



# Staff Report to Council

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**DATE:** Sunday, November 15, 2020

**DEPARTMENT:** Planning

**SUBJECT:** Policy No. POL-0167-PLAN - Carbon Mineralization Policy

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## **BACKGROUND:**

The City of Langford is committed to climate action. As one of the fastest growing cities in Canada, the city is poised to set the stage for policies that encourage a reduction in greenhouse gases. It has been estimated that the concrete building industry is responsible for up to 8% of the world's CO<sub>2</sub> emissions, largely due to the production of cement, the critical ingredient that gives concrete its strength. Construction materials, mainly concrete, are also the single largest source of CO<sub>2</sub> emissions in a city's supply chain. According to the Global Cement and Concrete Association (GCCA), Carbon Capture Utilization and Storage (CCUS) technologies are estimated to be the single largest reduction (36%) in concrete's Net Zero CO<sub>2</sub> technology roadmap.

Langford is in a position to be the Canadian leader in the deployment of CCUS technologies for concrete used in new construction with the integration of a carbon reduction policy. Specifically, CO<sub>2</sub> mineralization technologies inject CO<sub>2</sub> captured from industrial emitters into concrete during the manufacturing process. Once injected, the CO<sub>2</sub> chemically converts into a calcium carbonate mineral and becomes permanently embedded in the concrete, at no extra cost or change in quality.

Adopting such a CO<sub>2</sub> mineralization policy would allow Langford to track climate benefits, attract investment in the local innovation economy and reduce greenhouse gas emissions from local construction. Furthermore, it would create a transferable policy model to catalyze policy momentum nationwide.

## **POLICY OPTIONS AND COMMENTARY:**

The two key elements to an effective carbon mineralization policy include a transparent reporting of the carbon footprint using Type III Environmental Product Declarations (EPDs) and a mandate for using CO<sub>2</sub> mineralized concrete on all private and public projects. Council may wish to officially adopt its own policy for reducing carbon emissions within the City of Langford, using a form of available carbon dioxide (CO<sub>2</sub>) utilization technology, otherwise known as CO<sub>2</sub> sequestration or mineralization, or an equivalent which offers concrete with lower embodied CO<sub>2</sub> than all other competing bids.

To track and report on GHG reductions from construction, a growing number of private and public projects now require Environmental Product Declarations (EPDs), which is a standardized, third-party verified life cycle assessment report that describes the environmental performance of a product. These standardized reporting forms would accompany existing submittals for rezoning, development permits, and building permit applications.

Concrete BC has already developed resources for local producers to produce these declarations (EPDs) but it is best practice to allow a grace period for local businesses to get these completed. Staff are recommending a minimum of six months.

**FINANCIAL IMPLICATIONS:**

This policy would not result in any additional costs to the city or development community.

**LEGAL IMPLICATIONS:**

There are no legal implications associated with this policy.

**OPTIONS:**

THAT Council

**Option 1**

THAT Council

1. Adopt POL-0167-PLAN (attached as Schedule A) that considers post-industrial CO<sub>2</sub> mineralized concrete, or an equivalent which offers concrete with lower embodied carbon than all other competing bids, for use in all City-led capital improvement projects and private construction projects where use of such concrete does not significantly increase costs or significantly delay the project, such that:
  - a. Beginning June 1st 2022, all concrete submitted to City-owned or solicited projects and private construction projects greater than 50 cubic meters will be required to be produced using post-industrial CO<sub>2</sub> mineralization technology, or an equivalent which offers concrete with lower embodied CO<sub>2</sub> than all other competing bids, and shall include a product-specific Type III Environmental Product Declaration that is 3rd-party verified; and
  - b. Allow Council to revisit the policy to verify the effectiveness and/or make changes, as necessary.

**OR Option 2**  
THAT Council

2. Do nothing at this time with respect to carbon mineralization and Policy POL-0167.

**SUBMITTED BY:** David Sametz, MCIP, RPP, Planner II, Long Range Planning

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**Concurrence:** Michelle Mahovlich, P.Eng, P.Geo, Director of Engineering and Public Works

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**Concurrence:** Marie Watmough, Acting Director of Corporate Services

**Concurrence:** Darren Kiedyk, Chief Administrative Officer

