

1.0 PURPOSE AND NEED

1.1 INTRODUCTION

The United States (US) Army Corps of Engineers (USACE), Alaska District, Regulatory Division is examining the potential environmental impacts associated with Pebble Limited Partnership's (PLP) proposed project, as described in PLP's Department of the Army (DA) Permit application (POA-2017-271). In its application, PLP has asked for authorization to discharge fill material into waters of the US (WOUS) and for work in and the placement of structures in navigable waters of the US (NWUS) for the purpose of developing a copper-gold-molybdenum porphyry deposit (Pebble deposit). PLP's proposed mine location is in southwest Alaska, near Iliamna Lake, approximately 200 miles southwest of Anchorage and 60 miles west of Cook Inlet. The mine site and a majority of the proposed supporting infrastructure would be located in the Lake and Peninsula Borough (LPB), with the remainder of supporting infrastructure located in the Kenai Peninsula Borough.

1.2 APPLICATION DESCRIPTION

PLP has applied for authorization to discharge dredged and fill material into WOUS as part of its proposed development of the Pebble deposit. DA authorization for the discharge of dredged and fill material into WOUS is required by Section 404 of the Clean Water Act (CWA) (33 US Code [USC] 1344). PLP has also applied for authorization to work in and to place structures in NWUS. DA authorization for work and placement of structures in, over, or under NWUS is required by Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403). The application submitted by PLP on December 22, 2017, was determined complete in compliance with USACE regulations at 33 Code of Federal Regulations (CFR) Part 325.1(d). PLP has continued to identify opportunities that would reduce impacts to aquatic resources and to incorporate these avoidance and minimization measures into the project design.

PLP proposes discharges into WOUS and work in and placement of structures in NWUS in order to develop and operate an open-pit mine and associated ore processing facilities for the purpose of producing copper, gold, molybdenum, and other commodities for sale. Additional elements necessary for this purpose, identified in the application include: the construction of an 82-mile road from the mine site to a port facility; a port facility near Diamond Point; a lightering location in Iniskin Bay; a 164-mile natural gas pipeline originating on the Kenai Peninsula and extending across Cook Inlet to the port facility, following the transportation corridor, and terminating at the mine site; a 164-mile fiber optic cable paralleling the natural gas pipeline; concentrate and return water pipelines that follow the transportation corridor between the mine site and the port facility; and power generation facilities located at the mine and the port site. PLP states that the operating life of the resultant surface mine would be 20 years, that mine closure would last 20 years, and that post-closure monitoring activities would extend for many years thereafter. A more detailed summary of PLP's proposed project is provided in Chapter 2, Alternatives; the project description is provided in Appendix N.

1.3 FEDERAL DECISIONS TO BE MADE

DA authorization is required for the proposed permanent discharges of dredged or fill material into 2,231 acres and temporary discharge of fill into 773 acres of WOUS associated with construction of the mine and associated roads, port, concentrate and return water pipelines, fiber optic cable, and natural gas pipeline in wetlands and other WOUS under Section 404 of the CWA. DA authorization is also required for the work and structures associated with construction of the

marine facilities at the port, segments of the transportation corridor access road near the port, a lightering location, fiber optic cable, and the natural gas pipeline, as well as dredging at the port facility, in NWUS. The USACE has set forth implementing regulations in 33 CFR Parts 320-332.

Through review of the application, USACE identified two additional federal decision-makers that would use the Environmental Impact Statement (EIS) to inform their decisions; the US Coast Guard (USCG), and the Department of the Interior's Bureau of Safety and Environmental Enforcement (BSEE). The USCG has authority under the General Bridge Act of 1946, as amended, 33 USC 525 to review and approve locations and navigational clearances of bridges and causeways in or over NWUS; USCG authorization is required for proposed bridges over the Newhalen River and the Iliamna River. The USCG has set forth implementing regulations in 33 CFR Parts 114-118. The BSEE oversees safety, environmental protection, and conservation of resources related to the exploration for and development of offshore resources on the Outer Continental Shelf; BSEE authorization is required for the right-of-way (ROW) encompassing the natural gas pipeline between the Kenai Peninsula and the proposed port facility, but only that portion of the ROW that would lie on the Outer Continental Shelf of Cook Inlet. This authority derives from the Outer Continental Shelf Lands Act, as implemented by BSEE regulations at 30 CFR Part 250, Subpart J.

The decisions to be made by the three federal agencies, if those decisions are to grant applicable permits, would not fully authorize mining of the Pebble deposit because a number of activities proposed to be part of the project do not fall under federal authority. The State of Alaska has authority over many activities including, but not limited to: approval to construct the dams required for the tailings storage facilities and other impoundments, air and water discharges, Plan of Operations, Reclamation and Closure Plan, and the Waste Management Plan. For proposed roads and natural gas pipelines on state lands, PLP must also apply for and receive ROW leases from the State of Alaska. PLP must apply for and receive a number of additional federal, state, and local permits and approvals. Permit decisions by federal, state, and local governments are usually made independently of each other. In general, permit decisions are not dependent on another permit in order to be issued. One exception is that USACE may not issue a permit under Section 404 of the CWA if the State of Alaska denies a water quality certification for the proposed project. A list of permits, approvals, and consultations required for development and operation of the proposed project is provided in Appendix E.

1.4 ENVIRONMENTAL ANALYSIS

The USACE has determined that the proposed discharge of fill material into WOUS and/or work in and placement of structures in NWUS associated with PLP's application is a major federal action that could significantly affect the quality of the human and natural environment. Based on this determination, this EIS has been prepared under Section 102(2)(c) of the National Environmental Policy Act (NEPA) of 1969 (42 USC 4321 et seq.) and its implementing regulations promulgated by the Council on Environmental Quality (CEQ) (40 CFR Parts 1500-1508), and USACE regulations found at 33 CFR Part 325 Appendix B, NEPA Implementation Procedures for the Regulatory Program. NEPA procedures are designed to ensure that federal agencies identify and assess the reasonable alternatives to proposed actions, along with the environmental consequences of a proposed action and reasonable range of alternatives, in order to avoid or minimize the adverse effects of those actions upon the quality of the human environment. NEPA requires analysis and disclosure of potential impacts of the entire proposed project, including construction, operations, closure, and post-closure phases of the mine, transportation corridor, port, and natural gas pipeline. However, not all activities or potential impacts described in this EIS are within federal authority.

Information gathered as part of the NEPA process will be used to inform USACE's public interest review determination, required by 33 CFR Part 320.4. Information will also be used by USACE to make a determination of the least environmentally damaging practicable alternative (LEDPA) under the CWA's Section 404(b)(1) Guidelines and any appropriate required compensatory mitigation for unavoidable impacts to WOUS. No discharges of dredged or fill materials are permitted to be authorized by USACE under the CWA if there is a practicable alternative that would have less adverse impact on the aquatic ecosystem, as long as the alternative does not have other significant adverse environmental consequences.

An EIS is used to inform the public and agency decision-makers, but it is not a decision document. A joint Record of Decision (ROD) by the USACE and USCG, issued at the conclusion of the NEPA process, will record each appropriate federal agency's decision(s), identify the alternatives considered in reaching those decision(s), and identify practicable means to avoid or minimize environmental harm (if required).

As the lead federal agency under NEPA, USACE issued a Notice of Intent (NOI) to prepare an EIS and a Notice of Scoping for the Pebble Project was published in the Federal Register (FR) on March 29, 2018 (83 FR 13483; page 13483-13484). The scoping comment period was extended by 60 days to continue through June 29, 2018. Nine public meetings were held during the scoping period. A total of 174,889 submissions were received through June 29, 2018. Details on the scoping process can be found in the Scoping Report (Appendix A).

The Notice of Availability (NOA) of the Draft EIS was published in the FR on March 1, 2019 (84 FR 41; page 7049). The comment period was extended to continue through July 1, 2019. Nine public hearings were held during the comment period. Dates and locations of the public hearings are listed in Chapter 6, Consultation and Coordination. A total of 311,885 submissions were received during the comment period. A summary of comments received on the Draft EIS and responses to comments can be found in the Comment Analysis Report (Appendix D).

The USACE coordinated this EIS with multiple cooperating agencies, which are defined as those agencies with jurisdiction by law or special expertise with respect to any environmental impact involved in a proposed project or its reasonable alternatives. Cooperating agencies may include state or local agencies and Tribal governments. The USACE invited USCG, BSEE, and other federal and state agencies, local governments, and federally recognized tribes to become cooperating agencies based on their special expertise and/or jurisdiction by law. The USCG, BSEE, the Advisory Council on Historic Preservation, the US Fish and Wildlife Service (USFWS), the US Environmental Protection Agency (EPA), the US Department of Interior National Park Service (NPS), the US Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA), the State of Alaska, the LPB, the Curyung Tribal Council, and the Nondalton Tribal Council accepted invitations to become cooperating agencies. A summary of consultation and coordination with agencies can be found in Chapter 6, Consultation and Coordination.

1.5 PURPOSE AND NEED

A permit applicant's stated purpose and need is used as part of the NEPA process to inform the reasonable alternatives to a proposed action that are evaluated in an EIS. PLP is wholly owned by Northern Dynasty Mineral Ltd. and was established to design, permit, construct, and operate a mine at the Pebble deposit. PLP's stated purpose is to produce commodities, including copper, gold, and molybdenum, from the Pebble deposit in a manner that is commercially viable, using proven technologies that are suitable for the project's remote location. This purpose addresses PLP's stated need "to meet the increasing global demand for commodities such as copper, gold, and molybdenum." According to PLP, because the area PLP has leased for mineral development

is not served by existing infrastructure, achieving the project purpose requires the construction of facilities for the mining and processing of mineral-bearing rock, as well as construction of support and access infrastructure. The stated purpose of the natural gas pipeline from the Kenai Peninsula is to provide a long-term stable supply of natural gas to meet the energy needs of the project by connecting to the existing regional gas supply network.

Separate from the analysis in the EIS, USACE evaluates an applicant's stated purpose and need to consider a proposed project from the public's perspective (under the public interest review criteria). The public interest review evaluation is being developed with information contained in the EIS and will be appended to the ROD. Although USACE generally focuses on an applicant's statement, USACE, in all cases, exercises independent judgment in defining the purpose and need from both the applicant's and public's perspective.

From the broad, macroeconomic scale, the stated project need is reflected in the demand for copper, gold, and molybdenum. In 2019, the US consumed an estimated 2,039,276 tons of refined copper (USGS 2020c). Worldwide copper usage has tripled over the last 50 years and growth in the worldwide demand for copper is projected to continue (ICSG 2019). Copper is used in a variety of products and industries, including electrical and electronic products, industrial equipment, building construction, automobiles, and appliances.

Gold is used for the production of jewelry, electronics, and electrical components, official coins, and other uses (USGS 2005). In 2019, the United States consumed an estimated 165 tons of gold. (USGS 2020d). Worldwide, 412 tons of gold were consumed in 2016 (USGS 2019). Worldwide consumption of gold grew by almost 8 percent per year between 1980 and 1999, and by an average of 2.8 percent per year between 1992 and 2002 (USGS 2005).

The most common use of molybdenum is the production of alloy steels and superalloys, enhancing hardness, strength, and resistance to corrosion. Examples of uses of these alloys include in food handling equipment, in automobile parts, in construction equipment, and in heavy construction (USGS 2010). The average reported amount of molybdenum used in the United States between 2015 and 2018 was 18,602 tons. In 2019, the United States used an estimated 18,739 tons of molybdenum (USGS 2020e).

The USACE has determined that PLP's stated purpose is made too narrow by limiting the proposed development to the Pebble deposit. The public's interest in commodities such as copper, gold, and molybdenum does not dictate a particular source of these commodities and the public has also expressed interest in protecting the state's natural resources, such as fisheries. Additionally, although PLP has identified a need for these minerals and USACE assumes that a private applicant has completed appropriate economic evaluations and proposed a project that is needed in the marketplace, the primary minerals—copper, gold, and molybdenum—are not mineral commodities considered to be critical to the economic or national security of the United States as reflected in the national policy, "A Federal Strategy to Ensure a Reliable Supply of Critical Minerals." However, the public also has an interest in improving the economy of the state, in the creation of jobs in the state, and in the extraction of natural resources for the benefit of the state. This is demonstrated by scoping comments, which indicated a desire to bring economic opportunity and jobs to the region, as well as by policy language in the Alaska State Constitution and Alaska Statutes encouraging development of the state's mineral resources consistent with the public interest.

After evaluating an applicant's stated purpose and need from both the applicant's and the public's perspective, the USACE determines a proposed project's basic and overall purposes solely for evaluation of the project under the CWA 404(b)(1) Guidelines. A basic project purpose (typically general in scope) is used to determine if a project is water dependent. The USACE has determined that the basic project purpose is to mine mineral ore. An overall project purpose is

used to help identify practicable alternatives (i.e., those that are available and capable of being done after taking into consideration cost, existing technology, and logistics) for evaluation under the CWA 404(b)(1) Guidelines. The USACE has determined that the overall project purpose is to develop and operate a copper, gold, and molybdenum mine in Alaska to meet current and future demand.

In many instances, for actions subject to NEPA (such as USACE's evaluation of PLP's permit application), the analysis of alternatives in an EIS provides the information used by USACE for evaluation of alternatives under the CWA 404(b)(1) Guidelines. In review of PLP's permit application, USACE has determined that the construction of facilities and other infrastructure to support the proposed project is more appropriately evaluated as part of the alternatives and does not require specific inclusion in the basic or overall project purposes. Sometimes, an EIS may address a broader range of alternatives than required to be analyzed under the CWA 404(b)(1) Guidelines. The CWA 404(b)(1) Guidelines analysis is being developed with information contained in this EIS and will be included as an attachment to the ROD.