Nano One Materials Corp.

Management's Discussion & Analysis

For the six months ended

June 30, 2022

PREPARATION OF MANAGEMENT'S DISCUSSION & ANALYSIS

The following Management's Discussion & Analysis ("MD&A") of Nano One® Materials Corp. ("Nano One" or the "Company") for the six months ended June 30, 2022, should be read in conjunction with the Company's condensed interim consolidated financial statements for the six months ended June 30, 2022, and the audited annual financial statements for the year ended December 31, 2021, and related notes thereto. The financial statements have been prepared in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board ("IASB"). All monetary amounts in this MD&A are expressed in Canadian dollars, unless otherwise indicated.

The information contained herein is presented as at **August 4, 2022** (the "MD&A Date"), unless otherwise indicated.

Additional information relating to the Company, including the Annual Information Form ("AIF") dated March 28, 2022, is filed with Canadian securities regulatory authorities on SEDAR (www.sedar.com) and on the Company's website at www.nanoone.ca.

The Company's head office is located at Unit 101B, 8575 Government Street, Burnaby, British Columbia V3N 4V1 and its registered and records office is located at 2900 - 550 Burrard Street, Vancouver, British Columbia V6C 0A3.

For the purposes of preparing this MD&A, Management, in conjunction with the Board of Directors, considers the materiality of information. Information is considered material if: (i) such information results in, or would reasonably be expected to result in, a significant change in the market price or value of Nano One's common shares; or (ii) there is a substantial likelihood that a reasonable investor would consider it important in making an investment decision; or (iii) it would significantly alter the total mix of information available to investors. Management, in conjunction with the Board of Directors, evaluates materiality with reference to all relevant circumstances, including potential market sensitivity.

DISCLOSURE CONTROLS AND PROCEDURES AND INTERNAL CONTROLS OVER FINANCIAL REPORTING

The Company's disclosure controls, and procedures ("DC&P") are designed to provide reasonable assurance that relevant information is gathered and reported to senior management, including the Chief Executive Officer and the Chief Financial Officer, on a timely basis so that appropriate decisions can be made regarding public disclosures. We have also designed internal controls over financial reporting to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with IFRS. During the six months ended June 30, 2022 and the year ended December 31, 2021, there were no changes in internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

FORWARD-LOOKING STATEMENTS

This MD&A contains certain "forward-looking information" and "forward-looking statements" (collectively, "forward-looking statements"), within the meaning of applicable Canadian securities laws, which are based upon the Company's current internal expectations, estimates, projections, assumptions, and beliefs. All information, other than statements of historical facts, included in this MD&A that addresses activities, events or developments that the Company expects or anticipates will or may occur in the future is forward-looking information. Such statements can be identified by the use of forward-looking terminology such as "expect", "likely", "may", "will", "should", "intend", or "anticipate", "potential", "proposed", "estimate" and other similar words, including negative and grammatical variations thereof, or statements that certain events or conditions "may" or "will" happen, or by discussions of strategy. Forward-looking statements include estimates, plans, expectations, opinions, forecasts, projections, targets, guidance, or other statements that are not statements of fact. Such forward-looking statements are made as of the date of this MD&A and, except as required by law, the Company is under no obligation to update or alter any forward-looking information.

Forward-looking statements in this MD&A may include, but are not limited to, statements with respect to: the use of the net proceeds from previous financings; the performance of the Company's business and operations; the intention to grow the business, operations and potential activities of the Company; regulatory changes; the competitive conditions of the industry and the Company's competitive position in the industry; the Company's business plans and strategies; the anticipated benefits of the Company's partnerships; the Company's licensing, supply chain and joint venture opportunities; the applicable laws, regulations and any amendments thereof; and any anticipated future gross revenues and profit margins of the Company's operations.

With respect to the forward-looking statements contained in this MD&A, the Company has made assumptions regarding, among other things: the use of the net proceeds of previous financings; operating and capital costs; anticipated partnerships; the Company's ability to access future financing opportunities; and the Company's ability to attract and retain qualified personnel or management. Although the Company believes that the expectations reflected in the forward-looking statements are reasonable, there can be no assurance that such expectations will prove to be correct. The Company cannot guarantee future results, levels of activity, performance, or achievements. There are risks, uncertainties, and other factors, some of which are beyond the Company's control, which could cause actual results, performance or achievements of the Company, as applicable, to differ materially from any future results, performance or achievements expressed or implied by such forward-looking statements contained in this MD&A.

RISKS AND UNCERTAINTIES

Risk is inherent in all business activities and cannot be entirely eliminated. An investment in Nano One's common shares involves risk. Investors should carefully consider the risks and uncertainties described below and, in the AIF, filed with Canadian securities regulators (www.sedar.com) which may not be a comprehensive list of risks and uncertainties as additional risks and uncertainties, including those unknown by the Company at this time, or are currently considered immaterial, may exist, and other risks may apply.

Global Pandemic (COVID-19)

In March 2020, the World Health Organization declared the outbreak of COVID-19 a global pandemic. This contagious disease outbreak has adversely affected workforces, economies, and financial markets globally. Global supply chains have been adversely affected resulting in shipping delays. It is not possible for the Company to predict the duration or magnitude of the adverse results of the outbreak and its effects on the Company's business or results of operations or on the Company's industry partners who provide in-kind and/or financial contributions to the Company's government programs. Operations depend on continuing to safeguard all personnel.

DESCRIPTION OF THE BUSINESS

The Company is a clean technology company with a patented, scalable and low carbon intensity industrial process for the low-cost production of high-performance lithium-ion battery cathode active materials ("CAM"). The technology is applicable to electric vehicle, energy storage, consumer electronic and next generation batteries in the global push for a zero-emission future. Nano One's One-Pot process, its coated nanocrystal materials and its Metal to Cathode Active Material (M2CAM®) technologies address fundamental performance needs and supply chain constraints while reducing costs and carbon footprint.

Nano One has received funding from various government programs and the current "Scaling of Advanced Battery Materials Project" is supported by Sustainable Development Technology Canada (SDTC) and the Innovative Clean Energy (ICE) Fund of the Province of British Columbia (BC-ICE).

One-Pot process Technology

Nano One's One-Pot process is engineered to use non-sulfate forms of metal feedstock, with the intention of reducing total cost and carbon footprint of feedstock needs per kilogram of CAM, eliminating the need to convert metal to sulphate, thereby removing downstream sulphate waste equivalent to nearly two times the CAM product volume and it reduces water consumption, GHG emissions and added process costs. Furthermore, the process uses lithium feedstock in the form of carbonate rather than hydroxide, which is more costly, corrosive and harder-to-handle. The process is feedstock flexible which enables improved optionality of sourcing of raw materials. The process also forms innovative coated nanocrystal cathode powders that are designed to be more durable than conventional cathode powders.

The nanocrystal innovation addresses a fundamental battery trade-off between energy density and durability. Increased durability provides electric vehicle manufacturers greater flexibility in optimizing range, charging rates, safety, and cost. The One-Pot process combines all input components: lithium, metals, additives, and coatings in a single reaction to produce a precursor that, when dried and fired, forms quickly into a single nanocrystal cathode material simultaneously with its protective coating.

The Company's primary cathode formulations under development include:

- Lithium Nickel Manganese Cobaltate (NMC622, NMC811, and Ni>90% NMC);
- Lithium Nickel Manganese Oxide (LNMO, or High Voltage Spinel HVS); and
- Lithium Iron Phosphate (LFP).

Further details about the Company's process developments and product developments can be found in the AIF.

M2CAM® Technology

In February 2021, Nano One announced the launch of its Metal to Cathode Active Material (“M2CAM”) technology which reduces cost, reduces waste, and reduces the carbon footprint in the lithium-ion battery supply chain. Nano One's collaborators include automotive OEMs with similar motivations to meet environmental targets by reducing waste, carbon emissions, logistics and costs. Patents are pending for M2CAM, and preliminary test results are showing battery capacity up to 5% higher than cathode materials currently made from metal salts.

Nano One’s patented One-Pot process forms durable single crystal cathode powders and protective coatings simultaneously and the process has been adapted for M2CAM, enabling these materials to be made directly from metal powders. Metal powders are one-fifth of the weight of metal sulfates, avoiding the added costs, energy and environmental impact of converting to sulfate and shipping and handling of waste. The One-Pot process is an aqueous process, using carbon neutral chemistry, that operates at room-temperature and atmospheric pressures, and it combines feedstock conversion, precursor formation, lithiation and coating steps into one reaction. This creates added value for metals and aligns Nano One with the environmental, sustainability and cost objectives of automotive companies, miners, investment communities and governmental infrastructure initiatives.

RECENT CORPORATE MILESTONES

ACQUISITION OF JOHNSON MATTHEY BATTERY MATERIALS LTD.

On May 25, 2022, the Company announced it had entered into a binding agreement to acquire 100% of the shares of Johnson Matthey Battery Materials Ltd. (“JMBM Canada”) a Canadian entity located in Candiac, Québec, for approximately $10,250,000 paid in cash, subject to closing working capital adjustments.

Acquisition to include the team, facilities, equipment, land and other assets

- Team has more than 360 years of scale-up and commercial production know-how
- Team and facilities proven in supplying tier 1 cell manufacturers for automotive
- LFP facility and land strategically located near Montréal and operational since 2012
- Facility and equipment can serve Nano One's process needs with room to expand
- Expedites Nano One business strategy for LFP and other battery materials

JMBM Canada also includes a 2,400 tonne per annum capacity LFP production facility occupying approximately one tenth of the 400,000 square foot property (the “Candiac facility”). The transaction is expected to complete by the end of calendar 2022, subject to JMBM Canada fulfilling contractual commitments and certain other customary closing conditions.

Nano One sees tremendous value in the people and their expertise at JMBM Canada. The acquisition will accelerate Nano One’s learning curve and commercialization plans. The Candiac facility, permitting and automotive quality systems is a major accelerator in Nano One’s business objectives and complements the innovative R&D team and facilities in Burnaby, BC.

Nano One is looking to accelerate its commercialization plans in collaboration with the expert team in Candiac, with a view to combining know-how and technology to fast-track to commercial scale LFP, NMC, LNMO and other cathode materials.

The plant is an ideal platform for the advancement and acceleration of our commercialization strategy. Nano One is planning to scale for commercial qualification and production. Nano One has begun detailed engineering and procurement to increase pilot capacity and preliminary engineering is underway for a multi-1,000 tpa industrial scale commercial demonstration line. These scale-up efforts are being focused initially on Nano One’s most mature product, LFP, to address growing demand in the automotive and energy storage markets in North America, Europe and other emerging jurisdictions. The proximity to international airports and major port facilities makes the Candiac location a critical link in the mines-to-mobility initiative.

Nano One believes that Québec will be a center of gravity for critical minerals and battery materials in North America. It brings decades of battery technology investment, a skilled and valuable workforce, multinational anchor companies and access to hydroelectric power. Nano One sees an opportunity to play a central role in the battery ecosystem and the mines-to-mobility initiative and believes Québec has an opportunity to differentiate from other jurisdictions through innovation by driving down the environmental footprint, cost and complexity of making battery materials. This will make the supply chain resilient, competitive and sustainable for a long and prosperous future.

Quebec's facilities will be focused on transitioning from technology demonstration to production prototypes, complete systems and operational validation. Annual capacity will be 100's to 1,000's of tons used for scale-up development, systems testing, commercial validation and first commercial production with potential customers and partners.

JOINT DEVELOPMENT AGREEMENT - BASF

On May 31, 2022, the Company announced the signing of a joint development agreement ("JDA") with BASF SE ("BASF"), a globally active chemical company with extensive experience in the development and manufacture of battery materials. Under the JDA, the companies will co-develop a process with reduced by-products for commercial production of next-generation cathode active materials (CAM), based on BASF's HEDTM-family of advanced CAM and using Nano One's patented One-Pot process and M2CAM technologies. BASF has a family of CAM products well-suited to the evolving requirements of batteries in automotive drivetrains and a proven track record of developing these products in collaboration with others. Nano One and BASF will also use the M2CAM process for higher flexibility in terms of manufacturing approach and resulting product performance, reduced energy consumption and environmental footprint.

The joint development plan has various phases and stage gates and is the result of evaluating Nano One's processes and products. The signing of the JDA represents a significant milestone in the business relationship between BASF and Nano One.

STRATEGIC INVESTMENT BY RIO TINTO

On June 9, 2022, the Company announced entering a strategic partnership with Rio Tinto, a leading global mining and metals group, providing iron and lithium products, collaboration and a US$10,000,000 ($12,536,500) investment into Nano One. This partnership and funding will accelerate Nano One's multi-cathode (multi-CAM) commercialization strategy and support CAM manufacturing in Canada for a cleaner and more efficient battery supply chain for North American and overseas markets.

Nano One issued 4,643,148 common shares (the "Shares") to Rio Tinto, approximately 4.9% of the issued and outstanding Shares of Nano One at the time of the share issuance, at $2.70 per share in a non-brokered private placement. The proceeds will be directed towards technology and supply chain development, commercialization, Nano One's acquisition of the Candiac facility in Québec (see above, May 25, 2022), its conversion to One-Pot LFP and industrial scale piloting of other Nano One CAM technologies, and for working capital purposes.

Provisions of the investment agreement with Rio Tinto include participation rights in any future equity financings to maintain pro rata ownership interest for a period of five years from the date of closing; a lock up on securities dispositions and a standstill for a period of 12 months from the date of closing, subject to certain exemptions.

Strategic Collaboration Agreement – Rio Tinto

Rio Tinto and Nano One entered into a strategic collaboration agreement that includes a study of Rio Tinto's battery metal products, including iron powders from the Rio Tinto Fer et Titane facility in Sorel-Tracy, Québec, as feedstock for the production of Nano One's cathode materials. Rio Tinto will contribute know-how from its Critical Minerals and Technology Centre, which has developed a unique expertise in the extraction and processing of critical minerals such as lithium and scandium, as well as minerals from Canada, the United States, and other international sources to further drive localization of the lithium ion battery value chain.

Rio Tinto will collaborate on technical and business matters as may be required in developing, designing, constructing, and operating cathode production facilities. Nano One issued 1,000,000 share purchase warrants to Rio Tinto as consideration for their technical and support services. The warrants are exercisable at $4.00 each until June 16, 2023.

CORPORATE DEVELOPMENTS – YEAR TO DATE

In addition to the recent corporate milestones discussed above and other information discussed throughout this MD&A, the Company announced the following developments during the six months ended June 30, 2022 and through to the MD&A Date (from newest to oldest):

Funding to Advance M2CAM and Thermal Processing Initiatives

On March 3, 2022, the Company announced that it will be receiving advisory services and funding of up to $404,000 between 2022 and 2024 ($120,000 was received by June 30, 2022) from the National Research Council of Canada Industrial Research Assistance Program ("NRC-IRAP") to support a research and development project to advance its M2CAM technology and thermal processing innovations. The project will further advance cost optimization of the One-Pot process for the manufacture of CAM, specifically as it relates to use in metal feedstocks enabled by Nano One's M2CAM technology and innovations in the final stage of thermal processing.

Successful Completion of Phase One of Co-Development Agreement with Niobium Producer CBMM

On February 15, 2022, the Company announced that it has successfully completed Phase One of its advanced lithium-ion battery cathode materials coating development agreement with CBMM, the world's leading supplier of niobium products and technology. Nano One has successfully demonstrated the use of CBMM's niobium to form a protective coating on Nano One's single nanocrystal NMC cathode active material. This coating is designed to enhance durability, and the success on this first milestone strengthens the supply chain relationship between CBMM and Nano One while providing yet another demonstration of the flexibility of Nano One's patented One-Pot process.

Nano One's patented One-Pot process adds a cost effective niobium coating on each individual nanocrystal to protect the cathode from deleterious side reactions than can otherwise cause rapid performance degradation. The One-Pot process enables this coating to be formed without adding process steps or costs, and the coating can significantly increase the durability of cathode materials in lithium-ion batteries. The niobium-coated single crystal cathode materials are applicable to both conventional liquid electrolyte cells and advanced solid state electrolyte cells.

Engineering Study Supports the Benefits of the One-Pot process and M2CAM

On January 24, 2022, the Company announced the successful completion of an industrial scale engineering study conducted by Hatch Ltd. (Hatch) a leading global engineering firm. The study supports that Nano One's patented One-Pot M2CAM process offers both environmental and potential economic benefits when compared to conventional cathode manufacturing processes.

The engineering study set out to compare the conventional sulfate process for manufacturing CAM with Nano One's One-Pot M2CAM process for nickel rich cathode materials. Conventional cathode manufacturing produces approximately 1.8 times more weight in sodium sulfate waste than it does in CAM product, whereas Nano One's process produces no waste. It is estimated the One-Pot M2CAM process also reduces water consumption by approximately 60% prior to recycling. Further, the Hatch work supports that the Nano One's process significantly reduces the number of process steps to get to a single crystal coated cathode active material helping reduce costs and create efficiencies. The report estimates competitive economics for Nano One and its One-Pot process over conventional cathode processes and identifies opportunities for further cost savings, despite One-Pot having over 20-years less industrial optimization.

Intellectual Property

Between January 2022 and June 2022, the Company obtained three additional issued patents, with a fourth issued in July 2022. As at the MD&A Date, the Company has twenty-four (24) issued patents which were issued by various jurisdictions including Canada, China, Japan, Korea, Taiwan, and the United States. The patents have expiries ranging between thirteen (13) to nineteen (18) years from the patent issuance date. The Company also has over forty (40) pending patent applications throughout the world.

The Company's intellectual property was developed and is wholly-owned by the Company. The Company has filed other patent applications and may file additional patents at a later date to further strengthen its intellectual property and technology going forward, although no assurances can be given that it will be successful in such endeavours. Additional information on the Company's intellectual property can be found in the Company's AIF.

Government Assistance

The Company's primary active government assistance programs are that with SDTC, and NRC-IRAP:

Sustainable Development Technology Canada ("SDTC"):

In 2019, the Company executed a contribution agreement with SDTC for a non-repayable grant in respect of the Company's "Scaling Advanced Battery Materials" project. The SDTC Program #2 grant is for up to $8,545,500 which includes BC-ICE contributions (discussed below). SDTC Program #2 is estimated to conclude in May 2023.

As of the MD&A Date, the Company is in Milestone 4 and in July 2022, Milestone 4 proceeds of approximately $1,800,000 were received. Accordingly, to the MD&A Date approximately $7,698,000 has been received under SDTC Program #2.

The Company receives funding from the Government of Canada for its research activities through various programs. During the six months ended June 30, 2022 and June 30, 2021 the following amounts were received (repaid):

		June 30, 2022	June 30, 2021
(1)	**Amounts received (repaid):**	**$**	$
(2)	Sustainable Development Technology Canada (SDTC)	-	262,500
	Industrial Research Assistance Program (NRC-IRAP)	136,768	(3,408)
		136,768	259,092

(1) Proceeds or repayments are recorded within research expenses, net.
(2) See deferred government assistance below for allocation of SDTC proceeds for the six months ended June 30, 2022 and June 30, 2021. Subsequent to June 30, 2022, the Company received Milestone 4 proceeds of $1,797,824.

NRC-IRAP Programs:

Program #6:

In December 2021, the Company executed an agreement with NRC-IRAP for non-repayable contributions to the Company totalling up to $404,000 ($120,000 received through to June 30, 2022) over the course of the program through to June 2023. The scope of the program is research into cost optimization of the Company's patented process for the manufacture of cathode active materials and specifically the use of metal feedstocks and thermal processing methods. Under the terms of the agreement, NRC-IRAP will reimburse the Company for 80% of salaries paid to employees involved in this project.

Youth Internship Contribution Agreement:

The Company has entered into various Youth Internship Contribution Agreements with NRC-IRAP for non-repayable contributions to the Company beginning in May 2021. Under the terms of the agreements, the contributions from NRC-IRAP are for the reimbursement of certain salaries paid to employees of the Company.

The cumulative amount of program funding received since January 1, 2014 from the Government of Canada are as follows:

	June 30, 2022 $	December 31, 2021 $
Sustainable Development Technology Canada (SDTC) and BC-ICE	8,025,683	8,025,683
Automotive Supplier's Innovation Program (ASIP)	1,950,952	1,950,952
Industrial Research Assistance Program (NRC-IRAP)	965,106	828,338
Innovation Assistance Program (IAP) (from NRC-IRAP)	241,225	241,225
Scientific Research & Experimental Development (SR&ED)	98,661	98,661
Other Grants	80,059	80,059
	11,361,686	11,224,918

OVERALL PERFORMANCE

Further to the "Recent Corporate Developments" as discussed above, the Company used cash and cash equivalents during the six months ended June 30, 2022, of approximately $4,723,000.

The key sources of cash and cash equivalents during the six months ended June 30, 2022, were as follows:

- Proceeds from the strategic investment by Rio Tinto through a private placement of approximately $12,536,000 (June 2022);
- Cost recoveries from strategic partners of approximately $637,000;
- Interest income of approximately $175,000;
- Proceeds from the NRC-IRAP government program of approximately $137,000; and
- Proceeds from the exercise of stock options and warrants of approximately $108,000.

The key uses of cash and cash equivalents during the six months ended June 30, 2022, were as follows:

- Purchase price consideration for the acquisition of JMBM Canada of $10,250,000 (May 2022);
- Operating expenditures of approximately $7,414,000 before proceeds from NRC-IRAP, and other cost recoveries (see above);
- Investments in equipment and machinery, and payments for the issuance of patents of approximately $513,000; and
- Lease payments of approximately $105,000.

See "Cash flows for the six months ended June 30, 2022" below within Discussion of Operations for further details on cash flows for the period then ended.

DISCUSSION OF OPERATIONS

The Company reports operating results in a single operating segment being the development and scale-up of a patented process for the production of cathode active materials (CAM) for lithium-ion battery applications in electric vehicles, energy storage systems, and consumer electronics.

Research expenses

Amounts for the three and six months ended June 30, 2022 and June 30, 2021 were as follows (rounded):

	Three months ended			**Six months ended**		
	June 30, 2022 $	June 30, 2021 $	**Change $**	**June 30, 2022 $**	June 30, 2021 $	**Change $**
Contractors	**421,000**	34,000	**387,000**	**575,000**	100,000	**475,000**
Labour	**906,000**	555,000	**351,000**	**2,267,000**	1,132,000	**1,135,000**
Safety and training	**44,000**	36,000	**8,000**	**61,000**	48,000	**13,000**
Supplies	**229,000**	152,000	**77,000**	**413,000**	287,000	**126,000**
Utilities	**18,000**	13,000	**5,000**	**29,000**	23,000	**6,000**
	1,618,000	790,000	**828,000**	**3,345,000**	1,590,000	**1,755,000**
Contractors - Warrants issued	**595,000**	-	**595,000**	**595,000**	-	**595,000**
Depreciation	**201,000**	191,000	**10,000**	**394,000**	255,000	**139,000**
Cost recoveries	**(324,000)**	-	**(324,000)**	**(329,000)**	(79,000)	**(250,000)**
Government assistance	**(68,000)**	(25,000)	**(43,000)**	**(108,000)**	(766,000)	**658,000**
Research expenses, net	**2,022,000**	956,000	**1,066,000**	**3,897,000**	1,000,000	**2,897,000**

In addition to the research expenses, net amount presented above, the Company incurred approximately $145,000 during the six months ended June 30, 2022, within professional and consulting, for charges relating to patent filings and applications. Additionally, the Company incurred approximately $291,000 on research and development equipment and pilot plant equipment in aggregate during the six months ended June 30, 2022.

Supplies costs primarily comprises chemical formulations which may be subject to fluctuations in commodity prices. The Company is therefore exposed to fluctuations in commodity prices which impacts operating results in terms of expenditures on research activities. purchased, but is expected to have an increasing impact on operations as volumes and costs increase in 2023 and beyond.

Contractors costs primarily includes costs for engineering studies such as the work performed by Hatch as discussed above and other engineers, third-party researchers, and amounts paid to environmental agencies that assist with chemical supply removal. The Company is compliant to the best of its knowledge with all local required environmental waste and disposal regulations. Contractors also includes a non-cash amount of $595,000 representing the fair value of 1,000,000 warrants issued to Rio Tinto in connection with the strategic collaboration agreement in June 2022 (see "Strategic Investment by Rio Tinto").

For the three and six months ended June 30, 2022 and June 30, 2021

The following tables summarize the Company's results of operations and cash flows for the three and six months ended June 30, 2022 and June 30, 2021 (rounded):

	Three months ended		
	June 30, 2022 $	June 30, 2021 $	**Change $**
Revenue	**-**	-	**-**
Loss from operating expenses	**(4,538,000)**	(2,605,000)	**(1,933,000)**
Loss and comprehensive loss	**(4,415,000)**	(2,549,000)	**(1,866,000)**
Cash used in operating activities	**(2,913,000)**	(2,419,000)	**(494,000)**
Cash used in investing activities	**(10,402,000)**	624,000	**(11,026,000)**
Cash provided by financing activities	**12,498,000**	26,927,000	**(14,429,000)**

	Six months ended		
	June 30, 2022 $	June 30, 2021 $	**Change $**
Revenue	**-**	-	**-**
Loss from operating expenses	**(8,902,000)**	(7,057,000)	**(1,845,000)**
Loss and comprehensive loss	**(8,728,000)**	(7,094,000)	**(1,634,000)**
Cash used in operating activities	**(6,640,000)**	(4,082,000)	**(2,558,000)**
Cash used in investing activities	**(10,588,000)**	273,000	**(10,861,000)**
Cash provided by financing activities	**12,505,000**	31,374,000	**(18,869,000)**

Cash used in investing activities during the six months ended June 30, 2022, substantially comprises $10,250,000 paid for the acquisition of JMBM Canada in May 2022. The remaining $338,000 is net of interest income of $175,000, leaving $513,000 having been incurred on deposits and purchases of property and equipment, and patent issue cost payments.

Cash provided by financing activities during the six months ended June 30, 2022, is attributable to the proceeds from Rio Tinto's strategic investment by way of private placement of $12,536,500 less approximately $35,000 in share issue costs, the exercise of options and warrants of approximately $108,000, less facility lease payments of approximately $105,000. The cash provided by financing activities in the comparative period reflected the proceeds from the exercise of a greater volume of options and warrants and the closing of a short-form prospectus offering (gross proceeds of approximately $28,917,000).

During the three months ended June 30, 2022, the primary sources of cash were from the Rio Tinto private placement ($12,500,000), cost recoveries from strategic partners ($637,000), interest income ($123,000), proceeds from Government programs ($69,000), and exercises of stock options and warrants ($49,000).

Certain components of operating expenses for the three and six months ended June 30, 2022 and June 30, 2021, were as follows (rounded):

	Three months ended		
	June 30, 2022 $	June 30, 2021 $	**Increase (decrease) $**
General and administrative expenses	**280,000**	347,000	**(67,000)**
Investor relations and shareholder information	**266,000**	246,000	**20,000**
Professional and consulting, net	**461,000**	173,000	**288,000**
Salaries, benefits, and fees, net	**998,000**	424,000	**574,000**

	Six months ended		
	June 30, 2022 $	June 30, 2021 $	**Increase (decrease) $**
General and administrative expenses	**550,000**	480,000	**70,000**
Investor relations and shareholder information	**403,000**	375,000	**28,000**
Professional and consulting, net	**970,000**	425,000	**545,000**
Salaries, benefits, and fees, net	**2,007,000**	1,203,000	**804,000**

- General and administrative expenses:

  The primary cause of the increase is higher insurance premiums for D&O insurance which are amortized over the term of the policy. The amount expensed during the six months ended June 30, 2022 was approximately $129,000. The other key components of general and administrative expenses for the period then ended were transfer agent filing and exchange fees, rent, and travel and accommodation of approximately $245,000 in aggregate.

- Investor relations and shareholder information:

  There was an insignificant fluctuation in investor relations and shareholder information as the Company's programs and level of marketing efforts have remained fairly consistent to date from its programs initiated in 2021.

- Professional and consulting:

  Legal fees increased by approximately $278,000 to $381,000 as a result of the efforts from counsel relating to key corporate milestones achieved during the period. Patent filing fees increased to approximately $145,000 as a result of greater operational activity overall. Advisory and capital markets services and consultancy increased to approximately $236,000. Human resources costs decreased as the Company no longer uses contractors for human resources services.

- Salaries, benefits, and fees:

  Staffing levels continue to increase in both the Company's corporate and research departments. Salaries and benefits for the comparative period are reduced by allocations of SDTC government grants, whereas no such allocations were recognized against salaries and benefits for the current period. Moreover, the Company's annual short-term incentives which are paid in the first quarter of each year, were greater in the current period relative to the comparative period.

  As of the MD&A Date, there are 69 employees/contractors as part of Nano One's company-wide team.

Cash flows for the six months ended June 30, 2022

Cash used in operating activities was approximately $6,640,000, largely driven by $6,838,000 incurred on cash-based operating expenses less approximately $198,000 in changes in working capital items. This equates to an average monthly operating burn rate of approximately $1,106,000 for the six months ended June 30, 2022 compared to an average monthly burn rate for the year ended December 31, 2021, of approximately $600,000. Cash used in operating activities is presented net of government assistance proceeds (NRC-IRAP) and cost recoveries received during the period, as discussed above.

Cash used in investing activities was approximately $10,588,000, driven by the purchase price consideration for the acquisition of JMBM Canada of $10,250,000, and approximately $509,000 in equipment deposits and purchases. Investing activities were partially offset by interest income received on high-interest savings accounts/funds of approximately $175,000.

Cash provided by financing activities was approximately $12,505,000, comprising the investment by Rio Tinto of $12,536,500, less related share issue costs of approximately $35,000 as well as payments for the basic rent portion of leased facilities of approximately $105,000. Additionally, the Company received proceeds from the exercise of stock options and warrants of approximately $108,000.

SUMMARY OF QUARTERLY RESULTS

The following table shows the results for the last eight fiscal quarters as prepared in accordance with IFRS and presented in Canadian dollars, the Company's functional currency:

Period Ending	Revenue $	Loss and comprehensive loss $	Basic and Diluted Loss Per Share $
June 30, 2022	-	(4,415,217)	(0.05)
March 31, 2022	-	(4,312,314)	(0.05)
December 31, 2021	-	(2,462,276)	(0.03)
September 30, 2021	-	(1,767,249)	(0.02)
June 30, 2021	-	(2,549,411)	(0.03)
March 31, 2021	-	(4,544,172)	(0.05)
December 31, 2020	-	(2,103,524)	(0.02)
September 30, 2020	-	(1,504,365)	(0.02)

There are no significant seasonal variations in quarterly results as the Company is not subject to significant seasonality in its research and corporate activities. The Company is exposed to currency risk as it incurs certain transactions in United States dollar, and occasional transactions in the Euro, and the British Pound. However, the Company has assessed that the impact of a 10% fluctuation in foreign exchange rates relative to the Canadian dollar would be insignificant to the Company's financial position and results of operations.

Variations in loss and comprehensive loss for certain of the above periods were affected primarily by the following factors:

- The quarter ended March 31, 2022, was characterized by a significant increase in the volume and cost of research activities (excess of $1,000,000 increase over the previous three months ended December 31, 2021) as well as increases in substantially all other cash-based components of operating expenses.
- The quarter ended December 31, 2021, saw an increase in professional fees and consulting fees. Additionally, there were additional fees incurred on engineering studies, and a reduction in amounts recognized as government assistance which are offset to reduce research expenses, net.
- The quarters ended June 30, 2021 and September 30, 2021, were reflective of a general increase in activities in all departments and projects for the Company including increased investor relations programs, increased research expenditures, and increased salaries and benefits.
- The quarter ended March 31, 2021, included greater than normal share-based payment expense (non-cash) of approximately $3,070,000 in relation to the grant of stock options of which certain stock options granted to directors and officers vested immediately.

Use of Proceeds from Financings

The Company completed the following three equity financings between February 2020 and April 2021, for aggregate net proceeds of $50,411,757:

- On February 21, 2020 (the "First Financing"), the Company completed a non-brokered private placement for gross proceeds of approximately $11,000,000. The net proceeds of the placement after deducting finders' fees, legal, filing and other fees were $10,381,392;
- On October 29, 2020, the Company completed a short form prospectus financing for gross proceeds of approximately $14,000,000. The net proceeds of the financing after deducting finders' fees, legal, filing and other fees were $13,118,991; and
- On April 1, 2021, the Company completed a short form Prospectus financing for gross proceeds of approximately $29,000,000. The net proceeds of the financing after deducting the cash underwriters' commission and expenses, legal, filing and other fees were $26,911,374.

For the period from closing of the First Financing (February 21, 2020) to June 30, 2022, the Company has used the net proceeds of the financings as shown below. These amounts are presented on a gross basis and do not include government grant proceeds.

Principal Purposes	**Use of Proceeds $**
Research activities	9,469,586
Capital equipment purchases and leasehold improvements on laboratory facilities	3,465,127
Pilot plant expansion	537,026
Intellectual property acquisition	569,247
Business development and strategic alternatives (1)	11,218,461
Working capital	10,773,119
Proceeds used	**36,032,566**
Remaining	14,379,191
Net proceeds of the financings	**50,411,757**

(1) Includes $10,250,000 paid in May 2022, for the acquisition of JMBM Canada.

TRANSACTIONS BETWEEN RELATED PARTIES

Key management personnel are the persons responsible for the planning, directing, and controlling the activities of the Company and includes both executive and non-executive directors, and entities controlled by such persons. The Company considers all directors and officers of the Company to be key management personnel.

The following transactions were carried out with key management (gross before applicable government assistance recoveries):

	Transactions six months ended June 30, 2022 $	Transactions six months ended June 30, 2021 $	**Balances outstanding June 30, 2022 $**
Bedrock Capital	75,000	75,000	-
DBM CPA	81,650	64,775	15,225
Directors' fees	114,521	27,000	-
Management and directors' fees (within salaries, benefits, and fees)	271,171	166,775	15,225
Officers (salaries, benefits, and fees; and research expenses)	782,115	720,700	-
Directors and officers (share-based payments)	683,893	3,156,085	-
Patent Filing Specialists (professional and consulting; and intangible assets)	126,132	69,385	11,381
	1,863,311	4,112,945	**26,606**

(a) Professional and consulting, net:

- Includes the services of Patent Filing Specialists Inc. (“Patent Filing Specialists”), a company controlled by Joseph Guy, a Company Director. Transactions are included within both intangible assets (for capitalized patent issue costs) and professional and consulting fees for patent filings, maintenance and related.

(b) Salaries, benefits, and fees, net (including allocations to research expenses, net):

- Includes salaries and short-term variable cash-based compensation incentives paid to Dan Blondal, CEO, Stephen Campbell, CTO, John Lando, Former President until November 30, 2021, Alex Holmes, COO, and Pamela Kinsman, Corporate Secretary and Director of Sustainability and Corporate Affairs. Expense reimbursements outstanding as at December 31, 2021 related to Alex Holmes.

  In accordance with an executive employment agreement the Company has in place with Dan Blondal, in case of termination by the Company without cause, he is entitled to six (6) weeks’ base pay (or notice) for every year of service to a maximum of twenty-four (24) months. He would not be entitled to further bonus payments after termination. In the case of resignation after a Change of Control and for ‘Good Reason’, Dan Blondal is entitled to twenty-four (24) months’ base salary.

- Includes the services of Bedrock Capital Corp. (“Bedrock Capital”) a company controlled by Paul Matysek the Chairman and a Company Director.

- Includes the services of Donaldson Brohman Martin, CPA Inc. (“DBM CPA”), a firm in which Dan Martino, CFO is a principal.

  Includes fees paid to the Company’s directors for their positions as non-executive directors and/or board committee members or chairpersons.

(c) Share-based payments:

- Includes amounts recognized on vesting of stock options and Equity Incentives granted to directors and officers.

- During the six months ended June 30, 2022, the Company granted 189,423 RSUs to various directors and officers.

LIQUIDITY AND CAPITAL RESOURCES

As at June 30, 2022, the Company had working capital of approximately $47,500,000.

The Company considers its capital structure to consist of its components of shareholders’ equity. When managing capital, the Company’s objective is to ensure that it continues as a going concern, to ensure it has sufficient capital to deploy on new and existing projects (including the requirement for matching funds relating to SDTC programs), as well as generating returns on excess funds while maintaining liquidity/accessibility to such funds. In order to facilitate the management of its capital requirements, the Company prepares annual expenditure budgets that are updated as necessary depending on various factors, including successful capital deployment, growth of its workforce, and general capital market or industry conditions. The Board of Directors relies on the expertise of the Company’s management to sustain future development of the business. Management reviews and adjusts its capital structure on an ongoing basis.

The Company is not subject to any externally imposed capital requirements. There were no changes to the Company’s approach to capital management during the six months ended June 30, 2022.

The Company currently has no source of revenues, though it receives funding from government programs, and certain cost recoveries from strategic partners. Additionally, the Company has historically relied upon equity financing to fund its activities. In order to fund ongoing research activities, expansion, capital expenditures, and operating expenses, the Company will spend its existing working capital and may seek additional capital sources to facilitate growth and expansion plans towards commercialization.

The Company currently invests excess capital in high-interest savings accounts (“HISAs”) and/or HISA funds which bear interest at variable rates (cash equivalents). Additionally, the Company may seek to invest excess funds in guaranteed investment certificates (“GICs”) bearing fixed rates of interest that are either redeemable (cash equivalents) or non-redeemable (short-term investments) and have terms not exceeding 24 months.

As at June 30, 2022 and December 31, 2021, the Company had excess capital invested in a HISA and a HISA fund which facilitates the diversification of treasury amongst high-credit quality Canadian chartered banks. These amounts are accessible on demand. Additionally, the Company did not have any GIC or other short-term investment holdings.

Interest income of $174,963 earned during the six months ended June 30, 2022 was from the HISA and HISA fund.

The Company's primary source of capital and liquidity from 2020 onwards has been from three financings over the course of fourteen months from February 2020 to April 2021, which generated gross proceeds of approximately $54,000,000 (net, $50,400,000), as well as proceeds received from exercises of stock options and warrants, government assistance programs, and a strategic investment in the Company by Rio Tinto in June 2022 of approximately $12,536,000.

The three financings completed from 2020 onwards are summarized as follows:

- In February 2020, gross proceeds of approximately $11,000,000 was raised through a non-brokered private placement;
- In October 2020, gross proceeds of approximately $14,000,000 was raised through a short form Prospectus financing; and
- In April 2021, gross proceeds of approximately $29,000,000 was raised through a short form Prospectus financing.

In order to facilitate the management of its capital requirements, the Company prepares annual expenditure budgets that are updated as necessary depending on various factors, including successful capital deployment, and strategic growth plans.

The Company is not subject to any externally imposed capital requirements and there were no changes to the Company's approach to capital management during the six months ended June 30, 2022. The Company does not have specific capital or operating expenditure commitments on any of its projects aside from the provisions of SDTC Program #2 that require the Company to have matching funds to the grant amounts and to incur the required expenditures to complete the various Milestones. The Company will use its existing working capital to incur the required SDTC Program #2 expenditures.

Contractual obligations

The following table summarizes the Company's contractual maturities for its financial liabilities:

As at June 30, 2022	Carrying amount $	Contractual cash flows $	Under 1 year $	1-5 years $	More than 5 years $
Accounts payable and accrued liabilities	587,123	587,123	587,123	-	-
Accounts payable to related parties	26,606	26,606	26,606	-	-
Lease liabilities	855,136	1,032,957	237,780	659,147	136,030
Total	**1,468,865**	**1,646,686**	**851,509**	**659,147**	**136,030**

OUTSTANDING SHARE AND EQUITY DATA

The authorized share capital of the Company consists of unlimited common shares without par value. All issued common shares are fully paid. As at the MD&A Date, the Company's common share data was as follows:

	As at the MD&A Date	
	#	Weighted average exercise price $
Common shares issued and outstanding	100,299,744	n/a
Stock options outstanding	6,466,457	2.78
Warrants outstanding	4,971,395	2.38
RSUs/DSUs outstanding	382,554	n/a
Fully diluted	**112,120,150**	

Subsequent to June 30, 2022, 46,750 common shares were issued between $1.28 and $1.60 each for proceeds of $71,000.

In February 2022, the Company granted 189,423 RSUs to officers and directors of the Company which vest in three annual installments (one-third (63,141) on February 4, 2023; one-third (63,141) on February 4, 2024; and the final one-third (63,141) on February 4, 2025).

The value of the Equity Incentives granted was based on the fair value of the of the Company's common shares on the date of grant. Accordingly, the Equity Incentives were granted at a fair value of $2.88 each for a total value of $545,538 which is being recognized within share-based payment expense as the Equity Incentives vest.

ACCOUNTING MATTERS

The preparation of financial statements in conformity with IFRS requires management to make estimates, judgments and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and reported amounts of income and expenses during each reporting period. Estimates and assumptions are continuously evaluated and are based on management's experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. However, actual outcomes can differ from these estimates. The Company's significant accounting policies are detailed in Note 2 to the financial statements for the year ended December 31, 2021.

Key sources of estimation uncertainty

The preparation of financial statements in conformity with IFRS requires management to make estimates, judgments and assumptions that affect the reported amounts of assets and liabilities as at the date of the financial statements and reported amounts of income (loss) and expenses during each reporting period. Estimates and assumptions are continuously evaluated and are based on management's experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. However, actual outcomes can differ from these estimates.

Fair value of stock options and compensatory warrants

Determining the fair value of compensatory warrants (finders' warrants) and stock options requires estimates related to the choice of a pricing model, the estimation of stock price volatility, the fair value of the Company's common shares, the expected forfeiture rate and the expected term of the underlying instruments. Any changes in the estimates or inputs utilized to determine fair value could have a significant impact on the Company's future operating results or on other components of shareholders' equity.

The fair value of stock options granted, or compensatory warrants issued by the Company is determined by using the Black-Scholes option pricing model. The fair value is particularly impacted by the Company's stock price volatility which is determined by way of a historical look-back of weekly closing stock prices over a period of time equivalent to the term provided on stock options and compensatory warrants when granted or issued.

Property and equipment

The estimated useful lives of property and equipment are reviewed by management and adjusted if necessary. To estimate property and equipment's useful life, management may use its past experience, review engineering estimates and industry practices for similar items of property and equipment and/or apply statistical methods to assist in its determination of useful life.

The estimated useful life of the Company's pilot plant within property and equipment is subject to specific estimation uncertainty as to the duration of use. The use of the pilot plant has historically been driven by securing government assistance to conduct research activities that utilize the pilot plant. Accordingly, the Company has historically depreciated the pilot plant over the term of the government assistance program. Future determinations of the expected life of the pilot plant may differ from historical experience.

There have been no changes to the depreciation methods used by the Company during the six months ended June 30, 2022. The Company's pilot plant is being depreciated over the term of the existing SDTC Program #2.

Critical judgments in applying accounting policies

Income taxes

Tax provisions are based on enacted or substantively enacted laws. Changes in those laws could affect amounts recognized in profit or loss both in the period of change, which would include any impact on cumulative provisions, and in future periods. Deferred tax assets (if any) are recognized only to the extent it is considered probable that those assets will be recoverable. This involves an assessment of when those deferred tax assets are likely to reverse and a judgment as to whether or not there will be sufficient taxable profits available to offset the tax assets when they do reverse. This requires assumptions regarding future profitability and is therefore inherently uncertain. To the extent assumptions regarding future profitability change, there can be an increase or decrease in the amounts recognized in respect of deferred tax assets as well as the amounts recognized in profit or loss in the period in which the change occurs.

The Company has determined that the likelihood and timing of future profitability for which to use its unrecognized deferred tax assets is uncertain at this time, therefore, the Company's deferred tax assets continue to be unrecognized.

Research expenses

The determination of whether expenditures on research and development activities meet the criteria for capitalization as internally generated intangible assets is subject to estimation and uncertainty.

The Company has determined that its activities continue to be classified as research in nature, as opposed to development. This results in research costs being expensed to profit or loss within the financial statements.

Changes in accounting policies and future accounting standards

During the six months ended June 30, 2022, and during the year ended December 31, 2021, there were no changes to the Company's significant accounting policies, nor any new accounting policies adopted.

Certain pronouncements have been issued by the IASB or IFRIC that are effective for accounting periods beginning on or after January 1, 2022. The Company has reviewed these updates and determined that none are applicable or consequential to the Company.

Financial instruments – classification and fair value

Classification of financial instruments

Financial assets:	Classification:
Cash and cash equivalents	FVTPL
Receivables	Amortized cost
Deposits	Amortized cost

Financial liabilities:	Classification:
Accounts payable and accrued liabilities	Amortized cost
Accounts payable to related parties	Amortized cost
Lease liabilities	Amortized cost

The Company's financial instruments can be exposed to certain financial risks including liquidity risk, credit risk, interest rate risk, price risk, and currency risk. Details of these risks and related assessments as well as the fair value measurements of the Company's financial instruments are included in the Company's financial statements for six months ended June 30, 2022, within Note 12.

OFF-BALANCE SHEET ARRANGEMENTS

Nano One does not utilize off-balance sheet arrangements.

PROPOSED TRANSACTIONS

There are no proposed transactions as the MD&A Date.

MANAGEMENT'S RESPONSIBILITY FOR FINANCIAL STATEMENTS

Information provided in this MD&A and the financial statements is the responsibility of management. In the preparation of the financial statements, estimates are sometimes necessary to make a determination of the carrying value for certain assets or liabilities. Management believes such estimates have been based on careful judgments and have been properly reflected in the financial statements. Management maintains a system of internal controls to provide reasonable assurances that the Company's assets are safeguarded and to facilitate the preparation of relevant and timely information.

APPROVAL

The Board of Directors of the Company has approved the disclosure contained in this MD&A.