

## Proposed Changes for RECLAIM Version 8.0

### Process Note:

The RECLAIM tool is used by Industry and Regulators to estimate the total cost of reclamation for a site. It accounts for northern setting factors affecting reclamation projects conducted in Nunavut and the Northwest Territories, such as remote access and shipping, and short construction seasons.

To satisfy the [Mine Site Reclamation Policy for Nunavut & the Mine Site Reclamation Policy for the Northwest Territories](#):

*“Estimates of reclamation costs, for the purposes of financial security, should be based on the cost of having the necessary reclamation work done by a third-party contractor if the operator defaults. The estimates should also include contingency factors appropriate to the particular work to be undertaken.”*

Proponents have always had the option to use the existing rates provided in the RECLAIM tool and/or propose alternative site-specific values with supporting rationale for reviewer consideration. This RECLAIM update does not change or remove the ability of proponents to provide alternatives to the proposed rates or to add/exclude items from the cost estimate. It remains up to the reviewers to be vigilant and ensure that the total costs of the reclamation project are accurately captured.

## **Summary report highlighting proposed changes to RECLAIM Version 7.0 (2014) and associated User Manual**

### **Updated Unit Rates:**

- The previous unit rates for RECLAIM 7.0 were introduced in 2014.
- Many of the 2014 unit rates are too low compared to present day actuals for a third party contractor to complete the work.
- The proposed RECLAIM 8.0 unit rates were updated using a variety of methods including: First Principles, recent quotes and industry experience.
- First Principles include assumptions on haul distances, types of equipment and trucks, assumed schedule and volumes, rolling resistances, current fuel rates, productivity, profit, crew rate, etc.
- The largest changes in the proposed unit rates are for excavation, load, haul and place of soil (low spec) - which also correspond to a significant portion of total reclamation costs.
  - For example RECLAIM 7.0 had a listed rate of \$4.3/m<sup>3</sup> for a short haul with no backup provided on the unit rate development, whereas RECLAIM 8.0 has a rate of \$17/m<sup>3</sup> for a short haul and was developed using first principles.

The working group tasked the consultants to utilize the most up to date unit rates. All rates in the RECLAIM 8.0 Model are referenced to their source and are publicly available to provide feedback on.

### **Increased Indirect Percentages:**

- RECLAIM 8.0 proposes increased default percentages of some Indirect Costs based on industry experience with actual reclamation and mine closure projects conducted over the past ten plus years.
- Contingency was increased from 20 to 25% as a starting point for RECLAIM to reflect the conceptual level of engineering and design for closure, which is common in the early phases of the mine.
- Similarly, Engineering Design increased to 8% from 5%, Project Management increased to 10% from 5%, and Bonding/Insurance increased to 3% from 1%.

Proposed updates to indirect percentages in RECLAIM 8.0 are driven by real world examples. Proponents can propose alternative indirect percentages, with supporting assumptions and details for their use, for consideration by reviewers.

### **Moved mobilization and Interim Care and Maintenance (ICM) to Capital Costs:**

- Mobilization and ICM costs were previously included under Indirect Costs and excluded in the indirect calculations.

- By moving them to Capital Costs they are now factored within the contingency costs and other indirect percentage calculations.

Mobilization and ICM costs can be significant for work in the North. They are proposed in RECLAIM 8.0 to be factored within the contingency costs because of the variation by site and region, and the impact they have on third party contractor costs if re-mobilization to the site is required. ICM is a requirement under the license for operations and may or may not carry with it costs associated with new infrastructure. The application of these costs will be project specific.

**Included Owners Representative:**

- A new line was added under the Indirect Costs for Owners Representative and assigned a default percentage of 10% of the direct costs.
- This was previously excluded from RECLAIM but can have significant cost implications on a project.
- The Owners Representative plays a critical role in ensuring the project objectives are met while adhering to all technical, regulatory and contractual requirements. They are typically a third party engineering firm that supports government with responsibilities including but not limited to: liaison between stakeholders, regulatory compliance oversight, project planning, contract administration, risk management, monitoring and quality assurance, budget and schedule oversight, etc.
- The Owners Representative role is common for mines that are abandoned and a government take ownership - especially if the site is moved into a contaminated site program.

The Owner's Representative line is new to RECLAIM and reflects the costs seen when Government takes ownership. Government staff are the project managers and not the individuals running day-to-day operations. This task is contracted to a third party.

**Added in costs for Human Health and Ecological Risk Assessment (HHERA) and to finalize the CRP:**

- The HHERA evaluates the potential effects to humans and biota that result from exposure to chemicals in the environment in accordance with the Federal Risk Assessment Guidance provided by Health Canada, Environment and Climate Change Canada and the Canadian Council of Ministers of the Environment. This helps to define the extent of remediation as part of the CRP. This typically involves additional studies to support claims from a mine's aquatic and terrestrial monitoring program that there are truly no impacts to receptors and to limit liability for the Government.  
The cost to complete a Human Health and Ecological Risk Assessment (HHERA) was added to the tool as 3% of the Capital Costs.

- The costs for these items are calculated as a percentage of Capital Costs (i.e. excludes ICM and Post Closure Activities) and can be excluded by the proponent if they can demonstrate they are not required.
- The cost to finalize the CRP was included, as this was previously overlooked within RECLAIM. This includes the cost for a third party engineering firm to finalize the interim CRP which can be a complex process depending on the status of closure planning and validation of any progressive reclamation which the proponent indicated as complete or on going. A percentage of Capital Costs was added to the tool as 4%.

The HHERA defines the areas on and off the mine where risks to human or ecological health may be present from mining activities. These risks present a potential liability to the Government. The HHERA risk assessment builds on and confirms the predictions or statements made in the aquatic and terrestrial monitoring programs completed by the mine. This is new and can be zeroed out if a jurisdiction chooses not to apply it.

**Added in Future Value Calculation:**

- Future value calculation was added to the summary page and is the amount used for security.
- The future value is intended to capture what activities may cost when they are anticipated to occur.
- Future value is not applied to ICM costs but is applied to closure and post-closure activities costs. These costs are calculated based on user provided inputs for how long ICM is expected to take and when Closure and Post Closure Activities are expected to begin.
- A default inflation rate of 3% is applied, which has historically been the Bank of Canada's upper target for annual inflation.
- Closure activities are escalated to when they are anticipated to begin, whereas Post Closure Activities are calculated based on the year they are anticipated to occur.

It has been shown that ICM can be 3 to 5 years long. Total reclamation costs estimated in the years leading up to the implementation of the ICM may not accurately estimate the costs associated with completing the approved reclamation tasks after ICM. The proposed Future value calculation is new to RECLAIM and accounts for the years the mine is in ICM.