



## ENVIRONMENTAL BASELINE STUDIES

### PRELIMINARY SUMMARY STUDIES PERFORMED BY KEVIN WARING ASSOCIATES

#### 1. RECREATION

Kevin Waring Associates is preparing the recreation baseline description for a study area that includes all proposed Pebble Project facilities plus a broader region that includes extensive and important state and federal lands with recreational value in the extended periphery of the Pebble Project. This broader region's recreational resources include two national parks (Lake Clark National Park and Preserve, Katmai National Park and Preserve), four wild rivers (Alagnak, Chilikadrotna, Mulchatna, Tlikakila), and other state (McNeil River State Game Refuge and Sanctuary, Nushagak and Mulchatna Recreational Rivers) and federal lands noted for their wilderness recreational resources. The study area's recreational assets include exceptional habitat for rainbow trout, sockeye salmon, and brown bears. These assets make the study area a popular destination for sport fishing, hunting, wildlife viewing, and a variety of other wilderness recreation activities.

The purpose of the baseline description is to describe the study area's various recreational resources, as well as the types, locations, levels, and economic importance of recreational activities that they support.

The recreation study area is bounded on the east by west Cook Inlet, the northern boundary of Lake Clark National Park and Preserve on the north, the Mulchatna River drainage on the west, and the midline of Katmai National Park and Preserve on the south. The Pebble Project area occupies only a small part of the larger study area. As appropriate, the baseline description provides more detailed information for the Pebble Project vicinity than for other areas.

Kevin Waring Associates has accomplished the following tasks for the recreation baseline description:

- Identified and mapped the location of about 60 wilderness recreation lodges that support sportfishing, hunting, and other wilderness recreation in the region.
- Compiled and analyzed six years of sportfish data from the Alaska Department of Fish and Game to quantify and locate the level of sportfishing activity and catch by species for the 48 most popular fishing destinations in the study area. The findings were mapped to show the geographic

distribution of sportfishing activity and catch by major species for the study area as a whole and for the Pebble Project vicinity.

- Compiled and analyzed five years of data from the Alaska Department of Fish and Game on large-mammal hunting activities and harvests. The results for each major species (caribou, moose, brown bear, and sheep) were mapped to show the geographic distribution of hunting effort and harvest by species for 41 game management subunits in the study area and for the Pebble Project vicinity.
- Compiled and compared sportfishing and hunting data for the study area and for the state as a whole to put the relative contribution of the study area into statewide perspective.
- Compiled and analyzed historical data to show long-term trends in sportfishing and hunting in the study area.
- Identified and mapped the most popular locations for such wilderness recreation activities as wildlife viewing, backcountry camping and hiking, boating, rafting, canoeing, and kayaking.
- Identified and mapped popular flightseeing routes within the study area.
- Inventoried and mapped the location and management status of federal and state public lands with identified recreational resources that are managed for recreational use. In addition to two national parks, four wild rivers, a state game refuge and sanctuary, and the Nushagak and Mulchatna rivers recreation area, the inventory identified other federal and state lands managed for habitat and other recreation-supporting uses.
- Compiled and analyzed data on annual visitation levels since 2000 to Lake Clark National Park and Preserve and to Katmai National Park and Preserve; also, compared visitation to these two national parks with other national parks in Alaska and elsewhere in the nation.
- Inventoried commercial providers of recreational services in the study area by type of service provided and by base of operations.
- Estimated the economic contribution of commercial and non-commercial recreation in the study area to the regional and statewide economy.

The above information, and other relevant background, is being integrated into a comprehensive report on recreation in the study area.

## **2. LAND AND WATER USE**

Kevin Waring Associates also is preparing the land and water use baseline description. The study area for this study is identical to the study area for the recreation baseline description.

The purpose of the land and water use baseline description is to provide baseline information about existing land and water ownership and use patterns, land use and management plans, and land management regimes in the Pebble Project vicinity and other areas that might be affected by project development and operations. As appropriate, the study also covers ownership and management of tidelands and surface waters. This information will provide a basis for later assessment of the proposed project's potential effect on land and water use in the study area.

The study area is the most sparsely populated region in Alaska, sparser than the North Slope. The major landowners in the study are federal and state governments and Alaska Native regional and village corporations. Additional private landholdings are centered in settlements or at remote Native allotments and homesteads dispersed throughout the study areas. The predominant land use is habitat and wilderness. Outside the few small, remote settlements, the major human uses are subsistence and low-intensity wilderness recreation. The study area is blanketed by numerous overlapping federal, state, and local governmental jurisdictions.

KWA has accomplished the following tasks for the baseline report on land and water use:

- Compiled and mapped general land ownership in the study area and detailed land ownership in the Pebble Project vicinity.
- Identified and mapped the planning designation and applicable management guidelines for state and federal public lands covered by official management plans.
- Profiled the land use and coastal management plans and regulations of the major local governmental planning jurisdictions (Lake and Peninsula Borough, Kenai Peninsula Borough, Bristol Bay Borough, Bristol Bay Coastal Resource Service Area) that govern the study area and, particularly, the Pebble Project vicinity.
- Described existing state and local governmental transportation plans that may affect future land use patterns in the study area.
- Identified and mapped Northern Dynasty Mines Inc.'s mining claims and other mining claims in the Pebble Project vicinity.
- Described the status of land transfers under the Alaska Native Claims Settlement Act to the Alaska Native regional and village corporations in the Pebble Project vicinity.
- Described the status of ongoing federal, state, and local land use and transportation plans and studies that might affect future land use and management in the study area.

The study findings are being incorporated into a baseline report with numerous maps, charts, and tables to illustrate existing land and water ownership, use, and management patterns.

### **3. SOCIOECONOMICS**

Kevin Waring Associates, supported by the McDowell Group, is developing the socioeconomic baseline report. The McDowell Group is preparing the economic element; its activities are described in a separate summary.

The study area for the socioeconomic baseline description has been broadly defined to encompass all the communities and regional governments whose residents are apt to become engaged in some manner with Pebble Project development and operation. This includes a core study area of the seven communities (Igiugig, Iliamna, Kokhanok, Newhalen, Nondalton, Pedro Bay, and Port Alsworth), the balance of the Bristol Bay region (the rest of Lake and Peninsula Borough, Bristol Bay Borough, Dillingham census area), and the three governmental jurisdictions in Cook Inlet region (Municipality of Anchorage, Kenai Peninsula Borough, Matanuska-Susitna Borough) which, though distant from the Pebble Project, may supply workers and services to the project.

Major topics in the socioeconomic baseline study include the population and economy of the entire study area and, for the core study-area communities, the condition and capacity of community infrastructure and housing, local land use and ownership, and governance institutions for funding and delivering community services. The core study area consists of seven small, remote communities, all of which are heavily dependent on air transportation for intra- and inter-regional movement of passengers and supplies and on imported fuel supplies. Because the proposed Pebble Project has the potential to alter transportation and energy supply arrangements for the core study area communities, existing transportation and energy facilities, services, and costs were profiled in detail for those communities.

Kevin Waring Associates is compiling the following information for the socioeconomic baseline description:

- Description of the cultural and development history of the core study-area communities.
- Community and regional population trends and characteristics.
- Maps of the physical layout and local land use and ownership for each of the core area communities.
- Profiles of the existing community infrastructure.
- Description of the local governance institutions that deliver community services to the core study-area communities and the rest of the Bristol Bay region communities. This includes an overview of governmental structures—including quasi-public entities—and their powers and funding sources, as well as the inter-relationship of regional governance institutions.
- Inventory of existing air, marine, and overland transportation facilities and services to the study-area communities.
- Trends in air-passenger traffic volumes and air freight shipments (both private carrier and bypass mail) to and through Iliamna and directly to core study-area communities.
- Current air passenger and freight costs (both private carrier and bypass mail) between study-area communities and regional centers such as Anchorage and King Salmon.
- Arrangements for delivery of bulk fuels to core study-area communities.
- Local bulk fuel storage capacity, consumption, and costs.
- Profiles of local electric power utilities, their existing power generation and distribution facilities, their fuel consumption and costs, and their customer rates.

This baseline information, together with the economic information being compiled by the McDowell Group, will be synthesized into a comprehensive socioeconomic baseline description for the study area.