No. 07-219

In The
Supreme Court of the United States

EXXON SHIPPING COMPANY, et al.,

Petitioners,

v.

GRANT BAKER, et al.,

Respondents.

On Writ Of Certiorari To The United States Court Of Appeals For The Ninth Circuit

BRIEF OF *AMICUS CURIAE* PRINCE WILLIAM SOUND REGIONAL CITIZENS' ADVISORY COUNCIL AND COOK INLET REGIONAL CITIZENS' ADVISORY COUNCIL IN SUPPORT OF RESPONDENTS

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BRIEF OF *AMICUS CURIAE* PRINCE WILLIAM SOUND REGIONAL CITIZENS' ADVISORY COUNCIL AND COOK INLET REGIONAL CITIZENS' ADVISORY COUNCIL IN SUPPORT OF RESPONDENTS

The Prince William Sound Regional Citizens' Advisory Council (PWSRCAC) and the Cook Inlet Regional Citizens' Advisory Council (CIRCAC) respectfully submit this brief as *amicus curiae* in support of Respondents.[1]

INTRODUCTION AND INTEREST OF *AMICUS CURIAE*

PWSRCAC is an independent non-profit corporation organized under the laws of the State of Alaska and incorporated on December 26, 1989. It was created in the months following the *Exxon Valdez* oil spill, after representatives of Prince William Sound commercial fishing interests approached Alyeska Pipeline Service Company (Alyeska) and persuaded it of the need for citizen oversight of the Valdez oil terminal and the tanker operations within Prince

[1] Petitioners and respondents each have filed a blanket consent with the Clerk. Pursuant to S. Ct. R. 37.6, PWSRCAC and CIRCAC state that no counsel for a party authored this brief in whole or in part, no counsel or party made a monetary contribution intended to fund the preparation or submission of this brief, and no person other than *amicus curiae*, their members, or their counsel made a monetary contribution to its preparation or submission.

William Sound. Alyeska is the operator of the Trans-Alaska Pipeline as well as the Marine Terminal located in Valdez, Alaska (Marine Terminal), from which North Slope crude oil is loaded onto tankers for transport mostly to refineries outside of Alaska. It is a corporation primarily owned by several major oil companies producing and shipping oil from Alaska's North Slope, in the following percentages: BP Pipelines (Alaska) Inc., 46.93%; ConocoPhillips Transportation Alaska, Inc., 28.29%; ExxonMobil Pipeline Co., 20.34%; Unocal Pipeline Co., 1.36%; and Koch Alaska Pipeline Co. LLC, 3.08%. PWSRCAC is dedicated to the mission of citizens promoting the environmentally safe operation of the Marine Terminal in Valdez and the oil tankers that use it. Initially, PWSRCAC was comprised of representatives from the municipalities that were affected by the oil spill, as well as representatives from environmental, Alaska Native, and commercial fishing organizations. Today, PWSRCAC is made up of 18 member organizations, including representatives from communities, aquaculture, commercial fishing, environmental, Alaska Native, recreation, and tourism groups.[2] They include communities and

[2] PWSRCAC's current membership consists of two classes – voting members and ex-officio, non-voting members. Its voting members are representatives nominated by the following organizations and municipal governments: The Alaska State Chamber of Commerce, Alaska Wilderness Recreation and Tourism Association, Chugach Alaska Corporation, City of Cordova, City of Homer, City of Kodiak, City of Seldovia, City of Seward, City of Valdez, City of Whittier, Community of Chenega, Community of Tatitlek, Cordova District Fishermen United, Kenai

(Continued on following page)

interest groups in a region stretching from the Sound itself to Kodiak Island to the lower Cook Inlet – all areas that were touched by oil from the *Exxon Valdez* spill.

On February 8, 1990, PWSRCAC and Alyeska entered into a contract, which will remain in effect as long as oil continues to flow through the Trans-Alaska Pipeline. Under the contract, Alyeska annually funds PWSRCAC to carry out certain contractual responsibilities for the benefit of Alyeska and the public. The contractual obligations include monitoring oil tanker operations in Prince William Sound, providing local and regional input into the design of mitigation measures for oil spills, reviewing oil spill response and prevention plans and the capabilities of the terminal and tankers to comply with those plans, undertaking studies relating to spill prevention and

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Peninsula Borough, Kodiak Island Borough, Kodiak Village Mayors Association, Prince William Sound Aquaculture Corporation, and the Oil Spill Region Environmental Coalition. The following organizations have designated an individual to act as an ex-officio, non-voting member of PWSRCAC: The United States Environmental Protection Agency (EPA), the United States Coast Guard (USCG), the United States National Oceanic and Atmospheric Administration (NOAA), the United States Department of the Interior, the United States Forest Service (USFS), the Bureau of Land Management (BLM), the Alaska Department of Environmental Conservation (ADEC), the Alaska Department of Fish and Game, the Alaska Department of Natural Resources (DNR), the Alaska Division of Homeland Security and Emergency Management (HSEM), the Department of Military and Veterans Affairs and the Oil Spill Recovery Institute. *See* the Oil Pollution Act of 1990 § 5002(d)(2).

mitigation of environmental impacts of terminal and tanker operations, and increasing public awareness of the actual and potential environmental impacts of terminal and tanker operations.

Congress later mandated the existence of PWSRCAC and CIRCAC (collectively the RCACs). Immediately after the catastrophic oil spill in March 1989, Congress began work on legislation aimed at preventing such spills from occurring again. The result was the Oil Pollution Act of 1990 (OPA 90).[3] Section 5002 of OPA 90 requires the establishment of Oil Terminal and Oil Tanker Oversight and Monitoring Demonstration Programs for Prince William Sound and Cook Inlet. The programs were designed to provide a model for overcoming "mistrust and confrontation" by promoting partnership and cooperation among local citizens, industry and government and by providing citizen oversight of environmental compliance by oil terminals and tankers.[4] Significantly, Congress

[3] Public Law 101-380 (August 18, 1990).

[4] CIRCAC supports and joins in this *amicus* brief to the Court. Like PWSRCAC, CIRCAC was established under Section 5002 of OPA 90 to provide citizen oversight for oil industry operations, but in the Cook Inlet region rather than the Prince William Sound area. CIRCAC meets its mission to "represent the citizens of Cook Inlet in promoting environmentally safe marine transportation and oil facility operations in Cook Inlet" through its 13-member Board of Directors appointed by boroughs, cities and municipalities in the Cook Inlet region, as well as Alaska Native, commercial fishing, aquaculture, Alaska State Chamber of Commerce, recreational, and environmental interest groups. OPA 90 also requires CIRCAC to establish committees to

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identified complacency on the part of the oil industry and government regulators as one of the contributing factors of the *Exxon Valdez* oil spill. OPA 90 § 5002(2)(B).

Section 5002(d) of OPA allows an alternative, pre-existing organization to fulfill the requirement for a citizens' council if the President annually certifies that the citizens' advisory committee "fosters the general goals and purposes of this section" and is broadly representative of the communities and interests in its geographic area. Each year since the enactment of OPA 90, PWSRCAC has been certified as the citizens' oversight and monitoring program for the Sound.

Funding of the regional citizens' advisory councils under Section 5002(o) is provided by the oil companies whose activities impact each region. Thus, Alyeska must fund PWSRCAC annually as long as the Trans-Alaska Pipeline is operational, and the owners or operators of terminal facilities, offshore

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accomplish its mandates, which provides additional opportunities for citizen involvement by allowing public members to participate on each of the main working committees: the Environmental Monitoring Committee and the Prevention, Response, Operations, and Safety Committee. The following organizations have designated an individual to act as an ex-officio, non-voting member of CIRCAC: EPA, USCG, USFS, NOAA, BLM, ADEC, DNR, and HSEM. *See* OPA 90 § 5002(d)(2).

facilities, or crude oil tankers operating in Cook Inlet must fund CIRCAC each year.[5]

Although it works closely with and is primarily funded by Alyeska, PWSRCAC is an independent advisory group. PWSRCAC's contract with Alyeska is explicit: "Alyeska shall have no right . . . to any degree of control over the formation or operation of the [PWSRCAC]." PWSRCAC 2006-07 Annual Report (Annual Report), App. 8.

Since its formation in 1989, PWSRCAC has been a leader in the area of tanker monitoring and oil spill prevention. PWSRCAC closely monitors the operations of the Marine Terminal as well as the operations of tankers while in transit through Prince William Sound and while berthed at the Terminal. PWSRCAC reviews and comments on the oil spill contingency plans prepared by both Alyeska, as the operator of the Marine Terminal, and the tankers that transit Prince William Sound. Jointly with the industry it has conducted major studies relating to tanker operations in Prince William Sound.

More recently, the PWSRCAC has been involved in a variety of projects, ranging from participating in oil spill response drills, commenting on draft permits from regulatory agencies, participating in oil spill prevention and response plans, and studying the

[5] Current charter funding members are ConocoPhillips, Cook Inlet Pipeline Co., Forest Oil Corp., Marathon Oil Co., Tesoro Alaska Petroleum, Chevron Corp., and XTO Energy.

problem of non-indigenous species that result from tanker transportation of oil. *See* Annual Report, App. 12, 13-14, 16-17 and 25-27. One of PWSRCAC's specific responsibilities is to increase public awareness of issues relating to the Marine Terminal and oil tanker operation. *See id.*, App. 19-20. Accordingly, PWSRCAC has financed a variety of studies, including a guidebook explaining how communities can deal with "technological disasters," and an oral history of the *Exxon Valdez* oil spill. PWSRCAC, *Then and Now – Changes in Oil Transportation Since the* Exxon Valdez *Spill* (1989-1999) (*Then and Now*), App. 67-68.

In the last several years, PWSRCAC has taken an active role in urging the oil companies that own and/or operate the oil tankers to continue to maintain and use the fleet of tugs that escort the tankers through Prince William Sound. *Id.*, App. 46-49. PWSRCAC also has successfully advocated for the installation of upgrades to the ballast water treatment facility at the Alyeska terminal to eliminate hazardous air pollution. *Id.*, App. 69-71. PWSRCAC has been described as an "anti-complacency" organization, and as a "corporate conscience" financed by the oil industry.[6] Through PWSRCAC the people with the most to lose from oil pollution have been given a voice in decisions that potentially put their livelihoods at risk.

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[6] *See, e.g.,* PWSRCAC website, http://www.pwsrcac.org/faq.html at 3.

In sum, the RCACs are "the third leg of a tripod supporting safer oil transportation, the other two being industry and government." *Then and Now*, App. 73. "Industry must balance the need for environmental protection against the pressure for profits, while government agencies are . . . subject to political pressure to promote economic development and minimize the regulatory burden on industry." *Id.*, App. 74. In contrast, the RCACs are "unique in having no mission except promoting safety and informing the public about it. . . ." *Id.*, App. 73.

The RCACs believe that punitive damages are appropriate – in fact, necessary – in maritime cases, such as this one. Punitive damages serve a vital purpose in deterring reckless acts that profoundly affect not only the environment, but also the social well-being and livelihood of the many people who use, enjoy and rely upon areas such as Prince William Sound, Cook Inlet and the Kodiak Archipelago. Because of their unique position as citizens' advisory and monitoring organizations, the RCACs bring to this discussion the outlook of the residents of Alaska who have seen first hand the tragic consequences of a calamitous oil spill. The RCACs believe that the world of shipping has changed dramatically, especially within the last 50 years. They further believe that while citizen oversight councils such as themselves provide an important safeguard against the complacency that led to the *Exxon Valdez* oil spill, punitive damages also are an essential deterrent

against the reckless conduct that could cause another such disaster.

SUMMARY OF ARGUMENT

Nearly 19 years after the *Exxon Valdez* oil spill, its effects on Prince William Sound, Lower Cook Inlet, and the Kodiak Archipelago still are being felt. The oil spill did immeasurable damage to the region, its resources, and its inhabitants. The oil spill damaged the very social and economic fabric of the region, affecting people's lives, their livelihood, recreational opportunities and subsistence. Although punitive damages cannot repair the socio-economic fabric of the region, they can help to protect it from future spills by deterring the conduct that led to the oil spill.

In this brief, PWSRCAC and CIRCAC present their view that punitive damages are essential here as a means of deterring Exxon and other oil companies, by letting them know that the complacency and reckless behavior that led to the grounding of the *Exxon Valdez* and the most devastating oil spill in North America will not be tolerated. PWSRCAC and CIRCAC have a unique voice in this litigation, in part because they were born out of the *Exxon Valdez* oil spill itself and in part because they speak for the enduring interests of Prince William Sound, Cook Inlet, the Kodiak Archipelago and their inhabitants. Despite advances in vessel monitoring, marine safety and communications, and spill prevention, several

recent incidents suggest that without the threat of punitive damages, the conduct that led to the *Exxon Valdez* oil spill and its result could occur again. The RCACs believe that punitive damages are necessary to deter Exxon and others from engaging in the conduct that led to the *Exxon Valdez* oil spill and could lead to future oil spills.

ARGUMENT

I. Punitive Damages Are Necessary And Appropriate here to Ensure that the Corporate Complacency and Recklessness that Resulted in the *Exxon Valdez* Oil Spill Do Not Recur.

Two unforgettable disasters have occurred in Alaska since it became a state in 1959. The first one was the 1964 earthquake, the largest recorded quake in the history of North America, larger even than the infamous San Francisco earthquake of 1906.[7] The earthquake struck without warning at 5:36 p.m. on Good Friday, March 27, 1964 – it was inescapable and unavoidable. The earthquake left its indelible mark on many areas in the State, including several communities, such as Valdez, which were devastated by the ensuing tsunami.

[7] According to the U.S. Geological Survey, the 1964 Earthquake had a magnitude of 9.2. *See* USGS website, http://earthquake.usgs.gov/regional/states/events/1964_03_28.php.

The second one also struck, coincidentally, on Good Friday, March 24, 1989. The *Exxon Valdez* oil spill was not a natural disaster at all, but an all-too-human one, a disaster that devastated the natural resources of Prince William Sound, Lower Cook Inlet and the Kodiak Archipelago. To this day, the *Exxon Valdez* is the most disastrous oil spill to have occurred in North America. This Court has recognized it as "[t]he most notorious oil spill in recent times," which "released more than 11 million gallons of crude oil and . . . caused public officials intense concern over the threat of a spill." *United States v. Locke*, 529 U.S. 89, 96 (2000).[8] In contrast to the earthquake, the oil spill was entirely avoidable and preventable. Whereas the earthquake was an Act of God, the spill was entirely an act of man. A misadventure of alcohol, exhaustion, and personal and corporate recklessness, the oil spill affected, and continues to affect, the lives and livelihood of thousands of persons with ties to Prince William Sound, Lower Cook Inlet, and the Kodiak Archipelago.

PWSRCAC and CIRCAC have been tasked with, among other things, assuring that a catastrophe such as the *Exxon Valdez* spill does not happen again. In furtherance of this goal, the RCACs believe that it is critical that oil companies are held accountable for egregious conduct, which has the potential for such

[8] For the path that the spilled oil took, *see Then and Now*, App. 40.

long-lasting, far-reaching and catastrophic consequences.

A. A Catastrophic Spill Such as the *Exxon Valdez* Oil Spill Continues to Affect and Harm the Region and Its Resources Long After the Spill Has Occurred.

Nearly 19 years after the oil spill, the continuing harm to the socio-economic fabric of Prince William Sound, Lower Cook Inlet and the Kodiak Archipelago is well documented. Punitive damages are appropriate to help prevent against future catastrophic spills, the effects of which would likely be immeasurable.

What is the area comprising Prince William Sound, Lower Cook Inlet, and the Kodiak Archipelago? To its inhabitants it is a place of remarkable beauty and abundance. To commercial fishermen and women, it is the source of their livelihood. To Alaska Natives, its resources provide them with a rich subsistence lifestyle. To visitors and recreational users, it is a place of unparalleled majesty and abundant wildlife. To the large corporations that move the oil, it is primarily a body of water, a thing to be traversed to bring the bounty of the North Slope oil fields to market. To too many people, Prince William Sound is known principally as the place where the *Exxon Valdez* grounded on Bligh Reef and spilled its oil.

Located in Southcentral Alaska, Prince William Sound is bounded to the north, east and west by the Chugach Mountains, the second highest range of

coastal mountains in the world (after the Andes).[9] The Sound was formed by millions of years of glacial activity, which has left it marked with deep fjords, bays, and passageways along its more than 3,000 miles of shoreline. *Id*. The Sound is home to more than 20 towering tidewater glaciers and countless smaller glaciers, many of which descend from its several ice fields, including Bagley Icefield, the largest subpolar icefield in North America. *Id.*

Prince William Sound's inhabitants are scattered throughout an area larger than Massachusetts, Connecticut and Rhode Island combined. *Id.* Most of its inhabitants reside in the towns of Valdez, Cordova, and Whittier, and in the two Native villages of Chenega and Tatitlek. *Id.* No roads connect these communities, and only Valdez and Whittier can be reached by car – Whittier by the same one-lane tunnels used by locomotives. Many of its inhabitants derive their livelihood from the fish, natural resources, and recreational opportunities that are found in abundance throughout the Sound.

In the 1970's, one of the Sound's communities, Valdez, became the southern terminus of the Trans-Alaska Pipeline. Tankers began transporting the oil being pumped from Prudhoe Bay across the Sound, taking the oil to markets in California and other

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[9] Prince William Sound Natural History, http://www.alaska.net/~awss/pws.html (Alaskan Wilderness Sailing and Kayaking).

ports in the western United States. These tankers are cavernous modern ships capable of transporting enormous quantities of oil across the open seas. This Court has recognized this development in oil transportation:

> The bulk of oil transported on water is found in tankers, vessels which consist of a group of tanks contained in a ship-shaped hull, propelled by an isolated machinery plant at the stern. The Court described the increase in size . . . of these ships close to three decades ago in *Askew v. American Waterways Operators, Inc.*, 411 U.S. 325, 335, 93 S. Ct. 1590, 36 L. Ed. 2d 280 (1973), noting that the average vessel size increased from 16,000 tons during World War II to 76,000 tons in 1966. . . . By December 1973, 366 tankers in the world tanker fleet were in excess of 175,000 tons. . . .

United States v. Locke, 529 U.S. at 96 (citation omitted). As the *Locke* Court concluded, "[t]he size of these vessels, the frequency of tanker operations, and the vast amount of oil transported by vessels with but one or two layers of metal between the cargo and the water present serious risks. . . ." *Id. See also Askew v. American Waterways*, 411 U.S. at 324-25 (oil spillage was "an insidious form of pollution of vast concern to every coastal city or port and to all the estuaries on which the life of the ocean and the lives of the coastal people are greatly dependent[,]" a concern heightened by "the risk of ever-increasing damage by reason of the size of modern tankers[,]" among other things).

The vast amounts of oil being transported by these vessels can result in catastrophic oil spills like the *Exxon Valdez*.

Although we must be prepared to respond to any spills that occur, prevention of future spills is critical. "History shows that oil, once spilled on the sea, is never fully contained and recovered." *Then and Now*, App. 44. Despite "improvements in containment and cleanup technology," it is virtually impossible to "recover all the oil from a major spill. . . ." *Id.* Further, bad weather "can defeat even a good plan." *Id.* In other words, a spill that never occurs is one that never requires cleaning up, has no impact on the lives and livelihoods of the inhabitants of the area, and leaves the area as pristine as before. The *Exxon Valdez* spill itself illustrates this. Even now its effects are still found – and felt – throughout Prince William Sound, Lower Cook Inlet, and the Kodiak Archipelago, not only on the area's beaches and natural resources, but also on its socio-economic fabric. *See Exxon Valdez Oil Spill Restoration Plan, Update on Injured Resources and Services 2006* (Exxon Valdez Oil Spill Trustee Council, November 2006) (*EVOS 2006 Update*), *infra.* Prevention, therefore, must be "the first line of defense," *Then and Now*, App. 44, the foundation on which spill response is built.[10]

[10] Since prevention efforts cannot guarantee that no spills will occur, however, "the industry, regulatory agencies and the public must [also] be prepared to respond to spills that do occur." *Then and Now*, App. 56.

More than 17 years after the oil spill, Prince William Sound is still recovering from its effects. *EVOS 2006 Update* at 6. In addition to the damages to the environment, which are not at issue here, the spill did incalculable, unquantifiable damage to the socio-economic fabric of life in and around Prince William Sound and Lower Cook Inlet. *See, e.g.*, Pet. App. 150-151a, 166a-167a, and SJA386sa-572sa. The effects of the *Exxon Valdez* oil spill were not "purely economic. The social fabric of Prince William Sound and Lower Cook Inlet was torn apart," as the district court aptly noted. JA150a. Community impacts included "'a chronic pattern of economic loss, social conflict, cultural disruption and psychological stress.'" JA150a-151a, *quoting* J. Steven Picou, *et al.*, *Community Recovery from the* Exxon Valdez *Oil Spill: Mitigating Chronic Social Impacts* at 6-7. The communities affected by the spill "'reported increased incidences of alcohol and drug abuse, domestic violence, mental health problems, and occupation related problems.'" JA151a, *quoting* Duane A. Gill, *Environmental Disaster and Fishery Co-Management in a Natural Resources Community: Impact of the* Exxon Valdez *Oil Spill, in Folk Management in the World's Fisheries*, 227 (Dyer & McGoodwin, eds., 1994). Several studies found that "a high percentage of affected fishermen suffered from severe depression, post-traumatic stress disorder, generalized anxiety disorder or a combination of all three." JA151a (citation omitted). The oil spill's disruption of "the lives and livelihood of thousands of claimants and their families" could not be "quantified." JA167a.

Oil from the *Exxon Valdez* spill continues to persist, and contaminate the Sound and its beaches. In fact, a recent study indicated that, "at some locations, remaining subsurface oil may persist for decades with little change." Jeffrey W. Short, *et al.*, *Slightly Weathered* Exxon Valdez *Oil Persists in Gulf of Alaska Beach Sediments after 16 Years*, 41 Environ. Sci. Tech. 1245 (2007). The same study determined that "physical dispersion rates" of the oil have slowed since 2001. *Id.* at 1248. The study concluded that "the remaining subsurface oil may persist with little change for decades, even in sediments that are not anoxic [oxygen-depleted]." *Id.* at 1249. Such persistence will, understandably, continue to pose problems for the Sound and its inhabitants:

> Such persistence can pose a contact hazard to intertidally foraging sea otters, sea ducks, and shorebirds . . . , create a chronic source of low-level contamination . . . , discourage subsistence in a region where use is heavy . . . , and degrade the wilderness character of protected lands.

Id. Like the lingering effects of the oil, "mental health problems" continued to "linger a decade" after the Spill, *Then and Now*, App. 67, and still linger today, *see* D. Gill, *Technological Disaster, Resource Loss and Long-Term Social Change in a Subartic Community:* Exxon Valdez *Oil Spill Social Impacts on Alaska Natives and Commercial Fishermen in Cordova,*

Alaska – 2001-2006 (Miss. State U. Soc. Sci. Res. Center 2007).[11]

As of November 2006, not one of the "Human Service" categories identified by the EVOS Trustee Council had recovered. *EVOS 2006 Update* at 34-38, and at 6, Table 1. The four categories that the Trustee Council identified were commercial fishing, subsistence, recreation and tourism and passive use. *Id.* Commercial fishing was injured "as a result of the spill's direct impacts to commercial fish species. . . ." *Id.* at 34. Oil from the spill also "disrupted subsistence activities" for the 2,200 people of 15 Alaskan Native communities and about "13,000 other subsistence permit holders in the area." *Id.* at 37. Recreation and tourism in areas affected by the spill "dramatically declined in 1989 in Prince William Sound, Cook Inlet and the Kenai Peninsula." *Id.* at 36. Finally, injuries to "passive use," the "service provided by natural resources to people that will likely not visit, contact or otherwise use the resource," are tied "to public perceptions of injured resources." *Id.* at 35.

Each of these categories of "Human Service" was "negatively indirectly impacted by the spill due to its connection with impacted natural resources." *Id.* at

[11] Gill's final report was submitted to the National Science Foundation, Office of Polar Research, Washington, D.C. (NSF #0082405).

34-38, and at 6. Each is still struggling with the after-effects of the spill, *id.*, aftershocks that are longer-lasting than those from the '64 quake. Although punitive damages cannot repair the socio-economic fabric of the region, or restore it to pre-oil spill days, punitive damages can help protect the region from future spills by deterring the conduct that led to the spill.

B. Punitive Damages as a Deterrent Are Vital to Protect Prince William Sound, Cook Inlet and the Kodiak Archipelago Against the Occurrence of Another Catastrophic Oil Spill such as the *Exxon Valdez*.

Punitive damages are an important tool to help deter future oil spills by punishing the conduct that causes them and the corporate climate in which they occur. It is vital today to continue to discourage the conduct and climate that led to the *Exxon Valdez* spill – the lack of vigilance, tolerance of serious errors, and corporate recklessness. If the award of punitive damages here prevents a single, serious oil spill, even one far less catastrophic than *Exxon Valdez*, their purpose will have been well served.

Punitive damages are meant "as a threat to discourage egregious misconduct." D. Robertson, *Punitive Damages in American Maritime Law*, 28 J. Mar. L. & Com. 73, 163 (1997) (hereafter "*Punitive Damages*"). When the "threat" operates properly, "such damages should not have to be actually awarded very often." *Id.* Further, punitive damages

are "a well-settled part of American maritime law and have been since the early 1800s. . . ." *Id.* at 162. *See Lake Shore & M. S. Ry. Co. v. Prentice*, 147 U.S. 101, 108 (1893) ([C]ourts of admiralty . . . proceed, in cases of tort, upon the same principles as courts of common law, in allowing exemplary damages . . . "). As a federal court observed more than a century ago, "[I]f owners do not wish to be mulct [sic] in damages for such misconduct, they should be careful to select men worthy to command their vessels." *City of Carlisle*, 39 F. 807, 817 (D. Or. 1889), *quoted in Punitive Damages*, 28 J. Mar. L. & Com. at 121. Similarly, this Court has observed that punitive damages are appropriate if an employer knew that its employee was "an unsuitable person," or if the employer "participated in, approved, or ratified" the employee's tort. *Lake Shore*, 147 U.S. at 117. *See also Punitive Damages*, 28 J. Mar. L. & Com. at 121-22.

Punitive damages also serve the three-fold goal of "'punishing the defendant, of teaching him not to do it again, and of deterring others from following his example.'" *Punitive Damages*, 28 J. Mar. L. & Com. at 75, *quoting* W. Prosser, *The Law of Torts* § 2 at 9 (4th ed. 1971). Punitive damages are particularly important here to discourage and deter others from engaging in similar conduct in the future.

The checks in place today to prevent another catastrophic oil spill in Prince William Sound are better than they were at the time of the *Exxon Valdez* spill. They include, among other things, the requirement that by 2010 all tankers in the fleet transporting oil from

Valdez will be double hulled;[12] changes to and improvements in the tug escort system;[13] and improved oil spill contingency plans and oil spill drills.[14]

Furthermore, the checks also include the RCACs themselves. OPA 90 mandated PWSRCAC and CIRCAC as a means of giving the people most directly affected by the *Exxon Valdez* oil spill a voice in decisions relating to oil and its transportation in the region. As described in the Statement of Interest, *supra*, during the last 18 years, PWSRCAC has developed an expertise in oil spill prevention and spill response, as evidenced by its many public outreach programs, studies, and participation in national and international activities regarding these topics.

Regardless of the additional checks in place today and the RCACs' involvement, however, there is no "guarantee that the complacency [that resulted in the *Exxon Valdez* oil spill] will not set in again. . . ." *Then and Now*, App. 74. Simply stated, human factors never can be removed: "The U.S. Coast Guard estimates that

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[12] Federal law calls for the phase out of all single-hulled oil tankers trading in U.S. ports by 2010, and the phase out of older double-bottomed vessels by 2015. 46 U.S.C. § 3703a. A 1998 study by the National Research Council (NRC) confirmed that advances in vessel technology, such as double hulls and redundant systems, however, do not erase the need for additional prevention measures. Nuka, *PWS Escort System*, App. 84, *citing* NRC, *Double-Hull Tanker Legislation: An Assessment of the Oil Pollution Act of 1990* (Nat'l Acad. Press 1998).

[13] *Then and Now*, App. 46-49.

[14] *Then and Now*, App. 57-61.

nearly 85% of oil spills and marine accidents can be attributed to human factors – either individual errors or organizational failures." Nuka Research and Planning Group, LLC, "*Importance of Maintaining the Prince William Sound Escort System for Double-Hulled Tankers*" (December 3, 2004) (Nuka, *PWS Escort System*), App. 82-83.[15] Significantly, many of the same human factors that caused the *Exxon Valdez* oil spill remain today. We believe that unless the punitive damages award is affirmed, sending a clear message to the industry that such behavior will not be countenanced, the number of oil spills will increase again, and much of what we and others have accomplished over the last nearly 20 years will be lost.

Numerous studies document the prevalence of alcohol abuse among seamen.[16] Unquestionably, alcohol consumption affects performance. A 2004 study found the effects of alcohol on the performance of ship operators to be "striking." S. Ritz-Timme, *et al.*, *What shall we do with the drunken sailor? Effects of alcohol*

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[15] The Nuka *PWS Escort System* report was citing *USCG 1998. Safety: We are the enemy. Safety Alert,* http://www.uscg.mil/hq/g-m/moa/docs/sa0998.htm. *See* App. 82-83.

[16] *See, e.g.,* T. Hemmingsson *et al*., *Alcoholism in Social Classes and Occupations in Sweden* 26 Int'l J. Epidem. (Int'l Epidem. Ass'n 1997); W. Mandell *et al*., *Alcoholism and Occupations: A Review and Analysis of 104 Occupations* 16 Alcohol. Clin. Exp. Res. 734-746 (July/Aug. 1992); D. Hitz, *Drunken Sailors and Others,* 34 Quart. J. Stud. Alc. 496 (1973); H.K. Rose and M.M. Glatt, *A Study of Alcoholism As An Occupational Hazard of Merchant Seamen* 107 J. Mental Sci. (Brit. J. Psych. January 1961).

*on the performance of ship operator*s, 156 Forensic Sci. Int'l 16-22 (2006). According to the study, "[t]he complex categories [of performance] were most affected, namely the analysis of situations, foresight, concentration, navigation, risk disposition and accurateness . . . " *Id.* at 20-21. Further, the authors noted that even among the captains who compensated for their alcohol impairment by concentrating almost exclusively on the primary task, performance would be "seriously impaired in case of an emergency or other circumstances of increased workload." *Id.* at 21.[17]

Sadly, the problem of "drunk driving" among ship operators that led to the grounding of the *Exxon Valdez* continues today. On August 4, 2007, a Polish sea captain with a blood alcohol level two and a half times the limit first crashed his ship into an unmanned gas platform in the North Sea, then behaved bizarrely during the rescue and finally, began to drink vodka while the crew boarded a life raft. "What shall we do with the drunken sailor? Clap him in irons and jail him for a year."[18] Closer to home, in March 2005, the Seattle Post-Intelligencer briefly reported on a lawsuit that had been filed by a galley worker who had worked aboard the *Polar California*,

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[17] The facts in this case are proof enough of the deleterious effects of alcohol on the performance of a ship's operator. *See, e.g.,* Plaintiff's Brief at 5-8.

[18] Ebsco Publishing, http://web.ebscohost.com/ehost/detail?vid=15&hid=21&sid=240b4742-dc5f-4388-9a6a-6. . . .

one of ConocoPhillips' tankers which transports Alaskan oil out of Valdez to the West Coast of the United States and Hawaii. The lawsuit, which settled out of court, alleged that ConocoPhillips had constructively terminated the galley worker in retaliation for her reporting alcohol use by the tanker's captain and crew. The newspaper article further reported that Port Angeles, Washington, which sits along the Strait of Juan de Fuca, had become a popular "watering hole" among tanker crews and had become "a de facto hole in the system meant to keep alcohol away from these dangerous ships." *The Human Factor: Why Another* Exxon Valdez *Could Happen*, SEATTLE P.I., March 23, 2005 (*The Human Factor*).

Most recently, the seriousness and prevalence of alcohol consumption among mariners is evidenced by the 2006 change in the U.S. Coast Guard's requirements for alcohol testing after serious marine incidents (SMI). Before June 20, 2006, the Coast Guard required marine employers to try to have each person employed on the vessel in commercial service who was directly involved in an SMI chemically tested for evidence of drug and alcohol use. *See* former 46 C.F.R. § 4.06. The regulations did not specify a time requirement following the SMI for collecting specimens or completing the tests to determine the use of alcohol or dangerous drugs. Now, however, Coast Guard regulations require alcohol testing to be conducted within two hours of an SMI and require most commercial vessels to have alcohol-testing devices on board. 46 C.F.R. § 4.06-3 (2006), published in 70 Fed.

Reg. 75954 (2005). In addition, the rule adds a 32-hour time limit for the collection of specimens for drug testing following a serious marine incident. In sum, the 2006 Coast Guard rule change shows that "drunk driving" continues to be a problem among ship operators.

Likewise, crew fatigue, which was identified as one factor in the *Exxon Valdez* oil spill, *see* Pet. App. 254a-255a, occurs today, notwithstanding the federal law limiting work hours on tankers. OPA 90 § 4114, *amending* 46 U.S.C. § 8104(n). A March 2006 newspaper story investigated an unreported oil spill by the *Polar Discovery* in January 2004. *The Human Factor*, SEATTLE P.I. *supra*. The *Polar Discovery* is one of ConocoPhillips' double-hulled supertankers in the Valdez fleet. Waste oil from the engine room flowed for a half hour through a valve carelessly left open onto the deck of the tanker and into the scupper holes that drain to the ocean. The *Polar Discovery*'s captain failed to report the spill. Worse yet, he falsified records to cover it up. *Fine and Probation: Attempt was Made to Cover Incident Up*, ANCHORAGE D.N., October 24, 2007 (*Fine and Probation*). More than four months after the spill, a whistleblower finally reported it to the Coast Guard.[19] According to one

[19] In October 2007, ConocoPhillips pleaded guilty to a criminal pollution violation for failing to report the spill and falsifying records to cover it up. *Fine and Probation*, ANCHORAGE D.N., *supra*. ConocoPhillips agreed to pay a fine and penalties totaling $2.5 million and was placed on probation for three years. As part of the plea agreement, U.S. prosecutors agreed

(Continued on following page)

newspaper account, the spill occurred through a series of human errors due to having a tired and overworked crew and a cost-cutting corporate culture that ignored reported misconduct and retaliated against whistleblowers. *The Human Factor*, SEATTLE P.I. *supra*. Clearly, despite improvements since 1989, the conditions and corporate climate that led to the *Exxon Valdez* oil spill still persist today.

Organizational complacency and inertia, like alcohol consumption and crew fatigue, continue to affect oil spill prevention and response efforts. There are three primary "players" in high-consequence marine accidents: humans, physical elements (such as the weather) and organizations. W.H. Moore, *et al.*, *Improving the Management of Human and Organization Errors (HOE) in Tanker Operations*, Ship Structures Symposium at 2 (November 16-17, 1993). Organizational pathologies[20] often are "over-riding influences" in such accidents, and are the most difficult to correct:

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not to seek criminal prosecution against the company for alleged violations aboard two other tankers, the *Polar Alaskan* and the *Polar Endeavour*. *Id.*

[20] The organizational pathologies identified were: "corporate 'cultures' focused on production at the expense of quality, ineffective and stifled communications, ineffective commitment and resources provided to achieve quality, excessive time and profit pressures, conflicting corporate objectives, and counter-quality and integrity incentives." Moore, *Improving the Management of HOE in Tanker Operations* at 2.

> [h]uman and organization errors . . . account for the vast majority of unanticipated significant problems associated with the design, construction, and o*peration of ships*. Approximately 80% of the problems are due to [human and organization errors], and approximately 80% of these can be traced to operations.

Id. (emphasis added).

The RCACs believe that the oil companies' complacency is due in no small part to the inherent tension between their profit-making imperative and legally-mandated oil spill prevention and response measures, which often require spending money to implement. Safety is sacrificed for the bottom line. The following example illustrates this point. Federal law now requires laden single-hulled tankers to be escorted by two tugs as they transit Prince William Sound. 33 C.F.R. § 168.40(a). Currently, double-hulled tankers laden with oil also are escorted through the Sound by two tugs. However, the law requiring the two-tug escort for the laden single-hulled tankers may become moot when the single-hulled tankers are phased out, perhaps as soon as the end of 2008. Thereafter, the use of double tug escorts will depend on voluntary compliance by the oil companies. Annual Report, App. 9. In the absence of a law requiring the use of double tug escorts, it is possible, if not probable, that the oil companies will try to cut back on the

use of tug escorts in Prince William Sound, as they have in other port areas.[21] Though the escort tugs unquestionably have contributed to the overall safety of tanker traffic in Prince William Sound, it should come as no surprise that the oil companies would prefer to eliminate this expense. The tension between safety and cost is intrinsic, and unavoidable.

In light of the RCACs' nearly 20 years of experience in the aftermath of the *Exxon Valdez* oil spill, and, particularly, their substantial experience dealing with the oil industry, they are convinced that, despite the many safeguards in place today against another oil spill, the elements of human error – indeed recklessness – and the corporate profit-making imperative remain substantially the same. The RCACs believe that one important reason Prince William Sound, Cook Inlet and the Kodiak Archipelago have been spared large oil spills in the last 18 years is that the oil companies and their employees are wary of the threat of financially-significant sanctions that may be assessed as punitive damages. Moreover, the threat of punitive damages encourages the oil companies to continue making the right choices, choosing safety and self-policing over the bottom line. In short,

[21] Tug escorts already have been eliminated for the new double-hulled tankers in San Francisco Bay. *The Human Factor*, SEATTLE P.I. at 5. Further, in 2004, at the behest of the oil companies, Washington state commissioned a study that concluded with a recommendation to eliminate tug escorts for the tankers there. *Id.*

PWSRCAC and CIRCAC urge the Court to retain punitive damages as one effective means of deterring individual and corporate recklessness.

CONCLUSION

PWSRCAC and CIRCAC therefore respectfully request the Court to affirm the judgment of the Ninth Circuit.

Respectfully submitted,

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January 29, 2008

Letter from the President and the Executive Director

[All Pictures Omitted In Printing]

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Note: This report covers the period from July 2006 through June 2007.

Our council has had a productive year. Our relations with the oil industry are on perhaps the best footing we've seen in a decade. Some old issues have been satisfactorily resolved, and, on balance, the new ones seem less contentious.

And we're happy to note that interest in citizen oversight continues around the world.

Here are some highlights of the past year:

• We started an oral history of the Exxon Valdez oil spill, featuring interviews with people directly involved in the spill and its aftermath. We expect to publish their memories in book form by March 2009, the 20th anniversary of the spill.

• We remain active on the threat that non-indigenous species from tanker ballast water pose to Alaska's maritime environment, especially its commercial, sport, and subsistence resources. With Congressional interest in this issue growing, we are pressing federal lawmakers to make sure any legislation on the subject requires ballast-water exchange, which is the best practice presently available for deterring invasions by non-indigenous species. In February 2007, we organized a successful film festival with a major focus on invasive species as part of the Alaska Forum on the Environment in Anchorage. We also initiated an annual science night to communicate our research efforts to our constituents and other researchers in our region.

• Our last two annual reports noted our continuing concerns over the future of the escort tugs that accompany loaded oil tankers through Prince William Sound. Those concerns were partly resolved over the past year when the tanker companies agreed to maintain the present fleet of ten tugs, at least for now. However, another question remains: what will happen to the tug fleet as federal escort requirements end with the transition to double-hull tankers? As

discussed elsewhere in this report, the council in May 2007 called for continuing and strengthening the double-escort requirement.

- We produced "Where Do I Go From Here," a half-hour film aimed primarily at high-school students. It focuses on jobs in the marine sciences and seafaring. We hope it will help students find careers that let them work in their home communities.

- In fall 2006, as Congress investigated a partial shutdown of the Prudhoe Bay oilfield caused by pipeline corrosion, we were invited to provide information on how citizen oversight might work on Alaska's North Slope. We developed a whitepaper on the subject that was added to the Congressional record by Sen. Lisa Murkowski.

In May 2007, the council's executive director traveled at the invitation of the U.S. State Department to Finland and Estonia to discuss citizen involvement in oil spill prevention and response. Interest was intense; the executive director gave four major speeches and approximately 15 news interviews.

- This year saw an agreement that we believe will solve a long-running problem at Alyeska Pipeline Service Co.'s tanker terminal in Valdez: hazardous air pollution from the facility that cleans oily residue from tanker ballast water. After lengthy discussions among ourselves, Alyeska, and its oil-company owners, the owners committed to upgrades that should eliminate virtually all of this pollution by the end of 2008. In response, we published newspaper advertisements in

Valdez and Anchorage commending the owners for their commitment, and we pledged to continue working with them to see the upgrades completed.

• We settled a dispute with Alyeska over the council's right to investigate the profitability of oil companies operating on Alaska's North Slope. Alyeska dropped its claim that the council may not use Alyeska contract funds for such investigations, and paid half our legal expenses.

• Over a period of years, we participated with Alyeska and the Alaska Department of Environmental Conservation in a remarkably cooperative workgroup process to develop an updated oil spill contingency plan for the tanker terminal. The process was such a model of effective interaction among citizens, industry, and regulators that we nominated Alyeska and the environmental conservation department for recognition from the Pacific States/British Columbia Oil Spill Task Force.

We saw the other side of this coin in a highly unsatisfactory contingency-planning process conducted by the companies that operate oil tankers. Their plan was prepared in private, without citizen participation, and was so deficient when first submitted that it was summarily rejected by the state. The tanker companies returned to the drawing board, set up a highly compressed workgroup process, and invited us to participate. The revised contingency plan for oil tankers was approved by the state for public comment, and

we hope the final version will be comparable in quality to Alyeska's terminal plan.

• In spring 2006, the council received whistleblower allegations of unsafe welds on some storage tanks at the Valdez tanker terminal. The council began an investigation that, while still in progress, has satisfactorily resolved all but two of 23 issues raised during the inquiry. Those two issues are now being investigated jointly by Alyeska and the council.

The federal Oil Pollution Act of 1990 called on citizens, industry and regulators to work as partners to prevent a return to the complacency that led up to the Exxon Valdez oil spill. We believe the accomplishments of the past year prove that process is working, and we commit to continue it in the coming year.

Mission and Responsibilities

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

The Prince William Sound Regional Citizens' Advisory Council is an independent non-profit corporation guided by its mission: promoting environmentally safe operation of the Alyeska terminal in Valdez and the oil tankers that use it.

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, which operates the trans-Alaska pipeline as well as the Valdez terminal. Most of the council's operating funds come from this contract.

The second guiding document, enacted after the council was created, is the Oil Pollution Act, which required citizen oversight councils for Prince William Sound and Cook Inlet. Their purpose is to promote partnership and cooperation among local citizens, industry and government, to build trust, and to provide citizen oversight of environmental compliance by oil terminals and tankers.

The Act allows an alternative, pre-existing organization to fulfill the requirement for citizen oversight and our council has done so for Prince William Sound since 1991. Each year, the U.S. Coast Guard certifies that the council fosters the general goals and purposes of the Oil Pollution Act and is broadly representative of the communities and interests as envisioned in the Act.

The council's contract with Alyeska pre-dates the Oil Pollution Act, but the similarities in the powers and duties given the council in the two documents are not

coincidental. Many people involved in the establishment of the council also promoted citizen involvement requirements in the federal law.

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:

- Monitor, review and comment on oil spill response and prevention plans prepared by Alyeska and by operators of oil tankers.

- Monitor, review and comment on the environmental protection capabilities of Alyeska and the tanker operators, as well as on the environmental, social and economic impacts of their activities.

- Review and make 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.

The council was initially funded at $2 million a year. The funding is renegotiated every three years; current Alyeska funding is approximately $3 million a year. The council's total annual budget is about $3.7 million.

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."

Oil Spill Prevention

To ensure a maximum level of safety, the council reviews all aspects of the oil transportation system in Prince William Sound. These include 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.

TANKER SAFETY

Escort System

The heart of the system for preventing oil spills in Prince William Sound is the fleet of rescue and response tugs that accompany loaded tankers out into

the Gulf of Alaska. Thanks to years of study and analysis, and considerable investment by the shipping industry, this system is widely considered the best in the world. This fleet, operated by Alyeska's Ship Escort Response Vessel System, includes five state-of-the-art 10,000-horsepower tugs that have proved their capabilities in actual incidents, as well as in sea trials observed and reviewed by the council.

Federal law now requires that loaded single-hull oil tankers be escorted by two tugs in Prince William Sound, and current practice is for double-hull tankers to have double escorts as well. However, it's unclear what will happen as the tanker fleet completes the transition to double-hull vessels, which is expected to happen by the end of 2008, and the federal requirement becomes moot. After that, the use of double escorts will hinge on voluntary compliance and on state-level requirements, and the council is concerned that the tanker companies may propose to reduce the escort and response system.

As a result, the council in May 2007 adopted a new position on the escort system. It calls for preserving the double-escort requirement, and for strengthening the system with a new requirement regarding the tug kept on station at Hinchinbrook Entrance, where tankers pass from the Sound into the Gulf of Alaska and where they face some of the most extreme sea and weather conditions. That tug would be required to be one of Alyeska's high-performance Prevention/Response Tugs, also known as PRTs, rather than

a conventional tug as is allowed now during maintenance rotations.

Automatic Identification System

In an effort to increase the security and safety of large vessels in U.S. ports, the United States Coast Guard recently required the use of Automatic Identification Systems, or AIS, on all such ships. This system reports the ship's position and navigational status to the Coast Guard and to all AIS-equipped vessels and ground stations nearby.

The council uses an AIS in its Valdez office to compile a data archive describing with great accuracy virtually all tug and tanker traffic in Prince William Sound since early 2006, when our system began operating. Besides providing historical data, we believe, the AIS will increase our ability to monitor the response in real time if a serious oil spill should occur in the Sound.

Iceberg Detection and Avoidance

Icebergs have proved to be one of the greatest hazards to tanker navigation in Prince William Sound. In 1989, the Exxon Valdez left the tanker traffic lanes to avoid icebergs, leading to the worst oil spill in North American history. In 1994, the tanker Overseas Ohio collided with an iceberg while coming into Port Valdez and sustained significant damage to its hull.

Fortunately, the Ohio was empty and no spill resulted.

Council-sponsored research has determined that ice from Columbia Glacier will continue flowing into the tanker lanes for the foreseeable future. After investigating several ice detection and reporting technologies, the council, along with several partners, launched a major project to use radar to reduce the navigational risk posed by ice.

A VHF (very high frequency) radar system was installed on Reef Island, near Bligh Reef, scene of the Exxon Valdez disaster. This system began operation in 2002 and continues to operate successfully today. It is linked to Alyeska's escort system facility and to the Coast Guard's Vessel Traffic Service, both in Valdez, enabling oil shippers, coastal pilots, escorts, and the Coast Guard to make informed decisions about shipping schedules and other ice avoidance measures.

Oil Spill Preparedness & Response

The council has devoted significant resources to preventing oil spills, but the risk cannot be eliminated entirely. We must be prepared to respond quickly and effectively in case prevention measures fail. Two council programs address this need: Oil Spill Prevention and Response Planning, and Oil Spill Prevention and Response Operations.

OIL SPILL PREVENTION AND RESPONSE PLANNING

State and federal laws require the operators of oil tankers, the Valdez Marine Terminal, and the trans-Alaska pipeline to prepare detailed plans showing how they will respond to oil spills should prevention measures fail. The council devotes much time and attention to oversight of these all-important plans.

In many cases, the council participates with government and industry on the working groups that develop these plans, known as contingency plans. The council also conducts independent reviews and submits comments and recommendations.

The council promotes compliance, enforcement, and funding for state and federal regulations and oversight, and also supports the Alaska Coastal Management Program. Along with local communities, the council encourages the incorporation of local knowledge of sensitive areas into contingency planning.

During the past year, the council reviewed applications for new contingency plans for oil tankers and for the Valdez terminal.

Valdez Marine Terminal Contingency Plan

As discussed at the beginning of this report, the council participated from the earliest stages in developing an updated oil spill contingency plan for Alyeska's tanker terminal in Valdez. For several years, a workgroup has met regularly to improve the plan.

The council participated in this workgroup with the state-federal Joint Pipeline Office, the Coast Guard, Alyeska, and the Alaska Department of Environmental Conservation.

Issues tackled by this workgroup included training, storage tank status and inspections, and new contingency plan regulations adopted by the state of Alaska in December 2006. The plan is expected to be completed and approved by March 2008.

We consider this one of the most successful such processes we have seen. In recognition, we nominated Alyeska for the Pacific States/British Columbia Oil Spill Task Force 2007 Legacy Award and recommended the Alaska Department of Environmental Conservation for honorable mention. (As a member of the Task Force, it is not eligible for the Legacy Award).

Oil Tanker Contingency Plans

As also discussed earlier, a new oil spill contingency plan for tankers in Prince William Sound was submitted to the state of Alaska in February 2007. It had been prepared by the tanker industry in private, without citizen input, and was so deficient that the state declined to put it out for public review and comment. Instead, the tanker companies were directed to rework and re-submit it. At that point, the companies did invite citizen involvement, and the council subsequently participated in several workgroups in an effort to improve and clarify the plan.

Nine areas of concern were addressed, including escort tugs, non-mechanical response tactics such as dispersing or burning floating oil, and Geographic Response Strategies.

In our view, the handling of the oil tanker contingency plan – especially in contrast with the development of the updated plan for the Valdez oil terminal – is a strong illustration of the need for, and value of, transparency and citizen involvement in such processes, as envisioned in the Oil Pollution Act.

Geographic Response Strategies

These are oil spill response mini-plans specific to sensitive areas and resources, such as salmon streams and clamming beaches. The council has long worked to have them included in oil spill contingency plans for Prince William Sound and the Gulf of Alaska.

As this report went to press, a total of 238 Geographic Response Strategies had been completed and another 20 are expected to be completed in the coming year.

Weather and Sea Current Data Collection

Weather conditions and sea currents affect nearly every aspect of oil transportation safety. They can play a role, sometimes the determining role, in efforts to prevent or to clean up oil spills. Consequently, the council promotes constant improvements in the

system for collecting weather and current information for Prince William Sound.

We are partners with the Cordova-based Oil Spill Recovery Institute in a project to install weather stations in the Sound, many of which incorporate web cameras in addition to data-gathering equipment. Fifteen of the stations are now set up or scheduled to be installed in the near future. Web camera images from many of them are available at http://ak.aoos.org/pws/web_cams.php on the Internet.

The council is working to deploy gauges to collect data on wave height and frequency in Valdez Arm, where very little such information is available at present.

ShoreZone Mapping

The council has been involved in ShoreZone mapping in Prince William Sound since 2004. ShoreZone mapping involves shooting aerial video of shorelines during the lowest tides of the year. Biologists and geologists aboard the aircraft provide commentary on the video sound tracks during the overflight. Their information is used to create detailed maps and databases of the shorelines that were videotaped; in addition, the video itself becomes part of the ShoreZone information bank.

The council's primary goal in ShoreZone mapping is to have this detailed information available for use in oil spill response planning (including the preparation

of Geographic Response Strategies) and in actual responses. However, the information has other uses as well, including education and research unrelated to oil spills.

To date, the council has funded or co-funded mapping of approximately 1,680 miles of shoreline in the Sound, including 745 miles in the past year. When work in the Sound funded by other organizations is completed in the coming year, there will be a continuous set of habitat mapping data stretching from Southeast Alaska to Kodiak.

ShoreZone mapping data – including aerial video imagery – is available to the public at www.CoastAlaska.net on the Internet.

OIL SPILL PREVENTION AND RESPONSE OPERATIONS

It takes more than volumes of carefully written and reviewed contingency plans to effectively respond to an oil spill or to an emergency that could cause one. It also takes equipment, trained people, and a management system to implement the plan. And it takes practice, practice, practice. The council's oil spill prevention and response operations program is tasked with monitoring the operational readiness of Alyeska's Ship Escort Response Vessel System and the tanker companies, and with making sure the council itself is prepared to respond to oil spills and other emergencies.

Council staff members, volunteers, and contractors monitor and report on spill response drills, exercises, and training throughout the region to provide citizens, regulators, and responders with information about the state of readiness and to make recommendations for improvement. Most of the monitoring work is done by council staffers, who present annual reports summarizing each year's activities, lessons learned, recommendations, and outstanding issues.

In the past year, two major multi-day drills were conducted in Valdez. Both of these – one by ExxonMobil's SeaRiver Maritime in September 2006 and another by BP in May 2007 – included over one hundred participants and focused on a process called "transition." This occurs when the oil company responsible for a spill takes over response management from the Ship Escort Response Vessel System, or SERVS, which manages the initial response.

Alyeska keeps a large fleet of fishing vessels under contract to help with the cleanup in the event of another big oil spill, and the council works to make sure the crews of these vessels have the training and resources they need to be effective.

In March 2007, the council hosted a Fishing Vessel Workshop in Anchorage. The purpose was to provide vessel owners in the program a forum to discuss training and other issues of concern. Officials of the Alaska Department of Environmental Conservation attended, as did a representative from SERVS.

The Response Gap

The council has long been concerned about the 'response gap' – the fact that loaded tankers are allowed to sail through Prince William Sound in weather so harsh that oil recovery would not be possible in the event of a spill.

To address this problem, the council hired a consulting firm to analyze the response gap and examine what could be done about it. The consultant concluded the gap may be 'open' – meaning oil recovery is not possible – as much as two-thirds of the time during the winter, and about one-sixth of the time even in summer. On a year-round basis, the consultant estimated, oil recovery in some areas of the Sound is impossible 38.5 percent of the time, or 140 days a year.

The consultant recommended that an effort be started to find ways to improve response capability so as to reduce the response gap. The consultant also recommended additional research into the problem, and the council has taken the first steps to implement those recommendations. The report, Response Gap Estimates for Two Operating Areas in Prince William Sound, is available at www.pwsrcac.org/docs/d0034200.pdf on the council's website.

The Oil Pollution Act directs our council to review, monitor and comment on Alyeska's environmental protection capabilities, as well as the actual and potential environmental impacts of terminal and tanker operations. The Act also calls on us to develop recommendations on environmental policies and permits. The council carries out this work through two major programs: Terminal Operations and Environmental Monitoring. 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, to document levels of pollution and biological effects, and to better understand new technologies and the environmental costs or benefits that might be associated with their use.

TERMINAL OPERATIONS

Besides posing the risk of a major oil spill caused by earthquake or accident, Alyeska's Valdez tanker terminal produces ongoing pollution from routine operations, as allowed by its permits from regulatory agencies. The council oversees terminal operations in an effort to minimize the risk of spills, as well as to make sure that pollution is within regulatory limits and that those limits are set at the lowest feasible levels.

The council has monitored oil loadings at the terminal since January 2002. At that time, about 968,000 barrels of North Slope crude moved through the terminal and onto tankers every day. Since then, oil flow has dropped steadily, reaching an average of about 692,000 barrels a day by May of 2007. That's barely more than a third of what the trans-Alaska pipeline carried to Valdez at its peak of about 2 million barrels a day in the early 1990s.

However, the value of the oil moving through the terminal has gone up, not down, because crude oil prices have risen so sharply. In 2002, the oil moving through Valdez was worth about $8.4 billion; in 2006, the value was $15.8 billion.

Even at a shore facility like the oil terminal, Prince William Sound weather can cause problems. Unusually windy conditions during the winter of 2006-2007 sent waves breaking over the booms placed around tankers at the terminal to contain spills during loading. This required a shutdown of loading operations at a time when Alyeska had taken four of its 18 large oil storage tanks out of service. As a result, the 14 tanks still in service became so full that North Slope oil production and trans-Alaska pipeline operations were affected.

Situations like this are why the council pays such close attention to oil flow and tank levels at the terminal, and to the actions that Alyeska and regulators take to manage high inventory levels in the storage tanks. Alyeska has reported that it is

seriously considering returning another tank to service, which would give a total of 15.

Air and Water Quality

The terminal is a major source of volatile organic compounds and other air pollutants, primarily because of hydrocarbon vapors released at the Ballast Water Treatment Facility. Some of these emissions are known carcinogens and may be affecting health or the quality of life in Valdez. The council is working to reduce concentrations of hazardous air pollutants in Valdez and at the terminal.

The vapors are released because some tankers arrive in Valdez with significant quantities of oily ballast water carried in cargo tanks to provide navigational stability during the trip north.

This water is cleaned at the ballast water facility, where concentrations of specified pollutants in the water are reduced to permitted levels of a few parts per million before it is discharged into Port Valdez. These discharges occur under a National Pollutant Discharge Elimination System permit issued by EPA and a separate permit issued by the Alaska Department of Environmental Conservation. The council reviews the permit applications during the renewal process, which last occurred in January 2005.

Until recently, the system included almost no effort to control the hydrocarbon vapors released during the three-stage treatment process. The council worked

with Alyeska and, for the first time, the oil companies that own it to get a commitment from the owners to reduce these vapor emissions. The efforts were largely successful, as recognized by the council in a series of newspaper advertisements in late 2006.

Since then, the council has collaborated with Alyeska on development of vapor controls for the ballast water facility, and work is well under way on fixes for the first two stages of the three-stage process.

However, Alyeska has experienced considerable difficulty in finding a suitable replacement for the third stage. It consists of two large open-air pools where bacteria eat some of the hydrocarbons still in the ballast water while other hydrocarbons are given off as vapors. Alyeska has been active in prototyping and testing processes that offer promise for controlling these third-stage vapors.

Terminal Integrity Issues

Since 2006, the council has been investigating concerns raised by whistleblowers about faulty welds, incorrect welding procedures, and regulatory indifference during work that occurred in 2002 on four tanks that store crude oil, ballast water, or diesel fuel at the terminal. While it appears that some welding irregularities may have occurred, Alyeska maintains that all welds are safe. As this report goes to press, Alyeska and the council have joined forces to retain an independent tank welding expert to review the matter.

Earthquake Risks

Alyeska's Valdez tanker terminal was designed to withstand earthquakes as strong as the Good Friday earthquake that devastated Valdez and many other Alaska coastal areas in 1964.

However, the Good Friday earthquake is now believed to have been more severe than originally thought, so the council is concerned that the terminal might suffer serious or catastrophic damage in another such event.

The council retained experts to review seismic safety at the terminal. While their report is not final, one preliminary finding is that major earthquakes in the area may be more frequent than previously thought. It had been estimated that a Good Friday-scale earthquake could occur every 2,500 years, but the experts concluded from landslide evidence that another large earthquake occurred in the area only 1,000 years ago.

ENVIRONMENTAL MONITORING

Chemical Dispersants

Chemical dispersants are substances that, when applied to spilled oil, are claimed to do as their name suggests: they disperse it into the water column, rather than leaving it floating on top in a slick. The council promotes research and testing to increase knowledge about chemical dispersants and

the environmental consequences of their use on oil spills in Alaska waters.

The council has voiced concerns about efficacy, toxicity, resurfacing, and other dispersant issues for years, urging regulatory agencies to take a conservative approach towards their use. Because outstanding questions have not been answered and research has not demonstrated that dispersants would even work in the waters of Prince William Sound, these concerns remain largely unaddressed and the council continues its advocacy for research into the many questions about dispersant use in cold seawater.

The council's formal position on dispersants, adopted in May 2006, is as follows:

> *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 (the 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.*

Aquatic Nuisance Species

Not all ballast water discharged in Port Valdez requires treatment to remove oil. Some tankers employ segregated ballast tanks where "clean" sea water is used for stability. This "clean" ballast is filled with living organisms that are discharged with it into Prince William Sound and Port Valdez as tankers approach the Alyeska terminal for loading. Because of the potential for invasions by harmful species, the council has made this issue a high priority since 1996.

In partnership with the U.S. Fish and Wildlife Service, NOAA's Sea Grant program, Alyeska, and the University of Alaska Fairbanks, the council has cosponsored a series of scientific studies conducted by the Smithsonian Environmental Research Center since 1997. At present, our financial partners are the U.S. Fish and Wildlife Service and the National Park Service.

The Smithsonian researchers were involved in two major efforts for the council this past year. The first was a pilot project to monitor for the presence of nonnative tunicates, or sea squirts, because they can grow in high densities and cause problems for other marine species. The council staff helped by setting up monitoring stations at the Valdez Marine Terminal in the summer of 2006 and following up with another Port Valdez monitoring station in 2007. The 2006 monitoring in our region did not turn up harmful

invasive tunicates. The 2007 monitoring is part of a global monitoring effort.

The Smithsonian researchers submitted a draft report forecasting the northward spread of four invasive species to Alaska waters. The report concludes that all four species – an invasive barnacle, the European green crab, the club tunicate, and the Atlantic periwinkle – could find suitable environments in Alaska waters to survive and could be indicative of other invasive species spreading to Alaska:

> *"Our analyses indicate that Alaskan coastal waters are at risk of invasion by nonindigenous species now present in western North America. . . . conditions exist in Alaska and other uncolonized regions that could support populations of all four species examined. More broadly, these results suggest that many nonindigenous species along the west coast may have the capacity for northward spread to Alaska."*

The council continues to stay active in an effort to establish a state-wide invasive species group that we hope will foster proactive management strategies, among other things. Other participants in this group include regulators, academia, and other non-governmental organizations.

In addition, we hold seats on the national Invasive Species Advisory Committee, the Western Regional Panel of the National Aquatic Nuisance Species Task

Force, and the West Coast Ballast Outreach Project Advisory Committee.

For many years, the council has sponsored a trapping effort in Port Valdez for the European green crab, which has traveled up the West Coast from San Francisco Bay at an alarming rate. Although it has not been reported in Alaska, it is of concern because ballast water is a known pathway for this crab. We have expanded the green crab monitoring network by working with organizations and students in our region. We expect the expansion to continue in the upcoming year and to be supported in other regions through a network being established by the Kachemak Bay Research Reserve. This will provide consistency in monitoring across the state.

The council organized a successful film festival with a major focus on invasive species as part of the Alaska Forum on the Environment held in February 2007. This was a great opportunity to provide important invasive species information in an entertaining fashion to a larger environmental community in Alaska.

More information on the council's invasive species program can be found at www.pwsrcac.org/projects/NIS on the Internet.

Regional Environmental Monitoring

In 1993, the council established a Long-Term Environmental Monitoring Program, called LTEMP, that

continues today. It is designed to assess the status of hydrocarbon levels in our region, as well as long-term trends and any new developments that could have an effect on the levels.

Samples are collected at 10 intertidal sites in Prince William Sound and the Gulf of Alaska. Mussel tissues and sediments from the sites are analyzed in a laboratory to determine whether hydrocarbons are accumulating and, if so, their source. The result is the largest chronological set of data for hydrocarbons in Prince William Sound ever compiled. This data set is available for use by other researchers.

In the coming year, data from 1993 to 2005 will be analyzed by an independent contractor to evaluate how well the project is meeting its objectives and to help the council coordinate future environmental monitoring efforts.

A related project is investigating whether local fish species can accumulate hydrocarbons in their bodies by eating contaminated food from the marine environment.

Many LTEMP reports, along with additional information on the program, are available at www.pwsrcac.org/projects/EnvMonitor/ltemp.html on the council website.

Outreach

MEMBER RELATIONS

The council has a full-time staff position, called Outreach Coordinator, to maintain productive relations with the 18 communities and interest groups that make up its membership. The coordinator visits communities in the region, attends member group functions, gives presentations, coordinates special events involving the council and its member groups and generally encourages citizen involvement in the council's work.

Outreach activities in the past year included participation at events in such council communities as Homer, Seldovia, Valdez, Kodiak, Cordova, Seward, Tatitlek, and Chenega Bay. The council's information booth was also set up at numerous conferences and meetings in places ranging from Anchorage to Seattle to Montreal to Edmonton.

The council has produced a film on educational and career opportunities in the areas of marine science and seafaring, and is developing a 30-minute film history of the Exxon Valdez oil spill. It will include personal interviews and footage of the spill, and will help commemorate the 20th anniversary of the spill in the spring of 2009.

The council has also updated and posted on its website an oil spill curriculum for use in schools, and has

brought out the fourth edition of its coloring book for children.

CITIZEN OVERSIGHT AROUND THE WORLD

The Oil Pollution Act designates the Alaska citizens' councils as demonstration programs. In the years since our birth, we have seen the citizen oversight movement spread worldwide, and we have increasingly become a resource for citizens elsewhere who hope to establish their own programs.

In the fall of 2006, the council provided information to Congress on the question of a citizen oversight group for Alaska's North Slope. Interest in such a group rose after BP experienced pipeline leaks that eventually led to the shutdown of about half the Prudhoe Bay oilfield. Some of the council information was added to the Congressional record by Sen. Lisa Murkowski, but, so far, no such group has been formed.

In May 2007, the council's executive director traveled to Finland and Estonia at the request of the U.S. State Department to discuss oil spill prevention and response strategies with citizens of those countries. We stand ready to continue sharing the lessons we've learned since 1989 about the value of citizen oversight, and how to make it work.

PUBLICATIONS

The council increases public awareness on a wide range of issues pertaining to crude oil transportation through printed and electronic publications.

The Observer, a free quarterly newsletter, is distributed throughout Prince William Sound, the northern Gulf of Alaska, lower Cook Inlet and the Kodiak Archipelago. *The Observer* is also sent on request to interested citizens elsewhere, as well as to regulators and industry. In addition, it is posted on the council website, www.pwsrcac.org.

The Observer covers council activities, developments in the oil transportation industry and news about policy and operational issues related to marine oil transportation. 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 appropriate industry and regulatory personnel.

We publish a concise monthly email newsletter, *The Sound Approach*, which includes such regular departments as "Council News," "Reading Room," and "Featured Links." It also offers interesting tidbits about our region, oil transportation, and related topics.

The council maintains an extensive, award-winning website, www.pwsrcac.org, which provides information about our work, membership, mission, and projects. The council makes available a 14-minute video about its origins, mission and activities. This video, titled "A Noble Experiment: The Story of the Prince William Sound Regional Citizens' Advisory Council," is shown at conferences and other events attended by the council, and is distributed free to

member entities for use in informing their constituents about the council. It can be viewed at video.google.com/videoplay?docid=39275729294009273 on the Internet. The council also places public service announcements about its work, mission, and concerns on radio stations in the Exxon Valdez oil spill region. Many of these announcements feature council volunteers telling about their own lives and why they decided to donate their time and energy to the council's work. These announcements are available for playback at www.pwsrcac.org/newsroom/radio.html on the council website.

And, once a year, the council summarizes its work in an annual report such as this one.

STATE GOVERNMENT RELATIONS

The council monitors state actions, legislation and regulations that relate to terminal or tanker operations, or to oil spill prevention or response. To track developments in the state capital, the council retains a monitor 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. During the legislative sessions of 2007, the committee focused its efforts on securing adequate long-term funding for the Alaska Department of Environmental Conservation's Division of Spill Prevention and Response.

FEDERAL GOVERNMENT RELATIONS

The council monitors federal government actions and issues through contract representatives in Washington, D.C. During the past year, we have increasingly focused on legislation to address the problem of aquatic nuisance species. In particular, we have monitored and been active on the issue of requiring domestic oil tankers bound for Valdez to exchange their ballast water at sea to reduce the threat of Alaska waters being invaded by non-indigenous species.

RECERTIFICATION

The Coast Guard certifies the council as the federally approved citizens' advisory group for Prince William Sound, pursuant to the Oil Pollution Act. The council has been the certified group since 1991.

Under the annual recertification process, the Coast Guard 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, the Coast Guard considers comments from industry, interest groups, and citizens. The council fulfills the requirement for an industry-funded citizens advisory group, but it was established before the law was enacted.

Board of Directors

WHO WE ARE

The council is an organization of organizations. Our members include state-chartered cities and boroughs, tiny Alaska Native villages with tribal governments, Native corporations, commercial fishing organizations, an environmental consortium, and groups representing the tourism industry.

Each member entity chooses one representative to our board. The lone exception is Valdez. It 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.

Who serves on the board?

The names and faces change, but current and recent board members have included commercial fishermen, a schoolteacher, the chief executive of a regional Native corporation, tour-boat operators, an oilfield engineer, and a village mayor.

* * *

Committees

As of June 30, 2007

Four 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.

Papers, Presentations, Reports, and Media Releases

An Assessment of the Role of Human Factors in Oil Spills from Vessels. Nuka Research, 8/1/2006. *852.431.060801.NukaHumanFac.pdf*

Contingency Plan Considerations for the Prince William Sound Tanker Escort System. Harvey Consulting and Nuka Research, 8/14/2006. *801.431.060814.CPConsideratn.pdf*

Review of The Status of Fire Protection Facilities and Fire Team Readiness at Alyeska's Valdez Marine Terminal. Loss Control Associates, 8/23/2006. *554.431.060823.LCAvmtRpt.pdf*

Report on the Non-Mechanical Response for the T/V Exxon Valdez Oil Spill. Citizens' council, 8/30/2006. *955.431.060830.EVOSresponse.doc*

Briefing Paper on the Role of Statutorily Established Citizen Oversight Councils in the Conduct of Oversight of Oil Transportation Operations, Facilities and Procedures. Citizens' council, 9/1/2006. *270.107.060901.RCACBackgrnd.doc*

2004-2005 Long Term Environmental Monitoring Report. James R. Payne, William B. Driskell, Jeffrey W. Short, and Marie L. Larsen, 11/1/2006, *951.431.061101.AnnualLT2005.pdf*

Biological Invasions in Alaska's Coastal Marine Ecosystems: Establishing a Baseline. Smithsonian Environmental Research Center, 11/1/2006. *952.431.061101.BioInvasions.pdf*

Corrosion Crisis Shows Need for Citizen Oversight at Prudhoe Bay. Guest editorial opinion by John Devens, 11/9/2006.

Prince William Sound Escort and Response System and Policies. Nuka Research and Planning Group, LLC., 12/1/2006. *801.431.061201.IssuesPolicy.pdf*

Response Gap Estimates for Two Operating Areas in Prince William Sound. Nuka Research and Planning Group, LLC., 12/22/2006. *756.431.061222.NukaRGFnlRpt.pdf*

VMT System Integrity Issues Summary of Findings of Facts, Allegations and Recommendations. Harvey Consulting, 4/5/2007. *505.431.070405.HrvyTankFind.pdf*

White Paper: The Imperative to Protect Alaska Waters from Aquatic Invasive Species. Citizens' council, 6/1/2007. *952.107.070601.AquInvasSpec.pdf*

Different Outcomes on Oil Spill Plans Show Value of Citizen Involvement. Guest editorial opinion by John Devens, 5/14/2007.

These are just a few of the many reports, papers, presentations, and media releases produced by the council in the past year. For further information, or to obtain copies, visit the council website or contact either council office (see facing page).

* * *

■ **THEN AND NOW – CHANGES IN OIL TRANSPORTATION SINCE THE EXXON VALDEZ SPILL**

1989-1999

Prince William Sound Regional Citizens' Advisory Council ■

[Pictures Omitted In Printing]

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Cover Photos:

Fishing vessel towing boom: Randy Brandon.

Cook Inlet Setnetters: Oil Spill Public Information Center.

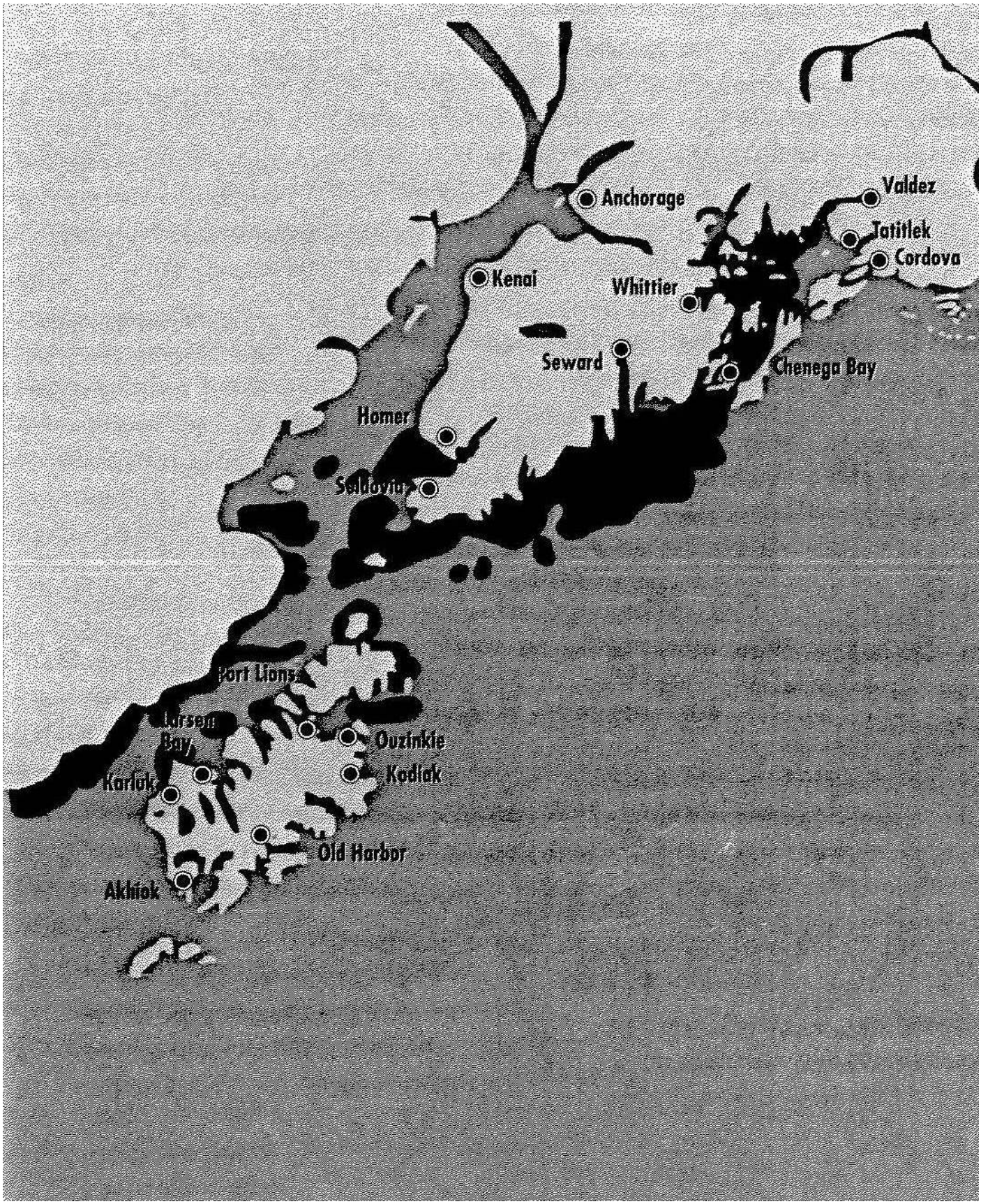
Cleaning oiled beach: Oil Spill Public Information Center.

Background photo of tanker with tethered tug: Patrick C. Welch

Page 6 background photo: © Dennis Remick

The Prince William Sound Regional Citizens' Advisory Council is an independent, non-profit corporation formed after the 1989 Exxon Valdez oil spill to minimize the environmental impacts of the trans-Alaska pipeline terminal and tanker fleet. The council has 18 member organizations, including communities affected by the Exxon Valdez oil spill and groups representing Alaska Native, aquaculture, environmental, commercial fishing, recreation and tourism interests in the spill region. The council is certified under the federal Oil Pollution Act of 1990 as the citizens' advisory group for Prince William Sound, and operates under a contract with Alyeska Pipeline Service Co. The contract, which is in effect as long as oil flows through the pipeline, guarantees the council's independence, provides annual funding, and ensures the council the same access to terminal facilities as state and federal regulatory agencies.

PATH OF OIL SPILLED FROM THE EXXON VALDEZ



The Exxon Valdez spilled 11 million gallons of North Slope crude into Prince William Sound. Over the subsequent weeks, the oil spread south and west affecting parts of more than 1,500 miles of Alaska shoreline. The extent of oiling varied from heavy to light, sheen and tar balls.

INTRODUCTION – THEN & NOW

The Exxon Valdez oil spill was not simply a freak accident. While Exxon Corp. was immediately responsible, other factors were also at work. The oil industry, government agencies, elected officials and the citizens of Alaska share responsibility for the complacency that allowed the spill to occur and failed to ensure a prompt, effective cleanup.

The oil industry failed to maintain adequate systems for preventing and responding to oil spills.

Regulatory agencies failed to protect public resources because of ineffective or inadequate oversight.

State and federal elected officials failed to pass laws strong enough to protect the environment and give regulatory agencies the funds they needed to protect public resources.

Except for a few outspoken local citizens, most Alaskans simply failed to pay attention.

The result was a spill on March 24, 1989, of about 11 million gallons* of North Slope crude oil into Prince William Sound less than 30 miles from Valdez, the city for which the tanker had been named. The ship ran aground on Bligh Reef after leaving the

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* *Oil volumes are stated in gallons in this report for the convenience of the general reader. The oil industry, however, measures oil in barrels of 42 gallons. The Exxon Valdez spill was about 260,000 barrels.*

designated tanker lanes because of earlier reports of icebergs in the area.

The Exxon spill could have been averted by stronger prevention practices and more vigilant government oversight. Better response planning in advance could have lessened the impacts of the spill.

Birds, beaches and otters were oiled and people in the region suffered psychological and economic harm. In some cases, the ill effects of the spill linger today.

This publication explores how factors that led to the nation's worst oil spill have been addressed in the decade since. Much has been done. New and revised federal and state laws and regulations are in place, and the oil industry operates with a heightened awareness of the consequences of a catastrophic spill.

Are the resources and communities of Prince William Sound and the Gulf of Alaska safer from a major oil spill than they were in 1989? Can Alaskans now relax?

The Prince William Sound Regional Citizens' Advisory Council, which produced this report, believes Alaska waters and the communities affected by the Exxon spill are, in fact, safer today. But we can never relax. Continued vigilance is essential to ensure that protections are not diluted and gains are not lost as memories of the spill fade.

Indeed, as this report goes to press, oil prices are in one of their periodic slumps and the industry is announcing cutbacks in several areas of its operations. Much to the council's concern, some of these cutbacks

– such as layoffs of spill-response personnel and delays in the construction of double-hull tankers – have the potential to affect safety. In the council's view, safety is a fixed cost of transporting oil and should not be subject to the vagaries of the oil market.

The council is an independent non-profit organization formed after the Exxon Valdez oil spill to promote environmentally safe operation of the crude oil terminal in Valdez and the tankers it serves.

Under a contract with Alyeska Pipeline Service Co., we monitor and advise Alyeska on terminal operations, spill prevention, response planning, and other environmental issues. We conduct independent research, monitor regulatory activity and advise tanker owners and operators, regulatory agencies and the public on issues related to oil transportation and its environmental impacts.

Our 18 member organizations include communities affected by the Exxon Valdez oil spill and interest groups with a stake in the affected region.

The federal Oil Pollution Act of 1990 requires an industry-funded citizens' advisory group for Prince William Sound; we are certified as meeting that requirement.

The views expressed here are ours, and we are solely responsible for the content of this report.

– Prince William Sound Regional Citizens' Advisory Council

March 24, 1999

I. PREVENTION – REDUCING THE SIZE AND FREQUENCY OF OIL SPILLS

History shows that oil, once spilled on the sea, is never fully contained and recovered. Despite improvements in containment and cleanup technology, it has proven impossible to recover all the oil from a major spill even under the best of conditions. Indeed, the best-laid response plans in the world are no guarantee that any spilled oil will be recovered from the water since severe weather can defeat even a good plan.

The first line of defense must be prevention.

VESSEL TRAFFIC AND NAVIGATION

The U.S. Coast Guard's Vessel Traffic Service functions as the waterway manager for major shipping including tankers traveling to and from Alyeska Pipeline's Valdez Marine Terminal. The traffic service includes the Coast Guard's control center in Valdez, a system of designated lanes for separating inbound and outbound tankers, and electronic equipment for determining and displaying the positions of tankers in or near Prince William Sound.

Numerous improvements have been made to the traffic service since 1989. These changes enhance the traffic center's ability to monitor inbound and outbound tankers and to provide them with traffic advisories.

Ten years ago, radar coverage was limited, failing to detect the Exxon Valdez as it grounded on Bligh Reef less than 30 miles from the Coast Guard traffic center in Valdez. Today, the system has been upgraded to provide better resolution in varying weather conditions and at an extended range. The integration of satellite positioning data allows tracking of all tankers from the Valdez terminal through Hinchinbrook Entrance, where Prince William Sound opens into the Gulf of Alaska.

Coast Guard personnel now track tankers continuously in the Valdez Narrows and as often as once a minute in the rest of the Sound and out into the Gulf of Alaska.

In 1989, only two people were on duty in the Vessel Traffic Center when the Exxon Valdez ran aground. Today, a third person, the watch supervisor, is present to oversee the radar and radio watch standers. Qualifications and training for watch standers have also been upgraded and expanded.

Reporting and communications have been upgraded by the industry. New repeater towers installed by Alyeska Pipeline allow better communication between tankers and the Valdez Marine Terminal.

TANKER OPERATIONS AND ESCORT SYSTEM

The Exxon Valdez was traveling without an escort vessel at about 14 mph* when it approached icebergs northwest of Bligh Reef and deviated from the established tanker lanes to avoid the ice.

Today, loaded tankers in Prince William Sound are subject to speed limits, are under constant escort, and normally must remain in the tanker lanes at all times.

The Coast Guard has always required loaded tankers to have a tug escort through the Valdez Narrows. Now, a system of close escorts and vessels on station covers the tanker route from the berths at Valdez to the Gulf of Alaska at Hinchinbrook Entrance.

Each loaded tanker has at least two escorts; in Valdez Narrows, one of the escorts must actually be tethered to the tanker's stern. Another special restriction in Valdez Narrows: In times of high winds, three escorts are required.

At the north end of the Sound (from the Valdez terminal to Bligh Reef) and at the south end, where tankers enter the Gulf of Alaska via Hinchinbrook

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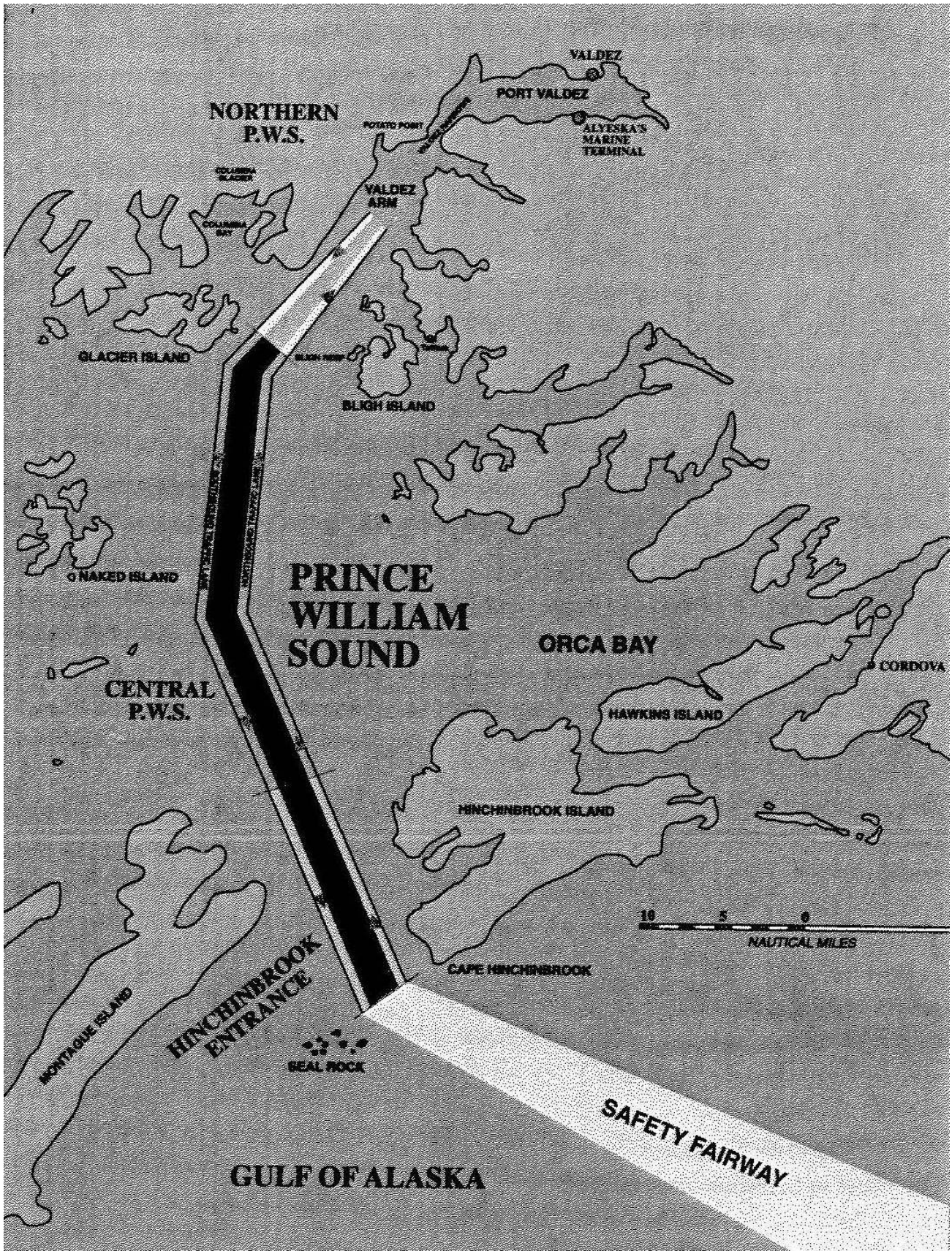
* *In 1998, oil shippers and Alyeska began using the "Protector," a class of tractor tugs more powerful and maneuverable than the conventional tugs that had been used. The Protector tugs are being replaced by new and even more powerful tugs. (See Page 7.) Photo courtesy Crowley Maritime, Inc.*

Entrance, all escorts must stay within a quarter-mile of the tanker.

However, in the central part of the Sound – from Bligh Reef to Hinchinbrook Entrance – there is more sea room and only one of the escorts is required to stay within a quarter mile of the tanker. The other escort – called a "Sentinel" – may be stationed a few miles away at one of three points along the route, where it remains under way for quick response.

PRINCE WILLIAM SOUND TANKER LANES



Tankers transit three zones as they head south from Valdez: Northern Prince William Sound (orange), Central Prince William Sound (purple) and Hinchinbrook Entrance (green). Speed limits, escort requirements and weather restrictions apply in each of the three zones.

After a tanker leaves Prince William Sound, a rescue tug must stay on station near Hinchinbrook Entrance until the tanker is at least 17 miles out to sea.

Escort vessels have several important functions: to watch for and report any sign of problems with a tanker, to assist if a tanker encounters trouble, and to provide the first response should a spill occur, as described in Section II.

At least one of the escorts is equipped with containment boom, oil skimmers, a work boat to deploy boom, storage capacity and a trained response crew.

Within the Sound, tankers are subject to various speed limits. The highest speed limit, 12 mph, applies in Port Valdez and Valdez Arm. The lowest, 6 mph, applies in Valdez Narrows.

In central Prince William Sound there is, technically speaking, no speed limit. However, the tankers can't outpace their escort vessels, creating an effective speed limit of about 12 mph.

TANKER CREWS

Until 1989, signs of alcohol use did not prevent tanker crews from returning to their vessels through the terminal. Now, under alcohol screening procedures instituted by Alyeska Pipeline, all tanker captains are given breath tests an hour before sailing. Crew members suspected of consuming alcohol are

tested; any with blood alcohol content of 0.04 percent or greater are denied access to the terminal and their vessel.

In 1989, a state-certified ship's pilot was required to be aboard loaded tankers only until they reached Rocky Point, about 20 miles out from the terminal. Now the pilot remains aboard as far as Bligh Reef.

In all parts of Prince William Sound, two of the ship's licensed deck officers must be on the bridge at all times. A federally licensed pilot is also required; that role is normally filled by one of the deck officers. (A pilot is a licensed mariner familiar with local waters who is required to be aboard ship to assist the crew in prescribed areas.)

Today, unlike in 1989, federal law limits the number of hours crew members may work, to reduce the risk of fatigue-induced accidents.

In addition, tanker crews – as well as tugboat officers and state coastal pilots – receive bridge simulator training under conditions reproducing tug and tanker interactions in Prince William Sound.

Also, on-water rescue training has been increased for tugboat and tanker officers.

TANKER INSPECTIONS

The structural integrity of the tanker Exxon Valdez was not an issue in its grounding. However, in 1988, a report issued by the Coast Guard identified

the Valdez fleet as disproportionately affected by structural failures. The problem was underscored in January 1989, when the tanker Thompson Pass spilled 71,000 gallons of crude oil at the terminal because of cracks in its hull. The Coast Guard and the state of Alaska now require more stringent inspections of tankers vulnerable to structural failure.

In addition, all tankers docked at the Valdez Marine Terminal are now surrounded with containment boom while oil is transferred.

WEATHER CONSIDERATIONS

Weather restrictions on tanker traffic were instituted after the Exxon Valdez oil spill.

The Valdez Narrows are now closed to large tankers when the wind exceeds 35 mph; when it exceeds 46 mph, smaller tankers are banned, too.

In addition, Hinchinbrook Entrance is closed to tankers if the wind exceeds 52 mph or the seas exceed 15 feet.

In the past, lack of information about weather and sea conditions in Prince William Sound and Hinchinbrook Entrance was a problem. Because of wind patterns and local topography, readings from the wind measuring station at Potato Point are not always a reliable gauge of actual conditions. The lack of other reporting stations in the Sound meant that frequently the only information available about wind and sea conditions was from a vessel already under

way, or from a weather station at Middleton Island, in the Gulf of Alaska more than 100 miles from Valdez.

In 1995, that changed when weather equipment was installed at Potato Point, at Bligh Reef, in the center of Prince William Sound and at Hinchinbrook Entrance. The new equipment reports wind speed and direction, barometric pressure, temperatures, and wave action.

Thanks to the efforts of the citizens' council, the oil industry and regulators, Congress appropriated $500,000 to pay for the buoys. In 1998, weather equipment was installed on Middle Rock so that wind speeds in the Valdez Narrows would be more accurately reported.

MONITORING AND OVERSIGHT BY REGULATORY AGENCIES

The Alaska Department of Environmental Conservation and the U.S. Coast Guard are the agencies most directly responsible for oversight and monitoring of the Valdez Marine Terminal and oil tanker traffic. After the Exxon Valdez oil spill, both agencies were criticized for failing to either implement or enforce adequate prevention measures.

Changes have been made in both agencies.

At the state level, the Exxon Valdez oil spill focused public and political attention on the need for the Department of Environmental Conservation to

have the authority and funding to monitor and oversee terminal and tanker operations, programs which had been under-funded through the late 1970s and '80s.

After 1989, state funding increased significantly for spill drills, facility and vessel inspections, and review of the voluminous oil spill contingency plans prepared by Alyeska Pipeline and the oil shipping companies.

Oil-related functions were consolidated into one division, called Spill Prevention and Response. State legislation passed in 1990 provided the authority, resources and funding that the Department of Environmental Conservation needed to monitor and oversee industry operations and implement spill prevention and response programs. New regulations implemented in 1998 require the industry to employ the best available technology in oil spill prevention and response.

The Department of Environmental Conservation now has the authority, which it didn't have before, to require and enforce prevention measures as a condition for approval of oil spill contingency plans. Those measures include more training, more equipment, more inspection and maintenance of equipment, better record-keeping and specific requirements for loaded tankers.

The Coast Guard is the federal agency most affected by the Exxon Valdez. As a result of the problems that emerged from the spill, the Coast Guard

has a more direct role in spill prevention and response and much greater regulatory oversight of the oil transportation industry. It is responsible for implementing most of the new prevention measures required by the Oil Pollution Act of 1990 and by other federal regulations passed later.

ICE STUDIES

According to a 1995 study co-sponsored by the citizens' council, the oil industry, and regulators, one of the most serious remaining risks to tankers in Prince William Sound is posed by icebergs from Columbia Glacier.

This glacier has been disintegrating and retreating rapidly since 1980. Each year, it calves thousands of icebergs into Columbia Bay, about 25 miles southwest of Valdez. Some of these icebergs drift into the tanker lanes.

Besides playing a role in the Exxon Valdez grounding, ice from Columbia Glacier caused another major accident in 1994, when the empty tanker Overseas Ohio struck a berg and suffered more than $1 million in damage to its bow.

The citizens' council is funding research to find ways to predict when icebergs are likeliest to enter the tanker lanes, and technology to detect them in the water.

DOUBLE HULLS

One of the most important steps taken to prevent and reduce oil spills like the Exxon Valdez is the federal requirement that all oil tankers in U.S. waters have double hulls by 2015. Double hulls are to be phased in, with existing vessels in the Valdez trade to be converted or replaced on a schedule that depends on size and age.

Double hulls are important because studies indicate they can eliminate or dramatically reduce the size of oil spills. In the case of the Exxon Valdez, a Coast Guard study said a double hull could have cut the size of the spill by 60 to 80 percent.

Double-hulled vessels existed long before 1989, and more have been built since then. As this report was being prepared in early 1999, ARCO had three new double-hulled vessels under construction for the Prince William Sound trade.

However, only three double-hull tankers – all under charter to BP – were in actual service in the Sound. Some other tankers had double bottoms and some operators were leaving outer tanks partly empty to reduce oil loss in the event of a hull puncture.

Most of the tankers calling at the terminal in Valdez were built in the 1970s and the age of the fleet is becoming a concern to the citizens' council.

In addition, the council is concerned about possible slowdowns to the phaseout schedule in the Oil Pollution Act.

Until 1998, an ambiguity in the act permitted single-hull tankers to be remeasured – a process where their cargo capacity was reduced – in order to extend how long they could stay in service. Four such vessels that operate in Prince William Sound were remeasured before Congress eliminated the ambiguity in 1998. The council will be vigilant against other provisions that would permit single-hull tankers to remain in service past their original retirement dates.

The Coast Guard is currently considering a request from the oil industry to allow single-hulled tankers to extend their retirement dates by being retrofitted with double bottoms or double sides. The council is opposing this proposal, supporting a strict interpretation of the Oil Pollution Act that would take aging single-hull tankers out of service on the original schedule.

II. RESPONSE – REDUCING THE HARM FROM OIL SPILLS

Prevention measures can reduce the size and frequency of oil spills. But prevention efforts will never become fail-safe, so the industry, regulatory agencies and the public must be prepared to respond to spills that do occur. It is incumbent upon those who handle and carry crude oil, as well as regulatory agencies and the public, to make sure that spilled oil

is contained and recovered to the greatest extent humanly possible.

The speed and effectiveness of the response to an oil spill depend on the availability of equipment, resources and trained personnel, on planning and preparation and, ultimately, on favorable weather.

CONTINGENCY PLANS

Anyone who handles or transports crude oil or refined products as cargo must have a government-approved contingency plan for preventing and responding to spills. What must be in the plan and what must be provided in the way of drills, training, acquisition of equipment, etc., are determined by state and federal laws and regulations. The requirements depend on the type of vessel or facility, the location, and the amount and type of cargo involved.

Alyeska Pipeline was required to have a contingency plan before the Exxon Valdez spill, but it was not well implemented. Spill-response duties were assigned to personnel with other day-to-day operational tasks and equipment was not adequately maintained. The initial response in March 1989 was slow, ineffective and poorly coordinated.

Since then, state and federal agencies have expanded plan requirements and changed some of the assumptions. The federal Oil Pollution Act of 1990 and Alaska state laws passed after the Exxon Valdez

spill led to the first regulations requiring contingency plans for individual tankers.

Those who must have contingency plans to operate must provide greater assurances that personnel are being trained, that equipment and resources are available to be mobilized quickly, and that all players have practiced their roles in preparation for an actual spill.

The size of spill assumed in a response plan makes a tremendous difference in the resources and equipment that must be available. Alyeska Pipeline's 1987 contingency plan, approved by the state, said a spill of 8.4 million gallons (three-quarters the size of the Exxon Valdez spill) was highly unlikely and reasoned that "Catastrophic events of this nature are further reduced because the majority of tankers calling on Port Valdez are of American registry and all of these are piloted by licensed masters or pilots."

Both state and federal law now require planning for larger potential spills than in the past, and require more spill response equipment to be immediately available.

Plan holders must have enough equipment immediately available to deal with a spill of 12.6 million gallons of oil (slightly larger than the Exxon Valdez spill) within 72 hours.

They must also plan for spills of almost 40 million gallons, but may rely more on equipment to be

brought in from outside the Prince William Sound area for these larger spills.

As the consortium that operates the trans-Alaska pipeline and terminal for its seven owner companies, Alyeska Pipeline holds the contingency plans for spills on the pipeline and at the Valdez tanker terminal.

In Prince William Sound, the tanker owners and operators must have their own approved contingency plans, although they contract with Alyeska Pipeline to provide the initial response described in the plans.

Under these contracts, Alyeska Pipeline manages the spill response for up to the first 72 hours after a spill. After that, it may transfer management of the response to the spiller, so long as the U.S. Coast Guard and the Alaska Department of Environmental Conservation agree that the spiller or its representative is ready to take over.

EQUIPMENT READY

The first three days after the Exxon Valdez oil spill afforded nearly ideal weather for oil recovery. Seas and winds were calm. But the equipment wasn't ready. Seventeen hours after the grounding, neither the leading edge of the spill nor the grounded tanker had been boomed and the few skimmers on-scene were operating ineffectively. Skimming soon halted because there was no more room to store the recovered oil-water mixture.

Throughout the first few days, debate raged about use of dispersants. Exxon argued for widespread dispersant use, but didn't have enough dispersant or the equipment to do the job and never received regulatory approval.

The situation now is quite different. Prince William Sound is home to Alyeska Pipeline's Ship Escort/Response Vessel System, or SERVS, one of the top oil spill response forces in the world.

SERVS has several functions. It helps tankers navigate safely through Prince William Sound and responds to a tanker problem or a spill. SERVS also responds to spills on the southern portion of the trans-Alaska pipeline and at the Valdez tanker terminal.

SERVS employs approximately 200 trained personnel; another 60 people comprise Alyeska Pipeline's crisis management team in the event of a spill.

The SERVS escort/response vessels are equipped to tow or otherwise assist tankers. Also, some carry spill response equipment and can contain, recover and – to a limited extent – store oil.

At least one escort vessel is always within a half-mile of each loaded tanker and in radio communication with the tanker's bridge until it reaches Seal Rocks, outside Hinchinbrook Entrance. After that, a rescue tug stands by until the tanker is 17 miles into the Gulf of Alaska.

Trained Alyeska Pipeline response crews are on duty around the clock and the response fleet is on standby alert whenever a loaded tanker is traveling in the Sound.

SERVS' response resources include 35 miles of containment boom (versus less than five miles in 1989), 37 high-volume skimming systems, barges to receive recovered oil and water mixture, and equipment to pump and transfer oil-water mix. SERVS also has 3,600 feet of fire boom with helicopter-carried igniter systems. Equipment is tested in drills and exercises, to reduce the chances of confusion and surprises in an actual incident.

Four open-water task forces, each with a trained crew and a large barge with three skimming systems on-board, are stationed in Prince William Sound. Two are in Port Valdez – the body of water where the city of Valdez and the Alyeska tanker terminal are located. The other two task forces are located elsewhere in the Sound, along the tanker route to Hinchinbrook Entrance.

Today, Alyeska Pipeline has at its disposal more than 60 skimming systems with a combined recovery capacity of over 12 million gallons of oil-water mixture in 72 hours. In 1989, only 13 systems were available; their combined capacity was about 1.2 million gallons in 72 hours.

Dispersants are now stockpiled in Anchorage, Valdez and outside Alaska, along with equipment to deliver them from ships, airplanes and helicopters.

Current state and federal laws and regulations hold that dispersants should be used only if it is clear that mechanical cleanup methods such as booming and skimming won't work. The citizens' council supports these laws and opposes efforts to loosen these restrictions.

Among the council's concerns is the scarcity of reliable scientific data about the efficiency, toxicity and persistence of dispersants and dispersed oil in actual Prince William Sound/Gulf of Alaska conditions. The council is participating in design of a study to resolve these questions.

More generally, the council is concerned that the oil industry may not be able to import spill-response equipment from outside the Prince William Sound region with the rapidity and in the quantities called for in the contingency plans. In a September 1998 drill, BP demonstrated it could import and deploy limited quantities of equipment from outside the region, but the council will continue to press government regulators to ensure the industry can perform on the scale required in this area.

NEARSHORE RESPONSE

Some of the changes since 1989 put more emphasis on shoreline protection, identification of sensitive areas such as hatcheries, and wildlife protection. A new term was coined – Nearshore Response – to describe the effort to protect shorelines threatened by spilled oil that has escaped initial containment.

Nearshore response is a major component of spill response, in which local personnel, knowledge and resources can be used to protect critical resources and shorelines. Industry groups, the citizens' council and regulatory agencies have worked cooperatively to develop nearshore response plans.

Local fishing vessels are part of Alyeska Pipeline's planned nearshore response. They are used, among other things, to transport response equipment, deploy and tend boom, and mobilize pre-staged equipment to protect fish hatcheries. Alyeska Pipeline has provided response training to over 300 fishing boats and their crews. The fishing vessels, based in communities in Prince William Sound, the Kenai Peninsula and Kodiak Island, are under contract with Alyeska Pipeline to respond to spills if willing and available at the time of an incident.

The oil industry has stockpiled spill containment and removal equipment at five fish hatcheries in Prince William Sound and at five community response centers that have been established in the Sound. They are at Chenega, Cordova, Tatitlek, Whittier and Valdez.

Two similarly equipped centers have been set up outside Prince William Sound. They are in Kodiak and Seldovia, and were established by the communities and the state of Alaska.

Each center provides manpower, equipment, and coordination of emergency responses. Response training for fishing vessel operators is provided by

the industry, the state of Alaska, the Coast Guard and the communities themselves.

Storage capacity for recovered oil was a problem in the 1989 recovery effort, when only a single barge with room for 500,000 gallons of oil was available. Boats would pick up the emulsified oil, only to find there was nowhere to put it. Alyeska Pipeline now maintains storage capacity, much of it on barges, for over 34 million gallons of recovered oil and water mixture. However, the availability of adequate storage for recovered oil is still an outstanding question. The citizens' council has requested demonstrations to verify that lack of storage won't hinder nearshore oil recovery operations.

The oil industry is much better prepared today for nearshore response than it was a decade ago, but there is still room for improvement. The council believes the latest versions of the plans aren't specific enough about where boats and other equipment for nearshore response will come from. In particular, the council believes the full implementation of the nearshore plans as written would require the use of more commercial fishing vessels than are likely to be available at one time.

DRILLS, MANAGEMENT AND OTHER ASPECTS OF RESPONSE

Spill drills enable response personnel to become knowledgeable and proficient in the strengths and weaknesses of equipment and procedures. Before

1989, there were no major oil spill drills; today, major drills are conducted once a year, with frequent smaller drills. The major drills include state and federal agencies, fishing vessels, tanker owners and operators and the citizens' council.

An important aspect of spill response implemented since 1989 is use of the National Interagency Incident Management System, an incident command system first developed by fire fighters in California to coordinate management, resources and roles during an emergency response.

In Alaska, this approach integrates the party responsible for the spill, the state and the Coast Guard in a unified command structure that expands according to need. It also establishes a predetermined decision-making process and a common language that significantly reduces confusion and misunderstandings among personnel from different organizations. This structure has been adapted by industry and government agencies to define and coordinate their roles and responsibilities in the event of a spill. The Incident Command System has been tested and practiced extensively in drills.

The Incident Command System's need for quick, wide-ranging communications is supported by a radio repeater system installed to cover Prince William Sound, Cook Inlet and parts of the Gulf of Alaska.

STATE FUNDING FOR SPILL RESPONSE

After the Exxon Valdez oil spill, an existing spill response fund was expanded to ensure that reserves would be available for a major oil spill and to provide a long-term funding source for the state of Alaska's spill prevention and response programs. The money for this expanded role comes from a 5-cent conservation surcharge on every barrel of oil produced in Alaska. The surcharge drops to 3 cents when the reserve set aside for oil-spill response reaches $50 million; if the reserve is drawn down in an actual response, the surcharge rises to 5 cents again until the reserve is replenished.

FEDERAL FUNDING FOR SPILL RESPONSE

To ensure that money will be available to pay for responding to and cleaning up major spills nationwide, the federal Oil Pollution Act required establishment of a $1 billion oil spill liability trust fund, funded by the oil industry.

The Oil Pollution Act strengthened federal authority to order spill cleanup action and requires the Coast Guard to direct spill response actions when any spill poses a risk to public health or safety. It also provides tougher criminal penalties and higher civil penalties for the spiller.

COMMUNITY IMPACTS

Technological disasters, such as the Exxon Valdez spill, disrupt communities in many ways.

The most obvious and tangible disruptions occur to the ordinary flow of goods, services, and jobs. For example, the spill created thousands of high-paid jobs in cleanup work. As a result, ordinary employers in communities – village stores, Native corporations and city governments – lost workers and found it even harder to function normally during the crisis.

These kinds of disruptions are highly visible and usually straightforward to remedy. But disasters also damage communities in ways that are less obvious and longer-lasting.

For example, studies of Prince William Sound communities indicate that mental health problems caused by the Exxon spill still linger a decade after the event.

In 1989, there was no plan for helping communities deal with such problems.

Today, the citizens' council is applying the results of several years of socio-economic research to produce a guidebook explaining how communities can deal with technological disasters. Some strategies: a newspaper education program; training for community professionals such as school teachers, clergy, police and mental-health counselors; and even training so that community members can provide basic mental-health counseling to each other.

With the guidebook's assistance, the council hopes communities and individuals will be able to understand what a technological disaster is, how it differs from a natural disaster, what to expect during the disaster, and how to find help. The guidebook will be available in 1999.

III. OPERATIONAL POLLUTION – PROTECTING THE ENVIRONMENT WHEN THERE'S NOT A SPILL

While it was the Exxon Valdez accident that focused world attention on Prince William Sound 10 years ago, a catastrophic spill is not the only risk posed by the crude oil trade. The Sound and its residents are also at risk of pollution from routine operations – such things as small spills of crude oil or refined products by tankers and other vessels at the Valdez terminal, leaks or permitted discharges from the terminal itself, air pollution, and even the invasion of Prince William Sound by non-native sea life.

LONG-TERM ENVIRONMENTAL MONITORING

In 1993, the citizens' council started long-term environmental monitoring at nine sites in Prince William Sound and the Gulf of Alaska. The sites are monitored for hydrocarbons in the water and sediment. Samples are collected in summer and late winter. Results are presented in an annual report.

This information provides a benchmark for assessing the ongoing impacts of routine tanker and terminal

operations. In addition, it will permit a better before-and-after assessment of the impacts if there is another catastrophic spill.

BALLAST WATER TREATMENT

Tankers arriving in Valdez carry ballast water in the same tanks used to haul crude oil south. This water, which picks up oil from the residue in the tanks, has to be off-loaded before the ships can take on a new cargo of crude oil.

A facility at Alyeska's tanker terminal receives this oily seawater, treats it, and discharges it into Prince William Sound at the rate of 16 million gallons a day.

The environmental effects of this wastewater, which carries traces of oil even after treatment, has been a concern for local citizens since oil first flowed through the Trans-Alaska Pipeline.

In the decade since 1989, the treatment plant has been improved, meaning less oil in the treated water going into the Sound. The levels of the most harmful compounds in the treated ballast water have fallen dramatically.

Still, the news is not all good. Oil is present in bottom sediments near the treatment facility, and in some "hot spots," organisms that live in those sediments are dropping in number and variety. And the facility continues to release petroleum vapors into the

air, including cancer-causing benzene, from its basins and tanks.

In early 1999, Alyeska was working with the citizens' council and regulators to map the zone of contaminated mud. And the company agreed to put a device on the treatment plant's outlet pipe to continuously monitor the amount of petroleum hydrocarbons being discharged into public waters.

VAPOR CONTROLS

When tankers load crude oil at Alyeska Pipeline's Valdez terminal, thousands of tons of oily vapors containing the potent cancer-causing chemical benzene are forced out of their tanks. For two decades after oil first flowed through the trans-Alaska pipeline in 1977, those vapors were vented to the air, creating a health hazard for workers at the terminal and nearby residents.

In early 1998, Alyeska Pipeline activated equipment that captures those vapors and either burns them or pumps them into the crude oil storage tanks at the tanker terminal.

The citizens' council was a long-time advocate of vapor controls, and was pleased with the federal government's decision to require them at two of the terminal's four tanker berths.

However, the state of Alaska's official projections of future North Slope oil production have increased since the vapor control project began. The council now

believes that oil production may exceed the handling capacity of the two berths equipped with vapor controls.

Accordingly, the council has called on Alyeska Pipeline to install vapor controls at a third berth. As of early 1999, the company was still analyzing the need for the third control system.

ALIEN INVADERS

Some ports, including the Great Lakes and San Francisco Bay, have been invaded by species not indigenous to the area. These non-indigenous species can compete with native species and cause severe ecological and economic damage. One example is the zebra mussel, a fresh-water species blamed for clogging intake pipes and displacing native species in many parts of the Lower 48.

The citizens' council has an ongoing project to study whether Prince William Sound is at risk of being colonized by non-indigenous species arriving in the ballast water of oil tankers.

Such invaders often arrive in the ballast water carried from one waterway to another by tankers and other large ships, raising concerns that the millions of tons of ballast water flushed from oil tankers could result in similar problems in Prince William Sound.

In 1997, the citizens' council and several co-sponsors began a study of the invasion risk in Prince William Sound. The council's pilot study showed that

plankton are abundant and diverse in the arriving ballast water and that some are not indigenous to Prince William Sound. The consultants doing the study concluded the Sound is at risk of invasion as a result, and the study was extended into 1999.

This effort includes further investigation into the content and management of ballast water as well as collection and analysis of samples from the Sound to see what non-indigenous species have already become established.

Further, the American Petroleum Institute contributed money to study whether exchanging ballast water at sea is a practical way of keeping non-indigenous species out of the Sound, and tanker companies have supported the effort with test exchanges during their trips north. This technique is of interest because mid-ocean waters typically carry fewer organisms than coastal waters, and mid-ocean species tend not to thrive if discharged near shore.

CONCLUSION:

CITIZEN INVOLVEMENT – A NEW TOOL FOR COMBATTING COMPLACENCY

Perhaps the most radical innovation to come out of the Exxon Valdez oil spill was the establishment of permanent, industry-funded citizens' councils to oversee both the oil transportation industry and its government regulators.

Before 1989, there was no mechanism, other than public hearings by regulatory agencies, for citizens to advise the oil industry or otherwise speak directly on operations affecting their communities and livelihoods. Earlier attempts by Prince William Sound residents to give their input to oil industry representatives were generally met with negative responses.

That began to change in the summer of 1989, when then-Alyeska Pipeline President James Hermiller actively supported formation of the Prince William Sound Regional Citizens' Advisory Council with Alyeska funding.

The citizens'-council concept was written into federal law in 1990, when Congress identified complacency on the part of the oil industry and government regulators as a root cause of the Exxon Valdez spill. In the Oil Pollution Act of that year, Congress mandated citizens' councils for Cook Inlet and Prince William Sound as a tool to prevent that complacency from re-emerging as memories of the spill faded.

The citizens' councils are the third leg of a tripod supporting safer oil transportation, the other two being industry and government.

While each of the three legs has an interest in environmental safety, the citizens' councils are unique in having no mission except promoting safety and informing the public about it, while industry and government must manage competing missions.

Industry must balance the need for environmental protection against the pressure for profits, while government agencies are always subject to political pressure to promote economic development and minimize the regulatory burden on industry.

The citizens' councils, by contrast, are relatively free from political and financial pressure.

For the Prince William Sound citizens' council, our long-term contract with Alyeska provides a fairly stable base of funding. At the same time, our advisory role and our diverse, community-based board largely insulates us from direct lobbying and the other usual forms of political pressure. We are immediately accountable to those we represent, the people and groups with the most to lose from another catastrophic oil spill in Prince William Sound. They include communities and interest groups in a region stretching from the Sound itself to Kodiak Island to lower Cook Inlet – all areas that were touched by oil from the Exxon Valdez spill.

Our influence depends on the quality of our analytical work on oil transportation safety, not on regulatory powers or political connections.

None of this can guarantee that complacency will not set in again, but we do serve as an early warning system to alert industry, government and the public of problem areas.

We monitor terminal and tanker operations, we conduct independent research and we advise industry

and government on ways to prevent oil spills and respond effectively if spills do occur.

One of our jobs is to monitor the adequacy of spill response, so we participate in drills and actual responses in several ways. Our representatives convey local concerns, advice and observations to the officials managing the response. They also help communicate developments in the response effort to local communities.

By 1995, the safeguards adopted after the Exxon Valdez spill had reduced the likelihood of another such accident by 75 percent, according to a risk assessment study of tanker operations in the Sound.

Many risks remain and there is still room for improvement, of course, but this should not obscure the very substantial overall progress made by industry, regulatory agencies and the citizens we represent.

We at the Prince William Sound Regional Citizens' Advisory Council believe Alaska's people and environment are better protected from marine oil spills today than they were in 1989. We intend to do all in our power to make sure this is still true on March 24, 2009, the 20th anniversary of the Exxon Valdez tragedy.

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Importance of Maintaining the Prince William Sound Escort System for Double-Hulled Tankers

Report to
Prince William Sound Regional Citizens' Advisory Council

[All Pictures And Maps Omitted In Printing]

December 3, 2004

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Importance of Maintaining the Prince William Sound Escort System for Double-Hulled Tankers

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Introduction

The Prince William Sound tanker escort system is one of the most significant prevention programs in place to prevent oil spills from laden tankers transiting Prince William Sound (PWS). Laden oil tankers are escorted by two high-powered tugs, in varying configurations, from the time they leave the dock at the Valdez Marine Terminal (VMT) until the tanker has transited safely into the Gulf of Alaska.

The Oil Pollution Act of 1990 (OPA 90) mandates that "single hulled tankers over 5,000 gross tons transporting oil in bulk shall be escorted by at least two towing vessels" as they travel through areas of PWS.[1] U.S. Coast Guard regulations at 33 CFR 168 implement this requirement by outlining the responsibilities of tanker operators, defining the specific geographic bounds of the escort system, and establishing operational standards and performance requirements for laden tankers and escort tugs.

[1] P.L. 101-380, Section 4116(c).

The Vessel Escort and Response Plan (VERP), which was developed by the PWS tanker owners, has been approved by the Coast Guard as the plan of operations for the PWS escort vessels. The introduction to the VERP states that the plan is "designed as a port specific plan to provide information regarding the capabilities of the Prince William Sound Escort vessels and operating procedures for the effective use of these escorts in the event of an equipment failure aboard the tanker."[2]

Issue Summary

The federal statutes and regulations that require the operation of the PWS tanker escort system specify that escort tugs are required for single-hulled, laden tankers only.[3] However, the introduction to the VERP implies that the escort system shall be utilized by all laden tankers, regardless of hull configuration: "These procedures apply to all tankers operating in Prince William Sound."[4]

Federal law calls for the phase out of all single-hulled oil tankers trading at US ports by 2010, and the phase out of older double-bottomed vessels by 2015.[5] According to industry estimates, the Trans-Alaska Pipeline Service (TAPS) tanker fleet will be comprised of 100% double-hulled

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[2] *Vessel Escort and Response Plan*, Alyeska-SERVS, 2001.

[3] 33 CFR 168.20 and P.L. 101-380, Section 4116(c).

[4] *Vessel Escort and Response Plan*, Alyeska-SERVS, 2001.

[5] 46 USC Sec. 3703a.

vessels by as early as 2007, and many of these vessels will have redundant safety and operating systems. At that point, the disposition of the federal requirement for the PWS escort system is unclear. The VERP language suggests that the system is intended for operation beyond single hull phase out, but there is no clear regulatory guidance. As the system currently operates, the same escort configuration is applied for all laden tankers, even the newer double-hulled, redundant tankers. PWSRCAC appreciates and commends the TAPS shippers for adhering to the existing PWS escort system for double-hulled tankers by recognizing that two escort vessels assigned to each laden tanker (single or double hull) is a best practice.

Because of this ambiguity regarding the long-term operation of the PWS tanker escort system, which is such a critical safety and prevention measure, Prince William Sound Regional Citizens' Advisory Council (PWSRCAC) has developed this report to confirm its strong support for the continued operation of the escort system in its present configuration and to recommend potential avenues for ensuring its continued operation.

Discussion

Description of PWS Escort System

Escort vessels are typically high-powered tugs that are assigned to a specific tanker during its transit through a specific water body. The Prince William Sound escort vessels have several

important functions. They watch for and report any sign of problems with a tanker and are available to assist if a tanker encounters trouble. They also provide the first response should a spill occur. The escort vessel system is further strengthened by safety measures that include speed limits and weather restrictions.

The 2001 VERP describes the operation of the PWS escort system for laden and ballasted tankers. Several different types of escort vessels are described.

- An **escort vessel** is any vessel that is assigned and dedicated to a tanker during escort transit and is fendered and outfitted with towing gear.
- An **escorting response vessel** is a vessel fitted with skimming and onboard storage capabilities practicable for the initial oil recovery planned for a cleanup operation.
- An **enhanced tractor tug (ETT)** refers to the Prince William Sound class tugs.
- **A Hinchinbrook tug** is a vessel capable of ocean escort and rescue service. The vessel is stationed in the vicinity of Hinchinbrook Entrance (HE) to provide assistance as a sentinel escort for tankers in ballast transiting HE, and laden tankers transiting into or out of the Gulf of Alaska to 17 miles off Cape Hinchinbrook. This vessel may also be utilized

as a close escort for laden tankers transiting through HE.

- **A primary escort** is a PWS class (ETT) or Prevention and Response class tug (PRT). A Protector class tug may be the primary escort for tankers 90,000 DWT or less, provided an escorting response vessel is also assigned to the transit.
- **A sentinel escort** is a vessel stationed in Northern Sound, Central Sound, or HE to provide assistance to tankers.

The PWS escort system operates on the basis of several different zones that require different escort vessel configurations and capabilities based on navigational considerations and other risk factors (Figure 1). The normal escort procedures for laden tankers (inbound or outbound) specify that ***at least two*** escort vessels must be assigned to each laden tanker transiting the Sound. As described above, the primary escort must be an ETT or PRT, in most cases. An escort vessel that is fitted with skimming and onboard storage capability must either be part of the escort convoy or be pre-positioned on sentinel duty during the transit.

In the Northern Prince William Sound zone, two escort vessels must maintain close escort (within ¼ nm of the tanker), except when one of the escorts is also serving as an ice scout. The primary escort must be tethered to the laden tanker as it transits Valdez Narrows.

In the Central Prince William Sound zone, the primary escort must maintain close continuous contact (within ¼ nm of the tanker), while the second escort may be a sentinel vessel stationed underway off Bligh Reef or east of Naked Island, or off Montague Point, based on the tanker's location in the Sound.

At Hinchinbrook Entrance, outbound laden tankers must maintain two close (within ¼ nm of the tanker) escorts. The Hinchinbrook tug may serve as one of these escorts. Inbound laden tankers must have two vessels in close escort beginning before they cross the line between Cape Hinchinbrook Light and Seal Rocks.

Once an outbound laden tanker reaches Hinchinbrook Entrance, a sentinel escort is stationed underway between Cape Hinchinbrook and Seal Rocks until the tanker reaches a point 17 miles seaward of Cape Hinchinbrook.

Escort System Protects Against Spills Caused by Human Factors

The U.S. Coast Guard estimates that nearly 85% of oil spills and marine accidents can be attributed to human factors – either individual errors or organizational failures.[6] Technological improvements such as double hulls can reduce the severity of an oil spill caused by grounding, collision, or allision, but they cannot interrupt the

[6] USCG. 1998. Safety: We are the enemy. Safety Alert. http://www.uscg.mil/hq/g-m/moa/docs/sa0998.htm accessed 9/14/04.

chain of events that may cause the accident to occur in the first place. Redundant steering or propulsion systems increase the chances of recovering from certain navigational emergencies before they can lead to a serious incident, but these systems are only as good as the people that operate them. As new technologies come online, they create the need for new training and job aids to ensure that human operators put the technology to use properly. In coming years as double-hulled oil tankers are phased in, the human element will continue to be a significant risk factor.

In a recently published article, the Coast Guard historian writes, "Technology has eliminated or greatly reduced many of the other variables that have historically created the circumstances for shipwrecks and maritime disasters." Yet, despite these advances, "casualties caused by human error such as the Feb 4, 1999 grounding of the Panamanian-flagged bulk carrier *New Carissa* will continue."[7] This sentiment, that advances in technology and engineering cannot overcome the proclivity for human error, is repeated in countless publications about marine accidents in general, and oil spills in particular.

The significant role of human and organizational error as an oil spill cause is directly relevant to the issue of maintaining the PWS tanker escort

[7] Browning, R.M. Jr. "Ship Ashore: An Overview of Marine Vessel Casualties" *Proceedings of the Marine Safety and Security Council of the U.S. Coast Guard* Vol 61, No. 1, Spring 2004.

system. As more and more double-hulled, redundant tankers are phased into the vessel fleet, it is possible that the Prince William Sound shippers may suggest that the prevention gains realized through these mechanical and technological improvements somehow justify a reduction in the configuration of the PWS escort system. This would amount to a major step backward in spill prevention.

A 1998 study by the National Research Council (NRC) confirmed that advances in vessel technology, such as double hulls and redundant systems, do not erase the need for additional prevention measures.[8] The NRC report considered the results of outflow analyses, which attempt to measure the prevention value of double hulls by assessing how oil outflow might be reduced or avoided in an incident involving a double-hulled vessel as compared to a single hull. These outflow analyses showed that four out of every five oil spills attributable to collisions and groundings would be eliminated, and a two-thirds reduction would be realized in the total volume of oil spilled from collisions and groundings. These predictions validate the popular belief that double hulls have a significant and positive effect on reducing the

[8] NRC, 1998. *Double Hull Tanker Legislation: An Assessment of The Oil Pollution Act of 1990.* National Academy Press, Washington, D.C. See a full analysis of the human factors issue in DeCola, "In Search of the Double Hull Mariner: Assessing the Contribution of Human Factors to Oil Spills from Vessels and Measuring the Effectiveness of Prevention Programs," report to PWSRCAC, November 2004.

risk and the severity of oil spills, however they also show that double hulls are not a perfect prevention measure, thus enforcing the need to continue with other prevention programs.

The PWS tanker escort system is currently utilized by double-hulled, redundant tankers that trade at the Valdez Marine Terminal. Since the escort system has been in place, there have been no major oil spills from PWS tankers, and 2003 was the first spill-free year for PWS tankers since the pipeline was built, with not a single drop of crude oil spilled in the Sound by the TAPS tanker trade. The escort system certainly contributed to this success, and there is no reasonable justification for removing or reducing such an effective, proven prevention program.

Escort System Provides National Security Benefit

As national attention is increasingly focused on issues of port security, it is important to recognize the value of the PWS tanker escort system as a security measure. By facilitating the safe passage of laden tankers through the Sound, the escort system protects against the potential for accidents caused by a number of factors, including acts of war or terrorism. The escort tugs have rescue and assist capabilities that may save a vessel, her crew, and cargo in the event of a security incident.

Conclusions

Ensuring Continued Operation of the PWS Escort System

The only way to ensure the continued operation of the PWS escort system is through a legal or regulatory imperative. It is essential that such a directive specify that the system continues to operate in its current state where two escort vessels are assigned to each laden tanker in varying configurations depending upon location in PWS.

There are several potential mechanisms for creating this imperative. The U.S. Coast Guard could develop new regulations or amend existing regulations at 33 CFR 168 to specify that the two escort system in PWS applies to double-hulled and redundant tankers as well as single-hulled vessels. The State of Alaska could also develop such a requirement through the rulemaking authority of the Department of Environmental Conservation. A states' right to regulate escort vessels in well-defined geographic areas based on special considerations is borne out in U.S. case law through United States v. Locke, 529 U.S. 89 (2000) and *Ray v. Atlantic Richfield Co.,* 435 U.S. 151 (1978).

Until a regulatory solution is implemented, the Coast Guard Captain of the Port (COTP) in PWS could use his authority to implement a Regulated Navigation Area that requires the escort system to operate in its current configuration, or he could develop a COTP directive that requires each individual tanker operator to continue to

comply with the escort system as currently configured.

Recommendations for PWSRCAC Position

In order to express support for the continued operation of the PWS tanker escort system in its current configuration, PWSRCAC should consider adopting the following position.

> "Maintaining a strong and reliable escort fleet and preserving the practice of requiring two escorts for laden tanker transits is essential to the safe transportation of oil in Prince William Sound. As the TAPS tanker fleet composition moves toward full compliance with the Oil Prevention Act of 1990 double hull requirements, the risk of another major tanker spill to the waters of Prince William Sound will decrease. But it would be dangerous and imprudent to allow these improvements in vessel engineering to replace proven prevention programs that have been implemented in the years since the *Exxon Valdez* spill.
>
> The Prince William Sound tanker escort system safeguards against oil spills caused by navigational errors, severe weather, and human or organizational failure. The Prince William Sound Regional Citizens' Advisory Council, as part of its mission to promote the environmentally safe operation of the Alyeska Pipeline marine terminal in Valdez and the oil tankers that use it, supports the continued operation of the PWS tanker escort

program in the configuration described in the 2001 Vessel Escort and Response Plan, whereby: two escorts stay in close configuration through Northern Prince William Sound with the primary escort tethered through Valdez Narrows; one close escort and a sentinel are assigned through Central Prince William Sound; two close escorts are maintained through Hinchinbrook Entrance; and a sentinel is stationed until a laden tanker reaches a distance of 17 miles seaward of Cape Hinchinbrook."