 AAC 75.445 (d)(4)	Condition 8 Decision Adjudicatory Hearing request granted and heard with 1995 Plan approval. Condition

			oil reaching the Copper River Delta or Flats.			8 and DEC decision finding trajectory analyses not in compliance with Condition 8 upheld by Deciding Officer. 1999 Copper River Delta Oil Spill Trajectory Analysis and Agreement; 1999 Copper River Delta Oil Spill Trajectory Analysis and Agreement
1995	R	9	Tesoro Alaska Petroleum ONLY: submit amendment to plan which evaluates plan holder response in Kodiak region.	S	18 AAC 75.425 (e)(3)(J); 18 AAC 75.445 (d)(4)	Challenges to Condition 9 were rejected by the Deciding Officer in the 1995 Adjudicatory Hearing Proceedings. Docket No. 700 and Final Decision at p. 9, 12; 1995-1996 Kodiak Island Spill Response
1999	R	1	Notify ADEC of any change in contractual relationship with response contractor.	administrative	18 AAC 75.425(e)(3)(H); 18 AAC 75.445(i)	The Shippers filed an adjudicatory hearing request that was subsequently dismissed after discussions with DEC. Tom Lakosh filed an adjudicatoryhearing request that was denied for not meeting the adjudicatory hearing requirements. administrativestrative Law Judge Shelley Higgins heard the case which was affirmed by Superior Court Judge Dan Hensley.
1999	R	2	Deadline established for 2002 renewal, and scope of future renewal outlined.	administrative	AS 46.04.030(e); AS 46.04.030(d); 18 AAC 75.415; 18 AAC 75.420	John Kotula wrote a letter on behalf of the ADEC concerning the upcoming 2002 renewal.
1999	R	3	Participate in GRS workgroup, update plan, and deploy GRS equipment.	SAP	AS 46.04.030(e); 18 AAC 75.445(d)(4); 18 AAC 75.425(e)(3)(J); 18 AAC 75.425(e)(1)(F); 18 AAC	2000 Geographic Response Strategy

					75.425(e)(1)(F)(v); 18 AAC 75.415	
1999	R	4	Participate in scenario workgroup.	S	AS 46.04.03 (e); 18 AAC 75.425 (e)(1)(F); 18 AAC 75.445(d)(3); 18 AAC 75.445(d)(4); 18 AAC 75.445 (d)(5)	2000 Scenario Workgroup
1999	R	5	Provide for access to secondary storages barges.	B	AS 46.04.030 (e); AS 46.04.030(k)(3)(C)	2000 Minor Amendment re Nearshore Secondary Storage Barges
1999	R	6	Modify and update spill response training for fishing vessel response.	FV, TR	AS 46.04.030 (e); AS 46.04.030(k)(3)(C); 18 AAC 75.430 – 18 AAC 75.442; 18 AAC 75.445(d)(4)	2000 Major Amendment re Fishing Vessel Program
1999	R	7	Provide respirator training to 18 Tier I fishing vessels.	FV, TR	AS 46.04.030(e); AS 46.04.030(k)(3); 18 AAC 75.445(j)	2000 Minor Amendment re Respirator Training
1999	R	8	Conduct simulation and sea trials for Hinchinbrook Entrance tanker escort opeerations.	ET	AS 46.04.030 (e); 18 AAC 75.027(e); 18 AAC 75.425(e)(2)(D); 18 AAC 75.425(e)(4)(A)(iii); 18 AAC 75.425(e)(3)(D); 18 AAC 75.445 (f)	2001 Major Amendment re Hichinbrook Entrance tug
1999	R	9	Submit a report if a vessel is involved in a reportable incident along the TAPS trade route.	administrative	AS 46.04.030 (e); 18 AAC 75.005	2000 Notification of Vessel Casualty
1999	R	10	Submit conforming plan edits within 45 days.	administrative	AS 46.04.030(e)	
2000	A		No COA were written into the major amendment approval.			

2001	A		No COA were written into the major amendment approval.			
2002	R		No COA were written into the 2002 plan renewal.			
2004	A	1	Demonstrate the ITB Krystal Sea's response capabilities and adequate staffing with trained crew members.	RE, TR	18 AAC 75.425(e)(3)(F)	
2004	A	2	Confirm the ITB's availability and procedures for addressing circumstances when it would not be available.	RE, TR	18 AAC 75.425(e)(3)(F)	
2004	A	3	Agree to the requirement that the Krystal Sea remain in the region of operation in order to meet RPS requirements.	RE, TR	18 AAC 75.425(e)(3)(F)	
2006	A	1	Assignment of one additional fishing vessel to any Near Shore Task Force which incorporated a Current Buster system, and notification to ADEC before any changes are made	NS, TR, FV, RE	18 AAC 75.425(e)(3)(F)	
2006	A	2	Fishing vessel crew training in all near shore tactics	NS, TR, FV, RE	18 AAC 75.425(e)(3)(F)	
2006	A	3	A requirement that eight Current Buster systems would be available for deployment before the amendment could become effective	NS, TR, FV, RE	18 AAC 75.425(e)(3)(F)	
2007	R	1	Initiate a workgroup to verify personal numbers, roles, and deployment strategies.	P	18 AAC 75.425 (e)(3)(C) and (I)	2008 Personnel Workgroup

2007	R	2	Conduct a field exercise to verify aerial support for dispersant use.	AL, NM	18 AAC 75.425 (e)(3)(G) and 425 (e)(3)(G)	2008 Dispersant Aerial Support Workgroup
2007	R	3	Provide documents verifying the updated plan information for the Tier III fishing vessel program.	FV, TR	AS 46.04.030(e); 18 AAC 75.425(e)(3)(I)	
2007	R	4	Keep up current Nearshore Task Force 5 equipment and update plan when new equipment arrives.	NS	18 AAC 75.425(e)(3)(F)	
2007	R	5	A copy of the approved plan must be on board covered vessels at all times.	administrative	18 AAC 75.465	
2007	R	6	Submit a final revised copy of the plan within 30 days.	administrative	AS 46.04.030(e)	
2007	R	7	Future amendments must be submitted in "red line" format identifying all changes.	administrative	AS 46.04.030(e); 18 AAC 75.415; 18 AAC 75.420	
2007	R	8	Notify ADEC of any change in contractual relationship with response contractor.	administrative	18 AAC 75.425(e)(3)(H); 18 AAC 75.445(i)	
2012	R	1	A copy of the approved plan and COA must be on board all vessels in state waters	administrative	18 AAC 75.465	
2012	R	2	Submit updated plan within 30 days.	administrative	AS 46.04.030(e)	
2012	R	3	Future amendments must be submitted in "red line" format identifying all changes.	administrative	AS 46.04.030(e); 18 AAC 75.415; 18 AAC 75.420	
2012	R	4	Notify ADEC of any change in contractual relationship with response contractor.	administrative	18 AAC 75.425(e)(3)(H); 18 AAC 75.445(i)	
2012	R	5	Correct section on fishing vessel availability to show correct numbers.	administrative	AS 46.04.030(e); AS 46.04.030(k); 18 AAC 75.438; 18 AAC	

					75.425(e)(1)(F); 18 AAC 75.445(c)	
2012	R	6	Provide documents to verify information on Tier III fishing vessel program.	FV, TR	AS 46.04.030(e); 18 AAC 75.425(e)(3)(I)	
2017	R	1	Submit administrativeistrative corrections to plan.	administrative	AS 46.04.030(e)	
2017	R	2	Provide documents to verify information on Tier I, II, III fishing vessel programs.	FV, TR	AS 46.04.030(e); 18 AAC 75.425(e)(3)(I)	
2017	R	3	Notify ADEC of any change in contractual relationship with response contractor.	administrative	18 AAC 75.425(e)(3)(H); 18 AAC 75.445(i)	
2018	A	1	Requirement to make seven administrativeistrative edits and factual corrections prior to publication.	ET, TR, FV	18 AAC 75.425 (e)(3)(G) and 425 (e)(3)(G); 18 AAC 75.425(e)(3)(F)	
2018	A	2	PWS Transition Plan changes and implementation, including: a. Updates to training information, b. Adding an appendix to the Transition Plan which maintained the TransRec tactics until all TransRec skimmers were decommissioned, c. Inclusion of the Transition Plan as an appendix to the ODPCP until transition was complete, and d. Additional demonstrations and documentation to assure vessel configuration and crew training.	ET, TR, FV	19 AAC 75.425 (e)(3)(G) and 425 (e)(3)(G); 18 AAC 75.425(e)(3)(F)	

2018	A	3	Submittal of additional documentation, including ABS and USCG documentation and load and decant plans for the Mineral Creek and OSRBs.	ET, TR, FV	20 AAC 75.425 (e)(3)(G) and 425 (e)(3)(G); 18 AAC 75.425(e)(3)(F)	
2018	A	4	Update of PWS Tanker C-plans information regarding escort and sentinel tugs, as well as the response training program	ET, TR, FV	21 AAC 75.425 (e)(3)(G) and 425 (e)(3)(G); 18 AAC 75.425(e)(3)(F)	
2018	A	5	Additional exercise requirements which included a tabletop exercise for additional personnel needed to meet the 18-hour commitment, a lightering barge exercise, and field demonstrations of open water recovery operations.	ET, TR, FV	22 AAC 75.425 (e)(3)(G) and 425 (e)(3)(G); 18 AAC 75.425(e)(3)(F)	
2018	A	6	Requirement to provide quarterly reports for crew training and exercises.	ET, TR, FV	23 AAC 75.425 (e)(3)(G) and 425 (e)(3)(G); 18 AAC 75.425(e)(3)(F)	
2020	A		No COA were written into the major amendment approval.			

Appendix D – Findings 1995-2020

Renewal Year	Finding #	Finding Description	Topics	Applicable Alaska Statutes and Regulations
1995	1	The core plan adequately describes fire hazard prevention and control methods. There is no legal basis to require demonstration of plan holder's fire-fighting capabilities for an oil spill that is on fire. Attorney General opinion is included.	RE	18 AAC 75.425(e)(1)(F)(ii); 18 AAC 75.425(e)
1995	2	There is not sufficient information to find that the tanker escort is BAT, particularly for VLCCs; vessel escort improvement proposal required. Findings document	ET, BAT	AS 46.04.030(e); 18 AAC 75.990(5); 18 AAC 75.445(f)

		discusses the need for regulatory guidance on BAT, which had not yet been promulgated. It also explains the use of a "system" approach to considering BAT for the escort system, which is applied to this day. Finally, it acknowledges the then-forthcoming PWS risk assessment as providing necessary information regarding the escort system and prevention measures overall. [See 1995 COA 2.]		
1995	3	The open-water response system is BAT, but there is not sufficient information yet to determine that the nearshore response system is BAT. [See 1995 COA 3.]	BAT, RE	AS 46.04.030(e); 18 AAC 75.445(g)(2); 18 AAC 75.990(5)
1995	4	Overall the scenarios (three at the time) satisfy the requirement to describe deployment strategies for various response system elements, but more information is needed to assess air transportation during holiday periods as well as water transprtation to Kodiak and Cordova. [See COA 4.]	RE, AL	AS 46.04030(k); 18 AAC 75.438; 18 AAC 75.424(e)(1)(F); 18 AAC 75.445(c); 18 AAC 75.438
1995	5	Tesoro Alaska Petroleum must submit response plan for Kodiak region.	S	AS 46.04.030(r); AS 46.04.030(c); AS 46.03.030(k)(3); AS 46.04.900(23); 18 AAC 75.495; AS 46.04.020(g)(1)&(2)
1995	6	Plans provide adequate equipment to support lightering oil from a tanker vessel.	L	18 AAC 75.425(e)(3)(F)
1995	7	The necessary contracts are in place between plan holders and the Primary Response Action Contractor. The equipment required to meet the in-region response planning standard must be listed in plan.	C	AS 46.04.035(h)(2); 18 AAC 75.500(a)&(b)
1995	8	Insufficient information to determine full adequacy of nearshore response, plan holders must complete several tasks. [See COA 3.]	NS	18 AAC 75.425(e)(1)(F),(vi), and (ix)
1995	9	Sufficient controls exist to prevent required response equipment from being removed from a spill response when spill leadership transitions from APSC to the Responsible Party [under AS 46.020(g)(2)].	RE	AS 46.04.030(r); AS 46.020(g)(2)
1995	10	Current vessels operating in the TAPS trade meet requirements for a towing system.	ET	18 AAC 75.027(f)
1995	11	Plan holders must provide a compliance schedule for identifying environmentally sensitive areas, as well as recreational use areas. [See COA 5 and 6.]	SAP	18 AAC 75.425; 18 AAC 75.445; 18 AAC 75.425(e)(3)(J)
1995	12	ADEC should require completion of wildlife recovery/rehabilitation infrastructure as a COA. [See COA 7.]	W, TR	18 AAC 75.425(e)(1)(F)(xi); 18 AAC 75.445
1995	13	Adequate strategy for a 2000 bbl and less spill at the VMT.	RE	18 AAC 75..425(e)(1)(F)
1995	14	Dispersant Corexit 9527 may be considered by the FOSC in a spill response.	NM	18 AAC 75.445(h)
1995	15	Core plan contains an RMROL analysis of the environmental and operation conditions that would impede or hamper a response.	RMROL	18 AAC 75.425(e)(3)(D); 18 AAC 75.445(f)

1995	16	Respose to Comments Not Related to a Major Finding: Onshore Response Equipment, Medical Monitoring and Substance Abuse Programs, Fishing Vessel Response Training, Availability of Escort Vessels During a Response	TR	
1999	1	GRSs are required to continually improve the plan and incorporate new information	SAP	18 AAC 75.425(e)(3)(J); 18 AAC 75.425(e)(1)(F)(v); 18 AAC 75.438; 18 AAC 75.445(d)(4)
1999	2	Plan holders have not sufficiently demonstrated that they maintain access to an additional barge to provide secondary storage	B	18 AAC 75.425(e); 18 AAC 75.445; AS 46.04.030(k)(3)(C)
1999	3	There is an adequate number of trained fishing vessels, but Tier III vessels must be trained to be viable response assets.	FV, TR	AS 46.04.030(k); AS 46.04.030(k)(3)(C); 18 AAC 75.425(e)(3)(F); 18 AAC 75.445(g)(4)
1999	4	Respirator training is required to prepare the Tier I fishing vessel fleet to work in fresh oil.	FV, TR	18 AAC 75.425(e)(1)(C); 18 AAC 75.445
1999	5	Plan holders need to update and modify worst case spill scenario to meet the intent of ADEC regulations.	S	18 AAC 75.425(e)(1)(F); 18 AAC 75.445(d)
1999	6	Simulations of tug performance during worst case events must be developed.	ET	18 AAC 75.425(e)(4); 18 AAC 75.445(k)
2002	1	All plan holders have adequate access to sufficient out-of-region response equipment through a registered PRAC; ADEC verified this by requiring an Out of Region Acquisition Survey from each plan holder during the plan review.	RE	AS 46.04.030(k); 18 AAC 75.430; 18 AAC 75.438
2002	2	1999 scenario workgroup provides full activation of entire range of adopted spill response strategies, usable for any size spill.	S	18 AAC 75.425(e)(1)(F); 18 AAC 75.445(c) & (d)
2002	3	Sufficient resources are available to support the levels of nearshore response operations listed in the plan	NS	18 AAC 75.425(e)(1)(F); 18 AAC 75.445(d)
2002	4	Plan holders have access to adequate numbers of personnel trained in ICS, and can properly and efficiently staff a response.	PN	18 AAC 75.425(e)(3)(C)
2002	5	TAPS trade vessel inspections by the USCG are adequate to establish compliance with state regulations.	C	18 AAC 75.007(h); 18 AAC 75.005 - 18 AAC 75.090; 18 AAC 75.007(b); 18 AAC 75.425(e)(2)(A)
2002	6	Towlines onboard escort vessels are adequate for the intended purpose and services (and are BAT).	ET	18 AAC 75.027; 18 AAC 75.425(e)(4)(A)(iii)
2002	7	Plan holders have adequately addressed BAT requirements, including escort system.	BAT, ET	18 AAC 75.425(e)(4); 18 AAC 75.445(k)
2007	1	The plan meets intent of regulations by providing adequate information about the deployment of shoreline cleanup.	RE	18 AAC 75.425(e)(1)(F)(xii); 18 AAC 75.438(a)(1)

2007	2	The plan contains adequate information to address the protection of downstream communities and sensitive areas.	SAP	18 AAC 75.310(a)
2007	3	The plan contains sufficient information to ensure that responses in darkness can be carried out.	NS	18 AAC 75.425(e)(1)(F)
2007	4	Ariel response resources identified in the plan are sufficient to meet initial response requirements.	AL	18 AAC 75.425 (e)(3)(E); 18 AAC 75.445(d)(3)
2007	5	The plan sufficiently identifies the required number of trained personnel needed to fill the positions necessary in first 72 hrs of a response.	PN	18 AAC 75.445(c); 18 AAC 75.430 - 18 AAC 75.442
2007	6	Non-technical monitoring of dispersants and in-situ burning is adequately described in the plan.	NM	18 AAC 75.425 (e)(3)(G)(i)
2007	7	The plan adequately described RMROL capabilities during a situation when response would be impaired or ineffective (I.e. severe weather).	RMROL	18 AAC 75.425(e)(3)(D)
2007	8	The plan contains sufficient response capacities for the specific purpose of protecting sensitive areas.	SAP	18 AAC 75.425(e)(3)(J); 18 AAC 75.425(e)(1)(F)(v); 18 AAC 75.445(d)(4)
2007	9	The BAT information contained in the plan meets regulatory requirements.	BAT	18 AAC 75.425(e)(4)(A)(iii); 18 AAC 75.445(k)(3)(A) through (H), 18 AAC 75.027(e)
2007	10	The plan adequately describes and accounts for resources necessary to care for wildlife during an oil spill response.	W	18 AAC 75.425(c)(1)(F)(xi)
2007	11	The quantity and types of boom identified in the plan are sufficient to satisfy regulatory requirements.	RE	18 AAC 75.425(g)(3); 18 AAC 75.438
2012	1	Sensitive area protection task forces are sufficiently equipped with fishing vessels.	SAP	18 AAC 75.425(e)(3)(J); 18 AAC 75.425(e)(1)(F)(v); 18 AAC 75.445(d)(4)
2012	2	Nearshore response systems have been/will be sufficiently field tested.	NS	18 AAC 75.425(e)(1)(F)
2012	3	There are sufficient on-site safety officers and supporting fishing vessels designated in the plan.	PN, FV	18 AAC 75.425(e)(1)(C)
2012	4	Plan holders have a system in place to ensure fishing vessels are equipped with enough trained crew.	FV, PN	18 AAC 75.445(c); 18 AAC 75.430 - 18 AAC 75.442; 18 AAC 75.438
2012	5	The plan has been adjusted to sufficiently identify the required personnel to carry out a response.	PN	18 AAC 75.445(c); 18 AAC 75.430 - 18 AAC 75.442; 18 AAC 75.438
2012	6	Concerns raised about the plan with regards to weather/sea state and booming are adequately met.	RMROL	AS 46.03.030(k)(3); 18 AAC 75.438; 18 AAC 75.425(e)(1)(F); 18 AAC 57.445(d)(5); 18 AAC 75.425(e)(3)(D); 18 AAC 75.445(f)
2012	7	A vessel decontamination task force is contained in the current plan and would sufficiently decrease hull contamination.	RE, FV	18 AAC 75.438; 18 AAC 75.425

2012	8	The 546 Scenario meets regulatory requirements for lightering.	L	18 AAC 75.027(a); 18 AAC 75.425(e)(1)(F)(viii); 18 AAC 75.438; 18 AAC 75.425(e)(1)(F)(ix)
2012	9	BAT analysis In the 2012 plan is sufficient.	BAT	18 AAC 75.425(e)(4)(A)(i) and (iii); 18 AAC 75.445(k)(3)(A) through (H); 18 AAC 75.027(e); 18 AAC 75.445(k)(2)
2012	10	The roles listed in the plan incident management team organization chart are sufficient to meet initial response needs.	PN	18 AAC 75.425(e)(3)(C)
2012	11	Eight areas were identified as needing verification through response exercises.	TR	18 AAC 75.485
2017	1	The incorporation of the crucial skimmers and buster booming systems into the plan was approved.	RE	18 AAC 75.445(g); 18 AAC 75.430 - 18 AAC 75.442; 18 AAC 75.445(k)(1)
2017	2	The removal of one open water recovery barge did not impede the plan's effectiveness.	B	46.04.030(k)(3)(B); 18 AAC 75.438
2017	3	Concerns about the barge and vessel system expressed through public comments are unfounded.	B, ET	18 AAC 75.445; 18 AAC 75.425
2017	4	The plan has sufficient lightering capabilities.	L	18 AAC 75.027; 18 AAC 75.445(d)(6)
2017	5	Regulations do not require that plan holders demonstrate their abilities under all possible environmental conditions.	RMROL	18 AAC 75.990(101); 18 AAC 75.425(e)(3)(D); 18 AAC 75.445(f)
2017	6	Concerns about decanting are unfounded.	RE, S	18 AAC 75.445(d)(7); AS 46.03.050; AS 46.04.020(b)
2017	7	Descriptions of monitoring plans for non-mechanical response are adequate and meet regulations.	NM	18 AAC 75.425(e)(3)(G)(i); 18 AAC 75.445(h)
2017	8	The referenced terminology regarding ANS crude characteristics is acceptable, but ADEC will continue to analyze oil periodically and update terminology, if needed.	OP	18 AAC 75.445(g)(5); 46.04.900(12)
2017	9	The plan holders have a system in place to ensure fishing vessels are equipped with sufficient trained crew.	FV, TR	18 AAC 75.445(c); 18 AAC 75.438
2017	10	The information listed in the plan is sufficient for addressing debris encountered during a response.	RE	18 AAC 75.445(d)(7); 18 AAC 75.425(e)(1)(F)
2017	11	The three sensitive area task forces and associated equipment are sufficient for sensitive area protection.	SAP	18 AAC 75.425(e)(3)(J); 18 AAC 75.425(e)(3)(J)(iii); 18 AAC 75.425(e)(1)(F)(v); 18 AAC 75.445(d)(4)
2017	12	BAT analyses contained in the core plan continue to meet regulatory requirements.	BAT	18 AAC 75.425(e)(4)(A)(i) and (iii); 18 AAC 75.425(e)(1)(F)(iv); 18 AAC 75.445(k)(3)(A) through (H); 18 AAC 75.990(130); 18 AAC 75.027(e); 18 AAC 75.445(g)(2); 18 AAC

				75.990(9); 18 AAC 75.445(k)(1); 18 AAC 75.445(k)(2)
2017	13	The three weather scenarios contained in the plan are sufficient to address winter weather conditions.	S	18 AAC 75.425(e)(1)(F)
2017	14	The core plan sufficiently identifies the personnel to carry out a response.	PN	18 AAC 75.445(c); 18 AAC 75.438; 18 AAC 75.425(e)(3)(C)
2017	15	While plan holders must demonstrate the ability to develop a safety plan, ADEC regulations do not specify what the plan must contain.	S	18 AAC 75.425(e)(1)(C)
2017	16	The current plan is sufficient for a response in darkness, but ADEC will continue to ensure that training focuses on operation in darkness.	TR	18 AAC 75.425(e)(1)(F)

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PRINCE WILLIAM SOUND TANKER OIL SPILL PREVENTION & CONTINGENCY PLAN

Compendium of Event Summaries (1995-2020)

Prepared for Prince William Sound Regional Citizens' Advisory Council

August 2021 DRAFT

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Abbreviations

ADEC	Alaska Department of Environmental Conservation
Alyeska	Alyeska Pipeline Service Company
BAT	Best available technology
COA	Condition of Approval (issued by ADEC in C-plan review process)
ERV	Emergency Response Vessel
ETT	Enhanced Tractor Tugs
HE	Hinchinbrook Entrance
ODPCP	Oil Discharge Prevention and Contingency Plan
OPA90	Oil Pollution Act of 1990
PRT	Prevention and Response Tug
PWS	Prince William Sound
PWSRCAC	Prince William Sound Regional Citizens' Advisory Council
RFAI	Request for Additional Information
RFP	Request for Proposal
RMROL	Realistic maximum response operating limitations
RPG	Response Planning Group (representing the PWS C-Plan holders)
SERVS	Alyeska Pipeline Service Company's Ship Escort/Response Vessel System
Tanker C-plan	Prince William Sound Crude Oil Tanker Oil Discharge Prevention and Contingency Plan
VERP	Vessel Escort and Response Plan
VSP	Voith Schneider Propulsion
USCG	U.S. Coast Guard

1995 Plan Approval

Plan holders:
ARCO Marine, Inc.; Atlantis Agency Corporation; Cambridge Tankers, Inc.; Chevron Shipping Company; First Shipmour Associates; Fourth Shipmour Associates; Intercontinental Bulktank Corporation; Interocean Management Corporation; Interocean Tanker Corporation; Juneau Tanker Corporation; Marine Transport Lines, Inc.; OMI, Inc.; Overseas Bulktank Corporation; First United Shipping Corporation; SeaRiver Maritime; Second Shipmour Associates, Inc.; Second United Shipping Corporation; Keystone Shipping; Third Shipmour Associates, Inc.; Third United Shipping Corporation; and Tesoro Alaska Petroleum Company.

Summary:
The first Tanker C-plan approval after a full review under the post-EVOS contingency plan statute (AS 46.04.030 enacted with HB 567, 1990) and the 1992 "HB 567 regulations" (18 AAC 75.005 - .090 and 75.400 - .495) was completed in 1995. In approving the plan, ADEC issued 15 findings and 9 conditions of approval (COA). At this time, the Prince William Sound Core Plan consisted of Notebooks A - G consisting of Part 1 – Response Action Plan, Part 2 – Prevention Plan (Parts 1 and 2 totaled 183 pages), and Part 3 Supplemental Information Documents (Part 3 totaled 2,937 pages).

In March 1994, the plans were formally submitted as contingency plan amendment applications under the new HB 567 regulations. After a series of additional information requests, including a large additional information request form the PWSRCAC in June 1994, ADEC declared the plans complete for review in February 1995 and requested comments from all review participants.

To assist the public in making comments, ADEC, in March 1995, issued a two-volume set of draft findings. One set of findings concerned the individual tanker plans and the other concerned the PWS "core plan" relied on by all the PWS plan holders. ADEC then held public hearings in Kodiak, Homer, Valdez, Cordova, and Anchorage. In August 1995, ADEC issued its final findings and responses to public comments and issued a proposed consistency determination under the Alaska Coastal Management Program (ACMP).

In August 1995, the Kodiak Island Borough filed an ACMP elevation request seeking a specific protection plan for the Kitoi Bay Hatchery in the contingency plans. The City of Cordova also filed an ACMP elevation request seeking a condition of approval requiring a specific protection plan for the Copper River Delta and Flats.

In September 1995, the Resource Agency Directors issued a decision on the ACMP elevation requests by the City of Cordova and the Kodiak Island Borough. As a result, COA 8 was added to the contingency plan approvals requiring oil spill trajectory analyses to determine the likelihood of oil reaching the Copper River Delta and Flats and, if established, requiring

planning of effective spill response strategies for that region. In addition, COA 9 was added to the Tesoro Alaska Petroleum contingency plan approval requiring a plan amendment evaluating the plan holder's capability to respond to a spill that might occur within Kodiak region of operation waters, or that might occur outside of these waters but migrate so as to impact the Kodiak region of operation.

In September 1995, SeaRiver Maritime, BP Oil, the City of Cordova, and the Kodiak Island Borough challenged COAs 8 and 9 of the plan approval by elevating the Director's level ACMP decision to the Commissioners of ADEC, ADNR, and ADFG. On September 27, 1995, ADEC Commissioner Gene Burden, on behalf of all of the state resource agency commissioners, issued a final consistency determination under the ACMP for ADEC's contingency plan approvals including conditions 8 and 9.

In October 1995, ADEC delivered plan approval letters to the twenty-one shippers, including eight COAs for the Prince William Sound plan holders and nine COAs in the case of Tesoro Alaska Petroleum. In November, the plan approval was challenged by several parties who requested adjudicatory hearings: Tom Copeland, Tom Lakosh, Kristin Stahl-Johnson, Cordova District Fishermen United and United Fisherman for Alaska (CDFU/UFA), BP Oil Shipping Co., SeaRiver Maritime, Inc., the City of Cordova, and the Kodiak Island Borough.

Former ADEC Commissioner Gene Burden granted adjudicatory hearing requests brought by Tom Copeland, Tom Lakosh, Kristin Stahl-Johnson, CDFU/UFA, BP Oil Shipping Co., and SeaRiver Maritime, Inc. Commissioner Burden also granted adjudicatory requests brought by the City of Cordova and Kodiak Island Borough which were subsequently withdrawn in 1995. Eight subsequent adjudicatory hearing requests were filed by the CDFU parties and granted by Commissioner Michele Brown concerning actions by ADEC on the plan holders' submittals in response to the COA placed on the 1995 contingency plan approvals. These challenges to ADEC's actions on the conditions of approval were consolidated with the 1995 contingency plan adjudication (discussed in a separate summary in this report).

Concurrent with the plan renewal, the shippers had initiated a Prince William Sound risk assessment with input and funding from PWSRCAC.

Supporting Documents:

ADEC. (1995, August) Prince William Sound Oil Tanker Contingency Plan Review: Findings Document and Response to Comments.
651.410.950801.pdf

Alaska Department of Law. (1997) Appendix A: A Brief History of Oil Discharge Prevention and Contingency Planning Since the Exxon Valdez Oil Spill, Opposition to Petition for Review, CDFU et. al. v. Alaska Department of Environmental Conservation.
S07987

APSC. (1997) Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan (Notebooks A-G).

Burden, G. (1995, September 27) Gene Burden, ADEC Commissioner, to Hersh Kohut, Arco Marine, Inc., re: Commissioner Level Consistency Determination for Marine Oil Spill Response Plan Oil Discharge Prevention and Contingency Plan, Dated March 25, 1994 – Final Action, September 27, 1995.
651.300.950907DECdftappvl.pdf

Chapple, T. (1995, March 29) Tom Chapple, ADEC, to Bill Walker, PWS Regional Citizens' Advisory Council, re: Prince William Sound Tanker Contingency Plan, Draft Findings, March 29, 1995.
651.300.950329.ADECdftFnds.pdf

Chapple, T. (1995, August 11) Tom Chapple, ADEC, to H.E. Stanley, re: Proposed Decision packet for Prince William Sound Tanker Contingency Plans, August 11, 1995.
651.300.950811.ADEC prpsdCpln.pdf

Chapple, T. (1995, October 2) Tom Chapple, ADEC, to Mark Necessary, Tesoro Alaska Petroleum, Inc., re: Approval Letter, October 2, 1995. (This letter was the same as that provided to the other plan holders, with the addition of a ninth condition of approval requiring information about Tesoro's ability to respond to a spill in the Kodiak region of operation.)
651.300.951003.DECplnAppvl.pdf

Fredriksson, K. (1995, September 7) Kurt Fredriksson, ADEC, to Mark Necessary, Tesoro Petroleum Company, re: Proposed Director Level Consistency Determination for Vessel Operations Oil Discharge and Contingency Plan dated June 15, 1994, September 7, 1995.
651.300.950907DECdftappvl.pdf

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PWSRCAC Comments:

Date	Communication	Contents	Doc Management
June 1994	Letter to ADEC	Round 1 RFAI (209 pp)	651.431.940623.Cmts&RFAITkrPlan.pdf
April 1995	Public Summary	Major Issues on PWS ODPCP and ADEC Draft Findings Document (45 pp)	651.431.950426.RCACtkrCPissues.pdf
May 1995	Letter to ADEC	PWS ODPCP and ADEC Draft Findings Document (52 pp)	651.105.950519.TkrDraftADEC.pdf
May 1995	Letter to ADEC	PWS ODPCP and ADEC Draft Findings Document (vol. 2) (158 pp)	651.105.950531.TNKcplanCmnt.pdf
June 1995	Letter to Atlantis Agency Corporation	PWS ODPCP and ADEC Draft Findings (24 pp)	651.105.950605.TkrCPInCmnts.pdf
August 1996	Letter to ADEC	RPG Copper River Submittal (3 pp)	651.105.960830.RPGCopperRiv.pdf

1996 Near Shore Response Plan (1995 COA 3)

Plan holders:
ARCO Marine, Inc.; Atlantis Agency Corporation; Cambridge Tankers, Inc.; Chevron Shipping Company; First Shipmour Associates; Fourth Shipmour Associates; Intercontinental Bulktank Corporation; Interocean Management Corporation; Interocean Tanker Corporation; Juneau Tanker Corporation; Marine Transport Lines, Inc.; OMI, Inc.; Overseas Bulktank Corporation; First United Shipping Corporation; SeaRiver Maritime; Second Shipmour Associates, Inc.; Second United Shipping Corporation; Keystone Shipping; Third Shipmour Associates, Inc.; Third United Shipping Corporation; and Tesoro Alaska Petroleum Company.

Summary:
In the 1995 plan approval, ADEC required in COA 3 a report demonstrating that the Near Shore Response Plan met four specific criteria in order to evaluate the effective use of near shore skimmers, the range of travel of mini-barges which serve response vessels/skimmers, and turn-around times for minibarges after they lighter to Barge 500-2.

On December 14, 1995, the Response Planning Group submitted an analysis to comply with Condition 3. The information was sent out for public review and comments were received from CDFU, Tom Lakosh, and PWSRCAC.

On September 20, 1996, ADEC issued a decision letter and required that the plan holders contract through SERVS with an additional 53 fishing vessels to provide for the in-region task forces' timely arrival at the scene of a discharge incident. ADEC required plan holders to make available an additional barge for lightering oil and water collected by the near shore task forces to allow for operations in more than one geographic area. The decision was affirmed in the 1998 adjudicatory hearing.

Supporting Documents:

ADEC. (1995, August) Prince William Sound Oil Tanker Contingency Plan Review: Findings Document and Response to Comments. (950814 PWS Tanker Plan Final Findings).
651.410.950801.pdf

Chapple, T. (1995, October 2) Tom Chapple to Hersh Kohut, Arco Marine, Inc., October 2, 1995 [Approval Letter].
651.300.951003.DECplnAppvl.pdf

Yates, H.W. (1995, December 14) H.W. Yates, SeaRiver Maritime, on behalf of RPG, to Tom Chapple, ADEC, re: PWSODP&CP, ADEC Final Approval Condition No. 3.
657.300.951214.SeaRNearshor.pdf

Chapple, T. (1996, Sept 20) Tom Chapple, ADEC to Hersch Kohut, ARCO Marine, Inc., Decision Regarding Condition 3 of Prince William Sound Contingency Plan Approval.

651.300.960920.ADECCond3PWS.pdf

Lisiecki, S. (1997, January 13) Simon Lisiecki, BP Oil Company, on behalf of the RPG, to Tom Chapple, ADEC, re: Follow-up to ADEC's Decision regarding Condition 3 of the Prince William Sound Tanker Contingency Plan Approval.
651.300.970113.BPtkrCond3.pdf

Provant, S. (1997, May 27) Steve Provant, ADEC, to Simon Lisiecki, BP Oil Company, on behalf of the RPG, re: Response Planning Group Letter of January 13, 1997, concerning contingency plan approval condition #3.
651.300.970527.CPlanAppCon3.pdf

SERVS (1997, August 25) Fishing Vessel Program.
703.410.970825.SERVSstatus

Johnson, R. (1998, August 14) Adjudication of Prince William Sound Oil Tanker Contingency Plans Approved October 2, 1995, and Consolidated Matters, Final Decision by Deciding Officer 1995 PWS Tanker C-plans and Consolidated Matters Final Decision by Deciding Officer August 1998.pdf

1996 ESAs for Prince William Sound, Kodiak, and Kenai Peninsula areas (1995 COA 5)

Plan holders:
ARCO Marine, Inc.; Atlantis Agency Corporation; Cambridge Tankers, Inc.; Chevron Shipping Company; First Shipmour Associates; Fourth Shipmour Associates; Intercontinental Bulktank Corporation; Interocean Management Corporation; Interocean Tanker Corporation; Juneau Tanker Corporation; Marine Transport Lines, Inc.; OMI, Inc.; Overseas Bulktank Corporation; First United Shipping Corporation; SeaRiver Maritime; Second Shipmour Associates, Inc.; Second United Shipping Corporation; Keystone Shipping; Third Shipmour Associates, Inc.; Third United Shipping Corporation; and Tesoro Alaska Petroleum Company.

Summary:
In its approval of the 1995 plan, ADEC required in COA 5 identification of a final date for the completion of the identification of sensitive areas and areas of public concern for the Prince William Sound, Kodiak, and Kenai Peninsula areas.

In November 1995, the RPG, through SERVS and their contractor EMCON Alaska, provided ADEC with an updated Geographical Resource Database (GRD) which include data on sensitive areas and areas of public concern transmitted from local, state, and federal resource agencies. The updated GRD included additional data on sensitive areas and areas of public concern for PWS, Kenai Peninsula, and Kodiak Island.

After consultation with Alaska Department of Fish and Game, ADEC verified the accuracy of the data included in the updated GRD and in a letter dated August 1, 1996, they determined that the requirements of 1995 COA 5 had been satisfied.

Supporting documents:

ADEC. (1995, August) Prince William Sound Oil Tanker Contingency Plan Review: Findings Document and Response to Comments. (950814 PWS Tanker Plan Final Findings).
651.410.950801.pdf

Chapple, T. (1995, October 2) Tom Chapple to Hersh Kohut, Arco Marine, Inc., October 2, 1995 [Approval Letter].
651.300.951003.DECplnAppvl.pdf

Chapple, T. (1996, August 1) Tom Chapple to Hersh Kohut, Arco Marine, Inc., Status "Conditions of Approval" for Prince William Sound Tankers Oil Discharge Prevention and Contingency Plan
651.300.960801.PWStkrODPCP

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1996 Supplemental Data for PWS Air Logistics Study and Water Cargo Transportation into Kodiak and Cordova (1995 COA 4)

Plan holders:
ARCO Marine, Inc.; Atlantis Agency Corporation; Cambridge Tankers, Inc.; Chevron Shipping Company; First Shipmour Associates;
Fourth Shipmour Associates;Intercontinental Bulktank Corporation; Interocean Management Corporation; Interocean Tanker Corporation; Juneau Tanker Corporation; Marine Transport Lines, Inc.; OMI, Inc.; Overseas Bulktank Corporation; First United Shipping Corporation; SeaRiver Maritime; Second Shipmour Associates, Inc.; Second United Shipping Corporation; Keystone Shipping; Third Shipmour Associates, Inc.; Third United Shipping Corporation; and Tesoro Alaska Petroleum Company.

Summary:
Condition of approval 4 of the 1995 plan renewal required the plan holders to provide supplemental data to the PWS Air Logistics Study that assessed air cargo transportation availability during peak holiday seasons and water cargo transportation into Kodiak and Cordova, both direct from the Lower 48 and from the Alaska mainland.

On March 8, 1996, the RPG submitted a Prince William Sound logistics report prepared by Lyndon Logistic for ARCO Marine, Inc., which assessed air and water logistic support spill response capabilities in PWS. Assessment of available capacity was made during a holiday time period. This report utilized basic concepts and strategies set forth in the 1992 Air Logistic/Air Transport Availability Exercise Report completed by ARCO Aviation and Materials groups.

In a letter dated August 1, 1996, ADEC determined that equipment necessary for response to a major oil spill could be delivered to Kodiak by air freight during peak holiday season within the required time frames. Water transportation to Kodiak was available to provide primary or secondary support for equipment delivery. Based on the information provided by the RPG, ADEC determined that the requirements of COA 4 had been satisfied.

In an August 1, 1996, letter, ADEC also noted that, in addition to the contingency plans approved for individual tankers operating in PWS, it had entered into an agreement with the Kodiak Island Borough and the majority of plan holders to work with the U.S. Coast Guard to develop a unified State and federal Sub-Area Contingency Plan (Sub-Area Plan) for Kodiak Island which identified (1) delivery of spill equipment to the Kodiak Island Borough in adverse weather and (2) logistical considerations of delivering equipment to the Kodiak Island Borough by air and water.

Supporting Documents:

ADEC. (1995, August) Prince William Sound Oil Tanker Contingency Plan Review: Findings Document and Response to Comments. (950814 PWS Tanker Plan Final Findings).
651.410.950801.pdf

Chapple, T. (1995, October 2) Tom Chapple to Hersh Kohut, Arco Marine, Inc., October 2, 1995 [Approval Letter].
651.300.951003.DECplnAppvl.pdf

Chapple, T. (1996, August 1) Tom Chapple to Hersh Kohut, Arco Marine, Inc., Status "Conditions of Approval" for Prince William Sound Tankers Oil Discharge Prevention and Contingency Plan
651.300.960801.PWStkrODPCP

1996 Wildlife Training and Otter Hospital Compliance Schedule (1995 COA 7)

Plan holders:
ARCO Marine, Inc.; Atlantis Agency Corporation; Cambridge Tankers, Inc.; Chevron Shipping Company; First Shipmour Associates; Fourth Shipmour Associates; Intercontinental Bulktank Corporation; Interocean Management Corporation; Interocean Tanker Corporation; Juneau Tanker Corporation; Marine Transport Lines, Inc.; OMI, Inc.; Overseas Bulktank Corporation; First United Shipping Corporation; SeaRiver Maritime; Second Shipmour Associates, Inc.; Second United Shipping Corporation; Keystone Shipping; Third Shipmour Associates, Inc.; Third United Shipping Corporation; and Tesoro Alaska Petroleum Company.

Summary:
In its 1995 plan approval, ADEC required in COA 7 a compliance schedule for completing the development of training programs for wildlife-handling personnel by November 15, 1995. The training of the current wildlife-handling personnel was to be completed no later than February 15, 1996. Finally, the otter treatment facility in Valdez was to be completed according plan specifications by December 31, 1995.

On February 14, 1996, the RPG submitted the wildlife training courses offered in the SERVS training calendar at the Prince William Sound Community College. The training was offered on an annual basis and records of personnel receiving the training were maintained at SERVS. This training included wildlife rehabilitation specialty courses offered by wildlife research organizations, sponsored a major international wildlife conference for the exchange of technical information and advanced training, and offered a specialty course for oiled otter rehabilitation.

APSC/SERVS also set up the completed Otter Rehabilitation Center which was inspected on January 4, 1996, by ADEC, ADFG, and otter rehabilitation specialists.

In a letter dated August 1, 1996, ADEC determined, after consultation with ADFG, that (1) the training program would adequately prepare wildlife response teams; (2) personnel were trained according to the program; and (3) the otter treatment center in Valdez had been completed and found to be adequate. Based on its review of the training program and inspection of the otter treatment facility, ADEC determined that the requirements of 1995 COA 7 had been satisfied.

Supporting Documents:

ADEC. (1995) Prince William Sound Oil Tanker Contingency Plan Review: Findings Document and Response to Comments.
651.410.950801.pdf

Chapple, T. (1995, October 2) Tom Chapple, ADEC, to Hersh Kohut, Arco Marine, Inc., re: plan approval, October 2, 1995.
651.300.951003.DECplnAppvl.pdf

Chapple, T. (1996, August 1) Tom Chapple, ADEC, to Hersh Kohut, Arco Marine, Inc., re: Status "Conditions of Approval" for Prince William Sound Tankers Oil Discharge Prevention and Contingency Plan, August 1, 1996.
651.300.960801.PWStkrODPCP

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1996 Recreational Areas in PWS (1995 COA 6)

Plan holders:
ARCO Marine, Inc.; Atlantis Agency Corporation; Cambridge Tankers, Inc.; Chevron Shipping Company; First Shipmour Associates; Fourth Shipmour Associates; Intercontinental Bulktank Corporation; Interocean Management Corporation; Interocean Tanker Corporation; Juneau Tanker Corporation; Marine Transport Lines, Inc.; OMI, Inc.; Overseas Bulktank Corporation; First United Shipping Corporation; SeaRiver Maritime; Second Shipmour Associates, Inc.; Second United Shipping Corporation; Keystone Shipping; Third Shipmour Associates, Inc.; Third United Shipping Corporation; and Tesoro Alaska Petroleum Company.

Summary:
In its 1995 plan approval, ADEC required in COA 6 amendment of the plan to include 1) identification of primary recreational use areas within Prince William Sound, 2) notification of the Alaska Wilderness Recreational and Tourism Association of major spill events, and 3) provisions to call attention to the need for awareness that recreational users may be isolated by a major spill event.

On February 14, 1996, the RPG submitted revisions to Supplemental Information Document #13 which identified primary recreational use areas, notification procedures, responder training to minimize intrusion, and a spill notification checklist. On February 21, 1996, the RPG provided, through SERVS and EMCON Alaska, an update to the GRD which included additional data on recreational use areas for Prince William Sound.

In a letter dated August 1, 1996, ADEC determined that the requirements of condition 6 had been satisfied.

Supporting Documents:

ADEC. (1995, August) Prince William Sound Oil Tanker Contingency Plan Review: Findings Document and Response to Comments. (950814 PWS Tanker Plan Final Findings).
651.410.950801.pdf

Chapple, T. (1995, October 2) Tom Chapple to Hersh Kohut, Arco Marine, Inc., October 2, 1995 [Approval Letter].
651.300.951003.DECplnAppvl.pdf

Chapple, T. (1996, August 1) Tom Chapple to Hersh Kohut, Arco Marine, Inc., Status "Conditions of Approval" for Prince William Sound Tankers Oil Discharge Prevention and Contingency Plan.
651.300.960801.PWStkrODPCP

1997 BAT Regulation Revisions

Plan holders: n/a

Summary:
When the oil spill statues at AS 46.04.030 were enacted, the Alaska Legislature did not define the term "best available technology." Instead, the Legislature directed ADEC to establish regulations to carry out the statutory BAT requirement among other new requirements included in the 1994 statutory changes.

In 1997, the requirement to address BAT in oil discharge prevention and contingency plans was included in regulations at 18 AAC 75.425 (e)(3)(4) Part 4 – Best Available Technology Review. A BAT review was to include communications, source control procedures, trajectory analyses and forecasts, and wildlife capture, treatment and release procedures. In addition, for tank vessels, the review was to include measures to assure prompt detection of an oil discharge.

This regulation, in turn, referenced 18 AAC 75.445 (k) for criteria on which the BAT review in the plan must be evaluated:

> (k) Best Available Technology Review. For the purposes of 18 AAC 75.425(e)(4), the department will review a plan and make a best available technology determination using the following criteria, as applicable:
> (1) Technology used for oil discharge containment, storage, transfer, and cleanup to satisfy a response planning standard in 18 AAC 75.430 - 18 AAC 75.442 will be considered best available technology if the technology of the applicant's oil discharge response system as a whole is appropriate and reliable for the intended use as well as the magnitude of the applicable response planning standard;
> (2) Technology that complies with the performance standards of 18 AAC 75.005 – 18 AAC 75.080 and that is not subject to a best available technology review under 19 AAC 75.425(e) (4)(A), will be considered best available technology.
> (3) Technology identified under 18 AAC 75.425 (e)(4)(A) will be evaluated using the following criteria, if applicable:
>
> > (A)…whether each technology is the best in use in other similar situations and is available for use by the applicant;
> > (B) whether each technology is transferable to the applicant's operations;
> > (C) whether there is a reasonable expectation each technology will provide increased spill prevention or other environmental benefits;
> > (D) the cost to the applicant of achieving best available technology, including consideration of that cost relative to the remaining years of service of the technology in use by the applicant;
> > (E) the age and condition of the technology in use by the applicant;
> > (F) whether each technology is compatible with existing operations and technologies in use by the applicant;
> > (G) the practical feasibility of each technology in terms of engineering and other operational aspects; and

(H) whether other environmental impacts of each technology, such as air, land, water pollution, and energy requirements, offset any anticipated environmental benefits.

The BAT regulations have remained unchanged since codified in 1997.

1998 Adjudicatory Hearing re: 1995 Plan Approval on Phasing and Copper River

Summary:
ADEC's formal approvals of the oil discharge prevention and contingency plans on October 2, 1995, along with conditions placed on those approvals, resulted in the filing of adjudicatory hearing requests from several different parties. Former ADEC Commissioner Gene Burden granted adjudicatory hearing requests brought by Tom Copeland, Tom Lakosh, Kristin Stahl-Johnson, Cordova District Fishermen United and United Fisherman for Alaska (collectively CDFU), and BP Oil Shipping Co. and SeaRiver Maritime, Inc. (Shippers). Commissioner Burden also granted adjudicatory requests brought by the City of Cordova and the Kodiak Island Borough which were subsequently withdrawn in 1995. The Shippers adjudicatory hearing requests were later settled and withdrawn.

Eight subsequent adjudicatory hearing requests were filed by CDFU and granted by Commissioner Michele Brown concerning actions by ADEC on the plan holders' submittals in response to the COAs placed on the 1995 contingency plan approvals. These challenges to ADEC's actions on the COAs were consolidated with the 1995 contingency plan adjudication A complete history of the proceeding is summarized in the Final Decision, dated August 14, 1998, issued by attorney Robert M. Johnson who acted as the Deciding Officer under a delegation issued by then ADEC Commissioner Michele Brown. The purpose of this discussion is not to summarize the history of the adjudication but rather to identify the Deciding Officer's rulings that had subsequent impacts on the tanker plans themselves and how ADEC addressed later contingency plan renewals.

Phasing in Conditions of Approval
The 1995 Contingency Plan approvals included eight conditions of approval (nine in the case of the Tesoro Alaska Petroleum plan). CDFU challenged ADEC's conditions of approval as illegal "phasing" or deferral of decision on major portions of the plans, and argued that even if the conditions were permissible, that the plan holders' submissions to comply with the conditions must be subject to formal ADEC review procedures and a new Alaska Coastal Management Program consistency determination.1

The Deciding Officer concluded, as a matter of law, that "to-be-determined" conditions of approval, if data is justifiably not yet complete and provided the process is not used to circumvent public input rights, may be deemed appropriate conditions of approval under ADEC's authority under AS 46.04.03(e) and 18 AAC 75.455(i).2 He concluded that the decision to impose each condition must be considered as a factual matter to determine whether ADEC had or should have had sufficient data to avoid a "to-be-determined condition." In the context of 1995 COA 2 involving improvements to the tanker escort system, the Deciding Officer concluded that ADEC did have factual grounds to impose to-be-determined escort improvements through the condition of approval given ADEC's lack of complete information at the time of the plan approval.3 In the context of 1995 COA 7 involving protection strategies for

the Kodiak Region of Operation, the Deciding Officer upheld ADEC's imposition of that condition under the review standards provided in 18 AAC 75.415.

The Deciding Officer also concluded that when ADEC imposes a permissible "to-be-determined" condition of approval that ADEC must then use the public review procedures applicable to contingency plan renewals in order to provide the public with the ability to review and comment on the submissions provided to satisfy the condition of approval.4 Subsequent to the Deciding Officer's Final Decision in August 2018, ADEC has imposed COAs that fall into one of three categories using the framework of his Phasing decisions: 1) compliance conditions that do not require subsequent public review; 2) specific approval requirements mandating that specific language be incorporated into a plan that do not require subsequent public review, or 3) appropriate "to-be-determined" conditions requiring submittals that must then undergo public review as a major amendment to the contingency plans.

Protection of the Copper River Delta and Flats

CDFU contended that the contingency plans must require fully planned, pre-positioned response for the Copper River Delta and Flats as an environmentally sensitive area under ADEC's regulations because it was located within the Prince William Sound region of operation. The Deciding Officer rejected the legal contentions of CDFU concerning the necessity for a fully planned, pre-positioned response in a plan holder's region of operation irrespective of whether an area is likely to be affected by a discharge.5

ADEC had required as part of 1995 COA 8 that the PWS plan holders perform and submit oil spill trajectory analyses for two hypothetical spill events inside state waters to determine the likelihood of oil impacting the Copper River Delta or Flats from two locations within Prince William Sound. ADEC subsequently concluded that the plan holders' submittal required by 1995 COA 8 did not satisfy the condition of approval because the submitted information was insufficient to render a predictive likelihood determination.6 ADEC then required, as part of the 1998 contingency plan renewal application, additional modeling as well as response strategies for locations such as Hawkings Island Cutoff that could prevent oil migration from the central sound to the Copper River Delta and Flats.7 The Deciding Officer heard testimony on the Copper River Delta and Flats issue during the adjudicatory hearing and upheld ADEC's decision imposing 1995 COA 8 and its subsequent decision concerning the plan holders' submission under 1995 COA 8.

Prior to the hearing, ADEC, the Shippers, and CDFU reached a settlement of the Copper River Delta and Flats contingency plan issue with the Shippers agreeing to develop geographical response plan strategies for those areas that were then to be incorporated into the Prince William Sound Subarea Plan.8 This effort was the precursor to later efforts to develop Geographical Response Strategies (GRSs) for many areas in PWS, the Kenai Peninsula, and Kodiak Regions that were then incorporated in Subarea Plans for use by plan holders.

Supporting Documents:

Kodiak Island Borough, ADEC, ARCO Marine, Inc. and BP Oil Shipping Company, USA (as agent for and on behalf of Keystone Shipping; lnterocean Management Corp., Atlantic Agency, OMI Corp., Marine Transport Lines, First Shipmore, Second Shipmore, Third Shipmore, Fourth Shipmore, First United, Second United, Third United, Overseas Bulktank, Juneau Tanker Corp., Cambridge Tankers, lnterocean Tanker Corp., and International Bulktank Corp.); West Coast Shipping, and Tesoro Alaska Petroleum, Settlement Agreement June 12, 1996
651.300.960812.KIBSettlement

Johnson, R. (1998, February 3) Adjudication of Prince Adjudication of Prince William Sound Oil Tanker Contingency Plans Approved October 2, 1995 and Consolidated Matters, Order Respecting Motions for Summary Judgment Relating to Escort Tugs and BAT: Issue "B" (Docket Nos. 491 and 550)
Order Respecting Mtns for Summary Judgment Relating to Escort Tugs and Bat Issue B

Johnson, R. (1998, February 9) Adjudication of Prince Adjudication of Prince William Sound Oil Tanker Contingency Plans Approved October 2, 1995 and Consolidated Matters, Order Respecting Motions for Summary Judgment Relating to Phasing: Issue "P" (Docket Nos. 479 and 545)
Order Respecting Mtns for Summary Judgment Relating to Phasing Issue P

Cordova District Fishermen United, United Fishermen of Alaska, Alaska Department of Environmental Conservation, ARCO Marine Inc., SeaRiver Maritime Inc., BP Oil Shipping Company, (1998, February 25) "Settlement Agreement for PWS Tanker Contingency Plans" and Cordova District Fishermen United, United Fishermen of Alaska, and Alaska Department of Environmental Conservation, (1998, February 12) "Settlement Agreement for PWS Tanker Contingency Plan Appeals"
651.110.980224.TankerStlAgt.pdf).

Johnson, R. (1998, August 14) Adjudication of Prince William Sound Oil Tanker Contingency Plans Approved October 2, 1995 and Consolidated Matters, Final Decision by Deciding Officer 1995 PWS Tanker C-plans and Consolidated Matters Final Decision by Deciding Officer August 1998.pdf

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1998 Tanker Escort Improvements (1995 COA 2)

Plan holders:
ARCO Marine, Inc.; Atlantis Agency Corporation; Cambridge Tankers, Inc.; Chevron Shipping Company; First Shipmour Associates; Fourth Shipmour Associates; Intercontinental Bulktank Corporation; Interocean Management Corporation; Interocean Tanker Corporation; Juneau Tanker Corporation; Marine Transport Lines, Inc.; OMI, Inc.; Overseas Bulktank Corporation; First United Shipping Corporation; SeaRiver Maritime; Second Shipmour Associates, Inc.; Second United Shipping Corporation; Keystone Shipping; Third Shipmour Associates, Inc.; Third United Shipping Corporation; and Tesoro Alaska Petroleum Company.

Summary:
In its approval of the 1995 plan, ADEC required in COA 2 that the plan holders assure the use of BAT through (a) a proposal for interim improvements to the tanker escort system during the winter months for tankers over 190,000 DWT while transiting through the Valdez Narrows, and (b) a proposal for escort system improvements for the duration of the plan approval within 60 days after issuance of the Prince William Sound Risk Assessment final report.

In December 1996, the Prince William Sound Risk Assessment was completed. The risk assessment concluded that the escort system was the single most effective risk reduction measure in PWS.

In early 1997, ADEC promulgated new regulations, adding the requirement for a BAT review of certain aspects of the contingency plans, including the escort system. Prior to this, there had been a statutory requirement for BAT but no guidance in regulation as to how to implement the statute. The new regulations took effect as the RPG was working to address 1995 COA 2a and 2b.

Following completion of the risk assessment in 1997, the RPG convened an Enhanced Escort System Task Force to identify, test, and develop appropriate tug technology for the PWS escort system to meet the requirements of COA 2b of the 1995 plan approval.

In February 1997, the RPG reported to ADEC on their efforts to comply with COA 2b. The RPG had formed sub-committees to implement the findings of the risk assessment and was committed to the following escort tug enhancements:

1. Charter a high horsepower tug for service at Hinchinbrook Entrance (the Gulf Service);
2. Conduct sea trials of the Crowley Protector Class tugs (if they performed better than the existing escort tugs, an arrangement would be made to replace the existing tugs with the Protector Class tugs);
3. Develop a plan to upgrade the current tug fleet and implement the plan with at least two new tugs in service by the year 2000; and
4. Revise tug operating procedures.

In March 1997, the RPG also reported to ADEC on the process they had used to determine the requirements for an escort tug to meet the State's newly-promulgated BAT regulations. They stated that PWS stakeholders, including ADEC, were consulted or had participated in extensive studies, performance trials, and field trips to observe various tugs in operation. The RPG concluded that ETTs had the capabilities best suited to the needs of the escort duties in PWS. They developed request for proposal (RFP) criteria and specifications for tugs that included requiring VSP. Separate performance criteria were developed for Valdez Narrows, Valdez Arm, and PWS.

The RPG also reported on their program to further enhance the escort system. The first Protector Class tug had been brought into PWS in December 1996 as an interim measure, but simulations and performance trials led them to conclude that the Protector Class did not improve the overall safety of the escort system. (Protector class tugs were approved as escorts for smaller tankers only.) These trials did lead to the development of protocols for trials to evaluate the performance of tugs and maneuvers to assist tankers in distress.

The RPG requested that ADEC determine whether a tug meeting certain performance criterion (spelled out in the March 1997 letter) would meet the State's BAT requirement at 18 ACC 75.445(k)(3). Once that determination was received, the RPG indicated that they would begin a procurement process that would result in two new tugs being delivered no later than the end of 1999.

The RPG included the draft RFP and draft description of the proposed enhanced escort system with their March 1997 letter to ADEC and shared these with PWSRCAC as well.

On April 9, 1997, ADEC replied to the RPG and approved performance criteria for the RFP as meeting the State's BAT requirement, with the reservation that if the chosen tug design did not have VSP, an additional approval would be necessary. ADEC also approved the description of the enhanced escort system. On May 2, 1997, ADEC issued a formal BAT decision for Condition 2b, indicating that the plans submitted by the RPG met the State's regulations at 18 AAC 75.425(e)(4) and 18 AAC 75.445(k)(1-2). Finally, ADEC approved the rescue tug Gulf Service as BAT for the escort at Hinchinbrook Entrance on an interim basis for the immediate term of the 1995 plan approval.

On May 21, 1997, the USCG Commander of the 17th District sent a memorandum to the Commanding Officer of the Valdez Marine Safety Office stating that the federal regulations (33 CFR 168) did not preclude a "sentinel" tug escort (USCG, 1997), so the sentinel escort proposed by the RPG was found to be in compliance with USCG regulations.

In October 6, 2017, the RPG presented an Enhanced Escort System Proposal including sentinel-based escort in the central Sound. In November 1997, ADEC issued a public notice to approve changes to the escort system in fulfillment of condition 2a.

On May 6, 1998, ADEC completed its review of public comments, tug performance simulations, actual sea trials information and proposed changes to the escort system. The results of ADEC's

analysis were contained in Response to Comments on Interim Tug Escort Improvements (April 22, 1998) and Proposed Sentinel Escort System and the Best Available Technology Support Document (April 22, 1998). As a result, ADEC approved incorporation of the Protector Class tugs into the escort system as a formal plan amendment with rights to request an adjudicatory hearing.

On October 5, 1998, ADEC concluded that the interim escort improvement requirements of COA 2a had been satisfied after reviewing the September 1 version of the VERP and a letter from RPG dated September 30, 1998.

Supporting Documents:

Atkinson, J. (1995). Report of Investigation into Alternatives Available by the Winter of 1995-96 That Could Enhance the Ability to Save Disabled Tankers of Over 190,000 DWT in Valdez Narrows. Marine Consultant, Charlottesville, VA. June 15.
801.410.959615.SaveDisTank.pdf

ADEC. (1995) Prince William Sound Oil Tanker Contingency Plan Review: Findings Document and Response to Comments.
651.410.950801.pdf

Chapple, T. (1995, October 2) Tom Chapple, ADEC, to Hersh Kohut, Arco Marine, Inc., re: Approval Letter, October 2, 1995.
651.300.951003.DECplnAppvl.pdf

Chapple, T. (1997). Tom Chapple, ADEC, to Contingency Plan Holders and Interested Parties re: Adoption of Regulations for Best Available Technology, January 21, 1997.
661.300.970121.ADECbatRegs.pdf

Mitchell, V., Carney, P., Randall, G., Jones, T., and Hyce, L. (2001). Escort Tug Analysis for Oil Tankships in Prince William Sound and the Gulf of Alaska. Hampton Roads Section of The Society of Naval Architects and Marine Engineers (SNAME). Hampton, VI. June 1.
801.107.010414.Escorttugan.pdf

Lisiecki, S. (1997, February 5). Simon Lisiecki, BP, to Tom Chapple, ADEC, re: State of Alaska Approval for Oil Discharge Prevention and Contingency Plan, Terms and Conditions – 2b, February 5, 1997.
651.300.970205BPtkrCond2d.pdf

Lisiecki, S. (1997, March 31). Simon Lisiecki, BP, to Tom Chapple, ADEC, re: State of Alaska Approval for Oil Discharge Prevention and Contingency Plan, Terms and Conditions 2 (b), March 31, 1997.
651.300.970331.BPCplanCmplc.pdf

Jones, T. (1997, April 7). Protector Class Tug Trials: January/February 1997 Preliminary Report. Prepared for PWSRCAC Oil Spill Prevention and Response Committee; Port Operations and Vessel Traffic Committee.
801.431.970407.ProtectorV2.pdf

Chapple, T. (1997, April 9). Tom Chapple, ADEC, BP on behalf of the Prince William Sound Tanker Plan Holders re: Application of Best Available Technology Requirements for Escort Vessels: Condition 2b of October 2, 1995 Prince William Sound Tanker Contingency Plan Approval, April 9, 1997.
661.300.970409.BATcplanCon2.pdf

Alaska Department of Environmental Conservation (ADEC). (1997, May 2). Best Available Technology Decision for Condition 2b PWS Tanker Contingency Plan Approvals: Technical Support Document.
651.410.970502.ADEC2bBATdoc.pdf

United States Coast Guard (USCG). (1997, May 21). Commander, District 17, to USCG Commanding Officer Marine Safety Office, Valdez, re: Change to Tanker Escort Regulations for Prince William Sound, May 21, 1997.
801.300.970521.ChgsTkrEscPWS.pdf

Lisiecki, S., (2017, October 6) Simon Lisiecki, BP Oil Company on behalf of the RPG, to Tom Chapple, ADEC, re: Enhanced Escort System, October 6, 2017.
801.300.971006.BPEnhEscSyst.pdf

Alaska Department of Environmental Conservation. (2017) Public Notice Enhanced Escort Proposal for Condition 2a of Department's October 2, 1995 Oil Spill Discharge Prevention and Contingency Plan approvals, Summary of Proposed Changes to Escorting of Oil Tankers in Prince William Sound, Public Review Draft, November 7, 1997, Technical Support Document.
651.410.971107.BATcond2CPapp.pdf and November 1997 Public Notice on 1995 COA 2A Escort Changes.pdf

Chapple, T. (1998, May 6) Tom Chapple, ADEC, to Patrick Carney, on behalf of PWS Plan Holders, re: Application of Best Available Technology Requirements for Interim Escort Improvements; Condition 2a of October 2, 1995 Prince William Sound Tanker Contingency Plan Approval, May 6, 1998.
651.300.980506.DECtkrCond2a.pdf and DEC Decision Document App of Best Available Technology Requirements for Interim Escort Improvements 5-6-1998.pdf

Provant, S. (1998, October 5). Steve Provant, ADEC, to Patrick Carney, on behalf of PWS Plan Holders, re: Prince William Sound Tanker Oil Discharge Prevention and Contingence Plans, October 2, 1995 Condition of Approval 2a, October, 5, 1998.
651.300.981005.ADECtkrCOA2a.pdf

1999 Plan Renewal

Plan holders:
Alaska Tanker Co., ARCO Marine, Inc., Chevron Shipping Co., SeaRiver Maritime Inc., Tesoro Alaska Petroleum Co.

Summary:
This was the second renewal under the post-EVOS contingency plan statute and the 1992 "HB 567 regulations". At this time, the plan consisted of a Response Action Plan, Notification Procedures, Prevention Plan, Response Strategies, Training and Drills, Best Available Technology, Vessel Specific and Geographic Specific Appendices, and the PWS Core Plan. The PWS Core Plan consisted of two volumes: Volume 1 containing Part 1 – Response Action Plan and Part 2 – Prevention Plan (215 pages) and Volume 2 containing Part 3 – Supplemental Information Documents and Part 4 – Best Available Technology (854 pages). Significant portions were updated since 1995 and the plans were reorganized and consolidated to make them more user friendly.

The plan was submitted for approval in July 1998. In addition to the written RFAI process, ADEC also held community workshops and public hearings in Valdez, Anchorage, Cordova, Kodiak, and Seward. The communities of Homer and Seldovia were linked into the Anchorage hearing. ADEC issued two short-term extensions of its 1995 contingency plan approvals in order to complete the public review.

In November 1999, ADEC approved the plan with findings on six major Issues and 44 specific responses to comments. ADEC also included 10 conditions of approval (COA) in its approval letter.

In December 1999, conditions 3-9 of the plan approval were challenged by ARCO Marine, SeaRiver Maritime, and BP Oil Shipping Co. (on behalf of Alaska Tanker Co.). Tom Lakosh also sought an adjudicatory hearing on the plan approval. The shippers' hearing requests were withdrawn in March 2000 after discussions and submittals to ADEC concerning the conditions of approval. Tom Lakosh's hearing request was denied by Hearing Officer Shelley Higgins in May 2000 as not meeting the requirements of ADEC adjudicatory hearing rules.

Findings from 1999 established a few important areas of compliance and six issues requiring further attention. The findings identify both prevention and response improvements since the 1995 tanker plan approvals. Items that were raised during the 1999 plan approval process but essentially resolved at that time were:

1. In-Region and Out-of-Region Equipment Identification and Contractual Arrangements
2. Consistency with the applicable Alaska Coastal Management Program district policies for Cordova, Kodiak, Whittier, and Valdez;

3. BAT assessments for communications, measures for source control procedures to stop the discharge at its source and prevent its further spread, trajectory analysis and forecasts, and prompt detection of an oil spill; and
4. BAT for the Prince William Sound towing package or an approved equivalent system.

Ten conditions of approval were included for all plan holders including requirements for:

1. Notification of changed relationship with response contractor.
2. Setting a deadline for submission of the 2002 renewal request, and a process for working on the renewal in the interim.
3. A Geographic Response Strategy (GRS) workgroup for Prince William Sound and the outer Kenai Peninsula coast to be modeled after the process used in Cook Inlet, incorporation in the plan references to all currently approved Geographical Response Strategies in the Kodiak, Cook Inlet and Prince William Sound Sub Area Plans, an update to the Geographical Resource Database (GRD) annually, incorporation into the GRD references to the Port Graham/Nanwalek Area Meriting Special Attention, and conducting a minimum of five equipment deployments to test tactics in new GRSs prior to submittal for adoption in the Subarea plan.
4. A scenario workgroup to be co-chaired by ADEC and the plan holder.
5. Demonstration of access to five secondary storage barges to support nearshore response operations.
6. Modification and updates to spill response training for fishing vessel response.
7. Respirator training to 18 Tier 1 fishing vessels.
8. Simulation and sea trials for Hinchinbrook Entrance tanker escort operations in order to assess the plan holder's July 28, 1999, proposal for a change to the Hinchinbrook Entrance escort operations.
9. Reports if a vessel is involved in a reportable incident along TAPS trade route.
10. The submittal of conforming plan edits within 45 days.

Actions resulting from COA's 3 – 9 are incorporated into the Tanker Plan Timeline and summaries are included elsewhere in this report.

Supporting Documents:

Prince William Sound Tanker Plan Holders. (1999) Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan, Volumes 1 and Volume 2, Second Edition, Rev. 0.
651.410.011108.PWStankCplan

ADEC (1999) Prince William Sound Tanker Oil Discharge Prevention and Contingency Plans, Draft Findings Document, June 1999.
651.300.990601.ADECdraftFindingsDoc.pdf

ADEC. (1999) Prince William Sound Tanker Oil Discharge Prevention and Contingency Plans, Findings Document, October 1999.
651.410.991001.ADECtkrFinds.pdf

Alaska Department of Administration. (2000) Shelley J. Higgins, Deciding Officer, Memorandum and Order Denying [Tom Lakosh] Request for Hearing, May 1, 2000.
651.110.00501.DOAtkrDenylte.pdf

ARCO Marine, Inc. (1999) Request for Adjudicatory Hearing on November 2, 1999 Approval, Charles Flynn, Burr, Pease & Kurtz, December 2, 1999.
651.110.991102.ARCOAdjHearRqst.pdf

ARCO Marine, Inc. (2000) Notice of Withdrawal of Adjudicatory Hearing Request re November 2, 1999 Tanker Cplan Approval, March 3, 2000.
651.300.000302 NotWithrARCO.pdf

ARCO Marine Inc., BP Oil Shipping Company, USA, and SeaRiver Maritime (1999) Motion for Stay of Enforcement of Condition 3, Condition 4, Condition 7 and Condition 9 to the Oil Spill Contingency Plan Approval Dated November 2, 1999, December 2, 1999.
651.110.991202.TkrCplStayOr.pdf

ARCO Marine Inc., BP Oil Shipping Company, USA, and SeaRiver Maritime. (1999) Memorandum in Support of Motion for Stay of Enforcement of Condition 3, Condition 4, Condition 7 and Condition 9 to the Oil Spill Contingency Plan Approval Dated November 2, 1999, December 2, 1999.
651.110.991202.TkrStaySuppo.pdf

BP Oil Shipping Company, USA and Alaska Tanker Company (1999) Request for Adjudicatory Hearing on November 2, 1999 Approval, Charles Flynn, Burr, Pease and Kurtz, December 2, 1999.
651.110.991202. TkrCPlanHear.pdf

BP Oil Shipping Company USA. (2000) Notice of Withdrawal [of Adjudicatory Hearing Request re November 2, 1999 Tanker Cplan Approval], March 3, 2000.
651.110.000303 BPOSS Notice of Withdraw Adj Request.pdf

Harvey, S. (1999, November 2) Susan Harvey, ADEC, to Timothy J. Clossey, ARCO Marine, Inc., re: Approval Letter, November 2, 1999. (This letter was the same as that provided to the other plan holders.)
651.300.991102.ADECaprvARCO.pdf

SeaRiver Maritime, Inc. (1999) Request for Adjudicatory Hearing on November 2, 1999 Approval, Kevin Callahan, Patton Boggs LLP, December 2, 1999.
651.110.991202.TkrCplanHrSR.pdf

SeaRiver Maritime, Inc. (2000) Notice of Withdrawal of Hearing Request re November 2, 1999 Tanker Cplan Approval], March 3, 2000.
651.110.000303 SeaRiver Notice of Withdraw Adj Request.pdf

PWSRCAC Comments:

Date	Communication	Contents	Doc Management
December 1998	Letter to ADEC	Request for Additional Info; PWS ODPCP (220 pp)	651.105.981204.TNKcplanCmnt.pdf
April 1999	Letter to ADEC	Issues identified 1998 PWS ODPCP Review (2 pp)	651.105.990402.ADECcplnRCAC.pdf
July 1999	Letter to ADEC	Additional Comments on ADEC's Draft Finding for PWS ODPCP (2 pp)	651.105.990712.TNKcplanCmnt.pdf
August 1999	Letter to ADEC	Condition 5 – BAT; and Condition 3 – Fishing Vessels (4 pp)	651.105.990826.TNKcplanCmnt.pdf
June 2001	Letter to ADEC	PWS Tanker Plan Scenario Handouts (2 pp)	651.105.010611.PWSTkrScenCm.pdf
July 2001	Letter to ADEC	RPG submittals on PWS TP COA #4 Scenarios (4 pp)	651.105.010703.COA4WkgpCmts.pdf

1999 Copper River Delta Oil Spill Trajectory Analysis and Agreement (1995 COA 8)

Plan holders:
ARCO Marine, Inc.; Atlantis Agency Corporation; Cambridge Tankers, Inc.; Chevron Shipping Company; First Shipmour Associates; Fourth Shipmour Associates; Intercontinental Bulktank Corporation; Interocean Management Corporation; Interocean Tanker Corporation; Juneau Tanker Corporation; Marine Transport Lines, Inc.; OMI, Inc.; Overseas Bulktank Corporation; First United Shipping Corporation; SeaRiver Maritime; Second Shipmour Associates, Inc.; Second United Shipping Corporation; Keystone Shipping; Third Shipmour Associates, Inc.; Third United Shipping Corporation; and Tesoro Alaska Petroleum Company.

Summary:
In its 1995 plan approval, ADEC required in COA 8 that the PWS plan holders perform and submit oil spill trajectory analyses for two hypothetical spill events inside state waters to determine the likelihood of oil impacting the Copper River Delta or Flats. On May 29, 1996, the RPG submitted two technical documents responding to 1995 COA 8.

On May 27, 1997, ADEC, in a ten-page findings document, concluded that the plan holders' submittal did not satisfy the COA because the submitted information was insufficient to render a predictive likelihood determination. ADEC then required, as part of the 1998 contingency plan renewal application, additional modeling, as well as response strategies for locations such as Hawkings Island Cutoff that could prevent oil migration from the central sound to the Copper River Delta and Flats. That decision was the subject of a subsequent adjudicatory hearing request that was granted by ADEC Commissioner Michele Brown.

The Deciding Officer heard testimony on the Copper River Delta and Flats issue during the adjudicatory hearing and upheld ADEC's decision imposing 1995 COA 8 and its subsequent decision concerning the plan holders' submission under 1995 COA 8.

Prior to the hearing, ADEC, the Shippers, and CDFU/UFA reached a settlement of the Copper River Delta and Flats contingency plan issue. The Shippers agreed to develop GRS for those areas for incorporation into the Prince William Sound Subarea Plan. On March 3, 1998, ADEC issued a public notice that it was amending Condition 8 to conform to this Copper River Settlement Agreement process. On April 22, 1998, ADEC issued a decision removing 1995 COA 8 from the 1995 Plan Approval in lieu of the Copper River Settlement Agreement.

The Copper River Delta and Flats work group developed the GRS between April 1998 and June 1999. On June 18, 1999, the Subarea Committee Co-Chairs approved the Copper River Delta and Flats addendum as Change 1 and announced a work group to produce a Change 2.

As part of the Settlement Agreement, a Copper River Delta and Flats Exercise was conducted on April 17-20, 2000, in Orca Inlet by SERVS, Alaska Chadux and the U.S. Coast Guard.

The final March 2020 Prince William Sound Area Contingency Plan (Version 2018.1) states "The PWS Area has been divided into five Geographic Response Zones (Figure G-1-1). The Copper River Delta Flats Zone strategies were developed through a separate Work Group process and are not included in this document. The Copper River Delta Flats GRS are considered a separate annex to the PWS Area Contingency Plan at this time."

Supporting Documents:

ADEC. (1995) Prince William Sound Oil Tanker Contingency Plan Review: Findings Document and Response to Comments.
651.410.950801.pdf

Chapple, T. (1995, October 2) Tom Chapple, ADEC, to Hersh Kohut, Arco Marine, Inc., October 2, 1995 re: Approval Letter, October 2, 1995.
651.300.951003.DECplnAppvl.pdf

Chapple, T. (1996, August 1) Tom Chapple, ADEC, to Hersh Kohut, Arco Marine, Inc., re: Status "Conditions of Approval" for Prince William Sound Tankers Oil Discharge Prevention and Contingency Plan, August 1, 1996.
651.300.960801.PWStkrODPCP

Chapple, T. (1997, May 27) Tom Chapple, ADEC, to Simon Lisiecki, BP Oil Shipping Co., on behalf of the RPG, re: Assessment of the likelihood of spilled oil being transported to the Copper River Delta or Flats; Condition 8 of October 2, 1995 Prince William Sound Tanker Contingency Plan Approval, May 27, 1997.
651.431.970527.ADECtkrCond8.pdf

Johnson, R. (1998) Adjudication of Prince William Sound Oil Tanker Contingency Plans Approved October 2, 1995, and Consolidated Matters, Final Decision by Deciding Officer.
1995 PWS Tanker C-plans and Consolidated Matters Final Decision by Deciding Officer August 1998.pdf

Cordova District Fishermen United, United Fishermen of Alaska, Alaska Department of Environmental Conservation, ARCO Marine Inc., SeaRiver Maritime Inc., BP Oil Shipping Company. (1998) Settlement Agreement for PWS Tanker Contingency Plans.
651.110.980224.TankerStlAgt.pdf

Chapple, T. (1998, March 3), Tom Chapple, ADEC to Plan Holders, Review Participants and Commentors, re: Public Notice to Amend Condition 8 of ADEC's Approval for the oil shippers' PWS Tanker Discharge Prevention and Contingency Plan, March 3, 1998.
651.300.980326.DECamndCond8.pdf

Chapple, T. (1998, April 22) Tom Chapple, ADEC, to Patrick Carney, BP Oil Shipping Co, on behalf of the Prince William Sound Tanker Plan Holders, re: Amendment to Plan Approval Condition #8, April 22, 1998.
651.300.980422.ADECtkrCOA8.pdf

Iwamoto, L. (1999) Presentation for a public meeting on the Prince William Sound Subarea Contingency Plan (Draft Change 1), describing the Alaskan subareas, and providing an overview of Change 1 with maps for the Copper River Delta and Flats (CRDF) addendum.
600.107.990301.PWSsacpDft.pdf

Lautenberger, C., Morris, R., Hahn, B., (1999, June 18) Carl Lautenberger, US EPA Region 10, Captain Ronald Morris, COTP Prince William Sound, Brad Hahn, Alaska Department of Environmental Conservation Subarea Co-Chair, to John Devens, PWSRCAC, re: USCG Change 1 to the PWS Subarea Plan for Copper River Delta and Flats, June 18, 1999.
651.300.990618

Copper River Delta and Flats GRS (1999) Prince William Sound SCP, GRS, part one (Change 1 – July 1999)
600.450.990701.SubaCrdfGRSplan.pdf

Requirements of Settlement Agreement for PWS Tanker Contingency Plans (Copper River Delta & Flats) (2000, February 8)
651.410.000208.TKRepAgeem.pdf

Delozier, M. (2000, April 17) Mark Delozier, SERVS, to Joe Banta, PWSRCAC, re: A Report Entitled Copper River Delta & Flats Exercise, April 17, 18, 19, 20, 2000; April 17, 2000.
752.410.000417.CRD&FDrillEx.pdf

Prince William Sound Subarea Contingency Plan, Geographical Response Strategies Section (2014, October).
pws-scp-g-grs Change 3, October 2014

Prince William Sound Area Contingency Plan, Version 2018.1, Final March 2020
pws-area-plan Version 2018.1, Final March 2020

2000 Geographic Response Strategy (1999 COA 3)

Plan holders:
Alaska Tanker Co., ARCO Marine, Inc., Chevron Shipping Co., SeaRiver Maritime Inc., Tesoro Alaska Petroleum Co.

Summary:
Condition of Approval (COA) 3 from the 1999 plan renewal approval required that the plan holders:

a. participate in a Geographic Response Strategy (GRS) workgroup for Prince William Sound and the outer Kenai Peninsula coast to be modeled after the process used in Cook Inlet,
b. incorporate in the plan references to all currently approved Geographical Response Strategies in the Kodiak, Cook Inlet, and Prince William Sound Sub-Area Plans, update the Geographical Resource Database (GRD) annually,
c. incorporate into the GRD references to the Port Graham/Nanwalek Area Meriting Special Attention, and
d. conduct a minimum of five equipment deployments to test tactics in new GRSs prior to submittal for adoption in the Subarea plan.

On February 28, and March 1, 2000, the RPG submitted amendments to Part 3, SID #3, and Section 2.1 to satisfy 1999 COA 3(b) (incorporate GRS references into the plan). On March 3, 2000, ADEC found that the proposed changes satisfied 1999 COA 3(b) and directed that they be included as a minor amendment to the plan.

On March 1, 2000, the RPG proposed a draft Memorandum of Agreement (MOA) for participation in a GRS workgroup for Prince William Sound and the outer Kenai Peninsula, and for equipment deployments to test tactics for a minimum of five new GRS sites per year as called for in COA 3(a) and (c). On March 3, 2000, ADEC approved the MOA as appropriate for meeting those requirements. The Workgroup held its formative meeting on March 28, 2000.

In May 2000, the MOA was signed by ADEC, USCG, Alaska Tanker Company, LLC, Alyeska Pipeline Service Company, Tesoro Maritime Company, SeaRiver Maritime, Inc., Chevron Shipping Company, LLC, ARCO Marine, the U.S. Forest Service, U.S. Department of Interior, National Oceanic and Atmospheric Administration, Alaska Department of Fish and Game, Alaska Department of Natural Resources, and PWSRCAC. The MOA set a deadline of January 1, 2001, for the first five GRSs to be developed. The MOA divided PWS into four regions for the development of GRS over the term of the plan renewal.

As part of the SeaRiver Maritime, Inc., PWS exercise in June 2000, GRSs were developed for sensitive sites in the vicinity of the Village of Tatitlek.

In September 2000, the PWS GRS workgroup identified a preliminary list of candidate sites for GRS development in the northeast and southwest PWS zones. In October 2000, the PWSRCAC proposed the addition of Point Elrington in southwest PWS as a GRS site because of its status as a major haul-out for Steller's sea lions.

In June 2001, Chevron Shipping Company conducted a GRS Exercise as part of Condition 3 in the area of the Village of Chenega.

In July 2001, ADEC found that the RPG had met condition 3(a) for the year 2001 by its active participation in the GRS workgroup and completing five GRS. To fulfill the remainder of condition 3(a), the letter noted that an additional 15 GRS were to be completed by November 1, 2002.

In September 2001, the PWSRCAC undertook a public input process concerning the selection of GRS locations in PWS. The PWSRCAC later prepared a summary of public comments.

In December 2001, a MOA was entered into by ADEC, Kenai Peninsula Borough, USCG, Cook Inlet RCAC, PWSRCAC, Alaska Chadux Corporation, Alyeska SERVS, and Tesoro Maritime Company for a workgroup to draft 40 GRS for the outer Kenai Peninsula coast.

In September 2002, the PWS plan holders, ADEC, USCG, and PWSRCAC entered into a new MOA for a workgroup to draft GRS for 20 additional20 sites in PWS with the testing of 12.

Supporting Documents:

ADEC, Kenai Peninsula Borough, U.S. Coast Guard, Cook Inlet RCAC, PWSRCAC, Alaska Chadux Corporation, Alyeska SERVS, &Tesoro Maritime Company (2001) Memorandum of Agreement for a Workgroup to draft 40 Geographic Response Strategies for the outer Kenai Peninsula coast.

654.590.011214.Kenaigrsmoa.pdf

ADEC, USCG, et al. (2002) Memorandum of Agreement between ADEC, USCG, Plan Holders and Interested Parties Workgroup to draft Geographical Response Strategies for Prince William Sound.

654.590.020917.PWSgrsMOA

Carney, P. (2000, February 28) Patrick Carney, BPOSS on behalf of RPG, to S. Provant, ADEC, re: Approval letter; Condition 3(b), November 2, 1999.

651.300.000228.TkrCplanCOA3.pdf

Carney, P. (2000, March 1) Patrick Carney, BPOSS on behalf of RPG, to Steve Provant, ADEC, re: Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan; Condition 3 Geographical Response Strategies Statement of Commitment, March 1, 2000.

651.300.000301.TkrPlancoa3.pdf

Carney, P. (2000, March 1) Patrick Carney, BPOSS on behalf of RPG, to S. Provant, ADEC, November 2, 1999 Approval letter; Condition 3(b), March 1, 2000.
651.300.00031.Tkrplancoa3b.pdf

Harvey, S. (2000, May 24), Susan Harvey, ADEC, to John Devens, PWS RCAC, "Geographical Response Strategy Memorandum of Agreement"
654.300.000524.ADECreGRSmoa.pdf

Haugstad, E. and Provant, S. (2000, October 31), Eric Haugstad and Steve Provant, Co-Chairs of GRS Work Group, to John Devens, PWS RCAC, Public Comments on Prince William Sound Geographic Response Strategies.
654.300.001031.TEScmntGRS.pdf

H.W. Yates (2000, May 25) H.W. Yates, SeaRiver Maritime, to Carol Ann Kompkoff, Chenega Bay IRA Council, "PWS GRS Exercise June 6-8, 2000"
654.300.000525.SeaRgrsExerc.pdf

Provant, S. (2000, March 3) Steve Provant, ADEC, to P. Carney, BPOSS, on behalf of RPG, re: Condition No. 3(a) and (e), March 3, 2000.
651.300.000303.ADECtkrCon3b.pdf

Provant, S. (2000, March 3) Steve Provant, ADEC, to P. Carney, BPOSS, on behalf of RPG, re: Condition No. 3(b), March 3, 2000.
651.300.000303.ADECtkr3a & e.pdf

Provant, S. (2000, March 20) Steve Provant, ADEC, to P. Carney, BPOSS, on behalf of RPG, Condition No. 3(b)
651.300.000320.ADECtkrCon3b.pdf

Provant, S. (2000, May 9) Steve Provant, ADEC, to P. Carney, BPOSS, on behalf of RPG, Condition No. 3(a)
651.300.000509.ADECcond3GRS.pdf

Provant S. (2001, July 3) Steve Provant, ADEC, to Thomas Colby, Alaska Tanker Company, Response Planning Group re: Reply to your GRS letter of June 19, 2001, July 3, 2001.
654.300.010703.ADECGRSwkgrp.pdf

PWS GRS Workgroup. (2000) Memorandum of Agreement
654.590.000511.PWSGRSmoa.pdf

PWS GRS Workgroup, (2000) List of Candidate Sites Preliminarily Selected for Geographical Response Strategy Development by PWS GRS Work Group.
654.109.000915BMgrsCandSit

PWS GRS Workgroup. (2001) Comments Summary on PWS GRS Work Group September/October 2001 Public Input Process.
654.410.011016.GRSpubInputRpts.pdf

Prince William Sound Regional Citizens' Advisory Council. (2001) Geographic Response Strategies (GRS) Information Packet.
654.431.010913.GRSFolderRFI.pdf

Williams, J., (2001, May 30) Jeff Williams, Chevron Shipping Co, LLC to John Devens, PWS RCAC, re: Chevron GRS 2001 Exercise Site Selection, May 30, 2001.
654.300.010530.ChevExercise.pdf

2000 Major Amendment re Fishing Vessel program (1999 COA 6)

Plan holders:
Alaska Tanker Co., ARCO Marine, Inc., Chevron Shipping Co., SeaRiver Maritime Inc., Tesoro Alaska Petroleum Co.

Summary:
The 1999 plan approval included COA 6, a requirement that the plan holders would 1) modify and update fishing vessel spill response training; 2) submit a plan amendment providing the arrangements to enable the plan holders to inspect, select, and contract Tier III vessels; and 3) provide an updated inventory of Tier I and II contracted vessels to ADEC on a quarterly basis.

On December 30, 1999, the RPG submitted a proposed minor amendment to satisfy COA 6. A notebook of fishing vessel training materials was made available for ADEC inspection at the SERVS Fishing Vessel Coordinator's Valdez office. Tier III Fishing Vessel Activation Procedures were established and included in the amendment. Finally, Alyeska provided to ADEC an updated list of contracted fishing vessels.

Following correspondence between ADEC and the plan holders to clarify the intent of the COA, on February 28, 2000, ADEC determined that the information provided, including the proposed amendment language, satisfied the intent of condition. ADEC determined that the amendment had to be treated as a major amendment and would proceed through the formal public review process. On March 3, 2020, the RPG submitted the formal amendment package to ADEC.

On June 16, 2000, ADEC issued a proposed consistency determination and findings for approval of plan edits to satisfy 1999 COA 6 improvements for fishing vessel responders. On June 22, 2000, ADEC approved the amendment to the plan with the additional provisions to improve fishing vessel response.

Supporting Documents:

Carney, P. (1999, December 30) Patrick Carney, BPOSS on behalf of RPG, to Steve Provant, ADEC, re: November 2, 1999 Approval Letter, Condition 6 (1) – Fishing Vessel Training, December, 30, 1999.
651.300.991230.TkrCoa61.pdf

Carney, P. (1999, December 30) Patrick Carney, BPOSS on behalf of RPG, to Steve Provant, ADEC, re: November 2, 1999 Approval Letter, Condition 6 (2) – Tier III Fishing Vessel Activation Procedures, December 30, 1999.
651.300.991230.BPCondtion6(2)TierIIIActivationProcedures.pdf

Carney, P. (2000, February 11) Patrick Carney, BPOSS on behalf of RPG, to Steve Provant, ADEC, re: November 2, 1999 Approval Letter, Condition 6 – Fishing Vessel Training Ref February 4, 2000 Letter, February 11, 2000.
651.300.000215.ADECTkrCplnCond6.pdf

Harvey, S. (2000, June 16) Susan Harvey, ADEC, to William Rogers, Chevron Shipping Company, LLC, re: Proposed Consistency Determination for Amendment to Chevron Shipping Company, LLC Oil Discharge Prevention and Contingency Plan, ADEC Number 981-CP-4044, June 16, 2000.
651.300.000616.ADECchevrTkr.pdf

Harvey, S (2000, June 22) Susan Harvey, ADEC, to John A. Ripperger, Alaska Tanker Company, LLC, re: Plan Amendment to Alaska Tanker Company, LLC, Oil Discharge Prevention and Contingency Plan dated July 22, 1998 as amended, ADEC Plan Number 981-CP-4039, June 22, 2000.
651.300.000622.ADECtkrFVRsp.pdf

Hillman, S. (1999, December 30) Sharon Hillman, Alyeska Pipeline Service Company on behalf of RPG, to Steve Provant, ADEC, re: November 2, 1999 Approval Letter, Condition 6 (3) – Tier I, II & III Vessel Inventories, December 30, 1999.
651.300.991230.TkrCoa63APSC.pdf

Provant, S. (2000, February 4) Steve Provant, ADEC, to Patrick Carney, BPOSS on behalf of RPG, re: Condition of Approval #6, February 4, 2000.
651.300.000204.ADECtkrCOA6.pdf

Provant, S. (2000, February 28) Steve Provant, ADEC, to Patrick Carney, BPOSS on behalf of RPG, re: Condition of Approval # 6, February 28, 2000.
651.300.000228.ADECtkrCOA6.pdf

2000 Minor Amendment re: Near Shore Secondary Storage Barges (1999 COA 5)

Plan holders:
Alaska Tanker Co., ARCO Marine, Inc., Chevron Shipping Co., SeaRiver Maritime Inc., Tesoro Alaska Petroleum Co.

Summary:
The 1999 plan approval included COA 5, a requirement that the plan holders demonstrate access to five secondary storage barges to support nearshore response operations.

On December 30, 1999, the RPG sent a letter to ADEC as required by 1999 COA 5(a) and (b) providing Contract TAPS/6140, a memorandum of understanding between Crowley Marine Services, Inc. and Alyeska Pipeline Service Company in which Crowley agreed to make available one barge at the scene of a cleanup by hour 71 of the spill response and two additional barges by day nine and two additional barges by day eleven. The barges were to be outfitted with suitable mooring connections, fenders, pumps, hoses and equipment to position pumps that will allow successful lightering from multiple mini-barges or small storage containers. If Crowley is not able to provide such barges, it must make best efforts to obtain suitable barges from third-party sources. Attachment 1 was a listing of the 10 barges in Crowley's fleet.

ADEC responded on February 7, 2000, stating that proviso in the MOU that "if commercially available" did not ensure availability of the needed barges. ADEC stated "The contract must clearly state that financial terms have been previously negotiated with the provider, and will not result in a delay in meeting the 71-hour planning standard. Details of the negotiated rate structure do not need to be submitted to the Department; rather, the Department simply requires that the contract clearly state that a rate structure is currently in place. A third option would be to develop a mutual aid agreement with a local spill response organization, such as CISPRI."

The RPG responded on February 18, 2000, stating they believed their submittal satisfied COA 5 and asserted that ADEC was expanding on its intention on Condition 5 and provided additional information on the CISPRI Mutual Aid Agreement, the memorandum of understanding concerning charter rates in the TAPS/6140 contract with Crowley and equipment for outfitting secondary storage barges.

ADEC responded on February 28, 2000, stating that the first part of the condition had been satisfied but that the capacity to outfit the barges in 5(a) and 5(b) for lightering operations had not been satisfied.

RPG submitted letters dated March 15 and 16 with information planned to be used on the secondary storage barges for days 6 and 11 and information on transportation and deployment time estimates.

ADEC responded on April 21, 2000, finding that the information on the equipment planned to be used on the secondary storage barges to be acceptable. ADEC rejected the 2-hour timeframe for equipment to be expected to arrive in Anchorage from location in Alaska and from the West Coast. ADEC requested that the timeframes in this table be re-evaluated and submitted to ADEC for review.

On September 7, 2000, ADEC approved, as minor amendments, a July 6, 2000 plan amendment to Part 3, SID #1 – Operations, page 1-62 and SID # 2, Section 4 – Mutual Aid Agreement, page 4-3 of the PWS Tanker Oil Discharge Prevention and Contingency Plan (Core Plan), Second Edition, Rev. 0 (November 1999). The amendments provided for examples of equipment for storage barges of opportunity for offloading stations and added the Mutual Aid/Response Agreement between Alyeska and Cook Inlet Spill Prevention and Response, Inc. This action closed out the actions required by 1999 COA 5.

Supporting Documents:

Carney, P. (1999, December 30) Patrick Carney, BPOSS on behalf of RPG, to S. Provant, ADEC, November 2, 1999 Approval Letter, Condition 5 (a) and (b) – Secondary Storage Nearshore Response Plan
651.300.991230.TkrCoa5ab.pdf

Provant, S. (2000, February 7) Steve Provant, ADEC to Patrick Carney, BPOSS on behalf of RPG, Condition 5
651.300.000207.ADECtkrCoa5.pdf

Carney, P (2000, February 18) Patrick Carney, BPOSS on behalf of RPG, to S. Provant, ADEC, November 2, 1999 Approval Letter, Condition 5 – Nearshore Secondary Storage Ref February 7, 2000 Letter
651.300.000218.TkrCplnCoa5.pdf

Provant, S. (2000, February 28) Steve Provant, ADEC to Patrick Carney, BPOSS on behalf of RPG, Condition of Approval #5
651.300.000228.ADECtkrCOA5.pdf

Carney, P. (2000, March 15 and 16) Patrick Carney, BPOSS on behalf of RPG, to S. Provant, ADEC, November 2, 1999 Approval Letter, Condition 5 Ref February 28, 2000
651.300.000316.BPtkrCond5.pdf

Provant, S. (2000, April 21) Steve Provant, ADEC to Patrick Carney, BPOSS on behalf of RPG, PWS Tanker Oil Discharge Prevention and Contingency Plan, November 2, 1999 Approval Letter, Condition No. 5
651.300.000421.ADECtkrCOA5.pdf

Provant, S. (2000, September 7) Steve Provant, ADEC to Patrick Carney, BPOSS on behalf of RPG, Condition #5 Plan Revisions Approval 9-7-00

651.300.000907.ADECtkrPt3Rv.pdf

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2000 Minor Amendment re respirator training (1999 COA 7)

Plan holders:
Alaska Tanker Co., ARCO Marine, Inc., Chevron Shipping Co., SeaRiver Maritime Inc., Tesoro Alaska Petroleum Co.

Summary:
The 1999 plan approval included COA 7, a requirement for respirator training to 18 Tier I fishing vessel crews.

On February 22, 2000, the RPG provided plan amendments for Fishing Vessel Training requirements, a statement that APSC/SERVS will provide respirator training for 18 fishing vessel crews, noting that documentation of respirator training will be maintained in the fishing vessel database at APSC/SERVS, and providing for semi-annual additional training to be conducted for replacement crews, if necessary.

On February 28, 2000, ADEC accepted the procedures in the RPG's February 22, 2000 letter, including the amendment language, a meeting COA 7.

On March 1, 2000, the RPG then provided copies of the routine plan update to plan reviewers and ADEC approved the text changes to the plan as a routine plan update on March 20, 2000.

In a letter dated, May 31, 2000, ADEC found the planholders had satisfied 1999 COA 7 after ADEC's review of respirator fit testing training records and the establishment of documentation procedures for listing the information in SERVs fishing vessel database.

Supporting Documents:

Carney, P. (2000, February 22) Patrick Carney, BPOSS on behalf of RPG, to S. Provant, ADEC, PWS Tanker Oil Discharge Prevention and Contingency Plan, Ref November 2, 1999 Approval Letter, Condition 7 – Fishing Vessel Training Requirements
651.300.000222.TkrCplnCoa7.pdf

Provant, S. (2000, February 28) Steve Provant, ADEC, to Patrick Carney, BPOSS on behalf of RPG, Condition of Approval # 7
651.300.000228.ADECtkrCOA7.pdf

Carney, P. (2000, March 1) Patrick Carney, BPOSS on behalf of RPG, to PWS Plan Reviewers, Routine Plan Updates for Condition 7
651.300.000301.TkrCplanCoa7.pdf

Provant, S. (2000, March 20) Steve Provant, ADEC, to Patrick Carney, BPOSS on behalf of RPG, Condition of Approval # 7

651.300.000320.ADECtkrCond7.pdf

Provant, S. (2000, May 31) Steve Provant, ADEC, to Patrick Carney, BPOSS on behalf of RPG, Condition of Approval # 7

651.300.000531.ADECbptkrCo7.pdf

2000 Reporting of Tanker Casualties (1999 COA 9)

Plan holders:
Alaska Tanker Co., ARCO Marine, Inc., Chevron Shipping Co., SeaRiver Maritime Inc., Tesoro Alaska Petroleum Co.

Summary:
The 1999 plan renewal included COA 9 which specified reporting requirements for vessels involved in a reportable incident along the TAPS trade route.

On November 9, 1999, the RPG send a letter to ADEC posing specific clarification questions concerning the 1999 COAs, including the reporting requirements of 1999 COA 9.

In their December 1999 adjudicatory hearing requests and request for a stay of 1999 COA 3, 4, 7, and 9, BP Oil Shipping, ARCO Marine, and SeaRiver Maritime argued that COA 9 was pre-empted by US Coast Guard reporting regulations, and was broad and unclear in scope.

On December 16, 1999, ADEC sent the RPG a clarification letter on the reporting requirements of COA 9. The letter identified what is included in Notification of Vessel Casualty, who must report, what is included as an Incident, what is a vessel casualty, what type of reporting is required and what are the time requirements, what is required in the report, and what are Alaska waters. In March 2000, the Plan holders withdrew their challenge to 1999 COA 9 as part of their adjudicatory hearing request.

Supporting Documents:

ARCO Marine Inc., BP Oil Shipping Company, USA, and SeaRiver Maritime. (1999) Motion for Stay of Enforcement of Condition 3, Condition 4, Condition 7 and Condition 9 to the Oil Spill Contingency Plan Approval Dated November 2, 1999.
651.110.991202.TkrCplStayOr.pdf

ARCO Marine Inc., BP Oil Shipping Company, USA, and SeaRiver Maritime. (1999) Memorandum in Support of Motion for Stay of Enforcement of Condition 3, Condition 4, Condition 7 and Condition 9 to the Oil Spill Contingency Plan Approval Dated November 2, 1999.
651.110.991202.TkrStaySuppo.pdf

Carney, P. (1999, November 9) Patrick Carney, BPOSS on behalf of RPG, to Susan Harvey, ADEC, PWS Tanker Oil Discharge Prevention and Contingency Plan, Ref: November 2, 1999 Approval Letter(s)
651.300.991109.TkrCertQues.pdf

Provant, S. (1999, December 16) Steve Provant, ADEC, to Patrick Carney, BPOSS on behalf of RPG, re: Condition #9 clarification, December 16, 1999.

651.300991216.ADECtkrCOA9.pdf

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2000 Scenario Workgroup (1999 COA 4)

Plan holders:
Alaska Tanker Co., ARCO Marine, Inc., Chevron Shipping Co., SeaRiver Maritime Inc., Tesoro Alaska Petroleum Co.

Summary:
The 1999 plan renewal approval included COA 4 which required that the plan holders participate in a scenario workgroup to be co-chaired by ADEC and the plan holders. Draft scenarios were to be submitted by February 1, 2001, and final scenarios by February 1, 2002, as part of the 2002 plan renewal application.

The 1995 Tanker plan included "Scenario B" as a worst-case discharge scenario. ADEC approved, and PWSRCAC supported, Scenario B which was based on reasonable worst-case assumptions. In the 1998 Tanker Plan, the plan holders significantly reformatted the Scenario, replacing a narrative format with a table based on regulatory requirements. The plan holders eventually submitted Scenario B to supplement the worst-case discharge table. Concurrent with the 1998 plan review, PWSRCAC funded an analysis of the worst-case discharge scenario to highlight some of the resource issues and recommend a more effective process for developing scenarios in the future. The scenario analysis used the Incident Action Plan framework to analyze the resource requirements for all task forces and strike teams deployed, and then match the resources ordered with these functional requirements. The results of this analysis identified several shortcomings and recommended using an IAP process to develop future scenarios.

1999 COA 4 sought to establish a scenario workgroup including the PWSRCAC to further improve the scenarios in the plan. On November 22, 1999, ADEC responded to the RPG's questions concerning the conditions of approval, and with respect to 1999 COA 4 stated that ADEC would like the scenario development process to be efficient. In addition to ADEC and an RPG designee, the USCG Valdez, SERVS and the PWSRCAC were invited to be members of the scenario workgroup. Other agencies, such as ADF&G were included to address wildlife or other issues as needed.

On March 1, 2000, the RPG sent ADEC a letter stating that the plan holders agree to participate in a work group to discuss scenario development for the plan in accordance with 18 AAC 75.425(e)(1)(F). Compliance constituted plan holders writing and delivering draft scenarios to ADEC on or before February 1, 2001, with final scenarios to be part of the 2002 plan renewal application.

The Condition 4 scenarios workgroup was initiated on October 23, 2000, at an ADEC meeting. At the meeting, ADEC proposed new content and format for the PWS and Valdez Marine Terminal plan scenarios.

On February 1, 2001, the RPG submitted a new draft scenario as required by 1999 COA 4. The letter included a table discussing ADEC's October 13, 2000, guidance and how its draft submittal responded to the guidance with a draft SID #4 Section 1 Scenario 809 "describing a response to a hypothetical 809,080-barrel spill." The scenario formats included a timeline table, resource mobilization table, equipment tally, organization charts, and a regulatory compliance table.

On May 7, 2001, Steve Provant of ADEC provided guidance to the RPG on the number of nearshore fishing vessel task forces that needed to be included in the response scenarios to satisfy COA 4. ADEC intended that the revisions to the scenarios continue to include the planning for five in-region, three out-of-region and eleven post-72-hour nearshore task forces. The scenario planning was to address the potential for a change in the spill from an open water response to a nearshore response. ADEC stated that the change in the realistic maximum oil discharge from 950,000 barrels to 809,000 barrels did not provide justification for a reduction in the number of nearshore task forces that must be planned for in the scenarios.

In a May 30, 2001, teleconference, the RPG provided additional scenario materials. Joe Banta of PWSRCAC provided comments to John Kotula, ADEC, and Tom Colby, RPG, on the February 1, 2001, Draft Scenario and the PWS Tanker Plan Scenario Handouts.

The scenario went through an RFAI process and on August 19, 2001, RCAC submitted formal comments on the RPG's RFAI Responses.

The final scenarios were incorporated into the plan for the 2002 renewal.

Supporting Documents:

Robertson T., Jones, T., Hartley, B., and DeCola, E. (1999, June) to Prince William Sound Regional Citizens' Advisory Council, Analysis of Oil Spill Scenarios from the 1998 Prince William Sound Tanker Plan Using Incident Action Plan and Critical Path Methods
651.105.990601.TNKcplanAnalysis

Harvey, S (1999, November 22) Susan Harvey, ADEC to P. Carney, BPOSS on behalf of RPG, Response to November 9, 1999 Correspondence re: 1999 COAs
651.300.991122.DECtkrRPGrsp.pdf

Carney, P. (2000, March 1) Patrick Carney, BPOSS on behalf of RPG, to S. Provant, ADEC, November 2, 1999 Approval letter; Condition 4
651.300.000301.TkrCplanCOA4.pdf

Provant, S. (2000, March 3) Steve Provant, ADEC, to P. Carney, BPOSS, on behalf of RPG, Condition No. 4
651.300.000303.ADECtkrCond4.pdf

Colby, T. (2000, November 30) Thomas Colby, ATC, on behalf of RPG, to S. Provant, ADEC, November 2, 1999 Approval letter; Condition 4, Scenarios
651.300.001204.ADECtkrCond4.pdf

Carney, P. (2001, February 1) Patrick Carney, BPOSS on behalf of RPG, to S. Provant, ADEC, November 2, 1999 Approval letter; Condition 4
651.300.010201.TkrCoaATC.pdf

Provant, S. (2001, May 7) Steve Provant, ADEC, to P. Carney, Alaska Tanker Company, on behalf of RPG, Condition No. 4, Scenario Near Shore Task Forces
651.300.010507.ADECCOA4Shor.pdf

Robertson, T (2001, June 27) Tim Robertson, Tim Robertson Consulting, to Joe Banta, PWS RCAC, Analysis and Comments on recent submittal on PWS TP COA #4 Scenarios
651.109.010627.TRCOA4ScCmts.pdf

PWSRCAC, (2001, August 1) Comments Regarding RFAI Responses for 2002 Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan and Individual Tanker Company Oil Discharge Prevention and Contingency Plans
600.431.010819.CmtsPhldRFAIrsp.pdf

Robertson, T. (2001, October 5) Additional Comments on Scenario Work products to S. Maunder
651.105.011005.TRScen809Cmt.pdf

ADEC, (2001, November 1) Comments on SID #4 Section 1 Scenario 809
651.300.011101.ADEC809Cmts.pdf

Robertson, T. (2001, December 12) to Banta, J, PWS RCAC, Draft Comments on PWS TP Scenario 809
651.300.011212.TRcmtSID4Sc809.pdf

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On May 7, 2001, Steve Provant of ADEC provided guidance to the RPG on the number of nearshore fishing vessel task forces that needed to be included in the response scenarios to satisfy COA 4. ADEC intended that the revisions to the scenarios continue to include the planning for five in-region, three out-of-region and eleven post-72-hour nearshore task forces. The scenario planning was to address the potential for a change in the spill from an open water response to a nearshore response. ADEC stated that the change in the realistic maximum oil discharge from 950,000 barrels to 809,000 barrels did not provide justification for a reduction in the number of nearshore task forces that must be planned for in the scenarios.

In a May 30, 2001, teleconference, the RPG provided additional scenario materials. Joe Banta of PWSRCAC provided comments to John Kotula, ADEC, and Tom Colby, RPG, on the February 1, 2001, Draft Scenario and the PWS Tanker Plan Scenario Handouts.

The scenario went through an RFAI process and on August 19, 2001, RCAC submitted formal comments on the RPG's RFAI Responses.

The final scenarios were incorporated into the plan for the 2002 renewal.

Supporting Documents:

Robertson T., Jones, T., Hartley, B., and DeCola, E. (1999, June) to Prince William Sound Regional Citizens' Advisory Council, Analysis of Oil Spill Scenarios from the 1998 Prince William Sound Tanker Plan Using Incident Action Plan and Critical Path Methods
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Harvey, S (1999, November 22) Susan Harvey, ADEC to P. Carney, BPOSS on behalf of RPG, Response to November 9, 1999 Correspondence re: 1999 COAs
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Carney, P. (2000, March 1) Patrick Carney, BPOSS on behalf of RPG, to S. Provant, ADEC, November 2, 1999 Approval letter; Condition 4
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Provant, S. (2000, March 3) Steve Provant, ADEC, to P. Carney, BPOSS, on behalf of RPG, Condition No. 4
651.300.000303.ADECtkrCond4.pdf

Colby, T. (2000, November 30) Thomas Colby, ATC, on behalf of RPG, to S. Provant, ADEC, November 2, 1999 Approval letter; Condition 4, Scenarios
651.300.001204.ADECtkrCond4.pdf

Carney, P. (2001, February 1) Patrick Carney, BPOSS on behalf of RPG, to S. Provant, ADEC, November 2, 1999 Approval letter; Condition 4
651.300.010201.TkrCoaATC.pdf

Provant, S. (2001, May 7) Steve Provant, ADEC, to P. Carney, Alaska Tanker Company, on behalf of RPG, Condition No. 4, Scenario Near Shore Task Forces
651.300.010507.ADECCOA4Shor.pdf

Robertson, T (2001, June 27) Tim Robertson, Tim Robertson Consulting, to Joe Banta, PWS RCAC, Analysis and Comments on recent submittal on PWS TP COA #4 Scenarios
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PWSRCAC, (2001, August 1) Comments Regarding RFAI Responses for 2002 Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan and Individual Tanker Company Oil Discharge Prevention and Contingency Plans
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Robertson, T. (2001, October 5) Additional Comments on Scenario Work products to S. Maunder
651.105.011005.TRScen809Cmt.pdf

ADEC, (2001, November 1) Comments on SID #4 Section 1 Scenario 809
651.300.011101.ADEC809Cmts.pdf

Robertson, T. (2001, December 12) to Banta, J, PWS RCAC, Draft Comments on PWS TP Scenario 809
651.300.011212.TRcmtSID4Sc809.pdf

2001 Major Amendment re Hinchinbrook Entrance Tug (1999 COA 8)

Plan holders:
Alaska Tanker Co., ARCO Marine, Inc., Chevron Shipping Co., SeaRiver Maritime Inc., Tesoro Alaska Petroleum Co.

Summary:
The 1999 plan approval included COA 8 which required that the plan holders conduct simulation and sea trials for Hinchinbrook Entrance tanker escort operations to assess the plan holder's July 28, 1999, proposal for a change to the Hinchinbrook Entrance escort operations.

In December 1999, the State of Alaska, BP Exploration Alaska, and ARCO Alaska entered into a Charter for Development of the Alaskan North Slope in order for the State of Alaska to approve the sale of ARCO Alaska to BP (State of Alaska, et. al., 1999). In Section B of the Charter, Marine Environmental Commitments, BP and ARCO agreed to continue to support a ship escort response vessel system for PWS at current or better levels of effectiveness.

On December 10, 1999, BP Oil Shipping wrote the ADEC Commissioner confirming support for the escort system in PWS and pledging to ensure that it remained world class. BP Oil Shipping noted that before newly built tugs could be integrated into the escort system, tests and sea trials needed to be completed. The letter also stated that in addition to training, the sea trials would be used to collect data to use to model a tanker arrest in closure conditions in Hinchinbrook Entrance.

On December 30, 1999, the RPG submitted a study conducted by The Glosten Associates, Inc. that calculated worst-case drift trajectories for tankers in PWS as part of 1999 COA 8. On January 14, 2000, PWSRCAC wrote a letter to ADEC stating that they did not feel that the study submitted by the RPG represented the worst-case drift trajectories. ADEC replied to the RPG by noting that they had not met the requirement of COA 8 to submit input parameters to ADEC for review before running the simulations. ADEC requested a meeting of all stakeholders (including PWSRCAC) to review and approve input parameters to expedite compliance with 1999 COA 8. The meeting was held on February 22, 2000.

On February 28, 2000, the RPG sent ADEC a letter documenting the input parameters discussed at the meeting and asserting that the submittal of December 30, 1999, met the requirements of COA 8. Nuka Research did not identify a record of ADEC responding to this letter, but the outcome was that the RPG performed additional drift trajectory simulations with results submitted in April and June that year.

On February 25, 2000, Alyeska asked for PWSRCAC's support to release the Gulf Service from Hinchinbrook escort duties to be replaced with a Prevention Response Tug (PRT). On March 17, PWSRCAC replied to Alyeska stating that they felt the release of the Gulf Service at that time was contrary to the process required by COA 8. PWSRCAC urged Alyeska and the RPG to

follow the process described in 1999 COA 8, which would eventually lead to the release for the Gulf Service once simulations and sea trials were completed, but not before. Three PRTs were placed into escort service in the spring and summer of 2000, even as the COA 8 process continued to unfold.

On March 14, 2000, a towing exercise was conducted in PWS using an Enhanced Tractor Tug (ETT) and PRT to tow a 261,000 DWT crude oil tanker. The purpose of the exercise was to practice and improve techniques for the rescue of a disabled tanker. The Glosten Associates, Inc. evaluated test data from the exercise and found that the ETT exceeded performance requirements of the 1997 RFP.

On March 22, 2000, the RPG sent a letter to ADEC recommending criteria for additional worst-case trajectory simulations. On March 31, ADEC affirmed the simulation criteria and requested that the RPG meet with ADEC and PWSRCAC to review the results and see if additional simulations were warranted. Once the simulations were complete, tug maneuvers would be identified and tested through sea trials. Once proven, the tug maneuvers would be incorporated into the simulations.

Also, on March 22, 2000, the RPG submitted an amendment to the plan to request a determination that the PRT Alert was equivalent to the Gulf Service and, therefore, the PRT could be substituted as the Hinchinbrook escort. On April 14, 2000, ADEC determined the proposed amendment sufficient for public review. On August 4, ADEC issued a proposed consistency determination and draft approval for the amendment.

On June 28, 2000, ADEC wrote a letter to the RPG indicating that they had reviewed the submitted trajectory simulations and were ready to bring the trajectory simulations to a close and begin considering tug maneuvers for tanker arrest and sea trials. On July 13, the RPG submitted the final worst-case trajectory simulations and tug maneuvers in a letter to ADEC. On August 2, PWSRCAC sent ADEC a letter stating that they did not feel that the July 13 submittal contained enough detail to meet the requirements of COA 8.

On August 14, 2000, The Glosten Associates, Inc. issued a report on drift simulations in Hinchinbrook Entrance. The report contained a series of simulations of different scenarios of ETT and PRT assisting a 211,000 DWT tanker in Hinchinbrook Entrance at closure conditions.

On September 1, 2000, the RPG submitted a letter and package of information that they believed demonstrated that all requirements of 1999 COA 8 had been met. On September 11, PWSRCAC's project team met with ADEC and USCG to discuss their concerns with the RPG's submittal.

On October 4, the RPG submitted another Tanker C-plan amendment that included the information submitted on September 1, and language for a revised BAT section in the plan. On November 17, ADEC notified the RPG that the proposed amendment submitted on October 4 was not sufficient for review because the amendment did not reflect the then-current escort fleet.

On December 8, the RPG submitted a revised text for the proposed plan amendment. On December 21, ADEC indicated that additional information was needed before the plan could be submitted for public review. In this letter, ADEC also informed the RPG that they would require a sea trial in less-than-calm conditions to verify the simulations.1

On January 10, 20012, the Tanker C-plan holders provided a letter to ADEC with answers to the questions ADEC had raised in their letter of December 21.

On November 14, 2000, PWSRCAC asked the RPG to conduct a drift stop exercise to validate the simulations done for worst-case trajectories. On January 9, 2001, the RPG declined to conduct the exercise on the basis it would be a disruption and distraction, and would elevate risk of an incident.

In March 2001, The Glosten Associates, Inc. produced a final report on ETT Radio Controlled Model Tests. This report contains the results of model tests to study the behaviors of the ETT in escort situations. These tests inform the development of rescue maneuvers.

In July, The Glosten Associates, Inc. produced a final report on their SHIPMAN maneuvering simulations of tanker escort tugs including ETT, PRT, and Protector. This report included computer simulations of escort tug interventions in disabled tanker scenarios to aid in determining the appropriate substitution of escort tugs in Valdez Narrows and Valdez Arm.

On April 6, 2001, ADEC issued the RPG a notice to publish a Tanker C-plan amendment for public review, which was then published on April 16. On August 2, ADEC issued a proposed consistency determination and draft approval of the C-plan amendment to satisfy 1999 COA 8. On August 15, 2001, ADEC notified the RPG that the amendment was approved, confirming that the escort system met the State's BAT requirements.

Supporting Documents:

State of Alaska, BP, and ARCO. (1999). Charter Agreement for Development of the Alaskan North Slope. December 2.

British Petroleum Oil Shipping Company (BP). (1999). Letter to Commissioner Michele Brown, ADEC. Confirming Support of Ship Escort and Response System. Anchorage, AK. December 10.
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Response Plan Group (RPG). (1999c). Letter to Steve Provant, ADEC. PWS Tanker Discharge Prevention and Contingency Plan: November 2, 1999 Approval Letter, Condition 8 Hinchinbrook Escort BAT Assessment. Anchorage, AK. December 30.
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Prince William Sound Regional Citizen's Advisory Council (PWSRCAC). (2000a). Letter to Steve Provant, ADEC. PWS Tanker C-Plan, Condition of Approval No. 8, Hinchinbrook Escort BAT. Valdez, AK. January 14.
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Alaska Department of Environmental Conservation (ADEC). (2000a). Letter to Patrick J. Carney, BP Oil Shipping Company, USA. Condition No. 8. Anchorage, AK. February 7.
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Response Plan Group (RPG). (2000a). Letter to Steve Provant, ADEC. PWS Tanker Discharge Prevention and Contingency Plan: November 2, 1999 Approval Letter, Condition 8 (1)(a). Anchorage, AK. February 28.
651.300.000228.BPtkrCond81a.pdf

The Glosten Associates, Inc. (2000a). Simulations Hinchinbrook Entrance. Prepared for the Disabled Tanker Towing Study Group. Anchorage, AK. May.

The Glosten Associates, Inc. (2000b). Hinchinbrook Simulation Results. Prepared for the Disabled Tanker Towing Study Group. Anchorage, AK. June.

Alyeska Pipeline Service Company (APSC). (2000). Letter to John Devens, Prince William Sound RCAC. PRT Replacement of the Gulf Service. Valdez, AK. February 25.
651.300.000225.APSCtkrGulfS.pdf

Prince William Sound Regional Citizen's Advisory Council (PWSRCAC). (2000b). Letter to Dan Hisey, Alyeska Pipeline Service Company. PWS Tanker C-Plan, Condition of Approval No. 8, Gulf Service Release. Valdez, AK. March 17.
651.105.000317.RCACGulfHold.pdf

Jones, T. (2000). Alert/Nanuq Towing Exercise Preliminary Report. Prepared for PWSRCAC Oil Spill Prevention and Response Committee. March 15.
752.431.000315.AlexTowEx.pdf

United States Coast Guard (USCG). (2000). Alert/Nanuq Towing Exercise Summary. Valdez, AK. March 14.

The Glosten Associates, Inc. (2000c). Verification of VSP tugs Nanuq and Tan'erliq performance with respect to PWS RFP. April 4.

Response Plan Group (RPG). (2000b). Letter to Steve Provant, ADEC. PWS Tanker Discharge Prevention and Contingency Plan: November 2, 1999 Approval Letter, Condition 8, February 7, 2000 and March 20, 2000. Anchorage, AK. March 22.
651.300.000322.BPtkrCond8.pdf

Alaska Department of Conservation (ADEC). (2000b). Letter to Patrick J. Carney, BP Oil Shipping Company, USA. PWS Tanker Oil Discharge Prevention and Contingency Plan, November 2, 1999 Approval Letter, Condition No. 8(1)(2)(3). Anchorage, AK. March 31.

Response Plan Group (RPG). (2000c). C-Plan Vessel Equivalency Report. March.
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Alaska Department of Conservation (ADEC). (2000c). Letter to Patrick J. Carney, BP Oil Shipping Company, USA. Amendment to the ADEC Approval of the Prince William Sound Tanker Oil Discharge Prevention and Contingency Plans: Notice to Publish. Anchorage, AK. April 14.
651.300.000414.ADECcplanPbl.pdf

Alaska Department of Conservation (ADEC). (2000d). Letter to William C. Rogers, Chevron Shipping Company, LLC. Proposed Consistency Determination for Amendment of the ADEC November 2, 1999 Approval of the Chevron Shipping Company. LLC, Oil Discharge Prevention and Contingency Plan date July 6, 1998 as Amended. ADEC No. 981-CP-4044. Anchorage, AK. August 4.
651.300.000804.ADECtkrChevr.pdf

Alaska Department of Conservation (ADEC). (2000e). Letter to Patrick J. Carney, BP Oil Shipping Company, USA. Worst Case Tanker Trajectories. Anchorage, AK. June 28.
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Response Plan Group (RPG). (2000d). Letter to Steve Provant, ADEC. PWS Tanker Discharge Prevention and Contingency Plan: November 2, 1999 Approval Letter and June 28, 2000 Letter regarding Condition 8 (1) Hinchinbrook Escort BAT Assessment. Anchorage, AK. July 13.
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Prince William Sound Regional Citizen's Advisory Council (PWSRCAC). (2000c). Letter to Steve Provant, ADEC. July 13, 2000 Planholder Letter regarding Condition of Approval No. 8, 1. (COA 8,1.): Analysis of Trajectories. Valdez, AK. August 2.
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The Glosten Associates, Inc. (2000d). Shipman Drifting Simulations Cape Hinchinbrook Entrance. August 14.

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Prince William Sound Regional Citizen's Advisory Council (PWSRCAC). (2000d). C-Plan Project Team Meeting with ADEC re: Shippers COA 8 submittal. September.

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Alaska Department of Conservation (ADEC). (2000f). Letter to Thomas T. Colby, Prince William Sound Contingency Plan Holders. Condition of Approval No. 8 Final Report and Amendment to Prince William Sound Tanker Oil Discharge Prevention and Contingency Plans Approved November 2, 1999. Anchorage, AK. November 17.
651.300.001117ADECtkrCOA8.pdf

Response Plan Group (RPG). (2000g). Letter to Steve Provant, ADEC. PWS Tanker Discharge Prevention and Contingency Plan: November 2, 1999 Approval Letter, Condition 8, BAT and November 17, 2000 ADEC Letter. Valdez, AK. December 8.
651.300.001208.TkrCoa8ATC.pdf

Alaska Department of Conservation (ADEC). (2000g). Letter to Thomas T. Colby, Prince William Sound Contingency Plan Holders. Condition of Approval No. 8 to Prince William Sound Tanker Oil Discharge Prevention and Contingency Plans Approved November 2, 1999. Anchorage, AK. December 21.
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651.300.000110.ATCtkrCoa8.pdf

Prince William Sound Regional Citizen's Advisory Council (PWSRCAC). (2000e). Letter to Tom Colby, Response Plan Group Coordinator. Drift Stop Tanker Exercise. Valdez, AK. November 14.
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Response Plan Group (RPG). (2001a). Letter to John Devens, Prince William Sound RCAC. Drift Stop Tanker Exercise. Valdez, AK. January 9.

The Glosten Associates, Inc. (2001a). Report of Results from Crowley Alaska ETT Nanuq/ Tan'erliq Radio Controlled Model Tests. Prepared for Crowley Marine Services, Inc. Seattle, WA. March.

The Glosten Associates, Inc. (2001b). Report of Results from Crowley Alaska ETT Nanuq/ Tan'erliq Radio Controlled Model Tests. Prepared for Crowley Marine Services, Inc. Seattle, WA. July.

Alaska Department of Conservation (ADEC). (2001a). Letter to Thomas T. Colby, Prince William Sound Contingency Plan Holders. Consideration of the Prince William Sound Escort System Best Available Technology (BAT) Assessment: Notice To Publish. Anchorage, AK. April 6.

Response Plan Group (RPG). (2001b). Public Notice Letter to Plan Reviewers and Interested Parties. PWS Tanker Discharge Prevention and Contingency Plan: Proposed Plan Amendment. Valdez, AK. April 16.
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Alaska Department of Conservation (ADEC). (2001b). Letter to Thomas T. Colby, PWS Response Planning Group. Proposed Consistency Determination for Amendment of ADEC's November 2, 1999 Approval of five Prince William Sound Tanker Oil Discharge Prevention and Contingency Plans. Anchorage, AK. August 2.
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Alaska Department of Environmental Conservation (ADEC). (2001c). Letter to Thomas T. Colby, PWS Response Planning Group. Conclusive Consistency Determination for Amendment of ADEC's November 2, 1999 Approval of five Prince William Sound Tanker Oil Discharge Prevention and Contingency Plans. Anchorage, AK. August 15.
651.300.010815.DECodpcpRPG.pdf

2002 Renewal

Plan holders:
Alaska Tanker Co, ChevronTexaco Shipping Co., Polar Tankers, Inc., SeaRiver Maritime, Inc., Tesoro Petroleum Co.

Summary:
Still operating under the 3-year approval period for state plans, a new plan was required following the 1998 submittal (approved in 1999) in 2001. This plan renewal was the last on the 3-year cycle as plan approvals were extended to 5 years beginning 2003. The PWS Plan consisted of two volumes: Volume 1 consisted of Part 1 – Response Action Plan and Part 2 – Prevention Plan (191 pages) and Volume 2 consisted of Part 3 - Supplemental Information Documents and Part 4 – Best Available Technology (691 pages).

There were no Conditions of Approval issued with the 2002 plan approval (not even the ones that later became standard administrative items, though the commitment to check fishing vessel availability quarterly is stated in the plan itself).

ADEC's findings accompanying the 2002 approval concluded several issues ongoing since the 1999 plan review (or previously).

- ADEC stated that verifying a plan holder's access to out-of-region equipment necessary to meet the RPS requires periodic review. An Out of Region Response Equipment Acquisition Survey was required as part of this plan review, resulting in ADEC concluding that the requirements were met. ADEC required that plan holders include "Equipment Access Agreements" flowcharts in their plans.
- Scenarios are adequate to describe a full response activation and serve as a usable guide – these were developed through a workgroup process beginning with the 1999 COA 4. As a result of that effort, the scenario formats were also modified to include a timeline table, resource mobilization table, equipment tally, org charts, and a regulatory compliance table. Specific activities in "downstream" communities are not addressed, as these, along with sensitive area protection more broadly, would come later in the response and the scenarios should not speculate on exactly where they would occur.
- Nearshore response task forces are adequately staffed (specifics from the plan are included in the Findings).
- Personnel numbers are adequate. During the review, ADEC required the designation of Command Staff by SERVS position.
- Tanker inspections conducted by the Coast Guard are sufficient to meet state regulations
- Tanker security plans are adequate even if not detailed (too much detail would undermine them; though ADEC asked for more information on deck watches).
- The escort system is BAT. Some of the information from the VERP must be included in the Tanker Plan.
- The Escort System meets state requirements, including BAT (including the towlines specifically). Relevant information from the VERP must be included in the state plan.

- ADEC found the prevention and response training programs adequate, but requested additional information about these during the plan review.

Supporting Documents:

ADEC (2002) Prince William Sound Tanker Oil Discharge Prevention and Contingency Plans, Draft Findings Document, October 17, 2002.
651.300.021017.ADECfindings.pdf

Hutmacher, B. (2002, October 17) Bill Hutmacher, ADEC, to Jeff Williams, ChevronTexaco Shipping Company LLC, RE: Approval Letter, October 17, 2002.
651.410.021017.ADECchevTex.pdf

Prince William Sound Tanker Plan Holders. (2002) Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan, Volumes 1 and Volume 2, Third Edition, Rev. 0.

PWSRCAC Comments:

Date	Communication	Contents	Doc Management
August 2001	Comments to ADEC	Comments for RFAI Responses; 2002 PWS ODPCP (26 pp)	600.431.010819.CMTSPhldRFAIIrsp.pdf
May 2002	RFAI to ADEC	RFAI; 2002 PSW ODPCP and Individual Plans (37 pp)	651.431.020510.RFAICplan.pdf
May 2002	Letter to ADEC	RFAI #1; 2002 PWS ODPCP (1 pp)	651.105.020510.TankerRFAI.pdf
September 2001	Letter to ADEC	RFAI #2; 2002 PWS ODPCP (15 pp)	651.105.020926.FinlODPCPCmt.pdf
October 2002	Letter to ADEC	Review of Finding #4 and Finding #7 of 1995 Plan (2 pp)	651.105.021007.ADECooreasTnkPln.pdf
November 2002	Comments by ADEC	ADEC Findings Document Analysis (2 pp)	651.300.021022.TkrCPanlFndgsDEC.pdf

2004 RMROL Regulatory Changes

Summary:
In 1997, the regulations provided for situations in which a plan holder could not successfully operate mechanical response equipment due to environmental limitations (weather, sea states, etc.). Those conditions were called Realistic Maximum Response Operating Limits (RMROL).

The 1997 version of the regulations at 18 AAC 75.445(f) for RMROL read:

> (f) Realistic maximum response limitations. In designing a spill response, severe weather and environmental limitations that might be reasonably expected to occur during a discharge event must be identified. The plan must use realistic efficiency rates for the specified response methods to account for the reduction of control or removal rates under those severe weather or other environmental limitations that might reasonably be expected to occur. The department will, in its discretion, require the plan holder to take specific temporary prevention measures until environmental conditions improve to reduce the risk or magnitude of an oil discharge during period when planned spill response methods are rendered ineffective by environmental limitations.

The 1997 regulations were consistent with statutory requirements in that the plan holder had to either demonstrate the ability to provide mechanical response capability year-round or rely on a combination of mechanical response capability and enhanced prevention capability during conditions exceeding RMROL. The 1997 regulations could be interpreted as providing plan holders an incentive to improve mechanical response equipment required to meet the RPS. Expanding the window of operation for mechanical response equipment narrowed the time when additional temporary prevention measures were required.

Between 1997 and 2004, ADEC received repeated challenges on its PWS tanker plan approval decisions. A number of challengers questioned why ADEC was not using its discretion to require "…the plan holder to take specific temporary prevention measures until environmental conditions improve to reduce the risk or magnitude of an oil discharge during period when planned spill response methods are rendered ineffective by environmental limitations."

Regulations at 18 AAC 75. 445(f) were amended in 2004 to allow the use of non-mechanical response tools when environmental conditions preclude the use of mechanical response:

> (f) Realistic Maximum Response Operating Limitations. In designing a spill response, severe weather and environmental limitations that might be reasonably expected to occur during a discharge event must be identified. The plan must use realistic efficiency rates for the specified response methods to account for the reduction of control or removal rates under those severe weather or other environmental limitations that might reasonably be expected to occur. The department may require the plan holder to take specific temporary prevention or response measures until environmental conditions improve to reduce the risk or magnitude of an oil discharge during periods when

> planned mechanical spill response options are rendered ineffective by environmental limitations. Plans that propose the use of non-mechanical response options under 18 AAC 75.425(e) (3)(D) must meet the requirements of 18 AAC 75.425(e) (1)(G), 18 AAC 75.425(e) (3)(G), and (h) of this section.

18 AAC 75.445(h) was also amended. This change is relevant because it allows the use of non-mechanical response techniques when mechanical response techniques are rendered ineffective:

> (h) Nonmechanical Response Information. Plans which propose the use of dispersants, in situ burning, or other nonmechanical response techniques during periods when environmental conditions or other factors limit the use of mechanical spill response methods must demonstrate their efficiency and effectiveness and must include a full assessment of potential environmental consequences, provisions for continuous monitoring and real-time assessment of environmental effects, and full compliance with all applicable approval requirements. If in situ burning is proposed as a response technique, a completed application for approval by the department must be included.

2004 Minor Amendments

Plan holders:
ATC, SeaRiver, Tesoro, BP Alaska, Polar Tankers, Chevron

Summary:
In late 2003 and early 2004, the RPG submitted a series of six minor amendments to the plan, each concerning a separate issue. Since all amendments were submitted at roughly the same time, they are grouped together in this summary.

The amendment numbers, approval dates, and changes incorporated are listed below.

- #2003-01; January 2, 2004; description of APSC equipment maintenance system, and announced and unannounced exercise schedule and records maintenance
- #2003-02; December 23, 2003; vessel change from Protector Class to a conventional tug
- #2003-03; approval date unknown; implemented personnel job description and training updates
- #2003-04; January 30, 2004; response equipment description revisions
- #2003-05; April 5, 2004; wildlife response clarifications following the wildlife workgroup
- #2003-06; April 19, 2004; editorial corrections

Supporting Documents:

RPG. (2002) Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan.
Colby, T. (2003, December 8) Tom Colby, Plan Administrator, to John Kotula, ADEC, re: Application for Amendment #2003-01 to the Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan, December 8, 2003.
651.300.031208.ATCtkrAmend1.pdf

Colby, T. (2003, December 8) Tom Colby, Plan Administrator, to John Kotula, ADEC, re: Application for Amendment #2003-02 to the Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan, December 8, 2003.
651.300.031208.ATCtkrAmend2.pdf

Colby, T. (2003, December 8) Tom Colby, Plan Administrator, to John Kotula, ADEC, re: Application for Amendment #2003-03 to the Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan, December 8, 2003.
651.300.031208.ATCtkrAmend3.pdf

Schorr, B. (2003, December 23) Betty Schorr, ADEC, to Tom Colby, Plan Administrator, on behalf of the Response Planning Group, RE: Routine Plan Amendment (#2003-02) to the Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan Parts 1, 2, 3, and 4, as

amended,
December 23, 2003.
651.300.031223.ADECtkrPln.pdf

Schorr, B. (2004, January 2) Betty Schorr, ADEC, to Tom Colby, Plan Administrator, on behalf of the Response Planning Group, RE: Routine Plan Amendment (#2003-01) to the Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan Parts 1, 2, 3, and 4, as amended, January 2, 2004.
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Schorr, B. (2004, January 30) Betty Schorr, ADEC, to Tom Colby, Plan Administrator, on behalf of the Response Planning Group, RE: Routine Plan Amendment (#2003-04) to the Prince William Sound Tanker Oi4 Discharge Prevention and Contingency Plan Parts 1, 2, 3, and 4 (Core Plan), as amended, January 30, 2004.
651.300.040130.ADECtkrCore.pdf

Schorr, B. (2004, April 5) Betty Schorr, ADEC, to Tom Colby, Plan Administrator, on behalf of the Response Planning Group, RE: Routine Plan Amendment (#2003-05) to the Prince William Sound Tanker Oi4 Discharge Prevention and Contingency Plan Parts 1, 2, 3, and 4 (Core Plan), as amended, April 5, 2004.
651.300.040405.ADECcore1234.pdf

Schorr, B. (2004, April 19) Betty Schorr, ADEC, to Tom Colby, Plan Administrator, on behalf of the Response Planning Group, RE: Routine Plan Amendment (#2003-06) to the Prince William Sound Tanker Oi4 Discharge Prevention and Contingency Plan Parts 1, 2, 3, and 4 (Core Plan), as amended, April 19, 2004.
651.300.040419.ADECtkrC1234.pdf

PWSRCAC Comments:

Date	Communication	Contents	Doc Management
April 2004	Letter to PWSRCAC	Amendments to PWS ODPCP (3 pp)	651.300.040420.AmdsTkrCPApr04.pdf
June 2004	Letter to ADEC	Comments on PWS ODPCP Krystal Sea Amendment (2 pp)	651.105.040609.ADECDrystal.pdf

2004 Major Amendment

Plan holders:
ATC, SeaRiver, Tesoro, BP Alaska, Polar Tankers, Chevron

Summary:
On December 8, 2003, the RPG submitted an application for amendment #2004-01 which replaced the landing craft Krystal Sea with an integrated tug and barge also known as Krystal Sea, and changed the home port of the vessel from Valdez to Cordova.

This amendment was a significant enough change to the response equipment in PWS to warrant being considered a major amendment, and so underwent a public review process. With this amendment, the plan holders replaced the landing craft Krystal Sea with an integrated tug and barge also known as Krystal Sea, and changed the home port from Valdez to Cordova.

In its approval letter, ADEC required three COAs: that the plan holders

1. demonstrate the new Krystal Sea's response capabilities and that the vessel was adequately staffed with trained crew members;
2. confirm the vessel's availability and procedures for addressing circumstances when the vessel would not be available; and
3. agree to the requirement that the Krystal Sea remain in the region of operation in order to meet RPS requirements.

The amendment was approved on June 22, 2004. The RPG addressed their compliance with the COAs in a letter dated June 3, 2005.

Supporting Documents:

Colby, T. (2005, June 3) Tom Colby, Plan Administrator, to John Kotula, ADEC, re: Plan Amendment (#2004-01) to the Prince William sound Tanker Oil Discharge Prevention and Contingency Plan, June 3, 2005.

Schorr, B. (2004, June 22) Betty Schorr, ADEC, to Tom Colby, Plan Administrator, on behalf of the Response Planning Group, RE: Routine Plan Amendment (#2004-01) to the Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan Parts 1, 2, 3, and 4, as amended, June 22, 2004.

651.300.040622.ADECamendApp.pdf

2005 Minor Amendments

Plan holders:
ATC, SeaRiver, Tesoro, BP Alaska, Polar Tankers, Chevron

Summary:
On October 6, 2005, the plan holders submitted applications for six minor amendments to the plan, each concerning a separate issue. Since all amendments were submitted at the same time, they are grouped together in this summary.

The amendment numbers and changes incorporated are listed below.

- 2005-1; boom storage locations and replacement of Hi Sprint and Hi Integrity boom with Ro-2000 boom on the barge 500-2
- 2005-2; storage location of Sea Mop and Termite skimmer systems
- 2005-3; edits to Part 3 Sid 1 Section 7, Dispersants
- 2005-4; replacement of GrahamRec skimmers with TransRec skimmers
- 2005-5; edits to the Communications section

All amendments were approved in the same letter dated October 14, 2005.

Supporting Documents:

Colby, T. (2005, October 6) Tom Colby, Plan Administrator, to John Kotula, ADEC, re: Routine Plan Amendment 2005-01 Replacement of Hi Sprint and Hi Integrity Boom, October 6, 2005.
651.300.051006.RPGamend2005-01.pdf

Colby, T. (2005, October 6) Tom Colby, Plan Administrator, to John Kotula, ADEC, re: Routine Plan Amendment 2005-02 Sea Mop and Termite Skimmer Systems, October 6, 2005.
651.300.051006.RPGamend2005-02.pdf

Colby, T. (2005, October 6) Tom Colby, Plan Administrator, to John Kotula, ADEC, re: Routine Plan Amendment 2005-03 Changes in Part 3 Sid 1, Section 7, Dispersants, October 6, 2005.
651.300.051006.RPGamend2005-03.pdf

Colby, T. (2005, October 6) Tom Colby, Plan Administrator, to John Kotula, ADEC, re: Routine Plan Amendment 2005-04 Replacement of GrahamRec Skimmers with TransRec Skimmers, October 6, 2005.
651.300.051006.RPGamend2005-04.pdf

Colby, T. (2005, October 6) Tom Colby, Plan Administrator, to John Kotula, ADEC, re: Routine Plan Amendment 2005-05 Changes to the Communications Section, October 6, 2005. (Letter was misdated 2004)
651.300.051006.RPGamend2005-05.pdf

RPG. (2002) Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan.

Schorr, B. (2005, October 14) Betty Schorr, ADEC, to Tom Colby, Plan Administrator, on behalf of the Response Planning Group, RE: Routine Plan Update Amendments to the Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan (Core Plan) Third Edition, Rev 2, October 14, 2005.
651.300.051014.RPGCorPlnRvw.pdf

2006 Amendments

Plan holders:
ATC, SeaRiver, Tesoro, BP Alaska, Polar Tankers, Chevron

Summary:
In 2006, the plan holders submitted applications for three amendments to the plan, each concerning a separate issue. Amendments #2006-01 and -03 were minor amendments. Amendment #2006-02 was a major amendment. Each of the three is discussed below.

Amendment #2006-01
On May 11, 2006, the plan holders submitted amendment #2006-01 which described their intent to replace the lightering barge 570 with barge 450-7, a newer and larger barge. All lightering equipment was to be transferred to the 450-7. As there was no diminishment of the plan holders' ability to respond to an oil spill, the amendment was approved without public review by ADEC on May 15, 2006.

Amendment #2006-02
On June 5, 2006, the plan holders submitted plan application for amendment #2006-02 which proposed changes to the equipment and tactics used by Nearshore Task Forces 1 – 4. These changes include the incorporation of the Current Buster booming systems in place of a portion of the U/J boom configurations previously used. If adopted, there were resultant changes in the number of fishing vessels required by a Near Shore Task Force. Because there was a possibility of diminishment of response capability, ADEC required this amendment application to undergo a public review. On July 31, 2006, ADEC submitted seven requests for additional information to the plan holder. The information was adequately supplied, and ADEC approved the amendment on October 18, 2006.

The approval included three COAs:

1. Assignment of one additional fishing vessel to any Near Shore Task Force which incorporated a Current Buster system,
2. Fishing vessel crew training in all near shore tactics, and
3. A requirement that eight Current Buster systems would be available for deployment before the amendment could become effective.

Amendment #2006-03
On April 28, 2006, the plan holders submitted an application for plan amendment #2006-03 to clarify the phrase "equipment caretaker" found in various sections throughout the plan. The parenthetical "(SERVS personnel or contractors) was added following the phrase. As there was no diminishment of the plan holders' ability to respond to an oil spill, the amendment was approved without public review by ADEC on May 8, 2006.

Supporting Documents:

Coffey, T. (2006, April 28) Tracy Coffey, Plan Administrator, to John Kotula, ADEC, re: Routine Plan Amendment 2006-03 Adjustment to "equipment caretaker" references, April 28, 2006.
651.300.060428.RPGamend.pdf

Coffey, T. (2006, May 11) Tracy Coffey, Plan Administrator, to John Kotula, ADEC, re: Routine Plan Amendment 2006-01 Replacement of Lightering Barge 570 with Barge 450-7, May 11, 2006.
651.300.060511.SeaRiverPlan.pdf

Kotula, J. (2006, July 31) John Kotula, ADEC, to Tracy Coffey, Plan Administrator, on behalf of the Response Planning Group, RE: Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan Amendment Application 2006-02, Near Shore section, dated June 5, 2006 Request for Additional Information, July 31, 2006.
651.300.060731.ADECnearRFAI.pdf

RPG. (2002) Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan.
Schorr, B. (2006, May 8) Betty Schorr, ADEC, to Tracy Coffey, Plan Administrator, on behalf of the Response Planning Group, RE: Routine Plan Amendments (#2006-03) to the Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan (Core Plan), May 8, 2006.
651.300.060508.ADECcoreAmen.pdf

Schorr, B. (2006, May 15) Betty Schorr, ADEC, to Tracy Coffey, Plan Administrator, on behalf of the Response Planning Group, RE: Routine Plan Amendments (#2006-01) to the Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan (Core Plan), May 15, 2006.
651.300.060515.DECcoreAmend.pdf

Schorr, B. (2006, October 18) Betty Schorr, ADEC, to Tracy Coffey, Plan Administrator, on behalf of the Response Planning Group, RE: Plan Amendment #2006-02 to the Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan (Core Plan), October 18, 2006.
651.300.061018.ADECplnAprvl.pdf

2007 Renewal

Plan holders:
ATC, SeaRiver, Tesoro, BP Alaska, Polar Tankers, Chevron

Summary:
Over a year prior to the expiration of their plans, the RPG members began the process of preparing a renewal application. Of primary importance during this process was a complete restructuring of the plan contents which resulted in moving from the previous three volumes to two volumes: the "core plan" and the SERVS Technical Manual (tech manual). Much of this effort was completed with the active participation of representatives from PWSRCAC, ADEC, APSC/SERVS, the shipping companies, and USCG during a multiday workshop.

The core plan consisted of five parts which align with those required in current Alaska regulations. Included in this volume were the response plans and scenarios, prevention plan, supplemental information, BAT review, and the RPS calculations. This volume is principally kept up to date by the RPG.

The tech manual is generally considered to be under the control of SERVS, but ADEC stipulated during this renewal that it must be included as part of the shippers' plans in order for the plans to be considered complete and approvable under Alaska regulations. The tech manual includes information about available response resources (tugs, barges, skimmers, boom, etc.) and tactics for how the equipment can be used. The information in the tech manual is required to support the response scenarios.

The approval letter for this renewal included eight COA, five of which were standard administrative requirements. One required that the equipment for Nearshore Task Force 5 be maintained until new equipment was obtained and the plan was amended to reflect the new equipment. Two COA required that portions of the plan contents be verified. The first of these required that a workgroup be convened to verify personnel numbers, roles, and deployment strategies. The second required that a field exercise be conducted to verify aerial support needed during dispersant application. The workgroup and the exercise will be discussed separately in this report.

In order to efficiently manage workgroup activities, in early 2008 a Steering Committee was established, comprised of representatives from the RPG, APSC/SERVS, ADEC, and PWSRCAC. The Steering Committee was tasked with determining the issues around which workgroups would be formed and providing guidance to those workgroups. The personnel workgroup mentioned above was the first convened by the Steering Committee.

Supporting Documents:

RPG. (2007) Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan. 651.300.080215.RPGpwsCommnt.pdf

APSC/SERVS. (2007) SERVS Technical Manual.
2007 SERVS TM SV-140 E1R0 11.07.pdf

Schorr, B. (2007, October 31) Betty Schorr, ADEC, to Jack Thibault, ATC, re: Plan Approval Letter October 31, 2007. (Note: with regards to the joint ODPCP and SERVS Technical Manual, the approval letters to all plan holders were identical.)
071101 ADEC Approval Letteer ATC copy.pdf

ADEC/SPAR/IPP/MVS. (2007) Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan Findings Document.
2007 PWS ODPCP R0 11.07 locked.pdf

PWSRCAC Comments:

Date	Communication	Contents	Doc Management
April 2007	Letter to BP Exploration Alaska	Comments on 2007 PWS ODPCP (32 pp)	651.105.070424.TkrPlanCmts.pdf
May 2007	Letter to BP Exploration Alaska	Redline Draft Version of SERVS Technical Manual (17 pp)	651.105.070510.RPGcmtsTM.pdf
July 2007	Letter to ADEC Industry Preparedness and Pipeline Program	RFAI; 2007 PWS ODPCP and associated Vessel Response Plans (2 pp)	651..105.070723.RFAICoverLtr.pdf
July 2007	Comments and RFAI to ADEC	Comments and RFAI; 2007 PWS ODPCP, VRPs, and SOPEP (17 pp)	651.431.070723.RFAIConPhil.pdf
July 2007	Comments and RFAI to ADEC	Comments and RFAI; 2007 PWS ODPCP and Alaska Tanker Integrated VRP (17 pp)	651.431.070723.RFAIATC.pdf
October 2007	Letter to Marine Vessels Section	Comments on 2007 Renewal (2 pp)	651.105.071015.FinalTkrCmts.pdf

2008 Personnel Workgroup

Plan holders:
ATC, SeaRiver, Tesoro, BP Alaska, Polar Tankers, Chevron

Summary:
The Alaska Department of Environmental Conservation's (Department) November 2007 approval of the Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan (ODPCP) included several conditions of approval, one of which was for the Response Planning Group (RPG) to convene a workgroup which was tasked with using the completely restructured and approved ODPCP to calculate the number of people required to carry out the field work necessary for implementing the first 72 hours of the 809 Scenario. All resources, equipment, and personnel, to implement the first 72 hours of a response are required to be in-region and readily available.

The RPG convened the workgroup in January 2008 with members from SeaRiver Maritime, Inc., Polar Tankers, Inc., the Department, Alyeska Pipeline Service Company's (APSC) Ship Escort/Response Vessel System (SERVS) and the Prince William Sound Regional Citizens' Advisory Council (PWSRCAC). Over the next eight months the workgroup examined the 809 Scenario, SERVS Technical Manual, and SERVS subject matter experts to identify all of the activities in the 809 Scenario response which required field personnel. As much as possible, the activities were grouped into the task forces identified in the Resource Mobilization Chart in the 809 Scenario. Once the activities were identified, the workgroup determined what job roles the activities required, calculated how many people in each job role were required to carry out any given activity, and at what time the personnel would need to be on scene to carry out the response. The final job roles, personnel numbers, and notes on deployment and logistics were displayed in graphs, generally one graph per task force. Those graphs are located in Attachment 2 of this report.

The following table summarizes the minimum number of people needed in each major operational area for each of the first three days of the response. Open water includes lightering, the Valdez Star, and the five TransRec barges task forces; near shore includes up to five task forces and their support barges, wildlife task forces, hatchery protection task forces, small vessel decontamination, response center/staging areas, and other equipment logistics; and miscellaneous includes non-mechanical task forces, tracking and surveillance, waste management and shoreline cleanup assessment teams.

Summary of Personnel Required for First 72 Response Hours

Operational Area	**At Hour 25**	**At Hour 48**	**At Hour 72**
Open Water	96	119	119
Near Shore	35	82	99
Miscellaneous	8	10	10
Total	139	211	228

It is important to note that the numbers in the above table and in the Attachment 2 graphs represent the personnel numbers and position descriptions which were appropriate to man the 809 Scenario response at the time the workgroup completed its task. The numbers required in an alternate response with disparate conditions may be very different. In other words, the workgroup's results represent a "snapshot in time," and may not be accurate in the future if there are changes to the response system or in the APSC training program. Ongoing verification of the plan holders' ability to respond to the spill described in the 809 Scenario would be possible by changing the Attachment 2 graphs to reflect any changes to the response system in place.

Supporting Documents:

Blanchard, T., Miller, S., Morgan, M., Parkin, T., Robertson, R., Schantz, D., Swiss, L. (August 19, 2008) Personnel Workgroup Report: The Field Personnel Requirements for a Hypothetical Tanker Oil Spill Response in Prince William Sound.

PersonnelWorkGroupReportFINAL_000.pdf

2008 Dispersant Work Group

Plan holders:
ATC, SeaRiver, Tesoro, BP Alaska, Polar Tankers, Chevron

Summary:
ADEC's November 2007 approval of the plan included several conditions of approval, one of which was for the RPG to convene a workgroup that was tasked with conducting a field exercise to verify the aerial support required for dispersant monitoring. One purpose of this exercise was to resolve differences of opinion on the ability of spotter aircraft to also be the monitoring aircraft.
The workgroup convened under a charter adopted on October 7, 2008, and which limited the workgroup's scope to the SERVS tactic that used a C-130 with ADDS pack to apply dispersants (Non-Mechanical Tactic PWS-NM-1/2 Dispersant Treatment/Dispersed Oil Monitoring). An exercise was designed and scheduled for June 1, 2009, using a LAC L-382 aircraft for dispersant application (simulated with water) and a King Air for monitoring and observation.

There was no final report available for the exercise or the workgroup, however, in 2009 the plan holders submitted an application for amendment to the plan that included a change to Tactic PWS-NM-1 to show the use of a spotter aircraft during dispersant application. It was noted that the same plane could subsequently be used to carry out SMART Tier 1 monitoring activities. ADEC determined that this amendment did not meet the criteria of a "major" amendment, and so it was approved without public review.

Supporting Documents:

APSC/SERVS, Dispersant Work Group. (2009) SERVS/LAC Exercise ADDS Pack Deployment June 1st, 2009.
752.410.090727.APSCqtrLstExerc

Thompson, Ed, Mike Meadors, John Kotula, Donna Schantz. (2008) PWS Tanker C-Plan Dispersant Work Group Project Charter.
955.400.081007.DWGcharter

Thompson, Ed. (2009, December 11). Ed Thompson, RPG Chair, to John Kotula, ADEC, re: Application for Amendment to the Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan, December 11, 2009.
651.300.091211.BPPWSAmdApp.pdf

2008 Minor Amendment

Plan holders:
ATC, SeaRiver, Tesoro, BP Alaska, Polar Tankers, Chevron

Summary:
On January 24, 2008, the RPG submitted, on behalf of the six shipping companies, an application for amendment to their plans. The amendment consisted of changes to the core plan and technical manual. This was the first amendment after the newly drafted core plan and technical manual were approved in 2007. The application letter described the amendment as "administrative in nature to correct typographical errors and reformat information to improve clarity."

Changes included:

- Minor wording changes such as changing tugs to escort tugs and APSC and SERVS to APSC/SERVS;
- Text changes to clarify subjects or align descriptions with actual operations;
- Adding oil solidifiers to the Source Control BAT evaluation; and
- Adding black lights to the Prompt Detection of Oil Discharge BAT evaluation.

The ADEC did not deem this amendment as requiring review under 18 AAC 75.455, and so it was approved as a minor amendment without public review on January 29, 2008.

Supporting Documents:

APSC/SERVS. (2007) SERVS Technical Manual.
2007 SERVS TM SV-140 E1R0 11.07.pdf

RPG. (2007) Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan.
Schorr, B. (2008, January 29) Betty Schorr, ADEC, to Ed Thompson, Plan Administrator, on behalf of the Response Planning Group, RE: Routine Plan Amendment (#2007-01) to the Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan (Core Plan) Approved October 31, 2007, January 29, 2008.
651.300.080129.ADECcoreAmd.pdf

Thompson, Ed (on behalf of the RPG). (2008, January 24) Ed Thompson, Plan Administrator, to John Kotula, ADEC, RE: Application for Amendment to the Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan, January 24, 2008.
651.300.080124.RPGpwsApAmd.pdf

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2009 Wildlife Exercise

Plan holders:
ATC, SeaRiver, Tesoro, BP Alaska, Polar Tankers, Chevron

Summary:
On May 18, 2009, a Wildlife Task Force field deployment was completed by APSC/SERVS with Polar Tankers as the plan holder of record. With a focus on the wildlife strategies and tactics contained in the 2008 SERVS Technical Manual, this exercise was the first time a full wildlife task force was deployed and tested.

A seven-boat task force was deployed in response to a simulated oil slick in Port Valdez with the following objectives:

1. Choose best location for deployment of wildlife hazing equipment;
2. Properly and safely set up and use passive wildlife hazing equipment (e.g., Mylar tape);
3. Simulate proper and safe use of non-passive wildlife hazing equipment (e.g., Breco A/V alarm, propane cannon, shotgun/cracker shells, etc);
4. Capture and handle simulated otters and birds;
5. Contain and transport simulated otters and birds; and
6. Document all wildlife task force activities using proper forms.

A variety of lessons learned were captured from the exercise in the areas of planning, documentation, communications, and equipment. Overall, the exercise was considered a success because it so completely tested the functioning of an entire task force in the field.

Supporting Documents:

ConocoPhillips/Polar Tankers, Inc. and Alyeska Pipeline Service Company/SERVS. 2009. Prince William Sound 2009 Response Exercise Wildlife Task Force Deployment, May 18, 2009, Final Report.
752.300.090805.ADECPWSCPWldfRpt.pdf

Robertson, Roy. (2009) Polar Tankers Prince William Sound 2009 Response Exercise Wildlife Task Force Deployment Exercise Report.
752.431.090518.wildlifePolarTanker090518.pdf

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2009 ANS Crude Workgroup

Plan holders:
ATC, SeaRiver, Tesoro, BP Alaska, Polar Tankers, Chevron

Summary:
During the 2009 testing of the Crucial fuzzy disc skimmers, it was noted by PWSRCAC and others that the properties and characteristics of Alaska North Slope crude oil should be evaluated to determine if they had changed since last examined in 1989, in ways that would impact oil spill response and recovery. As a result, the Steering Committee convened a work group in October 2009 consisting of representatives from PWSRCAC, ADEC, USCG, APSC/SERVS, and RPG.

According to the work group charter, the expectations for the group were:

1. The Work Group is expected to determine the current ANS Crude properties that impact oil spill response.
    a. The work group will look at oil properties as they apply to oil spill response over 2 blocks of time: the first 72 hours of the response (days 1-3); and again, for days 4-6.
2. This work group will likely involve data gathering and consultation with Subject Matter Experts within and outside the work group.
3. Inform the Steering Committee of any issues / recommendations for modification of the Charter at any time during the Work Group's tenure.
4. The RPG will facilitate obtaining ANS Crude samples, for the purposes of the WG needs, as requested by the Work Group.

SL Ross Environmental Research, Ltd. and Merv Fingas, Spill Science, Environment Canada were retained to conduct laboratory analyses on ANS crude samples. Their analyses concluded that the oil property assumptions in the tanker ODPCP were correct. The workgroup reported that result with the recommendations that the properties should be retested and an update on the properties made at the time of each plan renewal.

Supporting Documents:

Fingas, Merv. (2010) Review of the North Slope Oil Properties Relevant to Environmental Assessment and Prediction.
500.431.100601.ANSpropRevw.pdf

SL Ross Environmental Research, Ltd. (2010) Spill Related Properties of ANS 2010 Crude Oil.
500.431.100301.SLRans2010Rpt.pdf

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2009 Crucial Skimmer Work Group

Plan holders:
ATC, SeaRiver, Tesoro, BP Alaska, Polar Tankers, Chevron

Summary:
The RPG, in partnership with Crucial, Inc., developed high capacity oleophilic skimmers with which the RPG wanted to replace the TransRec and GrahamRec skimmers in the open water portion of the PWS response system. State of Alaska regulation at 18 AAC 75.445(g)(5) required that skimmers be allowed "…an effective oil recovery capacity of 20 percent of the equipment manufacturer's rated throughput capacity over a 24-hour period, unless an analysis demonstrates to the satisfaction of the department that another effective daily oil recovery capacity is appropriate…." In order to receive more than 20 percent "credit" for the new Crucial skimmers, the Steering Committee convened a workgroup to oversee skimmer testing at the Ohmsett facility in New Jersey to determine total throughput, oil recovery rate, and oil recovery efficiency in accordance with ASTM F2709. SL Ross was contracted to design and conduct the testing in March 2009 which was attended by representatives from the RPG, ADEC, PWSRCAC, USCG, and others.

On December 8, 2014, ADEC approved the following oil recovery rates and efficiencies for the PWS tanker plan:

- Crucial Model C-Disc 13/30:79 bbl/hr ORR; 70%ORE
- Crucial Model C-Disc 56/30:354 bbl/hr ORR; 70%ORE
- Crucial Model C-Disc 88/30:550 bbl/hr ORR; 70%ORE
- Crucial Model C-Disc 100/30:629 bbl/hr ORR; 70%ORE

The results of this workgroup and the approved skimmer oil recovery rates and efficiencies were used to make changes to the tanker ODPCP which were put into effect with the approval of the 2017 renewal.

Supporting Documents:

Haugstad, Eric. (2009) PWS Tanker C-Plan Crucial Skimmer Performance Workgroup Charter.
600.450.100101.CruclSkmmrChrt.pdf

Schorr, Betty. (2009, September 11) Betty Schorr, ADEC, to Plan Holder/PRAC re: Oil Discharge Prevention and Contingency Plan Skimmer and Pump Recovery Rates, September 11, 2009.
651.300.090911.ADECdrateLTR.pdf

SL Ross Environmental Research Limited. (2009) Determining the Nameplate Capacity of a Modified Crucial Disc Skimmer Phase 4.
752.410.090302.OhmsettSkim.pdf

SL Ross Environmental Research Limited. (2009) Alaska Shippers Skimming Tests, Phase 5: Testing at Ohmsett to Determine Nameplate Capacity with Modified Crucial Disc Skimmer.
752.410.100415.OHMSETSkimTests.pdf

Wood, Graham. (2014, December 8). Graham Wood, ADEC, to Montgomery Morgan, RPG Chairman, re: Prince William Sound Crucial Model C-Disk Simmer Efficiency Decision, December 8, 2014.
651.300.150904.ADECcrclSkmmr.pdf

2010 Fishing Vessel Numbers Work Group

Plan holders:
ATC, SeaRiver, Tesoro, BP Alaska, Polar Tankers, Chevron

Summary:
Because the number and definition of fishing vessels needed to meet all RPS requirements during the first 72 hours of a response had proven to be a source of confusion and misunderstanding, a workgroup was convened to review the SERVS tactics and the 809 Scenario and count the number of fishing vessels required at hours 24, 48, and 72+ of the response scenario. The workgroup did not assess operational requirements for the fishing vessels based on tasking (e.g., whether a seiner, bowpicker, or tender would be best suited to a task), but only looked at total numbers required.

In order to accomplish this task, the work group walked through the scenario step by step, noting when fishing vessels were required to be on scene and operational for any given task or for assignment to a task force. They then worked backward to determine when those vessels would have to be dispatched in order to arrive on scene in time. Requirements for maximum operational times and downtime for maintenance and resupply were also taken into account.

The workgroup recommended adding a column to the tables in the 809 Scenario to show numbers of fishing vessels required at various times, but did not suggest any changes to the total number of fishing vessels needed. The workgroup did note in its final memo, however, that issues identified during the October 10, 2010, nearshore exercise might lead to the need for additional clarification of vessel types and duties.

Supporting Documents:

Morgan, Monty. (2011, February 16) Monty Morgan, Polar Tankers, to the Workgroup Steering Committee, re: Memo regarding the Work Group for Fishing Vessel Numbers, February 16, 2011.
FVNumbersWGFinalSummary.pdf

Thompson, Knolle, Kotula, and Schantz. (2010) PWS Tanker C-Plan Fishing Vessel Numbers in the First 72 Hours Charter.
FVNumbersCharterDRAFT2ChangesAccepted.pdf

2010 Nearshore Exercise

Plan holders:
ATC, SeaRiver, Tesoro, BP Alaska, Polar Tankers, Chevron

Summary:
On August 16, 2010, ADEC sent the RPG notice that ADEC intended to conduct an unannounced exercise within six months to test the plan holders' ability to implement a nearshore response on a real-time basis in order to address on-going concerns about nearshore response capabilities. The exercise was initiated on October 10, 2010, with the following objectives:

- Assign all personnel and fishing vessels required to carry out the 809 Scenario for 72 hours;
- Manage operations on the Barge 500-2 to provide all necessary support for three nearshore task forces;
- Demonstrate the ability to manage and operate three nearshore task forces within a five-mile radius of the Barge 500-2 for free oil recovery and sensitive area protection;
- Validate fishing vessel captains' ability to fully perform all Task Force and Strike Team Leader duties; and
- Demonstrate the effective use of proper lines of communication.

Polar Tankers, Inc. acted as the plan holder of record for the exercise which lasted two days with 24-hour operations, and involved over 90 fishing vessels and SERVS-operated boats in addition to the Barge 500-2 and associated tug. The exercise was evaluated by representatives from ADEC, RPG, PWSRCAC, USCG, and SERVS, and debriefs were held with fishing vessel captains in Cordova, Whittier, and Valdez.

Lessons learned were group into the categories timing, resources, equipment, and training. A number of areas were identified for which ADEC determined the plan holders and APSC/SEERVS could not meet their plan commitments. On October 29, 2010, ADEC met with the RPG to discuss interim compliance measures which were summarized in a letter sent to the RPG that same day. The interim measures required ensuring that there were enough personnel on the Barge 500-2 to carry out all of the functions of the barge and that an operational plan was put in place to manage barge functions to ensure plan requirements were met. The RPG responded with a letter on November 12, 2010, that described changes to Barge 500-2 manning and operations, as well as considerations regarding contractor work hours, tasks able to be completed while the Barge 500-2 is underway, and minibarge offloading processes.

ADEC's final report on the exercise was sent to Polar Tankers on December 7, 2010, with the warning that another unannounced nearshore exercise would be called before May 2011 to further test response capabilities. This follow-up exercise was conducted on April 18, 2011, and is discussed elsewhere in this report.

Supporting Documents:

Colby, Tom. (2010, November 12) Tom Colby, acting Response Planning Group Chairman, to John Kotula, ADEC, November 12, 2010. [Notification of implemented interim compliance measures].
752.300.101112.RPGnsExRspnse.pdf

Kotula, John. (2010, August 16) John Kotula, ADEC, to Tom Colby, acting Response Planning Group Chairman, August 16, 2010. [Notice of forthcoming unannounced exercise].
657.300.100816.ADECpwsNrshEx.pdf

Kotula, John. (2010, October 29) John Kotula, ADEC, to Tom Colby, acting Response Planning Group Chairman, October 29, 2010. [Requirement of interim compliance measures].
752.300.101029.ADECpwsNrShreEx.PDF

Kotula, John. (2010, December 7) John Kotula, ADEC, to Monty Morgan, Polar Tankers, Inc., December 7, 2010. [Final nearshore exercise report and cover letter].
752.410.101207.UnanncNshExcRpt.pdf

Robertson, Roy. (2010) Port Fidalgo Unannounced Nearshore Drill, October 10, 2010, Equipment Deployment Report.
752.431.101010.PFunanncdNrshr.pdf

2011 Nearshore Exercise

Plan holders:
ATC, SeaRiver, Tesoro, BP Alaska, Polar Tankers, Chevron

Summary:
Following the October 10, 2010, Nearshore Exercise, ADEC required the plan holders and SERVS put measures into effect to ensure their plan commitments would be met and warned that another unannounced nearshore exercise would be called before May 2011 to further test response capabilities. This follow-up exercise was conducted on April 18, 2011, with Polar Tankers, Inc. again volunteering to act as the plan holder of record.

This follow-up exercise lasted three days, and again involved over 90 fishing vessels and SERVS-operated boats in addition to the Barge 500-2 and associated tug. The exercise was evaluated by representatives from ADEC, RPG, PWSRCAC, USCG, and SERVS, and debriefs were held with fishing vessel captains in Cordova, Whittier, and Valdez.

As with the 2010 exercise, lessons learned were grouped into the categories timing, resources, equipment, and training. While improvements were seen over the previous exercise, there were still a number of areas for which ADEC determined the plan holders and APSC/SEERVS could not meet their plan commitments.

On July 27, 2011, ADEC issued its final report on the exercise. Although the report acknowledged that improvements had been made in some areas, the accompanying cover letter listed 12 areas in which the "Prince William Sound plan holders, through their contractor Alyeska Pipeline Service Company (APSC)JSERVS cannot meet the commitments described in the plan or for which the plan does not adequately describe operational realities." Most of these issues had been raised after the 2010 exercise, as well. ADEC required that the plan holders arrange a meeting between them, PWSRCAC, and USCG to discuss the report, describe any improvements made to the system since the April exercise, and develop a path forward to ensure a nearshore response could be adequately carried out in the future.

The above meeting took place on September 1, 2011. Subsequently, on September 14, APSC/SERVS sent a letter to Monty Morgan, Polar Tankers, which described the status of and/or action steps for the 12 areas of concern raised by ADEC. In October 2011, a workgroup was convened to address nearshore response issues (discussed elsewhere in this report).

Supporting Documents:

Miller, Sharry. (2011, July 27) Sharry Miller, ADEC, to Monty Morgan, Polar Tankers, Inc., July 27, 2011. [Final nearshore exercise report and cover letter].
752.300.110727.DECnrshrExRpt.pdf

Morales, Andres. (2011, September 14) Andres Morales, APSC, to Monty Morgan, Polar Tankers, Inc., September 4, 2011. [Letter describing status of nearshore response and action steps following the April 18, 2011, nearshore exercise].
752.300.110914.APSCnrshrExRsp.pdf

Robertson, Roy. (2011) Naked Island Unannounced Nearshore Drill, April 18, 2011, Equipment Deployment Report.
752.431.110418.NakedIslNoNtc.pdf

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2011 Nearshore Workgroup

Plan holders:
ATC, SeaRiver, Tesoro, BP Alaska, Polar Tankers, Chevron

Summary:
The October 2010 and April 2011 nearshore exercises identified a need to review and update the nearshore response components of the ODPCP. The Steering Committee convened a workgroup to analyze the nearshore components, particularly Task Forces 1 – 8, keeping in mind current Anvil Study assumptions, and recommend improvements, as needed, to tactics, job aides, and training. This workgroup included representatives from the RPG, PWSRCAC, ADEC, APSC, and USCG.
According to the Nearshore Work Group White Paper, "The Work Group reviewed available historical documents and job aides associated with the Nearshore response; assessed Nearshore response tactics; and considered all aspects of Nearshore group management. Of importance to the PWS response system and this Work Group was the 1995 Anvil Study. The Work Group reviewed various Anvil Study versions, associated correspondence, and other related documents, and determined that the 1995 version best represented the oil recovery planning assumptions which the Core Plan uses to demonstrate the plan holders' ability to meet the response planning standard defined in Alaska regulations (all documents are listed in the bibliography). Included in these assumptions are expectations for equipment types and task force configurations."

The Work Group recommended revisions in many areas, including:

- Task force operational times,
- Task force equipment lists,
- Equipment deployment from the barge 500-2,
- Minibarge towing,
- Operations during darkness,
- Minibarge discharge containment during offloading,
- Debris management,
- Use of support vessels,
- Sensitive area protection,
- Vessel decontamination,
- Skimmer operations, and
- Primary storage.

During the time in which this workgroup was convened, the ODPCP and SERVS Technical Manual were renewed and approved in 2012. That renewal incorporated the majority of the workgroup's recommendations. Additionally, exercises were conducted to provide training and test components of the nearshore response system.

Supporting Documents:

Pace, John and Nearshore Workgroup. (2012) Nearshore Work Group White Paper.
657.107.111029.NrShrWrkGrpRpt.pdf

Yarbrough, R., Morales, A., Schantz, D., Kotula, K. (2011, October 21) Updating Nearshore Response Workgroup Charter and Nearshore Tactics Go Forward Plans for Structural Improvements.
651.590.111001.NrshrRspCharter.pdf and 651.590.111001.NrshrTacticPln.pdf

2012 Renewal

Plan holders:
ATC, SeaRiver, Tesoro, BP Alaska, Polar Tankers, Chevron

Summary:
Nearly a year prior to the expiration of their plans, the RPG members began the process of preparing a renewal application. Important changes to the plan as submitted for this renewal included the following.

- A change in the cargo capacity of the largest tanker in the PWS system resulted in a change to the RPS volume. In the 2012 plan, the plan holders identified ATC's Alaskan Legend as the largest tanker with a cargo capacity of 1,300,351 bbl. In the 2007 plan, the largest ship was the Sea River Long Beach at 1,515,132 bbl. After including regulatorily allowed RPS reductions, this change resulted in a reduction of the RPS volume from 809,080 bbl to 546,147 bbl. This adjustment did not substantially change the response requirements in the plan as they are driven primarily by the need to contain, control, or clean up 300,000 bbl of oil in the first 72 hours, but it did mean that the main RPS scenario was called the "546 Scenario" rather than the "809 Scenario".

- The creation of dedicated Sensitive Area Task Forces and the integration of the Hatchery Protection Task Forces into the SAP task forces. The end result was that all sensitive areas in PWS, including salmon hatcheries, would be assessed for protection during an oil spill; priority would not necessarily be given to hatcheries if the oil spill trajectory did not indicate that necessity; and

- Modifications to the nearshore response system recommended following on-water exercises and by the Nearshore Workgroup.
    - One significant change was requiring 40 Tier II fishing vessels to be available to leave the harbor at Hour 18 rather than Hour 24, the prior standard for all Tier II vessels.

The approval letter for this renewal included six COA, five of which were standard administrative requirements. The sixth COA required a change to the information in the SERVS Technical Manual to show the requirement for 40 fishing vessels at Hour 18, as noted above.

ADEC identified several areas which needed to be verified through oil discharge exercises following the plan approval and which were documented in the 2012 Findings Document.

- Nearshore response
- Open water response
- Sensitive area protection
- Tier II fishing vessel availability, including the availability of 40 vessels by Hour 18
- Tier III activation process and training
- Tanker- and barge-of-opportunity availability

- Open water and nearshore oil recovery operations during hours of darkness
- Availability of specialty vessels, including tenders, through the fishing vessel program to meet plan requirements, including the tasks for which the Krystal Sea/Cordova Provider was previously contracted

Many activities occurred as a result of the above list. Those discussed further in this report include a 2012 nearshore night operations exercise and a 2014 nearshore exercise.

Supporting Documents:

RPG. (2012) Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan.
2012 PWS Tanker ODPCP R0 11.12.pdf

APSC/SERVS. (2012) SERVS Technical Manual.
2012 SERVS TM SV-140 E2R1 6.13.pdf

Schorr, B. (2012, November 1) Betty Schorr to Polar Tankers, Inc., November 1, 2012 [Approval Letter]. (Note: with regards to the joint ODPCP and SERVS Technical Manual, the approval letters to all planholders were identical.)
ADEC approval letter 11.1.12 copy.pdf

ADEC/SPAR/IPP/MVS. (2012) 2012 Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan Findings Document.
ADEC Findings Document 11.1.12 copy.PDF

PWSRCAC Comments:

Date	Communication	Contents	Doc Management
March 2012	Letter to ADEC	Comments and RFAI #1; 2012 PWS ODPCP (2 pp)	651.105.120323.TkrPlnCmtCvr.pdf
March 2012	Comments and RFAI to ADEC	RFAI #1 and Comments; 2012 PWS ODPCP (50 pp)	651.431.120323.RFAITkrCplan.pdf
August 2012	Letter to ADEC	RFAI #2 PWS ODPCP (2 pp)	651.105.120817.TkrPlnCmtCvr.pdf
August 2012	Comments and RFAI to ADEC	RFAI #2 and Comments; 2012 PWS ODPCP (10 pp)	651.431.120817.TkrCplnRFAI2.pdf
October 2012	Comments and RFAI to ADEC	Final Comments; 2012 PWS ODPCP and	651.431.121012.TkrPlncmtFinal.pdf

		SERVS (20 pp)	
October 2012	Letter to Marine Vessels Section Division of Spill Prevention and Response	Final comments; 2012 PWS ODPCP (3 pp)	651.105.121012.TkrPlnCvr.pdf

2012 ANS Crude Workgroup

Plan holders:
ATC, SeaRiver, Tesoro, BP Alaska, Polar Tankers, Chevron

Summary:
Following the 2009 – 2010 ANS Crude Oil Properties workgroup recommendations that oil samples be tested prior to each plan renewal, the Steering Committee convened a workgroup again in 2012 to have samples tested again (an attempt was initially made to convene the workgroup in 2011, but was not finally convened until 2012).

SL Ross was retained to conduct laboratory analyses on ANS crude samples, subsequent to which they produced a report titles "Spill Related Properties of ANS 2012 Crude Oil". Additionally, Merv Fingas, Spill Science, Environment Canada, prepared the report, "Review of the North Slope Oil Properties Relevant to Environmental Assessment and Prediction."

The results of the above reports were summarized in a memo from the workgroup to the Steering Committee. The workgroup determined that the properties of ANS crude had not changed significantly enough to impact skimmer performance, but recommended that retesting be conducted every five years at the midpoint of plan approval (to allow time for any changes required to be made before the plan was next submitted for approval).

Supporting Documents:

DeVries, Mark. (2013) Memo to the Steering Committee on behalf of the ANS Crude Properties Workgroup with final results.
Oil_Properties_WG_09_July_2013_final.pdf

LeJeune, Fred; Morales, Andres; Kotula, John; Schantz, Donna (Steering Committee). (2012) PWS Tanker C-Plan Updating ANS Crude Properties Charter.
651.410.120410.ANSCrdPropChrtr.pdf

SL Ross Environmental Research Ltd. (2012) ANS Crude Oil Sampling Standard Operating Procedure.
651.400.121017.ANSCrdOilStndOpPrcdr.pdf

SL Ross Environmental Research Ltd. (2013) Spill Related Properties of 2012 ANS Crude Oil.
ANS2012OilAnalysis-Report_Final03_2013.pdf

2017 Renewal

Plan holders:
ATC, BP Alaska, Chevron, Polar Tankers, SeaRiver, Tesoro

Summary:
In April 2016, the RPG members began the process of preparing a renewal application which was approved in February 2017. Important changes to the plan as submitted for this renewal included:

- The 100-disc Crucial oleophilic skimmers were adopted into the open water response system. One open-water barge was equipped with Crucial skimmers and the TransRec/GrahamRec skimmers were removed from it.
- One open-water barge was removed from the response system as it was determined the improved ORR and ORE of the Crucial skimmers over the TransRec would result in a reduced need to store recovered water and emulsion. Therefore, only four barges (rather than five) were needed to store anticipated recovered liquids in the 546 Scenario.

The approval letter for this renewal included three COA: administrative corrections to the SERVS Technical Manual, usual requirements for Fishing Vessel program updates, and a standard requirement that ADEC be notified if there is any change to the plan holders' relationship with the response contractors.

Supporting Documents:

ADEC/SPAR/IPP/MVS. (2017) 2017 Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan Findings Document.
20170201 Polar approval letter w ADEC Findings Doc.pdf

APSC/SERVS. (2017) SERVS Technical Manual.
SV-140_Ed_3_Rev_3_CD.pdf

RPG. (2017) Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan.
PWS_ODPCP_2017_Ed_Rev_3_CD.pdf

Wood, Graham. (2017, February 1) Graham Wood, ADEC, to Karen Hays, Alaska Tanker Company, re: Plan approval letter, February 1, 2017. (Note: with regards to the joint ODPCP and SERVS Technical Manual, the approval letters to all plan holders were identical.)
20170201 Polar approval letter w ADEC Findings Doc.pdf

PWSRCAC Comments:

Date	Communication	Contents	Doc Management
July 2016	Comments and RFAI to ADEC	Comments and RFAI; 2016 Application for Renewal of PWS ODPCP and SERVS (16 pp)	651.431.160701.PWStkrCmts.pdf
July 2016	Letter to ADEC	Comments and RFAI; 2016 Application for Renewal of PWS ODPCP and SERVS (16 pp) (2 pp)	651.105.160701.PWStkrCmtCvr.pdf
December 2016	Comments and RFAI to ADEC	Round 2: Comments and RFAI; 2016 Application for Renewal of PWS ODPCP and SERVS (16 pp) (8 pp)	651.431.161215.TkrCmtsRFAI.pdf

2018 Major Amendment – Marine SVCS Transition

Plan holders:
ATC, BP Alaska, Chevron, Polar Tankers, SeaRiver, Tesoro

Summary:
On May 31, 2017, the plan holders submitted an application for amendment to the ODPCP and SERVS Technical Manual which focused on the transition of marine services from Crowley to Edison Chouest Offshore (ECO). An accompanying document describing the transition plan was also submitted for reference. The amendment was approved on June 22, 2018.

This amendment not only changed the contractor that provided tanker escort services and the tugs and barges for a spill response, but also introduced an entirely new fleet of tugs and oil spill response barges (OSRB) to the system. Of the previously contracted barges, only the Mineral Creek remained for lightering and nearshore task force support.

The approval letter for this amendment included six COA.

1. Requirement to make seven administrative edits and factual corrections prior to publication.
2. PWS Transition Plan changes and implementation, including:
    a. Updates to training information,
    b. Adding an appendix to the Transition Plan which maintained the TransRec tactics until all TransRec skimmers were decommissioned,
    c. Inclusion of the Transition Plan as an appendix to the ODPCP until transition was complete, and
    d. Additional demonstrations and documentation to assure vessel configuration and crew training.
3. Submittal of additional documentation, including ABS and USCG documentation and load and decant plans for the Mineral Creek and OSRBs.
4. Update of PWS Tanker C-plans information regarding escort and sentinel tugs, as well as the response training program.
5. Additional exercise requirements which included a tabletop exercise for additional personnel needed to meet the 18-hour commitment, a lightering barge exercise, and field demonstrations of open water recovery operations.
6. Requirement to provide quarterly reports for crew training and exercises,

Accompanying the approval letter was a Basis of Decision (Findings Document) which discussed 11 issues of importance or concern during the plan approval process for which ADEC explained their decision rationale.

Supporting Documents:

ADEC/SPAR/IPP/MVS. (2018) Oil Discharge Prevention and Contingency Plan Basis of Decision.

APSC/SERVS. (2018) SERVS Technical Manual.

Fletcher, S. and Miller, S. (2020) Memo RE: Conclusion of 2017-2018 PWS Tanker Plan Review (SERVS Transition).
651.300.200807.NukaSERVStrnstn.pdf

RPG. (2018) Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan.

Wood, Graham. (2018, June 22) Graham Wood, ADEC, to Karen Hays, Alaska Tanker Company, re: Amendment approval, June 22, 2018. (Note: with regards to the joint ODPCP and SERVS Technical Manual, the approval letters to all plan holders were identical.)
20180622-ATC-ApprovalECOAmend.pdf

PWSRCAC Comments:

Date	Communication	Contents	Doc Management
May 2018	Letter to ADEC	Rounds 1 & 2: Comments and RFAI on 2017 Amendment to PWS ODPCP	651.105.180523.ADECrfaiR2.pdf

2018 Minor Amendment

Plan holders:
ATC, BP Alaska, Chevron, Polar Tankers, Crowley, Andeavor

Summary:
On October 19, 2018, the plan holders submitted an application for amendment to the ODPCP and SERVS Technical Manual, the purpose of which was to remove Appendix D, Transition Plan, from the SERVS Technical Manual as the implementation of the Transition Plan had been completed per Condition of Approval 2A of the 2018 plan approval letter. In addition, minor corrections were made to the plan's text and contact information was updated.

On November 9, 2018, ADEC approved the amendment and acknowledged that the required conditions had been met.

Supporting Documents:

ADEC/SPAR/IPP/MVS. (2018) Oil Discharge Prevention and Contingency Plan Basis of Decision.

APSC/SERVS. (2018) SERVS Technical Manual.

Merrell, Geoff. (2018, November 9) Geoff Merrell, ADEC, to Brett Lowe, Polar Tankers, Inc., re: Polar Tankers, Inc. Oil Discharge Prevention and Contingency Plan, ADEC Plan # 16-CP-4038; Minor Amendment Approval, November 9, 2018. (Note: with regards to the joint ODPCP and SERVS Technical Manual, the approval letters to all plan holders were identical.)
20181106PolarMinorAmendApprov with DistList.pdf

Morgan, Monty (on behalf of RPG). (2018, October 19) Monty Morgan, Polar Tankers, to Ron Doyel, ADEC, RE: Application to Amend the Prince William Sound Tanker Oil Discharge Prevention and Contingency Plans (Revision 2), October 19, 2018.
651.300.181019.PWSRPGtkrCPrv2.pdf

RPG. (2018) Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan.

Wood, Graham. (2018, June 22) Graham Wood, ADEC, to Karen Hays, Alaska Tanker Company, re: Amendment approval, June 22, 2018. (Note: with regards to the joint ODPCP and SERVS Technical Manual, the approval letters to all plan holders were identical.)
20180622-ATC-ApprovalECOAmend.pdf

2020 Major Amendment

Plan holders:
ATC, BP Alaska, Polar Tankers, Crowley, Andeavor

Summary:
On September 6, 2019, the plan holders submitted an application for amendment to the ODPCP and SERVS Technical Manual, the purpose of which was to make administrative changes to the Tanker C-plan and SERVS Technical Manual. Addendums to the application were submitted to ADEC on September 23 and 24, 2019. ADEC declared the PWS ODPCP sufficient for review on September 26, 2019 and set the public review period to begin on October 2, 2019 and end on November 1, 2019.

The original application included Chevron as a plan holder, but before the amendment was approved, Chevron had withdrawn its State of Alaska vessel response plan and its membership in the RPG.

On November 13, 2019, ADEC sent letters to the plan holders which required that several RFAI be addressed. PWSRCAC had sent to ADEC on December 18, 2019, a letter which expressed concern about the removal of ice scouts from the plan and requested that the topic be addressed in the RFAI. ADEC's final RFAI included, "Please explain that there is no reduction in ice scouting capabilities with the proposed changes to the plan, and provide a description of the ice detection equipment that is currently available or in use on the escorting tugs and tankers."

In their December 2, 2019, response to the RFAIs, the RPG said:

> Due to tides, winds and current, a six-hour-old ice report is of marginal use to the mariner. Improvements in radar over the years have increased the ability of the VTS to see if there are any possible impairments near the shipping lanes in real time. These improvements, along with speed restrictions, the requirement for two Escort vessels, one of which can be an ice scout vessel and the changing condition of Columbia Glacier all justify removal of this requirement. Changes support ice reporting from on scene resources in the vicinity of the transit instead of reports provided up to nine hours previously. As a result, timely and accurate ice information will be reported so the best decisions can be made by professional mariners and COTP. All tankers and escort vessels have state-of-the- art radar as well as high powered searchlights.

On March 3, 2020, ADEC approved the amendment with the following Condition of Approval: "Prior to the publication of the approved plan, include additional information in the Core Plan, Section 2.1.8.2, Ice Navigation Procedures, that commits that an Ice Scout Vessel (ISV) will be part of normal transit procedures in PWS when ice is observed within one nautical mile of the traffic lanes until there is a report that confirms no ice is present."

One issue raised by PWSRCAC during this amendment review process was changes to language in core plan Section 3.9.1 Training Overview. PWSRCAC submitted an RFAI asking for explanations for the changes made which included the removal of job roles to determine training, the elimination of the learning management system to track training, and the removal of specific dates by which an individual's training should be completed. None of PWSRCAC's RFAI was passed on to the plan holders and the suggested changes were implemented into the plan.

Supporting Documents:

APSC/SERVS. (2018) SERVS Technical Manual.

Carey, Anna. (2019, November 13) Anna Carey, ADEC, to Brett Lowe, Polar Tankers, Inc., re: Polar Tankers, Inc. Oil Discharge Prevention and Contingency Plan, ADEC Plan # 16-CP-4038; Request for Additional Information, November 13, 2019. (Note: with regards to the joint ODPCP and SERVS Technical Manual, the letters to all plan holders were identical.)
20191113PolarRFAI.pdf

Morgan, Monty (on behalf of RPG). (2019, September 6) Monty Morgan, Polar Tankers, to Anna Carey, ADEC, re: Application to Amend the Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan, Revision 3, September 6, 2019.
651.300.190906.ADECrpgAmndRv3.pdf

Morgan, Monty (on behalf of RPG). (2019, December 2) Monty Morgan, Polar Tankers, to Anna Carey, ADEC, re: Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan, Revision 3, Response to Request for Additional Information, December 2, 2019.
651.300.191202.RPGamnd3RFAI.pdf

RPG. (2018) Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan.
Schantz, Donna. (2019, November 1) Donna Schantz, PWSRCAC, to Anna Carey, ADEC, re: Requests for Additional Information on the Proposed Amendment to the Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan, ADEC Plan Nos. 16-CP-2222; 16-CP-5192; 16-CP-4038; 16-CP-4039; and 16-CP-4046, November 1, 2019.
651.105.191101.ADECTkrCPCmts.pdf

Schantz, Donna. (2019, December 18) Donna Schantz, PWSRCAC, to Anna Carey, ADEC, re: PWSRCAC Final Comments on the Proposed Amendment to the Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan, ADEC Plan Nos. 16-CP-2222; 16-CP-5192; 16-CP-4038; 16-CP-4039; and 16-CP-4046, December 18, 2019.
651.105.191218.ADECTkrCPCmts.pdf

Wood, Graham. (2020, March 3) Graham Wood, ADEC, to Brett Lowe, Polar Tankers, Inc., re: Polar Tankers, Inc. Oil Discharge Prevention and Contingency Plan, ADEC Plan # 16-CP-4038; Plan Approval, March 3, 2020. (Note: with regards to the joint ODPCP and SERVS Technical Manual, the approval letters to all plan holders were identical.)

20200303Polar PWS Approval Maj, Amend, Cert, BOD, DistList.pdf

PWSRCAC Comments:

Date	Communication	Contents	Doc Management
November 2019	Letter to ADEC Division of Spill Prevention and Response	RFAI on proposed amendment (3 pp)	651.105.191101.ADECTkrCPCmts.pdf
December 2019	Letter to ADEC Division of Spill Prevention and Response	Final Comments on Proposed Amendment (3 pp)	651.105.191218.ADECTkrCPCmts.pdf

2020 Minor Amendment

Plan holders:
ATC, BP Alaska, Polar Tankers, Crowley, Andeavor

Summary:
On October 2, 2020, the plan holders submitted an application for amendment to the ODPCP and SERVS Technical Manual, the purpose of which was to amend the plan in accordance with changes to the USCG guidelines for dispersant operations. According to the application letter, "These revised guidelines, which go into effect January 1, 2021, necessitated a change of the contract provider for large aircraft dispersant application. Also included are administrative updates to the PWS Tanker ODPCP."

After deeming the proposed changes as constituting a minor amendment, ADEC approved the amendment on December 2, 2020. The approval letter listed revisions in four areas:

1. Updates to the Polar Tankers Inc. Vessel Response Plan and Shipboard Oil Pollution Emergency Plan (VRPSOPEP), Core Plan and SV-140 with new service provider for fixed-wing aerial dispersants in PWS and equipment descriptions, effective date January 1, 2021;
2. Updates to service provider for fixed-wing spotter aircraft to support dispersant application, effective date January 1, 2021;
3. Updates with new Fort Liscum self-propelled skimmer information;
4. VRPSOPEP updates including Administrative updates to Vol. 1 and Vol. 2 including the Table of Contents, Revision History, page footers and section identification information; updates to contact information for QIs and dive contractors; updates to clarify descriptions in Vol. 1 and Vol. 2; updates to Safety information in Vol. 1 to clarify PPE descriptions.

Supporting Documents:

APSC/SERVS. (2018) SERVS Technical Manual.

Morgan, Monty (on behalf of RPG). (2020, October 2) Monty Morgan, Polar Tankers, to Anna Carey, ADEC, re: Application to Amend the Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan, Revision 4, October 2, 2020.
651.300.201008.RPGrsbmtRev4.pdf

RPG. (2018) Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan.

Smith, Crystal. (2020, December 2) Crystal Smith, ADEC, to Brett Lowe, Polar Tankers, Inc., re: Polar Tankers, Inc. Oil Discharge Prevention and Contingency Plan, ADEC Plan # 16-CP-4038; Minor Amendment Rev. 64 Approval, December 2, 2020. (Note: with regards to the joint ODPCP and SERVS Technical Manual, the approval letters to all plan holders were identical.)
20201202.Polar.Rev.64.Approval.Minor.Amend.pdf

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Prince William Sound TANKER PLAN HISTORY

1976
- First APSC Oil Spill Contingency Plan completed; approved in 1977

1977
- First Alaska oil spill contingency planning requirements enacted
- Federal government approves APSC plan

1989
- PWSRCAC incorporated (contract with APSC signed in Feb 1990)
- *Exxon Valdez* Oil Spill
- ADEC Emergency Order requiring improved response plan

1990
- Oil Pollution Act passed
- Alaska law enacted with revised contingency planning requirements

1993
- Anvil Corporation *Oil Spill Response Plan and Mass Balance Study*

1994
- *Eastern Lion* oil spill
- ADEC plan review guidelines developed
- Disabled Tanker Towing Study #1

1995
- First approval under new regulations (AL, BAT, ET, NS, RE, SAP, S, TR, W)
- 1995 Plan Adjudication (BAT, ET, SAP)

1999
- Renewal (B, ET ,FV, SAP, S, TR)
- Copper River Delta Oil Spill Trajectory Analysis and Agreement (1995 COA 8) (C, NM, SAP, S, TR, W)
- Gulf of Alaska Response Agreement

1998
- Adjudicatory Hearing re: 1995 Plan Approval on Phasing and Copper River (BAT, S)
- Tanker Escort Improvements (1995 COA 2) (BAT, ET, RE)

1997
- Enhanced Escort System Task Force *See 1998 Tanker Escort Improvements*
- Sea trials with Protector Class tugs *See 1998 Tanker Escort Improvements*
- BAT regulations revised (BAT)

1996
- Near Shore Response Plan (1995 COA 3) (B, FV, L, NS, RE, TR)
- ESA's for PWS, Kodiak, and Kenai Penninsula (1995 COA 5) (TR, W)
- Supplemental Data for PWS Air Logistics Study and Water Cargo Transportation into Kodiak and Cordova (1995 COA 4) (NM, RE, TR)
- Wildlife Training and Otter Hospital Compliance Schedule (FV, PN, TR, W)
- Recreational areas in PWS (1995 COA 6) (SAP, TR)
- PWS Risk Assessment

2000
- Disabled Tanker Towing Study #2 *See 2001 Major amendment* (ET, TR)
- Geographic Response Strategy (1999 COA 3) (C, SAP, TR)
- Major amendment (1999 COA 6) (FV, RE, TR)
- Minor amendment (1999 COA 5) (B, C, L, RE)
- Minor amendment (1999 COA 6) (FV, TR)
- Reporting of Tanker Casualty (1999 COA 9) (ET)
- Scenario Workgroup (1999 COA 4) (PN, RE, S)

2001
- Major amendment (1999 COA 8) (BAT, ET, S, TR)

2002
- Renewal (BAT, C, ET, NS, PN, S)

2003
- Statute extends length of plan approvals from 3 to 5 years

2004
- RMROL regulations amended (RMROL)
- Hinchinbrook Entrance tug arrest exercise (ET)

2005
- Five minor amendments (NM, RE)

2012
- Renewal (BAT, FV, L, NS, PN, RMROL, SAP , TR)
- Alaska North Slope Crude Properties Work Group (OP)

2011
- Nearshore exercise - full nearshore deployment (FV, NS, TR)
- Nearshore Response Workgroup (FV, NS, RE, TR)

2010
- Fishing Vessel workgroup (FV, PN, TR)
- Nearshore exercise - full nearshore deployment (FV, NS, TR)

2009
- Wildlife Task Force Exercise (W)
- Alaska North Slope Crude Properties Work Group (OP)
- Crucial Skimmer Test Work Group (RE)

2008
- PWS Steering Committee *See 2007 Renewal*
- Personnel workgroup (PN, TR)
- Dispersants Aerial Support Workgroup (AL, NS)
- Minor Amendment (BAT)

2007
- Renewal (AL, BAT, FV, NS, NM, PN, RE, RMROL, SAP, S, TR, W)

2006
- Two minor and one major amendment (FV, L, NS, RE, TR)

2016
- ADEC plan review guidelines revised

2017
- Renewal (B, BAT, FV, L, NS, NM, OP, PN, RE, RMROL, SAP, S, TR)

2018
- Major amendment (B, ET, PN, TR)
- Minor amendment (ET)

2020
- Major amendment (ET, RE)
- Minor amendment (AL, RE)

= Renewal or Amendment
= Work Group or Report
= Exercise
= Legal Action
= Regulatory Change
= Summary not included

AL	= Air Logistics
B	= Barges
BAT	= BAT
C	= Contracts/MOU/MOA
ET	= Escort Tugs
FV	= F/V Program
L	= Lightering
NS	= Nearshore
NM	= Non-mechanical
OP	= Oil Properties
PN	= Personnel Numbers
RE	= Response Equipment
RMROL	= RMROL
SAP	= SAP/GRS
S	= Scenarios
TR	= Training
W	= Wildlife

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Briefing for PWSRCAC Board of Directors – September 2021

ACTION ITEM

Sponsor: Joe Lally and the Long Range Planning Committee

Project number and name or topic: 210 - Long Range Planning

1. Description of agenda item: Staff and the Long Range Planning Committee are requesting the Board review and approve a list of proposed protected projects for the upcoming Long Range Planning cycle. The proposed protected project list for this year is included as Attachment A to this briefing sheet.

The definition of a protected project is found on page 21 of the currently approved Long Range Plan and reads:

> *However, some projects—such as the Observer and the annual report—do not have clear starting and ending dates but instead are presumed to be permanent, ongoing parts of the Council's operations. Any such projects determined to be permanent and ongoing or mandatory obligations based on OPA 90 or our contract with Alyeska are to be classified as protected projects. The Board will annually review and approve any recommendations for protected projects. Protected projects are not subject to the project scoring and ranking as outlined later in the Plan.*

Protected projects have been a part of the Long Range Planning process since 2012. For many years, protected projects have been reviewed by the full Board in January, after the December project scoring process has already taken place. Since 2018, the Board has been asked to review and approve the proposed list of protected projects at the September meeting to allow any projects the Board would like removed from protected status to be scored and ranked. Changing the Board's review of protected projects from January to September aligns better with the overall project scoring process.

Through this agenda item, the full Board is also asked to participate in the current Long Range Planning effort. To help generate Board enthusiasm and participation, the Long Range Plan Guidance Memo and associated documents are included as Attachment B. Also included is the Project Briefing Sheet as Attachment C.

2. Why is this item important to PWSRCAC?: The Board adopted the current PWSRCAC Five-Year Long Range Plan and has committed to the use of the plan and the Long Range Planning process to develop annual work plans and budgets as well as continually revising and improving the Long Range Plan itself. The Board has directed its members and staff to work together to follow the Long Range Planning process that is now focused on preparing a draft FY2023-FY2027 work plan for consideration and adoption by the Board.

3. **Previous actions taken by the Board on this item:** A strategic plan for the upcoming five fiscal years has been annually approved by the Board since approximately 2001. Please contact staff for a complete and extensive of all Long Range Planning actions.

4. **Committee Recommendation:** The Long Range Planning Committee recommends Board approval of the proposed protected project list included as Attachment A.

Current Long Range Planning Committee members are Board members Robert Archibald, Amanda Bauer (also TOEM Chair), Patience Andersen Faulkner, and Elijah Jackson; the PWSRCAC technical committee chairs consisting of Steve Lewis (POVTS Chair), Jim Herbert (OSPR Chair), Davin Holen (SAC Chair), and Trent Dodson (IEC Chair); and IEC member Cathy Hart.

5. **Action Requested of the Board of Directors:** Approve the protected project list for the upcoming Long Range Planning process as presented in Attachment A to this briefing sheet.

Each Director is also asked to take individual action over the next several months by participating in the Long Range Planning process.

5. **Attachments:**

A: Proposed List of Protected Projects

B: Guidance Memo (includes the following)

- Projects ranked for FY2022
- Projects proposed for FY2022 that were not funded
- Projects proposed for out-years FY2023-FY2026
- Proposed FY2023 budget template
- One-page strategic plan
- OPA 90 & Alyeska contract requirements

C. New Project Briefing Sheet.

Proposed Protected Projects
For Long Range Planning

Following is a list of proposed protected projects. Definitions of these projects are presented on the following pages, along with the current Board approved funding amounts. The Board is asked to review and approve these protected projects.

OPA90 Mandated Projects

Project #	Project Name	Justification	Committee
6510	State Contingency Plan Reviews	OPA90 Mandate	OSPR
9510	LTEMP	OPA90 Mandate	SAC

Permanent/Ongoing Projects

Project #	Project Name	Justification	Committee
3200	Observer Newsletter	Permanent/ongoing	IEC
3300	Annual Report	Permanent/ongoing	IEC
3610	Web Presence BAT	Permanent/ongoing	IEC
6530	Weather Data & Sea Currents	Permanent/ongoing	OSPR/POVTS
6531	Port Valdez Weather Buoys	Permanent/ongoing	OSPR/POVTS

What is a Protected Project?

The definition of a protected project can be found on page 21 of the Board-approved Long Range Plan, and states:

> *However, some projects—such as the Observer and the annual report—do not have clear starting and ending dates but instead are presumed to be permanent, ongoing parts of the Council's operations. Any such projects determined to be permanent and ongoing or mandatory obligations based on OPA90 or our contract with Alyeska are to be classified as protected projects. The Board will annually review and approve any recommendations for protected projects. Protected projects are not subject to the project scoring as outlined later in this plan.*

Proposed Protected Projects:

6510 State Contingency Plan Reviews (FY2022 budget $85,000):
The purpose of this project is to monitor, review, and comment on state and federal oil discharge prevention and contingency plans (c-plans) for the Valdez Marine Terminal (VMT), the Trans-Alaska Pipeline System (TAPS) tankers that transit Prince William Sound, the Alaska Federal/State Preparedness Plan and associated Subarea Plans. As these c-plans outline prevention and response activities that would be undertaken to clean up spilled oil in the Prince William Sound region, review of these plans is a major task for PWSRCAC as outlined in both the PWSRCAC/Alyeska contract and OPA 90. Providing input and comments on prevention and response in Prince William Sound directly supports PWSRCAC's mission.

9510 Long Term Environmental Monitoring Program (FY2022 budget $154,980):
PWSRCAC initiated the Long Term Environmental Monitoring Project (LTEMP) in 1993 to satisfy the OPA 90 mandate "to devise and manage a comprehensive program of monitoring the environmental impact of the operations of terminal facilities and crude oil tankers while operating in Prince William Sound." LTEMP's normal scope of work involves collecting and analyzing blue mussel tissue, marine sediments, and passive sampling devices for hydrocarbon pollution. That monitoring takes place annually in Port Valdez at three sampling locations. Every five years more extensive mussel and passive sampling device monitoring is conducted at a total of 11 sites in Prince William Sound and the Gulf of Alaska, including the three Port Valdez sites. The scope of work for LTEMP in FY2021 was greatly expanded due to the April 12, 2020 oil spill from the terminal. The three normal Port Valdez LTEMP sites were monitored five times instead of once. Additionally, two more monitoring sites, close to the origin of the oil spill, were monitored – at times on a weekly basis. This project supports the PWSRCAC mission by monitoring the environment and providing the organization with the best scientific knowledge to help make informed decisions and comments pertaining to the operation and maintenance of the terminal and tankers.

3200 Observer Newsletter (FY2022 budget $6,000):
The goal of this project is to publish three Observer newsletters per year on PWSRCAC's work and issues. Both e-mail and print versions of the newsletter are produced. This project supports the Council's mission by informing the general public as well as our members and our industry and agency associates, on our issues, concerns, activities, programs, and projects.

3300 Annual Report (FY2022 budget $7,400):
The goal of this project is to prepare and publish PWSRCAC's Annual Report each year. This project supports the Council's mission by informing the general public, our member entities and our industry and agency associates of our issues, concerns and activities, programs and projects.

3610 Web Presence BAT (FY2022 budget $7,080):

This project funds Best Available Technology for the Council's public websites, committee extranet, and online presence through regular maintenance, upgrades, and new features. Every three years, a major review and technology upgrade will be conducted. The Council's web presence serves as a public communications tool and educational resource to increase public awareness of the Council, the history of the Council and citizen oversight of the oil industry, and the environmental impacts of the transportation of oil through Prince William Sound. The website is intended to foster dialog and engagement between the Council, our constituents, and the online community.

6530 Weather Data and Sea Currents (FY2022 budget $14,400):**
This project studies wind, water current and other environmental factors near the Valdez Marine Terminal, in Prince William Sound and the Gulf of Alaska that may aid navigation or affect the ability to prevent, respond to, contain, and clean up an oil spill. Much of this information is collected via the PWS Weather Station Network developed and maintained by the PWS Science Center. PWSRCAC has been a co-funding supporter of the network for over ten years.

6531 Port Valdez Weather Buoys (FY2022 budget $71,200):**
This project is to assemble, deploy and maintain two buoys capable of measuring ocean currents and common weather parameters. The first buoy is installed near Jackson Point in Port Valdez [61.0910°N 146.3811°W]. The second buoy is installed at the Valdez Duck Flats [61.1201°N | 146.2914°W]. The Prince William Sound Science Center (PWSSC) will be partnering with the Council to facilitate this project. A website showing the buoy data can be found at http://www.pwswx.pwssc.org/MOB1.html.

**** Note for weather-related projects**: One of the responsibilities the Council is charged with under the Oil Pollution Act of 1990 is to "Study wind and water currents and other environmental factors in the vicinity of the terminal facilities which may affect the ability to prevent, respond to, contain, and clean up an oil spill."

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Long Range Planning Guidance Memo & Supporting Documents August 2021

This packet is intended to provide the Committees with useful information and guidance to help identify projects for fiscal years 2023-2027. The approved schedule for this year's LRP effort is as follows:

- **September 10, 2021**: External project idea deadline
- **October 2021**: Technical committees meet to develop project ideas for FY23-FY27
- **October 22, 2021**: FY23 project budget sheets due
- **November 5, 2021**: Internal management review of FY23 budget sheets due
- **November 19, 2021**: Committee prioritization of FY23 projects due
- **December 3, 2021**: Volunteer workshop to review proposed projects
- **December 5, 2021**: Board and staff ranking of projects due (Sunday after workshop)
- **Early January 2022**: LRP Committee approves draft LRP for Board approval
- **January 26, 2022**: Board LRP workshop
- **January 27-28, 2022**: Board meeting to approve LRP
- **March 11, 2022**: Edits to budget briefing sheets due
- **Week of March 14, 2022**: Manager review of briefing sheets
- **Week of March 21, 2022**: "Rat killing" meeting
- **Week of April 4, 2022**: Finance Committee meeting to review proposed budget
- **April 18, 2022**: Mail budget books to Board members
- **May 4, 2022**: Budget workshop in Valdez

The information contained in this packet includes:

1) Projects ranked for FY2022
2) Projects proposed for FY2022 that were not funded
3) Projects proposed for out-years FY2023-FY2026
4) FY23 project budget template. Please note that some of the projects that were not included in this year's budget may need additional planning before they are brought back again for future years.
5) Board-approved One-Page Strategic Plan
6) List of OPA 90 and Alyeska Contractual Requirements to help in identifying what OPA 90 or Alyeska Contract requirements each project addresses.

Committees are asked to look at the projects proposed for this year but not included in the budget to determine if they are still relevant. If they are still relevant, please review the goals and objectives and submit an updated budget before proposing the project again for the next fiscal year or beyond.

In addition to reviewing deferred FY22 projects, committees are also asked to develop any new projects for fiscal years 2023-2027. Committees are asked to identify priority goals and objectives and how proposed projects fulfill these goals. Some questions that should

be answered include:

- How does the project support PWSRCAC's mission?
- What OPA 90 or Alyeska Contract requirements does this project address? (See attached list)
- Which projects most directly support the high-priority goals of PWSRCAC?
- What is the rationale for continuing current projects? What will be solved or accomplished by continuing an existing project into the coming fiscal year?
- Do the projects have definitive enough goals that you will know when they're complete/finished? Are any of your committee's projects likely to continue for multiple years? Please provide a clearly defined end point for each project or indicate how long the project is expected to take to complete.
- Are there projects that would benefit by having multi-committee involvement (i.e., done in partnership with one or more other committees)?
- How will information and/or results from the program/project be used to promote PWSRCAC's mission? Objectives should be clear, specific, and measurable.

Please also think about the following:

- Would your committee like assistance from the IEC in promoting and/or educating the public on your project? IEC stands ready to help if any projects are identified and brought to them.
- If your project has a scientific component, would it benefit from SAC's review and input? SAC stands ready to help if any projects are identified and brought to them.
- Is this project likely to be supported or opposed by regulators and/or industry?
- Will this project complement work by regulators and/or industry?

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Attachment B

Project Scoring Matrix - Funded FY2022 Projects

Sort Index	Staff	Lead Comm	Lead Comm Rank		FY2022 Projects	Approved FY2022 Budget	Assigned by Staff Points	Assigned by Board Points	Assigned By All Points
1	AS	POVTS	1	8013	AIS / Radar Whitepaper	$35,000	79	52	131
2	AL	SAC	1	9512	Determining Concentration and Composition of Oxygenated HC from VMT	$70,400	67	59	126
3	RR	OSPR	4	6536	Valdez Weather Buoy Data Analysis	$15,000	64	53	117
4	AS	POVTS	2	8012	Line Throwing Device Trials	$77,500	59	56	115
5	AL	TOEM	1	5057	APSC's Appeal of EPA's July 2020 Air Quality Rule	$60,000	65	47	112
6	AL	TOEM	2	5XXX	Crude Oil Piping Inspections Review	$51,744	52	54	106
7	AL	TOEM	3	5056	Tank 8 Floor and CP System Replacement Design Review	$11,000	47	59	106
8	AL	SAC	2	9511	PWS Forage Fish Surveys	$46,300	57	44	101
9	BO	IEC	1	3530	Youth Involvement	$45,750	59	40	99
10	BO	IEC	2	3410	Fishing Vessel Pgm Community Outreach	$15,000	55	43	98
11	AS	OSPR	1	65XX	Seal Rocks Wind Meter	$42,000	49	48	97
12	LS	OSPR	3	6540	Copper River Delta and Flats GRS History	$20,000	55	38	93
13	LS	OSPR	6	6511	History of VMT C-Planning	$25,000	57	35	92
14	AS	OSPR	2	6534	Cape Hinchinbrook Wx Surveillance	$500	52	36	88
15	AL	TOEM	4	5081	Crude Tank 7 and BW Tank 94 Maintenance Review	$96,000	36	49	85
16	AS	POVTS	3	8014	Emergency Ship Handling Training	$30,000	36	45	81
17	JR	OSPR	7	7050	Out of Region Equipment Survey	$30,000	43	35	78
18	BO	IEC	5	6560	Peer Listener Training	$35,000	44	30	74
19	AL	SAC	4	9513	Hydrocarbon Sensor Monitoring of VMT Impacts in Port Valdez	$4,700	32	41	73
20	AL	SAC	6	9110	PWS Marine Bird Winter Survey	$40,400	31	41	72
21	AL	SAC	3	9520	Marine Invasive Species	$56,870	35	37	72
22	JR	OSPR	5	7030	Fishing Vessel Readiness / Dock Walk	$1,074	27	39	66
23	AS	POVTS	5	9XXX	Review of Geological Hazards in PWS	$95,000	21	45	66
24	AL	TOEM	5	5XXX	Minimizing the Environmental Impacts of PFAS from the VMT	$32,000	39	26	65
25	BO	IEC	4	3903	Internship	$3,300	20	42	62
26	BO	IEC	3	3XXX	Cultivating Robust Engagement	$10,000	31	27	58
27	AL	SAC	5	9XXX	Toxicity of Treated Ballast Water to Copepods	$105,238	30	28	58
28	AS	POVTS	4	8XXX	MASS Technology Review	$35,000	23	21	44
29	LS	OSPR	8	65XX	OPA 90 Analysis	$15,000	10	30	40

* Unshaded projects were funded for FY2021 or FY2022. Shaded projects were deferred to FY2023 or beyond.

Protected Projects - Not Ranked

Staff	Lead Comm	Lead Comm Rank		FY2022 Projects	Approved FY2022 Budget
LS	OSPR	Protected	6510	State Contingency Plan Reviews	$85,000
AS	OSPR	Protected	6530	Weather Data & Sea Currents	$14,400
AS	OSPR	Protected	6531	Port Valdez Weather Buoys	$71,200
AJ	IEC	Protected	3200	Observer Newsletter	$6,000
AJ	IEC	Protected	3300	Annual Report	$7,400
AJ	IEC	Protected	3610	Web Presence BAT	$7,080
AL	SAC	Protected	9510	LTEMP	$154,980

Attachment B

Prince William Sound Regional Citizens' Advisory Council
Projects Not Included in FY2022 Budget

#	Title/Explanation	Project Manger	Committtee		Budget
Programs and Projects					
3XXX	Cultivating Robust Engagement	Oliver, Betsi	IEC	$	10,000.00
	This project is not moving forward due to lack of funding. It was ranked as lower priority by the Board than other projects. This project may be considered for funding later in FY 2022 if sufficient funds become available. (LRP Rank 26 out of 29)				
5591	Crude Oil Piping Inspections Review	Love, Austin	TOEM	$	51,744.00
	Staff is recommending this project not move forward until we can confirm with Alyeska that they are willing to provide the information this project requires. We have at least two other TOEM projects for FY 2022 that will require information from Alyeska, but those are projects related to work Alyeska is conducting this summer or in the near future (Tank 7 & 94 Inspections and Tank 8 CP System and Floor Replacement). Alyeska has indicated getting information related to current projects is much more doable than getting information on work that was done in the past – such as the piping inspections that would be the subject of this project. It is anticipated this project will be deferred until FY 2023 or FY 2024 when the Council can confer and confirm with Alyeska regarding their ability to support the exchange of information this project would require. (LRP Rank 6 out of 29)				
5XXY	Minimizing the Environmental Impacts of Per and Polyfluoroalkyl Substances (PFAS) from the Valdez Marine Terminal	Love, Austin	TOEM	$	32,000.00
	This project should be deferred until we can understand the extent of Alyeska's current work to mitigate the impacts of PFAS at the VMT. In discussions with Alyeska staff, we've learned that Alyeska is working on this issue and some of that current work may overlap with the scope of this project. To avoid duplication, this project should be deferred until a time when we have a thorough understanding of Alyeska's work to minimize PFAS impacts at the terminal. (LRP Rank 24 out of 29)				
6XXX	Analysis of the Oil Pollution Act of 1990 (OPA90)	Swiss, Linda	OSPR	$	15,000.00
	This project is not moving forward due to lack of funding. It was ranked as lower priority by the Board than other projects. (LRP Rank 29 out of 29)				
6XXZ	Seal Rocks Wind Meter	Sorum, Alan	OSPR	$	5,500.00
	This project is dependent on US Coast Guard permitting that has not been secured yet. This project will be recommended for funding during FY 2022 if permits are secured and sufficient funds become available. (LRP Rank 11 out of 29)				
7050	Prince William Sound Shippers' Out-of-Region Equipment Survey	Robida, Jeremy	OSPR	$	30,000.00
	This project is not moving forward due to lack of funding. It was ranked as a lower priority by the Board than other projects. However, the last out-of-region survey was conducted by PWSRCAC in 2007, and with recent changes in TAPS shippers, this project is timely. The project manager will continue to move forward with drafting a scope of work and developing an RFP for this project, so that the efforts can quickly begin should sufficient funds become available during FY 2022. (LRP Rank 17 out of 29)				
8XXY	Maritime Autonomous Surface Shipps (MASS) Technology Review	Sorum, Alan	POVTS	$	35,000.00
	This project is not moving forward due to lack of funding. It was ranked as lower priority by the Board than most of the other projects. (LRP Rank 28 out of 29)				
9XXZ	Toxicity of Treated Ballast Water to Copepods	Verna, Danielle	SAC	$	105,238.00
	This project is not moving forward due to lack of funding for the relatively high cost of the project. It was ranked as lower priority by the Board than other projects. (LRP Rank 27 out of 29)				
9XYX	Review of Geological Hazards in Prince William Sound	Sorum, Alan	POVTS	$	95,000.00
	This project is not moving forward due to lack of funding. It was ranked as lower priority by the Board than other projects. (LRP Rank 23 out of 29)				
Function Total				$	379,482.00
Total				$	379,482.00

Programs and Projects	Current Approved FY2022	Proposed FY2023	Proposed FY2024	Proposed FY2025	Proposed FY2026
INFORMATION AND EDUCATION					
3200--Observer Newsletter	$6,000	$8,600	$8,800	$9,000	$9,200
3300--Annual Report	$7,400	$10,400	$10,800	$11,200	$11,600
3410--Fishing Vessel Outreach Pilot	$15,000				
3530--Youth Involvement	$45,750	$50,750	$50,750	$50,750	$50,750
3610--Website Presence BAT	$7,080	$7,434	$7,805	$8,039	$8,280
3903--Internship	$3,300	$4,000	$4,000	$4,000	$4,000
3XXX--Cultivating Robust Engagement	$10,000				
6560--Peer Listener Training	$35,000				
Subtotals	$129,530	$81,184	$82,155	$82,989	$83,830
TERMINAL OPERATIONS AND ENVIRONMENTAL MONITORING					
5057--APSC's Appeal of EPA's July 2020 Air Quality Rule	$60,000				
5XXX--Crude Oil Piping Inspections Review	$51,744				
5056--Tank 8 Floor and CP System Replacement Design Review	$11,000				
5081--Crude Tank 7 and BW Tank 94 Maintenance Review	$96,000				
5XXX--Minimizing Impacts of PFAS from the VMT	$32,000				
Subtotals	$250,744	$0	$0	$0	$0
OIL SPILL PREVENTION AND RESPONSE					
6510--State Contingency Plan Reviews	$85,000	$127,500	$136,800	$140,904	$145,131
6511--History of Contingency Planning	$25,000	$25,000			
6530--Weather Data/Sea Currents	$14,400	$16,000	$16,000	$16,000	$16,000
6531--Port Valdez Weather Buoys	$71,200	$45,000	$45,000	$45,000	$45,000
6536--Analysis of Weather Buoy Data	$15,000	$15,100	$15,100	$15,100	$15,100
65XX--Seal Rocks Wind Meter	$42,000	$1,000	$1,000	$1,000	$1,000
6534--Cape Hinchinbrook Weather Surveillance	$500	$46,000	$1,700	$1,700	$1,700
6540--Copper River Delta and Flats GRS History	$20,000				
65XX--OPA 90 Analysis	$15,000				
7030--Fishing Vessel Readiness / Dock Walk	$1,074				
7050--Out of Region Equipment Survey	$30,000				
70XX--Documenting Various UAV Uses During Spill Response		$20,000			
654X--Converting GRSs into a GIS Data Layer		$20,000			

65XX--Mesoscale Weather Modeling in PWS			$50,000		
65XX--Land-Based Weather Station at VMT			$66,200		
Subtotals	$319,174	$315,600	$331,800	$219,704	$223,931
PORT OPERATIONS AND VESSEL TRAFFIC SYSTEMS					
8012--Field Trials of Messenger Line Throwing	$77,500				
8013--AIS / Radar Whitepaper	$35,000				
8014--Emergency Ship Handling Training Courses	$30,000				
8XXX--MASS Technology Review	$35,000				
9XXX--Review of Geological Hazards in PWS	$95,000				
Subtotals	$272,500	$0	$0	$0	$0
SCIENTIFIC ADVISORY					
9110--PWS Marine Bird Winter Survey	$40,400	$41,700			
Environmental Monitoring Program	$154,980	$156,779	$223,109	$229,802	$236,696
9511--Herring/Forage Fish Survey	$46,300				
9520--Marine Invasive Species	$56,870	$10,000	$10,000	$10,000	$10,000
9512--Determining Concentration and Composition of Oxygenated Hydrocarbons from VMT	$70,400				
9513--Hydrocarbon Sensor Monitoring of VMT Impacts in Port Valdez	$4,700	$7,500	$7,500	$7,500	$7,500
9XXX--Toxicity of Treated Ballast Water to Copepods	$105,238	$84,762			
Subtotals	$478,888	$300,741	$240,609	$247,302	$254,196
Committee Subtotals	$1,450,836	$697,525	$654,564	$549,995	$561,958
PROGRAMS					
3100--Public Information	$8,185	$8,431	$8,683	$8,944	$9,212
3500--Community Outreach	$62,175	$64,040	$65,961	$67,940	$69,979
3600--Public Communications Program	$3,950	$4,300	$4,650	$5,000	$5,350
4000--Program and Project Support	$1,533,505	$1,579,510	$1,626,896	$1,675,703	$1,725,974
4010--Digital Collections Program	$9,476	$9,760	$10,053	$10,355	$10,665
5000--Terminal Operations Program	$6,400	$3,400	$3,400	$3,400	$3,400
6000--Oil Response Program	$16,000	$16,000	$16,000	$16,000	$16,000
7000--Oil Spill Response Operations Program	$7,050	$7,262	$7,479	$7,704	$7,935
7520--Preparedness	$42,400	$45,400	$48,500	$49,955	$51,454
8000--Maritime Operations Program	$13,390	$13,792	$14,205	$14,632	$15,071
9000--Environmental Monitoring Program	$15,900	$15,900	$15,900	$15,900	$15,900
Subtotals	$1,718,431	$1,767,795	$1,821,728	$1,875,532	$1,930,939

LEGISLATIVE AFFAIRS					
4400--Federal Government Affairs	$53,148	$54,742	$56,385	$58,076	$59,819
4410--State Government Affairs	$19,570	$20,157	$20,762	$21,385	$22,026
4500--DR&R Research	$5,000				
Subtotals	$77,718	$74,900	$77,147	$79,461	$81,845
BOARD OF DIRECTORS					
1350--Information Technology	$519	$535	$551	$567	$584
2100--Board Administration	$143,214	$147,511	$151,936	$156,494	$161,189
2150--Board Meetings	$67,980	$70,019	$72,120	$74,284	$76,512
2200--Executive Committee	$0	$0	$0	$0	$0
2220--Governance Committee	$0	$0	$0	$0	$0
2222--Finance Committee	$0	$0	$0	$0	$0
2700--Legislative Affairs Committee	$0	$0	$0	$0	$0
Subtotals	$211,713	$218,065	$224,607	$231,345	$238,285
COMMITTEES AND COMMITTEE SUPPORT					
2250--Committee Support	$152,259	$156,826	$161,531	$166,377	$171,369
2300--Oil Spill Prevention & Response	$824	$849	$874	$900	$927
2400--Port Operations & Vessel Traffic System	$1,648	$1,697	$1,748	$1,801	$1,855
2500--Scientific Advisory Committee	$1,648	$1,697	$1,748	$1,801	$1,855
2600--Terminal Operations & Environmental Monitoring	$1,648	$1,697	$1,748	$1,801	$1,855
2800--Information and Education Committee	$1,648	$1,697	$1,748	$1,801	$1,855
Subtotals	$159,675	$164,465	$169,399	$174,481	$179,715
GENERAL AND ADMINISTRATIVE					
1000--General and Administrative	$536,172	$552,257	$568,825	$585,889	$603,466
1050--General and Administrative--Anchorage	$166,876	$171,883	$177,039	$182,350	$187,821
1100--General and Administrative--Valdez	$189,895	$195,592	$201,460	$207,503	$213,728
1300--Information Technology	$125,622	$129,391	$133,272	$137,270	$141,389
Subtotals	$1,018,565	$1,049,122	$1,080,596	$1,113,013	$1,146,404
Subtotals	$4,636,938	$3,971,871	$4,028,040	$4,023,827	$4,139,146
Contingency (Current Year Budget)	$50,000	$50,000	$50,000	$50,000	$50,000
Total Expenses	$4,686,938	$4,021,871	$4,078,040	$4,073,827	$4,189,146

Attachment B

Prince William Sound Regional Citizens' Advisory Council
Budget Briefing Sheets FY-2023

Type:
☐ Capital project (separate capital projects checklist required)
☐ Program ☐ Protected
☐ Project ☐ Protected
☐ Program/Project Support

Project Number:
Project Title:
Lead Staff:
Project Team Members:
Cross Committee Interest (If yes, which committees):

1. Description
    a. Provide a short description of the program/project.
    b. Why is this program/project necessary? What need or information gap is being addressed?
    c. How will information or results be used?
    d. How will program/project success be measured?
2. Program/project goals and objectives [Should be clear, specific, and measurable with starting and ending dates.]
3. Strategic plan and mission
    a. Which strategic goal(s) or objective(s) does this program/project advance? [Check all that apply on attached strategic plan page.]
    b. How/why does the proposed program/project advance PWSRCAC's mission?
    c. Which OPA 90 and Alyeska contract requirements does it address? [Check all that apply on attached OPA 90/Alyeska contract page.]
4. Project Implementation
    a. How will the program/project be accomplished? (e.g., with in-house staff and/or outside contractors, etc.? Please estimate project manager time in hours.)
    b. Does the program/project require Alyeska or shipper cooperation?
    c. Is this an ongoing program/project? If not, when will it start and when will it be finished?
    d. Does the program/project involve partnership or cost sharing with other organizations?
5. Budget (3 year, if applicable). Provide detail for each cost item and summarize on attached budget sheet by account category
    a. What is the total cost of the program/project over its life?
    b. How much was previously spent on this program/project? (This information may be obtained from the financial manager.)

Attachment B

Budget

Acct #	Account Title	Notes	FY-2023	FY-2024	FY-2025
50000	Salaries and Wages				
50100	Employer Payroll Taxes				
50400	Group Health Insurance				
50500	Rents				
50600	Utilities—Telephone & Data				
50700	Supplies (consumable)				
50800	Equipment Leases				
50850	Software & Software Subscriptions	Included only in 1300 budget.			
50900	Internet & E Mail Access	Included only in 1300 budget.			
51000	Equipment Purchases (Non-capitalized < $5,000)	Generally, anything $5,000 and more is depreciated over the asset's useful life.			
51100	Dues and Subscriptions	Magazine and other subscriptions.			
51200	Accounting	Included only in 1000 budget.			
51300	Legal Fees				
51450	Professional Fees -- Other				
51600	Advertising				
51700	Education	Tuition and other training expenses, excluding travel.			
51800	Printing & Reproduction				
51900	Postage, Delivery & Shipping				
52300	Conference & Conventions	Conference registration fees and other conference costs, excluding travel.			
52400	Equipment Maintenance				
53000	Insurance	Excluding group health insurance.			
54000	Library & Reference Materials				
55100	Recruiting Expenses				
57000	Research Contributions				
58000	Depreciation & Amortization				
59000	Miscellaneous				
59500	Contracts				
60000	Travel	Describe who is traveling, where they are going, and for what purpose.			
61000	Business Meals				
62000	Meeting Expenses	Meeting room rental and catering expenses.			
	Total				

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Attachment B

Prince William Sound Regional Citizens' Advisory Council
One-Page Strategic Plan

Mission Statement: Citizens promoting the environmentally safe operation of the Alyeska terminal and associated tankers

Link to full FY2022-FY2026 Long Range Plan

Core Purpose: Citizen oversight to prevent oil spills, minimize environmental impacts, and promote response readiness

Core Values

- Represent the interests of our stakeholders by providing an effective voice for citizens
- The foundation of PWSRCAC is volunteerism
- Promote vigilance and combat complacency
- Organizational transparency and integrity through truth and objectivity
- Foster environmental stewardship

Overarching Goals and Objectives (see pages 14-16 for a more complete list of objectives)

- Compliance with OPA90 and Alyeska contractual requirements.
  ☐ (1) Annual re-certification and funding
  ☐ (2) Maintain regional balance
  ☐ (3) Link projects and programs to OPA90 and Alyeska contract

- Continue to improve environmental safety of oil transportation in our region.
  ☐ (4) Monitor and review development of, and compliance with, laws and regulations
  ☐ (5) Pursue risk-reduction measures and promote best available technologies and best practices
  ☐ (6) Monitor operations and promote a safe and clean marine terminal
  ☐ (7) Monitor and review the condition of the tanker fleet/maritime operations
  ☐ (8) Monitor and promote the safe operation of all Alyeska/SERVS-related on-water assets
  ☐ (9) Monitor and review environmental indicators
  ☐ (10) Promote and facilitate effective research for scientific, operational and technical excellence

- Develop and maintain excellent external and internal communication.
  ☐ (11) Advocate for government and industry measures to improve the environmental safety of oil transportation
  ☐ (12) Maintain and improve relationships with government, industry and communities
  ☐ (13) Be the model for citizen oversight and provide support for other citizens' advisory groups
  ☐ (14) Ensure availability of PWSRCAC information
  ☐ (15) Work to improve availability of information to PWSRCAC from industry sources

- Achieve organizational excellence.
  ☐ (16) Effective short and long term planning, with clear and measurable goals for projects
  ☐ (17) Fiscally responsible, efficient, and easily understood financial procedures and reporting
  ☐ (18) Committed to continuous improvement
  ☐ (19) Recognize people as the most important asset of the organization
  ☐ (20) Recruit and develop knowledgeable and committed Board members, volunteers, and staff
  ☐ (21) Strong volunteer structure and support for volunteers

Attachment B

OPA 90 and Alyeska Contractual Requirements

PWSRCAC's structure and responsibilities stem from the Oil Pollution Act of 1990 (OPA 90) and our contract with Alyeska Pipeline Service Company (Alyeska). These documents guide our organization and it is important to review the following requirements, and if possible the source documents, when developing proposed projects for Board consideration and approval. Following are abbreviated summaries of some of the major requirements from both documents. Please check the box next to each requirement that the proposed project addresses.

Link to full text of OPA 90 Sec 5002: Terminal and Tanker Oversight and Monitoring, August 18, 1990
Link to full text of contract between PWSRCAC and Alyeska, February, 1990

OPA 90 Contractual Requirements

☐ (1) Regional Balance, broadly representative of communities and interests in the region.
☐ (2) Provide advice to regulators on the federal and state levels.
☐ (3) Provide advice and recommendations on policies, permits, and site-specific regulations relating to the operation and maintenance of terminal facilities and crude oil tankers.
☐ (4) Monitor the environment impacts of the operation of terminal facilities and crude oil tankers, as well as operations and maintenance that affect or may affect the environment in the vicinity of the terminal facilities.
☐ (5) Review the adequacy of oil spill prevention and contingency plans for the terminal facilities and crude oil tankers operating in Prince William Sound and review the plans in light of new technological developments and changed circumstances.
☐ (6) Provide advice and recommendations on port operations, policies, and practices.
☐ (7) Conduct scientific research and review scientific work undertaken by or on behalf of the terminal or oil tanker operators or government entities.
☐ (8) Devise and manage a comprehensive program of monitoring the environmental impacts of the operations of the terminal facility and crude oil tankers.
☐ (9) Monitor periodic drills and testing of oil spill contingency plans.
☐ (10) Study wind and water currents and other environmental factors in the vicinity of the terminal that may affect the ability to prevent, respond to, contain, and clean up an oil spill.
☐ (11) Identify highly sensitive areas that may require specific protective measures.
☐ (12) Monitor developments in oil spill prevention, containment, response, and cleanup technology.
☐ (13) Periodically review port organizations, operations, incidents, and the adequacy and maintenance of vessel traffic service systems designed to ensure safe transit of crude oil tankers pertinent to terminal operations.
☐ (14) Periodically review the standards for tankers bound for, loading at, exiting from, or otherwise using the terminal facilities.
☐ (15) Foster partnerships among industry, government, and local citizens.

Alyeska Contractual Requirements

☐ (1) Provide local and regional input, review and monitoring of Alyeska's oil spill response and prevention plans and capabilities, environmental protections capabilities, and the actual and potential environmental impacts of the terminal and tanker operations.
☐ (2) Increase public awareness of subjects listed above.
☐ (3) Provide input into monitoring and assessing the environmental, social, and economic consequences of oil related accidents and actual or potential impacts in or near Prince William Sound.
☐ (4) Provide local and regional input into the design of appropriated mitigation measures for potential consequences likely to occur as a result of oil or environmental related accidents or impacts of terminal and tanker operations.
☐ (5) Provide recommendations and participate in the continuing development of the spill prevention and response plan, annual plan review, and periodic review of operations under the plan including training and exercises.
☐ (6) Other concerns: comment on and participate in selection of research and development projects.
☐ (7) Review other important issues related to marine oil spill prevention and response concerns that were not obvious with the contract was signed.
☐ (8) Review other concerns agreed upon by the Council regarding actual or potential impacts of terminal or tanker operations.

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Attachment C

PWSRCAC Long Range Planning
PROJECT
BRIEFING TEMPLATE

Submitted by: _____

1. What is the name of the new project?

2. Give a brief description of the new project.

3. Why is this new project important to our organization, mission and/or our constituents?

4. What would be accomplished as a result of successfully completing the new project?

5. What is the probability of successfully completing the project?

6. What is the estimated cost to complete this new project?

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Briefing for PWSRCAC Board of Directors – September 2021

ACTION ITEM

Sponsor: Board Governance Committee
Project number and name or topic: Proposed Bylaw Amendment

1. **Description of agenda item:** This is a proposed amendment to Section 2.2.2 of the PWSRCAC Bylaws entitled "Class II Membership." The Bylaws currently list the Alaska Division of Homeland Security and Emergency Management (DHS&EM) and the Alaska Department of Military and Veterans Affairs (DMVA) as two separate and distinct Class II members. This needs to be corrected because DHS&EM resides within the larger DMVA. According to the Oil Pollution Act of 1990, these entities should be combined as one Class II member and have one non-voting representative for the combined entity. This amendment makes the necessary correction.

2. **Why is this item important to PWSRCAC:** Updating the Bylaws is an important component of good governance. The proposed amendment is important because the Bylaws should accurately reflect the Class II membership and correctly allocate the number of non-voting representatives that may participate at Board meetings.

3. **Previous actions taken by the Board on this item:** The Board Governance Committee and the Board of Directors review and amend the PWSRCAC Bylaws on a periodic basis. The most recent amendment occurred in September 2020 when the Board amended Section 3.8 to authorize meetings conducted by video conference.

4. **Summary of policy, issues, support or opposition:** Section 5002 (d) (2) of the Oil Pollution Act of 1990 (OPA 90) provides that:

> (B) NONVOTING MEMBERS. One ex-officio, nonvoting representative shall be designated by, and represent, each of the following:
>
> (ix) The Division of Emergency Services, Alaska Department of Military and Veterans Affairs.

The State subsequently changed the Division of Emergency Services to the Division of Homeland Security and Emergency Management. The Board made that name change in the Bylaws in December of 2004.

For some reason, perhaps an administrative error, the Bylaws list the Division of Homeland Security and Emergency Management (DHS&EM) and the Department of Military and Veterans Affairs (DMVA) as two separate and distinct Class II, non-voting members, even though DHS&EM is part of DMVA. OPA 90 clearly anticipated that these two entities should be combined and have one nonvoting representative. The Bylaws should be consistent with OPA 90.

The two entities should be combined into one in Section 2.2.2. The new member name should be:

> "Division of Homeland Security and Emergency Management, Alaska Department of Military and Veterans Affairs."

Representatives of the DHS&EM were consulted regarding this proposed bylaw change, and the response was that this change is appropriate, and that DHS&EM will represent DMVA.

5. **Committee Recommendation:** The Board Governance Committee recommends approval of the proposed amendment.

6. **Relationship to LRP and Budget:** Not Applicable.

7. **Action Requested of the Board of Directors:** Approve the amendment to Section 2.2.2 of the Bylaws entitled "Class II Membership" by combining the Division of Homeland Security and Emergency Management and the Alaska Department of Military and Veterans Affairs into one Class II member and designating the new member name as "Division of Homeland Security and Emergency Management, Alaska Department of Military and Veterans Affairs."

Note: Per Section 7 of PWSRCAC's Bylaws, any amendment to the Bylaws requires the affirmative vote of two-thirds of the number of Directors fixed by these Bylaws (13 affirmative votes).

8. **Alternatives:** None Recommended

9. **Attachments:** None

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Briefing for PWSRCAC Board of Directors – September 2021

ACTION ITEM

Sponsor: Gregory Dixon
Project number and name or topic: FY2022 Budget Modifications

1. **Description of agenda item:** The Board is asked to approve modifications to the FY2022 budget as outlined on the attached list. Generally, after completion of the annual financial statement audit, several budget changes are necessary to account for timing differences between actual start and completion of projects or because new information is available that was not known at the time the original budget was approved. In addition, a few adjustments are proposed to travel budgets as a result of the COVID-19 pandemic.

The attached list of proposed budget modifications includes an explanation for each modification. The Finance Committee will meet on September 13, 2021 to review the proposed changes and will provide a recommendation for Board action.

The proposed modifications include changes, if any, to the capital budget as well as the operating budget.

The Financial Manager will be available during the Board meeting to explain the changes and answer any questions that may arise.

2. **Why is this item important to PWSRCAC**: PWSRCAC's annual budget provides the organizations' spending plan and authorities. While some of the listed modifications are within the authorities of the Executive Director and the Executive Committee, others are not. The entire list is therefore presented to the Board to simplify the approval process.

3. **Previous actions taken by the Board on this item:**

Meeting	Date	Action
Board	5/21/2021	Approved FY2022 budget.

4. **Committee Recommendation:** The Finance Committee will be meeting on September 13, 2021 to review the list of budget modifications and provide a recommendation for Board consideration.

5. **Action Requested of the Board of Directors:** Approve the FY2022 budget modifications as listed on the provided sheet, with a total revised contingency in the amount of $292,867.

6. **Alternatives:** None recommended.

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7. **Attachments:** The list of proposed FY2022 budget modifications.

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Prince William Sound Regional Citizens' Advisory Council
FY2022 Budget Modifications

Mod #	Description	Task #	Income	Expenses	Contingency	Capital Budget	Net Assets Used
	Original budget		$ 3,739,044	$ 4,176,335	$ 100,000	$ -	$ (537,291)
	Recruiting expenses -- 4 positions.	1000		$ 15,000	$ (15,000)		
	Professional services Foraker Group for transition help	1000		$ 3,500	$ (3,500)		
	Foraker Group partnership fee	1000		$ 2,500	$ (2,500)		
	Implement multi-factor authentication for computer network.	1300		$ 10,000	$ (10,000)		
	Consultant to work with Board on development of a strategic plan and long-range planning process.	2100		$ 15,000	$ (15,000)		
	Volunteer workshop and appreciation party cancelled. Workshop will be virtual.	2250		$ (49,250)	$ 49,250		
	Additional budget for website upgrades and maintenance.	3610		$ 5,000	$ (5,000)		
	Carryover balance for Helvey Communications contracts for Connecting with Our Communities	3620		$ 15,000	$ (15,000)		
	Add budget for DR&R project	4500		$ 20,000	$ (20,000)		
	Adjust NESHAP OLD budget to actual contract amount	5057		$ (20,800)	$ 20,800		
	Adjust Crude Oil Tank 7 and Ballast Water Tank 94 Maintenance Review project budget to actual contract amount.	5081		$ (20,912)	$ 20,912		
	Year 2 of History of Contingency Planning project deferred	6511		$ (25,000)	$ 25,000		
	Add Out of Region Equipment Survey project.	7050		$ 30,000	$ (30,000)		
	Carryover balance of Glosten contract for line throwing project.	8012		$ 24,500	$ (24,500)		
	Carryover balance for C-Core contract for AIS/Radar whitepaper	8013		$ 12,500	$ (12,500)		
	Science Night cancelled	9000		$ (11,300)	$ 11,300		
	Additional budget for Spill Science for dispersants work	9550		$ 18,000	$ (18,000)		
	AOOS Grant for sensor-- previously approved		$ 20,000			$ 20,000	$ (20,000)
	Additional net assets available after FY2021 audit				$ 236,605		$ (236,605)
	Total		$ 20,000	$ 43,738	$ 192,867	$ 20,000	$ (256,605)
	Ending Balances		$ 3,759,044	$ 4,220,073	$ 292,867	$ 20,000	$ (793,896)

Briefing for PWSRCAC Board of Directors – September 2021

ACTION ITEM

Sponsor: Donna Schantz and Administration
Project number and name or topic: Scheduling for PWSRCAC January 2022 Events

1. **Description of agenda item:** Staff is seeking Board direction on how to proceed with the January 2022 events, including the January 26, 2022 Long Range Planning workshop and the January 27-28, 2022 Board of Directors meeting.

At its May 2021 Board meeting, the Board delegated authority to the Executive Committee to decide whether to hold the upcoming December 2021 and January 2022 events in person or virtually. The Executive Committee met on June 16 to discuss how to proceed and directed staff to hold the December 2021 Volunteer Workshop virtually; cancel the volunteer party and Science Night; and to move forward with holding the January 2022 events in person with COVID-19 mitigation measures to be decided later in the year.

At its September 9 meeting, the Executive Committee was asked to provide guidance on the January 2022 events given changing conditions. In light of the current upward trend of the COVID-19 pandemic and the alert level classified as high for the State of Alaska, the Executive Committee expressed the importance of bringing this decision to the full Board of Directors. The Executive Committee made a recommendation that the January 2022 events be held virtually.

Should the Board of Directors choose to hold the January 2022 events in person, they are asked to consider the following questions:

- Should the number of people invited to these events be limited?
- Who will be seated at the Board meeting table, and how far apart?
- Will masks be required, and if so, how strongly should this be enforced?
- Should in-person attendance be limited to those that can provide proof of a COVID-19 vaccination or recent negative COVID-19 test? *(Note: The State of Alaska approved a directive effective August 11 that recommends fully vaccinated people with no COVID-19-like symptoms and no known exposure be exempted from routine screening testing programs, if feasible.)*
- Should the events be catered (buffet or boxed?) or should participants be on their own for meals?

The first contractual deadline with Embassy Suites to avoid a cancellation penalty has passed. Should the Board choose to postpone making a decision on the January 2022 events, it is recommended that that a decision be reached before October 27, 2021, in order to avoid incurring additional penalties. Following is a breakdown of the costs that

would be incurred for canceling the reservation with Embassy Suites and holding the January 2022 events virtually.

> If cancelled 91-180 days prior = $5,060 cancellation fee plus taxes *(now until October 27, 2021)*
> If cancelled 8 – 90 days prior = $10,668 cancellation fee plus taxes *(October 28, 2021 through January 18, 2022)*
> If cancelled 0 – 7 days prior = $12,520 cancellation fee plus taxes *(January 19, 2022 until day of the event)*

The Board of Directors is asked to direct staff on how to proceed with the January 2022 Board meeting.

2. **Why is this item important to PWSRCAC:** The health and safety of PWSRCAC staff and volunteers is a top priority. Of particular concern is the ability to adequately satisfy recommendations including to stay a minimum of six feet apart from non-household members, wearing a face covering when in public, adequately sanitizing and disinfecting commonly touched surfaces, as well as being mindful and respectful to those that are most vulnerable to the virus. These restrictions and recommendations apply even if an individual is vaccinated. Additionally, in order to meet in person, decisions would need to be made such as who will sit at the main table in order to maintain social distancing, the purchase of additional microphones to accommodate social distancing and so that microphones are not shared, how to safely serve food, and who will enforce the wearing of masks.

Furthermore, recognizing that many people are still not comfortable traveling and being around large groups of people, it is anticipated that if the meeting were to be held in person, there would be a number of people that would not travel. This would result in a hybrid in-person/virtual meeting and staff has been made aware of challenges other organizations have faced while hosting hybrid meetings. The general view seems to be, for now, that it is better to be virtual than to host a hybrid meeting, as it is hard to manage the meeting so that both in-person and virtual participants are kept engaged (it is different than hosting an in-person meeting with just a few people on teleconference).

3. **Previous actions taken by the Board on this item:**

Meeting	Date	Action
XCOM	3/30/20	Authorized a deviation from the Board approved regular meeting schedule by holding the May 7-8, 2020 PWSRCAC Board meeting remotely through videoconference.
XCOM	4/30/20	XCOM approved Temporary Travel Restrictions, including but not limited to the wavier of policies 700.06 (VMT Familiarization), 721.02 (Board Travel Under Own Authority), and Policy 721.03 (Volunteer Travel Under Own Authority) until further notice.
XCOM	7/2/20	Authorized a deviation from the Board approved regular meeting schedule by holding the September 17-18, 2020 PWSRCAC Board meeting remotely through video and teleconference, and to shift the rotation of the annual community meeting so that the September 2021 meeting is held in Seward.
Board	9/17/20	Approved the cancellation of all the December 2020 in-person events (Science Night, Volunteer Workshop, and Volunteer Party) and the in-person January 2021 Board meeting because of COVID-19 and COVID-19 restrictions; staff to work on holding these events virtually.

Board	9/17/20	Adopted the proposed amendment to Section 3.8 of the PWSRCAC Bylaws titled "Meeting by Telephone or Videoconference."
Board	1/28/21	Authorized a deviation from the Board-approved regular meeting schedule by holding the May 6-7, 2021 PWSRCAC Board meeting and associated events remotely through video and teleconference because of COVID-19 and COVID-19 restrictions.
XCOM	4/27/21	Rescinded the temporary travel restrictions approved on April 30, 2020, with the following exceptions and guidance: a) the suspension of in-person meetings remains in effect until lifted by the Board or XCOM; and b) individual Board or committee member travel to conferences, business meetings, trainings, or other Council related business will be approved by the Board or XCOM on a case by case basis, with careful consideration given to the individual circumstances of each request and the most recent and relevant CDC, state, and local travel advisories and mandates.
XCOM	4/27/21	Approved a recommendation to the Board to hold the September 2021 Board meeting virtually, along with a request that the Board delegate authority to the Executive Committee to make decisions regarding future in-person Council events.
Board	5/7/21	Approved: a) a deviation from the Board-approved regular meeting schedule by holding the September 2021 meeting virtually, shifting the rotation of the annual community meeting so that the September 2022 meeting is held in Seward; and (b) delegated authority to the Executive Committee to make decisions regarding future in-person Council events.
XCOM	6/16/2021	Approved holding the December 2021 Volunteer Workshop virtually, with no Volunteer Party or Science Night, and the January 2022 events in-person with conditions to be decided upon later this year.
XCOM	9/9/2021	Approved a recommendation to the Board to hold the January 2022 events virtually.

4. **Summary of policy, issues, support or opposition:** Per Council bylaws, the date and location of meetings are set by Board resolution. Any deviation from the schedule set by the resolution requires Board or Executive Committee action.

5. **Committee Recommendation:** At their meeting on September 9, 2021, the Executive Committee passed a recommendation to the Board that the January 2022 events be held virtually.

6. **Relationship to LRP and Budget:** Costs associated with the January events are largely attributed to meeting space, meals, and travel for the staff and volunteers. Holding the January Board meeting virtually via Zoom would result in a cost savings of approximately $25,000 in the FY2022 budget.

7. **Action Requested of the Board of Directors:** Authorize a deviation from the Board approved regular meeting schedule by holding the January 26-28, 2022 PWSRCAC events virtually.

8. **Alternatives:** The Board could choose to hold the January 2022 events in person. Should the Board take this position, answers to the questions outlined in item one of this agenda statement would be needed.

9. **Attachments:** None.

PRINCE WILLIAM SOUND
REGIONAL CITIZENS' ADVISORY COUNCIL

September 2021
Status Report

3100 – Public Information Program

Objectives: Inform general public, member entities, and agency and industry partners of PWSRCAC projects. Support legal requirements for ongoing updates to the public.

Accomplishments since last report: Staff continues to inform the general public and others about PWSRCAC's projects and mission through publications and online presence.

3300 – Annual Report

Objectives: Prepare and publish PWSRCAC's Annual Report each year to inform the general public, member entities, and agency and industry partners of PWSRCAC projects and activities; and support legal requirements for ongoing updates to the public.

Accomplishments since last report: A new three-year contract with the graphic designer was implemented. Work to draft content for the next report has begun with staff and graphic design development with the contractor has been initiated.

3410 – Fishing Vessel Program Community Outreach

Objectives: For bringing the realities of oil spill response tactics, equipment, and planning to life for citizens within the Exxon Valdez oil spill region communities, the fishing vessel community outreach program is a perfect venue. Each fall and spring SERVS holds its fishing vessel program training in the following communities: Cordova, Valdez, Whittier, Seward, Homer, and Kodiak. The on-water portion of the training, in partnership with Alyeska/SERVS, shows real-time capabilities of oil spill response equipment and tactics. This project contracts a local tour boat that will allow interested students, members of the public, and media to observe and learn about oil spill response.

Accomplishments since last report: A spring 2022 event in Seward is tentatively proposed. Planning will commence once the spring SERVS schedule is posted, depending on feasibility of group gatherings at that time.

3500 – Community Outreach Program

Objectives: Increase awareness of PWSRCAC and increase communications with member organizations and communities in the Exxon Valdez oil spill region.

Accomplishments since last report:

- PWS Natural History Symposium was held virtually again, in May, hosting 20 presenters and over 260 attendees. Recordings are available here https://www.princewilliamsound.org/2021-natural-history-symposium
- Salmonfest resumed in Ninilchik, AK. The Council's booth represented oil spill prevention along the "Salmon Cause-way" with other NGO's sharing salmon-related conservation issues.

3530 – Youth Involvement

Objectives: Select proposals for youth activities, in collaboration with partner agencies and organizations throughout the Exxon Valdez oil spill region. Coordinate activities to facilitate hands-on learning about topics related to the Council's mission. Where appropriate and feasible, participate in mission-relevant youth activities.

Accomplishments since last report:

- The Alaska Oil Spill Curriculum has a new, searchable online database to make accessing the Council's resources easier for educators.
- Five teachers learned place-based education skills while kayaking in Prince William Sound with the Chugach National Forest and Alaska Geographic.
- Teens in Kachemak Bay participated in a 3-day marine hazards and ROV workshop, and then led a one-day camp for elementary students with Center for Alaskan Coastal Studies, reaching over 100 students.
- Oil spill education, including activities from the Alaska Oil Spill Curriculum, was featured in Center for Alaskan Coastal Studies' after school program in Homer.
- 11 youth from PWS and Copper River region participated in a field program learning about the ecological, cultural, and economic resources and history of the region. Council funding supported the marine component, including a visit to Bligh Reef, observing two tankers, and several activities from the Alaska Oil Spill Curriculum.
- 25 sixth graders in Cordova participated in a 3-part series on oil spills, including activities from the Alaska Oil Spill Curriculum, storytelling from Native elders, and a boat cruise to experience the marine ecosystem first-hand.
- Nine teachers met in Valdez with Prince William Sound College to develop science, technology, engineering and math lesson plans. They beta-tested the new Alaska Oil Spill Curriculum online database.
- The proven Remotely Operated Vehicle (ROV) course taught by Prince William Sound Science Center now has a manual so that educators can develop their own ROV kits. The program was field tested with 12 teachers in Cordova.
- 51 Valdez sixth graders participated in a four-week course on the impact of the oil spill on the environment as well as on other industries. Every student produced their own documentary film about the Exxon Valdez oil spill.
- 10 Alaskan teachers participated in a week-long, place-based learning course in the Copper River Delta and Prince William Sound, including lessons from the Alaska Oil Spill Curriculum and in-field plankton monitoring.

3600 – Public Communications Program

Objectives: This program disseminates information and increases awareness through the Observer newsletter and the Council's online presence. This program helps publicize information generated from the Council's technical committee projects. Project results and information will be disseminated in a format that is easily understood by the general public.

The Observer: Print and email versions of the Observer newsletter are produced three times per year.

3610 – Web Best Available Technology

Objectives: This project helps ensure the Council's websites and web presence uses the best and most up-to-date technology available by funding new features, repairs, and upgrades to the Council's websites. This includes regular maintenance and technical upgrades as well as upgrades to such aspects as user experience and branding.

Current projects: Updates to the Resource Library on the www.pwsrcac.org website are under development. This work will support a searchable/filterable database for educational lesson plans, among other improvements. This project also supports technical assistance for the OSPR project called 7901 Web-based Regional Stakeholder Committee (RSC) Resources.

Website data: Website usage for www.pwsrcac.org is tracked through Google Analytics for information such as numbers of visitors, location of visitors, how visitors found the site, which pages are visited most often, how much time is spent on pages, whether visitors were engaged enough to visit more than one page and much more.

Top content from 5/5/2021 to 8/5/2021.

1. Job announcement for Valdez Administrative Assistant ↑
2. Requests for Proposals (Category plus individual RFPs)
3. Columbia Glacier ↑
4. History of EVOS
5. PWS radar repairs ↑
6. About staff
7. Coping with Technological Disasters – Updated Guidebook ↑
8. RSC Resources ↑
9. Tanker Escort System
10. Regulatory reform

↑ denotes hot topics compared to previous three months.
Please contact Project Manager Amanda Johnson if you would like more details.

3620 – Connecting with Our Communities – Pending Funding in FY2022

Objectives:

1. Contract with a public relations firm to work with the Council to develop a long-term communications and public image strategy.
2. Develop Council image, messaging, and voice, as well as contemporary ways to communicate who we are to the public within the EVOS region and beyond.
3. Implement the strategy and evaluate its effectiveness in the short run. Make changes as necessary and implement for the long term.

Accomplishments since last report: Staff coordinated with Helvey Communications on closing out most of the remaining deliverables for the FY19 and FY20 contracts by the end of the FY21 fiscal year (June 30, 2021). New graphic materials featuring the updated logo (approved in September 2020) have been printed (letterhead, business cards, etc.). Due mostly to pandemic considerations, the media training deliverable was not able to be completed by that time. Staff are working to carry over most of the remaining contract funds into the FY22 budget, through a budget modification, to hopefully conduct this deliverable in spring of 2022.

3903 – Youth Internship

Objectives: Coordinate with regional secondary and/or higher education institutions to recruit students for internships, coordinate with other committees to help support students' education goals while meeting appropriate PWSRCAC project needs.

Summary: Intern Rosie Brennan created a template for the Alaska Oil Spill lesson plans, researched other online curricula and informed the Council's database development, managed metadata for over 50 lessons, and presented a draft web tool to an audience of teachers to get feedback and ideas for further refinement of the tool.

5000 – Terminal Operations Program

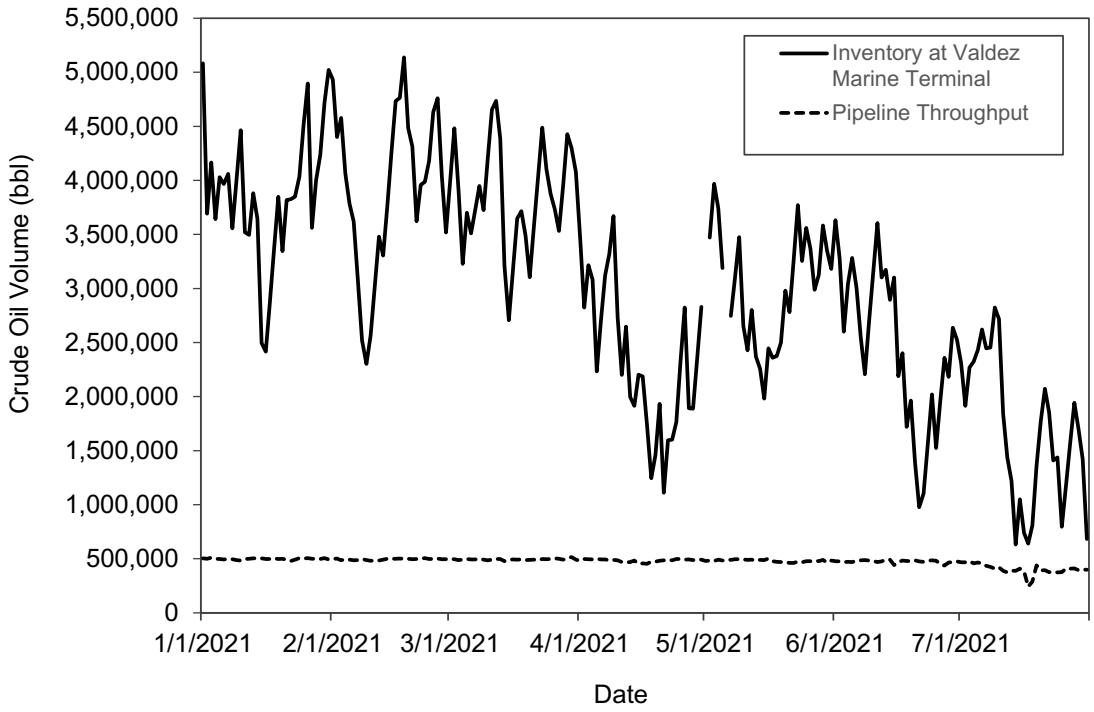
Objectives: The goal of the Terminal Operations and Environmental Monitoring Program is to prevent oil and hazardous liquid spills and minimize the actual and potential environmental impacts associated with the operation and maintenance of the Valdez Marine Terminal (VMT).

Accomplishments since last report: Monitored spills associated with operation and maintenance of the terminal, crude oil laden tanker ship tug escorts, 2020 VMT projects, and water quality of effluent discharged from Ballast Water Treatment Facility (BWTF) and sewage treatment facility.

Attachments: Graphs depicting a variety of data related to the operation and environmental impacts of the Valdez Marine Terminal.

2021 Daily Oil Inventory at the Valdez Marine Terminal and Trans-Alaska Pipeline Throughput

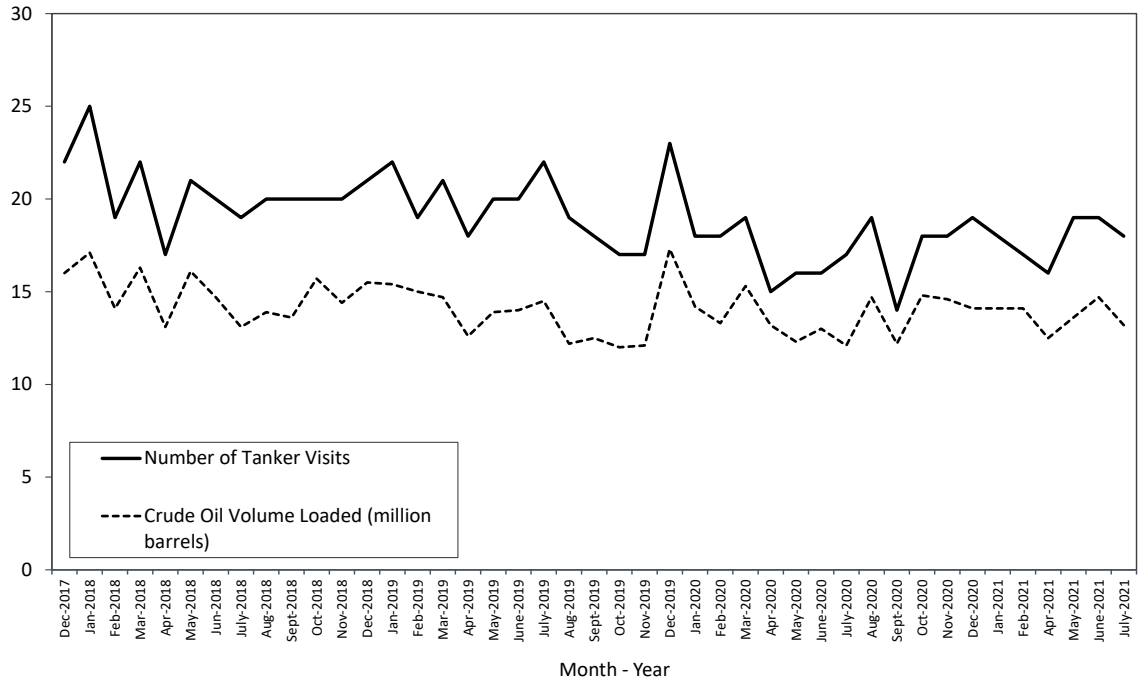
(Source: Alaska Department of Revenue - Tax Division).



Crude oil loaded and tanker visits at VMT

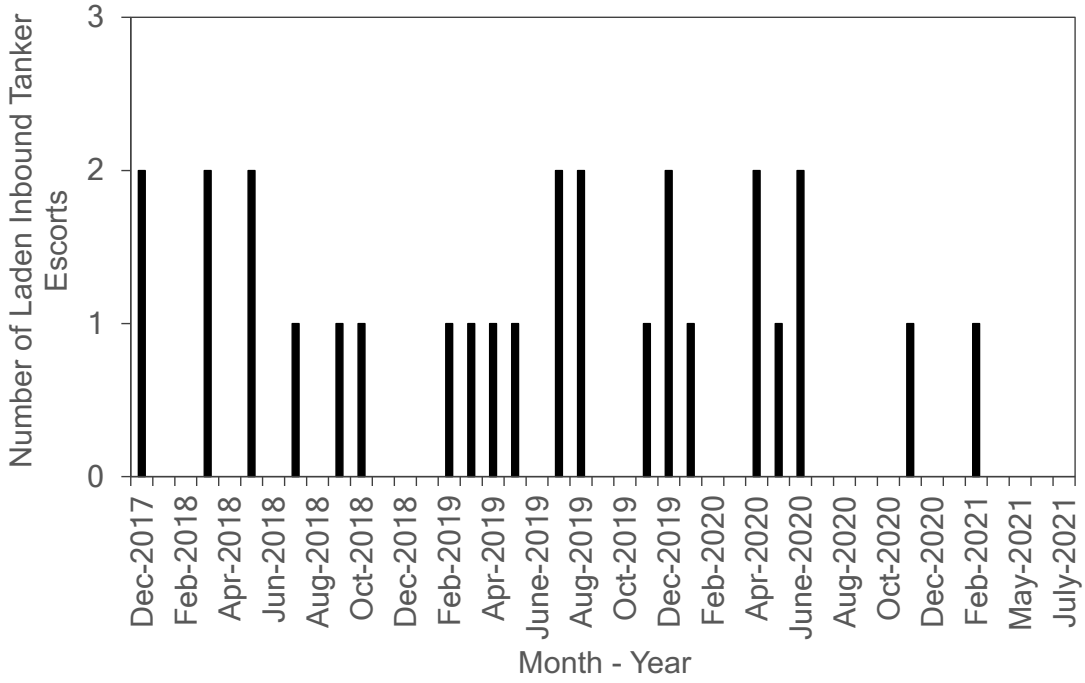
(Source: Alyeska Pipeline Service Company, partitioned by VMT vessel arrival date)

From December 2017 through July 2021 the average monthly tanker visits at the VMT were 19.0 tankers and the average monthly crude oil volume loaded was 14.1 million barrels.



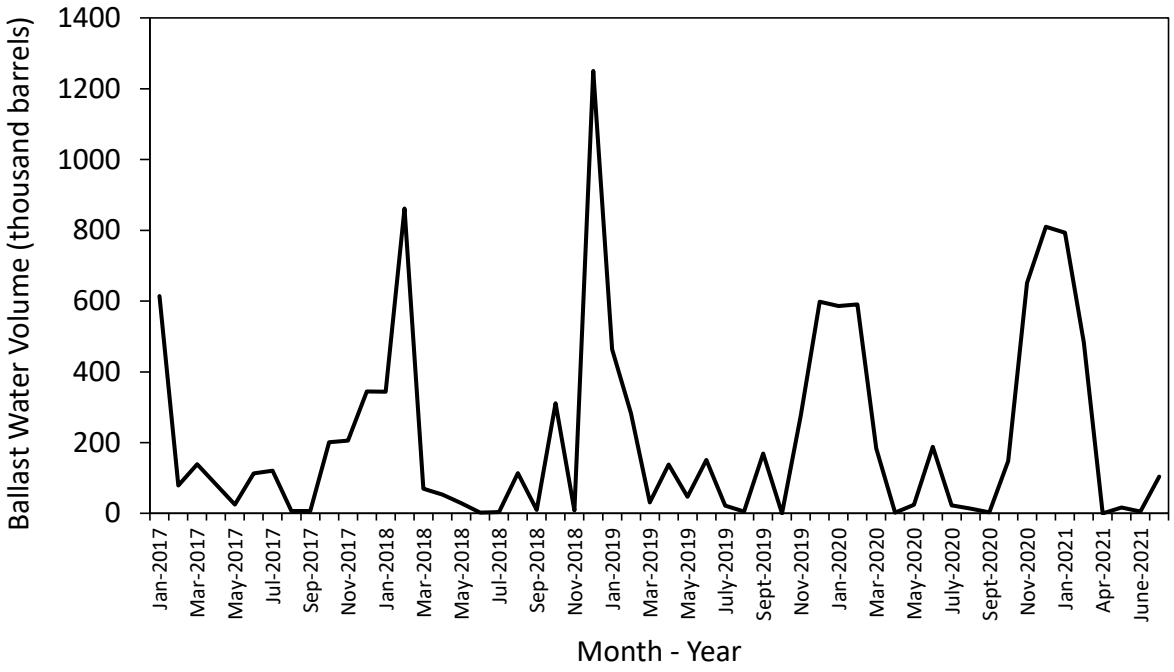
Inbound, laden tanker escorts to VMT

(Source: Alyeska Pipeline Service Company, partitioned by VMT vessel arrival date)



Monthly ballast water deliveries to Ballast Water Treatment Facility from tanker ships

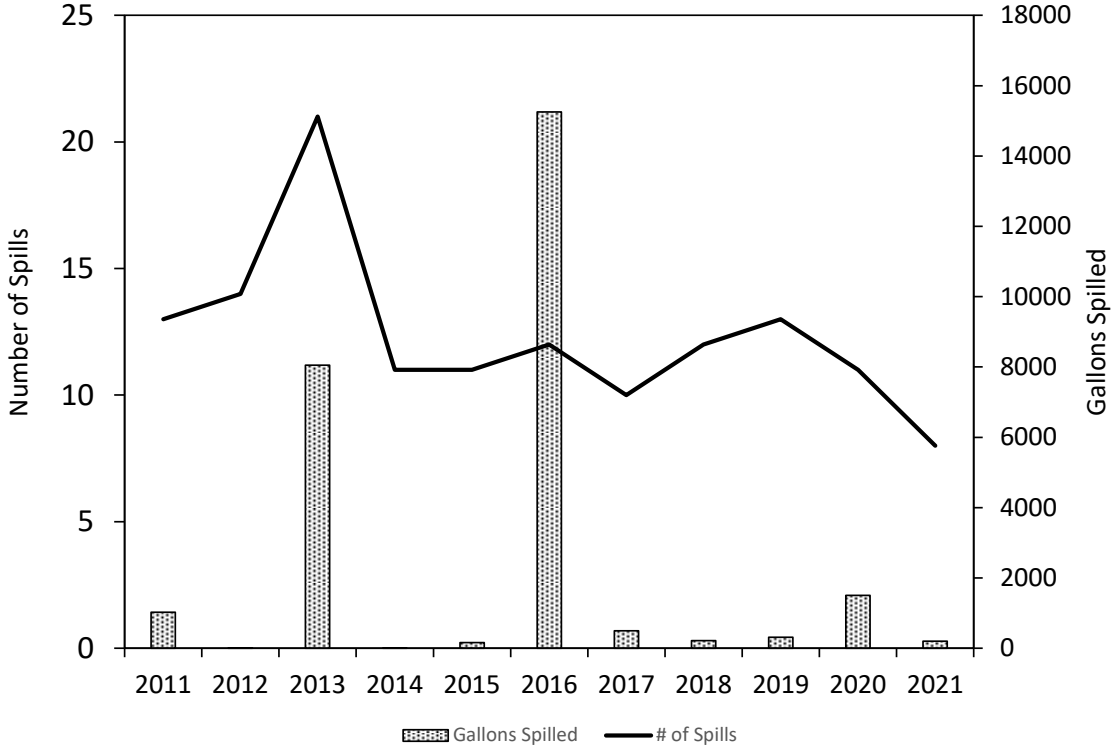
(Source: Alyeska Pipeline Service Company, partitioned by VMT vessel arrival date, current through February 2021)



Annual spills associated with the operation and maintenance of the VMT

(Source: Alyeska Pipeline Service Company)

This chart shows all spills, of all types (e.g., hydraulic fluid, crude oil, lube oil, ballast water).



5056 – Tank 8 Internal Inspection Review

Overall Goal: The FY 2021 goal of this project was to review the records and procedures used to maintain the integrity of Tank 8, in order to ensure the risk of a spill from this large, oil storage tank are minimized. The FY 2022 goal of this project is to ensure that the design of Tank 8's new floor and cathodic protection system (scheduled for installment in 2023) are aligned with industry best practices and designed to protect the tank bottom for the life of the structure.

Accomplishments since last report:

- During the May 6, 2021 meeting, the Board accepted the final FY2021 report by Taku Engineering LLC (the Council's contractor) for this project.
- On June 14, 2021, the final FY2021 report and associated Council-recommendations were sent to Alyeska (with copies to appropriate state and federal regulators) in a letter signed by the Council's Executive Director.
- Council staff have initially concluded that it would be appropriate to enter into a sole source contract with Taku Engineering to complete the FY2022 scope of work.

5057 – Alyeska's Appeal of EPA's July 2020 Air Quality Rule (NESHAP OLD): Establishing a Council Positon

Overall Goal: This project will entail the review of an EPA air quality rule that is applicable at the Valdez Marine Terminal and review Alyeska's subsequent arguments stating that certain parts of the new rule should not go into effect because those particular provisions would adversely affect the operation and maintenance of the terminal.

Accomplishments since last report:

- A request for proposals was advertised for this project on April 7, 2021.
- Three proposals were received in response to the request for proposals by May 14, 2021.
- On May 27, 2021, a proposal review team (made up of Terminal Operations and Environmental Monitoring Committee members and Council staff) identified the proposal by John Beath Environmental as the best suited to complete the scope of work for this project.
- A contract was executed between John Beath Environmental and the Council on June 29, 2021.
- John Beath Environmental began work and provided the Council project manager (Austin Love) with a project status update on August 2, 2021 – the project is on track to be completed in a timely manner.

5081 – Crude Oil Tank 7 and Ballast Water Tank 94 Maintenance Review

Overall Goal: This project would entail performing a technical review of the maintenance of crude oil storage Tank 7 and ballast water storage Tank 94 at the Valdez Marine Terminal. Both Tank 7 and Tank 94 are scheduled to undergo comprehensive internal inspections in 2021. The last time Tank 7 underwent a similar internal inspection was in 2008, and Tank 94's last internal inspection occurred in 2012. The 2021 internal inspections of both tanks will result in a large amount of new information pertaining to the past, current, and future maintenance of each storage tank. Additionally, since their last internal inspections were done back in 2008 and 2012, Alyeska has gathered and maintained other information, such as cathodic protection system testing records and external inspection results pertinent to the maintenance of Tanks 7 and 94. The new information generated from the 2021 internal inspections and the other, older information must all be considered to continue to safely maintain each of these tanks. This project is necessary to ensure that Alyeska is using industry best practices and considers all the pertinent information in the decisions they make to safely maintain both tanks, now and in the future.

Accomplishments since last report:

- A request for proposals was advertised for this project on July 2, 2021.
- Five proposals were received in response to the request for proposals by August 4, 2021.
- On August 11, 2021, a proposal review team (made up of Terminal Operations and Environmental Monitoring Committee members and Council staff) identified the proposal by Taku Engineering LLC as the best suited to complete the scope of work for this project.

5640 – ANS Crude Oil Properties

Objectives: This project entails analyzing the physical and chemical properties of Alaska North Slope Crude Oil and interpreting how those properties would impact the effectiveness of oil spill response measures including mechanical recovery, in-situ burning, and dispersants.

Accomplishments since last report: No work has been accomplished since the last report. This project remains on hold because Environment Canada, the lab that would analyze the November 2019 sample of Alaska North Slope Crude Oil, cannot analyze the oil sample due to COVID-19 restrictions. Environment Canada has offered to perform this chemical and physical analysis of the Council's crude oil sample free of charge.

5998 – Cathodic Protection Systems Review

Objectives: The purpose of this project is to review and analyze the operation and maintenance of the cathodic protection systems used at the Valdez Marine Terminal to limit corrosion on the crude oil storage tanks and piping at the facility. The goals of this project are to improve the Council's current understanding of these critical systems and, if warranted, identify ways Alyeska's operation and maintenance of the VMT could be improved, such that the risks of an oil spill from the terminal are decreased. Another goal of this project is to highlight where and how Alyeska implements industry best practices in regard to the operation and maintenance of cathodic protection systems at the VMT.

Accomplishments since last report:

- During the May 6, 2021 meeting, the Board accepted the final report by National Pipeline Services (the Council's contractor) for this project.
- On June 14, 2021, the final report and associated Council-recommendations were sent to Alyeska (with copies to appropriate state and federal regulators) in a letter signed by the Council's Executive Director.

6000 – Oil Spill Response Program

Objectives: Through this program, PWSRCAC develops positions and recommendations on oil spill response technologies; reviews state and federal contingency plans (c-plans) and plan-related issues; promotes compliance, enforcement, and funding of existing environmental regulations; and promotes the incorporation of local knowledge of sensitive areas into contingency planning.

Accomplishments since the last report:

Alaska Regional Response Team (ARRT): General information on the ARRT can be found HERE, and meeting summaries and presentations can be found HERE. The next ARRT meeting is scheduled for September 23, 2021, in Anchorage, which will be available by zoom.

Alaska Regional Contingency Plan Public Review: The public review for the Alaska Regional Contingency Plan (RCP) began on June 16, 2021, and closed on August 6, 2021. Based on this review, our primary concerns are:

- Retaining the Regional Stakeholder Committee in the plan as the primary mechanism for stakeholder engagement during an oil spill
- Ensuring the RCP sets policy for the area contingency plans
- Clarifying the process for updating the RCP

Prince William Sound Area Contingency Plan (PWS ACP): Informal comments were submitted to the PWS Area Secretary on the PWS ACP in July. Comments provided can be viewed HERE. This plan will go out for public comment in the near future. Our suggested priorities for future plan updates include:

- Updating Geographic Response Strategies
- Updating information on the Potential Places of Refuge

Arctic and Western Alaska Area Contingency Plan (AWA ACP): The USCG Area Secretary requested informal comments on the AWA ACP to identify changes that would not trigger a public review due in August.

6510 – Contingency Planning Project

Objectives: The purpose of this project is to monitor, review and comment on state and federal c-plans for the Valdez Marine Terminal and the Trans Alaska Pipeline System tankers that transit Prince William Sound. Reviewing c-plans is a major task for PWSRCAC as outlined in both the PWSRCAC/Alyeska contract and OPA 90.

The Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan (PWS Tanker C-Plan) and associated vessel response plans for Alaska Tanker Company, Andeavor, Crowley Alaska Tankers, Hilcorp North Slope, and Polar Tankers (last renewed on February 1, 2017) will expire in 2022. Alyeska Pipeline Service Company (Alyeska) Valdez Marine Terminal Oil Discharge Prevention and Contingency Plan (VMT C-Plan) was last renewed on November 15, 2019, and will expire in 2024.

Accomplishments since last report:

PWS Tanker C-Plan: Comments and suggested Requests for Additional Information on the five-year renewal of the PWS Tanker C-Plan were submitted to ADEC on July 22, and are available HERE. These comments cover the Prince William Sound Core Plan, SERVS Technical Manual, and the individual vessel response plans for Alaska Tanker Company, Andeavor, Crowley Alaska Tankers, Hilcorp North Slope, and Polar Tankers. Documents for the review can be found on OSPR's website HERE. ADEC will issue Requests for Additional Information (RFAIs) by October 21, 2021.

There were no significant changes proposed in the plan. Comments were divided into four categories where additional information was requested:

- New proposed language or context –additional information was requested on oil properties, vessels of opportunity, and barge and contractor updates.
- Key issues that have not been resolved – including downstream planning, sensitive area protection, Realistic Maximum Response Operating Limits, and operation of a tank vessel under escort.
- Training and exercises – including suggestions for gas meter testing, tether exercises, communications with respirators, exercising in darkness and reduced visibility, continue exercising with foreign flagged vessels, etc.

- Individual shipper plans – provide information on contractual obligations with TAPS tankers required by state regulations.

VMT C-Plan: The next VMT Workgroup meeting is scheduled for September 21. Our issues from the informal review remain outstanding (secondary containment, number of personnel in a Response Planning Standard (RPS)-sized spill, drainage 58).

6511 – History of Contingency Planning

Objectives: Objectives: The purpose of this project is to take a long-term view of contingency planning in Alaska spanning over 30 years since the *Exxon Valdez* spill. This project will document where progress has been made and where protections have decreased through the established regulatory record. The first phase of this project is focused on the Prince William Sound tankers and the second phase will focus on the Valdez Marine Terminal. The final report from each phase will capture the evolution of contingency planning in Alaska by identifying key issues, themes, and trends over time.

Accomplishments since last report:
Phase One – History of the Prince William Sound tanker contingency planning: At the August 5, 2021 OSPR Committee meeting, OSPR recommend that the Board accept the following documents on the history of contingency planning for the Prince William Sound Tanker C-Plan found on the OSPR website HERE:

- Prince William Sound Tanker Oil Discharge Prevention & Contingency Plan: Summary (1995-2020), DRAFT v2 (March 1, 2021);
- Prince William Sound Tanker Oil Discharge Prevention & Contingency Plan: Compendium of Event Summaries (1995-2020), DRAFT v2 (March 1, 2021); and
- Prince William Sound Tanker Plan History v1 (March 1, 2021).

Phase Two - History of Valdez Marine Terminal contingency planning: At the June 16, 2021 OSPR Committee meeting, OSPR recommended that the second phase of the history of contingency planning covering the Valdez Marine Terminal be deferred until FY2023.

6530 – Weather Data / Sea Currents Project

Objectives: This project studies wind, water current, and other environmental factors near the Valdez Marine Terminal, in Prince William Sound, and in the Gulf of Alaska. Weather conditions affect the safe navigation of vessels and aids the ability to prevent, respond to, contain, and clean up an oil spill. Accurate weather data for the region supports research and decision making in areas like oil spill response, traffic management, vessel performance specification, and contingency planning.

Accomplishments since last report: The Council's two weather stations are operating normally and we have had no maintenance issues with them. At its August 12 meeting, the Executive Committee accepted a grant from the Alaska Ocean Observing System (AOOS) in the amount of $20,000 to install a Conductivity, Temperature, and Depth (CTD) sensor in Port Valdez.

6531 – Port Valdez Weather Buoys

Objectives: This project originally assembled and deployed, and continues to maintain two buoys which measure ocean currents and common weather parameters in Port Valdez. The first buoy is

installed near Jackson Point [61.0910°N 146.3811°W]. The second buoy is installed at the Valdez Duck Flats [61.1201°N | 146.2914°W]. The Prince William Sound Science Center (PWSSC) partners with the Council to facilitate this project.

The Oil Pollution Act of 1990 requires the Council to study wind and water currents and other environmental factors in the vicinity of the terminal facilities which may affect the ability to prevent, respond to, contain, and clean up an oil spill.

The Council's Board of Directors has long advocated that robust weather monitoring systems be located in the vicinity on the Valdez Marine Terminal (VMT). This includes proposals to install ultrasonic anemometers at the loading berths and a weather station at the VMT. The Council's Board of Directors passed a resolution expressly requesting a weather station be employed at the terminal on January 22, 2016.

Weather is a significant factor in the management of safe crude oil transportation through Prince William Sound. Some of these concerns include marine safety, tanker escort operations, oil spill contingency planning, containment boom design, and safe loading of oil tankers.

Accomplishments since last report: The spring haul out and service visit was successful. The buoy hulls were cleaned and repainted, zinc anodes replaced, sensors replaced as needed, and batteries recharged. A representative from JOA Surveys will attend the fall haul out.

Funding for this project was in included in the AOOS five-year program planning proposal. One of their priorities is to improve marine safety and there is an interest in weather related projects. In a related effort, AOOS has offered, and the Executive Committee has accepted, a $20,000 grant to the Council to install a CTD sensor in Port Valdez. Information from this sensor would become part of the Physical Oceanographic Real-Time System (PORTS) site for Port Valdez.

6534 – Cape Hinchinbrook Weather Surveillance

Overall Goal: Working cooperatively with the Prince William Sound Science Center (PWSSC), this project seeks to provide improved observations of weather and wave conditions seen at the Hinchinbrook Entrance to Prince William Sound. The primary focus of this effort will be the eastern portion of the Entrance that encompasses the established vessel traffic lanes that pass by Cape Hinchinbrook.

Initially this project will be focused on securing a land use permit from the U.S. Coast Guard and U.S. Forest Service at Cape Hinchinbrook. The follow-on project will be the installation of an upland weather station and supporting equipment at the Cape. This equipment will provide observations of standard meteorological variables, wind speed and direction, temperature, humidity, and barometric pressure at the Cape. Power to the equipment installed on the uplands will be provided by solar panels and a wind generator. Data generated by the equipment will be telemetered out via cellular modem link to the Naked Island communications site.

Once the site is established, additional instruments may be considered, including an X-band (8.0 to 12.0 GHz) wave radar and a subsurface moored wave gauge.

Accomplishments since last report: This project was included in the current Long Range Planning process and the funding request is for potential permit fees needed to secure a land use permit from the Coast Guard. Establishment of a weather station at Cape Hinchinbrook will be proposed once a permit is secured.

Funding for this project was in included in the AOOS five-year program planning proposal. One of their priorities is improving marine safety and there is an interest in weather related projects.

Staff continues to work with the 17th Coast Guard District on permitting for the weather station.

6536 – Analysis of Weather Buoy Data

Objectives: In 2019, PWSRCAC was able to install two weather buoys in Port Valdez, one in the vicinity of the Valdez Marine Terminal and the other near the Valdez Duck Flats. The buoys are expected to collect weather data for at least five years. This project is the first of five projects that would take the data collected in each of the five years and perform an analysis to determine any weather trends throughout the year and seasonally. The analysis includes current and wind direction and speed information, wave direction and heights, and other pertinent information that can be obtained from the weather data.

Accomplishments since last report: The draft Port Valdez Weather Buoy Analysis report was forwarded to OSPR Committee member Dave Goldstein for his review and the draft report was sent to Merv Fingas of Oil Solutions to peer review. Both report reviews were shared with the report's author, Dr. Rob Campbell, for his consideration and revision of the report, after which it was sent to the project team with few comments received back. The report was then edited by Brooke Taylor and the proposed final version sent to the OSPR Committee. The Committee voted to recommend that the PWSRCAC Board of Directors accept the report.

6540 – History of Copper River Delta Flats GRS

Objective: The purpose of this project is to develop a white paper that captures the history of developing geographic response strategies (GRS) in the Copper River Delta and Flats (CRDF) area. GRSs are pre-built response strategies used to protect pre-identified sensitive areas in the event of an oil spill. Considering CRDF is part of the Prince William Sound Area Contingency Plan (PWS ACP), this information would be applicable to this plan. The white paper would document the significance of protecting this valuable, fragile ecosystem, and explain the current status of the GRS.

Accomplishments since last report: A contract is in the process of being finalized and signed, and work on the project is anticipated to start in early September. Nuka Research and Planning Group, LLC (Nuka) was awarded the contract in late May 2021, via RFP process, but it was understood that project work would not start until September. Nuka's proposal noted they had other projects in progress (helping Council with multiple c-plans under review for example) and key staff they expected to work on this project were occupied with other commitments. The project is on track, but with delay based on when the contract was awarded at the end of May. Staff has used this time to search through old physical files for related documentation and documents within the PWSRCAC document management system.

6560 – Peer Listener Training

Objectives: Review and assess the Peer Listener Training and similar programs nationwide to ascertain current best practices. The resulting report will inform the Council's decisions about how to revise the Peer Listener Training, the associated manual (an appendix of "Coping with Technological Disasters: A User-Friendly Guidebook"), and the train the trainer program going forward.

Accomplishments since last report: An RFP for a data-gathering phase of the project was released, but no proposals were received, even after extending the deadline and targeted outreach by volunteers and staff. Staff are proceeding with research in-house to identify possible steps forward and likely partners to complete the work.

7000 – Oil Spill Response Operations Program

Objective: This program encompasses monitoring and reporting on the activities related to the operational readiness of the oil spill response personnel, equipment, and organization of the TAPS shipping industry. The program also encompasses monitoring actual oil spill incidents within our region and evaluation of overall response readiness. Additionally, the program includes the planning and implementation of PWSRCAC's Incident Response Plan.

Accomplishments since last report: Normally, fishing vessel training for those in the contracted fleet consists of three days of training; a day of classroom based Hazardous Waste Operations and Emergency Response (HAZWOPER) training, a day of equipment explanation and how-to on shore, and a day of working with equipment while actually on the water. As a COVID precaution , this approach was changed in spring 2020. The classroom HAZWOPER portion was conducted online instead, after which participants watched pre-recorded lectures that the PWS College assembled and did an online test to show proficiency. Then, instead of on-land equipment training, two on-water days were conducted instead, with instructors travelling to individual vessels to talk equipment with a limited smaller group. The same approach will be used this fall. Cordova training is slated for 9/24 to 9/29.

Staff members Robertson, Robida, Lally, and Schantz helped evaluate the large-scale VMT exercise that took place 5/25-26. This was scenario 5 of the VMT C-Plan; the worst case discharge scenario. Robertson and Robida observed the 5/25 field portion of the event. The field portion generally went well. Of note from this day was that a tide slide was installed at one of the Drainage 58 connection points. Boom to shore connections at this site have been a long-standing concern of staff and the addition of the tide slide addresses part of our concerns. Following the tabletop portion on 5/26, Robertson covered the Planning Section, Robida covered the Operations Section, Lally the Unified Command, and Schantz the Joint Information Center (JIC) and Liaison Officer functions.

Robida attended a webinar put on by the Pacific States/British Columbia Oil Spill Task Force concerning lessons learned from virtual drills at the end of June. Three different speakers spoke to their experience with virtual exercise play and the pros and cons of managing a large event in this fashion. There was nothing groundbreaking in these talks, but it was satisfying to hear speakers come to many of the same conclusions that staff were also vocalizing after the large-scale tanker exercise this past spring, and more recent VMT exercise; both of which involved virtual/remote participants and processes. Some examples in no particular order included, 1) the need to prepare participants for exercise play on whatever given platform, and the fact that these platforms also needed some preparation work before exercise play could begin, 2) the need for technical support during the actual event to answer questions, address issues, help guide participants who were not as technically savvy, etc., 3) the need for more hardware beside just a laptop to truly be effective (multiple and bigger monitors, headset for hands free talking, better quality webcam, back-up hotspot device, etc.), 4) how sections such as Operations were really best served if they could be at the command post in person, whereas other sections such as Finance would be easier to play remotely, 5) how the virtual world didn't lend itself very well to the sidebar conversations, and finally, 6) how virtual exercise play was realistically here to stay and part of our new normal. Future webinars through Pacific States/British Columbia Oil Spill Task Force are expected and staff will participate based on topics and their availability.

Robida has been monitoring and engaged with discussion on GRSs being converted into a GIS format. This work is being spearheaded by the Arctic and Western Alaska (AWA) Area Committee, specifically the GRS sub-committee of the AWA. This conversion from PDF format to a GIS data layer makes logical sense and will allow responders and planners to access and view this information on a modern GIS platform such as NOAA's Arctic Emergency Response Mapping Application (ERMA). Additionally, the conversion will allow for easier long-term management and the ability to make changes to information far easier, versus the PDF documents this information currently resides in. PWSRCAC is generally supportive of this conversion, but the process has been difficult to follow at times, and Council is concerned that the greater spill response community and industry may not understand the sweeping changes that are already in motion to this long-standing program. Additionally, having this work occur at a sub-committee level and then percolate out to the rest of the state seems backwards, as historically large changes and issues such as this were worked by the Alaska Regional Response Team (ARRT) and then direction and policy went out to the more localized Area planners in order to ensure consistency amongst the then 10 sub areas. Instead, we're in a situation where work from a specific Area planning sub-committee will drive state policy and process.

It's the understanding of Council staff that ALL of the GRSs have been converted into a GIS applicable format at this point. The long-term data management and approval process for suggesting changes to GRSs are being discussed currently by AWA leadership, and it's anticipated that all of this should be known and settled very soon. A USCG led, GRS deployment is scheduled for September 13 in Kodiak to verify and test the decided upon GRS update process. Once the process has been vetted, it's staff's understanding that the intent is to move the entire state to this GIS-based system. GRS information will be stored and maintained in the NOAA Arctic ERMA program and the original PDFs will also be captured and retained. While the move to a GIS system is prudent, the project has included a small working group and PWSRCAC is concerned the process should have been more transparent and inclusive of other Area Committees and the greater spill response community.

7030 – Contracted Fleet Vessel Readiness Verification / Staff-Led Dock Walk

Objective: Contracted vessels serve a vital role in the Prince William Sound tanker and Valdez Marine Terminal contingency plans because almost all of the response tactics described in these plans require contracted vessels and their trained crews to implement. With this project, PWSRCAC intends to conduct a physical survey of a given port (or multiple ports) and attempt to verify that vessels self-reporting as available, actually are available.

There are approximately 400 vessels and associated crew on contract with SERVS. These vessels are predominantly commercial fishing vessels and fall into four categories: (1) Tier I vessels (or the "core" fleet of approx. 50+ vessels on contract), located in ports within Prince William Sound and required to be ready to respond within six hours; (2) A subset of approximately eight Tier 1 vessels (referred to as Rapid Response Vessels), strictly Cordova-based and expected to be underway within an hour of notification; (3) Tier II vessels (the bulk of the fleet, numbering 300+), in ports both within and outside of Prince William Sound, and expected be ready to respond within 24 hours, with a total of 40 vessels anticipated to depart by hour 18; and (4) Tier III vessels, which the contingency plans include discussion on, but the Tier III program is simply a recruitment program with no vessels currently on contract.

A minimum number of vessels from each given tier are expected to be available and ready to respond, so as to meet specific timing metrics captured within contingency plans, and therefore, satisfy state regulatory requirements. Alyeska/SERVS verifies vessel availability via phone calls to the captains (check-in frequency based on contract tier) and reports this information to ADEC on a quarterly basis to

ensure that available vessel count is sufficient to meet readiness requirements. ADEC is able to request this availability information at their discretion.

Given response planning standard volumes and c-plan scenarios, the PWS Tanker C-Plan is much more reliant on contracted vessels to implement a response than the VMT C-Plan. For example, the tanker plan scenario requires a total of approximately 279 vessels to be operational within the first 72 hours of a spill. Having approximately 400 vessels on contract allows some flexibility with meeting this requirement, and safeguards against vessels being out for repairs, captains being out of town, etc.

Accomplishments since last report: Work on this project has yet to start, as staff anticipates doing their dock walk over the winter timeframe; end of 4th quarter 2021, and end of 1st quarter 2022. The OSPR Committee will be kept informed as the project start date gets closer.

7520 – Preparedness Monitoring

Objectives: PWSRCAC's Drill Monitoring program falls under a broader program called Oil Spill Response Operations. Objectives for the Drill Monitoring program are to promote oil spill response operational readiness within the EVOS region by observing, monitoring, and reporting on spill response drills, exercises, and training; to provide citizens, regulatory agencies, and responders (Alyeska and the shippers) with independent observations and recommendations to improve preparedness; and provide citizen oversight.

Tasks to be completed include:

- Monitor and report on regular oil spill drills and training exercises at the VMT and throughout the Exxon Valdez oil spill region to citizens, the Board, industry, and regulatory agencies.
- Provide quarterly recommendations to the PWSRCAC Board of Directors.
- Keep PWSRCAC's standing committees (OSPR, TOEM, POVTS, IEC, and SAC) informed.
- Produce an annual report on effectiveness and progress of the regularly monitored drills.
- Continue developing and implementing staff training for drill monitoring.

Recent Exercises:

Los Angeles Spirit Tanker Towing Exercise – June 6, 2021

The foreign flagged tanker Los Angeles Spirit chartered by Hilcorp and operated by Teekay Shipping conducted an emergency towing exercise on Sunday, June 6. This was the first foreign flagged tanker to participate in a towing exercise in recent memory. The exercise went well, and all of the objectives were met.

Alyeska Valdez Marine Terminal Exercise – May 25-26, 2021

Alyeska conduct a two-day exercise in May. The first day consisted of field deployments focused around the VMT's Scenario 5 worst case spill response. These deployments included the booming and oil recovery tactics at Drainage 58 for a spill from the VMT. The second day was the tabletop exercise for the same scenario.

Upcoming Drills and Exercises

Valdez Marine Terminal Settlement Pond Deployments – August 19, 2021
Marathon PWS Shipper's Exercise – October 13-14, 2021

8000 – Maritime Operations Program

Objectives: This program reviews port organization, operations, incidents, and the adequacy and maintenance of the Coast Guard Vessel Traffic System, and coordinates with the Port Operations and

Vessel Traffic Systems (POVTS) Committee. Major program components include participation with the Valdez Marine Safety Committee (VMSC), monitoring changes to the escort system, reviewing Best Available Technology documents for the escort system and the Vessel Emergency Response Plan (VERP), participating in monthly SERVS/PWSRCAC and ADEC/PWSRCAC communication meetings, and supporting maintenance for the NOAA weather stations.

Accomplishments since last report: An article on the Rescue Tug BAT project will be published in the September/October issue of International Tug and Salvage.

The Maritime Operations Project Manager is participating in the Alaska Spatial Priorities Study, focusing on the Gulf of Alaska and Prince William Sound, and an interagency Barry Arm project team for the Council. Executive Director Donna Schantz participated in a NOAA PORTS® (Physical Oceanographic Real-Time System) outreach video commemorating the 30th anniversary of the program. Port Valdez is part of the PORTS® program.

A list of potential projects was sent out to POVTS and OSPR members. The committees are working on developing future projects as part of the PWSRCAC Long Range Planning (LRP) process.

Staff is working with Dr. Nicole Ziegler, Ph.D., at the University of Hawaii on a Maritime English Project.

Work is being done to develop a white paper describing world class standards for Best Available Technology.

8012 – Field Trials of Messenger Line Throwing Devices

Objectives: This project will evaluate the effectiveness of line throwing devices identified as being best available technology in the 2020 report, "Tanker Towline Deployment BAT Review." Field trials of this equipment will underscore best techniques in their use and will improve user experiences with the equipment. Results will be used to develop a set of recommended practices that will be shared with industry. A final report on the project findings will be presented to the Council.

Oil tankers operating in Prince William Sound are required to carry emergency towing equipment. The availability of this equipment can allow a stricken tanker to be towed safely to a place of refuge, where further action can be taken to stabilize the vessel. A key action that must occur in the use of one of these towing systems is to successfully make the final connection between the tow package messenger line and the vessel to be towed. Passing messenger lines to stricken vessels can be passed by hand, heaved or thrown aboard, projected by mechanical means, or picked out of the water. Weather is often a factor in vessel casualties and retrieving a line can be difficult and dangerous in poor weather.

This last year, the Council contracted the maritime research firm Glosten to evaluate the technologies available to pass or deploy messenger lines to vessels in distress to determine what constitutes best available technology (BAT), and then using a similar approach, compare currently used line handling technologies with alternatives identified by the consultant. The final report, "Tanker Towline Deployment BAT Review," has been well received and should prove useful in the future.

Accomplishments since last report: Field work and the final report have been completed, and a draft report received from Glosten. The POVTS Committee has reviewed and recommends acceptance of the report by the Board at its September meeting. Staff is looking at development of a video presentation that details the projects outcomes asthere was significant photo and video documentation of the trials.

8013 – Vessel Traffic System Use of AIS and Radar White Paper

Objectives: The Council has invited proposals to produce a white paper to evaluate, compare, and contrast the utilization of Automatic Identification System (AIS) and land-based radar in Vessel Traffic System operations. The selected contractor will ascertain and review research papers and literature related to this topic; summarize findings of this technology review; prepare a white paper on the subject of AIS and radar use; identify gaps in the research on this topic; and provide recommendations for future research. The final work product of this effort is a report detailing the results.

In its efforts to encourage legislators and the Coast Guard to replace the radar systems used in Prince William Sound, there will need to be accurate resources available that describe the issue well and are based on quality researched facts. This project is intended to provide this resource document.

Accomplishments since last report: Working with members of POVTS, LAC, and staff, the selected contractor (C-CORE) has completed the white paper. The POVTS Committee recommended acceptance of the paper, which was done by the Executive Committee on August 12, 2021. Staff is working with Roy Jones on a cover letter to transmit the report to the members of the Alaska Delegation.

8014 – USCG Basic and Advanced Emergency Ship Handling Training

Objectives: AVTEC - Alaska Maritime Training Center (AMTC) is working to develop simulator intensive Basic and Advanced Emergency Ship Handling courses that meet the International Maritime Organization (IMO) training guidelines and are U.S Coast Guard (USCG) approved. These courses will better prepare mariners for real life situations, including emergency ship maneuvering. Much of this training will be assessment-based and will utilize AMTC's full mission bridge simulator. Most simulations will take place in Prince William Sound using the enhanced vessel database developed by AMTC.

Council will contract with AVTEC faculty to develop and implement these courses, including gaining USCG course approval. Through this work, AVTEC will be able to help close the existing knowledge gap and get people certified to fill critical infrastructure positions within the maritime industry. This project promotes the safe operation of marine vessels in Alaska and beyond.

Accomplishments since last report: A contract has been completed with AVTEC/State of Alaska to complete this project. Updates will be provided by AVTEC-AMTC as the project progresses.

9000 – Environmental Monitoring Program

Objectives: Coordinate projects developed and overseen by the Scientific Advisory Committee and obtain scientific knowledge and technical information with regard to issues related to the actual and potential environmental impacts of the Valdez Marine Terminal and associated crude oil tankers. The notable tasks to be accomplished under this program are as follows:

- Project manager to attend at least one technical scientific conference
- Plan and complete budgeted environmental monitoring and scientific research projects
- Conduct PWSRCAC Science Night

Accomplishments since last report: The work managed under this program continues to be planned and executed successfully. The Board has decided that meetings and gatherings will be held virtually through 2021, and the Science Night event typically held in December will be cancelled.

9110 – Monitoring Spatial Variability of Marine Birds During Winter in PWS Tanker Escort Zone

Objectives: Provide up-to-date information on winter marine bird density and distribution throughout the Prince William Sound tanker transit zone, including under-surveyed areas such as the open waters and adjacent bays in and around Port Valdez, Valdez Arm, Tatitlek Narrows, Port Fidalgo, and Port Etches. Here are the notable tasks to be accomplished under this project:

- Perform winter bird surveys in Prince William Sound for three consecutive years
- Analyze data obtained during winter bird surveys
- Report the results of the analysis
- Make winter bird survey maps readily available for use by spill response managers

Accomplishments since last report: Researchers from the Prince William Sound Science Center have written a report summarizing the methods, findings, and recommendations of the 2021 survey, the first of three years of surveys. This report will be presented to the Board at the September 2021 meeting. It is recommended by the Scientific Advisory Committee that the Board accept the report as meeting the terms of the contract and ready to distribute to the public.

9510 – Long-Term Environmental Monitoring Project

Objectives: Comprehensively monitor the actual and potential environmental impacts related to the Valdez Marine Terminal and associated crude oil tankers and provide the Council with information about the presence and effects of hydrocarbons generated by the terminal facility and associated tankers. Here are the notable tasks to be accomplished under this project:

- Obtain environmental samples in Port Valdez: marine sediments, mussels, and passive sampling devices
- Analyze environmental samples
- Interpret and report results of sample analysis
- Present analytical findings to the PWSRCAC Board of Directors
- Maintain Environmental Monitoring Project plan

Accomplishments since last report:

- The final reports for the 2020 monitoring work (not directly related to the April 12, 2020 oil spill) were completed and results were presented to the Board in May 2021
- A draft of the environmental monitoring work pertaining to the April 12, 2020 oil spill was provided to the Scientific Advisory Committee for review in July 2021
- All 2021 environmental samples were collected in June from Port Valdez
- The 2021 samples are being analyzed for hydrocarbon contamination

9511 – Herring and Forage Fish Surveys

Objectives: Monitor schools of herring and other forage fish species in order to identify areas in the Sound where they tend to concentrate. Here are the notable tasks to be accomplished under this project:

- Conduct aerial surveys of forage fish in Prince William Sound
- Analyze aerial survey data and report on the results
- Make aerial survey maps readily available for use by spill response managers

Accomplishments since last report: Ariel forage fish surveys were conducted by researchers from the Prince William Sound Science Center as of July 6, 2021. This is the third survey conducted in four years of Council funding for this project.

9512 – Determining Concentration and Composition of Oxygenated Hydrocarbons from the VMT

Objectives: The goal of this project is to determine the types and amount of oxygenated hydrocarbons that are released from the Ballast Water Treatment Facility at the Valdez Marine Terminal. The notable tasks to be accomplished under this project are as follows:

- Collect monthly water samples from the Ballast Water Treatment Facility following discharge of oily ballast water by tankers
- Analyze the samples to determine the chemical composition and concentration of oxygenated hydrocarbons
- Interpret and report findings of the analysis and prepare the report for publication in a peer-reviewed journal
- Produce recommendations on future research to understand the fate, transport, and toxicity of oxygenated hydrocarbons in the marine environment

Accomplishments since last report: The contract for this project is in draft form and has been reviewed by the Contractor. Council staff have been communicating with Alyeska for their cooperation with obtaining water samples from the Ballast Water Treatment Facility.

9513 – Hydrocarbon Sensor Monitoring of Valdez Marine Terminal Impacts in Port Valdez

Objectives: Measure the concentration of hydrocarbons in the marine waters of Port Valdez on a continuous basis to support real-time or rapid assessment of the hydrocarbons generated by the Valdez Marine Terminal and associated tankers. The notable tasks to be accomplished under this project are as follows:

- Install a hydrocarbon sensor on the Council's weather buoy adjacent to the Valdez Marine Terminal
- Collect and review data acquired by the sensor and make the data publicly available online
- Perform annual maintenance on the sensor

Accomplishments since last report: There have been no notable accomplishments on this project since the last report.

9520 – Marine Invasive Species

Objectives: Understand and minimize the environmental impacts of invasive species arriving in the PWSRCAC region from tanker ballast water and hull fouling. Here are the notable tasks to be accomplished under this project:

- Obtain plankton samples in Port Valdez at three sites: the small boat harbor, Valdez Container Terminal, and Valdez Marine Terminal
- Perform metagenetic analysis on plankton samples to identify variability in the plankton community between locations and through time, and identify any nonindigenous species
- Interpret and report results of plankton metagenetic analysis
- Conduct monitoring of invasive crab and tunicate species in Valdez and Cordova

Accomplishments since last report:

- Council staff identified and began working with three high school age invasive species monitoring interns. Two of the interns are located in Cordova, Levi Pearson and Maggie Herschleb, and one is located in Valdez, Dillon Fowler.
- Council staff have been diligently collecting plankton samples from Port Valdez throughout the summer.
- A contract has been finalized with the Smithsonian Environmental Research Center to analyze the samples and interpret the results. A donation has been made to the Tower Foundation of San Jose State University to support collaboration on sample analysis and report writing with Moss Landing Marine Laboratories.

9550 - Dispersants

Objectives: This project entails reviewing and potentially updating the Council's current position regarding the use of dispersants in the event of an oil spill in our region. The current position states that the Council does not support the use of dispersants for spill response in Prince William Sound. In addition to reviewing the current position, the project would also involve updating Council documents that are used to technically support and educate the public about the Council's official dispersant use position

Accomplishments since last report: Dr. Merv Fingas completed a summary review of dispersant-related research that has been published since the last in-depth review by the Council in 2017. This report is included in this September Board packet. An appendix to the summary, which details the reports reviewed, is available upon request. This information will support the Board to have access to the most up-to-date science in its considerations of a position on the use of dispersants in the event of an oil spill in the waters of our region. Contract negotiations for a facilitator to guide the review and potential position revision process are underway.