



**LANDFORM  
DESIGN  
INSTITUTE**

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# Landform Design Quarterly

## LDI celebrates second anniversary, robust agenda



**Founder Gord McKenna announcing the creation of the LDI two years ago.**

*by David Wylynko*

Two years ago, the founders of the Landform Design Institute knew when they filed the paperwork to register the non-profit organization that assembling a community of professionals dedicated to transforming the mining industry would prove an ambitious undertaking. What they didn't anticipate was the imminent arrival of a coronavirus that would disrupt even the best-laid plans.

And yet, as the LDI celebrated its second anniversary on Sept. 30, it was clear that industry practitioners were more than ready to embrace the mandate of making landform design routine in the mining industry worldwide by 2030.

In its first two years, the Institute has delivered university lectures in Canada and abroad, held the first inaugural landform design course, published a gap analysis and revolutionary position paper, and staged a series of vibrant podcasts. Individual and student memberships are growing and several hundred people are

following LDI activities on social media, while its core principles have been cited in multiple guidance documents and industry reviews.

Based in Canada, the LDI anniversary coincided with the country's first National Day for Truth and Reconciliation, which honours the lost children and survivors of Canada's residential schools, their families, and the broader Indigenous communities. The LDI recognizes that Indigenous participation, in Canada and elsewhere, must be embedded in the day-to-day practice of mine reclamation and the restoration of mine lands.

Consequently, the Institute will be integrating Indigenous perspectives into the tools now being developed for use by industry practitioners. For example, this issue of the *Landform Design Quarterly* features an exploration of the emerging practice of "co-reclamation," which, in collaboration with Indigenous peoples in northern Alberta, is a participatory and

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## Making landform design routine worldwide

The Landform Design Institute is a new organization dedicated to creating and supporting a community of landform design practitioners. Its intention is to help their teams design and build truly sustainable mining landscapes. Its mission is to make landform design routine in the mining industry worldwide by 2030.

ESSAY

# Toward a ‘co-reclamation’ framework in collaboration with Indigenous Peoples

By Christine Daly, Jean L’Hommecourt, Bori Arrobo, Dan McCarthy, Gillian Donald, and S. Craig Gerlach

The global mining industry is entering a new historical phase, one that includes social dimensions in mine reclamation and closure planning. New principles and frameworks are leading mining organizations and governments to embrace “social transition” practices and policies that give host communities a central role in planning sustainable socioeconomic, cultural, and environmental post-closure outcomes. Mine owners and regulators have an ethical obligation to include local Indigenous Peoples in the mine reclamation

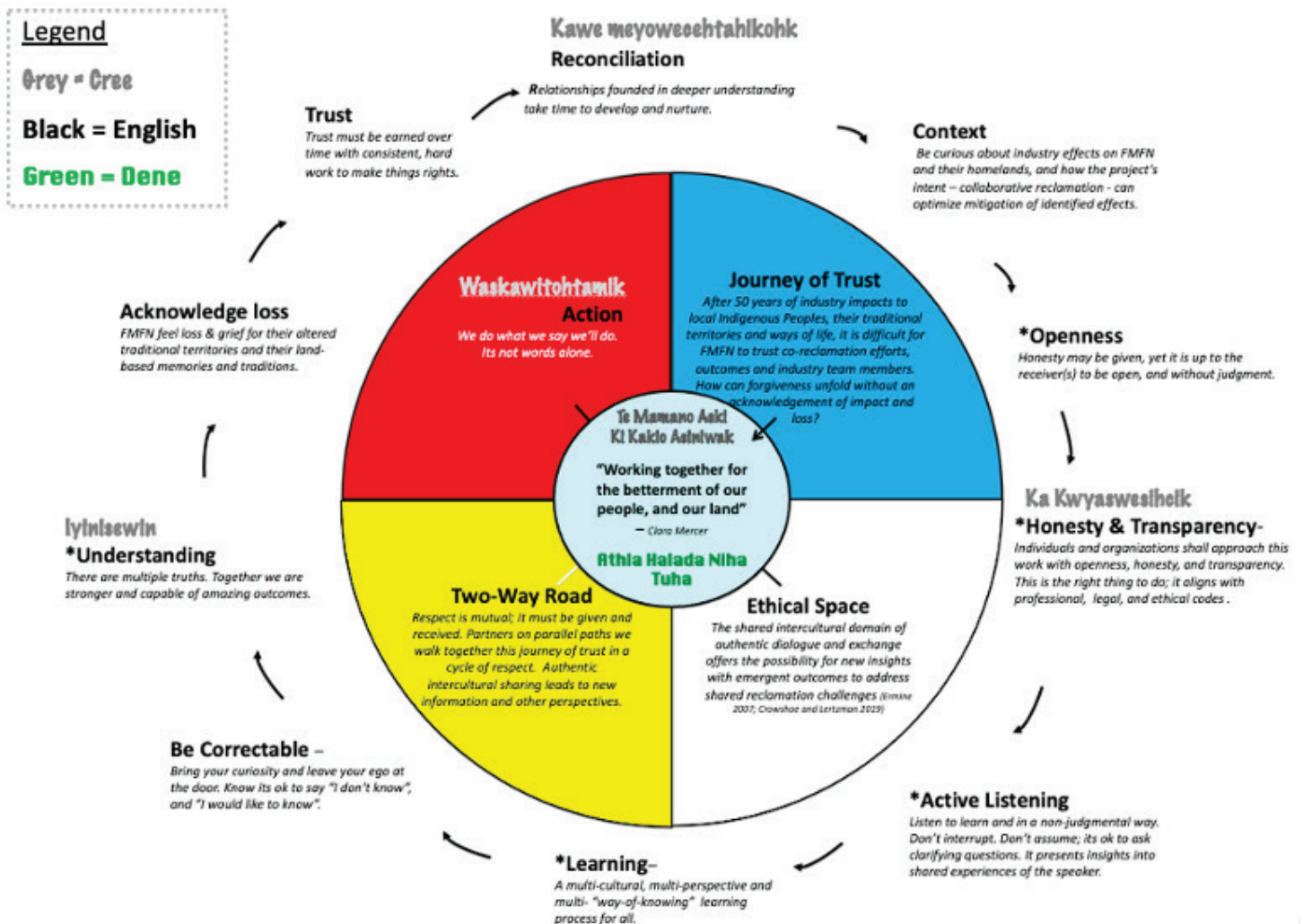
and closure planning process, represent their perspectives, and address their needs. They are the ones, after all, who will be able to continue with their traditional use of the land during project operations and, most importantly, after reclamation and closure of projects are deemed complete and industry leaves the region.

However, there is currently a lack of planning tools to support social transition planning and the meaningful participation of local stakeholder and Indigenous host communities in mine reclamation and closure planning decisions. Planning and design that involves intercultural communication and engagement should

be undertaken with an ethical commitment to including Indigenous Peoples and respect their cultural perspectives, needs, and values.

To that end, we are currently developing a participatory and inclusive approach to mine reclamation and closure planning, called “co-reclamation.” This is also the topic of Christine Daly’s PhD thesis at the University of Calgary. The co-reclamation framework, and its associated tools, are being developed with Fort McKay First Nation in the Fort McKay Traditional Territory of northeastern Alberta. The traditional lands, culture, and way of life

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Fort McKay cabins

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of this Cree and Dene First Nation are significantly affected by multiple oil sands projects. We are assessing if this new approach can produce landscape and cultural outcomes that are acceptable to both the First Nation and industry, and if they have an impact on their relationship and trust. The intent of the approach, as voiced by the late Elder Clara Mercer (who is dearly missed), involves: “Te mamano aski ki kakio asiniwak,” which is Cree for “Working together for the betterment of our people, and our land.” Jean L’Hommecourt, a land user and knowledge holder, shared that a Dene analogue is “althla halada niha tuha.”

We gave a presentation on this work entitled “The Cycle of Respect: A Tool for Ethical Intercultural Dialogue and Action in Oil Sands Reclamation and

Closure Planning” at the 11th International Conference on the Constructed Environment, Building the Anthropocene (May 12–14, 2021, at the University of Calgary). Our colleagues in producing the presentation included Alexandra Davies-Post of the University of Waterloo and the late David Lertzman of the University of Calgary (who is also dearly missed).

The presentation reviewed a newly co-created planning tool, the Cycle of Respect (previous page), which guides collaboration between the First Nation and the mine company through phases of oil sands mine closure and reclamation using the “two-roads approach” methodology developed by the Two Roads Approach Research Team. This methodology integrates Cree, Dene, and reclamation science knowledge into planning decisions. A central component of the two-roads

approach is sharing the best of both Indigenous and non-Indigenous knowledge systems while helping Indigenous Peoples develop their own ways of working on research and reclamation questions. The Cycle of Respect tool was co-created at the Youth Centre in Fort McKay in 2019 and 2020 using participatory action research, storytelling, and talking circles. Co-researchers (representing the Fort McKay First Nation, the company and the university) shared stories on memorable experiences and teachable moments from past government, industry, and Indigenous engagements. They identified key values associated with effective collaboration and translated them into 14 principles that guide effective, cross-cultural dialogue on mine reclamation and closure.

Development of Cree, Dene, and English

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versions of the Cycle of Respect is an important aspect of using the two-roads approach. As Elder Clara Mercer said, “Our languages are very, very important. It is our identity. It is who we are and what we are. And our whole connection to Mother Earth.” This work is ongoing.

Oil sands development and mine closure decisions affect a host community’s ability to sustainably use their traditional territory during operations and after reclamation and closure of projects are complete. Consequently, one Cycle of Respect principle is to acknowledge the grief Fort McKay First Nation experiences as a consequence of the loss of their traditional territory, the loss of special places that hold treasured memories, and the impact it has on their land-based culture.

Elder Edith Orr spoke of the loss of a cherished home: “My uncle’s cabin was once an area of family gatherings and memories. It was located across the river but is [an oil sands mine] now.” Elder Clara Mercer described the difficulty of healing

as a result of industrial development: “The old people tell us it takes longer to heal today. The reason is because the old trails have been destroyed. Where they used to be, they built dams, industries. So now our ancestors are having a hard time to find us and to help us heal,” she said.

Guided by the Cycle of Respect, cross-cultural dialogue among Fort McKay, company, and university co-researchers has identified opportunities to align diverse reclamation perspectives and needs. Elder Joe Grandjambe remarked how “they came together to make one story and everyone has almost the same idea, a good idea about reclamation.”

This work demonstrates how an appropriate starting point for Indigenous engagement in planning and design is the establishment of ethical principles that incorporate traditional Indigenous decision-making processes and encourage dialogue and intercultural knowledge exchange.

For her thesis, Christine is focused on developing and evaluating the co-

reclamation approach. Her thesis identifies four specific objectives:

1. Co-develop a code of conduct to guide effective, cross-cultural dialogue.
2. Develop planning tools for co-reclamation that support cross-cultural understanding and the participation of the Fort McKay First Nation in reclamation and closure planning decision-making.
3. Develop an effective co-reclamation framework to support ethical reclamation and closure practices for (i) the oil sands industry with regulatory requirements and commitments to closure; and (ii) a First Nation with rights to care for and use their traditional lands
4. Determine if a co-reclamation approach improves (i) mutual trust, and (ii) the acceptability of landscape outcomes.



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The Cycle of Respect planning tool in particular is meant to create a safe space for intercultural dialogue, allowing for the expression of diverse knowledge and experiences, and aligning cultural values with land uses.

Mutual benefits — for the First Nation, industry, and government — include the reintegration of mines into cultural landscapes, improved community well-being, support for healing and reconciliation, reduced business risk and increased confidence in operators, and enhanced social licence to operate and invest.

When properly informed by the host

community and reclamation specialists, high standards of environmental reclamation capable of sustained livelihoods and cultures post-closure are possible. Ideally, over time, adopting the Cycle of Respect will lead to effective, cross-cultural dialogue and more successful mine reclamation and closure.

Global mining companies and the governments overseeing mine development should consider adding this planning tool, or their own version of it, to their social transition planning toolbox.

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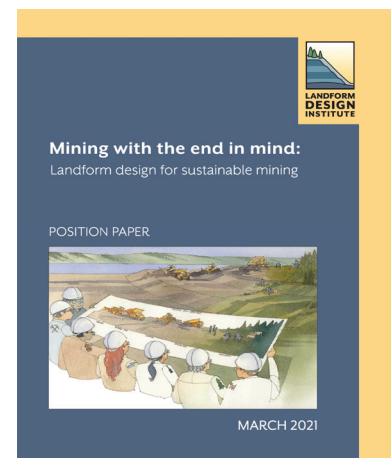
## An LDI Position Paper excerpt

# Benchmarks for success

In the *Mining with the end in mind* position paper, which was released earlier this year, the LDI used its 2020 gap analysis to develop a clear vision of what successful landform design looks like.

Achieving this vision will require large, multinational mining companies, and select individual mines, to adopt the Institute's mission while landform design knowledge is disseminated to all mines worldwide. In the paper, the pathway toward that vision is encapsulated in 10 benchmarks, which are reproduced here.

- » Mines working with regulators and local communities set realistic goals and schedules for creating safe, stable, and useful reclaimed landscapes.
- » Mines establish a well-designed and purposeful long-term reclamation research program to test plans and address uncertainty and provide optimizations in a timely manner.
- » Aggressive progressive reclamation is the rule rather than the exception. All available land is reclaimed quickly, and the amount of reclamation at the time of mine closure is minimized.
- » Progressive access to reclaimed land and progressive signoff on completion of reclamation is a routine activity.
- » Mines, regulators, and local communities meet all their commitments to one another, producing reclaimed landscapes all can take pride in.
- » Risks are shared through equitable financial assurance systems for reclamation.
- » General support exists for expanding mines and new mines, including a realistic and accepted framework and sound field performance.
- » Landform design processes are adopted not only by large multinational companies, but by all mines large and small.
- » A broad base of education is available to all involved in mine planning, landform design, and mine reclamation.
- » The mining industry is recognized as a leader in global sustainability.



**Download the full paper at [landformdesign.com](https://landformdesign.com)**



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inclusive approach to mine reclamation and closure.

The Institute is also boosting its members-only offerings. Today, the LDI is releasing the first of a series of short online lectures, or video vignettes, that are designed to describe the fundamentals of landform design. Hosted by LDI founder Gord McKenna, the vignettes are available exclusively for Institute members. (A temporary sneak peek at the first vignette is available for all through the Institute's website). Also for members only is a forthcoming series of essays that delve more deeply into the challenges and opportunities presented by responsible mine reclamation, and a series of excerpts from the position paper and related commentary.

With several other informative and educational initiatives underway — such as an expanding reference library and additional guidance tools — the Institute is largely focused on a critical

corporate membership drive that will complement the range of building blocks already in place. LDI individual and student membership continue to grow but are insufficient to ensure the Institute can implement its ambitious agenda, which includes the production of a landform design textbook, additional position papers, literature reviews, university-led grad-level courses, and a case history symposia and database.

As the COVID-19 pandemic recedes and in-person gatherings resume, the LDI will take advantage of the progress made over the last two years to accelerate the transformation of mine reclamation and landform design. If that sounds like something you'd like to be part of, please consider joining the team.

*David Wylynko is the LDI's Director of Communications and principal of West Hawk Associates, a national communications firm.*



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