ANNUAL REPORT

2017

Citizens Promoting Environmentally Safe Operation of the Alyeska Terminal and Associated Tankers





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July 1, 2016 – June 30, 2017

LETTER FROM THE

PRESIDENT AND EXECUTIVE DIRECTOR



Donna Schantz Executive Director

Amanda Bauer President of the Board of Directors

The Council involves citizens in decisions that impact the safe transportation of oil through Prince William Sound, seeking local knowledge and input through our member entities, volunteers, and other regional stakeholders. We supplement this local knowledge by hiring the best scientific and technical experts we can find, to ensure that our advice to industry, regulators, and elected officials is sound and credible. Through our work, the Council helps protect the people, their livelihoods, and the ecosystems in Prince William Sound and its downstream communities.

Our overarching goals remain the same as when we were created following the 1989 Exxon Valdez oil spill: we strive to combat complacency; foster partnerships between industry, regulators, and citizens; monitor compliance; and provide advice on environmental and other concerns regarding the safe operation of the Valdez Marine Terminal and associated oil tankers.

The most important issue the Council has faced this past year has been the transition in marine services provider for the oil spill prevention and response system in Prince William Sound. By July of 2018. Edison Chouest Offshore will replace Crowley Marine Services as the Ship Escort/Response Vessel System contractor. This system was instituted after the 1989 disaster to prevent future oil spills and provide spill response and preparedness capabilities for Alyeska Pipeline Service Company and Alaska crude oil shipping companies. The system includes powerful escort tugs, two of which accompany each loaded oil tanker through Prince William Sound. The tugs can rescue a tanker if it runs into trouble. or begin the response if, despite all efforts, an oil spill occurs. The contractor will also be responsible for maintaining key oil spill response equipment and trained personnel, including large oil spill response recovery barges.

This transition is the most significant change in oil spill prevention and response equipment and personnel since the system was created. Our understanding and expectation is that the new services will meet or exceed the current system. The Council is encouraged by the new equipment being purpose-built for service in Prince William Sound and the Gulf of Alaska. However, we also need a robust and transparent process to independently verify equipment and personnel capabilities and performance. Such a process would reassure the Council and all Alaskans that existing safeguards are not weakened.

Some other highlights of the past year include:

Reviewing Oil Spill Contingency Plans and Monitoring Prevention and Response Readiness: As

part of our core mission, the Council reviews and provides advice and comments on proposed amendments to the oil spill prevention and response contingency plans for the Valdez Marine Terminal and associated oil tankers (see page 10). The Council also observes and evaluates drills and exercises in Prince William Sound (see page 11).

Training Responders to Fight

Marine Fires: The Council, in conjunction with the Cook Inlet Regional Citizens Advisory Council, hosted a symposium to provide enhanced training for firefighters to safely and effectively respond to a marine fire incident (see page 12).



We strive to combat complacency; foster partnerships between industry, regulators, and citizens; monitor compliance; and provide advice on environmental and other concerns regarding the safe operation of the Valdez Marine Terminal and associated oil tankers.

Improving Dispersants Monitoring:

The Council worked with stakeholders to make regionspecific recommendations to improve state and federal oil spill dispersants monitoring protocols (see page 18).

Analyzing Valdez Air Quality:

The Council participated in the public review process by analyzing documentation related to the Valdez Marine Terminal air quality permit (see page 16).

Studying Water Circulation in

Port Valdez: The Council partnered with the Prince William Sound Science Center to study how water circulates in Port Valdez. Findings from this study should increase the understanding of how oil would move and behave in the event of an oil spill (see page 8).

Educating Stakeholders on Oil

Spill Response: The Council hosted a workshop to provide information to community members on how they can interact with, and provide input to, decision makers during a major oil spill response (see page 14). In a separate event, an on-water tour was provided for members of the public and media to observe how local fishing vessels are trained to take part in spill response, and learn about improvements in oil spill response equipment and tactics (see page 10).

Industry, regulators, and citizens all deserve to be commended for their prevention and response readiness efforts since 1989. For example, this year marks the 40th anniversary of the Trans Alaska Pipeline, and Alyeska has demonstrated a strong commitment to operating the pipeline and Valdez Marine Terminal in a safe manner. However, forty years of operation means that infrastructure is aging. Some of the underground piping at the Valdez Marine Terminal had not been internally inspected since start-up, but new technology has allowed Alyeska to inspect facility piping as part of their oil spill prevention program (see page 9). These efforts and many others reinforce that we all share the same goals - to prevent oil spills, and have the best response system possible should prevention measures fail.

We believe the accomplishments of the Council and others over the past year prove that the process of collaboration between industry, regulators, and citizens can work. As the transition to a new marine services provider and other work moves forward, we will continue to promote efforts that foster our central mission: making sure the oil transportation system in Prince William Sound is as safe as can be, to ensure the state's wonders and resources are available for future Alaskans.

MISSION AND RESPONSIBILITIES

The Council's 18 member organizations are communities in the region affected by the 1989 Exxon Valdez oil spill, as well as Alaska Native, aquaculture, commercial fishing, environmental, recreation, and tourism groups.

Consistent with its mission, the Council's structure and responsibilities stem from two documents. The first is a contract with Alyeska Pipeline Service Company which operates the Trans Alaska Pipeline as well as the Valdez Marine Terminal. Most of the Council's operating funds come from this contract.

The second guiding document, passed after the Council was created, is the Oil Pollution Act of 1990 (OPA 90), which required citizen oversight councils for Prince William Sound and Cook Inlet. The purpose of the councils is to promote partnership and cooperation among local citizens, industry, and government; to build trust; and to provide citizen oversight of oil terminals and tankers.

OPA 90 allows pre-existing organizations to fulfill the requirement for citizen oversight, which the Council has done for Prince William Sound since 1990. The Council's contract with Alyeska pre-dates the Act, but the similarities in the powers and duties given the Council in the two documents are not coincidental. Many people who helped establish the Council also promoted citizen involvement requirements in this federal law. The Prince William Sound Regional Citizens' Advisory Council is an independent non-profit corporation guided by its mission: citizens promoting the environmentally safe operation of the Alyeska terminal and associated tankers.

The council was formed after the Exxon Valdez oil spill to provide a voice for citizens affected by decisions related to the Alyeska pipeline in Valdez and the oil tankers that navigate the sound.

FUNCTIONS

In accordance with the provisions of the two documents, the Council performs a variety of functions aimed at reducing pollution from crude oil transportation through Prince William Sound and the Gulf of Alaska:

- Monitoring, reviewing, and commenting on oil spill response and prevention plans prepared by Alyeska and shipping companies moving oil through Prince William Sound.
- Monitoring, reviewing, and commenting on the environmental protection capabilities of Alyeska and the tanker operators, as well as on the environmental, social, and economic impacts of their activities.
- Reviewing and making recommendations on government policies, permits, and regulations relating to the oil terminal and tankers.

As part of these undertakings, the Council regularly retains experts in various fields to conduct independent research and technical analysis on issues related to oil transportation safety.

The Alyeska contract also calls for the Council to increase public awareness of the company's oil spill response, spill prevention, and environmental protection capabilities, as well as the actual and potential environmental impacts of terminal and tanker operations. The contract states that the Council may work on other related issues not specifically identified when the contract was written.

OIL POLLUTION ACT OF 1990'S PURPOSE FOR CITIZEN OVERSIGHT COUNCILS



To promote partnership and cooperation among local citizens, industry, and government



To build trust



To provide citizen oversight of environmental compliance by oil terminals tankers

FUNDING

The Council was initially funded at \$2 million a year. The funding is renegotiated every three years; current Alyeska funding is approximately \$3.6 million a year.

Although the Council works closely with and is funded chiefly by Alyeska, the Council is an independent advisory group. The contract is explicit: "Alyeska shall have no right...to have any degree of control over the formation or operation of the corporation."



The Council monitors, reviews, and makes recommendations on:

- Oil spill response and prevention plans prepared by Alyeska and by operators of oil tankers
- Environmental protection capabilities of Alyeska and the tanker operators, as well as on the environmental, social, and economic impacts of their activities
- Government policies, permits, and regulations relating to the oil terminal and tankers



MARINE SERVICES TRANSITION

DEVELOPMENT OF THE PRINCE WILLIAM SOUND ESCORT SYSTEM

The Council commissioned a report to document how Alyeska's current Ship Escort/Response Vessel System (SERVS) was developed. This report describes the history of the system, including issues considered by the Alaska Department of Environmental Conservation when determining the system to be "best available technology," commonly referred to as BAT. Extensive simulations and field trials were conducted prior to the approval of vessels into the system at that time.

With the transition of marine services in Prince William Sound, there is an opportunity for continuous improvement to the escort system, as the shippers pledged when the system was significantly enhanced 17 years ago. The goal of this report was to document the collaborative and extensive process that led to development of what has been recognized by many experts as one of the best tanker oil spill prevention systems in the world. This documentation is being used to help the Council promote a similar robust process for the new vessels and personnel entering into service.

BEST AVAILABLE TECHNOLOGY: "BAT" REFERS TO AN ALASKA STATUTE AND ASSOCIATED REGULATIONS THAT REQUIRE NEW AND PROVEN OIL SPILL PREVENTION AND RESPONSE TECHNOLOGIES TO BE EVALUATED AND INCORPORATED INTO CONTINGENCY PLANS.

INDUSTRY STANDARDS FOR ESCORT TUGBOATS

Escort tugboats accompany loaded oil tankers through Prince William Sound, stand by until the tankers are 17 miles out into the Gulf of Alaska, and are ready to save a tanker that experiences problems. These vessels are the heart of the prevention system designed to protect Prince William Sound and its downstream communities from another major tanker oil spill.

The Council contracted with Little River Marine Consultants to prepare a reference document detailing standards for escort tugboats as recognized by international, federal, and state organizations. The report titled "Industry and Class Standards for Escort Tugboats" highlights the standards used worldwide to evaluate escort tug design and operation.

TUGBOAT DESIGN REVIEW

In early 2017, the Council contracted Robert Allan Ltd., a naval architecture firm, to evaluate drawings and other materials



provided by Alyeska in December 2016. The firm identified concerns with the design of the new escort and general purpose tugs under construction by Edison Chouest Offshore (ECO). The full report, "A Review of the Proposed New Escort and Support Tugs for Tanker Operations in Prince William Sound," was submitted to Alyeska for their consideration. Ongoing discussions with ECO and Alyeska indicate that many of the Council's initial concerns with the tugboat designs have been addressed.

STAKEHOLDER SHIPYARD VISITS

Council volunteers and staff had the opportunity to visit ECO facilities in the Gulf of Mexico in Spring of 2017. The groups toured the company's training center, North American Shipyard, vessel service infrastructure at C-Port in Port Fourchon, and Gulf Ship in Gulfport, Mississippi. The visitors



were given unfettered access to ECO staff and the opportunity to ask questions about their operations. Those present were impressed with the facilities and the company culture focusing on safety and cultivating competent staff. The quality of workmanship and use of new technologies were also on display. Additional shipyard visits are being scheduled for Fall 2017.

Edison Chouest Offshore (ECO) is taking over as the marine services contractor for Alyeska Pipeline Service Company (Alyeska) from Crowley Marine Services in the summer of 2018. Under this contract, ECO will provide key oil spill prevention and response assets for the Valdez Marine Terminal and associated oil tankers operating in Prince William Sound, including five new escort tugs, four new general purpose tugs, four new oil recovery storage barges, one offshore utility vessel, and associated personnel. This transition represents the most significant change in the oil spill prevention and response system since it was created after the 1989 Exxon Valdez oil spill. The Council is encouraged by the state-of-the art equipment being purpose built for use in Prince William Sound, and is committed to working with Alyeska, ECO, and regulators to ensure that the level of oil spill prevention and response remains strong.

PREVENTING OIL SPILLS

To ensure the maximum level of safety, the Council reviews all aspects of the oil transportation system in Prince William Sound including operations of oil tankers and the Valdez Marine Terminal, oil spills and other incidents, and the adequacy and maintenance of the Coast Guard's Vessel Traffic Service.

PORT VALDEZ CIRCULATION STUDY

This year, the Council partnered with the Prince William Sound Science Center to study how water circulates in Port Valdez. Buoys were set adrift around the port at different water depths, carrying instruments that gathered data about temperature, salinity, and location to determine the surface and subsurface circulation patterns. Data was gathered in late winter, summer, and fall to understand how circulation changes with the seasons. The patterns vary greatly due to freshwater entering the port from major drainages such as the Lowe River and spring snowpack melt in Valdez. These seasonal

freshwater inputs change the circulation patterns in fjords such as Port Valdez. The data will increase understanding of how surface oil would move in the event of a spill, and help determine the potential fate of dispersed oil.

MARINE SAFETY: EVALUATING POTENTIAL PLACES OF REFUGE

Places of Refuge are pre-identified locations where a vessel needing assistance can be temporarily moved, and where actions can be taken to stabilize the vessel, protect human life, reduce hazard to navigation, and/or protect sensitive natural resources and other uses of the area. Data from two recent Council projects is helping test sites in Prince William Sound that could shelter a distressed oil tanker during inclement weather.

Previously, the Council worked with AVTEC's Alaska Maritime Training Center in Seward to upgrade the navigation data for Prince William Sound that is used in their ship bridge simulator. Marine pilots, using the bridge simulator, can direct a tanker into one of these sites and make recommendations on how to best accomplish required maneuvers. A series of climatic "wind roses." a tool that accurately represents typical wind conditions at a particular site, had also been developed by the Council through the Alaska Experimental Forecast

Facility at the University of Alaska Anchorage in preparation for this project.

This year, the Council contracted with Safeguard Marine, LLC, to update the Potential Places of Refuge simulator database to reflect current Prince William Sound conditions, search the upgraded navigational database for potential sites, and test proposed sites.

Out of four sites studied, only one was found to be suitable for anchoring an oil tanker. Results of the study were passed on to the U.S. Coast Guard and the Alaska Department of Environmental Conservation. The Council intends to continue its efforts to qualify the remaining sites identified for tankers transiting Prince William Sound.

ESCORT TUGBOAT OPERATIONS

In 2012, the Council retained Robert Allan Ltd., to review the current best available technology, or BAT, used in escort tugs worldwide, and compare them to the Prince William Sound escort tugs. Based on recommendations from this past work, the firm completed two reports for the Council this year, "A Review of B.A.T. for a Sentinel Tug Stationed at Hinchinbrook Entrance" and "Sentinel Tug Requirements for Gulf of Alaska: Ship Drift Study." These studies identified recommendations. such as increasing the length of time an escort tug stands by at Hinchinbrook Entrance when a loaded oil tanker departs Prince William Sound.



These studies used improved weather data provided by the Alaska State Climatologist at the Alaska Experimental Forecast Facility. This effort represents the best information now available on climatic conditions at the Entrance to the Sound from the Gulf of Alaska.

Presently, Hinchinbrook Entrance is closed to outgoing oil tanker traffic when weather conditions exceed 45-knot winds or 15-foot seas. A key finding of this study is that winds and waves are underreported, meaning that the actual conditions experienced can be in excess of the official closure conditions.

CRUDE OIL PIPING INSPECTIONS

Beginning in 2016 and continuing in 2017, Alyeska has been using new technology to inspect segments of crude oil piping at the Valdez Marine Terminal that previous tools were unable to access. Alyeska can now inspect the interior of offshore, buried, steep, and multibend piping segments using tethered robotic crawler tools with sophisticated sensors.

The Council advocated for Alyeska to perform such inspections and has been tracking the project through regular communications with Alyeska. Inspections in 2016 and 2017 found one small area of concern where a protective coating was applied as a preventative measure. No significant repairs were needed to continue safe operation. These inspections show how well these pipes have been maintained and operated since 1977.

Through these inspections, Alyeska has markedly improved the ability to maintain aging infrastructure. It is commendable that Alyeska is performing this technically challenging and costly work, which is not required by state or federal regulations. This work represents a significant prevention measure for the system.

PLANNING AND PREPARING FOR AN OIL SPILL

The Council and our industry and regulatory counterparts devote considerable resources to preventing oil spills and reducing the likelihood of another spill, but the risk cannot be eliminated entirely. A quick and effective response must be ready if prevention measures fail.

State and federal laws require operators of oil tankers and the Valdez Marine Terminal to prepare detailed plans showing how they will prevent and respond to oil spills. The Council devotes significant resources to review plans both in Prince William Sound and at the terminal, as well as to participate in and monitor federal and state planning efforts in Alaska. This planning has impacts in our region, including the Alaska Regional Response Team and government response plans for Prince William Sound, Kodiak Island, and Cook Inlet. The Council promotes compliance, enforcement, and funding for federal and state regulations and oversight. Along with local communities, the Council encourages incorporating local knowledge of sensitive areas into contingency planning.

UPDATES TO OIL SPILL PREVENTION AND RESPONSE CONTINGENCY PLAN FOR THE TERMINAL AND TANKERS

In the last year, the Council reviewed proposed amendments to the oil spill contingency plan for the Valdez Marine Terminal. The Council submitted comments covering preparedness, oil spill scenarios, response training, and the marine services transition. The approval process for such changes can take a significant amount of time and the Council carefully tracks this process.

The Council also participated in the five-year review for the spill contingency plan covering the oil tankers in Prince William Sound. Changes to that plan include incorporation of a more efficient skimming system for capturing oil during a spill. The marine services contract transition is also impacting the tanker plan, and the Council is providing feedback on proposed changes.

Response Optimization Analysis:

The Council analyzed options to maximize oil recovery in Prince William Sound with equipment currently in place. The study identified minor modifications to the current system that could increase oil recovery.

EDUCATING OUR STAKEHOLDERS: COMMUNITY SPILL RESPONSE

The Council traveled to Seldovia this year to present the Community Spill Response workshop, which educates stakeholders about how large oil spills are managed, and how communities can interact with response leaders to stay informed and share concerns during a large incident. With this eighth workshop, the Council has now held a workshop in every one of our member communities. These workshops cover the basics of

Seldovia

The location of this year's Community Spill Response workshop which educates stakeholders about how large oil spills are managed, and how communities can interact with response leaders to stay informed and share concerns during a large incident.



the incident command system, a standardized structure that has been adopted to manage a variety of emergencies and incidents. Workshop instructors describe the process as it pertains to oil spills and how stakeholders fit into the system.

The workshop also covers various responding agencies' roles and jurisdictions, current prevention and response capabilities in Prince William Sound, and improvements since 1989. Workshop participants have included city officials such as mayors, harbormasters, city managers, local emergency responders, and representatives from local agencies and other business and non-profits who would be affected by a spill or large incident. The Seldovia workshop also included participants from the nearby Alaska Native villages of Nanwalek and Port Graham.

MONITORING DRILLS AND EXERCISES

Both the Oil Pollution Act of 1990 and the Council's contract with Alyeska task the Council with monitoring the operational readiness of Alyeska's Ship Escort/ Response Vessel System (SERVS) and the oil shipping companies.

The Council observes, monitors, and reports on spill response drills, exercises, and training in the Prince William Sound/northern



DRILLS THE COUNCIL'S STAFF MONITORED IN PRINCE WILLIAM SOUND OVER THE PAST YEAR

Gulf of Alaska region to provide citizens, regulatory agencies, and oil spill responders with information about readiness as well as recommendations for improvement.

The Council's staff attended 19 drills and exercises in Prince



MARINE FIREFIGHTING FOR LAND-BASED FIREFIGHTERS

The Council hosted its ninth Marine Firefighting Symposium for Land-Based Firefighters in May of 2017. The symposium was held in Homer, Alaska, with the support of local fire



and harbor departments. The event was co-sponsored by Cook Inlet Regional Citizens Advisory Council.

Marine fires can threaten the maritime transportation system we depend on in Alaska. Depending on location and severity, a marine fire can require not only a local response, but a regional effort as well. Enhanced training prepares coastal communities to respond safely and effectively to marine fire incidents.

This three-day conference provides the best information available concerning marine firefighting, and participants were offered a chance to qualify for certification through the State of Alaska. William Sound over the past year. These exercises included tanker towing, open water and nearshore recovery, sensitive area protection, wildlife response, and a Valdez Marine Terminal/Tesoro Prince William Sound Shipper's tabletop drill.

The Valdez Marine Terminal and Tesoro combined their incident management teams' exercises and held one drill for combined credit rather than the normal separate events. The exercise scenario involved a tanker spill at the terminal's dock so the oil spill contingency plans for both the terminal and Tesoro were tested. The terminal also conducted a separate tabletop exercise in May of 2017.

Other notable exercises included the April 2017 setup and

demonstration of the sea otter hospital at the terminal. It had been 10 years since the sea otter hospital facility was assembled. There also was an oiled wildlife exercise that focused on the capture and processing of simulated oiled birds and sea otters.

PEER LISTENER TRAINER WORKSHOP

Communities in Southcentral Alaska are particularly vulnerable to disasters such as major storms, earthquakes, and oil spills. In addition to the negative effects on infrastructure and economics, these disasters can have other devastating social impacts, such as higher incidence of depression, anxiety, and post-traumatic stress disorder, as well as associated increases in substance abuse and domestic violence.

"Peer listening" is a strategy that can mitigate these impacts by supplementing mental and behavioral healthcare systems with trained community members. Peer listening involves informal counseling, recognition of symptoms, and referral to professional healthcare as needed to enhance emotional and psychological well-being, and in doing so, improve the disaster resilience of communities.

The Council sponsored a two-day workshop on peer listening for behavioral health professionals from throughout the Exxon Valdez oil spill region along with Council volunteers, staff, and partners. The workshop taught basic peer Wildlife experts used a stuffed animal to demonstrate the procedure for cleaning an oiled otter during the April exercise.



listening skills and prepared participants to teach these skills to fellow community members.

WINTER SPECIES IN PRINCE WILLIAM SOUND

In 2016, the Council completed a bibliography and database of research on winter species in Prince William Sound. The goal of this project was to develop information and sources documenting the presence of biological resources in Prince William Sound during the winter. The paper also identified gaps in knowledge on the topic. The research provides scientifically accurate information that can be used by the Council to identify sensitive biological resources in Prince William Sound and help shape oil spill contingency plans, for use by spill responders and spill drill participants.



Dr. Keith Nicholls, (right) a sociologist from the Coastal Resource and Resiliency Center in Alabama, who specializes in community disaster resilience, led the peer listener training workshop. Board Member Patience Andersen Faulkner (left) has been involved with this project since it was first developed after the Exxon Valdez spill.

RESPONDING TO AN OIL SPILL

CHANGES IN AREA OIL SPILL PLANNING

In response to proposed changes to federal and state area planning in Alaska, the Council submitted comments outlining concerns in November 2016. The suggested changes would bring Alaska into alignment with the National Contingency Plan and National Response Framework, and would require boundary changes for oil spill and hazardous material releases. For the communities impacted by the Exxon Valdez oil spill, planning changes will result in some communities being under new jurisdiction. These changes are still being finalized and the Council will continue to monitor this issue.

SIMULATING OIL ON WATER DURING DRILLS

A Council-driven workgroup dedicated to finding a suitable, environmentally neutral surrogate, or floating target to mimic oil, during drills and exercises has brought its efforts to a close. The workgroup determined there are any number of materials that could be used for this purpose, but hit road blocks regarding permitting, questions of legality, and agency jurisdiction for such activity. The workgroup process helped define some of these questions, and a field exercise was designed as a proof of concept as to how permitting might work. The exercise was ultimately cancelled over liability concerns.

OIL SPILL MONITORING

The Council monitors spills, including crude oil, that occur from terminal operations and SERVS. From July 2016 through June 2017, a total of 12 spills were reported, none of which were crude oil. The majority were relatively small amounts of hydraulic fluid, usually less than a teaspoon. The largest spills were 400 gallons of wastewater from the Ballast Water Treatment Facility piping and 300 gallons of sulfuric acid from piping outside the Power Vapor Facility. Both of these spills were caught by secondary containment, meaning they did not contaminate nearby soil or water resources.



by corroded piping and Alyeska is replacing that segment with new pipe in 2017. The sulfuric acid spill was caused by snow shedding from a roof and hitting a valve.

> To respond effectively to an oil spill or to an emergency that could cause a spill, it takes more than volumes of carefully written and reviewed contingency plans. It also takes equipment, trained people, and a management system to implement the plan. The Council monitors the operational readiness of Alyeska's Ship Escort/Response Vessel System (SERVS) and the tanker companies, while also ensuring the Council itself is prepared to respond during an oil spill or other emergency as a conduit for public concerns and as an independent monitor.

PROTECTING THE ENVIRONMENT

Besides posing the risk of a major oil spill caused by an earthquake or accident, the Valdez Marine Terminal produces ongoing air and water pollution from routine operations and maintenance, as allowed by its permits from regulatory agencies. The Council monitors terminal operations and maintenance to minimize the risk of spills and reduce the facility's discharge or emissions of water and air pollution to the lowest reasonable levels.

AIR QUALITY PERMIT RENEWAL

In order to operate the Valdez Marine Terminal, Alyeska must obtain an air quality operating permit from the Alaska Department of Environmental Conservation. This permit details all the requirements which limit air pollution from the many sources of stationary emissions at the facility. It must be renewed at least every five years and part of that process includes a public review.

In 2017, the Council participated in the public review process by analyzing the draft permit as well as other supporting air quality documentation. Overall, the Council found that the terms of the draft permit should not increase the potential or actual environmental impacts of the Valdez Marine Terminal on the local airshed.

SECONDARY CONTAINMENT SYSTEM REPAIRS

The crude oil storage tanks at the Valdez Marine Terminal are required to be located within a "secondary containment" area. The area must be able to hold the volume of the largest tank in the area plus an allowance for rain and snow. Part of the terminal's secondary containment system, called the industrial wastewater system (a network of buried cast-iron piping, concrete catchbasins, and manholes primarily used to drain rain and meltwater), is being repaired because some sections were leaking water. While those repairs are made, the integrity of a buried liner in the secondary containment areas is also being inspected. The liner inspection includes visual, permeability, and durability testing. These tests are meant to determine if the liner is sufficiently impermeable to crude oil (in the event of a spill) and resistant to damage from normal operations and weather. The Council has been reviewing the results of those tests, some of which call into question whether the liner is indeed sufficiently impermeable. In particular, visual inspection of the liner has revealed regions of cracking and numerous holes. The Council will continue to review forthcoming test results and explore other methods to inspect the condition of the buried liner.

INTERNAL CRUDE OIL STORAGE TANK INSPECTIONS

As part of regular maintenance, the steel crude oil storage tanks at the terminal are periodically inspected from the inside for corrosion and mechanical damage, such as gouges or dents. The inspections are done visually and with sophisticated inspection technologies relying on ultrasonic and magnetic principles. Typically, such internal inspections are done every 10-20 years for each tank. The tanks are also inspected externally every five years.

As part of their regular work, the Council reviewed internal inspections of two of the 14 crude oil storage tanks at the facility in 2016-2017. After reviewing inspection reports, the Council found no problems with the primary recommendations or conclusions of the inspection reports.

The Oil Pollution Act of 1990 directs the Council to review, monitor, and comment on Alyeska Pipeline Service Company's environmental protection capabilities, as well as the actual and potential environmental impacts of terminal and tanker operations. The Act also calls on the Council to develop recommendations on environmental policies and permits.

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Under the leadership of the Scientific Advisory Committee and the Terminal Operations and Environmental Monitoring Committee, the Council commissions scientific studies to determine actual or potential risks, documents levels of pollution and biological effects, and better understands new technologies and the environmental costs or benefits that might be associated with their use.

CHEMICAL DISPERSANTS

Chemical dispersants are substances that are intended to disperse spilled oil into the water column rather than leave it flowing on top in a slick. For many years, the Council has been concerned about the effectiveness of dispersants in the cold waters of our region, as well as the toxicity of these chemicals especially when mixed with oil. This concern has led to a number of studies in the Council's history regarding this subject.

Identification of Avoidance Areas in the Preauthorized Dispersants Zone

The Council used expert technical support this year to identify dispersant use avoidance areas, such as sensitive spawning, high productivity, or seasonal congregation areas, from the preauthorized dispersants zone of the Alaska Regional Response Team's Dispersant Use Plan for Alaska. The proposed preauthorization zone extends from 24 nautical miles offshore out to 200 nautical miles offshore. Comments were provided to the Alaska Regional Response Team in January 2017.

Dispersants Monitoring Protocols

For several years, the Council has been interested in more detail being added to existing dispersants monitoring protocols. A key need was a process to evaluate biological resources, including water column organisms that are generally not monitored, in the areas proposed for dispersant use, both before and after their



application. The Council reviewed existing technical protocol and worked with stakeholders to formalize an improved monitoring guideline. The guideline included a biological monitoring component to make it fit within the response framework of the Dispersant Use Plan for Alaska and the federal Special Monitoring of Applied Response Technologies (SMART) protocols. This effort meant crafting protocols to be useful to Prince William Sound responders during an actual event so that elements of the protocols could fit seamlessly into the work process, while also providing responders guidance for biological monitoring before and after dispersant applications. The final protocol has been shared with industry, agencies, and others.

Environmental Monitoring

MONITORING INVASIVE SPECIES

It is possible for tankers to carry invasive species in ballast water or attached to their hull. If introduced to a new environment, where there are no native predators to keep populations in check, they can become established and have significant economic and ecological effects. Invasives can destroy local species and habitat, including commercially important species, such as Alaska salmon. Some ports visited by Prince William Sound oil tankers are known to be infested with marine invasive species populations. The Council supports

citizen-based monitoring for marine invasive species, particularly the European green crab and invasive tunicates.

Ballast water

The Council has commissioned two reports on ballast water regulation and ballast water management systems in order to support committee and board analyses and actions regarding the regulation of ballast water transported by Trans Alaska Pipeline System tankers. The reports were titled "Status of international and domestic regulations on installation and use of ballast water management systems," and "Analysis of federal and state ballast water management policy as it concerns crude oil tankers engaged in coastwise trade to Alaska."

Bioblitz

This past year, the Council and the Smithsonian Environmental Research Center held the first Port Valdez marine invasive species bioblitz. Held in September of 2016, this event was a survey for invasive species and trained local citizens in identification and survey techniques for marine invasives. There was one invasive species identified in the initial bioblitz efforts. Schizoporella *japonica*, a marine bryozoan already known to be in Alaska, was found in Tatitlek. It was previously identified in Port Valdez, Tatitlek, Ellamar/Virgin Bay, and other regions of Alaska. Plankton samples from the waters of Port Valdez were also collected by Smithsonian scientists for genomic analysis at Moss Landing Marine Lab.



MONITORING FOR OIL

In 1993, per directives in the Oil Pollution Act of 1990, the Council started monitoring the region affected by the Exxon Valdez oil spill to assess the status of hydrocarbon levels in Port Valdez, Prince William Sound, and the Gulf of Alaska. This program monitors the long-term trends of lingering oil from the Exxon Valdez spill in the Sound, as well as any new oil spilled since that time. Today, samples are periodically collected at intertidal sites near the terminal and where tankers are active in Prince William Sound and the Gulf of Alaska to determine whether hydrocarbons are accumulating and, if so, their source.

Long Term Environmental Monitoring

The Council studies the effects of hydrocarbons on mussels and related species, in order to gather information on how to determine whether the animals have been exposed to, or injured by, hydrocarbons. Researchers also look at contemporary methods for evaluating the effects of hydrocarbons on the genome of mussels, identify gaps in existing knowledge, and pinpoint areas for future research.

This year, along with regular sampling, Council staff and experts began a new initiative, collecting passive hydrocarbon samplings from devices at three locations in Port Valdez, including two locations just offshore at the terminal. The sampling devices were deployed for a month-long period before being retrieved for analysis at the time of the regular Long Term Environmental Monitoring sampling effort. This new technology will help the Council diversify and update our long term environmental monitoring efforts, while continuing to use mussels as a target species.

OUTREACH

The Council's outreach coordinator, staff, and volunteers visit communities in the Exxon Valdez oil spill region, attend group member functions, give presentations, coordinate special events, and encourage citizen involvement in the Council's work.

The Information and Education Committee teams up with staff to support the Council's mission by:

- Fostering public awareness of our work,
- Building participation of current and future generations in the Council's environmental stewardship responsibilities.



Board members and volunteers staff the Council's booth at conferences..



FUNDING YOUTH EDUCATION PROGRAMS

The Council helps support regional partners' programs which teach youth about topics related to the organization's mission. Youth of all ages participate in a variety of settings to learn about oil spill prevention and response, citizen oversight, the response capabilities in Prince William Sound, and more.



Council volunteer Cathy Hart leading an oil spill demonstration activity in Cordova.



Old Harbor marine science campers experiencing how to run a Remotely Operated Vehicle (ROV) used in oil spills.



Youth learning about green crab monitoring at the Kodiak Area Marine Science Symposium.



regional partners involved in outreach and education projects and program



communities in the region visited at least once



kids and teachers reached through Youth Involvement

INTERNS HELP ACHIEVE OUR MISSION

The Council recruits youth interns from our region to complete projects that also incorporate career development opportunities. This year, high school student Cori Pegau has been monitoring Cordova for invasive green crab and tunicates and educating the public about marine invasive species.



Intern Cory Pegau

Cordovans watch SERVS shore protection training during Fishing Vessel Outreach tour.



In May of 2017, the Council partnered with Stan Stephens Cruises, Alyeska, and the Copper River Watershed Project to take Cordova residents out to see SERVS' local fishing vessel responders' annual oil spill response training. Seventy people spent two hours in Nelson Bay, including curious members of the general public, two middle school science classes, and local media. They learned how local fishermen take part in Alyeska's oil spill response team. Council staff and volunteers and Alyeska's Ship Escort/Response Vessel System (SERVS) staff narrated the oil spill response training, including information on equipment and tactics being used and the reasons this unique program exists.



Cordova residents watch SERVS fishing vessel program training during tour.



Cordovans waving to 500-2 barge staff during Fishing Vessel Outreach tour. The 500-2 barge is the primary support vessel for nearshore response operations.

GOVERNMENT RELATIONS

The Council monitors state and federal actions, legislation, and regulations that relate to terminal or tanker operations or to oil spill prevention and response. To track developments in the state capital and Washington, D.C., the Council retains monitors under contract during the legislative session. This area of Council activity is coordinated by a Legislative Affairs Committee made up of members of the Council Board.

RECERTIFICATION

The U.S. Coast Guard (USCG) certifies the Council as the federally approved citizens' advisory group for Prince William Sound, pursuant to the Oil Pollution Act of 1990. The Council has been the certified group since 1991.

Under the annual recertification process, USCG assesses whether the Council fosters the general goals and purposes of the Act and is broadly representative of the communities and interests as envisioned in the Act.

As part of its recertification process, USCG considers comments received from industry, interest groups, and citizens. The Council fulfills the Act's requirement for an industry-funded citizens' advisory group, although the Council was established before the law was enacted.



Council representatives visited Washington, D.C. in March to discuss oil spill prevention and response issues with elected officials.



THE OBSERVER NEWSLETTER

The Observer is a free newsletter with nearly 5,000 printed copies distributed throughout Prince William Sound, the northern Gulf of Alaska, lower Cook Inlet, and the Kodiak archipelago. It is also delivered by request to interested citizens around the world, including regulators and industry. It covers Council activities, developments in the oil transportation industry related to our mission, and news about policy and operational issues related to marine oil transportation in Prince William Sound. Major oil spill drills are covered, and Alyeska is invited to submit a column for each issue. In the course of preparing articles for The Observer, the Council frequently invites feedback from industry and regulatory personnel.

The Observer is available on the Council website and as an email newsletter.

Sign up for the email version of The Observer newsletter: www.bit.ly/TheObserverByEmail

OUTREACH ACTIVITIES

Prince William Sound

KENAI PENINSULA

> PRINCE WILLIAM SOUND

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PRINCE WILLIAM SOUND

- Alaska Geographic Teacher Expedition, Youth Involvement Project
- Copper River Stewardship Expedition, Youth Involvement Project
- Alaska Geographic Youth Expedition, Youth Involvement Project

● SEWARD

- Alaska Tsunami Bowl, Youth Involvement
 Judging Team
- Remotely Operated Vehicle (ROV) Challenge, Youth Involvement Project
- City Council, Presentation

OHOMER

- Aquatic Invasive Species Monitoring, Youth Involvement Project
- City Council, Presentation
- Marine Firefighting Symposium
- ROV Challenge for Kachemak Bay, Youth Involvement Project

SELDOVIA

- Incident Command for Stakeholders, Community Spill Response Workshop
- Aquatic Invasive Species Monitoring, Youth Involvement Project
- Public Reception
- City Council, Presentation
- Remotely Operated Vehicle (ROV) Challenge for Kachemak Bay, Youth Involvement Project

PORT GRAHAM

- Aquatic Invasive Species Monitoring, Youth
 Involvement Project
- Incident Command for Stakeholders, Community Spill Response Workshop (Seldovia)

- Bioblitz, Citizen Science Workshop
- Gold Rush Days, Booth Outreach
- Crooked Creek Chum Salmon Incubation Project, Youth Involvement Project
- Valdez Schools Career Fair, Booth Outreach & Interviews
- GulfWatch, Youth Interviews
- Prince William Sound Guides Informational Gathering, Presentation & Reception

- Prince William Sound College Mathematics Education Course, Presentation
- U.S. Coast Guard Change of Command
- Public Reception
- City Council, Presentation

TATITLEK

• Peksulineq Cultural Heritage Day, Attendance

CORDOVA

- Fishing Vessel Outreach Event, Charter Tour for the Public
- Community Visit, Outreach & Classroom Programs
- Copper River Nouveau, Support & Attendance
- Aquatic Invasive Species Monitoring, Youth Internship
- Copper River Wild, Booth Outreach & Children's Activities

• City Council, Presentation

KENAI

 Kenai Peninsula Borough Assembly, Reception & Presentation with Cook Inlet RCAC

CHENEGA BAY

Chenega Memorial, Support

ANCHORAGE

- Peer Listener Trainer Workshop
- Alaska Municipal League, Booth Outreach
- Chugach Children's' Forest, Award Recognition
- Pacific Northwest Chapter of the Society of Environmental Toxicology and Chemistry, Conference Attendance
- U.S. Coast Guard Foundation Dinner, Attendance
- Brown University BELL Youth Program, Presentation
- Science Night, Presentations and Reception
- Alaska Forum on the Environment, Oil Spill Track Sessions, Presentations, Booth Outreach, Youth Involvement Project & Youth Internship Recruitment
- Alaska Science and Engineering Fair, Youth
 Involvement Outreach
- U.S. Coast Guard Change of Command

OUTSIDE THE REGION

- Pacific Marine Expo, Seattle
- International Oil Spill Conference, Long Beach, CA
- U.S. Coast Guard Change of Command, Juneau
- Nonprofit Technology Network, Washington, D.C.

OUTREACH ACTIVITIES

Kodiak Island

LARSEN BAY

Community Visit, Public Reception & Classroom Program

• Rural Salmon & Science Camp, Youth Involvement Project

OLD HARBOR

- Nuniaq Marine Science Educational Camp, Youth Involvement Project & Community Visit
- Rural Salmon & Science Camp, Youth Involvement Project

KODIAK

- ComFish, Booth Outreach
- KANA-Koniag, Inc., Presentation with Cook Inlet Regional Citizens Advisory Council
- Kodiak Area Marine Science Symposium, Presentation & Kids' Corner Activity
- Kodiak Island Borough Assembly, Presentation

KODIAK ISLAND

FUIDA



BOARD OF DIRECTORS

Each member entity chooses one representative to our Board. The lone exception is Valdez, which has two representatives, giving our Board a total of 19 members. The Board meets three times a year. The January meeting is in Anchorage, the May meeting is in Valdez, and the September meeting rotates among other member communities in the oil spill region.

OFFICERS



Amanda Bauer President *City of Valdez*



Thane Miller Vice President Prince William Sound Aquaculture Corp.



Bob Shavelson Secretary Oil Spill Region Environmental Coalition



Wayne Donaldson Treasurer *City of Kodiak*

EX-OFFICIO BOARD MEMBERS (NON-VOTING)

Shannon Miller Alaska Dept. of Environmental Conservation

Lee McKinley Alaska Department of Fish and Game

Robert Skorkowsky U.S. Forest Service Graham Smith Alaska Dept. of Natural Resources

Kevin Kearney U.S. Bureau of Land Management

Colin Blair Alaska Div. of Homeland Security & Emergency Management Calvin J. Terada U.S. Environmental Protection Agency

Philip Johnson U.S. Department of the Interior

Commander Joe Lally U.S. Coast Guard, Marine Safety Unit, Valdez W. Scott Pegau Oil Spill Recovery Institute

Catherine Berg U.S. National Oceanic and Atmospheric Administration



Patience Andersen Faulkner Cordova District Fishermen United



Melissa Berns Kodiak Village Mayors Association



Luke Hasenbank Alaska State Chamber of Commerce



Orson Smith City of Seward



Robert Archibald City of Homer



Robert Beedle City of Cordova



Mike Bender *City of Whittier*



Al Burch Kodiak Island Borough



Josie Hickel Chugach Alaska Corporation



Roy Totemoff Community of Tatitlek



Alisha Chartier City of Seldovia



Melvin Malchoff Port Graham Corporation



Michael Vigil Chenega Corporation & Chenega IRA Council



Mako Haggerty Kenai Peninsula Borough



Dorothy Moore City of Valdez

ADVISORY COMMITTEES

Five standing committees advise the Board of Directors and the Council staff on projects and activities. Committee volunteers also assist the staff on individual projects. The advisory committees are made up of interested citizens, technical experts, and members of the Council Board. Committee volunteers are selected through an annual application process. They are appointed to two-year terms and may serve consecutive terms.

OIL SPILL PREVENTION AND RESPONSE COMMITTEE

Mission: Minimize the risks and impacts associated with oil transportation through strong spill prevention and response measures, adequate contingency planning, and effective regulations

- Chair: Jim Herbert, Homer
- Vice-chair: John LeClair, Anchorage
- Robert Beedle, Cordova*
- Mike Bender, Whittier*
- Jerry Brookman, Kenai
- Alisha Chartier, Seldovia*
- · David Goldstein, Whittier
- Gordon Scott, Girdwood

SCIENTIFIC ADVISORY COMMITTEE

Mission: Promote the environmentally safe operation of the terminal and tankers through independent scientific research, environmental monitoring, and review of scientific work

- Chair: John Kennish, Anchorage
- Vice-chair: Davin Holen, Anchorage
- · Sarah Allan, Anchorage
- Jeffrey Brooks, Anchorage
- Wei Cheng, Anchorage
- Wayne Donaldson, Kodiak*
- Roger Green, Brighton, Ontario
- Debasmita Misra, Fairbanks
- Dorothy M. Moore, Valdez*

PORT OPERATIONS AND VESSEL TRAFFIC SYSTEMS

Mission: Monitor port and tanker operations in Prince William Sound and recommend improvements in the vessel traffic navigation systems and monitors the vessel escort system

- · Chair: Steve Lewis, Anchorage
- Vice-chair: Robert Archibald, Homer*
- Amanda Bauer, Valdez*
- · Cliff Chambers, Seward
- Pat Duffy, Valdez
- Pete Heddell, Whittier
- Orson Smith, Seward*
- Jeremy Talbott, Valdez

TERMINAL OPERATIONS AND ENVIRONMENTAL MONITORING

Mission: Identify actual and potential sources of episodic and chronic pollution at the Valdez Marine Terminal

- Chair: Harold Blehm, Valdez
- Vice-chair: Mikkel Foltmar, Anchorage
- Amanda Bauer, Valdez*
- Steve Goudreau, Valdez
- Tom Kuckertz, Anchorage George Skladal, Anchorage

INFORMATION AND EDUCATION COMMITTEE

Mission: Foster public awareness, responsibility, and participation through information and education

- Chair: Jane Eisemann, Kodiak
- Vice-chair: Trent Dodson, Kodiak
- · Jamie Acton, Anchorage
- Patience Andersen Faulkner, Cordova*
- Cathy Hart, Anchorage
- Ruth E. Knight, Valdez
- · Andrea Korbe, Whittier
- · Savannah Lewis, Anchorage
- Kate Morse, Cordova
- · Linda Robinson, Homer

*member of Board of Directors

PHOTO CREDITS

KEY - T:TOP, B:BOTTOM, C:CENTER, R:RIGHT, L:LEFT, BG:BACKGROUND

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STAFF

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Roy Robertson Project Manager

Jeremy Robida Project Manager

Alan Sorum Project Manager

Linda Swiss Project Manager

Brooke Taylor Director of External Communications

Nelli Vanderburg Project Manager Assistant

Walt Wrede Director of Administration

PAPERS, PRESENTATIONS AND REPORTS

Analysis of federal and state ballast water management policy as it concerns crude oil tankers engaged in coastwise trade to Alaska (report) Danielle Verna. January 2017. Document number: 952.431.170120. VernaBWpolicy

Comments in Support of HB177 - An Act relating to the response to, and control of, aquatic invasive species; establishing the aquatic invasive species response fund; and relating to the provision of information about aquatic invasive species to users of the Alaska marine highway system (comments) Citizens' Council. April 2017. Document numbers: 952.105.170406.HB177support.pdf and 952.105.170414.HB177supportSnt.pdf

Comments on ADEC Notice of Public Scoping for Possible Updates to DEC Regulations for Petroleum Cleanup Level Regulations - 18 AAC 75 and 18 AAC 78 (comments) Citizens' Council. January 2017. Document number: 600.105.170131.ADECpetroCmts

Comments on Alyeska Pipeline Service Company, Valdez Marine Terminal Oil Discharge Prevention and Contingency Plan, Amendment 2017-1, ADEC Plan 14-CP-4057 (comments) Citizens' Council. April 2017. Document number: 651.105.170413. ADECvmtCmts.pdf

Comments on Draft Air Quality Control Operating Permit No. AQ0082TVP03 for the Valdez Marine Terminal (comments) Citizens' Council. June 2017. Document number: 557.105.170621.ADECaqPermit.pdf

Comments on the Alaska Regional Response Team's (ARRT) Proposal to Change Area Planning Boundaries and Approach (comments) Citizens' Council. November 2016. Document number: 600.431.161115. ARRTareaboundry.pdf

Comments on the Critical Need to Fully Fund the US Coast Guard (comments) Jointly submitted by Prince William Sound and Cook Inlet Citizens' Advisory Councils. March 2017. Document number: 440.105.170324.FundUSCG.pdf Comments requesting the proposed changes to the Unified Plan eliminating the Regional Stakeholders Committee (RSC), as it is currently constituted, be withdrawn (comments) Citizens' Council. September 2016. Document number: 600.105.160913. ADECrscChange.pdf

Comments to both ADEC and APSC requesting a joint meeting to collaborate on the transition from Crowley to Edison Chouest Offshore escorts (comments) Citizens' Council. March 2017. Document number: 801.105.170314.CollabADECapsc

Development of the Current Prince William Sound Escort System: Regulations, Analysis, and System Enhancements (report) Nuka Research and Planning Group LLC. June 2017. Document number: 801.431.170608. NukaservsHistory

Industry and Class Standards for Escort Tugboat (report and cover memo) Little River Marine Consultants and Citizens' Council. January 2017 Document number: 801.431.170128.LRMCtugStandrds

Comments to the Alaska Regional Response Team on Dispersant Use Avoidance Areas in the Prince William Sound, Cook Inlet, and Kodiak Subareas (comments) Pegasus Environmental Solutions-Alaska. January 2017 600.105.17010g.ARRTdispUseAvoid.pdf

Letter of support for ADEC oversight of the transition from Crowley Maritime to Edison Chouest Offshore under the Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan (comments) Citizens' Council. March 2017. Document number: 801.105.170301.ADECecoLetter1

Long-Term Environmental Monitoring Program – Final Report: 2015 Sampling Results and Interpretations (report) Payne Environmental Consultants, Inc. December 2016. Document number: 951.431.161201.2015AnnualRpt

Prince William Sound Oil Spill Recovery Optimization Analysis (report) Nuka Research & Planning Group, LLC. February 2017. Document number: 756.431.170201.NukaROA Resolution in support of the reauthorization of the Oil Spill Liability Trust Fund (OSLTF) exercise tax, increased use of the fund for spill prevention measures and establishment of a fund balance ceiling and floor which automatically suspends and reinstates the excise tax to improve the long-term sustainability of the OSLTF (resolution) Citizens' Council. May 2017. Document number: 210.106.170505.OSLTFresolution

Review of the Proposed New Escort and Support Tugs for Tanker Operations in Prince William Sound (report) Little River Marine Consultants. February 2017. Document number: 801.431.170202.ReviewECOtugs.pdf

Ship Simulation and Mariner Study of the Maritime Implications for Tank Vessels Utilizing Potential Places of Refuges, Mid-Prince William Sound, Alaska (report and advice letter) Safeguard Marine, LLC. January 2017. Document Number 856.431.170117. SafeguardPPOR and 856.105.170518. USCGadecPPOR

Comments on State-of-Science of Knowns and Uncertainties for Dispersants and Dispersed Oil – Topic 4, Eco-Toxicity and Sublethal Impacts (comments) Citizens' Council. May 2017. Document number: 955.105.170525.CRRCkinnerT4

Summary of Current B.A.T. Requirements for Escort and Rescue Towing Tugs (report) Robert Allan Ltd. October 2016. Document number: 801.431.161007.RALbatTugs.pdf

Table of Characteristics Comparisons Between Current Crowley Marine Services Vessels and Proposed Edison Chouest Offshore Vessels (report) Little River Marine Consultants. November 2016. Document number: 801.431.161109.CompareCMSeco.pdf

Transition from Crowley Maritime to Edison Chouest Offshore – Escort and General Purpose Tug Designs (comments) Citizens' Council. February 2017. Document number: 801.105.170222.APSCecoLetter2

Transition from Crowley Maritime to Edison Chouest Offshore – Training, Exercises and Best Practices (comments) Citizens' Council. January 2017. Document number: 801.105.170125.APSCecoLetter1

These are just a few of the many reports, papers, presentations, and other materials produced or compiled by the Council in the past year. For further information, or to obtain copies, visit the Council website or contact the Anchorage office (see back cover for contact information).

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