



# Northern Dynasty Minerals Ltd.

The **PEBBLE Project** | The **Future** of U.S. Mining & Metals

TSX: **NDM** NYSE AMERICAN: **NAK**



**THE TIME TO INVEST IN  
NORTHERN DYNASTY IS NOW**

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## INVESTMENT HIGHLIGHTS

### 100% owner of the Pebble Project, Alaska

#### **A WORLD CLASS RESOURCE**

- Among the globe's greatest accumulations of metal
- Untapped exploration upside
- Cu/Au/Mo/Ag/Re grades facilitate near-term development

#### **OPTIMIZED & DE-RISKED PROJECT**

- Project designed for operating & permitting success
- Final EIS reflects a 'permissible' project<sup>1</sup>
- >US\$800M investment in science, engineering & social licence

#### **CLEAR PATH TO VALUE**

- Favourable Final EIS
- Record of Decision (ROD) expected during current Federal Administration
- Strong, sustainable Native partnerships in Southwest Alaska
- Strategic alignment at federal and state level

#### **UNIQUE INVESTMENT OPPORTUNITY**

- Extraordinary near-term & long-term value upside
- Financing optionality
- Positioned to capture burgeoning markets for strategic metals
- On U.S. soil & Rule of Law

## PEBBLE: NEXT GOALS

- **Final EIS (July 2020) & ROD**
  - Lead federal regulator, the US Army Corps of Engineers, published a favorable Final EIS for Pebble Project on July 24, 2020
  - Positive ROD & issuance of key federal permits expected during current Federal Administration
- **Strategic Partnership: Targeting 2021**
  - Pebble viewed as a Tier-1 opportunity
  - Timeline influenced by COVID-19 travel restrictions
- **State Permitting: 2021 – 2023**
  - Pebble will initiate State of Alaska permitting as soon as practicable
  - Strategic, sequenced approach to advance project timeline while partnering process unfolds
  - State permits based on clear, objective performance standards and detailed engineering requirements
  - State of Alaska actively supports responsible mineral development
- **Final Investment Decision: 2023/2024**
- **Construction: 2023/2024 – 2026/2027**
- **Commencement of Mine Operations / First Concentrate Shipment: 2026/2027**

1. Least Environmentally Damaging Practicable Alternative

# PEBBLE: A WORLD CLASS MINERAL RESOURCE

Pebble Resource Estimate  
August 2020

Category	Cutoff CuEQ %	CuEQ %	Million Tonnes	Cu (%)	Au (g/t)	Mo (ppm)	Ag (g/t)	Re (ppm)	Cu (B lbs)	Au (M oz)	Mo (B lbs)	Ag (M oz)	Re (Kkg)
Measured	0.3	0.65	527	0.33	0.35	178	1.7	0.32	3.83	5.93	0.21	28.1	167
	0.4	0.66	508	0.34	0.36	180	1.7	0.32	3.81	5.88	0.20	27.4	163
	0.6	0.77	279	0.40	0.42	203	1.8	0.36	2.46	3.77	0.12	16.5	100
Indicated	1.0	1.16	28	0.62	0.62	302	2.3	0.52	0.38	0.56	0.02	2.0	14
	0.3	0.77	5,929	0.41	0.34	246	1.7	0.41	53.58	64.81	3.21	316.4	2,443
	0.4	0.82	5,185	0.45	0.35	261	1.8	0.44	51.42	58.35	2.98	291.7	2,271
Measured + Indicated	0.6	0.99	3,455	0.55	0.41	299	2.0	0.51	41.88	45.54	2.27	221.1	1,748
	1.0	1.29	1,412	0.77	0.51	343	2.4	0.60	23.96	23.15	1.07	109.9	853
	0.3	0.76	6,456	0.40	0.34	240	1.7	0.41	56.92	70.57	3.42	344.6	2,615
Inferred	0.4	0.81	5,693	0.44	0.35	253	1.8	0.43	55.21	64.06	3.18	320.3	2,431
	0.6	0.97	3,734	0.54	0.41	291	2.0	0.50	44.44	49.22	2.40	237.7	1,848
	1.0	1.29	1,440	0.76	0.51	342	2.4	0.60	24.12	23.61	1.08	112.0	867
Inferred	0.3	0.55	4,454	0.25	0.25	226	1.2	0.36	24.54	35.80	2.22	170.4	1,603
	0.4	0.68	2,646	0.33	0.30	269	1.4	0.44	19.24	25.52	1.57	119.1	1,154
	0.6	0.89	1,314	0.48	0.37	292	1.8	0.51	13.90	15.63	0.85	75.6	673
	1.0	1.20	361	0.68	0.45	377	2.3	0.69	5.41	5.22	0.30	26.3	251

- **6.5 billion tonnes** of measured & indicated resources containing: 57 B lb Cu, 71 Moz Au, 3.4 B lb Mo, 345 Moz Ag & 2.6 M kg Re
- **4.5 billion tonnes** of inferred resources, containing: 25 B lb Cu, 36 Moz Au, 2.2 B lb Mo, 170 Moz Ag & 1.6 M kg Re

NOTES:

David Gaunt, PGeo, a qualified person as defined under 43-101 who is not independent of Northern Dynasty, is responsible for the estimate.

Copper equivalent (CuEQ) calculations use metal prices: US\$1.85/lb for Cu, US\$902/oz for Au and US\$12.50/lb for Mo, and recoveries: 85% Cu, 69.6% Au, and 77.8% Mo (Pebble West zone) and 89.3% Cu, 76.8% Au, 83.7% Mo (Pebble East zone).

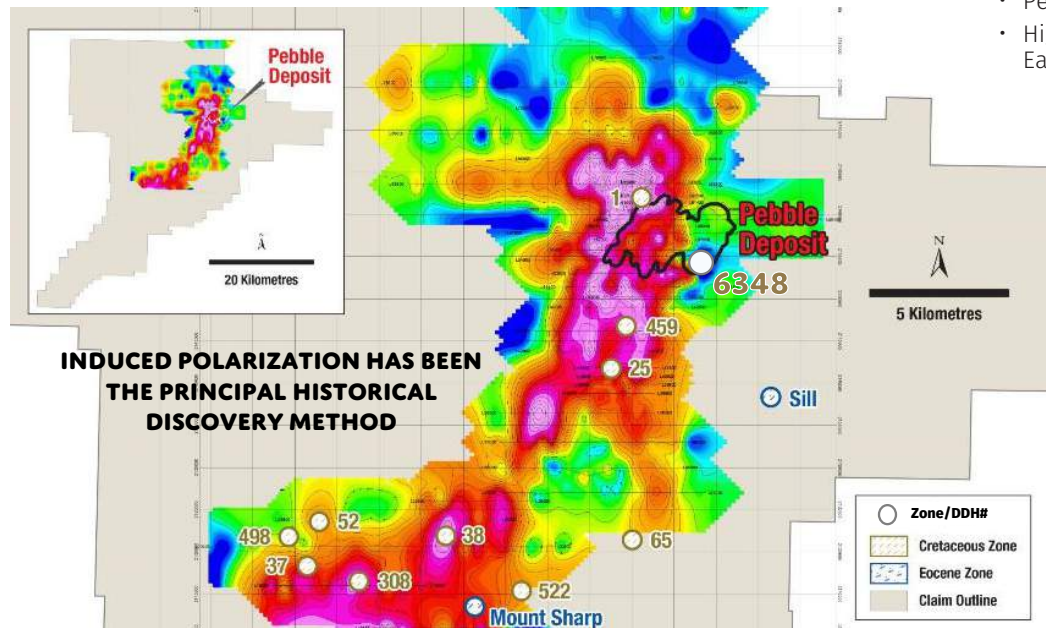
Contained metal calculations are based on 100% recoveries.

A 0.30% CuEQ cut-off is considered to be appropriate for porphyry deposit open pit mining operations in the Americas.

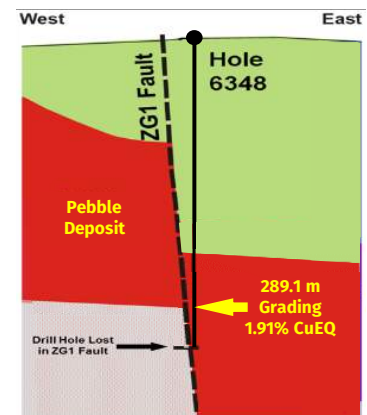
The mineral resource estimate is constrained by a conceptual pit shell that was developed using a Lerchs-Grossman algorithm and is based in the following parameters: 42 degree pit slope; metal prices and recoveries of US\$1,540.00/oz and 61% Au, US\$3.63/lb and 91% Cu, US\$20.00/oz and 67% Ag and US\$12.36/lb and 81% Mo, respectively; a mining cost of US\$1.01/ton with a US\$0.03/ton/bench increment and other costs (including processing, G&A and transport) of US\$6.74/ton.

All mineral resource estimates, cut-offs and metallurgical recoveries are subject to change as a consequence of more detailed analyses that would be required in pre-feasibility and feasibility studies.

## UNTAPPED EXPLORATION POTENTIAL



- Multiple prospective targets already identified
- Pebble Deposit open at depth and to the east
- Highest grades at Pebble truncated by the East Graben
  - Faulting was a post-mineralization event; patterns west of the ZG1 may be repeated to east
  - DDH-6348 intersected 289.1 m grading 1.91% CuEQ<sup>1</sup>



1. DDH-6348 intersected 289m grading 1.91% CuEQ (1.24% Cu, 0.79g/t Au, 0.042% Mo - CuEQ metal prices US\$3.00/lb Cu; US\$1,400/oz Au; US\$9.50/lb Mo).

## PEBBLE: FINAL ENVIRONMENTAL IMPACT STATEMENT (EIS)



- First time an independent, expert regulatory body has comprehensively reviewed a development plan put forward by Pebble Project proponents
- The most relevant and defensible science-based assessment of the project ever developed, and the administrative record upon which final permitting decisions will be made
- Describes a 'project of merit' that will:
  - Fully protect clean water, healthy fisheries & other environmental values
  - Create tremendous benefits for Alaska's people and governments
  - Expected to support a positive ROD

### Key Findings

#### On subsistence fish & wildlife resources:

"Overall, impacts to fish and wildlife would not be expected to impact harvest levels. Resources would continue to be available because no population level decrease in resources would be anticipated."

#### On the Bristol Bay commercial fishery:

"No measurable change in the number of returning salmon and the historical relationship between ex-vessel values and wholesale values...or processor operations."  
 "... would not be expected to have a measurable effect on fish numbers and result in long-term changes to the health of the commercial fisheries in Bristol Bay."

#### On water quality:

"...direct and indirect impacts of treated contact waters to off-site surface water are not expected to occur."  
 "...no effects on any community groundwater or surface water supplies."

#### On local communities:

"The increase in job opportunities, year-round or seasonal employment, steady income, and lower cost of living...would have beneficial impacts."  
 "The project could reduce or eliminate the current local population decline because of the increase in employment opportunities and indirect effects on education."



# PEBBLE PERMITTING CASE: LOW-RISK PROJECT DESIGN

## Conventional open-pit mine

- 20-year operating life
- Mining rate: ~70M tons per annum (average)

## Extremely efficient mining plan

- 0.12:1 life of mine waste: mineralized material

## 180,000 ton-per-day processing plant

- 1.3B tons over 20 years
- 12% of known mineral resource

## Conventional froth flotation with no contaminant penalties.

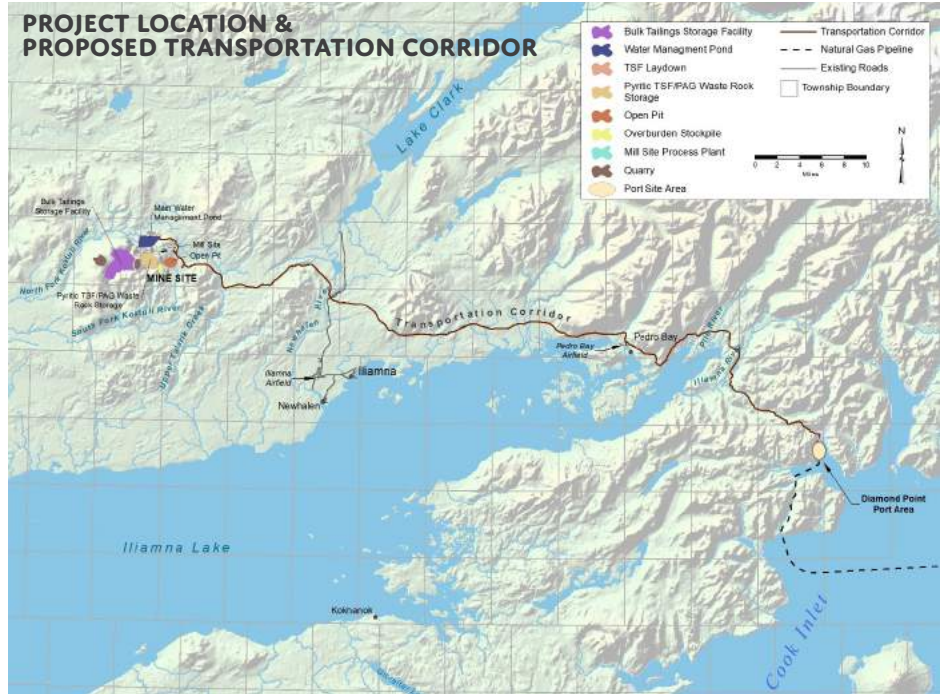
## Average annual metal production<sup>1</sup>:

- 613,000 tons of copper-gold concentrate
  - 318 million lb copper
  - 362,000 oz gold
  - 1.8 million oz silver
- 15,000 tons of molybdenum concentrate
  - 14 million lb molybdenum
  - 12,000 kg rhenium<sup>2</sup>

## Project infrastructure to benefit Alaska

- 270 MW natural gas fired generating plant
- 82-mile transportation system (road/pipeline)
- Permanent year-round port on Cook Inlet
- 164-mile pipeline from existing natural gas infrastructure on Kenai Peninsula to Pebble site

1. Estimated Production per Permitting Case
2. Based on proposed production of 15,000 tons year of molybdenum concentrate with a rhenium content of 900 ppm



# PEBBLE: POTENTIAL BENEFITS FOR ALASKA<sup>1</sup>

<b>JOBS</b>	<p>~850 DIRECT ~2,000 TOTAL</p> <p><b>AVERAGE MINING WAGE = US\$100K+</b></p>
<b>CONTRIBUTION TO ALASKA GDP</b>	<p><b>OPERATING BUDGET OF US\$400M+ (ANNUAL)</b></p>
<b>STATE TAXES &amp; ROYALTIES</b>	<p><b>US\$49M - US\$66M (ANNUAL)</b></p> <p><b>US\$970M - US\$1.32B OVER 20 YEARS</b></p>
<b>LAKE &amp; PENINSULA BOROUGH REVENUE</b>	<p><b>US\$19M - US\$21M (ANNUAL)</b></p> <p><b>US\$377M - US\$420M OVER 20 YEARS</b></p>

## Pebble would offer substantial economic benefits: locally, regionally & statewide

### Pebble can Help Address Alaska Fiscal Crisis

- Pebble represents:
  - Capital investment and GDP growth
  - Jobs and economic diversification
  - Much needed government revenue
  - New transportation and power infrastructure
- Lake & Peninsula Borough and Bristol Bay region are characterized by:
  - High levels of unemployment
  - High cost of living
  - Decreasing population
  - Outmigration and school closures

**Note:** The information in this section is indicative only and based on the mine development case submitted in the 404 permit application. As part of the EIS preparation process the Corps will undertake a comprehensive alternatives assessment and consider a broad range of development alternatives. See disclosure on Page 4. We continue to consider various development options and no final project design has been selected at this time. The information is intended to provide information about general economic effects/contribution of a development at Pebble to Alaska and the Lake and Peninsula region. It should not be used to evaluate the Pebble Project's impact on Northern Dynasty.

1. Includes estimates of mineral licensing tax, corporate tax, and state royalties

## MANAGEMENT

**Ronald Thiessen**, an accredited public accountant with more than 25 years of corporate development experience, is President and CEO of Northern Dynasty and a Director of the Pebble Partnership. Mr. Thiessen leads Northern Dynasty's corporate development and financing activities.

**Mark Peters** is a Chartered Professional Accountant (CPA, CA) with more than 20 years of experience in the areas of financial reporting and taxation, working primarily with Canadian and US public corporations. As Chief Financial Officer for Northern Dynasty, Mr. Peters is responsible for financial and corporate management activities.

**Bruce Jenkins** is a corporate and environmental science executive with over 40 years of experience in project and corporate management. He is contracted to the Pebble Partnership and guides environmental and permitting activities. Mr. Jenkins is Executive Vice President, Sustainability & Environment for Northern Dynasty.

**Adam Chodos** is a senior executive with over 19 years of experience in Corporate Development for major mining companies and Investment Banking advisory, specializing in the Natural Resources sector during which he had a significant role in over US\$28 billion of mergers, acquisitions, divestitures and capital markets transactions. He is Executive Vice President, Corporate Development.

**Stephen Hodgson** is a professional engineer with 40 years of experience in consulting, project management, feasibility-level design and implementation, and mine operations at some of the largest mineral development projects in the world, including Pine Point zinc mine in the Northwest Territories, the Red Dog zinc mine in Alaska, Antamina in Peru, and the Oyu Tolgoi copper-gold project in Mongolia. With his experience at northern and Arctic mines, he brings a unique perspective to the Pebble team and his role as Vice President, Engineering.

**Sean Magee** is a former journalist and speech writer who brings more than 25 years communications experience to his role as Vice President, Public Affairs for Northern Dynasty. Mr. Magee's experience/expertise spans the fields of government and stakeholder relations, community and First Nations/Native engagement, media relations, crisis and issues management. He has played a central role at Pebble for more than a decade.

**Mike Westerlund** has over 20 years' experience in the North American metals and mining industry. As Vice President, Investor Relations, his most recent position was with Hecla Mining Company, a US\$3 billion NYSE-listed precious metals company where he directed the investor relations department for eight years. Previously, Mr. Westerlund worked with a series of mineral exploration and mining firms with development stage and operating assets throughout North America.

**Trevor Thomas** is the company secretary to Northern Dynasty. Mr. Thomas has practiced in the areas of corporate commercial, corporate finance, securities and mining law since 1995, both in the private practice environment as well as in-house positions.

## BOARD OF DIRECTORS

Robert Dickinson, Ron Thiessen, Desmond Balakrishnan, Steven Decker, Gordon Keep, David Laing, Christian Milau, Ken Pickering

## CONTACT DETAILS

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## KEY SHARE INFORMATION

TSX: **NDM** NYSE AMERICAN: **NAK**

AS AT NOVEMBER 6, 2020

<b>Shares Basic:</b>	509.0 million
<b>Shares Fully Diluted<sup>1</sup>:</b>	555.6 million
<b>Insider Ownership<sup>1</sup>:</b>	12.6%
<b>Market Capitalization<sup>2</sup>:</b>	US\$392.1 million
<b>52-Week High/Low<sup>2</sup>:</b>	US\$2.49/US\$0.35
<b>Avg 3 Mo. Trade Vol<sup>2</sup>:</b>	2,222,937 daily (TSX)
	15,532,606 daily (NYSE American)
<b>Cash on hand<sup>3</sup>:</b>	CAN\$70.0 million (August 12, 2020)

1. Fully diluted as at November 6, 2020 and includes significant shareholders SKYY Capital Corporation Limited and Ostvast Capital which own 8.66% of the Company as at November 6, 2020.

2. As at November 6, 2020.

3. No change from previous.

All statements of Northern Dynasty Minerals Ltd. ("NDM") in this brochure, other than statements of historical facts, that address the permitting, development and production for the Pebble Project are forward-looking statements. These statements include statements regarding (i) the mine plan for the Pebble Project, (ii) the social integration of the Pebble Project into the Bristol Bay Region and benefits for Alaska, (iii) the political and public support for the permitting process, (iv) the issuance of a positive Record of Decision by the US Army Corps of Engineers and the ability of the Pebble Project to secure state permits, (v) the right-sizing and de-risking of the Pebble Project, (vi) the design and operating parameters for the Pebble Project mine plan, (vii) exploration potential of the Pebble Project, (viii) future demand for copper and gold, (ix) the potential partnering of the Pebble Project, and (x) the ability and timetable of NDM to develop the Pebble Project and become a leading copper, gold and molybdenum producer. Although NDM believes the expectations expressed in these forward-looking statements are based on reasonable assumptions, such statements should not be in any way be construed as guarantees that the Pebble Project will secure all required government permits, establish the commercial feasibility of the Pebble Project or develop the Pebble Project. Assumptions used by NDM to develop forward-looking statements include the assumptions that (i) the Pebble Project will obtain all required environmental and other permits and all land use and other licenses without undue delay, (ii) studies for the development of the Pebble Project will be positive, (iii) NDM's estimates of mineral resources will not change, (iv) NDM will be able to establish the commercial feasibility of the Pebble Project, and (v) NDM will be able to secure the financing required to develop the Pebble

Project. The likelihood of future mining at the Pebble Project is subject to a large number of risks and will require achievement of a number of technical, economic and legal objectives, including (i) obtaining necessary mining and construction permits, licenses and approvals without undue delay, including without delay due to third party opposition or changes in government policies, (ii) finalization of the mine plan for the Pebble Project, (iii) the completion of feasibility studies demonstrating that any Pebble Project mineral resources that can be economically mined, (iv) completion of all necessary engineering for mining and processing facilities, (v) the inability of NDM to secure a partner for the development of the Pebble Project, and (vi) receipt by NDM of significant additional financing to fund these objectives as well as funding mine construction, which financing may not be available to NDM on acceptable terms or on any terms at all. NDM is also subject to the specific risks inherent in the mining business as well as general economic and business conditions, such as the current uncertainties with regard to COVID-19. For more information, Investors should review the risk factors and related discussions in NDM's filings with the US Securities and Exchange Commission at [www.sec.gov](http://www.sec.gov) and its Canadian home jurisdiction filings available at [www.sedar.com](http://www.sedar.com).

The National Environment Policy Act Environmental Impact Statement process requires a comprehensive "alternatives assessment" be undertaken to consider a broad range of development alternatives, the final project design and operating parameters for the Pebble Project and associated infrastructure may vary significantly from that contemplated in this brochure. As a result, the Company will continue to consider various

development options and no final project design has been selected at this time.

This brochure also uses the terms "measured resources", "indicated resources" and "inferred resources". These terms are recognized and required by Canadian regulations (under National Instrument 43-101 Standards of Disclosure for Mineral Projects). The United States Securities and Exchange Commission (the "SEC") has adopted amendments to its disclosure rules to modernize the mineral property disclosure requirements for issuers whose securities are registered with the SEC under the U.S. Exchange Act, effective February 25, 2019 ("The SEC Modernization Rules"). The SEC Modernization Rules include the adoption of definitions of the terms and the categories of resources which are "substantially similar" to the corresponding terms under Canadian regulations in 43-101. Investors are cautioned not to assume that any part or all of the mineral deposits in these categories will ever be converted into reserves or be proven to be legally and economically mineable. Under Canadian rules, estimates of inferred resources may not form the basis of feasibility or pre-feasibility studies, or economic studies except for a Preliminary Economic Assessment as defined under NI 43-101. Investors are cautioned not to assume that part or all of an inferred resource is economically or legally mineable.

The technical information contained in this brochure has been reviewed and approved by qualified persons who are not independent of NDM. Information on geology, drilling and exploration potential was reviewed by James Lang, PGeo., Mineral Resources by David Gaunt, PGeo., and engineering by Stephen Hodgson, PEng.