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By U.S. Mail, E-Mail, and Electronic Submission

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**RE: Pebble Limited Partnership Project Draft Environmental Impact Statement (EIS No. 20190018), 84 Fed. Reg. 7049 (Mar. 1, 2019): Comments Submitted by Washington Office of the Attorney General**

Dear Pebble Project Program Manager:

The Washington Office of the Attorney General submits these comments on the Pebble Limited Partnership Project (Pebble Project) Draft Environmental Impact Statement (Draft EIS) prepared by the Army Corps of Engineers (Corps). As discussed below, the Attorney General has significant concerns about the Draft EIS's incomplete review of the far-reaching environmental and economic impacts of the proposed Pebble Mine. Given these significant impacts, the Attorney General believes that adopting the no-action alternative and preserving the Bristol Bay watershed—and its unparalleled salmon run—is the only common-sense option.

Washington State has close economic, educational, and cultural ties to the Bristol Bay region. As described in more detail below, the development of Pebble Mine would have immediate and irreparable effects on Washington's commercial fishing industry, recreational opportunities, and academic research. Accordingly, Washington has a unique and strong interest in ensuring the Corps complies with its obligations under the Clean Water Act (CWA) and the National Environmental Policy Act (NEPA) in reviewing the proposed Pebble Project.

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The project proposed by Pebble Limited Partnership (PLP) would develop the Pebble copper-gold-molybdenum porphyry deposit, called the Pebble deposit, as an open pit mine.<sup>1</sup> The Pebble deposit is located in southwest Alaska near Iliamna Lake. The fully developed mine site would extend approximately 8,086 acres—including through 3,458 acres of wetlands and other waters—and include an open pit; bulk and pyritic tailing storage facilities; multiple quarries; seepage collection, sediment, and water-management ponds; a 270 megawatt power plant; water treatment plants; and camp and storage facilities.<sup>2</sup> According to PLP's application, a total of 1.4 billion tons of material would be mined over a 20-year period.<sup>3</sup> Depending on the selected alternative, the Pebble Project could also include development of a port on the western shore of Cook Inlet; a transportation corridor between the port and the mine, including roads from the mine site to a ferry terminal on Iliamna Lake and a road from the opposite ferry terminal to a port on Cook Inlet; bridges and culverts; and a natural gas pipeline from the mine to the Kenai Peninsula.<sup>4</sup> After a 4-year construction phase, the mine would operate for approximately 20 years.<sup>5</sup>

The waters around the Pebble deposit are inextricably linked with the larger Bristol Bay watershed. This uniquely important region supports a complex ecosystem and the largest sockeye salmon run in the world—producing nearly half of the world's wild sockeye—and provides intact habitat to support four other Pacific salmon species, including coho, Chinook, chum, and pink salmon.<sup>6</sup> At least 29 fish species, more than 40 terrestrial mammal species, and more than 190 bird species rely on the Bristol Bay watershed.<sup>7</sup> Salmon form a critical part of this ecosystem by importing nutrients from the marine environment to freshwater and terrestrial systems that in turn support and enhance all levels of the food chain, including microorganisms, invertebrates, plants, fish, birds, and mammals.<sup>8</sup> This highly productive ecosystem relies in large part on the unaltered and interconnected surface and subsurface waters that enable hydrologic

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<sup>1</sup> Pebble Limited Partnership Project Draft Environmental Impact Statement (EIS No. 20190018), 84 Fed. Reg. 7049 (Mar. 1, 2019), at 2-9 [hereinafter DEIS].

<sup>2</sup> DEIS 2-13, Table 2-4; DEIS 4.24-2.

<sup>3</sup> DEIS 2-12.

<sup>4</sup> DEIS 2-9, Table 2-3; DEIS 2-92.

<sup>5</sup> DEIS 2-12.

<sup>6</sup> EPA's Frequently Asked Questions about Bristol Bay 404(c) Process, <https://www.epa.gov/bristolbay/frequently-asked-questions-about-bristol-bay-404c-process>.

<sup>7</sup> U.S. Env'tl. Protection Agency, An Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay, Alaska, EPA910-R-14001ES, Executive Summary, at 6 (Jan. 2014) [hereinafter EPA Assessment].

<sup>8</sup> *Id.*; Scoping Comments from Mary Colligan, Assistant Regional Director, Fisheries and Ecological Services, U.S. Fish and Wildlife Service, to Shane McCoy, Program Manager, Regulatory Division, U.S. Army Corps of Engineers, Alaska Division, 2-3 (June 29, 2018) [hereinafter FWS Scoping Comments].

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and biochemical connectivity between waterbodies.<sup>9</sup> As researchers from the University of Washington and the University of Utah recently found, the lake and river habitat of the Nushagak River basin, which drains into Bristol Bay, is essential for sockeye salmon production.<sup>10</sup> This delicate and intricate ecosystem is unlikely to recover quickly and any disruption could alter the landscape and the life it supports forever.<sup>11</sup>

In 2014, EPA Region 10 completed an independently peer reviewed multi-year watershed assessment to determine the significance of Bristol Bay's ecological resources and evaluate the potential impacts of large scale mining on those ecological resources.<sup>12</sup> Although this assessment did not review a specific mine, it considered the potential impacts of reasonably foreseeable mining activities in the Bristol Bay region.<sup>13</sup> That assessment concluded that mining activity could have both direct and indirect impacts on fish in the region due to loss of habitat from altered or reduced streamflows,<sup>14</sup> reduced food sources,<sup>15</sup> altered stream temperatures,<sup>16</sup> and decreased water quality.<sup>17</sup> Impacts threaten to be more severe in the event of a tailings dam failure or a water collection and treatment failure.<sup>18</sup> In its scoping comments on this NEPA process, the EPA continued to express "significant concerns regarding the potential impacts of mining activities near the world-class fisheries of the Bristol Bay Watershed."<sup>19</sup>

Given these potential risks to one of the most pristine and productive fisheries in the world and the Corps' obligations under NEPA and the CWA, the Corps must carefully consider the environmental impacts of the proposed Pebble Mine "to the fullest extent possible"<sup>20</sup> and must

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<sup>9</sup> EPA Assessment, Executive Summary, at 8.

<sup>10</sup> Sean R. Brennan et al., Using strontium in otoliths to determine the natal origin and habitat use of sockeye salmon in the Nushagak River: Final Report to Bristol Bay Regional Seafood Development Association, 5 (Oct. 1, 2017).

<sup>11</sup> See EPA Assessment, Executive Summary, at 8, 13–14, 17.

<sup>12</sup> EPA Assessment, Executive Summary, at 1.

<sup>13</sup> *Id.* at 5, 11.

<sup>14</sup> *Id.* at 13.

<sup>15</sup> *Id.* at 14.

<sup>16</sup> *Id.* at 14–15.

<sup>17</sup> *Id.* at 15.

<sup>18</sup> *Id.* at 17.

<sup>19</sup> Scoping Comments from R. David Allnut, Director, U.S. Environmental Protection Agency Region 10, to Shane McCoy, Program Manager, Regulatory Division, U.S. Army Corps of Engineers, Alaska Division, 1 (June 29, 2018) [hereinafter EPA Scoping Comments].

<sup>20</sup> 42 U.S.C. § 4332.

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fully apprise the public of these environmental impacts.<sup>21</sup> As Congress made clear in passing NEPA, the purpose of the statute is to “promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation . . .”<sup>22</sup> The CWA and its implementing regulations further direct the Corps to issue discharge permits only if the discharge will not result in significant degradation, there is not a practicable alternative which would have less adverse impacts, and all appropriate and practicable measures to minimize potential harm have been included.<sup>23</sup> Despite these mandates, the Draft EIS fails to satisfy NEPA and the CWA’s requirements in multiple respects. Specifically, the Draft EIS:

- fails to consider Washington’s unique economic and educational connections to the Bristol Bay commercial and recreational fisheries;
- fails to consider a reasonable range of alternatives, including a practicable alternative that would have less adverse environmental impacts;
- drastically underestimates the size of the mine; and
- fails to adequately analyze the direct, indirect, and cumulative impacts of the proposed mine, including potential impacts to the Bristol Bay watershed and the fisheries it supports and the potential impact of catastrophic tailings dam failure.

**I. WASHINGTON HAS A UNIQUE INTEREST IN PRESERVING THE INTEGRITY OF THE BRISTOL BAY WATERSHED AND FISHERY**

Washington State’s economic, educational, and cultural ties to Alaska, and to the Bristol Bay watershed and fishery in particular, render the impacts of the proposed Pebble Mine critically important to Washington. The development of Pebble Mine would have immediate and long-term adverse effects on Washington’s commercial fishing industry, recreational opportunities, and academic research. Without a thorough analysis of these impacts, moving forward with permitting the mine would be irresponsible; with such an analysis, Washington expects that it will be clear that permitting the mine would be deeply unwise and unacceptably harmful to Washington’s interests.

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<sup>21</sup> 40 C.F.R. § 1500.1; *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1185 (9th Cir. 2008) (The purpose of NEPA is twofold: “ensure[ ] that the agency ... will have available, and will carefully consider, detailed information concerning significant environmental impacts[, and] guarantee [ ] that the relevant information will be made available to the larger [public] audience.”) (citations omitted).

<sup>22</sup> 42 U.S.C. § 4321.

<sup>23</sup> *Utahns for Better Transp. v. U.S. Dept. of Transp.*, 305 F.3d 1152, 1163 (10th Cir. 2002); 40 C.F.R. §§ 230.10, 230.12.

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Although the proposed Pebble Mine lies over 1,400 miles from Cape Flattery, Washington and Alaska share a tightly intertwined history. After statehood, Washington's economic growth was fueled to a great degree by the Yukon Gold Rush, as would-be prospectors used it as an outfitting and transportation center for the northern goldfields. However, in the 100 years since, the close connection between Washington and Alaska has been founded not on mining, but on the health and bounty of Alaska's natural environment—and specifically the salmon fishery of Bristol Bay, which would be threatened by normal operations of the Pebble Mine, severely impacted by an expanded Pebble Mine, and devastated by unintended but predictable mishaps.

Consequently, the State of Washington has a significant interest in preserving the integrity of the Bristol Bay watershed and fishery, and ensuring that the Corps' NEPA and permit approval processes are thorough and accurate. That interest arises primarily from the presence of a substantial commercial and recreational fishing fleet that operates in Alaskan Waters but is based or supplied out of Washington, and the closely related business, recreational, and research opportunities that Bristol Bay offers to Washingtonians.

**A. Washington's Commercial Fishing Fleet Relies on a Healthy, Pristine Bristol Bay Salmon Fishery**

Alaska's outstanding natural environment has created an incalculably valuable renewable asset: a world-famous fishery, renowned for its productivity, variety, and untainted reputation. In particular, Bristol Bay is home to the last pristine salmon runs, and the largest sockeye run, in the world. Those runs, in turn, rely on the Bay's unpolluted headwaters, which reach into areas that would be developed by Pebble Mine and harmed by even normal mine operations. Rivers like the Kvichak and Nushagak spawn 46 percent of the global sockeye salmon population; tens of millions of adult salmon ply the waters of Bristol Bay before migrating up the rivers where they hatched years before.<sup>24</sup>

The numbers tell the tale: Roughly half of the global supply of wild salmon comes from the Bristol Bay commercial fishery.<sup>25</sup> The sockeye salmon migration alone can exceed 40 million fish.<sup>26</sup> Commercial and sport fishers value the salmon at over half a billion dollars. Other commercially valuable fish are found there as well; American commercial fishing boats hauled

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<sup>24</sup> *About Bristol Bay*, EPA, <https://www.epa.gov/bristolbay/about-bristol-bay> (last updated Apr. 20, 2017); Bellamy Pailthorp, *Northwest fishing fleet renews fight against proposed mine in Alaska's Bristol Bay*, KNBA (Mar. 22, 2019), <https://www.knba.org/post/northwest-fishing-fleet-renews-fight-against-proposed-mine-alaska-s-bristol-bay>.

<sup>25</sup> Julianna Rennie McClatchy, *Alaska mine seen as a threat to Pacific Northwest, salmon*, Spokesman-Review (Mar. 17, 2019), <http://www.spokesman.com/stories/2019/mar/17/alaska-mine-seen-as-a-threat-to-pacific-northwest/>.

<sup>26</sup> Paul Greenburg, *The Future of Alaska's Pebble Mine – and its salmon*, High Country News (June 28, 2018), <https://www.hcn.org/articles/climate-desk-the-future-of-alaska-pebble-mine-and-its-wild-sockeye-salmon>.

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5.5 billion pounds of Pacific trawl fish – Pacific cod, flounders, hake, Pacific Ocean perch, Alaska Pollock, and rockfishes – with a value of over \$761.2 million.<sup>27</sup>

This economic engine—the human management of which aims primarily to avoid active harm—is a continuing gold rush boom for Washington’s economy. Although the fishery is over a thousand miles to the northwest, Washington is the hub of the Alaska seafood industry. Puget Sound, in particular, is the base for the industry’s largest processors and biggest boats. In addition, Puget Sound is a transportation hub for Alaska seafood product entering the U.S. market and product sold to export markets.

Alaska’s commercial fishery directly employs nearly 14,000 people—including many fishermen and seasonal workers from Washington—and directly generates approximately \$500 million annually.<sup>28</sup> Washington residents own approximately 800 Bristol Bay fishing permits. Those permit owners hire additional support personnel who go north each fishing season. In a good year, a single boat might net as much as 100,000 pounds of salmon in the two-month window, earning a little more than a dollar per pound before expenses. The fish are off-loaded to vessels that bring the catch to the processor, where they are cleaned and readied for shipment. While most of the 32-foot fishing boats stay in Alaska, many of the larger tenders spend the winter moored at Fishermen’s Terminal in Ballard.<sup>29</sup> Thus, including multiplier effects, Alaska-related commercial fishing created 10,150 jobs and \$600 million in labor earnings in Puget Sound in 2013.<sup>30</sup>

The economic benefit, however, is not limited to fishing alone. The Alaska fishery, including Bristol Bay, generates a large Washington-based seafood processing industry as well. Puget Sound’s 36 seafood processing companies accounted for 82 percent of total first wholesale value of Alaska food production in 2013. Alaska-related seafood processing created 13,100 jobs and \$690 million in labor earnings in Puget Sound in 2013.<sup>31</sup> Between commercial fishing jobs and seafood processing jobs, Alaska’s seafood industry generates 23,900 jobs and \$1.3 billion in labor earnings in the Puget Sound region of Washington alone.<sup>32</sup>

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<sup>27</sup> NOAA Fisheries Publications, *Fisheries of the United States: Current Fisheries Statistics No. 2017* xxi (Michael Liddel & Melissa Yenko eds., 2017).

<sup>28</sup> *Why Alaska’s Pebble Mine Matters in Seattle*, Seattle Magazine (Jan. 2013), <https://www.seattlemag.com/article/why-alaskas-pebble-mine-matters-seattle>.

<sup>29</sup> *Id.*

<sup>30</sup> McDowell Group, *Ties That Bind: The Enduring Economic Impact of Alaska on the Puget Sound Region 2* (Feb. 2015) (prepared for Seattle Metro. Chamber of Commerce).

<sup>31</sup> *Id.*

<sup>32</sup> *Id.* at 1–2.

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**B. Washingtonians Benefit from a Pristine Bristol Bay Through Public Port Authorities, Marketing, Restaurants, and Recreational Opportunities**

Washington's interest in a thorough and accurate environmental review, and the protection of a pristine Bristol Bay fishery, goes beyond direct impacts of the commercial fishery. Public port commissions, private restaurants, and recreational fishers count on the Alaska fishery, including Bristol Bay.

First, Washington's proximity to the Alaska fishery creates a demand for public entities like the Port of Seattle and Port of Tacoma to offer facilities to vessel customers. At the Port of Seattle alone, 226 vessels actively fished in the Alaskan fisheries in 2017. Fishing vessels that moored at Port of Seattle facilities operating in the Alaskan fisheries generated gross earnings of \$455 million. In 2017, 226 fishing vessels operating in the North Pacific Fisheries utilized Port of Seattle facilities throughout the year, such as for periodic maintenance and repair or loading and off-loading. In 2017, gross earnings in Alaska's fisheries totaled more than \$1.0 billion. The revenues generated in 2017 by Port of Seattle vessels from fishing in Alaska—\$455 million—represented 44% of all gross earnings from the North Pacific Fisheries. Port of Seattle fishing vessel operator customers' harvested catch (Alaska and non-Alaska) equals an estimated 13% of total U.S. commercial fisheries in 2017.<sup>33</sup>

Second, the Washington-based fishery management and marketing industry benefits from the protection of the Alaska fishery, including Bristol Bay. Three fisheries-related government entities and eleven industry associations are based in Seattle. Together, they directly generate approximately 310 jobs and \$35 million in labor earnings. The management and marketing aspect of the Alaska fishery rests largely on the (accurate) perception of that fishery's pristine, unpolluted character. That perception—that brand—can be sullied by public awareness of a waste-producing mine. A recent news article quoted longtime Bristol Bay fisherman, and current CEO of the Bristol Bay Economic Development Corporation Norm Van Vactor: "If Pebble goes in, the Bristol Bay Sockeye brand and the entire Alaska Seafood brand will be tarnished... The state of Alaska has invested millions into building these brands and establishing Alaska as a premium brand in the marketplace. That brand is based on pristine habitat, sustainability, and high quality, not open-pit mining districts and acid mine drainage."<sup>34</sup>

Third, Washington-based restaurants indicate that they benefit substantially from protections for the Bristol Bay fishery. In a statement from the Seattle Restaurant Alliance, the organization emphasized the importance of salmon to their menus, and the role that the Bristol Bay fishery

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<sup>33</sup> Community Attributes, Inc., *Port of Seattle, Port of Tacoma, and The Northwest Seaport Alliance, Economic Impact Analysis* 30 (2019).

<sup>34</sup> Jessica Hathaway, *Pushing back on Pebble: Scientific community and Bristol Bay leaders offer testimony*, National Fisherman (Apr. 2, 2019), <https://www.nationalfisherman.com/alaska/pushing-back-on-pebble-scientific-community-and-bristol-bay-leaders-offer-testimony/>.

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has in their work.<sup>35</sup> Seattle restaurateur Tom Douglas, in objecting to the Pebble Mine, emphasized in an open letter to his customers, “Wild salmon are at the core of our identity and culture here in the Pacific Northwest. They have shaped our communities and the economy.”<sup>36</sup>

Finally, sport fishers located in Washington benefit from the extensive fishing opportunities in Bristol Bay. As a recent article in the Travel section of a national newspaper pointed out, “The chance to encounter such a tremendous variety of fish is a big part of its appeal for fly fishers and spin anglers alike . . . that, and the fact that the numbers—many fish and few anglers—make casting a fly or spinner here more an exercise in catching than merely fishing.”<sup>37</sup>

### **C. Washington Benefits from Industry and Academic Research Opportunities in the Bristol Bay Watershed**

Furthermore, Bristol Bay is a significant site for industry and academic research in the state of Washington. Professor Thomas Quinn of the University of Washington and his lab have conducted a long-term, multi-investigator program seeking to understand the basic and applied ecology of western Alaska sockeye salmon and their habitats. Dr. Quinn’s research draws significant value from Bristol Bay’s unique status as a pristine environment. The University maintains field camps in the greater Bristol Bay watershed for field research and education. This program has led to many academic articles, and has added decades of data to help maintain the “eyes and ears” of Bristol Bay since the study began in the 1940s. The length and breadth of this ecosystem-wide study makes it unique and uniquely valuable.<sup>38</sup> Dr. Quinn has noted that “Bristol Bay is one of the last really big, fully functioning salmon ecosystems on the planet.”<sup>39</sup>

Given Washington’s interests in the commercial, recreational, and educational value of the Bristol Bay fishery, Washington has a distinct interest in a thorough, comprehensive, and accurate statement of the environmental impacts of the proposed Pebble Mine.

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<sup>35</sup> Press Release, Seattle Rest. Alliance & Buss. for Bristol Bay, Seattle Restaurants, Businesses Praise City Council for Action Opposing Pebble Mine (Oct. 29, 2018), <https://www.b4bb.org/updates/press-releases/seattle-restaurants-businesses-praise-city-council-for-action-opposing-pebble-mine>.

<sup>36</sup> *Why Alaska’s Pebble Mine Matters in Seattle*, *supra* note 28.

<sup>37</sup> Chris Santella, Travel, *Alaska’s Bristol Bay region is rightly renowned as a fishing Mecca*, Wash. Post, Aug. 31, 2017, [https://www.washingtonpost.com/lifestyle/travel/alaskas-bristol-bay-region-is-rightly-renowned-as-a-fishing-mecca/2017/08/31/e6cea082-881f-11e7-a50f-e0d4e6ec070a\\_story.html?utm\\_term=.263b5f547205](https://www.washingtonpost.com/lifestyle/travel/alaskas-bristol-bay-region-is-rightly-renowned-as-a-fishing-mecca/2017/08/31/e6cea082-881f-11e7-a50f-e0d4e6ec070a_story.html?utm_term=.263b5f547205).

<sup>38</sup> *Research*, Univ. of Wash.: Salmon Science, <http://salmonscience.washington.edu/research/>; *The UW’s Living Lab in Alaska*, Univ. of Wash.: Salmon Science, <http://salmonscience.washington.edu/videos/uws-living-lab-alaska/>.

<sup>39</sup> *Why Alaska’s Pebble Mine Matters in Seattle*, *supra* note 28.



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## II. DETAILED COMMENTS ON THE PEBBLE MINE PROJECT DRAFT EIS

The Corps' Draft EIS fails to comply with NEPA and the CWA. As the “basic national charter for the protection of the environment,”<sup>40</sup> NEPA “requires that a federal agency consider every significant aspect of the environmental impact of a proposed action and inform the public that it has indeed considered environmental concerns in its decisionmaking process.”<sup>41</sup> “The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment.”<sup>42</sup>

Section 404 of the Clean Water Act authorizes the Corps to issue permits, after notice and an opportunity for public hearings, for the discharge of dredged or fill materials at specific disposal sites under certain conditions.<sup>43</sup> Specifically, the Corps may issue discharge permits only if the discharge will not result in significant degradation, there is not a practicable alternative that would have less adverse impacts, and all appropriate and practicable measures to minimize potential harm have been included.<sup>44</sup> In other words, only the least environmentally damaging practicable alternative can be permitted by the Corps.<sup>45</sup>

The Corps' review of the proposed Pebble Mine fails to take a “hard look” at the environmental impacts of this proposed action to ensure compliance with both NEPA and the CWA.<sup>46</sup> Instead, the Corps' Draft EIS represents a rushed and incomplete process that does not consider the full scope of potential mining activity or adequately review the significant, long lasting, irreversible, and potentially catastrophic environmental consequences—including damage to the world's most valuable sockeye salmon population—that could result from the proposed Pebble Mine. For the reasons stated below, the Draft EIS fails to comply with both NEPA and the CWA.

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<sup>40</sup> 40 C.F.R. § 1500.1.

<sup>41</sup> *Pit River Tribe v. U.S. Forest Serv.*, 469 F.3d 768, 781 (9th Cir. 2006) (quoting *Earth Island Inst. v. U.S. Forest Serv.*, 442 F.3d 1147, 1153–54 (9th Cir. 2006)).

<sup>42</sup> 40 C.F.R. § 1500.1(c).

<sup>43</sup> 33 U.S.C. § 1344; 40 C.F.R. § 230.10.

<sup>44</sup> *Utahns for Better Transp. v. U.S. Dept. of Transp.*, 305 F.3d 1152, 1163 (10th Cir. 2002); 40 C.F.R. §§ 230.10, 230.12.

<sup>45</sup> 40 C.F.R. § 230.10(a); *see also* EPA Scoping Comments at 1-2.

<sup>46</sup> *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989) (citation omitted).

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**A. The Draft EIS Fails to Consider a Reasonable Range of Practicable Alternatives**

The alternatives section “is the heart of the environmental impact statement.”<sup>47</sup> Agencies must rigorously explore and objectively evaluate all reasonable program alternatives, including no action, and must discuss the reasons for eliminating any alternatives which were rejected for detailed study.<sup>48</sup> To be effective, the alternatives analysis “should present the environmental impacts of the proposal and the alternatives in comparative form” to “sharply defin[e] the issues and provid[e] a clear basis for choice among options by the decisionmaker and the public.”<sup>49</sup> “[A]n alternative is properly excluded from consideration in an environmental impact statement *only* if it would be reasonable for the agency to conclude that the alternative does not bring about the ends of the federal action.”<sup>50</sup> “NEPA’s alternatives requirement, therefore, ensures that the ‘most intelligent, optimally beneficial decision will ultimately be made.’”<sup>51</sup>

In addition, under Section 404, the Corps must determine that “there are no practicable alternatives to the proposed discharge which would have less adverse impact on the aquatic system, so long as the alternative does not have other significant adverse environmental consequences.”<sup>52</sup> Alternatives are practicable if they are “available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purpose.”<sup>53</sup>

The alternatives considered in the Draft EIS fail to meet these requirements.

First, the project’s purpose and need statement unreasonably constrains the range of alternatives considered. The Corps explains that the “overall project purpose is to develop and operate a copper, gold, and molybdenum mine in Alaska in order to meet current and future demand.”<sup>54</sup> In defining this purpose and need, the Corps focused in part on the public interest in improving the

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<sup>47</sup> 40 C.F.R. § 1502.14.

<sup>48</sup> 40 C.F.R. § 1502.14(a) and (d). *See also Border Power Plant Working Grp. v. Dep’t of Energy*, 260 F. Supp. 2d 997, 1030 (S.D. Cal. 2003) (quoting *Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1520 (9th Cir. 1992) (an “agency must look at every reasonable alternative, with the range dictated by the nature and scope of the proposed action”)).

<sup>49</sup> *Anglers Conservation Network v. Pritzker*, 139 F. Supp. 3d 102, 118–19 (D.D.C. 2015) (emphasis in original, internal quotations excluded).

<sup>50</sup> *Id.*

<sup>51</sup> *N. Alaska Env’tl. Ctr. v. Kempthorne*, 457 F.3d 969, 978 (9th Cir. 2006) (quoting *Calvert Cliffs’ Coordinating Comm., Inc. v. United States Atomic Energy Comm’n*, 449 F.2d 1109, 1114 (D.C.Cir.1971)).

<sup>52</sup> 40 C.F.R. § 230.10.

<sup>53</sup> *Id.*

<sup>54</sup> DEIS 1-4.

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economy of Alaska, creating jobs, and extracting natural resources for the benefit of the state.<sup>55</sup> Although agencies “enjoy considerable discretion to define the purpose and need of a project,” they may not “define its objectives in unreasonably narrow terms.”<sup>56</sup> Here, however, the Corps has done just that by focusing on PLP’s “specific private objectives” in crafting the purpose and need statement.<sup>57</sup> Although the Corps purports to incorporate broader public economic interests in its purpose and need statement, the statement adopted by the Corps led the agency to evaluate in detail only three action alternatives, all of which would develop the Pebble deposit as proposed by PLP.<sup>58</sup> The Corps did not consider in detail alternative mine locations or alternatives that would better minimize environmental harms from the mine.<sup>59</sup> Thus, the purpose and need statement unreasonably narrowed the range of alternatives considered.

Second, although the Corps states that economics is a driver of the purpose and need for the proposed action, none of the three action alternatives considered are reasonable or practicable from an economic standpoint. PLP has not demonstrated the economic viability of its proposed mine to extract only about 12 percent of the known resources of the Pebble deposit or otherwise demonstrated that the mine will yield the economic benefits to Alaska that the Corps’ identified in its purpose and need statement.

Those that have reviewed the economics of the proposed project express serious doubt about the economic feasibility of the project.<sup>60</sup> A Kerrisdale Capital report in 2017 states that the investment firm believes that “[t]he Pebble deposit is not commercially viable” and “the project is fundamentally and irretrievably flawed, requiring far too much expensive infrastructure to generate an adequate return on investment mining low-grade ore.”<sup>61</sup> Yet, the Draft EIS

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<sup>55</sup> *Id.*

<sup>56</sup> *Nat’l Parks Conservation Ass’n v. Bureau of Land Mgmt.*, 606 F.3d 1058, 1070 (9th Cir. 2010) (citations omitted).

<sup>57</sup> *Id.* (rejecting purpose and need statement so narrowly drawn as to foreordain approval of the project).

<sup>58</sup> DEIS 2-2 (“The base case for Action Alternative 1 is Pebble Limited Partnership’s (PLP’s) proposed Pebble Project”); DEIS 2-85 (“The mine site layout and processes under Action Alternative 2 (Figure 2-45) would be the same as Action Alternative 1, with the exception of the construction methods for the north embankment of the bulk TSF.”); DEIS 2-106 (“Action Alternative 3 considers ... the same mine site layout and processes as Action Alternative 1”); DEIS App. N (project description).

<sup>59</sup> *See* DEIS B-6–B-8 (eliminating from detailed review other mine locations); DEIS B-12–B-13 (eliminating from detailed review smaller mines at the Pebble deposit).

<sup>60</sup> *See* Letter from Richard K. Borden, Midgard Environmental Services LLC to Shane McCoy, U.S. Army Corps of Engineers – Alaska District, at 5 (Mar. 28, 2019) (calculating the conceptual net present value of the 20-year mine plan to be negative three billion dollars), <https://www.nrdc.org/sites/default/files/mccoy-pebble-mine-economics-letter-20190328.pdf>; Kerrisdale Capital, Northern Dynasty Minerals Ltd. (NAK), Cu at Zero (February 2017), <https://www.kerrisdalecap.com/wp-content/uploads/2017/02/Northern-Dynasty-Minerals-NAK.pdf>.

<sup>61</sup> Kerrisdale Capital at 3, 19, *supra* note 60.

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unreasonably ignores the potential economic shortcomings of the mine and instead assumes a foregone conclusion that the mine as proposed in each action alternative will create economic benefits for Alaska.<sup>62</sup> Without meaningful data to demonstrate the economic viability of the mine as proposed, the Corps cannot demonstrate that its action alternatives are reasonable under NEPA or practicable under the CWA.<sup>63</sup>

Moreover, the Draft EIS does not even consider the significant economic trade-off of mine development. Approving the Pebble Project could cause irreparable harm to one of the most sustainable fisheries in the world with economic consequences that will reverberate through Alaska, Washington, and beyond. Even if PLP could show that its proposed mine is economically feasible, given the significant collateral economic and environmental consequences of development, the no action alternative is the only alternative that reasonably aligns with the economic considerations of the purpose and need statement. For these reasons, Washington strongly urges the Corps to adopt the no action alternative. Not only is this the least environmentally damaging practicable alternative, it best serves the public interest in protecting the Bristol Bay region by protecting the unparalleled and economically significant fishery.

Third, even setting aside the purpose and need statement, the range of alternatives considered is inadequate because the variations between the action alternatives do not consider any meaningful alternatives to the mine as proposed by PLP. Instead, the differences between action alternatives consist mostly of changes to the transportation network associated with the mine and do not meaningfully change the size of the mine and its related operations.<sup>64</sup> Under all action alternatives, the mine footprint will be at least 8,086 acres, with only minor changes to the footprint size between action alternatives and their variations.<sup>65</sup> As proposed, a total of 1.4 billion tons of material would be mined over the life of the project.<sup>66</sup> Even with the variations in

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<sup>62</sup> See DEIS 4.3-14 (discussing employment opportunities and tax revenue from the proposed mine).

<sup>63</sup> The economic shortcomings of the proposed action alternatives also contribute the concerns about a tailings storage facility dam failure. As the United Nations has noted, “the majority of the tailings storage-facility failures ... can be attributed to ... the lack of management continuity and inadequate resourcing (especially financial) for the facility.” UNEP, *Mine Tailings Storage: Safety Is No Accident* 29 (Charles Roche et al. eds., 2017), [https://gridarendal-website.s3.amazonaws.com/production/documents/:s\\_document/371/original/RRA\\_MineTailings\\_lores.pdf?1510660693](https://gridarendal-website.s3.amazonaws.com/production/documents/:s_document/371/original/RRA_MineTailings_lores.pdf?1510660693).

<sup>64</sup> See DEIS 2-85 (“The mine site layout and processes under Action Alternative 2 (Figure 2-45) would be the same as Action Alternative 1, with the exception of the construction methods for the north embankment of the bulk TSF.”); DEIS 2-103 (noting that the summer-only ferry operations variant would be the same as described for Action Alternative 1); DEIS 2-85, 2-106 (describing the pile-supported dock variant for the two potential port sites); DEIS 2-106 (“Action Alternative 3 considers ... the same mine site layout and processes as Action Alternative 1”).

<sup>65</sup> See DEIS 2-120; Table 2-2.

<sup>66</sup> DEIS 2-12; see also DEIS 2-85 (Action Alternative 2 considers the same mine site layout and processes as Alternative 1, with the exception of the construction methods for the north embankment of the bulk TSF); DEIS 2-106 (Action Alternative 3 considers the same mine site layout and processes as Alternative 1).

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the transportation network, the overall permanent footprint of the alternatives and variations considered only changes by approximately 1,200 acres.<sup>67</sup> None of these alternatives contemplates the likely expansion of mine operations in the future.<sup>68</sup> Instead, the Corps unreasonably dismisses such an alternative as exceeding the scope of the proposed project, despite noting that Northern Dynasty, which owns the mine, “has communicated to shareholders that expanded development is possible.”<sup>69</sup> Such expansion seems likely given these representations and that fact that the current mining plan seeks to develop only about 12 percent or 1.4 billion tons of the known resources at the Pebble deposit.<sup>70</sup> Accordingly, the Draft EIS is insufficient without detailed consideration of more expansive mine operation at the Pebble Deposit.

The action alternatives also fail to contemplate a mining alternative that would significantly reduce the environmental harms of the proposed mine. Without considering such an alternative in detail, the Corps cannot satisfy its obligation to determine whether it is adopting the least environmentally damaging practicable alternative.<sup>71</sup> This is particularly true given that the Environmental Protection Agency has determined that a mine smaller than that considered by the action alternatives would cause significant and irreversible environmental damage.<sup>72</sup>

In short, simply altering the transportation options between alternatives does not constitute a reasonable range of alternatives that will allow the Corps to make an informed decision about whether and how to authorize the proposed project.

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<sup>67</sup> See DEIS 2-127; Table 2-2.

<sup>68</sup> DEIS B-14.

<sup>69</sup> DEIS B-14; see also N. Dynasty Minerals, Ltd., *Northern Dynasty Mines April 2019 Factsheet* (April 2019), [https://www.northerndynastyminerals.com/site/assets/files/4590/ndm\\_april\\_2019\\_final\\_factsheet.pdf](https://www.northerndynastyminerals.com/site/assets/files/4590/ndm_april_2019_final_factsheet.pdf) (describing the Pebble deposit as “a [t]remendous [s]tore of [w]ealth” that includes “6.5 million tonnes of measured and indicated resources” and 4.5 billion tonnes of inferred resources”).

<sup>70</sup> DEIS 2-12.

<sup>71</sup> *Friends of Santa Clara River v. U.S. Army Corps of Engineers*, 887 F.3d 906, 911 (9th Cir. 2018) (quoting *Bering Strait Citizens for Responsible Res. Dev. v. U.S. Army Corps of Eng’rs*, 524 F.3d 938, 955 (9th Cir. 2008)) (“That is, the Corps must analyze alternatives to the proposed discharge and ‘select the least environmentally damaging practicable alternative.’”).

<sup>72</sup> EPA, Proposed Determination to Restrict the Use of an Area as a Disposal Site; Pebble Deposit Area, Southwest Alaska, 79 Fed. Reg. 42314, 42316 (July 21, 2014) (explaining that a mine at the Pebble deposit processing 0.25 billion tons of ore over 20 years would still contribute to significant habitat loss and “erode the genetic diversity that is crucial to the stability of the overall Bristol Bay salmon fisheries”).

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**B. The Draft EIS Drastically Underestimates the Size, Scope, and Duration of Mining**

As noted above, the Draft EIS does not meaningfully contemplate mining operations that reflect the likely size of the mine over time. Although PLP's proposed project summary states that the operating life of the mine will be limited to 20 years with a "total of 1.44 billion tons of material mined over the life of the project,"<sup>73</sup> as the EPA noted in its scoping comments, this proposed project size is more than eight times less than the 11.9 billion tons estimated in PLP's 2011 Preliminary Assessment Technical Report.<sup>74</sup>

The 2011 Preliminary Assessment Technical Report contemplated three potential mining scenarios, all of which are larger than that proposed by PLP here, with the largest comprising of mining 6.5 billion tons over a 78-year period.<sup>75</sup> In addition the 2011 Report identifies "a number of opportunities that could add substantial additional value to the Pebble Project" including exploring additional zones of copper, gold, molybdenum, and silver mineralization outside the Pebble deposit.<sup>76</sup> Taken with Northern Dynasty's representations to its shareholders that expansion is possible,<sup>77</sup> it seems all but certain that PLP plans to expand mining operations beyond its current proposal.

Indeed, the Draft EIS identifies this as a possibility by considering as a cumulative impact an expanded development scenario that would develop 55 percent of the Pebble deposit over a 78-year period.<sup>78</sup> However, simply analyzing expansion as a cumulative impact does not give sufficient weight or detail to the expansive and significant impacts such a large mine would have on the region or recognize that mine expansion is interconnected with approval of the smaller proposed mine. Nor does it allow the Corps meaningfully to evaluate the impacts of the expanded mine scenario in the context of choosing the least environmentally damaging alternative now. In short, an expanded Pebble Mine is more than a cumulative impact of the proposed action; it is its logical endpoint. In such cases, NEPA prohibits agencies from breaking

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<sup>73</sup> DEIS App. N at 1.

<sup>74</sup> EPA Scoping Comments, at 3.

<sup>75</sup> Northern Dynasty Receives Positive Preliminary Assessment Technical Report for Globally Significant Pebble Copper-Gold-Molybdenum Project in Southwest Alaska (Feb. 23, 2011), <https://www.northerndynastyminerals.com/news/news-releases/2011/northern-dynasty-receives-positive-preliminary-assessment-technical-report-for-globally-significant-pebble-copper-gold-molybdenu/>.

<sup>76</sup> *Id.*

<sup>77</sup> DEIS B-14; *see also* Northern Dynasty Mines April 2019 Factsheet, [https://www.northerndynastyminerals.com/site/assets/files/4590/ndm\\_april\\_2019\\_final\\_factsheet.pdf](https://www.northerndynastyminerals.com/site/assets/files/4590/ndm_april_2019_final_factsheet.pdf) (describing the Pebble deposit as "a [t]remenodous [s]tore of [w]ealth" that includes "6.5 million tonnes of measured and indicated resources" and 4.5 billion tonnes of inferred resources").

<sup>78</sup> DEIS 4.1-8.

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a project into smaller component parts to minimize significant environmental impacts of the project.<sup>79</sup>

Even if it were appropriate for the Corps to analyze the cumulative impacts of mine expansion, the cumulative impacts analysis in the Draft EIS does not take the hard look required by NEPA. As the Draft EIS notes, an expanded mine would require additional tailings storage, additional water storage, new waste rock storage facilities, additional processing facilities, a concentrate pipeline, and a deepwater loading facility.<sup>80</sup> Yet, the cumulative impacts analysis does not meaningfully assess the impacts associated with this expansion development.

For example, the cumulative impacts analysis of fish values in the Draft EIS generally states that expanded mine operations would result in the loss of an additional 35 miles of anadromous stream habitat, including the entire footprint of Frying Pan Lake, “affecting sockeye, coho, chum, and potentially Chinook salmon.”<sup>81</sup> The analysis does not quantify the degree of those salmon impacts or otherwise specify the degree of displacement, injury, or mortality, stream flow changes, or sedimentation that the Corps notes would be caused by expanded mine operations.<sup>82</sup> Other cumulative impacts analyses, including those for commercial fishing, recreation, groundwater, and surface water, contain similar deficient analyses that generally identify increased impacts without meaningfully discussing or quantifying how an additional 58 years of mining with a larger open pit mine and expanded storage facilities for tailings and waste rock and a longer reclamation period will impact commercial and recreational fishing, recreational opportunities, habitat, sediment, and water availability and quality.<sup>83</sup> Such a perfunctory analysis of cumulative impacts violates NEPA.<sup>84</sup>

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<sup>79</sup> *Delaware Riverkeeper Network v. FERC*, 753 F.3d 1304, 1313 (D.C. Cir. 2014) (“An agency impermissibly ‘segments’ NEPA review when it divides connected, cumulative, or similar federal actions into separate projects and thereby fails to address the true scope and impact of the activities that should be under consideration.”).

<sup>80</sup> DEIS 4.1-8.

<sup>81</sup> DEIS 4.24-37.

<sup>82</sup> *Id.*; see also Rachel A. Hovel, Assessment of Pebble Mine Draft EIS: Salmonid life history diversity and impacts to Iliamna Lake, at 3–4 (May 2019) (noting that evaluating impacts in terms of loss of habitat is inherently flawed because it does not account for population structure or life history diversity among fish in the watershed) (prepared for the Wild Salmon Center).

<sup>83</sup> See e.g., DEIS 4.5-19–4.5-20 (recreation) DEIS 4.6-17–4.6-18 (commercial fishing); DEIS 4.16-46–4.16-48 (surface water hydrology); DEIS 4.17-26–4.17-28 (groundwater hydrology); 4.18-36 (water and sediment quality).

<sup>84</sup> *Kern v. U.S. Bureau of Land Mgmt.*, 284 F.3d 1062, 1075 (9th Cir. 2002) (citation omitted); *Klamath-Siskiyou Wildlands Ctr. v. U.S. Bureau of Land Mgmt.*, 387 F.3d 989, 993–94 (9th Cir. 2004) (Proper considering of indirect and cumulative impacts requires “some quantified or detailed information”; general statements about possible effects “do not constitute a hard look absent a justification regarding why more definitive information could not be provided.”).

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The Draft EIS's analysis is further flawed because it fails to recognize that approving a smaller Pebble mine will make additional mining development in the region more likely because it will fundamentally shift the character of the area from a wild, pristine, and undeveloped region that feeds a thriving fishing and tourism industry to a mining district complete with an extensive transportation network. As EPA noted, each new mine in the area will "eliminate some amount of fish-supporting habitat" and has the potential, if failure occurs, to "affect fish habitats well beyond the mine footprint."<sup>85</sup> Given this potential for expansion, the Draft EIS's consideration of the environmental impacts for the proposed project neglects to analyze the full scope of impacts associated with approving the current Pebble proposal.

In sum, the Corps fails to fully and adequately analyze the significant impacts of the incredibly likely scenario of a larger mine at the Pebble deposit and of broader mining operations in the region.

**C. The Draft EIS Fails to Adequately Analyze the Direct, Indirect, and Cumulative Impacts of the Pebble Project**

**1. The Draft EIS fails to adequately analyze the potential impacts of mining activities on fisheries and fish populations in the Bristol Bay region**

Regardless of the size, a mine at the Pebble deposit will have catastrophic consequences on the Bristol Bay watershed and the fishery and jobs it supports. As discussed above, the Bristol Bay fishery is an incredibly important economic resource that generates thousands of jobs for Alaskans and Washingtonians.<sup>86</sup> These impacts include the release of harmful levels of toxics, including selenium and acid mine drainage both during mining and after mine closure, changes to water temperature, alteration and blocking of stream crossings, filling of wetlands, dewatering of streams, and impacts from fuel and hazardous material spills.<sup>87</sup> All of these impacts will significantly and negatively affect salmon and other fish in the region, threatening the overall productivity of the Bristol Bay region.<sup>88</sup> By failing to adequately analyze these severe impacts

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<sup>85</sup> EPA Assessment, *supra* note 7, Executive Summary, at 26.

<sup>86</sup> See *supra* Part I; see also DEIS 3.6-4 (discussing the value of the fishery); DEIS 3.6-10 (noting a decline in Alaskan ownership of fishing permits);

<sup>87</sup> See EPA Assessment, *supra* note 7, Executive Summary (entire); FWS Scoping Comments, *supra* note 8, at 2-4 (listing potential impacts from the mine on salmon through changes to water quality and habitat); Kendra Zamzow et al., *Selenium Issues in the Pebble Project Draft EIS Position Paper 2* (Apr. 12, 2019) ("Our analysis indicates that the proposed Pebble project will release selenium at concentrations that exceed state water quality criteria and may exert ecotoxic effects during mine operation and have a high probability of exerting ecotoxic effects after closure.").

<sup>88</sup> See FWS Scoping Comments, *supra* note 8, at 2 ("Conservation of salmon spawning and rearing habitats within and downstream of the proposed mine and tailings storage areas are essential to maintaining the overall productivity of the Bristol Bay region."<sup>88</sup>); Zamzow et al., *supra* note 87, at 2.



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and their effects on the Bristol Bay fishery, the Draft EIS fails to take a hard look at these impacts.

The Draft EIS erroneously and egregiously concludes that the Pebble Project will not have measurable effects on the salmon population and the Bristol Bay fishery.<sup>89</sup> In so concluding, the Draft EIS ignores a multitude of evidence indicating the interconnected nature of the waters in the Bristol Bay watershed and the importance of the watershed as a whole, including its various streams and wetlands, in supporting a healthy salmon population.<sup>90</sup> As one recent study reported, Nushagak River sockeye salmon, which are important to the Bristol Bay fishery, “are produced by a spatial mosaic of habitats whose profitability shifts from year to year,” emphasizing “the importance of habitat complexity for stabilizing production of sockeye salmon” and contributing to ecosystem resilience overall.<sup>91</sup> Given the interconnectedness of these waters and their importance to salmon productivity, mining impacts to streams and wetlands that feed Bristol Bay or provide important spawning habitat for salmon will have impacts on the health and viability of the fishery. In addition, impacts to water quality will affect the health and viability of salmonids at all stages of life. Such harms are incredibly difficult to remediate once they have occurred on a large scale.<sup>92</sup> Despite the potential scale of the harms to fish populations, the Draft EIS engages in a cursory analysis of fish impacts that fails to consider impacts to distinct fish populations and to life history diversity and omits meaningful analysis of how various impacts will accumulate and interact over the life of the mine.<sup>93</sup>

The Draft EIS also unreasonably dismisses impacts to branding around the Bristol Bay fishery. To reach this conclusion, the Draft EIS engages in a cursory analysis about other salmon fisheries that exist in developed areas. But these comparisons are limited because, as the Draft

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<sup>89</sup> See DEIS 4.6-5 (Alternative 1) (mining operations “would not have measurable effects on the number of adult salmon returning to the Kvichak and Nushagak river systems as a result of project operations.”); see also DEIS 4.6-10 (Alternative 2) (“As with Alternative 1, in terms of magnitude and extent, Alternative 2 would not be expected to affect the health or value of the Bristol Bay salmon fishery ....”); DEIS 4.6-11 (“Under Alternative 3, magnitude, duration, and likelihood of effects of the project on commercial and recreational fishing would not be expected to be different than under Alternative 1 ....”); see generally DEIS 4.24.

<sup>90</sup> See, e.g., Michael Kravitz and Greg Blair, *On Assessing Risk to Fish Habitats and Populations Associated with a Transportation Corridor for Proposed Mine Operations in a Salmon-rich Watershed*, Env'tl. Mgmt. (May 11, 2019), <https://doi.org/10.1007/s00267-019-01171-w> (“Risks to salmonids from filling of wetlands, hydrologic modifications, spillage or runoff of contaminants and fine sediment, and dust deposition are likely to diminish the production of anadromous and resident salmonids in many of these streams” affected by the transportation corridor of the Pebble Project).

<sup>91</sup> Brennan et al., *supra* note 10, at 2; See also Sean R. Brennan et al., *Shifting habitat mosaics and fish production across river basins*, 364 *Science* 364, 783 (2019).

<sup>92</sup> FWS Scoping Comments, *supra* note 8, at 3.

<sup>93</sup> See generally DEIS 4.24; Letter from American Fisheries Society, to Program Manager, U.S. Army Corps of Engineers, Alaska Division, at 3 (June 13, 2019).

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EIS notes, “no other wild salmon fishery in the world exists in conjunction with an active mine of this size.”<sup>94</sup> As the Draft EIS acknowledges, efforts around marketing, improving product quality, and developing new markets have long-term effects on the value of salmon,<sup>95</sup> indicating changes in the marketing and public perception of the quality of fish from the Bristol Bay region could have long-term negative consequences on fish price and industry economics. And as noted above, those that make their living off this fishery have grave concerns about branding impacts.<sup>96</sup> The development of a large-scale mining operation within the Bristol Bay watershed could have such an impact, particularly if the Corps is wrong about its analysis of impacts to fish populations in the region. As a result, it is impossible for the Corps to dismiss without support this potential harm to the value of the brand.

In addition, the Draft EIS wrongly dismisses impacts to recreational fishing in the area and where such impacts are recognized, the Draft EIS fails to engage in sufficient analysis to determine the scope of impacts. For example, with respect to recreational fishing in rivers and streams in the Bristol Bay region, the Draft EIS determines that anglers will likely “be able to find similar opportunities on other streams in the region” but notes that this will only be the case “if the extent of effects of Alternative 1 are limited to a subset of regional fishing opportunities.”<sup>97</sup> Yet, the Draft EIS does not provide assurance that such impacts will be limited to a subset of regional fishing opportunities. Similarly, the Draft EIS tautologically notes that under Alternative 2, “[f]ishing effort should not be adversely affected as long as fish populations are unaffected.”<sup>98</sup> This analysis is both confusing and overly general and fails to take a hard and meaningful look at the impacts to recreational fishing opportunities and associated economic impacts in the Bristol Bay region. The analysis also ignores the value to the recreational fishery of the remote and wild nature of the Bristol Bay region.<sup>99</sup>

In sum, the Corps did not sufficiently analyze impacts to the Bristol Bay commercial and recreational fisheries. The Final EIS must engage in a more robust, thoughtful, and well-reasoned analysis of the Pebble Project’s impacts to this essential fishery.

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<sup>94</sup> DEIS 4.6-6.

<sup>95</sup> DEIS 3.6-5.

<sup>96</sup> *See supra* Part I.B.

<sup>97</sup> DEIS 4.6-8.

<sup>98</sup> DEIS 4.6-10–4.6-11; *see also* 4.6-12 (noting that under Alternative 3 “fishing effort should not be adversely affected ... as long as fish populations are unaffected by changes in distribution of fishing effort.”).

<sup>99</sup> *See supra* Part I.B.

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## 2. The Draft EIS does not consider the reasonably foreseeable effects of catastrophic tailings dam failure

The Draft EIS does not adequately analyze the environmental damage of a complete or partial tailings dam failure at any of the proposed facilities. While the Draft EIS addresses minor spills associated with normal operation, it does not analyze potential catastrophic releases of bulk and pyritic tailings.<sup>100</sup> NEPA does not allow the Corps to ignore such significant and reasonably foreseeable environmental harms associated with a proposed project.<sup>101</sup>

The Corps unreasonably dismissed a full breach of the bulk or pyritic tailing storage facility embankments as “an extremely low” risk and declined to review such a scenario in the Draft EIS.<sup>102</sup> As the United Nations has noted tailings storage facility leaks and collapses represent the biggest mining-related environmental threat.<sup>103</sup> Recent tailings dam failures at the Mount Polley Mine in British Columbia—where an estimated 7.3 million cubic meters of tailings solids and 17.1 million cubic meters of fluid were released during a breach of a tailings facility embankment—<sup>104</sup> and the Samarco and Brumadinho Mines in Brazil, which failed in 2015 and 2019 respectively, provide chilling examples of the catastrophic impacts of tailings dam failures and substantiate the need for comprehensive risk assessments.<sup>105</sup> Indeed, the Draft EIS recognizes these potential impacts, noting that “[h]istorical failures of tailings dams have caused damage, including human casualties, destruction of homes and property, economic loss, and environmental impacts, especially impairment of aquatic habitat in drainages beneath the failed embankments.”<sup>106</sup> The Draft EIS further recognizes that such tailings dam failures are not limited to history, noting that recent tailings dam failures in Canada, China, Mexico, and Australia “demonstrate that modern, well-engineered tailing facilities are subject to failure,”<sup>107</sup> and that human error is the common factor in all major tailings storage facility failures.<sup>108</sup> In its

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<sup>100</sup> DEIS 4.27-72.

<sup>101</sup> See *Pit River Tribe*, 469 F.3d at 781 (agency must every significant aspect of proposed action’s environmental impact).

<sup>102</sup> DEIS 4.27-72; see also Lynker Technologies LL, *A Model Analysis of Flow and Deposition from a Tailings Dam Failure at the Proposed Pebble Mine*, at a (Mar. 12, 2019) (submitted to The Nature Conservancy and Bristol Bay Regional Seafood Development Association) [hereinafter *Lynker Report*] (noting that the Corps’ probability determination was based on the probability of a breach during the 20-year operation of the mine and ignores that failure could occur after the operational life of the mine concludes).

<sup>103</sup> UNEP, *supra* note 63, at 4.

<sup>104</sup> DEIS 4.27-69.

<sup>105</sup> *Lynker Report*, *supra* note 102, at a.

<sup>106</sup> DEIS 4.27-69.

<sup>107</sup> DEIS 4.27-69.

<sup>108</sup> DEIS 4.27-71.

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2014 Assessment, EPA analyzed the impacts of a tailings dam failure would flood the North Fork Kuktuli River valley with tailings and sediment, impacting important salmon, trout, and Dolly Varden spawning and rearing habitat and continue downstream to the mainstem Kuktuli River.<sup>109</sup> Yet, despite these significant and foreseeable risks associated with mine development, the Draft EIS “ruled out for analysis” a massive catastrophic tailings release scenario.<sup>110</sup>

By failing to consider a massive catastrophic tailings release scenario, the Corps ignores a significant potential environmental impact of the proposed Pebble Project and fails to provide the public with meaningful information about the proposed action.<sup>111</sup> As the Draft EIS indicates, “[i]t is considered state-of-the-practice to design modern tailings dams to high industry standards; subject them to multi-phase risk analysis; and apply strict regulations on their construction and operation.”<sup>112</sup> Yet in declining to conduct a tailings storage facility failure assessment, the Corps fails to hold the Pebble Project to this standard. This failure is particularly significant given that the Pebble Project will use the centerline construction method to construct the bulk tailings storage facility,<sup>113</sup> which the Draft EIS notes is more likely to fail than the downstream construction method.<sup>114</sup> Moreover, the proposed bulk tailings storage facility is “approximately ten times larger than the facilities that failed at Mt. Polley and Samarco, and is nearly unprecedented in scale relative to historical dam failures.”<sup>115</sup>

A recent report modeling the potential impacts of a tailings dam failure at the Pebble Project indicates that a failure would have significant and far-reaching consequences for the Bristol Bay watershed. The report found that under all the scenarios tested, tailings from a dam breach “would travel more than 75 kilometers (~50 miles) downstream.”<sup>116</sup> In the simulation, mudflow “fills the valley bottoms, spreading tailings across the off-channel habitat in the floodplains.”<sup>117</sup> Even with conservative and limited data, the study’s model shows tailings “would be deposited in approximately 250 kilometers (155 miles) of streams that are mapped as salmon habitat, and approximately 700 kilometers (435 miles) of streams that have been identified as potentially

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<sup>109</sup> EPA Assessment, *supra* note 7, Executive Summary, at 21–22.

<sup>110</sup> DEIS 4.27-75. Somewhat paradoxically, the DEIS then analyzes two spill scenarios in detail, which were “chosen based on their relatively low probability of occurrence, and relatively high environmental impacts.” *Id.*

<sup>111</sup> *See Pit River Tribe*, 469 F.3d at 781.

<sup>112</sup> DEIS at 4.27-69.

<sup>113</sup> DEIS at 4.27-73-74.

<sup>114</sup> DEIS at 4.27-73 (dams designed with downstream construction methods are “less likely to fail than dams using centerline construction methods, especially under seismic shaking.”).

<sup>115</sup> Lynker Report, *supra* note 101, at a.

<sup>116</sup> *Id.*

<sup>117</sup> *Id.*

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suitable for salmon spawning and/or rearing.”<sup>118</sup> In short, a massive failure could be catastrophic for salmon populations and the Bristol Bay watershed as a whole. As the Draft EIS notes, recovery of such a massive release “would be extremely difficult” given the large volume of material and the remote, roadless nature of the area downstream of the mine.<sup>119</sup> Accordingly, even if such a tailings dam failure is low risk, the Corps still must analyze the potential impacts of such an event given the potentially catastrophic and foreseeable environmental consequences to the Bristol Bay region.

**III. CONCLUSION**

For the above reasons, Washington strongly urges the Corps to reconsider its NEPA and CWA analysis including the range of alternatives considered, the size of the mine considered, and the direct, indirect, and cumulative impacts of the propose Pebble Project.

We appreciate your consideration of this important matter.

Respectfully submitted,

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<sup>118</sup> *Id.* at b (internal citations omitted).

<sup>119</sup> DEIS 4.27-65, 4.27-72.