



Mary River | Phase 2 Infrastructure
April 5, 2017



Infrastructure for Bulk Commodity Mining





Mary River Project

- ‡ Baffinland is amongst the highest ore quality and quantity world wide.
- ‡ Deposit No. 1 is currently the largest known deposit of high grade iron ore in the Mary River area.
- ‡ Resource estimates to date total more than 350 million tonnes at an average grade of 64%. Inferred resource up to 980 Mt in 9 deposits and exploration continues.
- ‡ Underground pits and tailings ponds are not required, Baffinland produces a Direct Ship Product (DSP) which does not require processing.



Comparison of Commodities

Commodity	Price (US \$/tonne)	Production for \$1 million (tonnes)
Gold	40,000,000	0.025
Silver	580,000	1.7
Zinc	2,750	364
Lead	2,300	435
Iron Ore	80	12,500



Phase 2 Expansion Project

Mary River Project – Recent History

- ‡ 2012 Original proposal – 18 mtpa by Rail to Steensby
- ‡ 2014 Early Revenue Phase - 4.2 mtpa by truck to Milne
- ‡ Oct 2014 Phase 2 Proposal –12 mtpa by truck to Milne with winter shipping
- ‡ 2015 – Started operations
- ‡ 2015 – Community consultation on Phase 2
- ‡ February 2016 – Updated Phase 2 - 12 mtpa by Rail to Milne
- ‡ 2016 – More community consultation
- ‡ November 2016 – Phase 2 removed winter shipping

Infrastructure Challenges

Baffin Island presents a unique and challenging environment displaying extreme conditions much of the year:

- ✚ Sub-zero temperatures for 9 months of the year, with temperatures reaching as low as -54°C.
 - ✚ Truck and equipment maintenance
- ✚ Spring freshet and fall freeze-up
 - ✚ Lose one month of trucking
- ✚ 2 months of near total darkness
- ✚ Less than 3 months of open water

Community Feedback

Key issues raised by the communities:

- ❖ Economic and social benefits - employment, training and business opportunities
- ❖ Dust generated by truck traffic and operations
- ❖ Potential winter shipping and ice breaking - possible effects on Inuit land use activities and travel routes.



Rationale for Phase 2 Project

Expansion is key to long term sustainability

- ≡ Phased approach to the development of the Mary River Project.
- ≡ The Project remains vital to the economy in North Baffin.
- ≡ Current production of 4.2 mtpa has proven insufficient for the long-term.
- ≡ Increased production is required to achieve the required economy of scale for future stability and global competitiveness.



Top Global Iron Ore Producers

Owner	Country	Production in 2014 (mt)
Rio Tinto	Australia	163
Vale	Brazil	120
Fortescue	Australia	90
BHP Billiton	Australia	79
BHP Billiton	Australia	77
IOC	Canada	22



What does Phase 2 Look Like?



What Changes in Phase 2

- ✦ Mining Operations and site services don't change significantly
- ✦ The focus is on expanding Infrastructure
 - ✦ Rail transport of ore from mine to port
 - ✦ Most northerly rail line in the world
 - ✦ Crushing and screening moved to the port
 - ✦ Second ore dock for Cape Size vessels



Rail Component

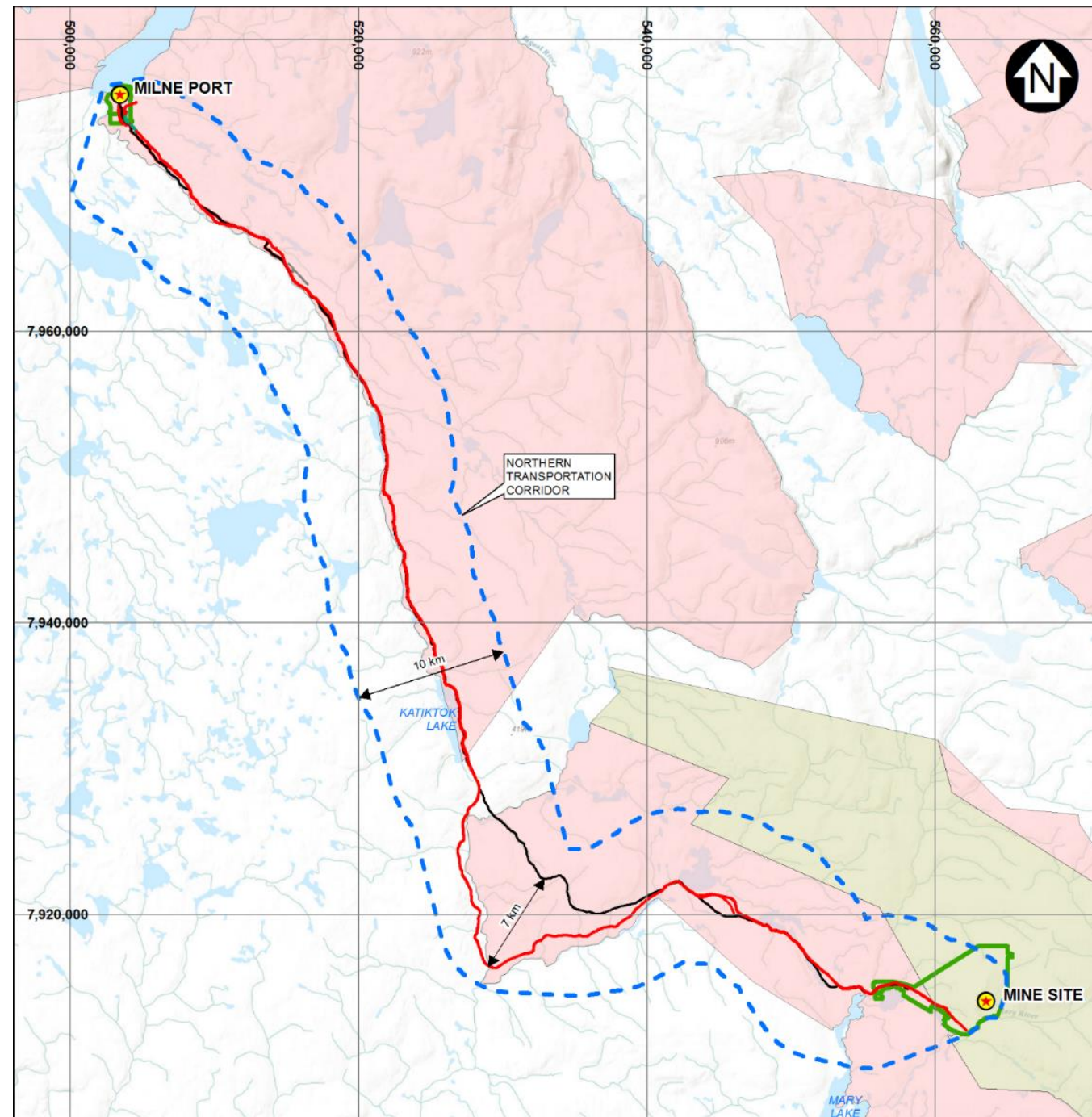


Rail vs Truck

- ✚ Reduced trips per day (compared to truck)
- ✚ Average speed 45 km/h, max speed 60 km/h
- ✚ Reduced fuel consumption (compared to truck)
- ✚ Reduced waste generation(compared to truck)
- ✚ Reduced animal interactions
- ✚ Reduced dust emissions



Rail Alignment



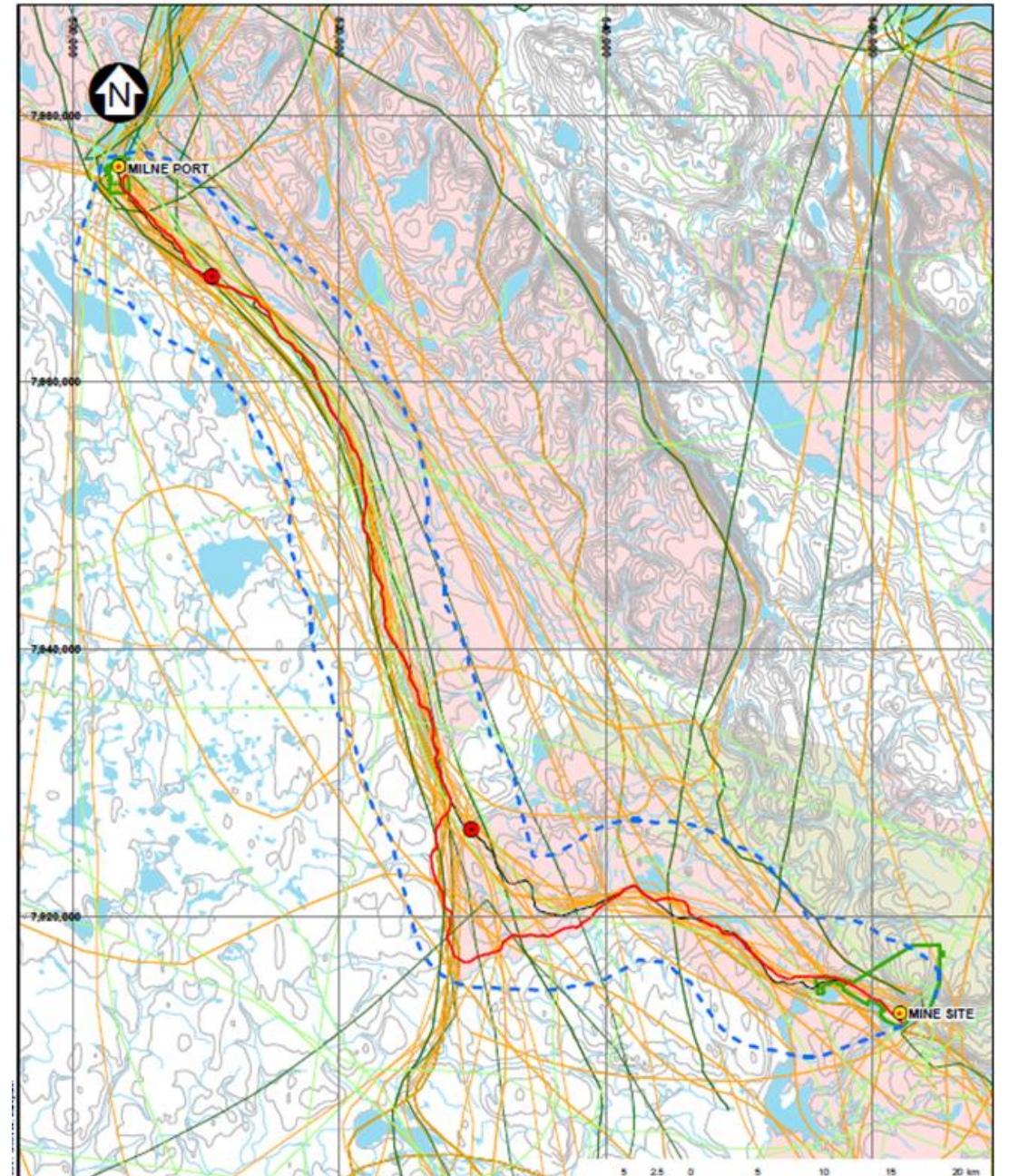
Rail Infrastructure

- ‡ 2 Trains with
 - ‡ 2 Locomotives
 - ‡ 72 ore cars with 108 t payload
 - ‡ Roughly 2 trips/day each
- ‡ Mine yard for loading
- ‡ Rotary car dumper
- ‡ Small rail yard at Port for rail maintenance



Level Crossings

- ≡ 5 Crossings with the mine road
- ≡ Caribou crossings
- ≡ Snowmobile or ATV Crossings



Typical rotary dumper



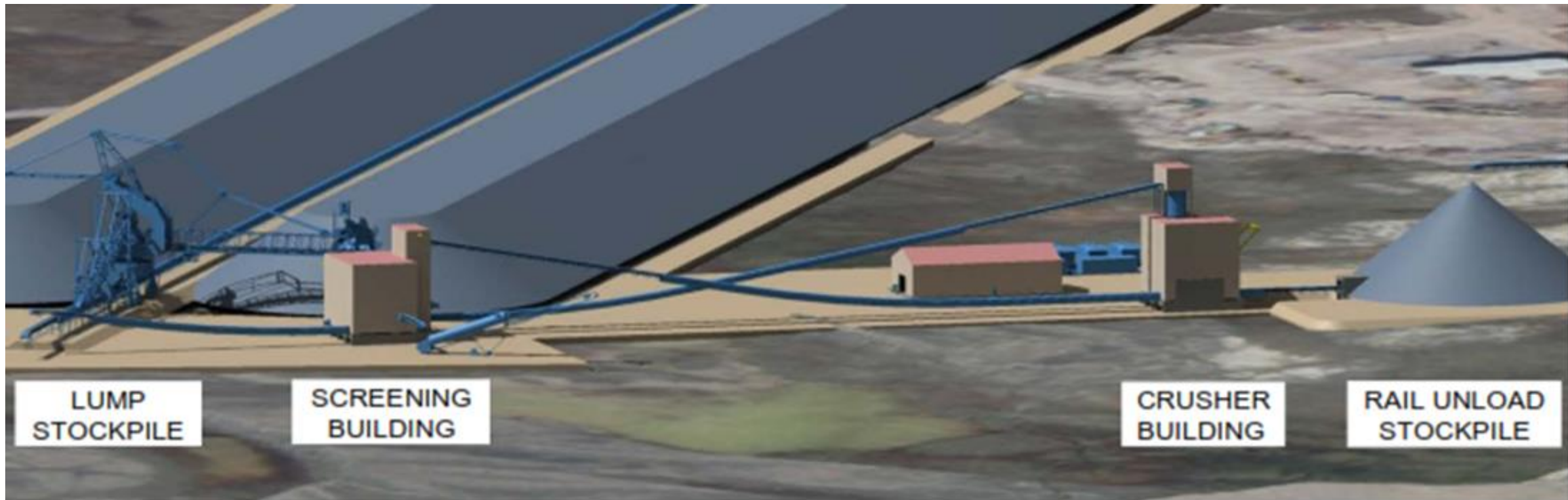


Crushing and Ore Handling



Crushing and screening

- ✚ Indoor crushing and screening
- ✚ Move to port site
- ✚ Fixed stacker / reclaimer





Cape Size Ore Dock



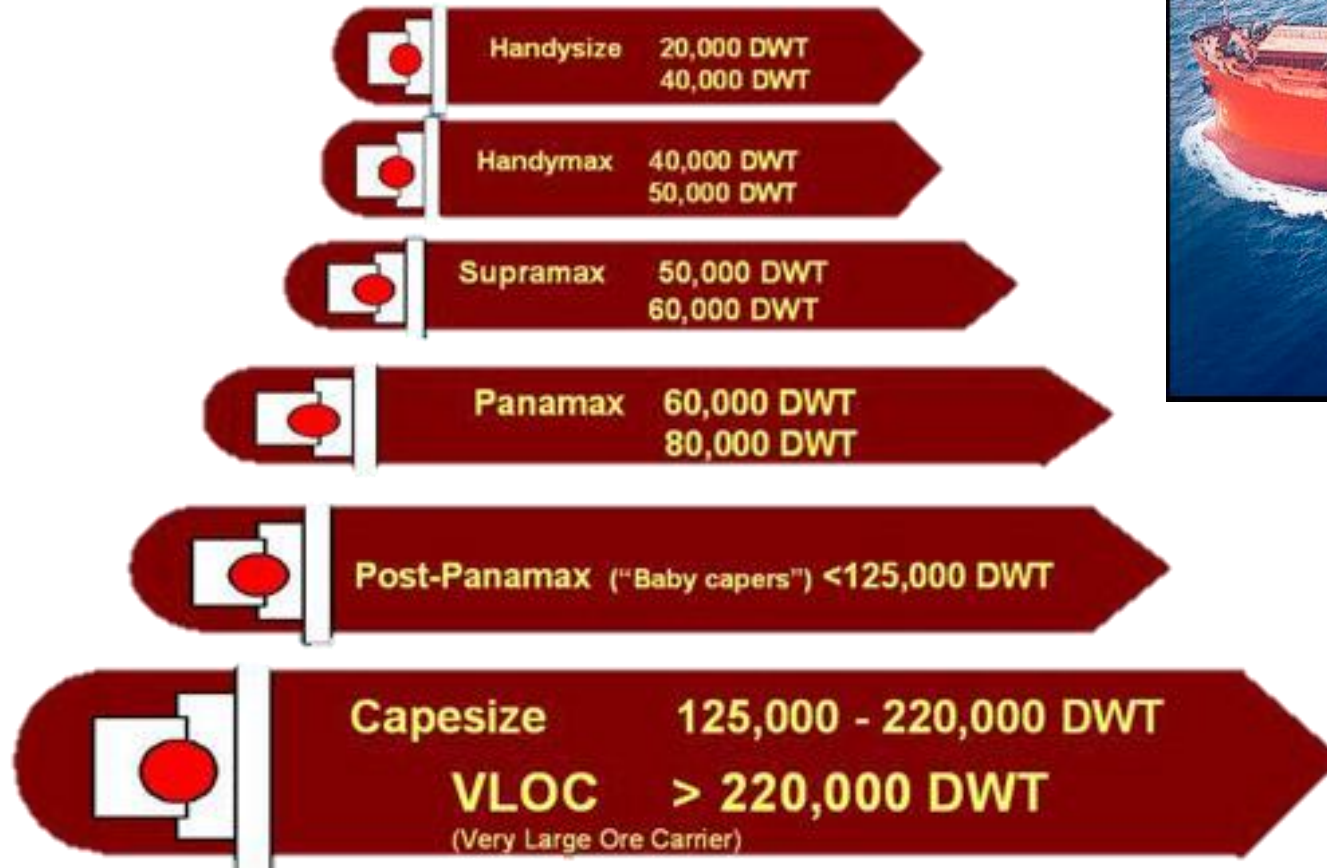
Second Ore Dock

- ✦ Focus on Open Water shipping
- ✦ Larger dock to accommodate Cape Size vessels
- ✦ Larger ship loader
- ✦ Fill two ore vessels each day



Cape Size Vessels

General Bulk Carrier Sizes



Port Infrastructure





Looking to the Future

Path Forward

Phase 2 Expansion Project and the creation of the railroad is critical to the success of Baffinland and will bring considerable benefits to the local communities:

- ✚ Detailed engineering
- ✚ Working through the regulatory process
- ✚ Continuing to talk to local communities
- ✚ Planning for operations and construction
- ✚ Skills development and training





Thank You

