

# Western Copper and Gold Announces Positive PEA on Casino

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\$2.3 billion After-Tax NPV (8%) at Base Case metal prices

After-Tax IRR 19.5% at Base Case metal prices

Cashflow over the first four years of \$965 million per year at Base Case metal prices

Base case development contemplates 25-year mine life

Extended Two-Phase development contemplates a 47-year mine life

Base Case metal prices: Cu: US\$3.35/lb, Au: US\$1,600/oz, Ag: US\$24/oz, Mo: US\$12/lb

VANCOUVER, June 22, 2021 - [Western Copper and Gold Corp.](#) ("Western" or the "Company") (TSX: WRN) (NYSE: WRN) is pleased to release the results of its Preliminary Economic Assessment (the "PEA", or "Study") on its wholly-owned copper-gold-molybdenum deposit in the Yukon ("Casino" or the "Project"). The Study considered the Project being constructed as an open pit mine, with a concentrator processing nominally 120,000 tonnes per day and a gold heap leach facility processing nominally 25,000 tonnes per day.

The Study supersedes all previous studies and incorporates the updated mineral resource with an effective date of July 2021. The Study also incorporates outcomes of the Best Available Tailings Technology Study (the "BATT Study") completed in 2020, with participation by First Nations, the Yukon Environmental and Socio-economic Assessment Board ("YESAB") and the Yukon Government. The design concept for the tailings management facility ("TMF") also reflects the guidance received from the Independent Engineering Review Panel.

The Study examines the development of the Casino Project, which comprises the processing of 1.3 billion tonnes of mineral material for both the mill and heap leach, with deposition of mill tailings and mine waste in the TMF facility consistent with design concepts considered during the BATT Study as a base case development.

"I am extremely pleased with the results from this PEA", said Paul West-Sells, President & Chief Executive Officer. "This study reaffirms Casino as one of the very few long-life copper-gold projects with robust economics in a top mining district, and we look forward to continuing working with our recent strategic investor, Rio Tinto, First Nations and other stakeholders to advance the project through additional engineering to feasibility."

In this news release, unless otherwise indicated, all further references to "\$" are to Canadian dollars and references to "US\$" are to United States dollars.

## HIGHLIGHTS

	Base Case*
Payback period, years	3.0
NPV pre-tax (8% discount)	\$3.62 billion
NPV after-tax (8% discount)	\$2.33 billion
LOM pre-tax free cash flow	\$13.0 billion
LOM after-tax free cash flow	\$9.1 billion
IRR pre-tax (100 % equity)	23.3%
IRR after-tax (100% equity)	19.5%
Initial Capital Investment	\$3.25 billion
Total mineralized material mined	1.3 billion tonnes
Mill mineralized material	1.1 billion tonnes
Heap leach mineralized material	204 million tonnes
Mill operation	25 years
Heap leach operation	23 years
LOM strip ratio	0.38:1

Base Case metal prices: Cu: US\$3.35/lb, Au: US\$1,600/oz, Ag: US\$24/oz, Mo: US\$12/lb.

#### KEY CHANGES FROM THE PREVIOUS STUDY

The engineering design basis for this PEA is similar in most respects to earlier studies but includes several significant design improvements. The major changes include:

##### Tailings Management Facility

The TMF is sized to provide sufficient capacity to store approximately 712 Mt of tailings and 500 Mt of mining waste rock and overburden materials. The remaining 415 Mt of non-acid generating ("NAG") tailings will be used for dam construction following classification with hydrocyclones and dewatering screens. The TMF for the PEA includes design changes based on the recommendations from the BATT Study. The key changes to the TMF design concept include:

- Substantial reduction in the quantity of free-standing water impounded during operations and a corresponding reduction in the volume of water associated with this facility.
- Closure by saturated NAG tailings cover limiting the need for a flooded cover.
- A tailings dewatering facility to conserve additional coarse sand material for dam construction. Surplus sand produced from cycloning and screening operations will be used to buttress the downstream slopes of the main embankment.
- Changes to the design of the starter dam to reduce construction risk.
- Added a HDS water treatment facility to provide mitigation for potential water surplus conditions. However, surplus water is not expected under design operating conditions.

##### Updated Mineral Resource

The updated mineral resource, released in July 2020, was used as the basis of the PEA. For the purposes of the Study, only the measured and indicated mineral resources were considered as mill or heap leach feed. Inferred mineral resources in the pit are considered to be waste as there are limited inferred mineral resources in the designed pit.

Note that the Study reports on mineral resources, not mineral reserves. Mineral resources that are not mineral reserves do not have demonstrated economic viability.

#### Heap Leach Gold Recovery

New column testing on various lithology samples representing the feed to the heap leach indicated that the gold recovery in the heap leach could be increased from 66% to 70%.

#### Access Road

Costing for the access road was adjusted to incorporate the commitment from the Yukon and Federal government to fund portions of the access road. More detail can be found in the Western news release dated September 5, 2017.

#### Airstrip

The proposed airstrip has been relocated along the access road to limit the potential impact on caribou habitat.

### FINANCIAL RESULTS

The Study indicates that the potential economic returns from the Project justify its further development and securing the required permits and licenses for operation.

The financial results of the Study were developed under commodity prices that were based on analyst projections of long-term metal prices and CAN\$:US\$ exchange rate ("Base Case" prices).

Note that an exchange rate of CAN\$:US\$ of 0.80 was used for the capital cost estimation for all metal price scenarios.

The following table summarizes the financial results:

	Base Case
Copper (US\$/lb)	3.35
Molybdenum (US\$/lb)	12.00
Gold (US\$/oz)	1,600
Silver (US\$/oz)	24.00
Exchange Rate (C\$:US\$)	0.80
NPV pre-tax (5% discount, \$millions)	5,790
NPV pre-tax (8% discount, \$millions)	3,620
IRR pre-tax (100% equity)	23.3%
NPV after-tax (5% discount, \$millions)	3,900
NPV after-tax (8% discount, \$millions)	2,330
IRR after-tax (100% equity)	19.5%
LOM pre-tax free cash flow (\$millions)	13,000
LOM after-tax free cash flow (\$millions)	9,070
Payback period (years)	3.0
Net Smelter Return (\$/t milled)	28.14
Copper Cash Cost* (US\$/lb)	(1.13)

\*C1 cash costs, net of by-product credits.

The financial results of the Study are significantly influenced by copper and gold prices, as is shown in the tables below:

Copper Price (US\$/lb)*	\$2.50	\$3.00	\$3.35	\$4.00	\$4.50	\$5.00
NPV pre-tax (8%) (\$M)	2,290	3,070	3,620	4,630	5,410	6,190
NPV after-tax (8%) (\$M)	1,400	1,950	2,330	3,040	3,590	4,140
IRR pre-tax	18.5%	21.4%	23.3%	26.6%	29.0%	31.3%
IRR after-tax	15.4%	17.9%	19.5%	22.3%	24.3%	26.2%
Payback (years)	3.7	3.2	3.0	2.7	2.5	2.3

Gold Price (US\$/oz)*	\$1200	\$1400	\$1600	\$1800	\$2000	\$2200
NPV pre-tax (8%) (\$M)	2,580	3,100	3,620	4,130	4,650	5,170
NPV after-tax (8%) (\$M)	1,600	1,960	2,330	2,700	3,060	3,430
IRR pre-tax	19.3%	21.3%	23.3%	25.2%	27.1%	29.0%
IRR after-tax	16.1%	17.8%	19.5%	21.1%	22.7%	24.3%
Payback (years)	3.5	3.2	3.0	2.8	2.6	2.5

\*All other metal prices except those noted are the same as the Base Case.

Higher grade material is fed to the concentrator during the first four years of the concentrator operation. This factor, combined with the concurrent heap leach facility operation, results in higher yearly cash flows and other metrics during this period and contributes significantly to the Project's financial performance.

	Years 1-4 Life of Mine	
Average Annual Pre-tax Cash Flow (\$millions)	1,081	645
Average Annual After-tax Cash Flow (\$millions)	965	528
Average Net Smelter Return (NSR) (\$/t ore milled)	41.92	28.14
% of Revenue - Copper	50	47
% of Revenue - Gold	37	36
% of Revenue - Silver	3	3
% of Revenue - Molybdenum	10	14

#### CAPITAL COSTS

Total initial capital investment in the Project is estimated to be \$3.25 billion, which represents the total direct and indirect cost for the complete development of the Project, including associated infrastructure and power plant. The following table shows how the initial capital is distributed between the various components.

Cost Item	Total (\$M)
Process Plant and Infrastructure	
Project Directs including freight	1,777
Project Indirects	390
Contingency	412
Subtotal	2,579
Mining	
Mine Equipment	409
Mine Preproduction	211
Subtotal	620
Owner's Costs	52
Total Initial Capital Costs	3,251
Sustaining Capital	719
Total Life of Mine Capital Costs	3,970

#### OPERATING COSTS

Operating costs for the milling operation were calculated per tonne of material processed through the mill over the life of mine:

	LOM (\$/tonne)
Milling	\$5.72
General & Administrative	\$0.45
Total	\$6.17

Heap leach operating costs were calculated per tonne of material processed through the heap leach over the life of the heap leach.

	LOM (\$/tonne)
Heap Leach Operation	\$1.30
ADR/SART	\$4.67
Total	\$5.98

Mining costs were calculated to average \$1.93 per tonne of material moved and \$3.10 per tonne of mineralized material.

(\$/tonne)

Cost per tonne material (material moved) \$1.93

Cost per tonne mill feed (mill + heap material) \$3.10

Cost per tonne mill feed \$3.66

The combined mining and milling costs are \$9.84 per tonne material milled for the life of mine, which compares favorably to the life-of-mine net smelter return of \$28.14 per tonne at Base Case metal prices.

## DEVELOPMENT PLAN

The Study evaluates the development of the Casino deposit as a conventional open pit mine, concentrator complex, and heap leach operation. The initial production will focus on the deposit's oxide cap as a heap leach operation to recover gold and silver in doré form. The main sulphide deposit will be processed using a conventional concentrator to produce copper-gold-silver and molybdenum concentrates. Key metrics of the processing plant are shown below:

	Years 1-4 Life of Mine	
Strip ratio	0.28	0.38
Nominal Throughput		
Mill (tpd)	120,000	120,000
Heap (tpd)	25,000	25,000
Average Annual Metal Production		
Copper (Mlbs)	252	178
Gold (koz)	339	231
Silver (koz)	1,570	1,360
Molybdenum (Mlbs)	16.5	16.6
Average Annual Mill Feed Grade		
Copper (%)	0.312	0.197
Gold (g/t)	0.360	0.226
Silver (g/t)	2.039	1.702
Molybdenum (%)	0.026	0.022
Average Annual Heap Leach Grade*		
Gold (g/t)	0.359	0.259
Silver (g/t)	2.271	1.95
Copper (%t)	0.039	0.034
Recovery (Mill)		
Copper (%)	84.5	86.6

Gold (%)	67.6	67.1
Silver (%)	55.3	53.1
Molybdenum (%)	65.9	71.3
Recovery (Heap)		
Gold (%)	70.0	70.0
Copper (%)	18.0	18.0
Silver (%)	26.0	26.0
Annual Concentrate Production		
Cu (dry ktonnes)	408	288
Mo (dry ktonnes)	13	13
Average Concentrate Grade		
Copper Concentrate		
Cu (%)	28.0	28.0
Au (g/t)	25.9	24.9
Ag (g/t)	119.8	147.1

Heap leach first four years grades taken from the start of the heap leach.

#### INFRASTRUCTURE

##### Molybdenum Concentrate

A new 132-km all-weather access road will be developed, extending from the end of the existing Freegold Road and generally following the alignment of the existing "Casino Trail" to the mine site. The Study contemplated that concentrates will be transported, stored and loaded on ships via upgraded facilities provided by the Port of Skagway, Alaska. The Project operating cost estimate includes the anticipated concentrate handling service charges based on use of the upgraded facilities.

#### SECOND PHASE DEVELOPMENT

The Study also examined extending the operation after treating the first 1.3 billion tonnes of mineralized material (Phase I) for approximately 25 years (Phase II) for a total life-of-mine of 47 years. The extended operation is achieved using the original concentrator and associated infrastructure at the same nominal processing rate of 120,000 tonnes per day. An additional 1 billion tonnes of mineralized material would be processed by the mill during the extended operation. A secondary TMF would be constructed downstream of the original TMF to accommodate the additional tailings and waste rock associated with extended operations.

The indicative capital requirements and economic performance indicators for the extended operations scenario is as shown below. As this table shows, the differences between Phase I capital costs and the combined Phase I + Phase II capital costs are the additional sustaining capital to construct the secondary TMF facility and the mine equipment required to support the Project through the additional years of mine life.

Cost Item	Phase I Total (\$M)	Phase I + II Total (\$M)
<b>Process Plant and Infrastructure</b>		
Project Directs including freight	1,777	1,777
Project Indirects	390	390
Contingency	412	412
Subtotal	2,579	2,579
<b>Mine</b>		
Mine Equipment	409	419
Mine Preproduction	211	206
Subtotal	620	625
Owner's Costs	52	52
Total Initial Capital Cost	3,251	3,256
Sustaining Capital	719	1,808
Total Life of Mine Capital Costs	3,970	5,064

The net present value and internal rate of return for developing the two-phase project are not significantly different from those for developing the single-phase project, however, the life-of-mine and life-of-mine cash flow increase significantly. Highlights from developing the Phase I + II development at Base Case metal prices are shown below:

	Phase I Development	Phase I + II Development
NPV pre-tax* (8% discount)	\$3.62 billion	\$3.70 billion
NPV after-tax* (8% discount)	\$2.33 billion	\$2.38 billion
LOM pre-tax free cash flow*	\$13.0 billion	\$17.2 billion
LOM after-tax free cash flow*	\$9.1 billion	\$12.0 billion
IRR pre-tax* (100 % equity)	23.3%	23.1%
IRR after-tax* (100% equity)	19.5%	19.3%
Total mineralized material mined	1.3 billion tonnes	2.4 billion tonnes
Mill mineralized material	1.1 billion tonnes	2.1 billion tonnes
Heap leach mineralized material	204 million tonnes	240 million tonnes
Average annual mill feed grades		
Copper (%)	0.197	0.163
Gold (g/t)	0.226	0.192
Silver (g/t)	1.70	1.507
Molybdenum (%)	0.022	0.018
Average annual heap leach grades*		
Gold (g/t)	0.259	0.245
Silver (g/t)	1.95	1.87
Copper (g/t)	0.034	0.034
Mill operation	25 years	47 years
Heap leach operation	23 years	33 years
LOM waste:ore ratio	0.38:1	0.47:1

\*Based on Base Case metal prices: Cu: US\$3.35/lb, Au: US\$1,600/oz, Ag: US\$24/oz, Mo: US\$12/lb

## STAKEHOLDER ENGAGEMENT

The Project is located within the traditional territory of Selkirk First Nation. Aspects of the Project impact the traditional territories of the Little Salmon/Carmacks First Nation, Tr'ondëk Hwëch'in, Klwane First Nation and White River First Nation. The nearest communities are the Village of Carmacks and Pelly Crossing, and the Project is 200 km upstream of Dawson City along the Yukon River.

Western is committed to developing and operating the Project in a safe, ethical and socially responsible manner. Western has been consulting extensively on the Project since 2008, and First Nations and their technical advisors have participated directly in the refinement of the tailings and mine waste strategy at the

Project, as reflected in the design presented in the PEA.

Since 2006, Western has spent over \$75 Million in Yukon advancing the Project, working with over 50 different Yukon and First Nations joint venture companies. Western is active in the local community, with longstanding support and sponsorship of over 30 local organizations and charities.

As the Project is further refined, Western will continue to seek feedback from and partnerships with local First Nations and communities and is committed to developing the Project with First Nations' and local community input.

## LOOKING FORWARD

Based on the positive results of the Study, Western plans to advance the Project to establish a mineral reserve estimate for the Project with the ultimate objective of submitting an application for environmental assessment under the Yukon Environmental and Socioeconomic Assessment Act, the first step in the permitting process.

## CONFERENCE CALL

Western will hold a conference call and webcast on Tuesday, June 22, 2021 at 8 am Pacific Time (11 am Eastern Time) to discuss the Study.

Webcast access: <http://services.choruscall.ca/links/westerncopperandgold20210622.html>

Telephone access:  
Vancouver local and International 1-604-638-5340  
Toll Free North America: 1-800-319-4610

An archived recording of the conference call will be available by dialing 1-604-638-9010 or 1-800-319-6413 within North America, passcode is 7194. The webcast and presentation slides will be archived on the Company's website [www.westerncopperandgold.com](http://www.westerncopperandgold.com).

## TECHNICAL REPORT & QUALIFIED PERSONS

M3 Engineering & Technology Corporation ("M3), a full-service Engineering, Procurement, Construction & Management firm, is recognized for its experience in copper processing and capabilities in the development and construction of mines and mineral processing plants. A National Instrument 43-101 (NI 43-101) compliant technical report prepared by the following Qualified Persons will be posted on the Company's website ([www.westerncopperandgold.com](http://www.westerncopperandgold.com)) as well as on SEDAR ([www.sedar.com](http://www.sedar.com)), and on EDGAR within 45 days:

- Daniel Roth, P.Eng. of M3 - Overall scientific and technical information, with a focus on project infrastructure, capital costs, and the economic analysis.
- Laurie Tahija, MMSA-QP, of M3 - Metallurgy, recovery methods, and process operating costs.
- Michael G. Hester, F Aus IMM, of Independent Mining Consultants - Resource estimation, mining methods and mine design.
- Carl Schulze, P.Geo., of Aurora Geosciences - History, geology, exploration, drilling, and sampling.
- Caroline J. Vallat, P.Geo., of GeoSpark Consulting Inc. - Data verification.
- Daniel Friedman, P.Eng., of Knight Piésold Ltd. - Tailings and heap leach facilities.

The Qualified Persons have reviewed and approved the scientific, technical, and economic information contained in this news release.

## ABOUT WESTERN COPPER AND GOLD CORPORATION

[Western Copper and Gold Corp.](http://www.westerncopperandgold.com) is developing the Casino Project, Canada's premier copper-gold mine in the

Yukon Territory and one of the most economic greenfield copper-gold mining projects in the world. For more information, visit [www.westerncopperandgold.com](http://www.westerncopperandgold.com).

On behalf of the board,

"Paul West-Sells"  
Dr. Paul West-Sells  
President and CEO  
[Western Copper and Gold Corp.](http://www.westerncopperandgold.com)

#### Cautionary Disclaimer Regarding Forward-Looking Statements and Information

Mineral resources that are not mineral reserves do not have demonstrated economic viability. Therefore, investors are cautioned not to assume that all or any part of an inferred mineral resource could ever be mined economically. It cannot be assumed that all or any part of "measured mineral resources," "indicated mineral resources," or "inferred mineral resources" will ever be upgraded to a higher category. The mineral resource estimates contained herein may be subject to legal, political, environmental or other risks that could materially affect the potential development of such mineral resources. See the technical report, once filed, for more information with respect to the key assumptions, parameters, methods and risks of determination associated with the foregoing. The PEA is preliminary in nature, includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the PEA will be realized.

This news release contains certain forward-looking statements concerning anticipated developments in Western's operations in future periods. Statements that are not historical fact are "forward-looking statements" as that term is defined in the United States Private Securities Litigation Reform Act of 1995 and "forward-looking information" as that term is defined in National Instrument 51-102 ("NI 51-102") of the Canadian Securities Administrators (collectively, "forward-looking statements"). Certain forward-looking information should also be considered future-oriented financial information ("FOFI") as that term is defined in NI 51-102. The purpose of disclosing FOFI is to provide a general overview of management's expectations regarding the anticipated results of operations and capital expenditures and readers are cautioned that FOFI may not be appropriate for other purposes. Forward-looking statements are frequently, but not always, identified by words such as "expects", "anticipates", "believes", "intends", "estimates", "potential", "possible" and similar expressions, or statements that events, conditions or results "will", "may", "could" or "should" occur or be achieved. These forward-looking statements may include, but are not limited to, statements regarding: mineral resource estimation; mine plan and operations; internal rate of return; sensitivities; net present value; potential recoveries; design parameters; economic potential; processing mineralized material; the potential of robust economics at Casino; advancing the Project through additional engineering and towards the next step in permitting and submission of an environmental and socio-economic effects statement; key changes to the TMF design; increases to the gold recovery in the heap leach; potential economic returns from the Project; estimated initial capital investment costs; estimated operating costs; estimated mining costs; development of the airstrip and all weather access road; anticipated concentrate handling service charges; developing and operating the Project in a safe, ethical and socially-responsible manner; plans for further development and securing the required permits and licenses for further studies to consider operation; market price of precious and base metals; or other statements that are not statement of fact. The material factors or assumptions used to develop forward-looking statements include prevailing and projected market prices and foreign exchange rates, exploration estimates and results, continued availability of capital and financing, construction and operations, the Company not experiencing unforeseen delays, unexpected geological or other effects, equipment failures, permitting delays, and general economic, market or business conditions and as more specifically disclosed throughout this document, and in the AIF and Form 40-F.

Forward-looking statements are statements about the future and are inherently uncertain, and actual results, performance or achievements of Western and its subsidiaries may differ materially from any future results, performance or achievements expressed or implied by the forward-looking statements due to a variety of risks, uncertainties and other factors. Such risks and other factors include, among others, risks involved in fluctuations in gold, copper and other commodity prices and currency exchange rates; uncertainties relating to interpretation of drill results and the geology, continuity and grade of mineral deposits; uncertainty of estimates of capital and operating costs, recovery rates, production estimates and estimated economic return; risks related to joint venture operations; risks related to cooperation of government agencies and First Nations in the development of the property and the issuance of required permits; risks related to the need to

obtain additional financing to develop the property and uncertainty as to the availability and terms of future financing; the possibility of delay in construction projects and uncertainty of meeting anticipated program milestones; uncertainty as to timely availability of permits and other governmental approvals; and other risks and uncertainties disclosed in Western's AIF and Form 40-F, and other information released by Western and filed with the applicable regulatory agencies.

Western's forward-looking statements are based on the beliefs, expectations and opinions of management on the date the statements are made, and Western does not assume, and expressly disclaims, any intention or obligation to update or revise any forward-looking statements whether as a result of new information, future events or otherwise, except as otherwise required by applicable securities legislation. For the reasons set forth above, investors should not place undue reliance on forward-looking statements.

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