

# Foran Mining Announces McIlvenna Bay Initial Phase Feasibility Study Results Outlining Robust Long-Life Operation

28.02.2022 | [CNW](#)

## Pre-tax NPV<sub>7%</sub> of C\$1.5B and IRR of 46% at Current Commodity Prices

VANCOUVER, Feb. 28, 2022 - [Foran Mining Corp.](#) (TSXV: FOM) (OTCQX: FMCXF) ("Foran" or the "Company"), is pleased to announce results from a Feasibility Study ("FS") on its expanded and re-scoped initial mine plan for its 100%-owned McIlvenna Bay project in east-central Saskatchewan. All currency figures are shown in Canadian dollars, unless otherwise noted.

### Highlights:

- Robust financial metrics in a world-class jurisdiction.
- At current prices, the FS defines a pre-tax NPV<sub>7%</sub> of \$1.49B and IRR of 46% with an after-tax payback period of 2.2 years. Base case economics outline a pre-tax NPV<sub>7%</sub> of \$678M and IRR of 26%.
- Compelling economics at lower commodity prices, delivering a pre-tax IRR of 21% at US\$3.00/lb copper, more than 30% below current prevailing prices.

Table 1 - Pre-Tax NPV<sub>7%</sub> Sensitivity Analysis

	Zinc Price (US\$/lb)	Copper Price (US\$/lb)				
		\$3.00	Base Case <sup>1</sup>	Current <sup>2</sup>	\$5.00	\$6.00
Pre-Tax NPV <sub>7%</sub> (C\$M) <sup>3</sup>	\$1.00	\$347	\$550	\$1,078	\$1,159	\$1,565
	Base Case <sup>1</sup>	\$475	\$678	\$1,208	\$1,287	\$1,694
	\$1.40	\$603	\$806	\$1,338	\$1,416	\$1,822
	\$1.60	\$732	\$935	\$1,467	\$1,544	\$1,950
	Current <sup>2</sup>	\$865	\$1,070	\$1,493	\$1,686	\$2,096
	\$1.80	\$860	\$1,063	\$1,597	\$1,672	\$2,079

<sup>1</sup> Base case copper and zinc prices are US\$3.50/lb copper and US\$1.20/lb zinc.

<sup>2</sup> Current copper and zinc prices are US\$4.53/lb copper and US\$1.64/lb zinc. Under these scenarios US\$1,936/oz gold, US\$24.52/oz silver, and 1.27 USD/CAD is used.

<sup>3</sup> Excluding current price scenarios, US\$1,600/oz gold, US\$22.50/oz silver, and 1.26 USD/CAD is used.

- Mineral Reserve tonnes +127%, establishing an initial 18 year reserve life.
- Probable Mineral Reserves total 25.7 million tonnes ("Mt") at 2.51% CuEq, a 127% increase in tonnes compared to the prior mineral reserve estimate and represents a 66% reserve conversion rate from the existing 39.1Mt of Indicated resources.
- FS outlines an 18.4 year mine life, based on a planned 4,200tpd throughput rate.
- McIlvenna Bay remains open at depth and long strike, while immediate exploration focus is on near-mine and regional targets to drive more immediate value to shareholders.
- Consistent and scalable production profile.

- The FS highlights average annual production of 72.8 Mlbs CuEq (33.0 kt) over the first 15 years of mine life. By individual metal this equates to 38.8 Mlbs Cu (17.6 kt), 63.6 Mlbs Zn (28.9 kt), 20 koz gold and 486 koz silver.
- Potential for production and throughput expansion as well as mine life extension exists as the Company potentially discovers and delineates additional near-mine deposits.
- High margin and focused on maximizing value per share.
- Life-of-mine C1 Copper Cash Costs are expected to average US\$0.26/lb Cu (net of by-product credits) and All-in Sustaining Costs to average US\$0.90/lb (net of by-product credits) at Base Case prices.
- At current commodity prices, this translates into \$4.0B in EBITDA and \$2.3B in Free Cash Flow over the current life-of-mine. These cash flow parameters underpin the robustness of the project, emphasizing the Company's objective to maximize and grow shareholder value.

Table 2 - IRR, Payback &amp; Cash Flow Sensitivity Analysis

	Copper Price (US\$/lb)					
	Base Case <sup>1</sup>	Current <sup>2</sup>	\$3.00	\$4.00	\$5.00	\$6.00
Pre-Tax IRR	26%	46%	21%	31%	40%	48%
After-Tax IRR	22%	38%	18%	26%	33%	40%
After-Tax Payback (yrs)	4.5	2.2	5.6	3.7	2.9	2.3
LOM EBITDA (C\$M)	\$2,483	\$4,012	\$2,097	\$2,870	\$3,643	\$4,415
LOM Free Cash Flow (C\$M)	\$1,179	\$2,280	\$906	\$1,460	\$2,015	\$2,565

<sup>1</sup> Base case prices are US\$3.50/lb copper, US\$1.20/lb zinc, US\$1,600/oz gold, US\$22.50/oz silver, and 1.26 USD/CAD.

<sup>2</sup> Current prices are US\$4.53/lb copper, US\$1.64/lb zinc, US\$1,936/oz gold, US\$24.52/oz silver, and 1.27 USD/CAD.

<sup>3</sup> Excluding high development project. US\$1.20/lb zinc, US\$1,600/oz gold, US\$22.50/oz silver, and 1.26 USD/CAD. Initial capital costs total \$368M, translating to an attractive initial capital intensity of US\$0.24/lb CuEq produced over life-of-mine (~US\$535/tonne CuEq). Over 70% of initial capital cost estimates are based on competitive quotes.

- Sustaining capital is estimated to be at \$481M over the LOM, including development of a shaft and material handling system.
- Delivering McIlvenna Bay with an ESG focus.
- Foran will continue to be relentless in intertwining its pioneering ESG strategy to target carbon neutrality while emphasizing the development of a sustainable asset for local communities in a decarbonizing world.
- Along with key partners and industry experts, Foran is currently developing a number of exciting business initiatives with updates on these developments expected throughout the year.

Dan Myerson, Foran's Executive Chairman & CEO commented;

"The completion of the FS is truly an excellent accomplishment by the entire team at Foran. It is important to be mindful that the study showcases only a snapshot in time of what our initial mine and centralized mill will look like, as we envision scaled expansions and future growth while sequencing in other deposits across the district.

As we continue to de-risk McIlvenna Bay with the ongoing advancement of the exploration decline, permitting, project financing, and our continued dynamic exploration campaign, I believe we are still in the early innings of understanding what this remarkable district has to offer. McIlvenna Bay is expected to be the centralized mill that could be expanded in phases as we continue to explore, define and potentially develop near-mine deposits and more within a 50km radius. Our land package is over 1,450 km<sup>2</sup>, providing us with the canvas to explore in a systematic way. The neighbouring Flin Flon district has been operating for close to

a century, and it is our vision to transform the Hanson Lake District into the next multi-decade mining camp.

Critically, Foran will be resolute in our effort to operate a mine of the future, targeting carbon neutrality and creating a sustainable asset for local communities in a decarbonizing world. Having the opportunity to power our site using renewable energy (hydropower), we are in a good position to deliver on our targets. Additionally, Foran will continue and always strive to be grateful, respectful and ensure a collaborative relationship with local communities, as this is essential in creating long-term mutually beneficial success. We are focused on education and training of local people to provide employment opportunities and build transferable skills. As the world continues to decarbonize, Foran will continue to search and evaluate circular economy opportunities, and pioneer ESG business initiatives to generate superior investment returns.

As the world hunts for new copper projects to satiate the urgent necessity to decarbonize our planet, geopolitical risks globally are impacting direct investment in regions where government regimes and taxation remain constant uncertainties. Operating in a global leading mining jurisdiction that is Saskatchewan further proves the amazing advantage Foran is fortunate and grateful to have. I am very proud of our team's accomplishments, and we look forward to delivering more exciting news throughout 2022 as we work towards our goals of building the next prolific mining jurisdiction in the world."

### Sensitivity Analysis

At current prices of US\$4.53/lb Cu, US\$1.64/lb Zn, US\$1,936/oz Au, and US\$24.52/oz Ag, the project generates an after-tax NPV<sub>7%</sub> of \$1,055M, an after-tax IRR of 38%, with a payback period of 2.2 years from the commencement of production. Outlined below in Table 3 is a detailed sensitivity analysis across various commodity prices.

Table 3 - After-Tax NPV<sub>7%</sub> Sensitivity Analysis

	Zinc Price (US\$/lb)	Copper Price (US\$/lb)					
		\$3.00	Base Case <sup>1</sup>	\$4.00	Current <sup>2</sup>	\$5.00	\$6.00
After-Tax NPV <sub>7%</sub> (C\$M) <sup>3</sup>	\$1.00	\$226	\$372	\$520	\$756	\$814	\$1,106
	Base Case <sup>1</sup>	\$320	\$466	\$613	\$850	\$907	\$1,198
	\$1.40	\$411	\$559	\$706	\$943	\$999	\$1,291
	\$1.60	\$505	\$652	\$799	\$1,037	\$1,092	\$1,384
	Current <sup>2</sup>	\$601	\$750	\$899	\$1,055	\$1,194	\$1,489
	\$1.80	\$597	\$745	\$892	\$1,130	\$1,185	\$1,476

<sup>1</sup> Base case copper and zinc prices are US\$3.50/lb copper and US\$1.20/lb zinc.

<sup>2</sup> Current copper and zinc prices are US\$4.53/lb copper and US\$1.64/lb zinc. Under these scenarios US\$1,936/oz gold, US\$24.52/oz silver, and 1.27 USD/CAD is used.

<sup>3</sup> Excluding current price scenarios, US\$1,600/oz gold, US\$22.50/oz silver, and 1.26 USD/CAD is used.

### Project Description

The McIlvanna Bay project is located in east-central Saskatchewan approximately 375km northeast of Saskatoon, and 85 km West of Flin Flon Manitoba, and is accessible year-round via a 18km all-weather road connected to Saskatchewan Provincial Highway 106.

The FS outlines a project designed to be a decline/shaft underground mining operation utilizing long-hole

mining methods for ore extraction. Ore is expected to be processed via conventional single stage crushing circuit with a semi-autogenous grinding ("SAG") mill and ball mill design. Grinding is planned to be followed by a flotation circuit to produce both a copper and zinc concentrate for transportation from site to Flin Flon for shipment by rail to Canadian smelters and/or offshore.

The deposit at McIlvenna Bay includes several zones and two distinct styles of mineralization, typical of volcanogenic-hosted massive sulphide ("VHMS") deposits, massive sulphide mineralization and stockwork-style mineralization in the Copper Stockwork Zone ("CSZ"). The massive sulphide is a continuous mineralized horizon which averages 3.5m in thickness while the CSZ averages a thickness of 12.0m. The massive sulphide and the underlying CSZ are generally in contact with one another throughout the deposit, giving the bulk of the deposit an average thickness of 15.5m overall.

The capital and operating cost estimates in the FS reflect the current inflationary pressures being faced by the industry globally, however the relatively light capital intensity associated with the project helps mute the overall impact inflation has on economics, which remain robust.

#### McIlvenna Bay Project Bankable Feasibility Study

The FS was led and compiled by Stantec Inc. as the lead author. Stantec completed the detailed mine design and engineering, with Halyard Inc. completing process plant, paste plant and surface support infrastructure design. Knight Piésold worked in conjunction with both Stantec and Halyard on the Dry Stack Tailings Management Facility Design. RockEng prepared the geotechnical model, working closely with Stantec and the Foran site team. The McIlvenna Bay Mineral Resource estimate was prepared by Micon International Limited, and the Mineral Reserve estimate was completed by Stantec.

Table 4 - Key Summary Table

Description	Units	Feasibility Study	
Metal Prices/FX <sup>1</sup>		Base Case	Current Prices
Copper	US\$/lb	\$3.50	\$4.53
Zinc	US\$/lb	\$1.20	\$1.64
Gold	US\$/oz	\$1,600	\$1,936
Silver	US\$/oz	\$22.50	\$24.52
Currency Exchange Rate	USD/CAD	1.26	1.27
Production Data			
Reserve tonnes	Mt	25.70	25.70
Copper Equivalent Grade <sup>2</sup>	%	2.51%	2.51%
Copper Grade	%	1.23%	1.23%
Zinc Grade	%	2.39%	2.39%
Gold Grade	g/t	0.47	0.47
Silver Grade	g/t	15.3	15.3
Daily Throughput	tpd	4,200	4,200

Annual Processing Rate	Mtpa	1.51	1.51
Mine Life	years	18.4	18.4
Blended Recoveries <sup>3</sup>			
Copper	%	91.1%	91.1%
Zinc	%	79.8%	79.8%
Gold	%	88.6%	88.6%
Silver	%	63.2%	63.2%
Average annual production (in concentrate)			
Copper Equivalent - First 15-years <sup>2</sup>	MLbs CuEq	72.8	72.9
Copper Equivalent - Life-Of-Mine <sup>2</sup>	MLbs CuEq	65.4	65.6
Copper	MLbs Cu	34.5	34.5
Zinc	MLbs Zn	58.6	58.6
Gold	koz Au	17.5	17.5
Silver	koz Ag	435.2	435.2
Life-of-Mine (LOM) Operating Costs			
Total Operating Costs?	C\$/milled	\$73.55	\$73.55
Opex + Sustaining Capex	C\$/tonne	\$91.94	\$91.94
C1 Copper Cash Costs (net of credits)?	US\$/lb	\$0.26	-\$0.62
All-In Sustaining Costs (net of credits)?	US\$/lb Cu	\$0.90	\$0.01
Capital Costs			
Initial Capital?	C\$M	\$368	\$351
LOM Sustaining Capital	C\$M	\$481	\$481
Financial Analysis			
Pre-Tax NPV7%	C\$M	\$678	\$1,493
Pre-Tax IRR	%	26%	46%
After-Tax NPV7%	C\$M	\$466	\$1,055
After-Tax IRR	%	22%	38%
Payback Period	years	4.5	2.2

<sup>1</sup> Current prices and FX based on Feb 23, 2022 closing values.

<sup>2</sup> CuEq metrics based on commodity prices under each scenario.

<sup>3</sup> Blended recoveries detailed in section below.

? Total Operating costs include mining, processing, G&A and Tailings costs.



? C1 Cash costs (net of credits) = total operating costs, plus treatment charges & refining costs, less by-product credits, divided by payable copper production.

? All-in Sustaining Costs = C1 Cash Costs (net of credits), plus LOM sustaining capital, plus royalties, divided by payable copper production.

? Initial Capital costs include pre-commercial production credits and costs, please refer to section below.

The planned site layout provides sufficient space for future expansion opportunities as the Company explores and potentially delineates additional satellite deposit opportunities. Figure 1 below highlights the surface infrastructure envisioned layout.

Figure 1 - Envisioned Site Layout

### Mineral Reserve Estimate

The 2022 Mineral Reserve Estimate was prepared by Stantec Inc., with an effective date of February 23, 2022. Reserves total 25.7Mt, a 127% increase from its 2020 Reserve estimate of 11.3Mt. This represents a 66% reserve conversion rate from the existing 39.1Mt of indicated resources (vs. 49% reserve conversion from the prior 2019 resource estimate). The higher conversion rate is attributable to optimized mine design, which includes a reduction in minimum mining widths from 3.8m to 3.0m, and a lower net smelter return ("NSR") cut-off value, and higher commodity prices.

Reserves grade of 1.23% Cu, 2.39% Zn, 0.47 g/t Au and 15.3 g/t Ag use a US\$90/t NSR cut-off. These compare to 2020 reserve grades of 1.14% Cu, 4.01% Zn, 0.54 g.t Au and 21.0 g/t Ag using a US\$100/t NSR cut-off. The decline in by-product grades are predominantly attributable to the significant reserve additions for the Copper Stockwork Zone, which has higher copper grades and lower zinc grades than the Massive Sulphide Lens. Foran sees the opportunity for further reserve upside potential given the deposit remains open at depth and along strike, in addition to higher current commodity prices.

The Mineral Reserve Estimate is estimated using long-term consensus metal prices of US\$3.50/lb Cu, US\$1.20/lb Zn, US\$1,600/oz Au and US\$22.50/oz Ag. This compares to the 2019 Reserve Estimate pricing of US\$3.30/lb Cu, US\$1.25/lb Zn, US\$1,310/oz Au and US\$16.20/oz Ag. The reserve is summarized in Table 5 below.

Table 5 - McIlvenna Bay 2022 Probable Mineral Reserve Estimate (US\$90/t NSR cut-off)

Reserves	Tonnes Cu	Grade Zn	Grade Au	Grade Ag	Grade CuEq	Grade
	(Mt)	(% Cu)	(% Zn)	(g/t Au)	(g/t Ag)	(% CuEq)
Main Lens - Massive Sulphide	10.1	0.99	5.43	0.51	23.8	3.41
Copper Stockwork Zone	15.6	1.39	0.41	0.45	9.9	1.92
Total Reserves	25.7	1.23	2.39	0.47	15.3	2.51

<sup>1</sup> Effective date February 23, 2022; CIM Definition Standards (May 10, 2014) were followed for Mineral Reserves; CuEq = copper equivalent; NSR = Net Smelter Return. Totals may not add due to rounding.

<sup>2</sup> The base case mineral reserve is estimated based on a NSR cut-off value of US\$90/t. NSR value was calculated using Cu, Zn, Au, Ag and high-grade caps were applied and include provisions for metallurgical recovery and estimates of current shipping terms and smelter rates for similar concentrates. Metal prices used are US\$3.50/lb. Cu, US\$1.20/lb. Zn, US\$1,600/oz. Au, and US\$22.50/oz. Ag.

<sup>3</sup> Mr. Mark Hatton, P.Eng., of Stantec Inc., has reviewed and verified this mineral reserve estimate. Mr. Hatton is independent of Foran and is a "Qualified Person" within the meaning of NI 43-101.

### Mining

The FS proposes to mine ore using three different, but similar, longhole mining methods. Most ore will be mined by way of transverse stoping, and some longitudinal and Avoca stoping, depending on the orebody thickness and geometry. These longhole methods involve developing lateral drifts at 30 metre sublevel intervals and drilling holes between the levels and blasting the ore from the upper elevation. The ore will be extracted from the lower elevation of the stopes and transported to surface in the early part of the mine life and will be hauled to underground stations after the shaft is commissioned. Empty stopes will be filled with

either paste backfill or waste rock from development headings.

Ore will be moved using battery electric vehicles ("BEVs"), which will help the company achieve its carbon-neutrality goals. The ramped-up 4,200 tonnes per day ("tpd") operation will require a fleet of seven haul trucks and six loaders. The use of BEVs will translate to operating cost efficiencies through reduced fuel consumption, and reduced ventilation and infrastructure requirements while improving air quality for all those working in the mine. Swappable batteries will be charged in special charging stations located underground. Underground development will be undertaken with innovative technology and state-of-the-art computerized development jumbos, which can install ground support, in addition to face drilling.

The FS assumes the company will be able to take advantage of the existing infrastructure associated with the previously announced exploration decline. Given the close proximity of the McIlvenna Bay reserve to surface, the company expects a relatively short timeline to initial ore mining and a relatively quick ramp up. As highlighted in Figure 2 below, the CSZ will constitute approximately 61% of the ore processed, while roughly 39% will be sourced from the massive sulphide zone.

Figure 2 - Ore Processing Source

#### Production Shaft

Included in the FS is the eventual construction of a production shaft to benefit mine efficiency at depth and to support any potential future resource and mine expansion down dip of the existing resource. Under the current plans, the shaft will be developed in two separate legs. Development of the upper leg is expected to begin in Year 5 with completion of the (loading pocket) in Year 7 at a total cost of C\$63.9M, which will lower operating cost in the lower levels of the mine, support future exploration initiatives and potential mine life extension.

The production shaft will be rectangular, extending from surface to a depth of 630m. Lateral development will precede excavation and furnishing allowing for the shaft to be developed from the bottom up in two separate sections resulting in lower cost than a conventional "blind sink" shaft. A pilot and slash method will be utilized for the excavation portion with the equipping of the shaft will be done from the top downwards.

A personnel hoist will also be installed within a separate compartment of the production shaft for improved effective work times and to facilitate a second means of egress from the mine.

Figure 3 - Long Section of Shaft and Underground Workings

#### Processing & Recovery

The FS proposes ore processing to be conducted using primary crushing with a semi-autogenous grinding ("SAG") mill and ball mill design. The processing facility is expected to have a nameplate capacity of 4,200tpd or 1.51Mtpa. Ore transported from the mine will be dumped directly into the crusher or temporarily stockpiled on a lined pad for future processing.

Cyclone overflow from the grinding circuit, at an 80% passing size of 75 µm, will flow by gravity to the flotation area. Sequential rougher flotation, followed by regrinding and cleaner flotation, will produce a copper concentrate with an average grade of 28% Cu, ~240 g/t Ag and ~10 g/t Au, and a zinc concentrate with an average grade of 50% Zn, ~45 g/t Ag, <1 g/t Au and SiO<sub>2</sub> of <1.5%. Both concentrates do not contain any elevated deleterious elements and are considered very clean. The two products are very similar in physical form, being filtered cake (nominally 8-10% moisture) that will be transported in bulk by road to the railhead in Flin Flon, MB. The flotation circuit will also produce a pyrite concentrate that will allow the operation to

maintain the sulphur content in the tailings storage facility ("TSF") at a level that prevents acid generation. Low sulphur tailings from the mineral processing facility will be thickened and filtered to reduce the moisture content and trucked to the TSF. The pyrite concentrate and a portion of the low sulphur tailings will be mixed with cement and pumped underground as paste backfill to fill mined-out stopes.

Figure 4 - Copper Equivalent ("CuEq") Production Schedule

## Metallurgy

The ore contains chalcopyrite, galena, sphalerite, pyrite and pyrrhotite almost exclusively, with only very minor occurrences of other sulphide minerals observed. Pyrite predominated over pyrrhotite in all ore types. For non-sulphide gangue, copper stockwork contained mostly quartz, mica, and chlorite, while massive sulphide ores contained more carbonates, iron oxides and talc and less quartz. Clay contents were generally low in all ore types. The testwork demonstrated the ore is amenable to conventional flotation and that the two ore types can be blended so that they do not have to be handled separately throughout the operations.

The mineral processing facility will produce clean copper and zinc concentrates that will be saleable to smelters. A program of variability testwork helped to develop head grade vs. recovery relationships for the FS, and these have been applied to the mine production schedule to define concentrate production profiles. Since metallurgical testing commenced in 2012, samples have displayed solid metallurgical characteristics and life of mine average copper and zinc recoveries of 91.1% and 79.8% respectively have been determined. Separate copper and zinc flotation concentrates with grades of 28% Cu and 50% Zn respectively are indicated, and the copper concentrate also carries by-product credits for gold and silver (with recoveries of 88.6% and 63.2% respectively).

Table 6 - Recovery rates

LOM Recovery Rates	Copper	Zinc	Gold	Silver
Massive Sulphide Ore	82.4%	84.4%	82.9%	54.6%
Copper Stockwork Zone	95.2%	47.0%	92.7%	76.6%
Blended Recovery Rates	91.1%	79.8%	88.6%	63.2%

## Power

Power will be supplied to the Project site will be provided in two phases. The first phase, which includes the construction period and initial production period, will be provided via an existing distribution line with approximately 1.2 MW in available capacity, coupled with liquefied natural gas generation. A new 77km dedicated 138 kV transmission line fed from the Island Falls Hydro Generating Station will be constructed and is anticipated to be in service in Year 5, at which point the LNG would be decommissioned. Total connected load power requirements for the mine are expected to be approximately 18.5 MW.

## Filtered Dry-Stack Tailings

Process plant tailings will be split into a sulphur deficient stream and a sulphur stream. The sulphur deficient stream would be dewatered to a 15-20% moisture cake and placed within the dry-stack tailings facility, which is located within the previously disturbed reclaimed silica sand quarry. The sulphur tailings stream will be mixed with a Portland cement-based binder and used underground to provide geotechnical support in mined-out areas of the mineral deposit. Reusing tailings for backfill and dry-stacking tailings reduces the mine's environmental footprint.

## Capital Expenditures

The FS outlines an initial pre-production capital cost estimate of \$368.0M, including a contingency of \$38.5 and net of pre-commercial production credits of \$7.9M, highlighted in Table 7 below. The largest components of the initial capital cost estimate include \$151.5M for mill development and \$132.2M for underground mine development. Construction is expected to be completed over a two-year period. Sustaining capital costs over the life of mine are estimated at \$481M, which includes \$63.9M for shaft development. Over 70% of initial capital cost estimates are based on competitive quotes.

The FS excludes pre-project approval expenditures associated with the previously announced pre-development program (surface preparation and exploration decline) as well early engineering costs. Based on latest estimates, Foran expects these pre-project approval expenditures to total approximately \$45M.

Table 7 - Capital Cost Summary

Capital Costs (C\$M)	Initial	Sustaining	Total
Mine	\$132.2	\$418.7	\$550.9
Mill	\$151.5	\$8.8	\$160.2
Infrastructure	\$42.4	\$15.0	\$57.4
Tailings	\$11.3	\$21.3	\$32.6
Closure	\$0.0	\$8.2	\$8.2
Sub-total	\$337.4	\$472.0	\$809.4
Contingency	\$38.5	\$9.0	\$47.5
Total	\$375.9	\$481.0	\$856.9
Pre-Commerical Production Revenue (\$54.5) -			(\$54.5)
Pre-Commerical Production Costs	\$46.6	-	\$46.6
Net Capital Cost	\$368.0	\$481.0	\$849.0

## Operating Costs

Operating costs are summarized in Table 8 below. Mining costs are estimated at \$41.26/tonne mined based on an average mining rate of approximately 1.51Mtpa. Mining costs reflect the blend of lower cost sublevel longhole stoping, and the higher cost associated with longitudinal stoping and Avoca mining. Processing costs are estimated at \$23.96/t, G&A at \$6.78/t, and tailings at \$1.54/t for total operating costs of \$73.55/t. Foran's consultants used a first principles methodology in establishing operating costs. Over 70% of material costs are quotes received during H2/21, with productivities being derived from benchmarking and industry best practices. On a per pound basis, C1 copper cash costs are estimated at US\$0.26/lb, net of by-product credits, and US\$0.90/lb on an all-in sustaining cost basis, net of by-product credits.

Table 8 - Life of Mine Operating Cost Summary

LOM Operating Costs (C\$/t milled)		Amount
Mining <sup>1</sup>	C\$/t milled	\$41.26
Processing	C\$/t milled	\$23.96
G&A	C\$/t milled	\$6.78
Tailings	C\$/t milled	\$1.54
Total Operating Costs	C\$/t milled	\$73.55
Sustaining Capital Costs	C\$/t milled	\$18.39
Operating Costs + Sustaining Capex	C\$/t milled	\$91.94
LOM Unit Costs		Amount
C1 Copper Cash Costs (net of credits) <sup>2</sup>	US\$/lb	\$0.26
All-in Sustaining Costs (net of credits) <sup>3</sup>	US\$/lb	\$0.90

<sup>1</sup> Mining costs are inclusive of paste fill costs.

<sup>2</sup> Mine site operating costs, treatment Charges & refining Charges, less by-product credits, divided by payable copper production.

<sup>3</sup> C1 Copper Cash Costs (net of credits), plus sustaining capex, plus royalties divided by payable copper production.

Financial Analysis

At US\$3.50/lb Cu, US\$1.20/lb Zn, US\$1,600/oz Au, US\$22.50/oz Ag, and a USD/CAD exchange rate of 1.26, the project generates a pre-tax NPV<sub>7%</sub> of \$678M and IRR of 26%. On an after-tax basis, the project generates an NPV<sub>7%</sub> of \$466M and IRR of 22% with a 4.5-year payback period. At current prices, the project generates an after-tax NPV<sub>7%</sub> C\$1,055M and IRR of 38%.

Table 9 - Financial Metrics

Description	Units	Feasibility Study	
Metal Prices/FX <sup>1</sup>		Base Case Current Prices	
Copper	US\$/lb	\$3.50	\$4.53
Zinc	US\$/lb	\$1.20	\$1.64
Gold	US\$/oz	\$1,600	\$1,936
Silver	US\$/oz	\$22.50	\$24.52
Currency Exchange Rate	USD/CAD	1.26	1.27
Financial Analysis			
Pre-Tax NPV7%	C\$M	\$678	\$1,493
Pre-Tax IRR	%	26%	46%
After-Tax NPV7%	C\$M	\$466	\$1,055
After-Tax IRR	%	22%	38%
Payback Period	years	4.5	2.2

<sup>1</sup> Current prices and FX based on Feb 23, 2022 closing values.

#### Opportunities

Foran has identified various opportunities that have the potential to further improve project economics:

- Automation - Foran will continue to evaluate emerging technologies that could increase automation in the operations to improve efficiency and safety. This could include more autonomous production equipment, as well as support equipment, such as boom trucks for transporting materials underground.
- Remote Operations Centre - Foran is considering installing a control room located offsite, where semi-autonomous equipment could be operated from. Certain other non-production functions could also be performed from this site which would reduce camp and travel costs and potentially help the company to attract and retain top-tier talent.
- Reduced Backfill Costs - Foran will investigate adding locally sourced sand (dolomite) in the backfill to reduce binder cost. While further testwork is required, the geochemical characteristics of the dolomite, combined with the cement used in the paste, creates a stronger product compared to using only tailings. This would result in a lower binder requirement.
- Ore Sorting - Initial testwork conducted on core samples indicated amenability to the sorting technology. More testwork will be undertaken, using material from the planned bulk sample, to investigate sorting in the flowsheet. The benefit would be upgrading ore before it is milled, reducing costs.
- Exploration Potential - The deposit extends down-plunge approximately 2km, where it remains open at depth and along strike. Foran is also turning its exploration focus to advancing regional targets and deposits.
- Potential Expansions - The processing plant is being designed as an initial 4,200tpd plant that could accommodate future potential phased expansions as Foran advances and delineates additional near-mine deposits across the Hanson Lake District.

#### Environment, Permitting and Communities

The McIlvenna Bay Project is considered a development and must obtain Ministerial approval pursuant to The Environmental Assessment Act (Saskatchewan) before construction can proceed. Foran has already commenced work required for EA approval, and as part of the process the Company must conduct an Environmental Impact Assessment and submit an Environmental Impact Statement ("EIS") for review to the Ministry of Environment.

Upon submission of the EIS, a technical review is completed through the Saskatchewan Environmental Assessment Review Panel, who are tasked with providing advice on the adequacy, accuracy and completeness of the EIS. Following the panel's review and response to comments by Foran, the EIS and final Technical Review Comments are available for public review and written comment for 30 or 60-calendar days. Once the public review period is complete and the Government has completed their Duty to Consult, the Minister of Environment would make a decision on approving the development. After the EA approval is in hand, the Company is able to obtain all other required regulatory permits and licenses, including but not limited to a mine surface lease agreement, construction approvals, and the operating approval.

## Carbon Neutrality and ESG

The Company remains committed on delivering a mine of the future, with an initial focus on natural capital initiatives (which includes achieving carbon neutrality) and human capital initiatives. Hydroelectric power, BEVs, and carbon sequestration are expected to be notable drivers in reaching our carbon neutrality goals, while we work closely with local communities that are critical to operate in an evolving and increasingly decarbonized world. The Company is looking forward to updating all stakeholders on our strategy as we move forward with these initiatives.

## Project Finance

Foran has received expressions of interest from a various potential financing partners to provide project-level debt and other potential forms of financing to advance the construction of McIlvenna Bay. The company will continue discussions with select potential financing partners in order to finalize the financing package in a timely manner while managing risk and maximizing value for shareholders. The company believes that McIlvenna Bay's top-tier jurisdiction, carbon-neutrality targets, low capital intensity and exposure to strategic commodities makes the project an attractive proposition for potential financing partners.

## Mineral Resource Estimate

The FS is underpinned by the Mineral Resource Estimate announced October 14, 2021 (News Release Link). The updated estimate outlined a 70% increase in Indicated resource tonnes to 39.1 Mt compared to the prior 2019 resource estimate of 23.0Mt and Inferred resources totaled 5.0 Mt. The 2021 Resource Estimate is summarized in Table 10 below. Mineralization begins ~25m below surface and extends down-plunge approximately 2km, where it remains open at depth outlining future opportunity to grow the resource.

The mineral resource estimate was completed by Micon International Limited ("Micon") and verified by Mr. William J. Lewis, P.Geo. of Micon, independent of Foran and a Qualified Person as defined within National Instrument 43-101 ("NI 43-101"). The 2021 Resource Estimate's effective date is September 6, 2021, and is estimated using long-term metal price projections of US\$4.25/lb Cu, US\$1.35/lb Zn, US\$1,800/oz Au and US\$25.00/oz Ag. The base case uses a US\$60/t NSR cut-off using provisions for metallurgical recoveries, smelter payables, refining costs, freight, and applicable royalties, consistent with the cut-off used for the 2019 Resource.

Table 10. McIlvenna Bay 2021 Mineral Resource Estimate (US\$60/t NSR cut-off) <sup>1-5</sup>

Zone	Tonnage (Mt)	NSR (\$US)	Cu (%)	Zn (%)	Pb (%)	Au (g/t)	Ag (g/t)	CuEq (%)
INDICATED								
Main Lens	10.8	199	1.01	6.17	0.41	0.53	27	3.13
Massive Sulphide								
Lens 3	2.6	113	0.82	3.07	0.14	0.25	15	1.80
Stringer Zone	1.2	119	1.26	0.52	0.07	0.31	13	1.53
Copper Stockwork Zone	22.7	127	1.31	0.38	0.02	0.37	9	1.60
Copper Stockwork	1.8	141	1.42	0.59	0.04	0.45	9	1.79
Footwall Zone								
TOTAL INDICATED	39.1	146	1.20	2.16	0.14	0.41	14	2.04
INFERRED								
Main Lens	1.6	163	0.65	6.51	0.46	0.29	28	2.66
Massive Sulphide								
Copper Stockwork Zone	3.5	106	1.08	0.79	0.03	0.25	11	1.37
TOTAL INFERRED	5.0	123	0.94	2.56	0.17	0.27	16	1.77

<sup>1</sup> Effective date September 6, 2021; CIM definitions were followed for Mineral Resources; CuEq = copper equivalent; NSR = Net Smelter Return. Totals may not add due to rounding.

<sup>2</sup> The base case mineral resource is estimated based on 240 diamond drill holes and a NSR cut-off value of US\$60/t. NSR value was calculated using Cu, Zn, Au, Ag and high-grade caps were applied as per the discussion in Estimation Methodology and Parameters below and include provisions for metallurgical recovery and estimates of current shipping terms and smelter rates for similar concentrates. Metal prices used are US\$4.25/lb. Cu, US\$1.35/lb. Zn, US\$1,800/oz. Au, and US\$25.00/oz. Ag, versus US\$3.30/lb. Cu, US\$1.25/lb. Zn, US\$1,310/oz. Au and US\$16.20/oz. Ag, used for the previous resource estimate in 2019. Specific gravity was interpolated for each block based on measurements taken from core specimens, with an average value of 3.59 for the main Massive Sulphide ("MS") lens and 2.87 for the Copper Stockwork Zone ("CSZ")

<sup>3</sup> Mr. William J. Lewis, P.Geo., of Micon, has reviewed and verified this mineral resource estimate. Mr. Lewis is independent of Foran and is a "Qualified Person" within the meaning of NI 43-101.

<sup>4</sup> Mineral Resources are inclusive of mineral reserves. Mineral resources which are not mineral reserves do not have demonstrated economic viability. The estimate of mineral resources may be materially affected by environmental, permitting, legal, marketing or other issues.

<sup>5</sup> CuEq values were calculated from the NSR values for each zone using both concentrate and recovery ~~Qualified Person~~ developed during Pre-Feasibility level metallurgical studies.

The 2021 Mineral Resource Estimate were prepared in accordance with Canadian Institute of Mining Metallurgy, and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves (May 10,

2014), and CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines (November 29, 2019) and was completed and verified by Micon, a global geological and mining consultancy. The 2021 Resource Estimate was verified by Mr. William J. Lewis, P.Geol. Mr. Lewis is an independent Qualified Person as defined in NI 43-101 and has consented to applicable disclosure contained herein regarding the 2021 Resource Estimate.

The 2022 Mineral Reserve Estimates were prepared in accordance with Canadian Institute of Mining Metallurgy, and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves (May 10, 2014), and CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines (November 29, 2019) and was completed and verified by Stantec Inc., a global mining consultancy. The 2022 Mineral Reserve Estimate was verified by Mr. Mark Hatton, P.Eng. Mr. Hatton is an independent Qualified Person as defined in NI 43-101 and has consented to applicable disclosure contained herein regarding the 2022 Mineral Reserve Estimate.

Mr. Denis Flood, P.Eng, Foran Vice-President of Engineering, is the Qualified Person for all technical information herein, excluding the 2022 Mineral Resource and 2022 Reserve estimates. Mr. Flood has reviewed and approved the technical information in this release.

### About Foran Mining

Foran Mining is a copper-zinc-gold-silver exploration and development company, committed to supporting a greener future, empowering communities and creating circular economies which create value for all our stakeholders, while also safeguarding the environment. The project is located entirely within the traditional territory of the Peter Ballantyne Cree Nation. The company also owns the Bigstone project, a resource-development stage deposit located 25km southwest of its McIlvenna Bay project.

McIlvenna Bay is a copper-zinc-gold-silver rich VHMS deposit intended to be the centre of a new mining camp in a prolific district that has already been producing for 100 years. McIlvenna Bay sits just 65km from Flin Flon, Manitoba and is part of the world class Flin Flon Greenstone Belt that extends from Snow Lake, Manitoba, through Flin Flon to Foran's ground in eastern Saskatchewan, a distance of over 225km.

McIlvenna Bay is the largest undeveloped VHMS deposit in the region. Our goal is to build the first carbon neutral copper mine in Canada by design. The Company announced the results from its Bankable Feasibility Study on February 28, 2022, outlining an 18 year mine life producing an average of 65 Mlbs CuEq annually. The Company filed a NI 43-101 Technical Report for the updated mineral resource estimate for the McIlvenna Bay deposit on February 11, 2022, wherein the indicated mineral resources increased to 39.1 million tonnes, a 70% increase compared to the previous resource estimate from 2019. Foran's copper-zinc Bigstone Deposit is expected to serve as additional feed for the mill at McIlvenna Bay. The Company filed a NI 43-101 Technical Report for the Bigstone Deposit's first resource estimate on February 11, 2021.

Foran trades on the TSX.V under the symbol "FOM" and on the OTCQX under the symbol "FMCXF".

Neither the TSX-V nor its Regulation Services Provider (as that term is defined in the policies of the TSX-V) accepts responsibility for the adequacy of this release. No stock exchange, securities commission or other regulatory authority has approved or disapproved the information contained herein.

### Technical Disclosure

Data verification by the Qualified Persons programs have included site visits, review of drill core, review of QA/QC data, re-sampling and sample analysis programs, and database verification. Validation checks were performed on data, and comprise checks on surveys, collar co-ordinates and assay data. Sufficient verification checks were undertaken on the database to provide confidence that the database is virtually error free and appropriate to support Mineral Resource and Reserve estimation.

A technical report for the McIlvenna Bay Project will be prepared in accordance with National Instrument 43-101 and will be filed on SEDAR at [www.sedar.com](http://www.sedar.com) and on the Company's website at [www.foranmining.com](http://www.foranmining.com) within 45 days of this press release. Readers are encouraged to read the technical

report in its entirety, including all qualifications, assumptions and exclusions that relate to the details summarized in this press release. The technical report is intended to be read as a whole, and sections should not be read or relied upon out of context.

## Forward Looking Statements

### CAUTIONARY NOTE REGARDING FORWARD LOOKING STATEMENTS

This news release contains "forward-looking information" (also referred to as "forward looking statements"), which relate to future events or future performance and reflect management's current expectations and assumptions. Often, but not always, forward-looking statements can be identified by the use of words such as "plans", "hopes", "expects", "is expected", "budget", "scheduled", "estimates", "forecasts", "intends", "anticipates", or "believes" or variations (including negative variations) of such words and phrases, or state that certain actions, events or results "may", "could", "would", "might" or "will" be taken, occur or be achieved. Such forward-looking statements reflect management's current beliefs and are based on assumptions made by and information currently available to the Company. All statements, other than statements of historical fact, are forward-looking statements or information. Forward-looking statements or information in this news release relate to, among other things: filing of the feasibility study in a timely manner, and the anticipated capital and operating costs, sustaining costs, net present value, internal rate of return, payback period, process capacity, average annual metal production, average process recoveries, anticipated mining and processing methods, proposed FS production schedule and metal production profile, anticipated construction period, anticipated mine life, expected recoveries and grades, anticipated production rates, infrastructure, social and environmental impact studies, future financial or operating performance of the Company, subsidiaries and its projects, estimation of mineral resources, exploration results, opportunities for exploration, development and expansion of the McIlvenna Bay Project, its potential mineralization, the future price of metals, the realization of mineral reserve estimates, costs and timing of future exploration, the timing of the development of new deposits, requirements for additional capital, foreign exchange risk, government regulation of mining and exploration operations, environmental risks, reclamation expenses, title disputes or claims, insurance coverage and regulatory matters. In addition, these statements involve assumptions made with regard to the Company's ability to develop the McIlvenna Bay Project and to achieve the results outlined in the FS, and the ability to raise capital to fund construction and development of the McIlvenna Bay Project.

These forward-looking statements and information reflect the Company's current views with respect to future events and are necessarily based upon a number of assumptions that, while considered reasonable by the Company, are inherently subject to significant operational, business, economic and regulatory uncertainties and contingencies. These assumptions include: our mineral reserve and resource estimates and the assumptions upon which they are based, including geotechnical and metallurgical characteristics of rock confirming to sampled results and metallurgical performance; tonnage of ore to be mined and processed; ore grades and recoveries; assumptions and discount rates being appropriately applied to the technical studies; success of the Company's projects, including the McIlvenna Bay Project; prices for zinc, copper, gold and silver remaining as estimated; currency exchange rates remaining as estimated; availability of funds for the Company's projects; capital decommissioning and reclamation estimates; mineral reserve and resource estimates and the assumptions upon which they are based; prices for energy inputs, labour, materials, supplies and services (including transportation); no labour-related disruptions; no unplanned delays or interruptions in scheduled construction and production; all necessary permits, licenses and regulatory approvals are received in a timely manner; and the ability to comply with environmental, health and safety laws. The foregoing list of assumptions is not exhaustive.

The Company cautions the reader that forward-looking statements and information include known and unknown risks, uncertainties and other factors that may cause actual results and developments to differ materially from those expressed or implied by such forward-looking statements or information contained in this news release and the Company has made assumptions and estimates based on or related to many of these factors. Such factors include, without limitation: the projected and actual effects of the COVID-19 coronavirus on the factors relevant to the business of the Corporation, including the effect on supply chains, labour market, currency and commodity prices and global and Canadian capital markets, fluctuations in zinc, copper, gold and silver prices; fluctuations in prices for energy inputs, labour, materials, supplies and services (including transportation); fluctuations in currency markets (such as the Canadian dollar versus the U.S. dollar); operational risks and hazards inherent with the business of mining (including environmental accidents and hazards, industrial accidents, equipment breakdown, unusual or unexpected geological or structure formations, cave-ins, flooding and severe weather); inadequate insurance, or the inability to obtain insurance, to cover these risks and hazards; our ability to obtain all necessary permits, licenses and regulatory approvals in a timely manner; changes in laws, regulations and government practices in Canada,

including environmental, export and import laws and regulations; legal restrictions relating to mining; risks relating to expropriation; increased competition in the mining industry for equipment and qualified personnel; the availability of additional capital; title matters and the additional risks identified in our filings with Canadian securities regulators on SEDAR in Canada (available at [www.sedar.com](http://www.sedar.com)). Although the Company has attempted to identify important factors that could cause actual results to differ materially, there may be other factors that cause results not to be as anticipated, estimated, described or intended. Investors are cautioned against undue reliance on forward-looking statements or information.

These forward-looking statements are made as of the date hereof and, except as required by applicable securities regulations, the Company does not intend, and does not assume any obligation, to update the forward-looking information.

#### Non-GAAP Measures

This press release includes certain terms or performance measures commonly used in the mining industry that are not defined under International Financial Reporting Standards ("IFRS"), including Copper Equivalent, C1 Copper Cash Costs (net of credits) per pound of payable copper and All-In Sustaining Costs per pound of payable copper, and operating costs per tonne processed. Non-GAAP measures do not have any standardized meaning prescribed under IFRS and, therefore, they may not be comparable to similar measures employed by other companies. The Company discloses "C1 Copper Cash Costs", "All-in Sustaining Costs", "EBITDA", and "Free Cash Flow" because it understands that certain investors use this information to determine the Company's ability to generate earnings and cash flows for use in investing and other activities. The Company believes that conventional measures of performance prepared in accordance with IFRS, do not fully illustrate the ability of mines to generate cash flows. The measures, as determined under IFRS, are not necessarily indicative of operating profit or cash flows from operating activities. The measures cash costs and all-in sustaining costs are considered to be key indicators of a project's ability to generate operating earnings and cash flows. Non-GAAP financial measures should not be considered in isolation as a substitute for measures of performance prepared in accordance with IFRS and are not necessarily indicative of operating costs, operating profit or cash flows presented under IFRS.

SOURCE [Foran Mining Corp.](#)

#### Contact

Jonathan French, CFA, Director, Investor Relations, 409 Granville Street, Suite 904, Vancouver, BC, Canada, V6C 1T2, [jfrench@foranmining.com](mailto:jfrench@foranmining.com); Media Enquiries: SEC Newgate, George Esmond/ Peter Tulupman, [Foran@secnewgate.co.uk](mailto:Foran@secnewgate.co.uk)

---

Dieser Artikel stammt von [Rohstoff-Welt.de](#)

Die URL für diesen Artikel lautet:

<https://www.rohstoff-welt.de/news/408309--Foran-Mining-Announces-McIlvenna-Bay-Initial-Phase-Feasibility-Study-Results-Outlining-Robust-Long-Life-Opera>

Für den Inhalt des Beitrages ist allein der Autor verantwortlich bzw. die aufgeführte Quelle. Bild- oder Filmrechte liegen beim Autor/Quelle bzw. bei der vom ihm benannten Quelle. Bei Übersetzungen können Fehler nicht ausgeschlossen werden. Der vertretene Standpunkt eines Autors spiegelt generell nicht die Meinung des Webseiten-Betreibers wieder. Mittels der Veröffentlichung will dieser lediglich ein pluralistisches Meinungsbild darstellen. Direkte oder indirekte Aussagen in einem Beitrag stellen keinerlei Aufforderung zum Kauf-/Verkauf von Wertpapieren dar. Wir wehren uns gegen jede Form von Hass, Diskriminierung und Verletzung der Menschenwürde. Beachten Sie bitte auch unsere [AGB/Disclaimer!](#)

---

Die Reproduktion, Modifikation oder Verwendung der Inhalte ganz oder teilweise ohne schriftliche Genehmigung ist untersagt! Alle Angaben ohne Gewähr! Copyright © by Rohstoff-Welt.de -1999-2025. Es gelten unsere [AGB](#) und [Datenschutzrichtlinien](#).