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July 15, 2021

Jolie Harrison
Chief, Permits and Conservation Division
Office of Protected Resources
National Marine Fisheries Service

Submitted via email to ITP.tyson.moore@noaa.gov

RE: Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Relocation of the Port of Alaska's South Floating Dock

Dear Ms. Harrison,

Established in 1947, Defenders of Wildlife is a national nonprofit conservation organization dedicated to the protection of flora and fauna in its native habitat. Defenders has 2.2 million members and supporters nationwide, including over 6000 in Alaska. Defenders has long advocated for the conservation and recovery of endangered Cook Inlet beluga whales. We appreciate the opportunity to comment on the above-referenced proposed Incidental Harassment Authorization.

First, we commend NMFS for recognizing CI belugas' much greater relative use of Knik Arm and the area surrounding the Port of Alaska in August and September each year by prohibiting one specific project activity during that time. We further appreciate the robust monitoring efforts designed to minimize the chances of belugas swimming into harm's way without being observed.

The significant existing noise pollution in the Port area, however, complicates and undermines NMFS's conclusion that this project, when added to that existing noise level, would cause negligible impacts to CI belugas. Similarly, allowing most of the project activities to proceed in August and September fails to effectuate the least practical impact on belugas. Permitting the project as proposed will create and/or exacerbate a condition where it is not possible for any CI beluga to transit past the project area to or from critical foraging and nursing habitat in Knik Arm. Accordingly, NMFS should not authorize any project activities in August or September absent an explanation of how doing so would still mitigate adverse impacts to the greatest extent. NMFS should assess the practicability of this alternative.

Noise is of chief concern in the CI beluga Recovery Plan and the dire status of the CI beluga requires aggressive conservation and precautionary management actions. We urge NMFS to

take every protective measure available to minimize the impacts to belugas from this and all permitted projects in Cook Inlet.

I. The Dire Status of CI Belugas Requires that NMFS Aggressively Pursue Recovery Actions While Causing No Further Harm.

Since NMFS completed its last CI beluga status review, it has announced a new population estimate of 279 animals as of June 2018, down from an estimated 328 in 2016.[1] In part, the new estimate reflected refinements in how NMFS statistically analyzes the aerial survey data that forms the key basis for the estimate – an indication of managerial improvement. Unfortunately, the refined analysis reaffirms the continued lack of recovery that only heightens the need for NMFS and partners to redouble efforts to conserve and recover this population.[2]

The precautionary principle in environmental science has been described as having four central components: taking preventive action in the face of uncertainty; shifting the burden of proof to the proponents of an activity; exploring a wide range of alternatives to possibly harmful actions; and increasing public participation in decision making.[3] The precautionary principle is an established environmental management approach that provides a framework for taking action to avoid irreversible harm in the absence of scientific certainty of such harm.[4] Precautionary approaches allow for action in the face of uncertainty. The present situation with CI belugas where there is an abundance of uncertainty, but all signs point to distress, is the textbook situation of when to employ precautionary management.[5]

CI beluga conservation has long been challenged by numerous potential impediments to recovery that are not clearly understood; the Recovery Plan lists nine different threats, plus a tenth "cumulative effects" threat that combines the others. The many threats, and the apparent absence of one "silver bullet" or key recovery action, mean that NMFS must remain committed to a multi-faceted and dogged approach to taking preventive recovery

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[1] Shelden, K. E. W. and P. R. Wade (editors). 2019. Aerial surveys, distribution, abundance, and trend of belugas (Delphinapterus leucas) in Cook Inlet, Alaska, June 2018. AFSC Processed Rep. 2019-09, 93 p. Alaska Fish. Sci. Cent., NOAA, Natl. Mar. Fish. Serv., 7600 Sand Point Way NE, Seattle WA 98115.

[2] "NOAA Releases New Abundance Estimate for Endangered Cook Inlet Beluga Whales," January 28, 2020. https://www.fisheries.noaa.gov/feature-story/noaa-releases-new-abundance-estimate-endangered-cook-inlet-beluga-whales ("These new abundance and trend numbers are concerning," said Jim Balsiger, Alaska Regional Administrator for NOAA Fisheries. "They indicate that we still have a long way to go to recover this iconic and highly endangered population.")

[3] Kriebel, D., Tickner, J., Epstein, P., Lemons, J., Levins, R., Loechler, E. L., Quinn, M., Rudel, R., Schettler, T., & Stoto, M. (2001). The precautionary principle in environmental science. *Environmental Health Perspectives*, *109*(9), 6.

[4] Cooney, Rosie. *The Precautionary Principle in Biodiversity Conservation and Natural Resource Management: an Issues Paper for Policy-Makers, Researchers and Practitioners*. 1st ed., IUCN-the World Conservation Union, 2005.

[5] deFur, Peter L., Michelle Kaszuba, Implementing the precautionary principle, Science of The Total Environment, Volume 288, Issues 1–2, 2002, Pages 155-165, ISSN 0048-9697, https://doi.org/10.1016/S0048-9697(01)01107-X.

actions in the face of uncertainty. It must employ the precautionary principle and avoid sanctioning further impediments to recovery even while striving to better understand those impediments.

Application of the precautionary principle to permitting additional noise impacts to belugas requires accounting for the level of existing background noise, the additive noise, and the timing and importance of belugas' use of the impacted areas. This is especially critical around the Port of Alaska, the noisiest part of CI beluga habitat and a location past which transit to and from critical foraging and nursing areas must occur. The Port area also includes Ship Creek, which provides salmon runs including Chinook, which may be of particular importance to belugas.[6]

II. Background Port Noise Impacts are Substantial and Constitute Level B Harassment.

For this project, NMFS set the Level B harassment threshold at 122.2 dBrms despite its understanding that responses including avoidance and altered group behaviors can be triggered at 120 dB.[7] It apparently did so because the median background noise level recently measured near the project location was 122.2 dB.[8]

NMFS's Cook Inlet beluga Recovery Plan considers anthropogenic noise to be a serious threat to recovery, and the Marine Mammal Commission has consistently urged NMFS to cumulatively assess noise and other stressors on belugas before authorizing additional noise impacts in the form of IHAs or LOAs. In fact, even when belugas are displaced from one area within their critical habitat, they will often encounter other sources of anthropogenic noises, indicating belugas are lacking refuge from noise or safe passage to important areas within their designated critical habitat.[9]

Low levels of noise may have biological impacts by "masking" important communication signals, influencing communication behaviors and disrupting foraging.[10] Even the limited data presented by Mooney *et al.*, 2020 documents overlap between anthropogenic noise disturbance and Cook Inlet beluga hearing capabilities that raises significant concern for

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[6] Norman, S. A., R. C. Hobbs, L. A. Beckett, S. J. Trumble, and W. A. Smith. 2019. Relationship between per capita births of Cook Inlet belugas and summer salmon runs: age-structured population modeling. Ecosphere 11(1):
e02955. 10.1002/ecs2.2955

[7] 86 Fed. Reg. 31,870, 31,887 (June 15, 2021).

[8] Id. at 31,888.

[9] Castellote, Manuel, Bruce Thayre, Michael Mahoney, Jeffrey Mondragon, Marc O Lammers, And Robert J Small. "Anthropogenic Noise and the Endangered Cook Inlet Beluga Whale, Delphinapterus Leucas: Acoustic Considerations for Management." *Mar Fish Rev* 80 (2019): 63–88. https://doi.org/10.7755/MFR.80.3.3.

[10] Id.

noise limiting the acoustic communication space for CI belugas.[11] There is sufficient information for NMFS to be greatly concerned about acoustic masking of essential beluga communication over a wide temporal and spatial scale within the critical habitat. Even when belugas are displaced while transiting, they cannot escape noise. There are seasons (summer) and areas (e.g., Cairn Point) with relatively greater noise levels.[12]

Troublingly, Castellote finds that industrial noise created by numerous routine Upper Inlet activities exceed thresholds beyond which impacts to belugas can be expected. Dredging, for example, was above hearing thresholds such that it can singlehandedly mask hearing and communication.[13] The dredging was at the Port of Anchorage, but the large ensonified area meant that belugas could not avert effects by avoiding the eastern side of lower Knik Arm, where the operations occur. Dredging at the Port would likely "expose any beluga that enters or exits Knik Arm to levels of noise exceeding the current behavioral harassment threshold."[14]

Specifically concerning the Port, Castellote et al., 2019 notes that it is likely the entire width of the arm at the Port is ensonfied at levels exceeding behavioral threshold and prevents safe passage for belugas. "No passage might remain free of acute acoustic disturbance exceeding the behavioral threshold of 125 dB for transiting belugas, where pile driving operations have been ongoing for multiple years (2006–11, and 2016) as part of the POA Marine Terminal Redevelopment Project."[15] Background noise at and around the Port often exceeds 125dB (figure 2).[16] Noise from just one component of that one project ensonified much, and at times all, of the mouth of Knik Arm to a level greater than the 122.5 dB Level B harassment standard used for that project – making it difficult and at times impossible for belugas to transit the area – known to be important for traveling to and from upper Knik Arm - without being harassed. In fact, figures 1 and 2 demonstrate the measured background noise and project noise during 36-inch pile driving actives with bubble casings and the large ensonfied areas of the harassment zone during pile driving actives at the project site.

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[11] Mooney, T. Aran, Manuel Castellote, Ian Jones, Natalie Rouse, Teri Rowles, Barbara Mahoney, and Caroline E. C. Goertz. "Audiogram of a Cook Inlet Beluga Whale (Delphinapterus Leucas)." *Journal of the Acoustical Society of America* 148, no. 5 (November 2020): 3141–48. https://doi.org/10.1121/10.0002351. (Researchers conducted hearing tests on a beluga found on the west side of Cook Inlet that had been deemed unsuited for returning to wild life after being treated for a series of ailments.)

[12] Castellote, et al., 2019.

[13] Castellote et al., 2019 at 73.

[14] Id.

[15] Id.

[16] Port of Alaska, Modernization Program Petroleum and Cement Terminal Hydroacoustic Monitoring Report (January 2021) at 37.

Vibrate 36- inch Trestle with air bubble casing			
	East-West		
	<100m	100-1000m	>1000m
Background	129.5	125.5	117
Project	156	138.8	126.8
	North		
	<100m		>100m
Background	129.4		128.6
Project	155.2		142.2

Figure 2 Background and project noise in dB as measured by Port of Alaska Modernization Program Petroleum and Cement Terminal Hydroacoustic Monitoring Report, January 2021; Prepared by Illingworth & Rodkin, Inc.

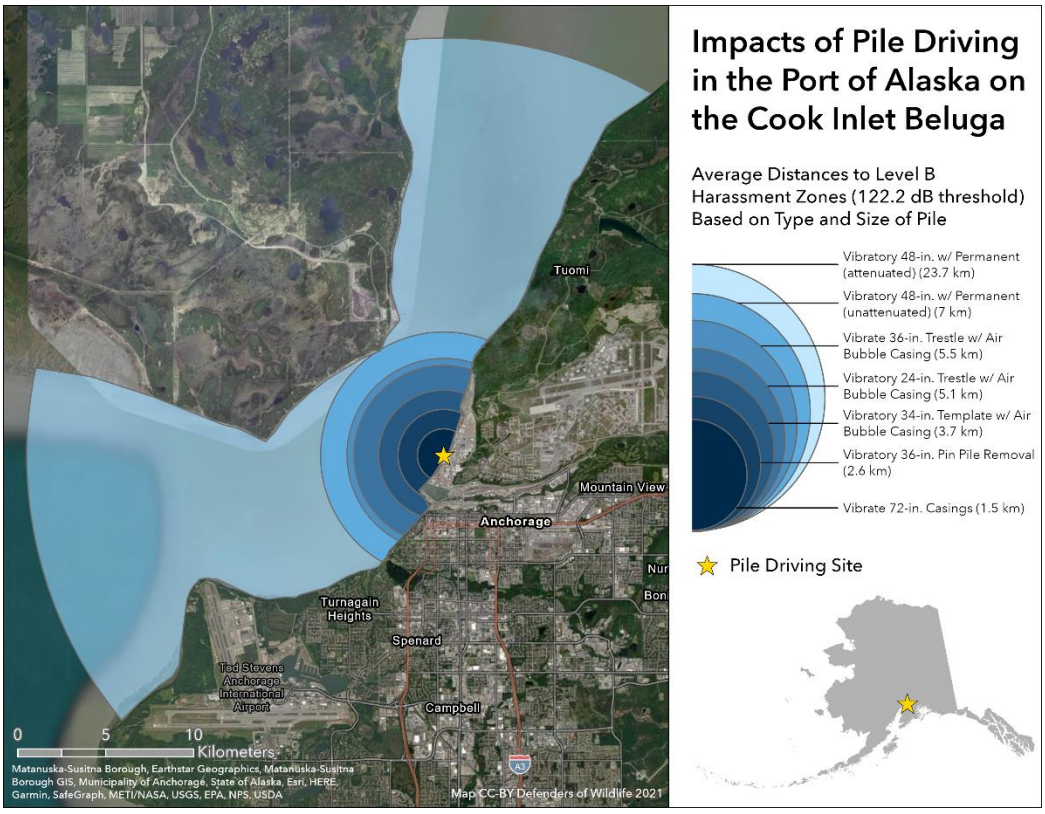

Figure 1 Average distances to Level B harassment zones during vibratory installation Adapted from Table ES-1in Port of Alaska Modernization Program Petroleum and Cement Terminal Hydroacoustic Monitoring Report, January 2021; Prepared by Illingworth & Rodkin, Inc.

Castellote *et al.,* 2019 also indicates that a revision of the spatial extent of the current critical habitat exclusion zone (around the Port) is warranted as it coincides with the most acoustically disturbed area of Cook Inlet., with the attendant implications for anthropogenic

noise management at that site.[17] Those management implications include avoiding concurrent emission of noise at both the POA and Point McKenzie; evaluating the acoustic footprint of different modes and types of seasonal dredge operations; defining shut down protocols, if necessary, based on observed beluga behavioral reactions; and seasonal scheduling of activities to reduce overlap with beluga peak use of the port basin.[18] The authors call for a detailed analysis of the activities at port facilities in the context of noise production as this would provide insights on how to minimize the problem of belugas lacking a safe acoustic passage.[19] Additionally, the spatial and temporal overlap of different high amplitude anthropogenic sources of noise, in particular in the Knik Arm area, "calls for the implementation of a cumulative impact analysis approach as part of the permitting process," perhaps using a quota system for takes and coordinating permitted activities to minimize impacts.[20]

Finally, the noisiest areas of Cook Inlet and possible identified nursery areas have considerable overlap. Traditional ecological knowledge, NMFS and recent research have presented three possible nursery areas for CI beluga: Lower Knik Arm (NMFS 2008), Eagle Bay and Trading Bay (Blevins *et al.,* 2017). Knik Arm is an important foraging area and nursery area according traditional ecological knowledge presented in Huntington 2000 and annual calf indices as reported by Hobbs *et al.*, 2015. Belugas calve from April through August, which is also the time of the most prominent anthropogenic noise in the Inlet.[21] Belugas have been known to use pulsed calls in large groups, when foraging, and in the presence of calves[22] – raising the significant potential masking impacts associated with persistent Level B noise harassment.

The Marine Mammal Commission has long advised NMFS to track all anthropogenic activities that may result in the taking of a beluga, and to place annual limits on the total

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[17] Castellote 2019 at 86. NMFS need not revise the critical habitat exclusion zone to take these steps, however, as they are prudent measures to support beluga recovery regardless of the critical habitat area or exclusion zone.

[18] Id. (emphasis added.) Defenders advocated for seasonal scheduling of the Phase I and II PCT construction activities but NMFS considered no such alternative, analyzing only the proposed action and no action alternatives and arguing that the proposed action inherently encompassed all measures to effect the least practicable impact on belugas. *See* NMFS Final IHA, 85 Fed. Reg. 19294, 19308 (April 6, 2020); *see also* "Department of the Army Environmental Assessment and Statement of Findings for the Above-Referenced Standard Individual Permit Application" (referencing File Number POA-2003-00502), April 16, 2020, at 11-12 (discussing some project alternatives considered in 2005 but not addressing the seasonal scheduling issue Defenders raised in 2020).

[19] Castellote, et al., 2019 at 86.

[20] Id.

[21] Id.; Huntington, H. P. (2000). Traditional Knowledge of the Ecology of Belugas, Delphinapterus leucas, in Cook Inlet, Alaska. *Marine Fisheries Review*, 7.

[22] Blevins-Manhard, R., Atkinson, S., & Lammers, M. (2017). Spatial and temporal patterns in the calling behavior of beluga whales, Delphinapterus leucas, in Cook Inlet, Alaska. *Marine Mammal Science*, *33*(1), 112–133. https://doi.org/10.1111/mms.12353

number and types of take authorized based on the most recent population estimate.[23] These suggestions are reflected in actions #56 and 62 in the Recovery Plan but haven't been implemented.

Figure 3, below, shows authorized take as a percentage of the CI beluga population estimate from 2007 to 2020.

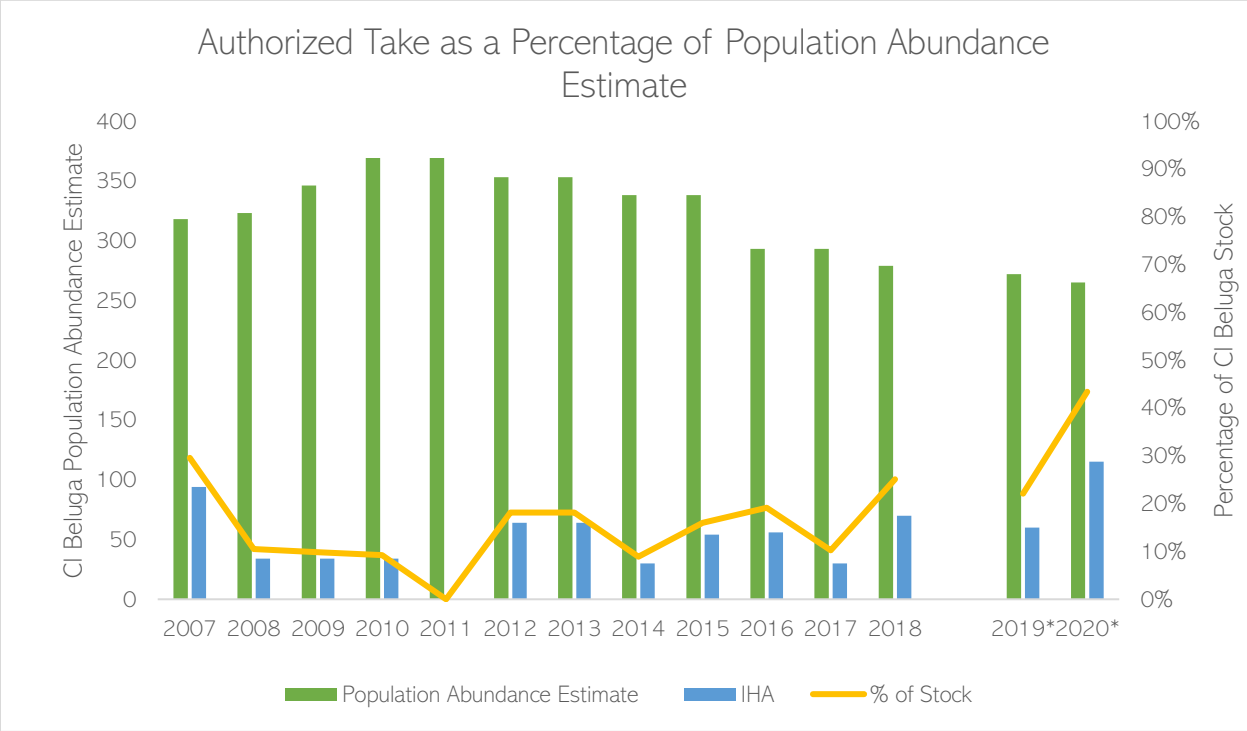

Figure 3 Authorized take by population abundance estimate as provided by AFSC 2019 report: Aerial Surveys, Distribution, Abundance, and Trend of Belugas (Delphinapterus leucas) in Cook Inlet, Alaska.
**Population abundance estimate (green bar) for 2019 and 2020 is calculated by a projected 2.3% annual decline.*

While the CI beluga population continues to decline, there is an increase in the percentage of the population authorized for take. Particularly in the absence of any limit on the total number of beluga takes authorized over a given time period, temporal restrictions that avoid additive noise impacts in already-ensonified areas where belugas are known to occur in significant numbers is a clear means of effecting the least practicable impact.

III. NMFS Should Prohibit Project Activities in August and September.

[23] E.g., Marine Mammal Commission Comments on NMFS's Draft Recovery Plan, July 14, 2015. https://www.mmc.gov/wp-content/uploads/belugawhale_recovery-plan_071415.pdf. ". . . the Commission recommends that NMFS develop and maintain a complete accounting of all anthropogenic activities in the inlet that may result in the taking of a beluga whale; this would assist in constructing a comprehensive habitat model for the inlet and in identifying important information gaps to ensure that adequate research and monitoring is being conducted and that activities limiting beluga whale recovery are identified and managed as effectively as possible. The Commission further recommends that NMFS place annual limits on the number and types of takes that are authorized for development and research projects, based on the most recent population estimate."

Accounting for this challenging existing environment means that NMFS must do more to minimize additive impacts and ensure that they are truly negligible. To effectuate the least practicable adverse impact on belugas, and to support its conclusion that project impacts will be negligible, NMFS must restrict project activities in the key months of August and September.

NMFS states that

> Given the extensive Level B harassment zone generated from the installation of the two unattenuated battered piles, vibratory driving these large piles during peak CIBW season poses an amount of risk and uncertainty to the degree that it should be minimized. This August and September peak is confirmed through acoustic monitoring (Castellote *et al.,* 2020) and Phase 1 PCT construction monitoring (61 North Environmental, 2021).[24]

Accordingly, vibratory driving unattenuated battered piles "will not occur in August or September."[25]

While we commend this restriction, its rationale applies with equal force to the project in general, not just to the very loudest project component. Driving unattenuated battered piles ensonifies an area of 8,318 meters in all directions from the source to the Level B harassment threshold (122.5 dBrms) – making it the activity that ensonifies the largest area to that threshold.[26] But numerous other project activities also ensonify very large areas ranging from 542-4,106 meters from the source – over 2.5 miles - to the same threshold,[27] such that those activities alone will render harassment-free transit past the project area difficult or impossible for belugas.

With background noise measured at levels exceeding Level B harassment thresholds in the Port area, moreover, the concept of a Level B harassment zone calculated for activities from one additional project loses its meaning. For the purpose of considering which project activities to restrict temporally to minimize impacts on belugas, the size of the (additive) ensonified area is less important than the amount of (additive) noise in the areas that belugas will likely use. Virtually all project activities will add significant noise pollution to a background level that already exceeds the Level B harassment threshold in an area frequented by many belugas and for critical life functions. For that reason, project activities should not be permitted during prime beluga use of the area – August and September.

[24] 86 Fed. Reg. at 31,895.
[25] Id.
[26] Id. at 31,890.
[27] Id.

Otherwise, the agency is failing to minimize the adverse impacts to belugas from the proposed action.

Similarly, this temporal restriction is also needed to ensure that the beluga impacts will be negligible. NMFS cites the following factors to support its conclusion that the project's impacts will be negligible:

• No mortality is anticipated or authorized;

• Area of exposure would be limited to travel corridors. Data demonstrates Level B harassment manifests as increased swim speeds past the POA and tight group formations and not through habitat abandonment;

• No critical foraging grounds (*e.g.,* Eagle Bay, Eagle River, Susitna Delta) would be impacted by pile driving; and

• While animals could be harassed more than once, exposures are not likely to exceed more than a few per year for any given individual and are not expected to occur on sequential days; thereby, decreasing the likelihood of physiological impacts caused by chronic stress or masking.[28]

The second and third factors aren't clearly supported by evidence. While the area of exposure is best known for its use as a travel corridor, it is worth noting that belugas are known to forage in the Ship Creek area as well. There is no indication that the listed foraging grounds are the only ones of significant importance to belugas and it is possible that noise pollution at the Port could impact both beluga and prey behavior near the Port.

Also, while we concur that the available evidence indicates behavioral reactions to noise that do not result in habitat abandonment, those observable reactions are not the extent of the likely impacts. Masking of communication, for example, especially when foraging and traveling with calves, is another potentially significant stressor and would not be detected by visual observations. The absence of evidence of habitat abandonment does not prove that noise impact around the Port are negligible.

More fundamentally, the discussion in the preceding section undermines the negligible impact conclusion for the same reason that it undermines the "least practicable impact" conclusion. The project will increase an existing noise level that already exceeds the Level B harassment threshold in an important critical habitat area used by a large percentage of the population for critical life functions. The effect is that the harassment-free use of the area is simply not feasible for many whales at critical times - which cannot reasonably be considered negligible.

Conclusion

[28] Id. at 31,900

While the proposed project may be considered relatively small, its impact is significant when added to the substantial cumulative background noise in the Port area created by numerous existing sources (many of which may also be considered relatively small). To effect the least adverse impact and to reach a conclusion of negligible impact, for the foregoing reasons NMFS must restrict all project activities in August and September – which will go a long way toward minimizing the impacts of the project on the endangered beluga population

Sincerely,

/s/

Patrick Lavin
Alaska Policy Advisor