



# THE PEBBLE PROJECT



HELPING TO SECURE AMERICA'S **GREEN FUTURE**

AUGUST 2025



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



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## CAUTIONARY & FORWARD LOOKING INFORMATION

**PLEASE REVIEW CAREFULLY**

This presentation includes certain statements that may be deemed "forward-looking statements" under the United States Private Securities Litigation Reform Act of 1995 and under applicable provisions of Canadian provincial securities laws. All statements in this presentation, other than statements of historical facts, which address permitting, including the effects of the incoming Trump administration and the proposed Critical Mineral Consistency Act, development, production for the Pebble Project and the ability of the Company to successfully complete the full royalty financing transaction announced on July 27, 2022 (the "Royalty Financing") are forward-looking statements. These include statements regarding (i) the development plan for the Pebble Project including the financial results of the 2023 PEA, including net present value and internal rates of return, and the ability of the Pebble Partnership to secure the financing to proceed with the development of the Pebble Project, including any stream financing and infrastructure outsourcing, (ii) the right-sizing and de-risking of the Pebble Project, (iii) the design and operating parameters for the Pebble Project development plan, including projected capital and operating costs, (iv) the social integration of the Pebble Project into the Bristol Bay region and benefits for Alaska, (v) the political and public support for the permitting process, (vi) the ability of the Pebble Project to ultimately secure all required federal and state permits, (vii) the ability of the Company and/or the State of Alaska to challenge the EPA's Final Determination process under the Clean Water Act and ultimately the Army Corps Record of Decision through legal actions; (viii) exploration potential of the Pebble Project, (ix) future demand for copper, gold and other metals, (x) if permitting is ultimately secured, the ability to demonstrate the Pebble Project is ultimately commercially viable, (xi) the potential addition of partners in the Pebble Project, and (xii) the successful completion of the full Royalty Financing. 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 or regarding the ability of NDM to develop the Pebble Project in light of the USACE remand decision and the EPA's Final Determination, establish the commercial feasibility of the Pebble Project, achieve the required financing or develop the Pebble Project.

Forward-looking statements are necessarily based upon a number of factors and assumptions that, while considered reasonable by NDM as of the date of such statements, are inherently subject to significant business, economic and competitive uncertainties and contingencies. Such forward looking statements or information related to the 2023 PEA include but are not limited to statements or information with respect to the mined and processed material estimates, the internal rate of return, the annual production, the net present value, the life of mine, the capital costs, operating costs estimated for each of the Proposed Project and the expansion scenarios for the Pebble Project, other costs and payments for the proposed infrastructure for the Pebble Project (including how, when, where and by whom such infrastructure will be constructed or developed), projected metallurgical recoveries, plans for further development, and securing the required permits and licenses for further studies to consider expansion of the operation, market price of precious and base metals, or other statements that are not statement of fact. 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) any feasibility studies prepared for the development of the Pebble Project will be positive, (iii) NDM's estimates of mineral resources will not change, and NDM will be successful in converting mineral resources to mineral reserves, (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, and (vi) NDM will be successful in its legal action against the EPA and the USACE and any action taken by the EPA in connection with the Final Determination or by the USACE in connection with the ROD will ultimately not be successful in restricting or prohibiting development of 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) the current development plan may not reflect the ultimate mine plan for the Pebble Project, (ii) 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, (iii) finalization of the mine plan for the Pebble Project, (iv) the completion of feasibility studies demonstrating that any Pebble Project mineral resources that can be economically mined, (v) completion of all necessary engineering for mining and processing facilities, (vi) the ability of NDM to secure a partner for the development of the Pebble Project, and (vi) receipt by NDM of significant additional financing, including the full Royalty Financing, to fund these objectives as well as funding mine construction. NDM is also subject to the specific risks inherent in the mining business as well as general economic and business conditions. Investors should also consider the risk factors identified in the Company's Annual Information Form for the year ended December 31, 2024, as filed on SEDAR+ ([www.sedarplus.ca](http://www.sedarplus.ca)) and included in its annual report on Form 40-F filed on EDGAR ([www.sec.gov](http://www.sec.gov)), as well as the risk factors set out in the Company's subsequent public continuous disclosure filings available on SEDAR+ and EDGAR. For more information on the Company, Investors should review the Company's filings with the United States Securities and Exchange Commission at [www.sec.gov](http://www.sec.gov) and its home jurisdiction filings that are available at [www.sedarplus.ca](http://www.sedarplus.ca).

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 currently contemplated. As a result, the Company will continue to consider various development options and no final project design has been selected at this time.

The technical information contained in this presentation 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.



# SUMMARY: STRONG RISK/RETURN POTENTIAL



## COPPER: AN IMPORTANT METAL FOR AMERICA'S GREEN FUTURE

- 👤 Transition to Green Energy expected to substantially increase demand for copper
- 👤 Forecast supply not sufficient to meet demand
- 👤 Higher copper prices expected
- 👤 US House of Representative passes Critical Mineral Consistency Act naming copper as a critical mineral for both the DOE and USGS. Currently before US Senate for approval



## PEBBLE: A WORLD CLASS RESOURCE YET TO BE UNLOCKED

- 👤 Largest undeveloped copper/gold deposit in the world
- 👤 Potential domestic solution to U.S. foreign supply chain dependence on critical minerals
- 👤 PEA September 2023: Positive Projected Financial Results, excellent optionality and important benefits for Alaska
- 👤 Untapped exploration upside



## PEBBLE: A PATH FORWARD

- 👤 New Republican administration making positive statements/actions on mining and the need for domestic critical mineral production
- 👤 Final EIS: no measurable impact on fisheries with significant social/economic benefits expected<sup>1</sup>
- 👤 NDM, Alaska and six native villages launched legal action against unsupportable EPA veto and USACE actions in Alaska Federal District Court
- 👤 Takings action launched in the US Court of Federal Claims (stayed in case needed)
- 👤 If fully funded, \$60 million Royalty Investment enhances financial strength to challenge these agency decisions

1. Pebble Project EIS - Final Environmental Impact Statement, July 2020

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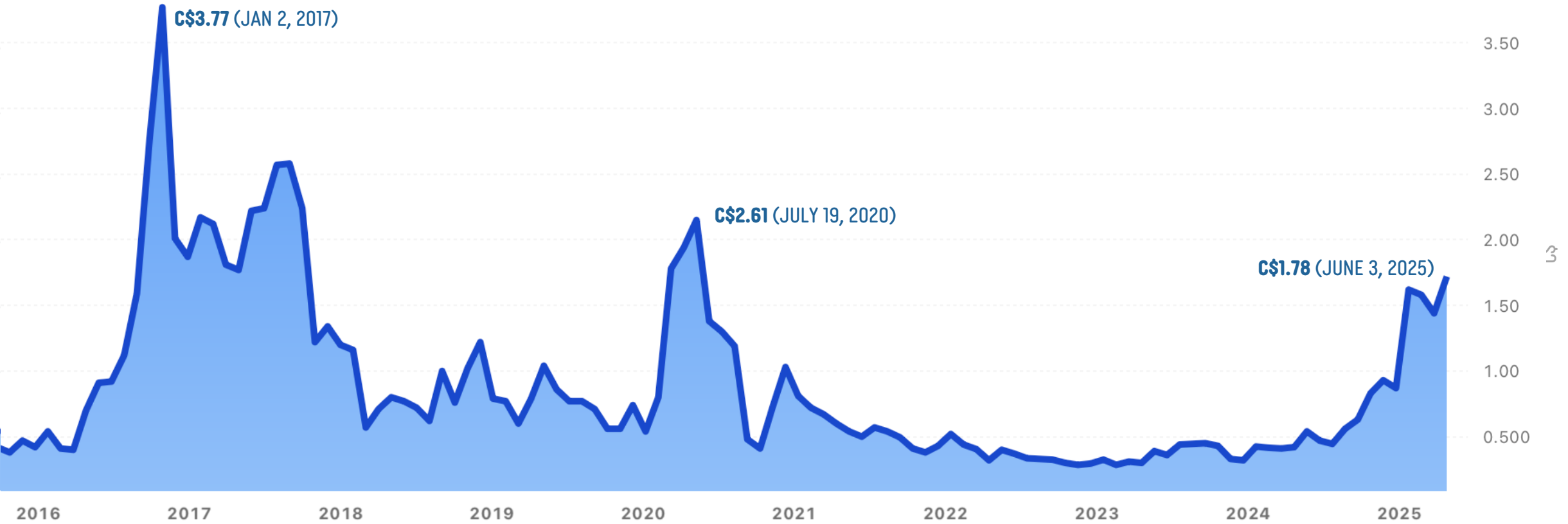
# UPSIDE POTENTIAL



NORTHERN DYNASTY MINERALS LTD

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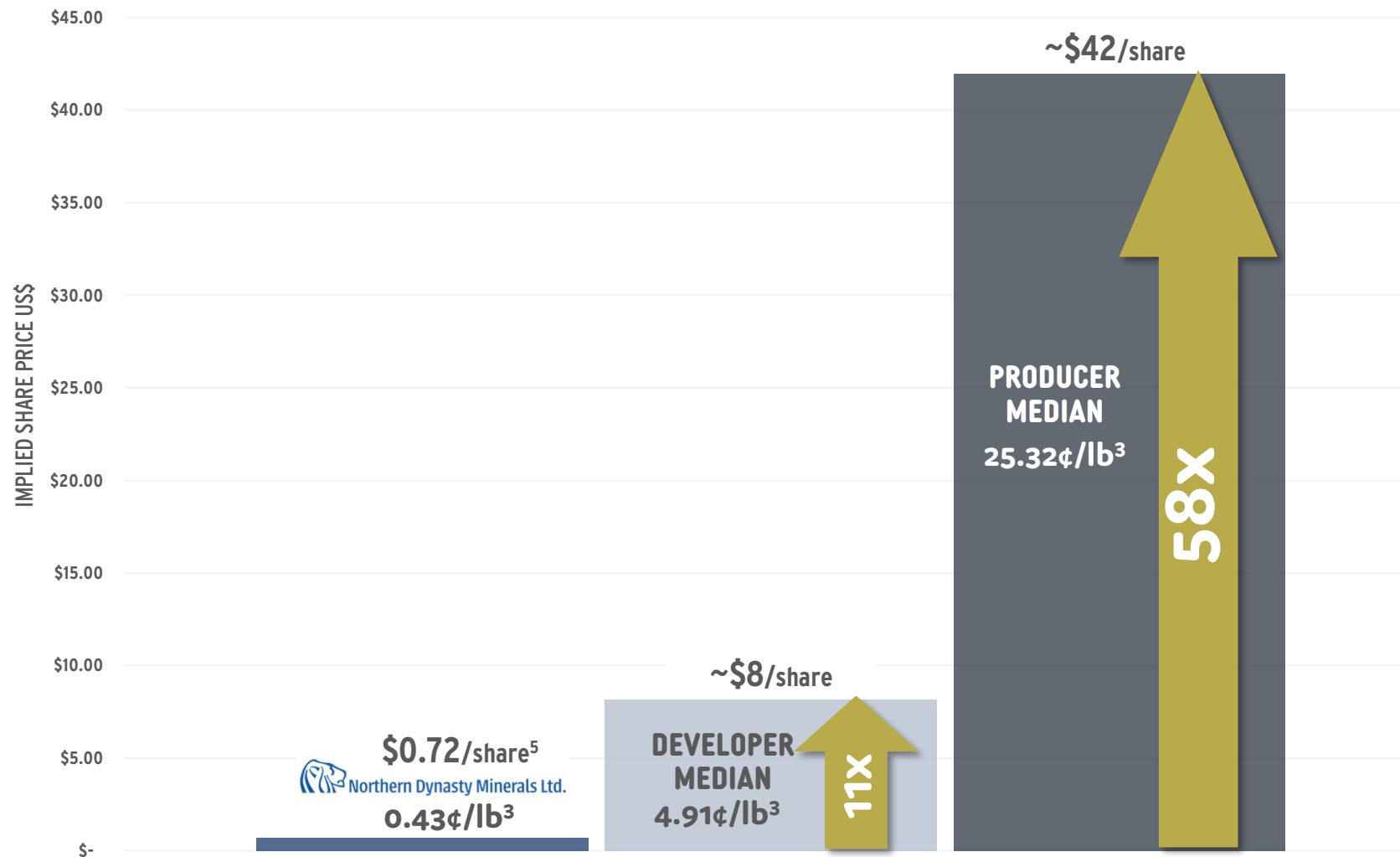
1D 1M 3M 1Y 5Y **10Y** All







# UPSIDE POTENTIAL FOR SHARE PRICE RE-RATING BASED ON COMPARATIVE INDUSTRY METRICS<sup>1,2,3</sup>



- Recoverable metal (excluding rhenium) in Pebble's large M+I resource expressed as CuEq (see Pebble Good Mining Ground for details) and compared to median values of contained M+I resources in CuEq of other Producer and Developer companies
- Pebble's very large M&I resource<sup>4</sup> of 89.1 B lbs. CuEq suggests potential for significant share price appreciation as the project advances
- Inferred resources (not included in the implied share price calculations) account for approximately 33% of the overall resource

- Source: BMO Capital Markets
- All dollar values are US\$
- Developer and producer multiples are calculated based on reported 'contained' metal; these multiples are applied to NDM's 'recovered' copper equivalent metal, as this is how the company reports per BCSC guidelines
- Resources are expressed as CuEq. CuEq resources are based on long-term, analyst consensus pricing of US\$4.00/lb copper; US\$1,800/oz gold; US\$23.50/oz silver; US\$15.00/lb molybdenum
- NYSE American: NAK as of February 6, 2025



# WHAT RECENTLY HAPPENED?

-  Donald Trump won U.S. Presidential election November 5, 2024
-  The Critical Mineral Consistency Act passed in the U.S. House of Representatives in November with bi-partisan support, recognizing copper is a critical mineral
-  Alaska Governor Dunleavy sent a report entitled “Alaska Priorities for Federal Transition” to President Trump in December
  - Asked the President to issue an Alaska-specific executive order on his first day in office
  - Reversing several Biden administration initiatives that are damaging to the resource extraction industry
-  President Trump signed an executive order - “Unleashing Alaska’s Extraordinary Resource Potential” on his first day of office (Jan 20)
  - The executive order effectively mirrored the Alaska Report requesting action
-  Lee Zeldin appointed as the head of the EPA in late January and appears to be pursuing a new direction for the EPA
-  Discussions with the U.S. Government to remove the Obama/Biden-era veto continue
  - To date direct negotiations have not yielded a timely result, NDM has now taken decisive legal action asking for a summary judgement
-  We are confident the court will find the veto was an unlawful overreach of the EPA's authority



# WHAT JUST HAPPENED? - VETO REMOVAL & LEGAL UPDATE

 We are pursuing a dual-track strategy to remove the Obama/Biden-era veto

- Negotiation: We are in active and ongoing discussions with U.S. government officials to withdraw the "illegal Obama/Biden-era veto." We are optimistic these talks will lead to a rational resolution
- Litigation: Simultaneously, we are pursuing legal action to maintain momentum and keep timelines tight

 This parallel approach is designed to secure the withdrawal of the veto as efficiently as possible.

## NEGOTIATION: Our Preferred Path Forward

 Our primary goal is a resolution that removes the unlawful veto without the need for continued litigation.

 Withdrawal of the veto is the most direct path to advancing a significant new source of domestic copper and unlocking substantial economic benefits for the region, state, and nation.

## LITIGATION: Summary Judgment:

 Judge Gleason of the Alaska Federal District granted our motion to set a summary judgment briefing schedule, finding there was "good cause shown"

- Summary judgement is a standard legal process that allows the court to evaluate the merits of the case based on the existing record, without requiring a full trial

 The court has established a clear timeline (providing a defined period to work towards a resolution) for legal proceedings:

- October 3, 2025: Opening briefs to be filed by Plaintiffs (State of Alaska, Pebble Partnership, Iliamna Natives Ltd., et al.)
- January 2, 2026: The Department of Justice (DOJ) will file its response brief
- February 27, 2026: Plaintiffs will file their response to the DOJ's brief



# CRITICAL MINERAL CONSISTENCY ACT<sup>1</sup>

 Passed by U.S. House of Representatives with bi-partisan support in November 2024

- Currently before U.S. Senate for approval

 The Act will ensure parity between USGS *critical minerals* and DOE *critical materials* lists to strengthen the domestic supply chain and include **copper**, electrical steel, silicon and silicon carbide on the critical minerals list

- Standardizes criteria for identifying critical minerals and includes provisions to reduce reliance on foreign imports by encouraging domestic mining, refining and recycling efforts
- The legislation specifically ensures critical mineral projects, including copper mine projects, are eligible for the FAST-41 permitting process
  - a program that improves agency coordination and establishes two-year completion goals, to create a more efficient, predictable and timely federal environmental review process for covered projects

 “Critical minerals are essential for our economy, national security and clean energy technologies. As demand for these strategic resources continues to increase, the United States must ensure access to a reliable supply”

- Arizona Congressman Juan Ciscomani (sponsored the legislation)

1. Source: <https://www.mining.com/us-house-of-representatives-approves-2024-critical-mineral-consistency-act/>





# “UNLEASHING ALASKA’S EXTRAORDINARY RESOURCE POTENTIAL”

PRESIDENTIAL EXECUTIVE ORDER  
JANUARY 20, 2025

-  President Trump signed this executive order on his first day of office. Of note are the following:
- *“It is, therefore, imperative to immediately reverse the punitive restrictions implemented by the previous administration that specifically target resource development on both State and Federal lands in Alaska.”*
  - *“The Assistant Secretary of the Army for Civil Works, under the direction of the Secretary of the Army, shall immediately review, revise, or rescind any agency action that may in any way hinder, slow or otherwise delay any critical project in the State of Alaska.”*



# A NEW APPROACH AT THE EPA?<sup>1</sup>

-  The EPA under the leadership of newly appointed head, Lee Zeldin, appears to be undergoing a significant transformation
-  Zeldin outlined in the New York Post (January 29, 2025) an ambitious agenda that aims to strike a balance between environmental stewardship and economic prosperity while safeguarding the agency's initiatives from legal challenges
-  **Key Strategy: Science & Research = Process-Driven Decisions**
  - Zeldin plans to prioritize science and research, ensuring all decisions have input from career professionals at the EPA. This structured approach enhances credibility and transparency
  - Zeldin said that actions *"have to be a result of a process where I am being briefed on the latest research and science and making a decision after the career professionals at EPA have the opportunity to share their thoughts and research with me. Durability is going to be an important priority for me with initiatives that I take."*
-  **Key Strategy: Avoiding Prejudgment = Lawsuit-Proof Actions**
  - Zeldin emphasizes compliance with legal frameworks to avoid policy reversals due to procedural shortcomings, ensuring lasting impact
  - Zeldin outlined: *"If I cut a corner that I'm not allowed to cut or prejudge an outcome that I'm not allowed to prejudge, and a state brings the EPA to court to challenge the action, a judge can overturn the action because EPA did not follow the processes required by law."*
-  **Discussions with the U.S. Government to remove the Obama/Biden-era veto continue**
  - To date direct negotiations have not yielded a timely result, NDM has now taken decisive legal action
  - To expedite a resolution, NDM has filed a motion for a summary judgment briefing schedule, which NDM believes is the most direct and efficient path to have the court rule on the clear unlawfulness of the EPA's veto (if they do not withdraw it themselves)
  - Summary judgement is a standard legal process that allows the court to evaluate the merits of the case based on the existing record, without requiring a full trial
  - Judge Gleason of the Alaska Federal District granted our motion to set a summary judgment briefing schedule, finding there was "good cause shown"
  - The court has established a clear timeline (providing a defined period to work towards a resolution) for legal proceedings
-  **We are confident the court will find the veto was an unlawful overreach of the EPA's authority**

1. Source: "New EPA chief Lee Zeldin has an ambitious agenda – and a plan to keep courts from overturning it" (January 29, 2025) <https://nypost.com/2025/01/29/us-news/new-epa-chief-lee-zeldin-has-an-ambitious-agenda-and-a-plan-to-keep-courts-from-overturning-it/>



# THE PATH FORWARD PRIORITIES

1. Removal of the EPA veto either by the court or by the administration
2. USACE addresses the Remand Order and potentially revisits ROD decision
3. Complete permitting requirements and receive the federal mining permit



**OUR LONG-TERM STRATEGY OF ATTRACTING A MINING CORPORATE PARTNER REMAINS UNCHANGED**





# PEBBLE

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## COPPER – AN IMPORTANT METAL FOR AMERICA'S GREEN FUTURE



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# THE FUTURE OF COPPER: A LOOMING CHALLENGE<sup>1</sup>

**THE WORLD CAN MINE COPPER TO FUEL THE GREEN ENERGY TRANSITION, OR IT CAN MINE COPPER TO BUILD THE INFRASTRUCTURE OF DEVELOPING COUNTRIES—BUT IT WILL BE EXTRAORDINARILY DIFFICULT TO DO BOTH.**

## Massive Consumption Projections:

- "Business as usual" growth to consume ~1,100 million metric tons by 2050, in comparison, companies mined about 23 million metric tons of copper in 2024
- Transitioning to green energy significantly increases demand, e.g., 2,304 million metric tons for wind/solar-heavy grids.
- Building out infrastructure in emerging economies like India and Africa will require hundreds of millions to a billion metric tons respectively.

## Supply Shortfalls:

- Current global supplies can only cover about 25 years of present needs.
- Meeting future demand requires opening 60+ large mines by 2050, each producing 500,000 metric tons/year.
- New mine development faces long lead times (up to 18 years) and significant investment hurdles.

## Price Implications:

- Copper prices would need to exceed \$20,000 per metric ton (more than double 2024 levels) to incentivize the necessary investment in new mines.

## Strategic Dilemma:

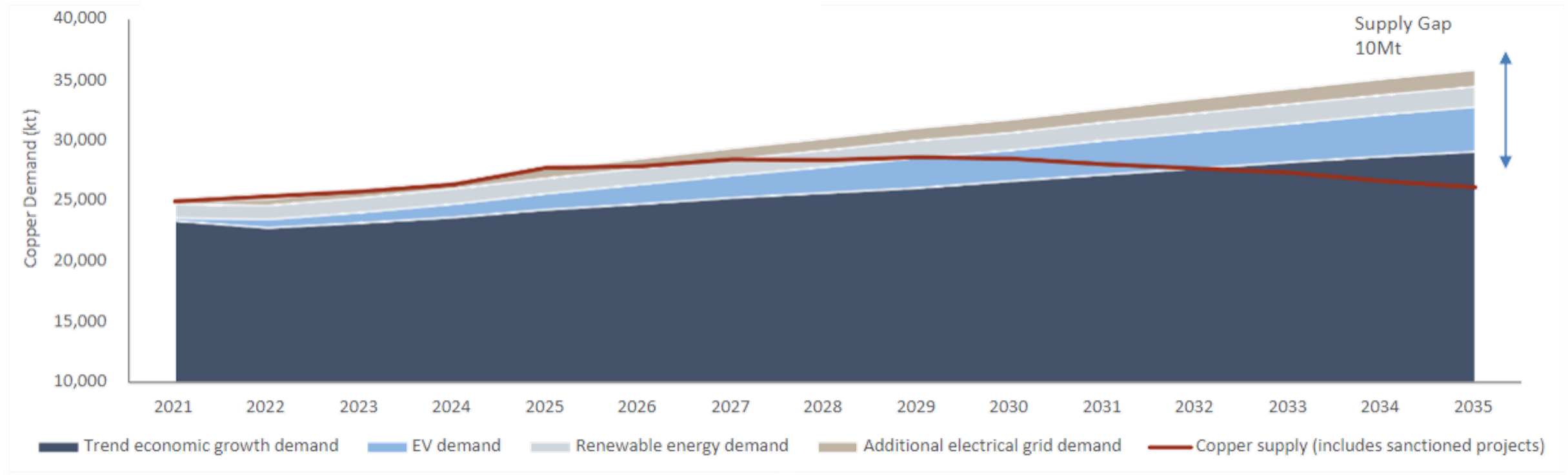
- Rapid electrification may potentially create copper bottlenecks, threatening both climate goals and efforts to bring essential services (power, water, healthcare) to developing nations.

1. Source: Mining enough copper to develop the world will require its price to more than double, says study <https://phys.org/news/2025-05-copper-world-require-price.html>



# ELECTRIFICATION ADDING AN EXTRA LAYER TO DEMAND OFFSETTING POTENTIAL WEAKNESS IN TRADITIONAL DEMAND SECTORS<sup>1</sup>

- Annual copper consumption has grown at 2.5% on average over the last 40 years
- Trend economic growth would imply a growth rate of 2.0%
- Estimate 2.8% growth rate includes the incremental copper demand from EV's and electrification



1. Source: RBC <https://www.rbcinsightresearch.com/ui/main/r/s/xGXx3Dgm>

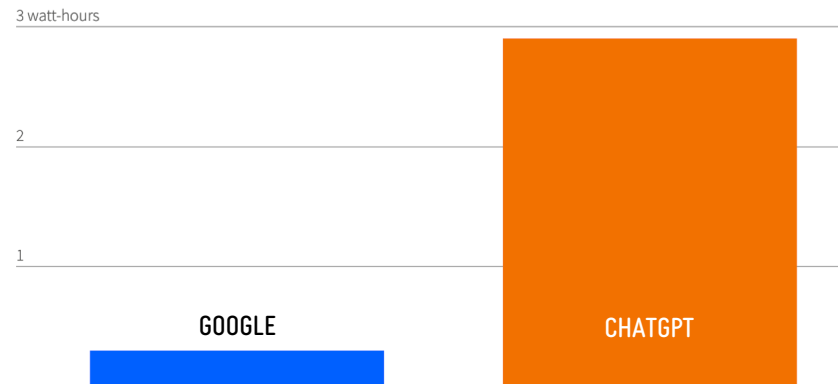




# EMERGING COPPER DEMAND FOR DATA CENTERS & A.I.<sup>1,2,3</sup>

- 🐾 BHP anticipates global copper demand will surge to 52.5 million tonnes per year by 2050
- 🐾 The expansion of data centers and Artificial Intelligence, which requires more energy-intensive computing, could increase global copper demand by 3.4 million tonnes annually by 2050
- 🐾 The surge in demand could worsen the copper supply-demand imbalance, leading to higher prices
- 🐾 Currently data centers are less than 1% of copper demand, but that is expected to be 6 to 7% by 2050
  - Data center operators are now planning and constructing facilities with capacity of 200 to 500 MW
  - AI data centers are expected to add a power demand of 370 TWh globally, equivalent to the combined power consumption of the United Kingdom and the Netherlands in 2023
  - It is estimated that each 1MW of power capacity requires between 20-40 tonnes of copper in the data center

**CHATGPT QUERIES ARE 10 MORE TIME  
MORE POWER INTENSIVE<sup>3,4</sup>**



1. Source: AI could add 1 million tonnes to copper demand by 2030, Trafigura chief economist says.  
<https://www.mining.com/ai-could-drive-lmtpa-increase-in-copper-demand-trafigura-chief-economist-says/>  
 2. Source: How the AI Data Centre Boom Could Threaten Global Copper.  
<https://datacentremagazine.com/data-centres/bhp-warns-ai-boom-could-worsen-copper-shortage>  
 3. Source: Data centre boom reveals AI hype's physical limits  
<https://www.reuters.com/breakingviews/data-centre-boom-reveals-ai-hypes-physical-limits-2024-07-04/>  
 4. Source: Goldman Sachs | A.F. Alias | Breakingviews | July 3, 2024





# PEBBLE



## A U.S.-BASED WORLD CLASS RESOURCE



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# A WORLD CLASS MINERAL RESOURCE... ON GOOD MINING GROUND

RESOURCES

- 6.5 B tonnes of Measured & Indicated
- 4.5 B tonnes of Inferred

|            | RECOVERABLE METAL    |          |
|------------|----------------------|----------|
|            | MEASURED & INDICATED | INFERRED |
| COPPER     | 53 B LB              | 23 B LB  |
| GOLD       | 54 M OZ              | 28 M OZ  |
| MOLYBDENUM | 2.8 B LB             | 1.8 B LB |
| SILVER     | 249 M OZ             | 122 M OZ |
| RHENIUM    | 1.8 M KG             | 1.0 M KG |

\* Refer to table of Measured, Indicated and Inferred Resources in Appendix

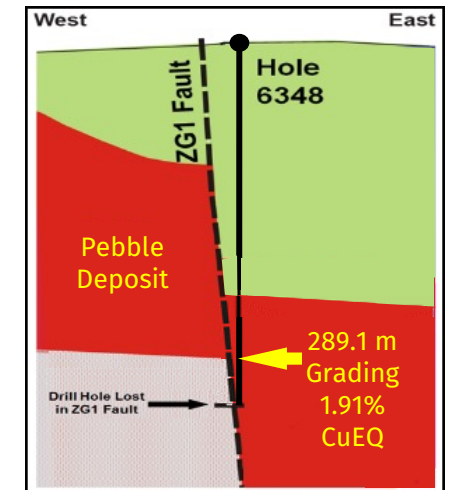
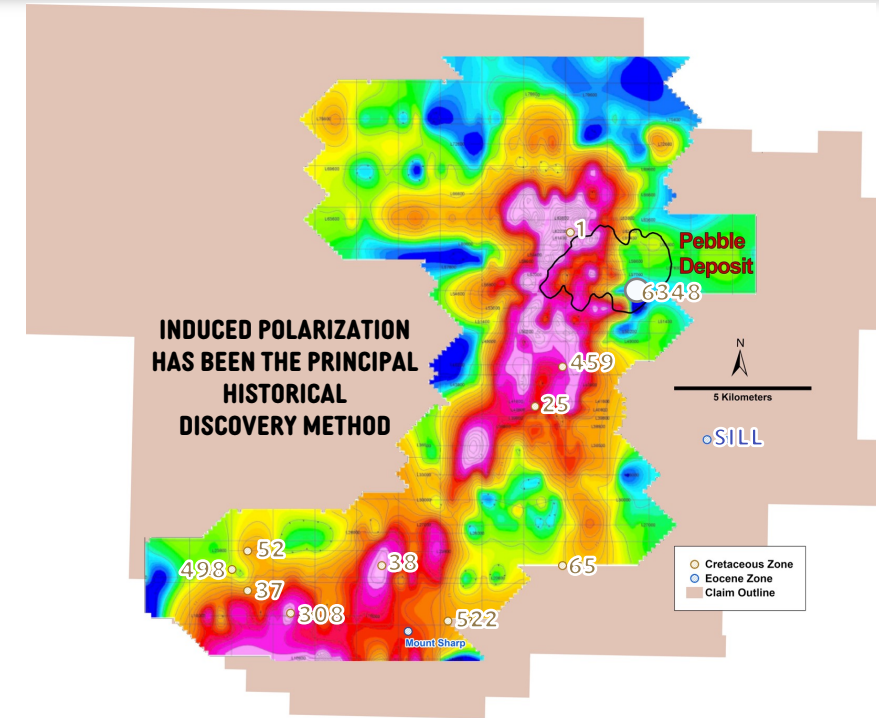




# PEBBLE UNTAPPED EXPLORATION POTENTIAL

## WORLD'S MOST EXTENSIVE MINERAL SYSTEM<sup>1</sup>

-  A zone of sulphide mineralization is indicated by an induced polarization chargeability anomaly at least 25 km by 7 km in size
-  Sulphides and hydrothermal alteration confirmed by drilling that discovered mineralization in 11 zones outside the Pebble deposit
-  Many other targets have been identified by magnetic and electromagnetic geophysical surveys and geochemical methods but have not been drill tested
-  There is good potential for a cluster of deposits to occur in the vicinity of Pebble
-  Pebble Deposit open at depth and to the east
  - DDH-6348 intersected 289.1 m grading 1.91% CuEQ<sup>2</sup> below cover rocks in the graben<sup>3</sup> east of the ZG1 Fault
  - Among the highest grade intersections at Pebble but no follow up
  - Faulting was a post-mineralization event; patterns west of the ZG1 Fault may be repeated to the east



1. Source: USGS.  
 2. CuEQ uses metal prices: \$3.00/lb Cu; \$1,400/oz Au; \$9.50/lb Mo. Individual grades are 1.24% Cu, 0.79 g/t Au, 0.042% M  
 3. A "graben" is a piece of Earth's crust (faulted block) that is shifted downward relative to adjacent crust.



# PEBBLE NATURE OF THE DEPOSIT PROVIDES OPTIONALITY<sup>1</sup>

-  **2023 Preliminary Economic Assessment ("PEA") updates cost estimates and financial results for the Proposed Project, defined in the original 2017 permit application and amended in 2019**
-  **The Proposed Project (i.e. Permitting Case) is an open pit mine feeding a conventional 180,000 tons per day ("Tpd") copper flotation concentrator**
  - Would process 1.3 billion tons of mineralized material over 20 years of mining at the low strip ratio of 0.12:1, compared to typical porphyry copper projects which range as high as 2:1 to 3:1.
  - Reflects innovative tailings, waste and water management strategies proposed by the Pebble Partnership Limited ("PLP"), and evaluated by the Army Corp of Engineers ("USACE") in the Final Environmental Impact Statement ("EIS"). as well as power and transportation infrastructure necessary for developing, operating and closing the proposed mine.
-  **Additionally, the 2023 PEA examines the sensitivity of the Project to three potential mine expansion scenarios:**
  - Generally modelled on a concept identified by the PLP in the response to a Request for Information from the USACE during the federal permitting process.
  - Potential alternative strategies for incremental gold recovery.
-  **Any of these potential mine expansion scenarios could form the basis for future permit applications and review**
  - Neither Northern Dynasty nor PLP has proposed or intends to propose any of these development alternatives in the near-term for regulatory approval.
  - Each would require extensive federal, state and local permitting processes and approvals before proceeding.

THE 2023 PEA IS PRELIMINARY IN NATURE AND INCLUDES INFERRED MINERAL RESOURCES THAT ARE CONSIDERED TOO SPECULATIVE GEOLOGICALLY TO HAVE ECONOMIC CONSIDERATIONS APPLIED TO THEM THAT WOULD ENABLE THEM TO BE CATEGORIZED AS MINERAL RESERVES. THERE IS NO ASSURANCE THAT THE 2023 PEA WILL BE REALIZED.

1. All results cited from the 2023 PEA reference the Base Case and related Potential Expansion Scenarios





# PEBBLE 2023 PEA: PROPOSED PROJECT

## Proposed Project

- 20-year, 180,000 tons per day open pit operation with conventional processing producing two concentrates
- Capable of processing 1.3 billion tons of mineralized material over 20 years of mining at a low strip ratio of 0.12:1
- Average annual mine operating cost of US\$14.17/ton
- Initial net capital investment of US\$3.116 billion<sup>1</sup>
- Average annual metal production is forecast to be 320 million lb copper; 368,000 oz gold; 15 million lb molybdenum; 1.8 million oz silver and 10,000 kg rhenium
- Life-of-Mine metal production of 6.4 billion lb copper; 7.4 million oz gold; 300 million lb molybdenum; 37 million oz silver; and 200,000 kg rhenium

 2023 PEA is an independent review of the project that provides cost and price estimates to reflect current economic volatility

 Infrastructure plan that uses the “southern route” for project access as defined in the original permitting application for the Pebble Project and subsequently amended

 Proposed mine would provide good-paying, year-round employment<sup>2</sup> for thousands of Alaskans and substantial tax revenues for the state, including contributions to the Alaska Permanent Fund

 Study also assesses potential mine expansion scenarios to demonstrate optionality and a possible pathway for future mine development, and the potential of the future addition of a gold plant

THE 2023 PEA IS PRELIMINARY IN NATURE AND INCLUDES INFERRED MINERAL RESOURCES THAT ARE CONSIDERED TOO SPECULATIVE GEOLOGICALLY TO HAVE ECONOMIC CONSIDERATIONS APPLIED TO THEM THAT WOULD ENABLE THEM TO BE CATEGORIZED AS MINERAL RESERVES. THERE IS NO ASSURANCE THAT THE 2023 PEA WILL BE REALIZED.

1. Total initial capital investment for the design, construction, installation, and commissioning estimated to be \$6.77 billion, which includes all direct and indirect costs, as well as a contingency. NDM believes it is most likely that the proposed project would be developed with partners who will provide the primary infrastructure (marine terminal, access road, ferry, natural gas pipeline, mine site power plant) in return for lease payments or tolls at rates which provide a return on investment to the developers of the infrastructure. The capital cost of this infrastructure which may be provided by third parties is estimated at \$2.64 billion, which would reduce the cash outlay required for construction. The financial results also include anticipated metal streaming, which would provide proceeds of approximately \$1.2 billion towards the initial capital cost, and right of way and reclamation payments of \$230 million during the construction period.

2. Direct and indirect employment



# PEBBLE 2023 PEA PRODUCTION SUMMARY<sup>1,2</sup>

|                                              | UNITS        | PROPOSED PROJECT | POTENTIAL EXPANSIONS <sup>3</sup> |
|----------------------------------------------|--------------|------------------|-----------------------------------|
| MINERALIZED MATERIAL                         | BILLION TONS | 1.3              | 8.6                               |
| COPPER EQUIVALENT <sup>4</sup>               | %            | 0.57             | 0.72                              |
| COPPER                                       | %            | 0.29             | 0.39                              |
| GOLD                                         | OZ/TON       | 0.009            | 0.01                              |
| MOLYBDENUM                                   | PPM          | 154              | 208                               |
| SILVER                                       | OZ/TON       | 0.04             | 0.046                             |
| RHENIUM                                      | PPM          | 0.28             | 0.36                              |
| WASTE                                        | BILLION TONS | 0.2              | 14.4                              |
| OPEN PIT STRIP RATIO                         | -            | 0.12             | 1.67                              |
| LIFE OF MINE                                 | YEARS        | 20               | VARIES                            |
| <b>METAL PRODUCTION (LIFE OF MINE)</b>       |              |                  |                                   |
| COPPER                                       | MLB          | 6,400            | 60,400                            |
| GOLD (IN CU CONCENTRATE)                     | KOZ          | 7,300            | 50,500                            |
| SILVER (IN CU CONCENTRATE)                   | KOZ          | 37,000           | 267,000                           |
| GOLD (IN GRAVITY CONCENTRATE)                | KOZ          | 110              | 782                               |
| MOLYBDENUM                                   | MLB          | 300              | 2,900                             |
| RHENIUM                                      | 1000 KGS     | 230              | 2,000                             |
| <b>METAL PRODUCTION (ANNUAL<sup>5</sup>)</b> |              |                  |                                   |
| COPPER                                       | MLB          | 320              | -                                 |
| COPPER-GOLD CONCENTRATE                      | KTONS        | 559              | -                                 |
| GOLD (IN CU CONCENTRATE)                     | KOZ          | 363              | -                                 |
| SILVER (IN CU CONCENTRATE)                   | KOZ          | 1,800            | -                                 |
| MOLYBDENUM                                   | MLB          | 15               | -                                 |
| MOLYBDENUM CONCENTRATE                       | KTONS        | 14               | -                                 |
| RHENIUM                                      | 1000 KGS     | 12               | -                                 |

1. All scenarios/alternatives include infrastructure outsourcing and gold streaming
2. Long-term metal prices: copper \$3.90/lb; gold \$1,700/oz; molybdenum \$12/50/lb; silver \$22.50/oz; rhenium \$1,500/kg
3. Any of these scenarios could form the basis for future permit applications and review. Neither Northern Dynasty nor the Pebble Partnership has proposed or intends to propose any of these development alternatives to the Proposed Project in the near-term for regulatory approval. Each would require extensive federal, state and local permitting processes and approvals before proceeding.
4. 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: 88% Cu, 75% Au, and 82% Mo
5. Life of mine volumes ÷ life of mine years

THE 2023 PEA IS PRELIMINARY IN NATURE AND INCLUDES INFERRED MINERAL RESOURCES THAT ARE CONSIDERED TOO SPECULATIVE GEOLOGICALLY TO HAVE ECONOMIC CONSIDERATIONS APPLIED TO THEM THAT WOULD ENABLE THEM TO BE CATEGORIZED AS MINERAL RESERVES AND THERE IS NO ASSURANCE THAT THE 2023 PEA WILL BE REALIZED. MINERAL RESOURCES THAT ARE NOT MINERAL RESERVES DO NOT HAVE DEMONSTRATED ECONOMIC VIABILITY.



# PEBBLE 2023 PEA PROPOSED PROJECT<sup>1,2</sup>

| DESCRIPTION                         | UNITS  | PROPOSED PROJECT –<br>BASE CASE, INCLUDING ROYALTIES |
|-------------------------------------|--------|------------------------------------------------------|
| MINING TAXES & GOVERNMENT ROYALTIES | US\$ M | 1,487                                                |
| CORPORATE INCOME TAX                | US\$ M | 1,931                                                |
| POST – TAX UNDISCOUNTED CASH FLOW   | US\$ M | 7,681                                                |
| POST – TAX NPV AT 7% <sup>3</sup>   | US\$ M | 2,233                                                |
| POST – TAX IRR                      | %      | 16.2%                                                |
| POST – TAX PAYBACK PERIOD           | YEARS  | 4.6                                                  |

THE 2023 PEA IS PRELIMINARY IN NATURE AND INCLUDES INFERRED MINERAL RESOURCES THAT ARE CONSIDERED TOO SPECULATIVE GEOLOGICALLY TO HAVE ECONOMIC CONSIDERATIONS APPLIED TO THEM THAT WOULD ENABLE THEM TO BE CATEGORIZED AS MINERAL RESERVES. THERE IS NO ASSURANCE THAT THE 2023 PEA WILL BE REALIZED.

- Assumptions:
  - Proposed Project, per that submitted for permitting
  - Third party partners provide project infrastructure, including access road, marine facilities, ferry and ferry landing facilities, natural gas pipeline, natural gas fired power plant
  - Metal streaming
  - Full five royalty tranches exercised
- Long-term metal prices: copper \$3.90/lb; gold \$1,700/oz; molybdenum \$12/50/lb; silver \$22.50/oz; rhenium \$1,500/kg
- Net Present Value is calculated using a 7% discount rate. By convention, a discount rate of 8% is typically applied to copper and other base metal projects, while 5% is applied to gold and other precious metal projects. Given the polymetallic nature of the Pebble deposit and the large contributions of gold to total project revenues, a 7% blended discount rate has been selected.



# PEBBLE POTENTIAL EXPANSION SCENARIOS<sup>1,2,3,4</sup>

- Three potential expansion scenarios were evaluated to test the sensitivity of the project to expansion of the operation and extraction of a greater portion of the resource.
- The potential expansion scenarios were modeled on the response submitted by Pebble Partnership to USACE in response to a Request for Information (“RFI”) received during the NEPA EIS process.
- All three potential expansion scenarios assessed the impact of extracting 8.6 billion tons of resource, with different throughput rates and expansion timeframes.
- The potential expansion scenario modeled explicitly on the RFI response envisioned the process plant expanding to 250,000 tons per day in Year 21. The other two potential expansion scenarios envisioned a plant expansion to 270,000 tons per day in either Year 5 or Year 10.

| DESCRIPTION                       | UNITS | YEAR 5 EXPANSION | YEAR 10 EXPANSION | YEAR 21 EXPANSION |
|-----------------------------------|-------|------------------|-------------------|-------------------|
| NET SMELTER RETURN                | \$M   | 312,780          | 312,360           | 312,570           |
| OPERATING COSTS                   | \$M   | 125,110          | 119,470           | 124,050           |
| TOTAL CAPITAL COSTS <sup>1</sup>  | \$M   | 26,850           | 26,830            | 27,430            |
| INITIAL CAPITAL COSTS             | \$M   | 4,132            | 4,132             | 4,132             |
| EXPANSION COSTS                   | \$M   | 4,404            | 4,324             | 4,974             |
| SUSTAINING COSTS                  | \$M   | 18,314           | 18,377            | 18,332            |
| POST – TAX UNDISCOUNTED CASH FLOW | \$M   | 110,770          | 114,970           | 111,800           |
| POST – TAX NPV AT 7%              | \$M   | 8,570            | 7,520             | 5,500             |
| POST – TAX IRR                    | %     | 22.0             | 20.0              | 18.1              |

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1. Assumptions:

- Proposed Project, per that submitted for permitting
- Third party partners provide project infrastructure, including access road, marine facilities, ferry and ferry landing facilities, natural gas pipeline, natural gas fired power plant
- Metal streaming
- Full five royalty tranches exercised

2. Long-term metal prices: copper \$3.90/lb; gold \$1,700/oz; molybdenum \$12/50/lb; silver \$22.50/oz; rhenium \$1,500/kg

3. Net Present Value is calculated using a 7% discount rate. By convention, a discount rate of 8% is typically applied to copper and other base metal projects, while 5% is applied to gold and other precious metal projects. Given the polymetallic nature of the Pebble deposit and the large contributions of gold to total project revenues, a 7% blended discount rate has been selected.

4. Any of these scenarios could form the basis for future permit applications and review. Neither Northern Dynasty nor the Pebble Partnership has proposed or intends to propose any of these development alternatives to the Proposed Project in the near-term for regulatory approval. Each would require extensive federal, state and local permitting processes and approvals before proceeding.





# PEBBLE SECONDARY GOLD RECOVERY PLANT<sup>1,2,3,4</sup>

- Possible addition of a secondary gold recovery plant in Production Year 5, using the most efficient and permissible lixiviants available at the time any related permitting applications are made
- We continue to evaluate multiple technologies to safely employ secondary gold recovery as doré at the Pebble Project. Any future plan to incorporate secondary gold recovery would require extensive federal, state and local permitting processes and approvals before proceeding
- Should a secondary gold plant be added in Production Year 5:
  - Pyritic tails from the copper-molybdenum cleaner circuit would be re-floated to remove additional gangue and upgrade gold content
  - The gold-bearing pyrite concentrate from this step would then be re-ground and fed to a closed circuit recovery plant
  - Gold and silver could be recovered via processing to produce doré; alternative methods pending the results of future testing

| DESCRIPTION                | UNIT | PROPOSED PROJECT | PROPOSED PROJECT +<br>GOLD PLANT | EXPANSION SCENARIOS |         |         |
|----------------------------|------|------------------|----------------------------------|---------------------|---------|---------|
|                            |      |                  |                                  | YEAR 5              | YEAR 10 | YEAR 21 |
| CONCENTRATE (LOM)          |      |                  |                                  |                     |         |         |
| COPPER                     | MLB  | 6,400            | 6,500                            | 61,200              | 61,200  | 61,200  |
| GOLD (IN CU CONCENTRATE)   | KOZ  | 7,300            | 7,300                            | 50,500              | 50,500  | 50,400  |
| SILVER (IN CU CONCENTRATE) | KOZ  | 37,000           | 37,000                           | 267,000             | 267,000 | 267,000 |
| GOLD PLANT (LOM)           |      |                  |                                  |                     |         |         |
| GOLD (AS DORÉ)             | KOZ  | -                | 2,000                            | 14,400              | 14,500  | 14,500  |
| SILVER (AS DORÉ)           | KOZ  | -                | 2,900                            | 22,500              | 22,600  | 22,600  |
| TOTAL PRODUCTION (LOM)     |      |                  |                                  |                     |         |         |
| GOLD                       | KOZ  | 7,400            | 9,300                            | 64,900              | 65,100  | 65,000  |
| SILVER                     | KOZ  | 37,000           | 39,500                           | 289,000             | 289,000 | 289,000 |

1. All scenarios/alternatives include infrastructure outsourcing and gold streaming

2. All figures are in U.S. dollars unless otherwise stated & all financial results are post-tax

3. Long-term metal prices: copper \$3.90/lb; gold \$1,700/oz; molybdenum \$12.50/lb; silver \$22.50/oz; rhenium \$1,500/kg

4. Any of these scenarios could form the basis for future permit applications and review. Neither Northern Dynasty nor the Pebble Partnership has proposed or intends to propose any of these development alternatives to the Proposed Project in the near-term for regulatory approval. Each would require extensive federal, state and local permitting processes and approvals before proceeding.



# PEBBLE SECONDARY GOLD RECOVERY PLANT – FINANCIAL RESULTS<sup>1,2,3,4</sup>

| DESCRIPTION                       | UNITS | PROPOSED PROJECT + GOLD PLANT | YEAR 5 EXPANSION | YEAR 10 EXPANSION | YEAR 21 EXPANSION |
|-----------------------------------|-------|-------------------------------|------------------|-------------------|-------------------|
| NET SMELTER RETURN                | \$M   | 38,190                        | 338,260          | 337,820           | 338,010           |
| OPERATING COSTS                   | \$M   | 19,740                        | 136,320          | 130,600           | 135,340           |
| TOTAL CAPITAL COSTS <sup>1</sup>  | \$M   | 5,640                         | 27,100           | 27,170            | 27,750            |
| INITIAL CAPITAL COSTS             | \$M   | 4,150                         | 4,150            | 4,150             | 4,150             |
| EXPANSION COSTS                   | \$M   | 219                           | 4,633            | 4,640             | 5,280             |
| SUSTAINING COSTS                  | \$M   | 1,272                         | 18,314           | 18,378            | 18,322            |
| POST – TAX UNDISCOUNTED CASH FLOW | \$M   | 9,020                         | 120,770          | 124,830           | 121,480           |
| POST – TAX NPV AT 7%              | \$M   | 2,740                         | 10,030           | 8,660             | 6,460             |
| POST – TAX IRR                    | %     | 17.5                          | 24.2             | 21.4              | 19.6              |

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1. Assumptions:

- Proposed Project, per that submitted for permitting
- Third party partners provide project infrastructure, including access road, marine facilities, ferry and ferry landing facilities, natural gas pipeline, natural gas fired power plant
- Metal streaming
- Full five royalty tranches exercised

2. Long-term metal prices: copper \$3.90/lb; gold \$1,700/oz; molybdenum \$12/50/lb; silver \$22.50/oz; rhenium \$1,500/kg

3. Net Present Value is calculated using a 7% discount rate. By convention, a discount rate of 8% is typically applied to copper and other base metal projects, while 5% is applied to gold and other precious metal projects. Given the polymetallic nature of the Pebble deposit and the large contributions of gold to total project revenues, a 7% blended discount rate has been selected.

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# PEBBLE



## A PATH FORWARD



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



# PEBBLE STILL WORKING ITS WAY THROUGH THE PERMITTING PROCESS

## Negative Record of Decision (ROD) Issued: November 25, 2020

-  Public Interest review (PIR) found Pebble to be ‘not in the public interest’
-  Compensatory mitigation plan (CMP) deemed ‘non-compliant’
-  ROD and PIR decisions are fundamentally unsupported by the ‘administrative record’ established by the Final EIS
-  CMP finding is contrary to policy, precedence and PLP interactions with the USACE

## Pebble Submits Permit Denial Appeal: January 19, 2021

-  “We believe our submission clearly demonstrates the USACE’s Record of Decision for the Pebble Project is contrary to law, unprecedented in Alaska and fundamentally unsupported by the administrative record. These are matters not only of concern to Northern Dynasty and its investors, but to all Alaskans.”

## USACE Pacific Ocean Division remands the negative ROD to the Alaska District: April 25, 2023

## USACE declines to engage in remand procedure due to EPA veto: April 20, 2024

1. Notwithstanding a thorough and comprehensive environmental review process conducted by the USACE together with cooperating agencies including the EPA, NOAA and USFWS that determined Pebble could be developed without harm to Bristol Bay fishery, without impact on water quality while providing significant economic opportunities and jobs for the region and communities near the project. The EPA issued a letter dated January 27, 2022 to the Pebble Partnership advising as to the EPA’s belief that the discharge of dredged or fill associated with mining of the Pebble Project could result in unacceptable adverse effects on important fishery areas and of its intent to issue a revised Proposed Determination and asked for submissions of information “to demonstrate that no unacceptable adverse effects to aquatic resources” would result from the Pebble Project. The EPA’s letter was also addressed to the USACE and the State of Alaska Department of Natural Resources. The Pebble Partnership responded to the EPA on March 28, 2022 contesting both the factual claim by the EPA as to the impact on aquatic resources and the legal basis on which the EPA has proposed to act.

2. On May 25, 2022, the EPA announced that it intended to advance its pre-emptive veto of the Pebble Project and issued a revised Proposed Determination. Public comments on the Revised Proposed Determination were due on September 6, 2022 and in September 2022, the Pebble Partnership submitted extensive comments on the Revised Proposed Determination, objecting to the EPA’s preemptive veto of the Pebble Project and calling upon the EPA to withdraw its action and refrain from further action against the project. A compelling letter and comments by the State of Alaska and a second letter signed by a total of 14 states were also submitted to the EPA, protesting the EPA’s overreach with the Revised Proposed Determination.



# USACE REMANDED PERMIT APPEAL BUT THEN DECIDED IT COULD NOT ACT WITH THE EPA VETO IN PLACE

- Under U.S. regulatory law, permitting decisions for major development projects must be based on an 'administrative record' which, in Pebble's case, includes the Final EIS published by the USACE in July 2020
- NDM maintains the USACE's permitting decision does not reflect many of the findings in the final EIS
- Focus is now removing the EPA veto then re-engaging with the USACE

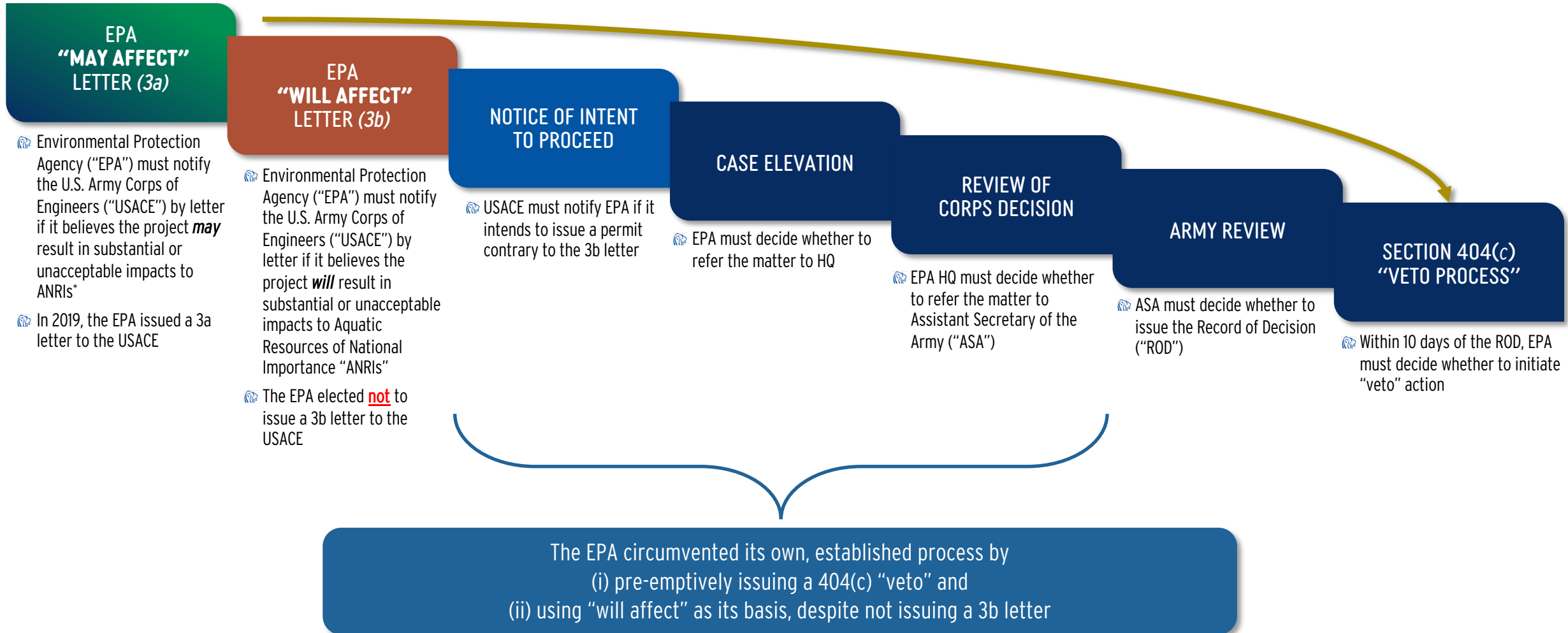
## SUMMARY OF INCONSISTENT AND DIAMETRICALLY OPPOSED FINDINGS

| SUBSTANTIVE ISSUE                                                                | FINDINGS IN FINAL EIS                                                                                                                                                                                                                                                                                                                                      | PERMITTING DECISION BASED ON PIR                                                                                                                                                                                        | PACIFIC OCEAN DIVISION REMAND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Potential 'economic contribution' to the Bristol Bay region and State of Alaska  | <i>"An estimated \$64 million annually in state corporate taxes during the operations phase. It was estimated that the operations phase could also generate \$41 million annually from State mining license taxes. The project could generate \$20 million annually (in 2011 dollars) in state royalty payments during the operations phase." (4.3-11)</i> | In supporting documents for its ROD, the USACE claims the Pebble Project's economic benefits are "speculative" and "would be primarily received by the private applicant"                                               | <i>"It is not clear why the District uses the term 'brief duration' here. As the Appellant states, the FEIS describes the economic benefits as long term. In addition, the District does not describe any of the other PIR factor benefits or detriments as 'brief duration'. While the sentence in question refers to 'the impacts', not 'the beneficial impacts' or 'the detrimental impacts', the District does not provide adequate explanation of why the benefits here would be deemed brief duration."</i> |
| Potential effects on 'water quality'                                             | <i>"There would be no effects on any community groundwater or surface water supplies from the changes in groundwater flows at the mine site." (ES 67)</i>                                                                                                                                                                                                  | In supporting documents for its ROD, the USACE claims Pebble would "cause water quality degradation"                                                                                                                    | As the Compensation Mitigation Plan (CMP) – or lack thereof – formed a significant basis for the negative ROD decision, as well as underpinning for the finding of 'significant degradation,' reversing the decision on the CMP could have significant follow-on effects for several other conclusions.                                                                                                                                                                                                           |
| Potential effects on 'subsistence fishing and hunting'                           | <i>"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." (ES 51)</i>                                                                                                                                    | In supporting documents for its ROD, the USACE claims Pebble would lead to "reduced subsistence opportunities"                                                                                                          | <i>"The Appellant also correctly states that the FEIS 'found no impact to fish and game resources available for subsistence harvests.' However, the ROD does not reflect any alternate conclusions or statements by the District."</i>                                                                                                                                                                                                                                                                            |
| Likelihood and consequence of a 'catastrophic tailings storage facility failure' | <i>"The Applicant's bulk TSF design is different than that of most other historic and current TSFs. The proposed design is especially distinct when compared to most historic mines that have experience large failures." (K4.27-4)</i>                                                                                                                    | In supporting documents for its ROD, the USACE found that in "the event of human failure and/or a catastrophic event (at Pebble), the commercial and/or subsistence (fisheries) resources would be irrevocably harmed." | <i>"...Because the District found that large spills are not reasonably foreseeable, its discussion of them...is inappropriate. The District is required to analyze effects which are likely to occur, but the District found that a catastrophic event is not reasonably foreseeable."</i>                                                                                                                                                                                                                        |





# EPA FAILS TO FOLLOW ITS OWN PROCESS



\* Aquatic Resources of National Importance

Source: EPA (<https://www.epa.gov/system/files/documents/2023-01/CWA%20404c%20Fact%20Sheet%202023.pdf>)



# FUNDAMENTAL FLAWS WITH EPA'S FINAL DETERMINATION

PLP's submitted to the EPA (Sept 2022), noting flaws in their veto

-  **EPA has not exhausted specific measures during the permitting process to voice and address its concerns before issuing a Section 404(c) veto**
  - 404(c) action remains premature and pre-emptive as the U.S. Army Corps of Engineers ("USACE") has issued a Record of Decision denial. As such, "pursuing a veto in the absence of such an indication by USACE is contrary to law and EPA precedent."
  - EPA's proposal to restrict future development of the Pebble Deposit is legally and technically unsupportable
-  **Like other recent challenges, this action exceeds the statutory authority granted by Congress**
  - Congress has never granted EPA the authority to set aside large areas of land, nor do EPA's regulations contemplate such authority
  - The 309-square-mile area proposed for restricting mining is over 23 times larger than the 2020 Mine Plan
-  **The EPA has made wildly speculative claims about possible adverse impacts from Pebble's development that are not supported by any defensible data and are in direct contradiction to the facts validated in the USACE's Final Environmental Impact Statement ("FEIS") for the Pebble Project**
  - The EPA refers to new scientific studies, but fails to provide any evidence of new, supporting information for their conclusions
-  **EPA relies heavily on 'what-if' scenarios, while at the same discounting the similar nature of anticipated economic benefits**
  - Despite the significant amount of work done by NDM, PLP and S&P Global to demonstrate the overwhelmingly positive socioeconomic benefits to Alaska (and the broader U.S. as well), the EPA seeks to dismiss this in favour of suspect and highly speculative work done to assess the benefits of the Bristol Bay salmon fishery
  - The FEIS and subsequent Economic Impact Assessment ("EIA") clearly demonstrate the dramatic impact responsible Pebble development could have for these communities; benefits which are indisputable. Also, the FEIS and EIA were completed by competent and highly reputable U.S./International engineering and data analysis and management companies
-  **The EPA has a nearly 20-year history of campaign within the agency to kill the Pebble Project**
  - Under the last three Democratic administrations, the EPA has conspired with environmental activists to undermine due process and circumvent the established National Environmental Policy Act ("NEPA") process



# TWO LEGAL ACTIONS LAUNCHED AGAINST EPA VETO OF PEBBLE MINE

**Case filed in Federal District Court in Alaska seeking to vacate the EPA veto is Main Focus of permitting strategy, case alleges:**

-  Veto violates various federal statutes regarding Alaska's statehood rights and a land exchange approved by Congress
-  Veto based on overly broad interpretation of EPA's jurisdiction since overruled by the Supreme Court
-  The geographic scope exceeds that allowed by the statute
-  Based on development plan, designed by EPA and mine opponents to reach a predetermined result which did not comply with existing environmental regulations and laws
-  Veto's supporting facts directly contradict Final EIS published by the USACE

**Takings case filed in the US Court of Federal Claims in Washington DC.**

-  Plan to ask court to defer considering this action until the EPA veto case finally resolved
-  The State of Alaska has filed a Takings case in the US Court of Federal Claims in Washington DC and filed the case against the veto in Federal District Court in Alaska
-  Signals to the Federal Government that we (PLP and State of Alaska) will be seeking very substantial damages if they persist in illegally blocking the lawful permitting process
-  Both Takings cases have been stayed, pending the outcome of the Administrative Appeal/veto case

➤ Two Native Village corporations, representing six villages, have also filed a case against the veto



## OUR LEGAL CASE AGAINST THE EPA VETO WAS STRENGTHENED BY THE USACE DECISION:

-  The USACE has announced (April 16, 2024) they can't move forward with the Remand Order while the EPA veto is outstanding
-  But the veto relies heavily on statements made by the USACE that were highlighted by the Remand Order as being erroneous because they are not supported by the administrative record
-  This strengthens our legal case against the EPA veto
-  Alaska Justice agrees with NDM and PLP Motion to Add USACE to existing EPA complaint



# INNOVATIVE ROYALTY AGREEMENT UP TO \$60 MILLION ON NON-CORE METALS

-  The Proposed Project requires time, patience and sufficient liquidity to successfully navigate the established legal process and continue ongoing efforts to work with the people in the region
-  Third \$12M tranche completed (\$36M received to date); investor granted extension (new expiry date September 30, 2025)
-  If the fourth \$12 million tranche is completed on or before September 30, 2025, the Royalty Holder will have the right to complete the fifth and final \$12 million tranche investment at any time up to and including December 31, 2025
-  Mechanisms built in to share in future upside related to metal price and recovery
-  The agreement raises significant capital over the next two years in return for the right to buy a small portion of future, non-core gold and silver production from the Proposed Project, while keeping 100% of the copper production
-  Could receive additional \$24M if all three remaining tranches are exercised by investor (at their option)

Source: See Northern Dynasty news releases dated July 27, 2022 and November 13, 2023





# PROVEN LEADERSHIP

## MANAGEMENT

### **RONALD THIESSEN** CEO / DIRECTOR

Mr. Thiessen, a Chartered Professional Accountant (FPCA, FCA) with more than 25 years of corporate development experience, leads Northern Dynasty's Mines ("NDM") corporate development and financing activities. In addition to his role as President and CEO, Mr. Thiessen is a Director of the Pebble Limited Partnership. He is also President and CEO of Hunter Dickinson Inc ("HDI").

### **MARK PETERS** CHIEF FINANCIAL OFFICER

Mr. Peters is a Chartered Professional Accountant (CPA, CA) who has more than 20 years of experience in the areas of financial reporting and taxation, working primarily with Canadian and U.S. public corporations. He served as CFO for HDI since 2016 and a TSX Venture-listed company since 2012. Prior to that, Mr. Peters led the tax department for the HDI group of companies and worked for PricewaterhouseCoopers LLP.

### **BRUCE JENKINS** EXECUTIVE VICE PRESIDENT ENVIRONMENT & SUSTAINABILITY

Mr. Jenkins is a corporate and environmental executive with more than 40 years of experience in project and corporate management. Mr. Jenkins oversees environmental affairs and sustainable development for NDM. He is also Executive Vice President, Environment and Sustainability for HDI.

### **ADAM CHODOS** EXECUTIVE VICE PRESIDENT CORPORATE DEVELOPMENT

Mr. Chodos is a senior executive with over 23 years of experience in Corporate Development and Investment Banking advisory. Mr. Chodos was most recently a Director of Corporate Development for Teck Resources and, before that, was a Group Executive with Newmont's Corporate Development team. He also spent nine years as an Investment Banker with J.P. Morgan Securities Inc., in New York, and had a significant role in US\$28 billion of mergers, acquisitions, divestitures and capital markets transactions in the resource sector. He is also Executive Vice President, Corporate Development for HDI.

### **STEPHEN HODGSON** VICE PRESIDENT, ENGINEERING

Mr. Hodgson (P.Eng.) has over 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. He brings a unique perspective to the Pebble team with his experience at northern and Arctic mines. He has led NDM engineering team since 2005.

### **MIKE WESTERLUND** VICE PRESIDENT, INVESTOR RELATIONS

Mr. Westerlund brings 20 years experience in the mines and mineral space including 8 years heading up the investor relations department at Hecla Mining Company, a US\$3B precious metals miner with 5 operating mines.

### **TREVOR THOMAS** COMPANY SECRETARY & GENERAL COUNSEL

Mr. Thomas has practiced in the areas of corporate commercial, corporate finance, securities and mining law since 1995, both in private practice environment as well as in-house positions and is currently in-house General Counsel for HDI.

## BOARD OF DIRECTORS

### **ROBERT DICKINSON** CHAIRMAN

Mr. Dickinson is a mining executive with more than 45 years of mineral exploration and development experience. He is an inductee of the Canadian Mining Hall of Fame, leads Northern Dynasty's project development activities. In addition to his role as Executive Chairman, Mr. Dickinson is a director of the Pebble Limited Partnership. He is also Chairman of HDI. He holds a BSc (Geology) & an MSc (Finance) from the University of British Columbia.

### **RONALD THIESSEN** CEO AND DIRECTOR (refer to Management listing)

### **DESMOND BALAKRISHNAN**

Desmond Balakrishnan is a lawyer practicing in the areas of Corporate Finance and Securities, Mergers and Acquisitions, Lending, Private Equity and Gaming and Entertainment for McMillan LLP, where he has been a partner since 2004. McMillan serves as the Company's Canadian attorneys. He has been lead counsel on over \$3 billion in financing transactions and in mergers and acquisitions aggregating in excess of \$6 billion. He also serves as a director and/or officer of several resource, finance and gaming firms. He holds CLA and BA from Simon Fraser University and a Bachelor of Laws (with Distinction) from the University of Alberta.

### **CHRISTIAN MILAU**

Christian Milau is a Chartered Professional Accountant (CA) and mining executive with experience in acquisition, financing, development, and operation of mines. He is currently serving as CEO of Saudi Discovery Company, a private copper and precious metals exploration company focused on Saudi Arabia. Mr. Milau was previously CEO of Equinox Gold and True Gold, as well as CFO of Endeavour Mining, and also has a background in finance and capital markets, and government and stakeholder relations, including successfully negotiating with governments on various community, security, fiscal and tax matters.

### **KEN PICKERING**

Mr. Pickering is a Professional Engineer, mining executive & international consultant with 40 years of experience in a variety of capacities in the natural resources industry. He has led the development, construction & operation of mining projects throughout the world. These include: the Escondida Mine in Chile & several billion dollar expansion phases, the Tintaya copper operations in Peru, BHP Iron ore operations in Western Australia, the Spence copper leaching project in Northern Chile & Pinto Valley operations/Resolution project in the Western United States. Mr. Pickering is also a Director of Taseko Mines & Endeavour Silver.

### **WAYNE KIRK**

Wayne Kirk has over 35 years of experience as a corporate attorney, including nine years' experience as Vice President, General Counsel and Corporate Secretary of Homestake Mining Company, and over 16 years of experience as a director of publicly held companies. Mr Kirk holds a B.A. in Economics (Distinction) from the University of Californai (Berkeley) and an LL.B (magna cum laude) degree from Harvard University, and has been a member of the California Bar since 1969. He was also a director of the company from July 2004 to February 2016.

### **SIRI C. GENIK**

Siri Genik is a senior executive in the Natural Resources and Infrastructure industries. She is a subject-matter expert in Sustainability and ESG, Stakeholder Engagement and Governance, as well as Strategic Communications and Supply Chain. Siri is the Principle and Founder of BRIDGE®, a firm providing sustainability strategies to Boards and Leadership. She has over 25 years of experience working on major capital projects through the world. Her background with the mining industry includes serving as Head of Project Services for BHP Canada as well as Glencore (Xstrata) working on projects in Australia, Malaysia and New Caledonia. Siri is a lawyer and is fluent in English, French and Spanish.

### **ISABEL SATRA**

Isabel Satra has spent over 20 years in investment management, most recently as Founder and CFO of Kopernik Global Advisors, where she is a Co-Portfolio Manager, oversees management of the firm finances as well as serves on the Board of Directors and the Investment Oversight Committee. She has also held positions of Analyst and Portfolio Manager at several investment firms, including Vinik Asset Management and Tradewinds Global Investors, after transitioning from engineering positions at Boeing North America and Rockwell International.

### **JOSIE HICKEL**

Josie Hickel has more than 25 years experience in executive leadership positions in several commercial enterprises, community organizations and non-profit organizations in Alaska as well as the Chugach Alaska Corporation, including the role of President. She also was Senior Vice President, HR and Administration of the Pebble Limited Partnership from 2008-2014. Currently, Josie is the Owner, CEO and President of Sustainable Alaska Consulting.



# SUPPORTIVE SHAREHOLDER BASE

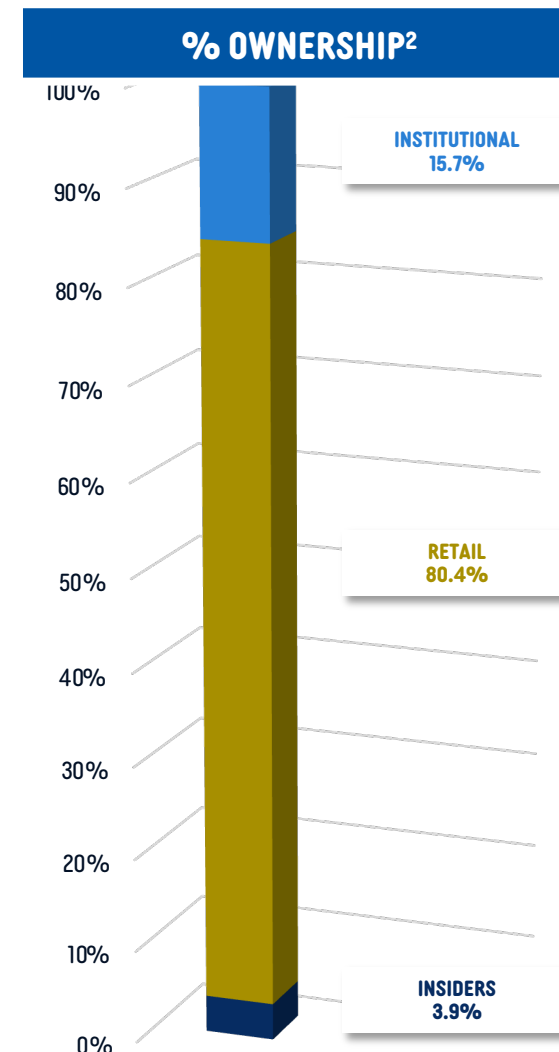
| ISSUED & OUTSTANDING |
|----------------------|
| 539.4 M              |

| OPTIONS & OTHER <sup>1</sup> |
|------------------------------|
| 68.8 M                       |

| FULLY DILUTED |
|---------------|
| 608.2 M       |

| BALANCE SHEET & TRADING LIQUIDITY                                                                                                                  |                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| C\$11.8 M Cash & Cash Equivalents <sup>3</sup><br>(March 31, 2025)                                                                                 |                                  |
| US\$15M in 10-year Convertible Notes, bearing interest at 2% per annum, convertible to common shares at US \$0.3557, subject to certain conditions |                                  |
| Daily Trading Volume Last 90 trading days <sup>4</sup>                                                                                             | NDM – TSX<br>862,932             |
|                                                                                                                                                    | NAK – NYSE American<br>6,246,243 |

| MAJOR INSTITUTIONAL SHAREHOLDERS <sup>5</sup>                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• SKKY Capital Corp Ltd.</li> <li>• Ostvast Capital Mgmt Ltd.</li> <li>• Kopernik Global Investors LLC</li> <li>• Russell Investment Management LLC</li> <li>• Journey Advisory Group LLC</li> <li>• Marshall Wace LLP</li> <li>• SEI Investments Co.</li> <li>• Wells Fargo &amp; Co.</li> <li>• Praetorian PR LLC</li> <li>• ALPS Advisors Inc.</li> <li>• Susquehanna International Group LLP</li> </ul> |



1. As at June 2, 2025. Includes Options, Warrants RSUs and DSUs. Also includes the Convertible Note issued in December 2023  
 2. Based on fully diluted shares at June 2, 2025  
 3. Does not include receipt of US \$12 million received on June 2, 2025, related to the third tranche of the royalty agreement dated July 26, 2022, and amended on November 13, 2023  
 4. As at June 2, 2025  
 5. Major Institutional Shareholders as at June 2, 2025 (Source: S&P Global Capital IQ)



# SUMMARY: STRONG RISK/RETURN POTENTIAL



## COPPER: AN IMPORTANT METAL FOR AMERICA'S GREEN FUTURE

- Transition to Green Energy expected to substantially increase demand for copper
- Forecast supply not sufficient to meet demand
- Higher copper prices expected
- US House of Representative passes Critical Mineral Consistency Act naming copper as a critical mineral for both the DOE and USGS. Currently before US Senate for approval



## PEBBLE: A WORLD CLASS RESOURCE YET TO BE UNLOCKED

- Largest undeveloped copper/gold deposit in the world
- Potential domestic solution to U.S. foreign supply chain dependence on critical minerals
- PEA September 2023: Positive Projected Financial Results, excellent optionality and important benefits for Alaska
- Untapped exploration upside



## PEBBLE: A PATH FORWARD

- New Republican administration making positive statements/actions on mining and the need for domestic critical mineral production
- Final EIS: no measurable impact on fisheries with significant social/economic benefits expected<sup>1</sup>
- NDM, Alaska and six native villages launched legal action against unsupportable EPA veto and USACE actions in Alaska Federal District Court
- Takings action launched in the US Court of Federal Claims (stayed in case needed)
- If fully funded, \$60 million Royalty Investment enhances financial strength to challenge these agency decisions

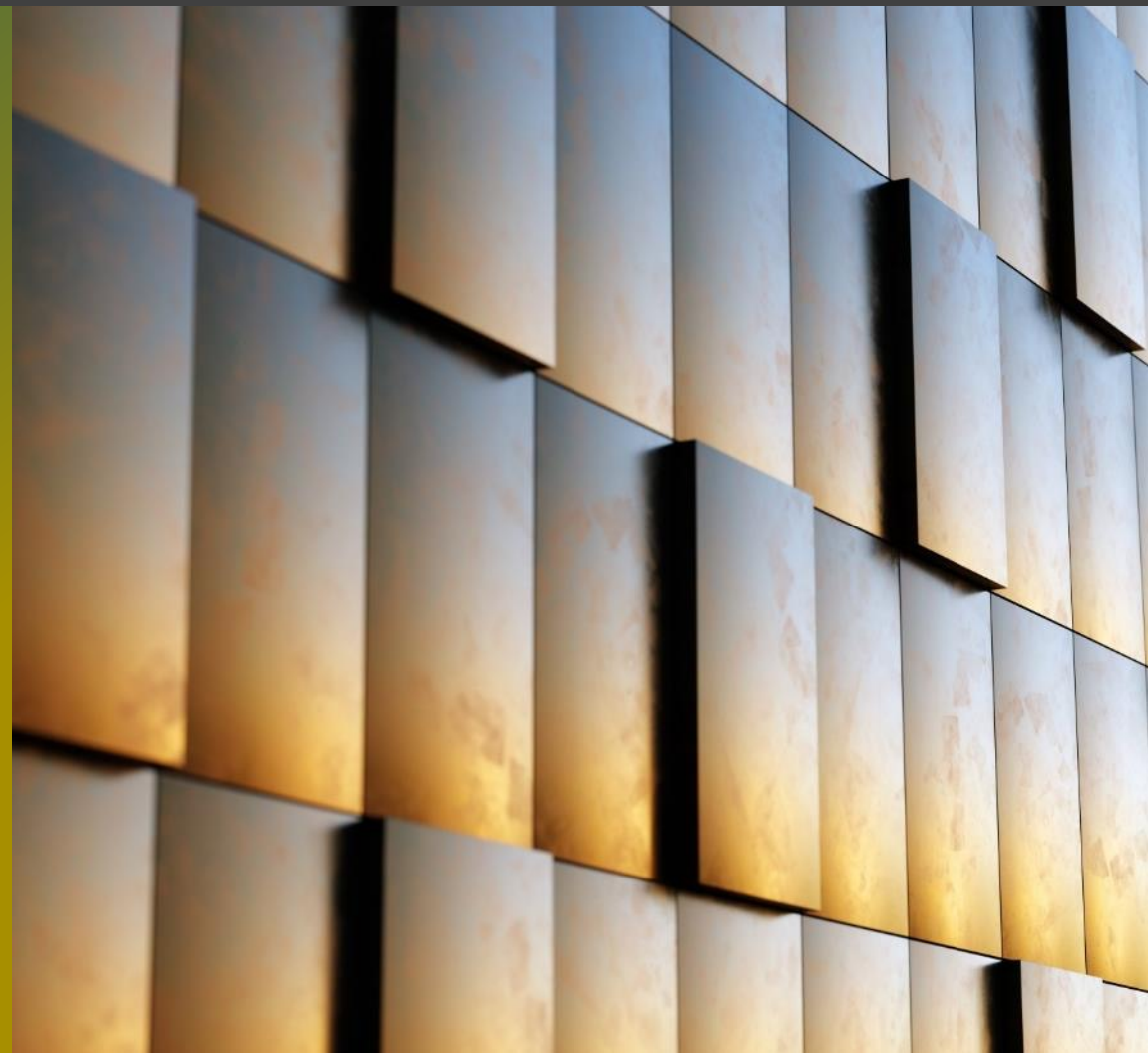
1. Pebble Project EIS - Final Environmental Impact Statement, July 2020

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

**RIGHTMINERIGHTTIME.COM**



...  
**APPENDIX**  
...







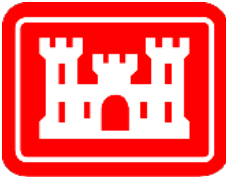
# PEBBLE FINAL ENVIRONMENTAL IMPACT STATEMENT (EIS)<sup>1</sup>

Pebble EIS initiated December 2017; published July 2020

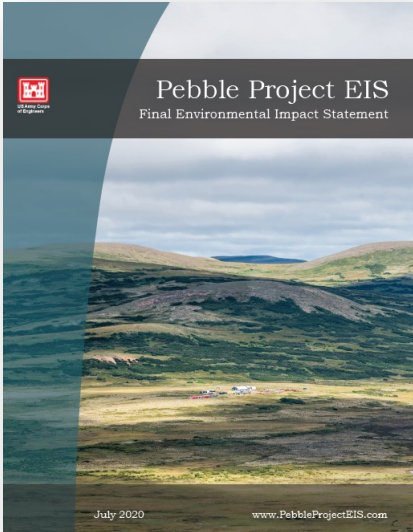
-  Intensive federal permitting process led by U.S. Army Corps of Engineers under National Environmental Policy Act (NEPA)
-  Eight federal & three state cooperating agencies, plus L+P Borough and federally recognized tribes, including:
  - U.S. Environmental Protection Agency, U.S. Fish & Wildlife Service
  - AK Dept. of Natural Resources, AK Dept. of Environmental Conservation

## Final EIS:

-  First time an expert independent body has comprehensively reviewed a development plan put forward by Pebble Project proponents under the full auspices of U.S. regulations
-  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’ that will create tremendous benefits for Alaska’s people and governments



**US Army Corps  
of Engineers®**



1. Pebble Project EIS - Final Environmental Impact Statement, July 2020





# PEBBLE PERMITTING CASE: RIGHT-SIZED & DE-RISKED

 Permitting case reflects the Company's efforts to mitigate and minimize risk where reasonably possible

 Conventional open-pit mine

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

 180,000 ton-per-day processing plant

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

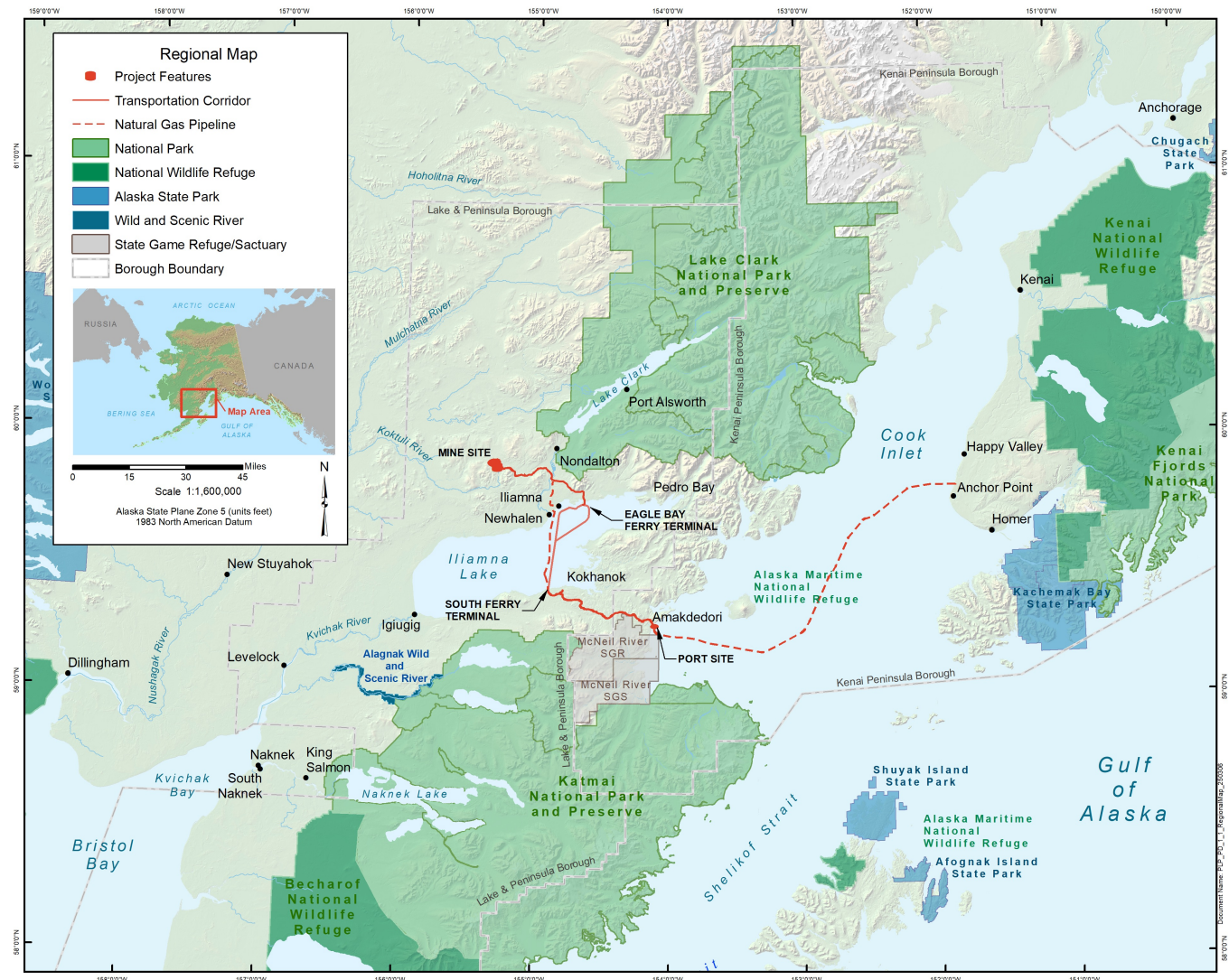
 Conventional froth flotation with no contaminant penalties

 Low cost, efficient mining plan

- 0.12:1 life of mine waste: mineralized material

 Project infrastructure to benefit Alaska

- 72-mile access road - 35 miles north of Iliamna Lake and 37 miles south of Iliamna Lake
- Road segments connected by ice-breaking ferry
- Permanent, year-round port on Cook Inlet
- 270 MW natural gas fired generating plant
- 168-mile pipeline from existing natural gas infrastructure on Kenai Peninsula



Note: See Disclosures Page 2

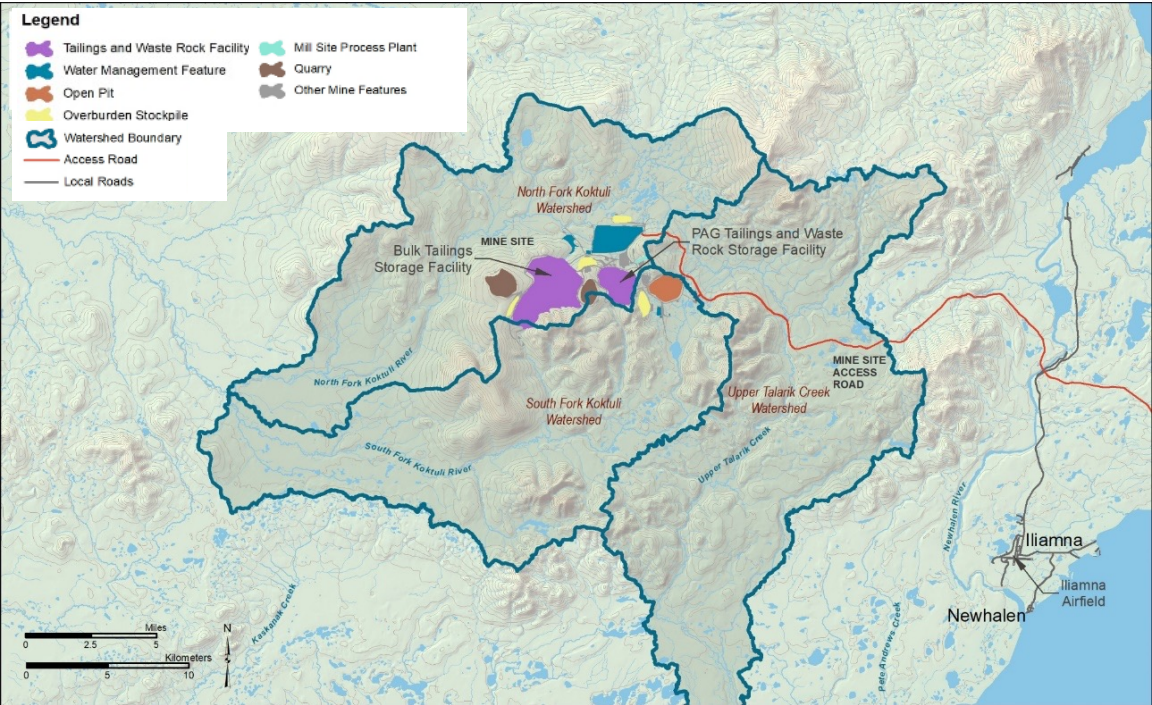
PROJECT LOCATION & PROPOSED TRANSPORTATION CORRIDOR



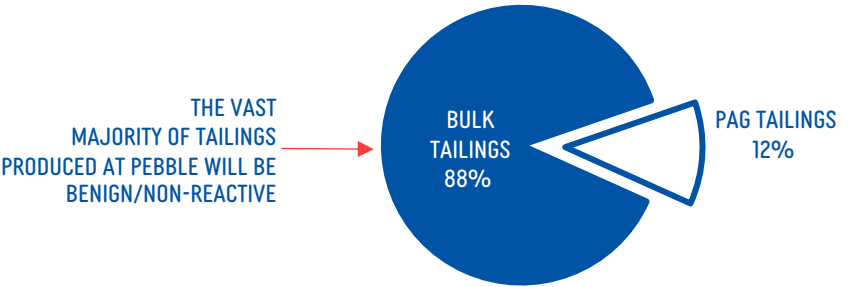
# PEBBLE KEY ENVIRONMENTAL DESIGN FEATURES

- Robust water management plan**
  - 76 years of weather data
- Compact project footprint**
  - 0.025% of Bristol Bay watershed
  - No impact on critical fish habitat
  - No permanent waste rock piles
- Potentially acid-generating (PAG) tailings & waste rock separated and stored underwater in fully-lined facility**
  - Transferred to open-pit for safe, permanent storage at closure
- Enhanced bulk tailings storage**
  - Enhanced buttresses and conservative (2.6:1) slope angles achieve 'factor of safety' above industry norms
  - Flow-through embankment vastly reduces failure likelihood & consequence
  - No long-term water quality effects
  - Capped and dry post-closure
- No mine facilities in Upper Talarik/Kvichak drainage**
- No planned cyanide use**

PRIMARY MINE FACILITIES & LOCAL HYDROGRAPHY



ALL PRIMARY MINE FACILITIES WILL BE SITED IN THE NORTH/SOUTH FORK KOKTULI DRAINAGE: AN AREA THAT PRODUCES 0.08% OF BRISTOL BAY SOCKEYE.



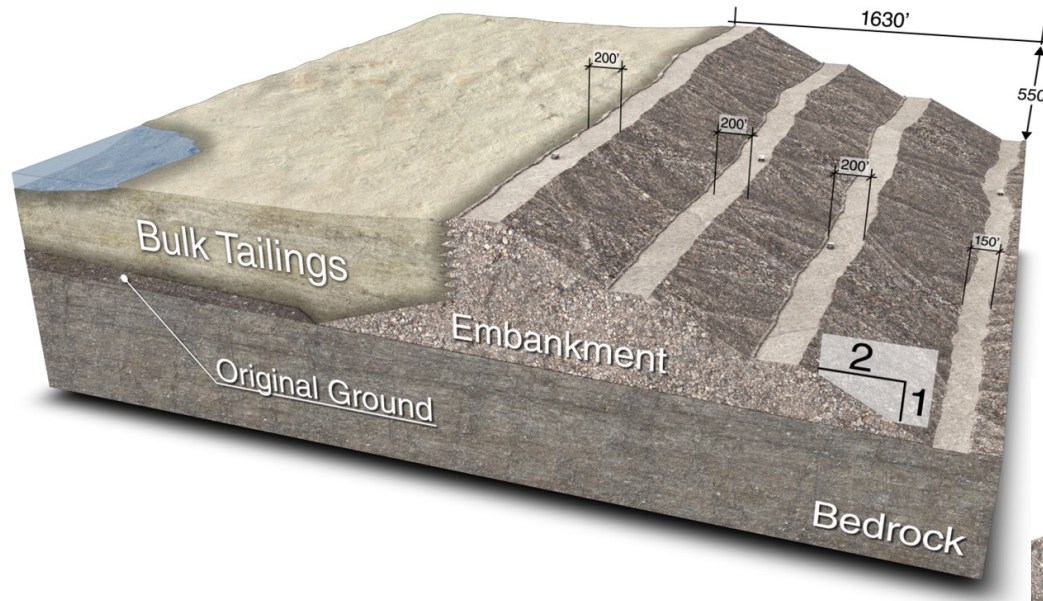
Note: See Disclosures Page 2





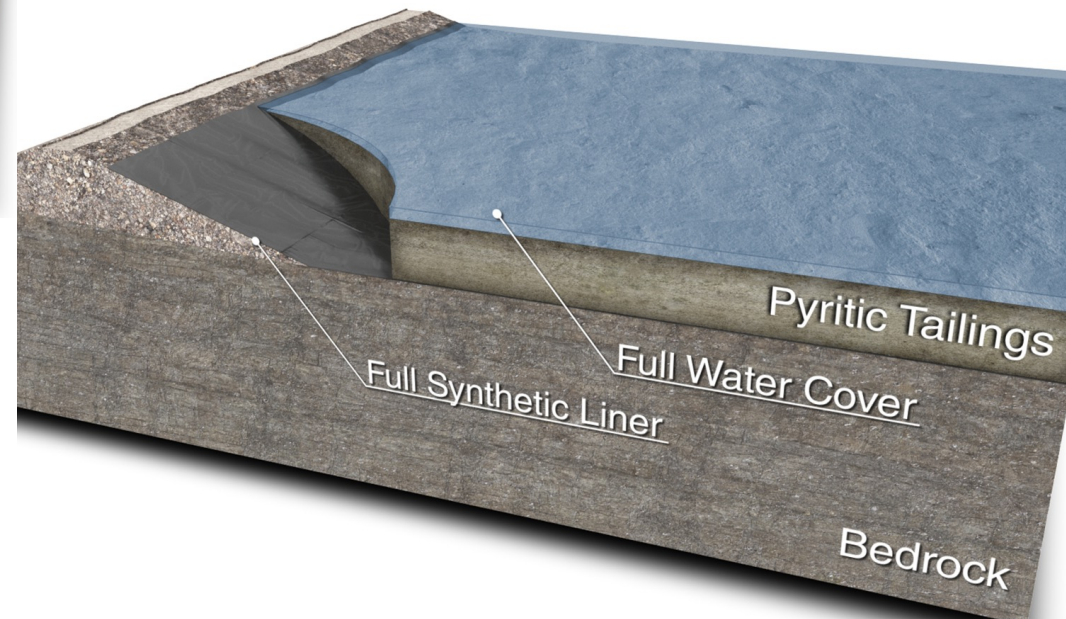
# PEBBLE TAILINGS STORAGE FACILITIES (TSF)

Two separate TSFs to manage bulk/non-PAG (1.0 billion tons) and pyritic/PAG (0.1 billion tons) material



- Bulk tailings can be stored sub-aerially
- Flow through main embankment (530 ft high)
- Lined southern embankment
- Flattened slopes with enhanced buttresses
- Conservative 2.6:1 (horizontal to vertical) slope angle
- Founded on bedrock
- Extended beach and reduced water storage

- Pyritic tails must be stored under water to prevent oxidation
- Synthetic liner to capture the water
- PAG rock to be stored with pyritic tails
- Rock and tails reclaimed to pit at closure and site decommissioned and reclaimed





# PEBBLE FINAL EIS 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:

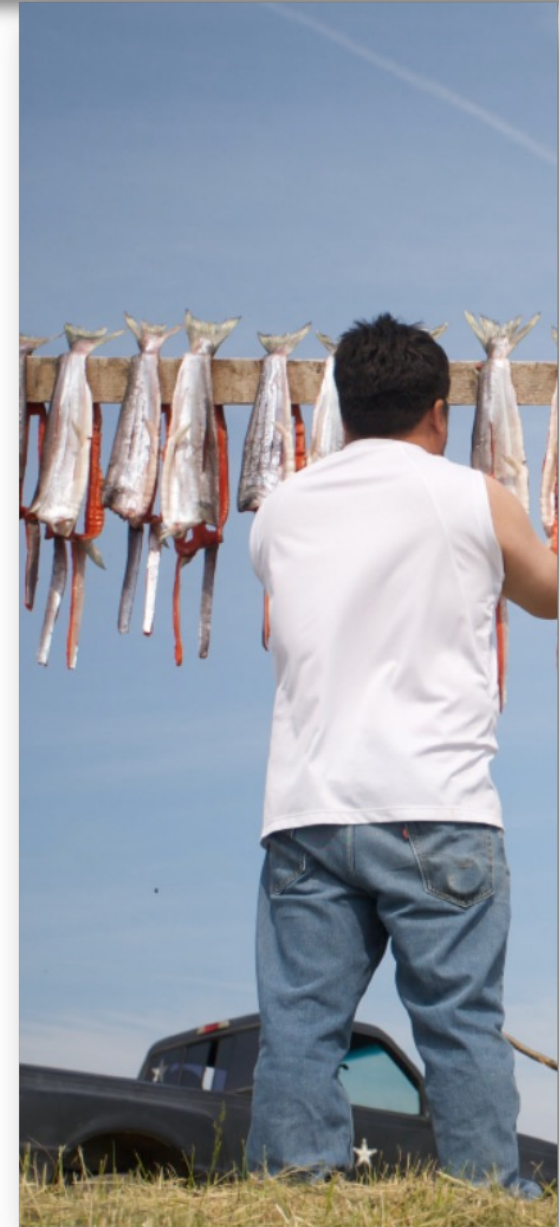
- “No measurable change in the number of returning salmon and the historical relationship between ex-vessel values and wholesale values...or processor operations.”
- “... would not be expected to have a measurable effect on fish numbers and result in long-term changes to the health of the commercial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





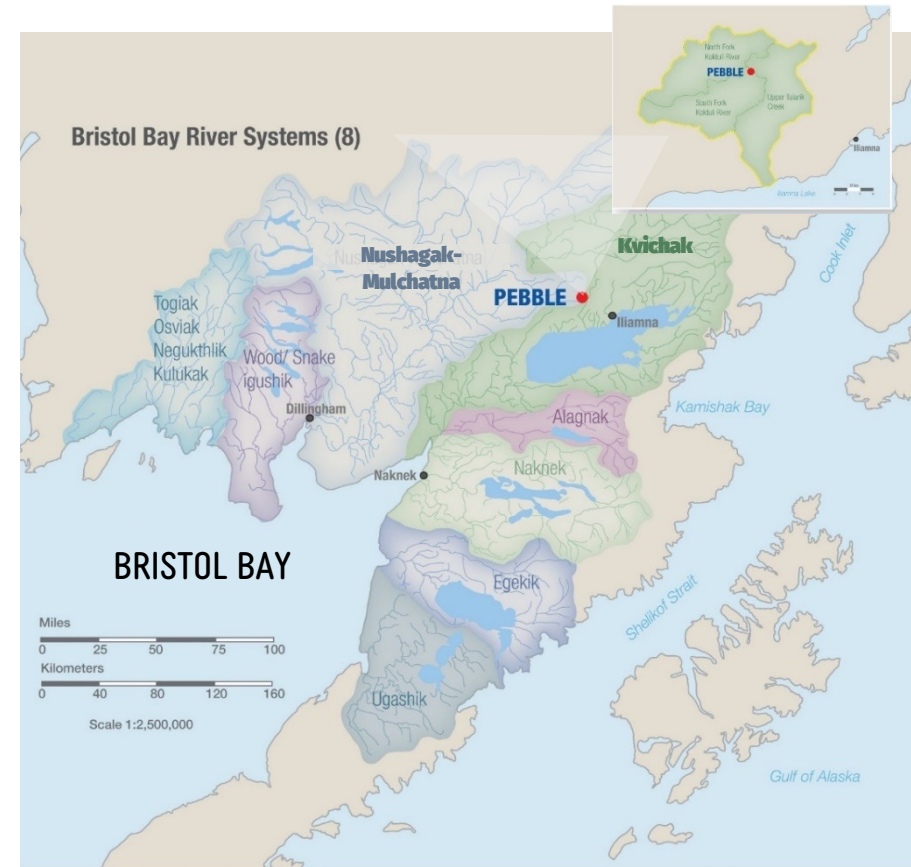
# PEBBLE FINAL EIS

## NO MEASURABLE IMPACT ON FISHERIES

 Based on the Pebble Project design submitted for permitting, and considering all relevant environmental safeguards and mitigations, the USACE found that “impacts to Bristol Bay salmon are not expected to be measurable.”

 The Final EIS concludes:

- within the Bristol Bay region as a whole (40,000 sq. miles)  
“The mine site area is not connected to the Togiak, Ugashik, Naknek, and Egegik watersheds and is not expected to affect fish populations or harvests from these watersheds.”
- Within the large regional watersheds that will host project facilities (~23,000 sq. miles)  
“(The project) would not have measurable effects on the number of adult salmon returning to the Kvichak and Nushagak river systems.”
- Within the project footprint area (~10 sq. miles)  
“...impacts to anadromous and resident fish populations from these direct habitat losses would not be measurable, and would be expected to fall within the range of natural variability.”







# PEBBLE SOCIAL INTEGRATION WITH BRISTOL BAY REGION

 Pebble has multiple partnership agreements with Alaska Native landowners/stakeholders in the project area to deliver:

- Transportation corridor access to Pebble mine site
- Direct financial benefits, contracting and employment for Alaska Native corporations and shareholders
- Bristol Bay residents who are full partners in the Pebble enterprise

 **Pebble Performance Dividend announced June 2020:**

- Revenue sharing for full-time residents of Bristol Bay
- Distribute a 3% net profit royalty interest
- Min. \$3M annual payment beginning at construction

 **Process to initiate public dialogue around regional power sharing announced June 2020**

 **MOU to establish transportation/port operations partnership with consortium of Alaska Native village corporations announced July 2020**

 **Workforce development plan to maximize local hire and local benefits through:**

- On-site training, internships, scholarships & educational partnerships
- Region-wide recruitment and transport
- Work schedules that facilitate subsistence lifestyles

**PEBBLE  
PERFORMANCE  
DIVIDEND** 





# ALASKA: A PROVEN MINING AND RESOURCE DEVELOPMENT JURISDICTION



## Established mining industry:

- Six operating mines and multiple late-stage development projects
- Ranked #11 Globally for Investment Attractiveness by Fraser Institute Annual Survey of Mining Companies 2022



## A strong resource based economy:

- Governor Dunleavy:  
“...The economic adversity facing Bristol Bay poses a steep challenge, but the odds are far from insurmountable if we take action today...”
- “I will not stop fighting for the people of the Bristol Bay region who continue to suffer from an acute lack of economic opportunity.”



## Committed to due process and the rule of law:

- Bristol Bay Area Plan (2005)  
“The general resource management intent for the Pebble Copper Area is to accommodate mineral exploration and development...”



## An ‘owner’ state’:

- Alaska State Constitution (1959):  
“It is the Policy of the State of Alaska to encourage... the development of its resources by making them available for maximum use consistent with the public interest”
- The Permanent Fund



1. October 26, 2020 letter, Gov. Dunleavy to Representatives Edgmon and Stutes



# PEBBLE AMONG THE WORLD'S GREATEST STORES OF MINERAL WEALTH





# PEBBLE.... ON GOOD MINING GROUND

## ➤ Pebble Resource Estimate using a 0.3% CuEq cutoff

| CLASSIFICATION | TONNES  | GRADES |      |        |        |        |        | RECOVERABLE METAL |         |         |         |           |
|----------------|---------|--------|------|--------|--------|--------|--------|-------------------|---------|---------|---------|-----------|
|                | Million | CuEq % | Cu % | Au g/t | Ag g/t | Mo ppm | Re ppm | Cu B lb           | Au M oz | Ag M oz | Mo B lb | Re Kg     |
| MEASURED       | 527     | 0.65   | 0.33 | 0.35   | 1.7    | 178    | 0.32   | 3.35              | 4.58    | 20.4    | 0.15    | 118,000   |
| INDICATED      | 5,929   | 0.77   | 0.41 | 0.34   | 1.7    | 246    | 0.41   | 49.64             | 49.24   | 228.9   | 2.62    | 1,731,000 |
| M+I            | 6,456   | 0.76   | 0.40 | 0.34   | 1.7    | 240    | 0.40   | 52.99             | 53.82   | 249.3   | 2.78    | 1,849,000 |
| INFERRED       | 4,454   | 0.55   | 0.25 | 0.25   | 1.2    | 226    | 0.36   | 22.66             | 28.11   | 121.7   | 1.81    | 1,025,000 |

### Notes:

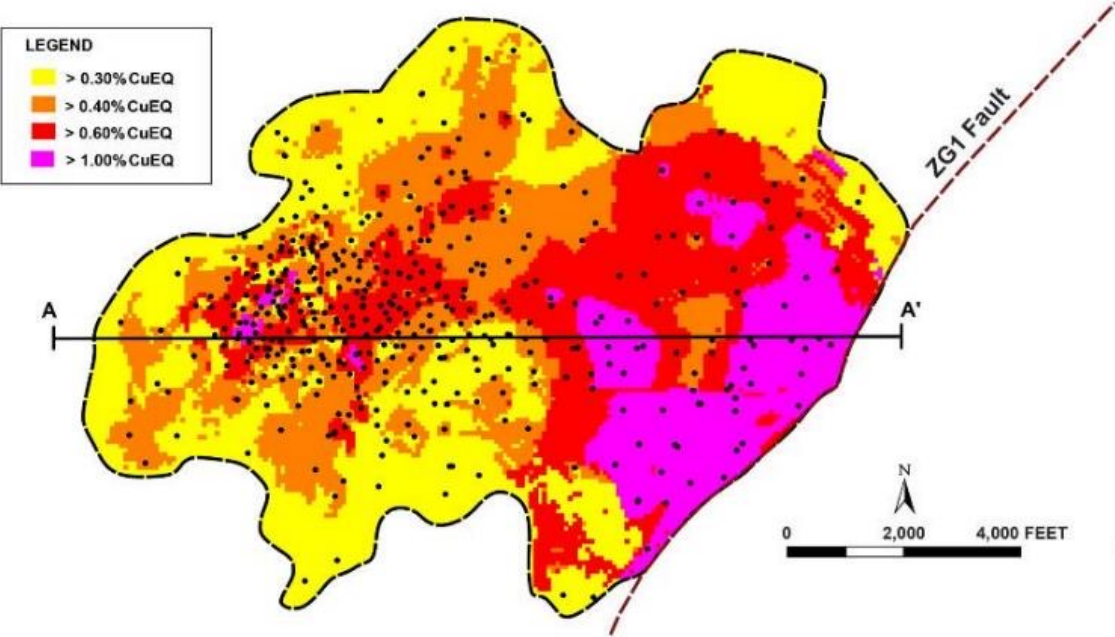
- David Gaunt, P. Geo., estimated the resource, which has been audited by Greg Z. Mosher, P. Geo., a Qualified Person who is independent of Northern Dynasty and who assumes responsibility for this estimate. The effective date of the Technical Report is August 21, 2023 (2023 PEA) filed at [www.sedarplus.ca](http://www.sedarplus.ca).
- Copper equivalent (CuEq) calculations use the following 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).
- Recovered metal based on recoveries in Table 1-1 and Table 13-20 in the 2023 PEA.
- The mineral resource estimate is constrained by a conceptual pit shell that was developed using a Lerchs-Grossmann algorithm and is based in the following parameters: 42 degree pit slope; metal prices and recoveries for gold of US\$1,540.00/oz and 61% Au, for copper of US\$3.63/lb and 91% Cu, for silver of US\$20.00/oz and 67% Ag and for molybdenum of 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.
- Per the calculation outlined in Section 14.12 of the 2023 PEA, recent company work has demonstrated that using appropriate and likely inputs for commodity prices, concentrate grades, payable copper, and realization charges results in a cutoff grade of 0.22% CuEq. The QP believes that the use of a 0.3% CuEq cutoff grade to express the Pebble resources is conservative and provides continuity with previous estimates.
- The QP has reviewed the technical information, and other factors that may affect the estimate including permitting and external legal counsel's letter regarding the ROD appeal and Final Determination and believes that there are reasonable prospects of eventual economic extraction.





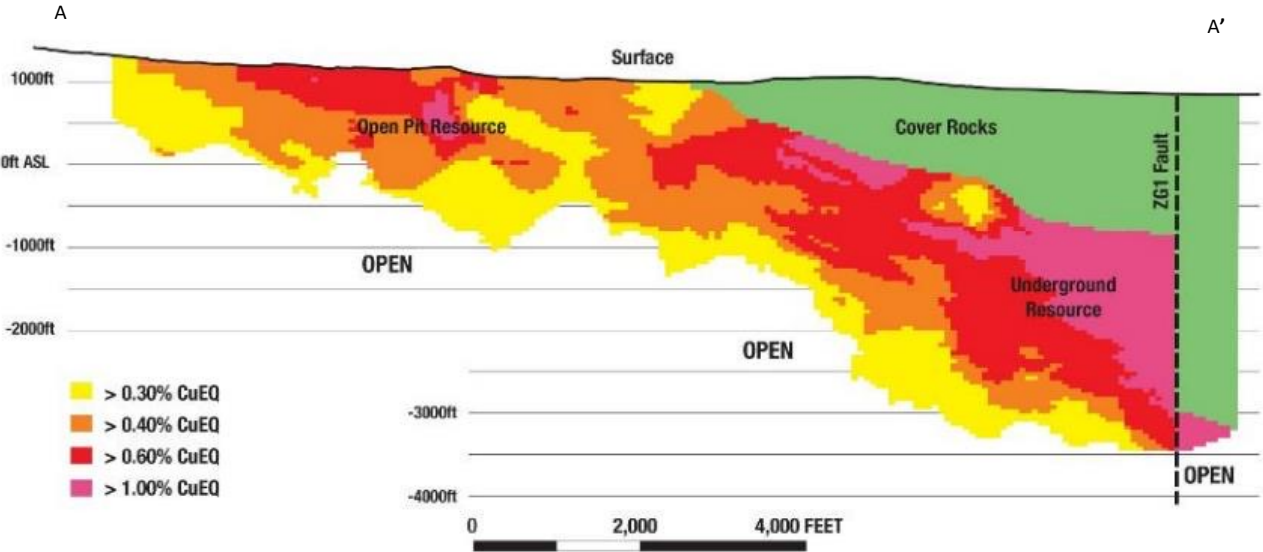
# PEBBLE PLAN VIEW AND CROSS SECTION

- The Pebble resource is based on 699 diamond core holes and >59,000 samples.
- Mineralization extends over a 4km by 3km area



PLAN VIEW AT THE TOP SURFACE OF CRETACEOUS ROCK TYPES

EAST-WEST CROSS SECTION THROUGH THE APPROXIMATE CENTRE OF THE RESOURCE LOOKING NORTH



Note: Metal prices used for copper equivalent (CuEQ) are same as for resource (see Page 40).

# PEBBLE PROPOSED PROJECT MINING



## Standard open pit truck/shovel operation

- 1.3 billion tons mill feed,  
1.4 billion tons total  
(0.12:1 strip ratio)
- 1 year pre-production, 20 years operation
- No permanent waste rock facility
- PAG waste and tails backfilled to the pit at closure
- Ultra-class equipment







# PEBBLE METALLURGICAL TESTWORK

-  **NDM testwork completed from 2004 to 2008**
  - Focused on flowsheet development
  - Comminution variability testing
-  **\$10.5 million on metallurgical testwork from 2008 to 2013**
  - Managed by PLP
  - Majority of the testwork completed at SGS Lakefield
  - Cu/Mo separation conducted at SGS and G&T (now ALS)
-  **Major testwork included**
  - Ore characterization / mineralogy
  - Flotation optimization
  - Flotation and comminution variability
  - Testwork to support secondary gold plant design
  - Continuous flotation
  - Vendor testwork (regrinding, thickening, filtration, gravity gold etc.)

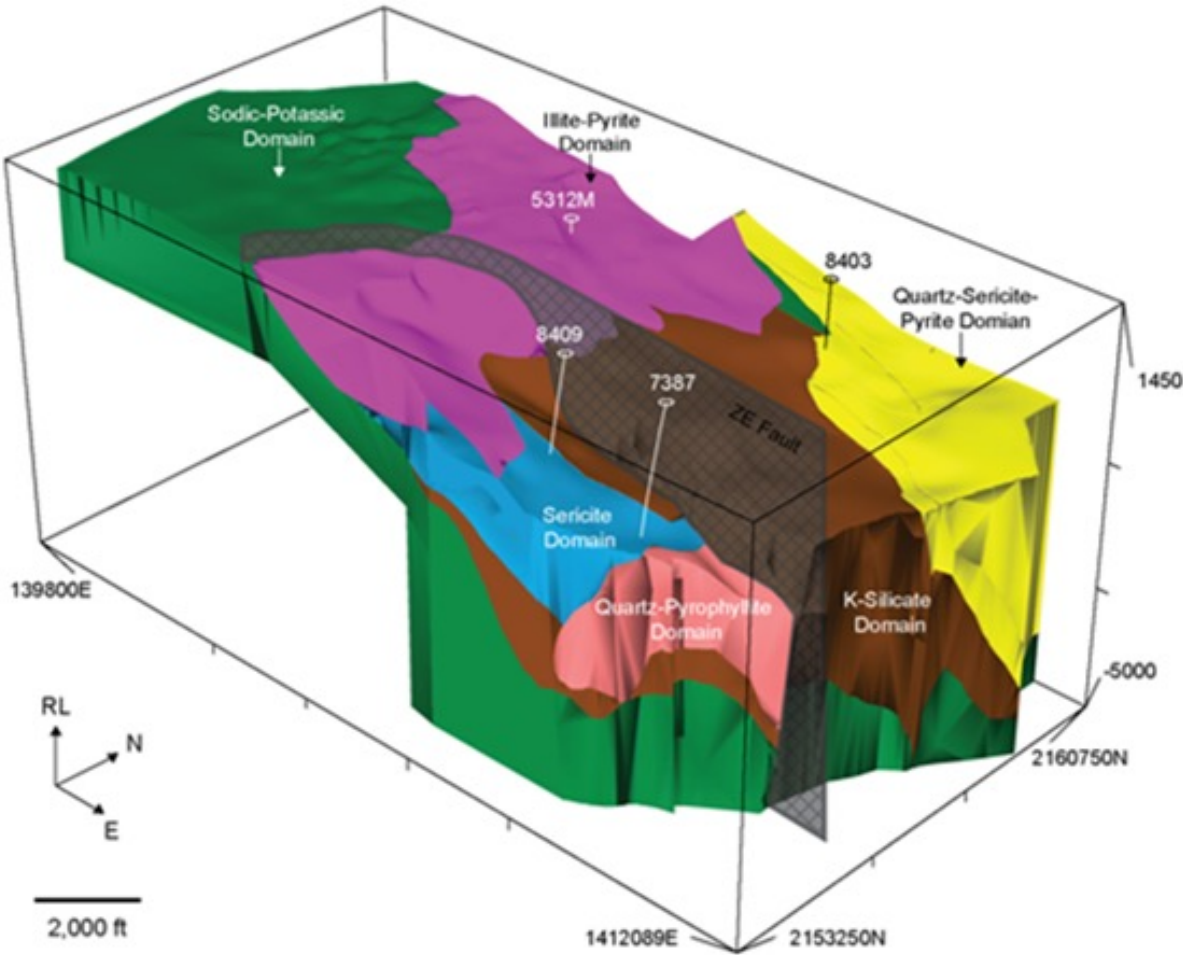




# PEBBLE METALLURGICAL RECOVERIES BY GEOMETALLURGICAL DOMAIN

|                | FLOTATION RECOVERY TO CONCENTRATE |      |      |         |
|----------------|-----------------------------------|------|------|---------|
|                | CU CONC                           |      |      | MO CONC |
|                | CU                                | AU   | AG   | MO      |
| SUPERGENE      |                                   |      |      |         |
| SODIC POTASSIC | 74.7                              | 60.4 | 64.1 | 51.2    |
| ILLITE PYRITE  | 68.1                              | 43.9 | 64.1 | 62.6    |
| HYPOGENE       |                                   |      |      |         |
| ILLITE PYRITE  | 86.4                              | 43.9 | 64.1 | 73.2    |
| SODIC POTASSIC | 86.2                              | 60.4 | 64.1 | 76.6    |
| K SILICATE     | 90.3                              | 61.3 | 64.1 | 82.3    |
| QP             | 94.3                              | 65.0 | 64.1 | 80.1    |
| SERICITE       | 86.4                              | 39.2 | 64.1 | 73.2    |
| QSP            | 86.0                              | 31.6 | 64.1 | 82.5    |

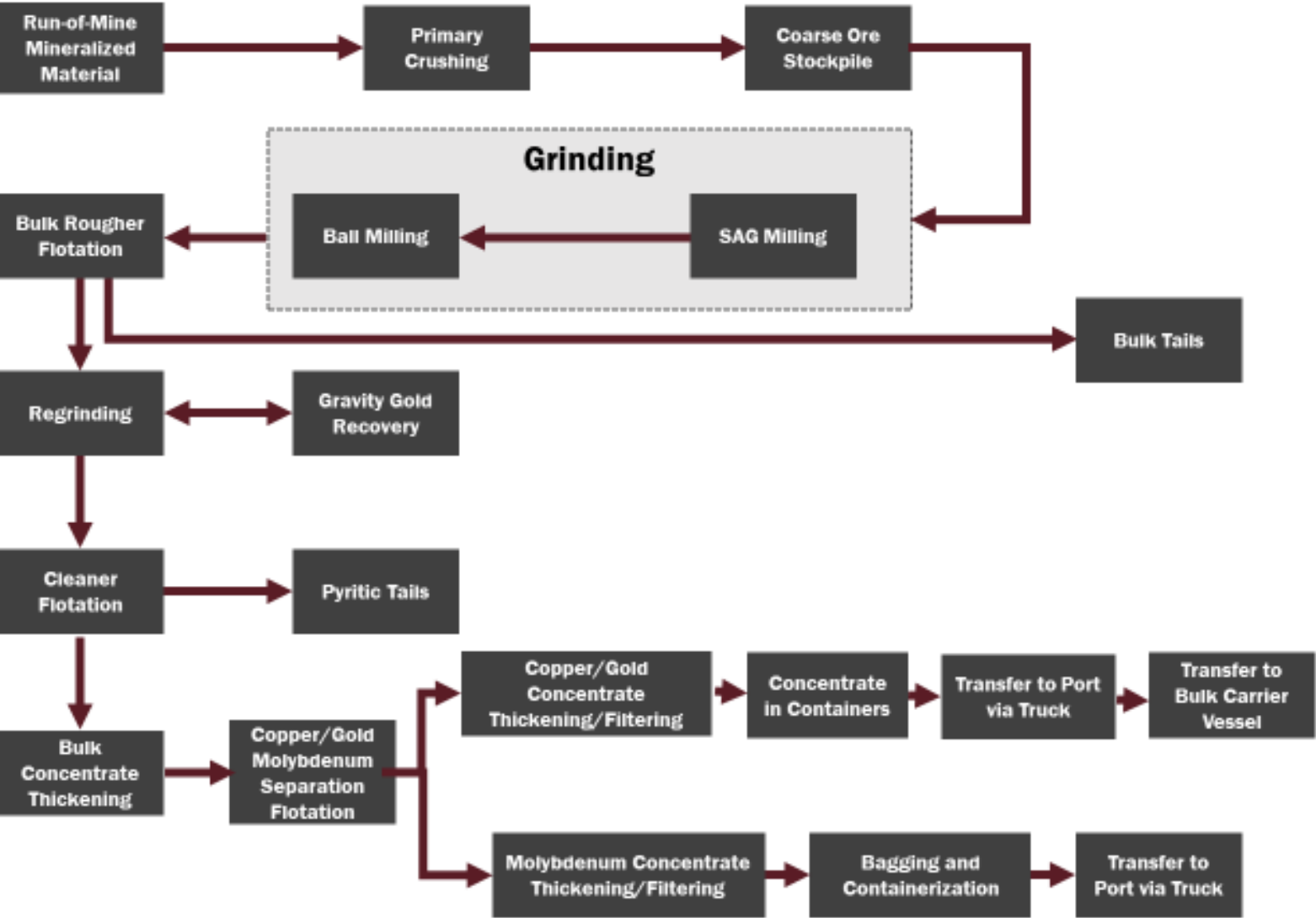
- Domains defined by geometallurgical assessment
- Domain recoveries based on locked-cycle test results
- Results summarized to the median
- Assumes a 92.7% Mo separation efficiency







# PEBBLE CONVENTIONAL FROTH FLOTATION PROPOSED PROCESS FLOW SHEET



Note: See Disclosures Page 2



# PEBBLE PROPOSED MINE SITE GENERAL LAYOUT







# PEBBLE EARTHQUAKE DESIGN



## Alaska earthquakes

- Most active state in the U.S.
- Critical design consideration



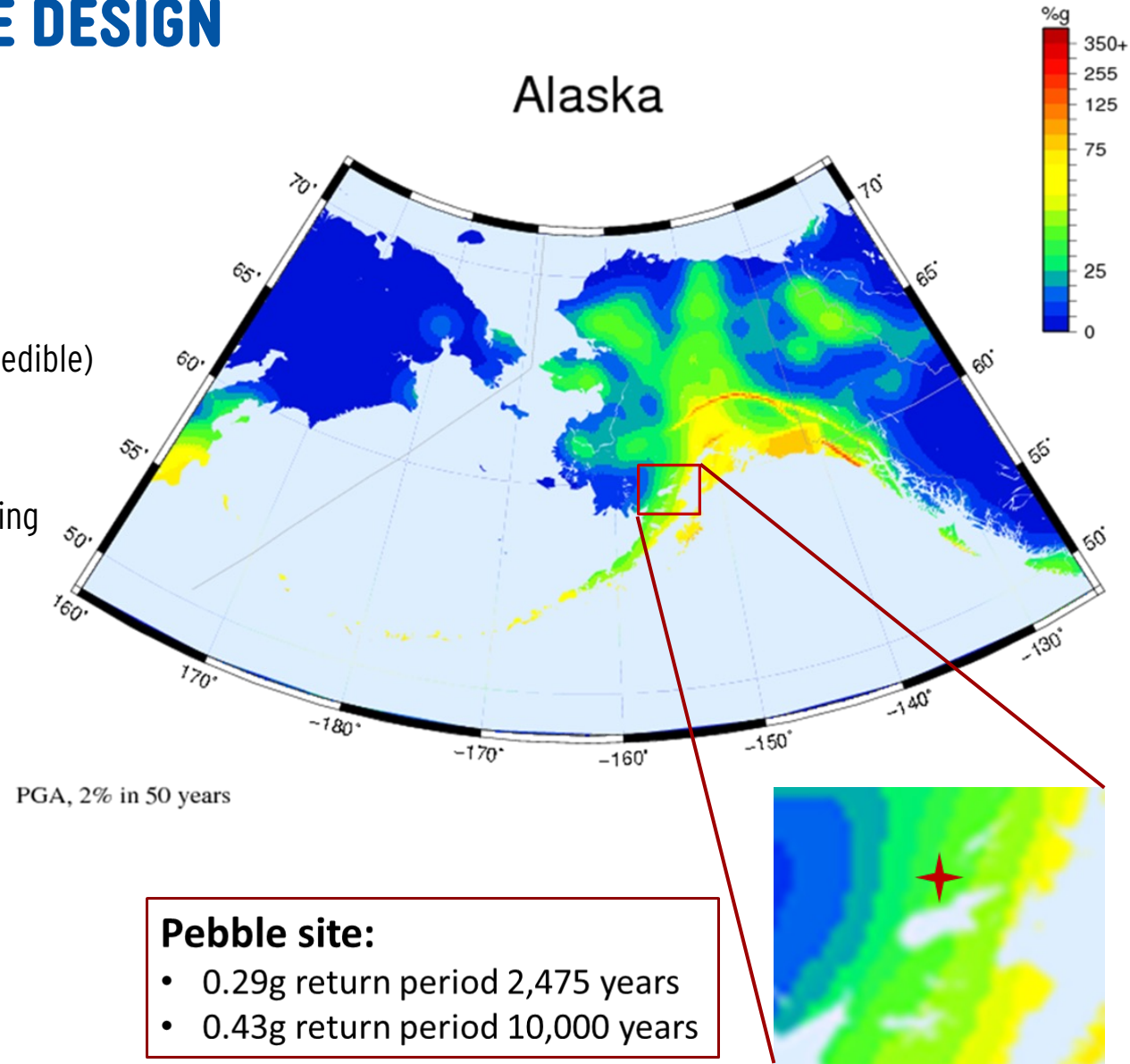
## Earthquake design in two steps

- Probability based on history
- Calculated worst case (maximum credible)



## Probability

- Used USGS data
- Based on accelerations due to shaking
- Measured as percent of gravity (g)



Map derived from USGS Earthquakes Hazard Program:  
[www.earthquake.usgs.gov/hazards/products/ak](http://www.earthquake.usgs.gov/hazards/products/ak)



# PEBBLE EARTHQUAKE DESIGN

-  **Maximum Credible Earthquake (MCE)**
  - Evaluated all potential seismic sources in region
  - Selected 4 earthquakes
-  **9.2 M Megathrust – 0.16g**
  - Repeat of 1964 event
-  **8.0 M Intralab – 0.61g**
  - Major event near port site
-  **7.5 M Lake Clark Fault – 0.57g**
  - Complete rupture of closest known major fault to the site
-  **6.5 M “floating” fault – 0.56g**
  - Unidentified fault immediately below the site
-  **Results**
  - Used the Intralab scenario with 0.61g as the MCE
  - Given the probability assessment, greater than 10,000 year return period







# PEBBLE WATER MANAGEMENT

## Water management is a key project component

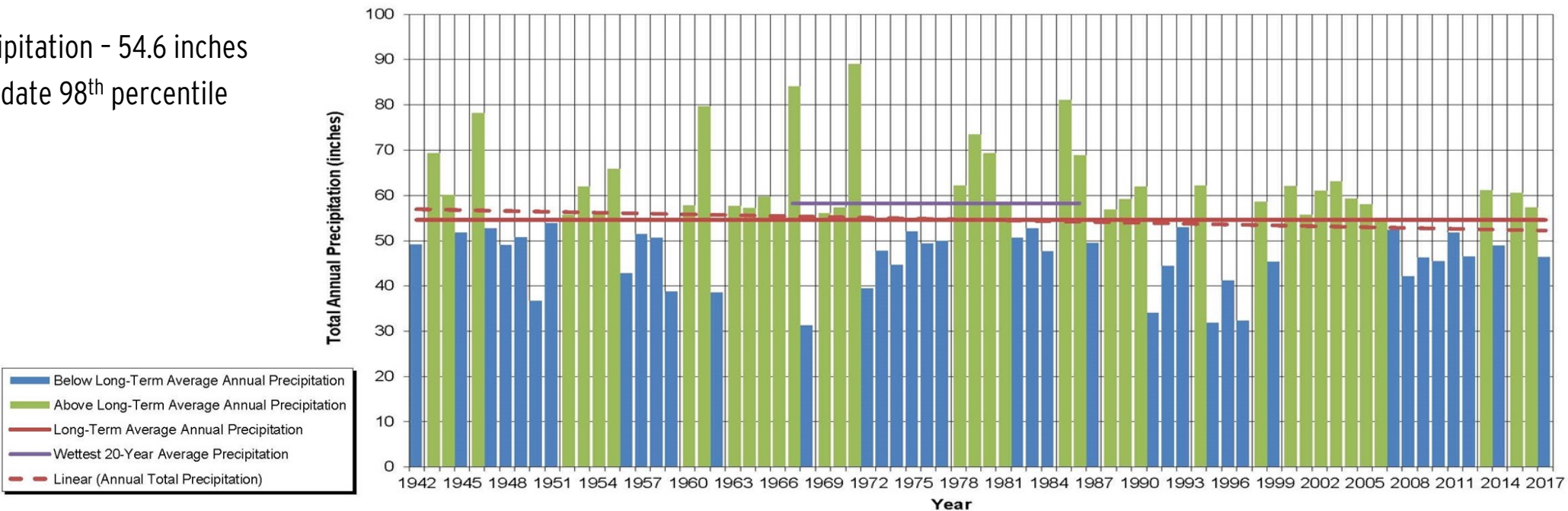
- Need to protect salmon spawning habitat
- Very specific and demanding discharge criteria
- Tailings management safety
- Required for process operations

## Water balance developed using:

- 11 years of site weather data
- Stream gauges
- 76 years of records from nearby communities

## Results

- Mean annual precipitation - 54.6 inches
- Designs accommodate 98<sup>th</sup> percentile





# PEBBLE WATER MANAGEMENT

## Water management plan

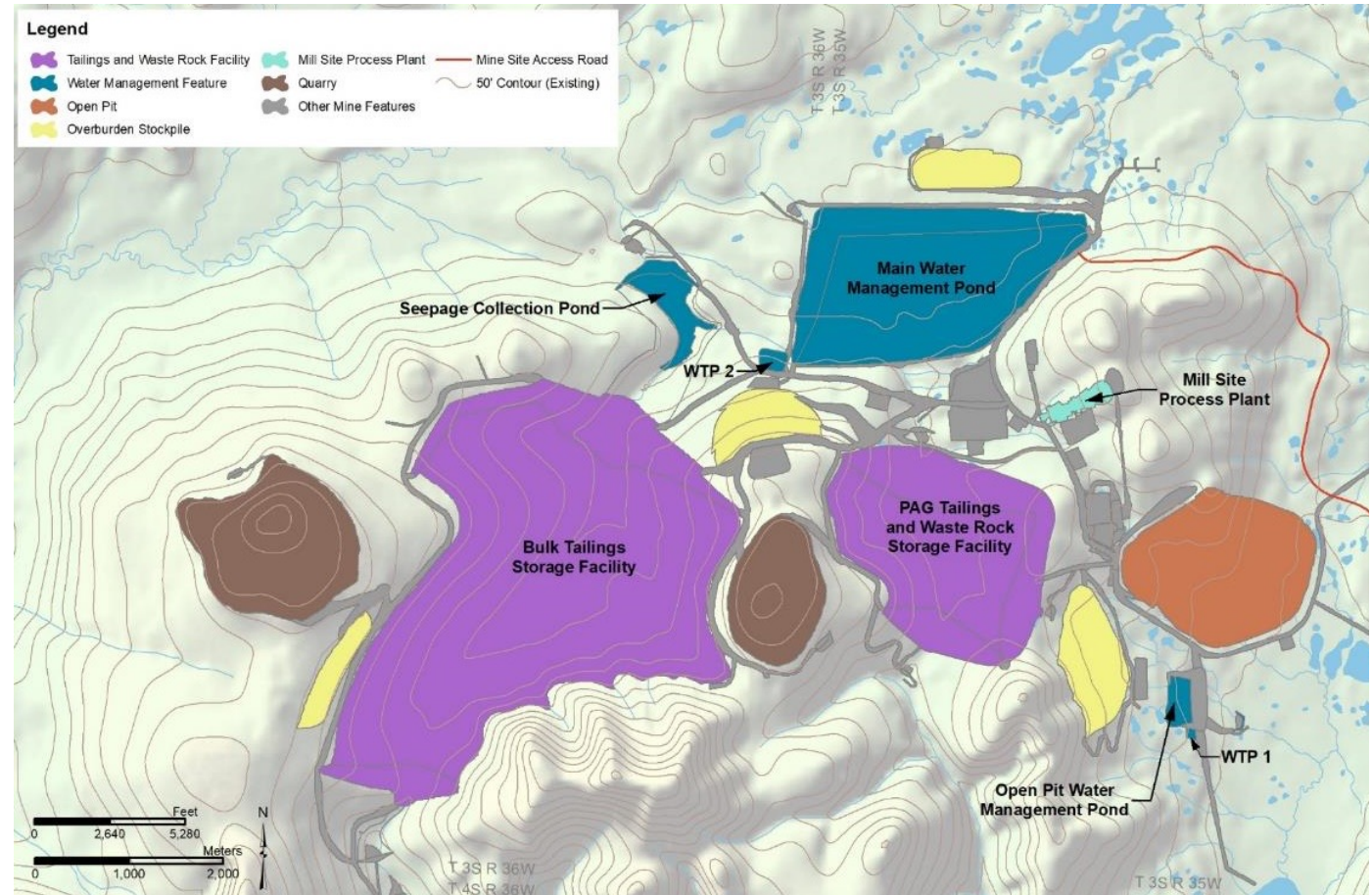
- Designed to manage full range of expected precipitation
- Minimize water storage in tailings facilities
- Meet or exceed discharge quality criteria

## Water management facilities

- Main Water Management Pond - primary storage facility
- Seepage Collection Pond - captures flow-through water from Bulk TSF
- Open Pit Water Management Pond

## Water treatment

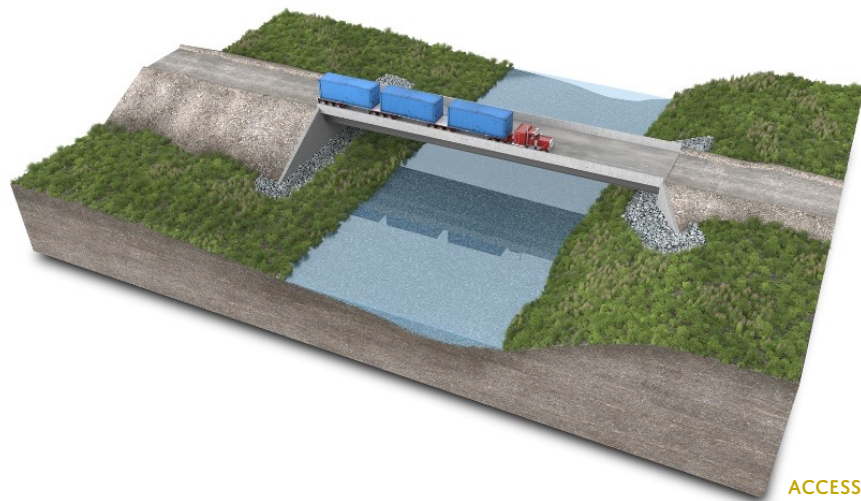
- Treatment Plant #1 - treats open pit dewatering flow
- Treatment Plant #2 - flow from TSFs and remainder of site
- Multiple trains for variable treatment rates to match conditions
- Discharge to the Koktuli South and North Forks and Upper Talarik



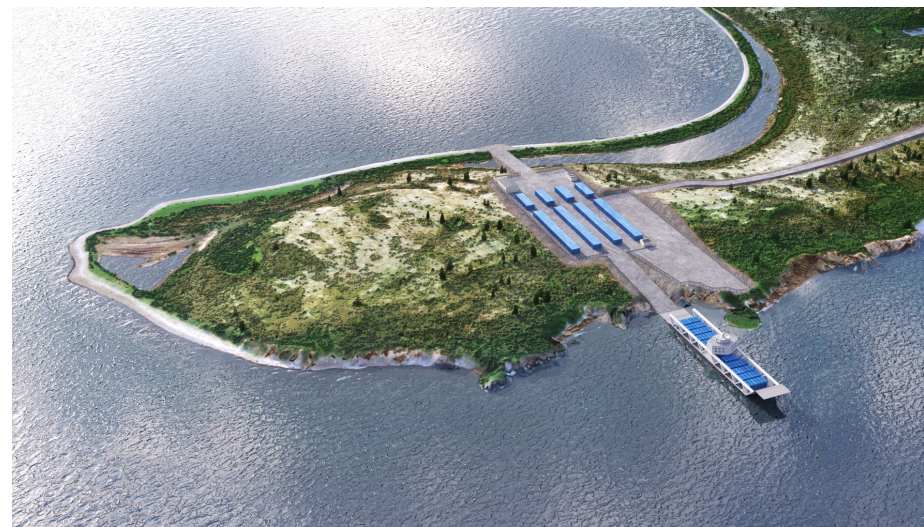




# PEBBLE: TRANSPORTATION SYSTEM



ACCESS ROAD – BRIDGE CROSSING



NORTH FERRY TERMINAL



ICE BREAKING FERRY

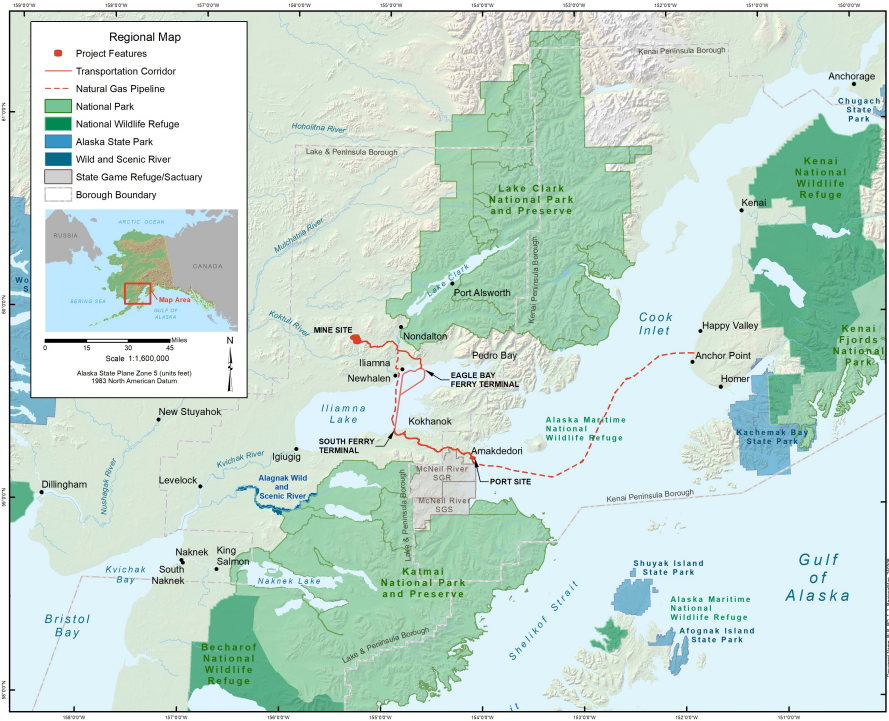


SOUTH FERRY TERMINAL





# PEBBLE: CONCENTRATE HAULAGE IN CONTAINERS



PERMITTING CASE ACCESS CORRIDOR



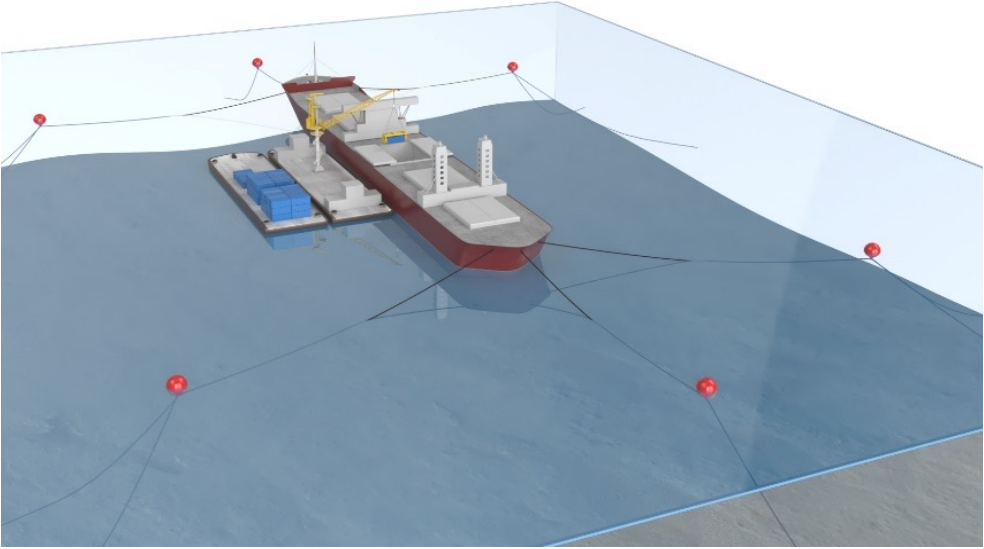
BULK CARRIER CONTAINER TRANSFER



BULK CONTAINER LAYDOWN YARD



AMAKDEDORI PORT



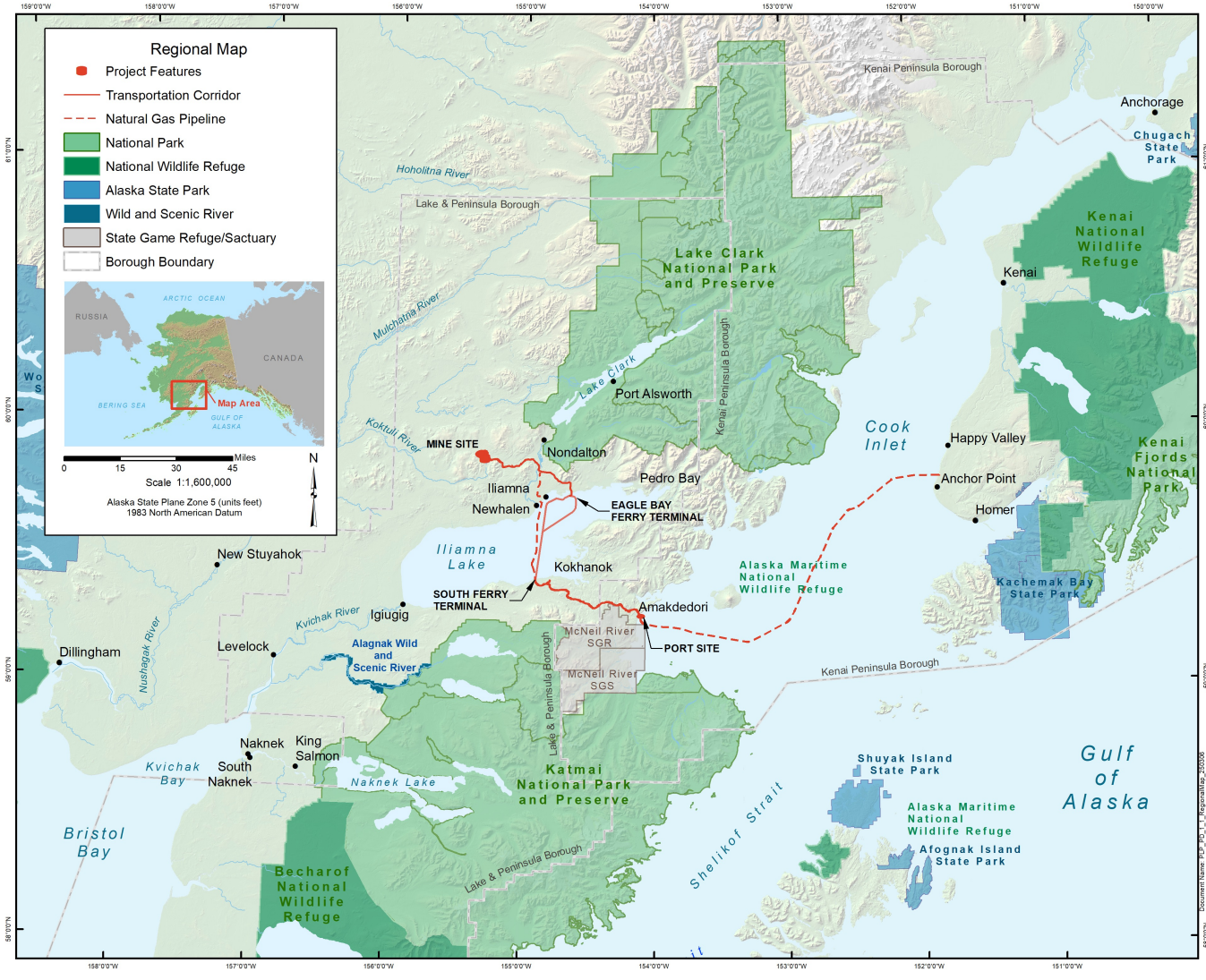
CONCENTRATE CONTAINER TRANSFER





# PEBBLE PROPOSED POWER SUPPLY

- 270 MW natural gas-fired power plant at mine site
  - Smaller power plant at port site
- 168 mile pipeline to connect to Kenai Peninsula
  - Sub-marine crossing of Cook Inlet
  - Sub-lake crossing of Iliamna Lake



PERMITTING CASE ACCESS CORRIDOR

Note: See Disclosures Page 2



# REFERENCES & SOURCE MATERIAL

## SOURCES FOR SLIDE 25

- TECK: <https://www.teck.com/investors/reserves-&resources/reserves-and-resources>
- ANGLO AMERICAN: <https://www.angloamerican.com/~media/Files/A/Anglo-American-Group/PLC/investors/annual-reporting/2019/aa-ore-reserves-and-mineral-resources-2018.pdf>
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- NEWMONT: [https://www.newmont.com/wp-content/uploads/2020/02/Newmont-Reports-2019-Reserves-and-Resources\\_Final.pdf](https://www.newmont.com/wp-content/uploads/2020/02/Newmont-Reports-2019-Reserves-and-Resources_Final.pdf)
- ANGLOGOLD ASHANTI: <http://www.aga-reports.com/18/download/AGA-RR18.pdf>
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- USGS Annual Metal Report: <https://prd-wret.s3-us-west-2.amazonaws.com/assets/palladium/production/s3fs-public/atoms/files/mcs-2019-copper.pdf>
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- <https://northerndynastyminerals.com/pebble-project/project-economics/>

PEBBLE PROJECT EIS - FINAL ENVIRONMENTAL IMPACT STATEMENT, JULY 2020

- <https://pebblepartnership.com/all-eis-documents>



# THANK YOU

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



Northern Dynasty Minerals Ltd

## CONTACT INFORMATION

General Office  
14<sup>th</sup> Floor  
1040 W. Georgia Street  
Vancouver, BC  
Canada V6E 4H1

## INVESTOR RELATIONS

[info@northerndynasty.com](mailto:info@northerndynasty.com)  
Tel: 604.684.6365  
TF: 800.667.2114



Suite 405, 2525 Gambell Street  
Anchorage AK 99503  
Phone: (907) 339-2600  
Fax: (907) 339-2601

## WEBSITES

[northerndynastyminerals.com](http://northerndynastyminerals.com)  
[pebblepartnership.com](http://pebblepartnership.com)  
[rightminerighttime.com](http://rightminerighttime.com)

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