VISION AND ACTION PLAN

for a Low-Carbon Pacific Coast Construction Sector

Pacific Coast COLLABORATIVE

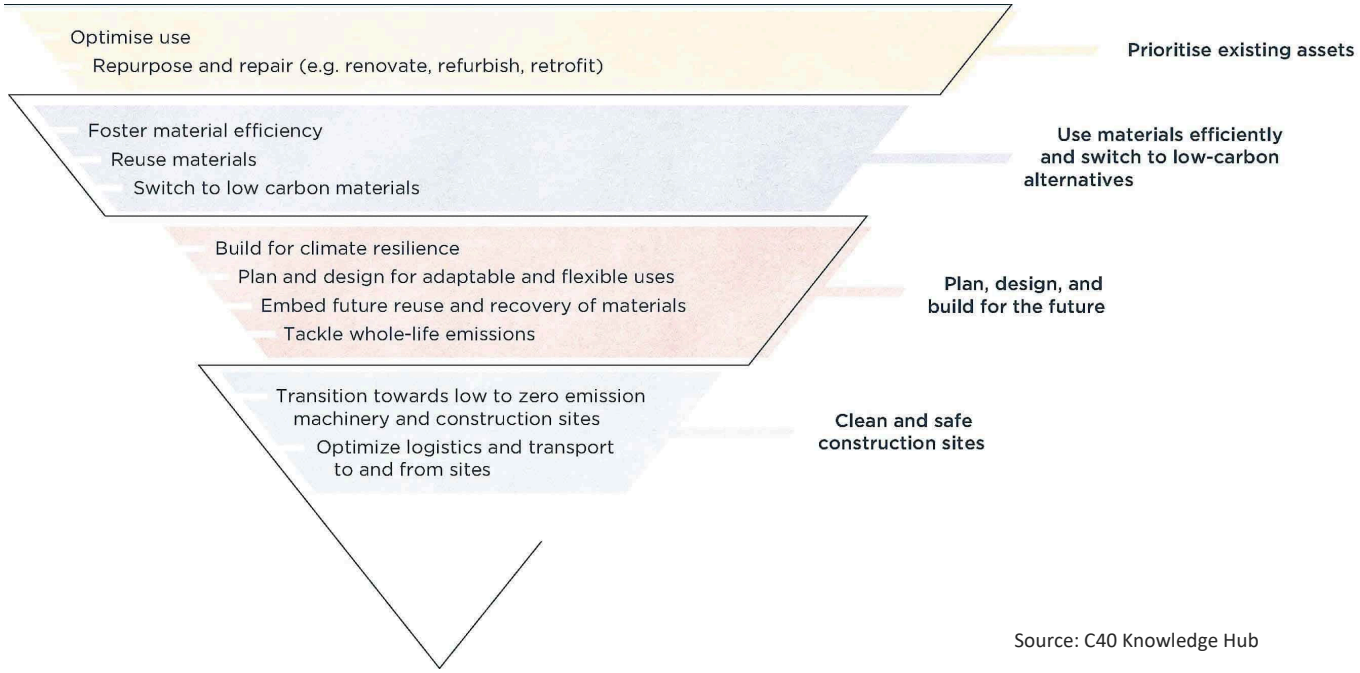
On the Pacific Coast of North America, we seek to create an equitable, low-carbon construction sector through regionally aligned policies aimed at market transformation. In this document, we describe our vision and potential actions we can pursue to achieve this.

WHY LOW-CARBON CONSTRUCTION IS IMPORTANT

Buildings are responsible for at least 39% of global energy-related carbon emissions each year, and 11% comes from embodied carbon. **Embodied carbon** refers to all the greenhouse gas emissions generated by the manufacturing, installation, maintenance, and disposal of construction materials used in buildings, roads, and other infrastructure. Essentially, embodied carbon is everything except the emissions from operational energy use. It is important to note that embodied carbon includes other greenhouse gases that impact climate change like methane, not only carbon dioxide. Although many of these emissions are thought of as industrial or waste emissions, building and construction policies and programs have a key role to play in reducing them.

According to the World Green Building Council, the embodied carbon emissions released before a building opens, referred to as 'upfront carbon', will be responsible for half of the entire carbon footprint of new construction between now and 2050, threatening to consume a large part of our remaining carbon budget. To accomplish regional climate goals by 2050, we need to accelerate change now and be well underway by 2030. Each new project is a new opportunity to use low-carbon materials and construction techniques and drive progress towards emissions reduction goals.

The following action plan outlines what we see as opportunities to collectively reduce carbon emissions in the Pacific Coast region of North America. While many of the following actions highlight opportunities related to materials, we acknowledge that manufacturing and designing with lower-carbon materials is only one piece of the puzzle when it comes to low-carbon construction. Prioritizing reuse of existing building and infrastructure assets; using materials efficiently; planning, designing, and building for the future; and using low-carbon construction practices are all important pieces to consider alongside low-carbon material choices. The construction hierarchy developed by C40 Cities outlines this approach in Figure 1 below, with most to least impactful approaches arranged from top to bottom.



Source: C40 Knowledge Hub

OUR VISION

We envision a regional building and construction sector that reduces and ultimately eliminates excess embodied carbon from construction practices along the Pacific Coast of North America. Many cities, states, and the province within the region already have efforts in place to reduce embodied carbon emissions in buildings and other infrastructure. To scale our collective impact, there is an opportunity to work together across borders, creating a truly regional approach to emissions reductions. Together, we will reduce greenhouse gas emissions while accelerating innovation, investment, and market development for low-carbon materials.

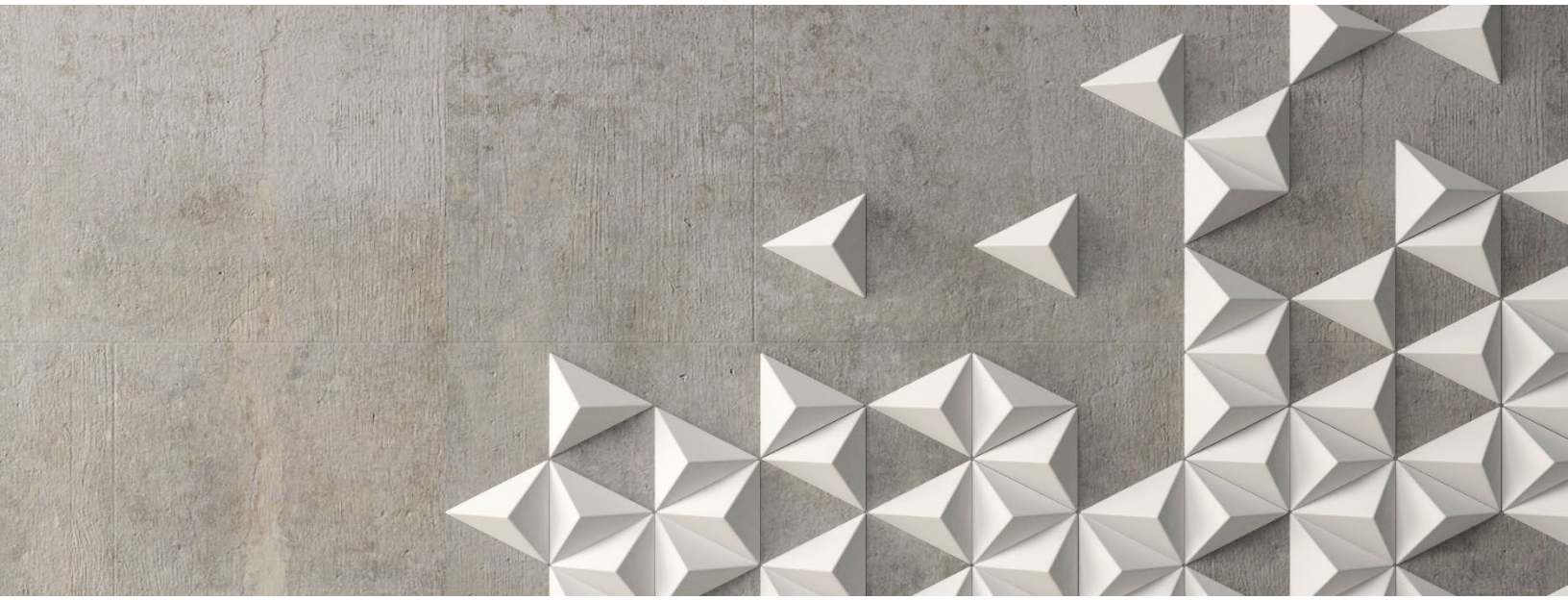
One of the most significant opportunities to advance the reduction of embodied carbon emissions in the Pacific Coast region is by encouraging alignment among cities, states, and provinces. Variations in policy language, building codes, data collection and reporting requirements, and supplier information hinder development of regional markets and limit the impact jurisdictions could have collectively. There is also a need for increased education on the topic of embodied carbon across stakeholder categories within the field, including government employees who can enact embodied carbon policies; architecture and engineering firms who design buildings and other infrastructure; and construction firms and workers who construct said buildings and infrastructure. With these challenges comes an opportunity to work together across borders to create alignment and increase awareness of low-carbon construction benefits, materials, and services. The Pacific Coast Collaborative (PCC) provides a platform for this agenda.

As the region transitions to decarbonized buildings and infrastructure, it is imperative to do so in a way that ensures groups who have been historically marginalized or excluded benefit from this transition. To achieve this in a tangible way, success depends on jurisdictions identifying best practices and creating opportunities to advance equitable outcomes throughout all aspects of decarbonization, including in workforce development, the impact of low-carbon policies on communities, industry development and engagement, supply chain management, and other areas. By aligning our actions and leveraging our shared regional geography, infrastructure, and economy, we will shift practices toward low-carbon construction in an inclusive and equitable way.

ABOUT THE PCC

The Pacific Coast of North America represents the world's fourth largest economy, a thriving region of 58 million people with a combined GDP of nearly $5 trillion. Through the Pacific Coast Collaborative (PCC), British Columbia, Washington, Oregon, California, and the cities of Vancouver, Seattle, Portland, San Francisco, Oakland, and Los Angeles are working together to build the low-carbon economy of the future.

In 2021, at the 26th United Nations Convention on Climate Change (UNFCCC) Conference of the Parties (COP26) in Glasgow, Scotland, PCC partners announced the launch of the Low Carbon Construction Task Force, a regional initiative to advance low-carbon construction materials and methods. PCC partners committed to create a shared regional strategy to accelerate innovation, investment, and market development for low-carbon materials by leveraging the scale of the Pacific Coast regional economy. This Vision and Action Plan is the work of that Task Force.



KEY PRINCIPLES TO GUIDE OUR VISION

Equity-Centered Policies—PCC jurisdictions intentionally engage and collaborate with impacted communities to create regionally aligned policies that consider the priorities of and potential impact on diverse communities within the region. When possible, policies prioritize creating opportunities for small, Black, Indigenous, and people of color (BIPOC-), and women-owned businesses; addressing environmental justice issues; and mitigating unintended consequences of policy decisions.

Job Creation and Regional Markets—The Pacific Coast of North America is seen as a prime market for low-carbon construction materials and services, creating jobs and attracting investment.

Increased Awareness and Use of Low-Carbon Materials—Building owners, architects, engineers, and builders are aware of the benefits and availability of low-carbon materials. Increasingly, owners are requiring low-carbon materials in their projects. Designers have adequate training to assess carbon throughout the building lifecycle. Builders are trained to procure and install low-carbon materials and use low-carbon construction techniques.

Data Informed Decision Making—Designers, builders, and building owners across the construction sector are empowered to choose materials and services that reduce impacts on the environment and their communities.

Collaboration and Shared Learning—PCC jurisdictions regularly collaborate and share learnings and best practices with each other and with other stakeholders along the Pacific Coast region.

HOW WE WILL ACHIEVE OUR VISION

In order to effectively shift markets and industry standards towards low-carbon construction practices, PCC jurisdictions must work to impact both supply of and demand for low-carbon materials. In addition to procurement of materials for publicly owned buildings, governments can incentivize or require use of low-carbon construction materials and strategies by the private sector through codes, policies, and programs. Governments cannot do this work alone—it will require actions by individuals, businesses, utilities, and other key institutions. However, our governments have a large role to play in creating codes, policies, and programs that deeply influence the extent to which private businesses, material manufacturers, architects, designers, engineers, building owners, and other stakeholders embrace low-carbon construction.

Below, we articulate three pathways along with component strategies and actions that will move our region toward the vision of reducing embodied carbon through low-carbon construction. Representatives of PCC member jurisdictions have identified a subset of actions to prioritize for collaboration in the coming years.

Pathway 1: Build Regional Demand for Low-Carbon Construction

Our governments play a key role in increasing demand for and incentivizing the design and construction of low-carbon buildings by the private sector. We will work toward designing compatible, coordinated programs and tools by utilizing strategies such as the following:

- Leverage purchasing power by developing regionally aligned programs & policies to procure low-carbon materials for public buildings and support procurement for private buildings
- Support regionally aligned building codes, zoning, and permitting policies that require or encourage use of low-carbon materials and strategies for public and private buildings
- Create regionally aligned policies to incentivize and/or require deconstruction and reuse of building materials
- Raise awareness of the value and availability of low-carbon construction materials and services in the region
- Invest in research and pilot projects to develop best practices and refine the business case for low-carbon construction

Pathway 2: Encourage Growth of Regional Supply of Low-Carbon Construction Materials and Services

State and provincial governments play key roles in creating an enabling environment for low-carbon construction to grow rapidly, catalyze investment, and help innovative policies and programs flourish in urban and rural areas. We will accelerate market development for the supply of low-carbon materials and services through state and provincial efforts to:

- Invest in business growth by creating and/or supporting a network of diverse regional incubators
- Invest in workforce development for living wage, low-carbon construction jobs
- Raise awareness of innovative and/or successful low-carbon construction projects
- Increase regional understanding of and access to sources and supplies of reused and low-carbon construction materials

Pathway 3: Build Strategic Partnerships

We recognize that government can do much to accelerate the transition to a low-carbon construction sector, but we are far from alone in driving this trend. We will build and strengthen partnerships by:

- Developing partnerships within PCC jurisdictions to advance policies and practices, such as public procurement, local zoning and building code regulations, and design and construction best practices.

- Fostering collaboration beyond the public sector and hosting forums to advance the low-carbon construction sector
- Leading the field by building coalitions and sharing resources with interested public sector partners in non-PCC jurisdictions

The following pages outline specific actions tied to each pathway and strategy.

 Indicates an action that several PCC jurisdictions are currently planning or implementing. These are important areas to test alignment of approaches and implementation, share lessons, and implement best practices across the region.

 Indicates a near-term action identified by some or all PCC jurisdictions as a priority area for collaboration over the next 2-3 years. These are areas where PCC jurisdictions can help each other with peer-to-peer technical assistance, collaborative development of resources, joint funding, and insights from pilot projects.

Pathway 1: Build Regional Demand for Low-Carbon Construction		
Leverage Purchasing Power	Develop low-carbon public procurement policies (e.g., Buy Clean) for public buildings and infrastructure that set embodied carbon targets and disclosure requirements	
	Develop shared model RFP language for project owners to require transparency regarding the embodied carbon content of materials and reward low-carbon bids	
	Encourage training for provincial, state, and local government officials on low-carbon construction materials, construction practices, contracting methods, procurement, and initiatives	
Building Policies	Use zoning, building code, and permitting processes to require design and construction teams to measure embodied carbon and meet low-carbon construction targets	
	Create incentives for developers to reduce embodied carbon for newly constructed buildings and manufacturers to measure and reduce supply chain emissions	
Circular Economy	Increase awareness of and access to salvaged and reused construction materials	
	Support deconstruction ordinances and bylaws and/or salvage material minimums to limit demolition and encourage reuse of materials	
Awareness	Lead an awareness campaign to educate the public about the link between low-carbon materials and efficient manufacturing, environmental justice, social equity, and other benefits	
	Develop a guide to existing low-carbon materials to facilitate a quicker, voluntary transition to use existing strategies	
	Provide training and resources to jurisdictions to help them understand the importance of addressing embodied carbon and how to account for these emissions reductions by using consumption-based emissions accounting in concert with their existing sector-based emissions accounting	
	Collect and support analysis of data to quantify the benefits of using low-carbon materials	
Innovation	Support pilot projects to showcase and advance innovative and best practices using regional and external funding mechanisms	
	Fund testing of emerging materials for pathways to acceptance within conventional building standards	

Pathway 2: Encourage Growth of Regional Supply of Low-Carbon Construction Materials and Services		
Accelerate Businesses	Leverage federal funding (such as the Inflation Reduction Act in the US) to support regional low-carbon material manufacturing initiatives	
	Provide targeted support for small, women-, and BIPOC-led business development and innovation	
	Include low-carbon material manufacturers in existing economic development priority programs	
Workforce Development	Develop trainings to increase industry capacity to implement new methods (for designers to measure and specify low-carbon materials and for builders to procure and install low-carbon materials)	
Amplification	Create incentives and/or reward programs for leading builders, products, and projects that employ low-carbon construction tactics	
	Provide incentives and technical assistance to accelerate innovation by material manufacturers in order to drive market momentum for low-carbon materials.	
	Develop a guide highlighting available products that are salvaged and reused within the region	
	Map existing regional suppliers, existing assets, and unique regional resources to identify gaps and opportunities for connection across jurisdictions	
	Support regional infrastructure for reuse of building and infrastructure materials (e.g., development of retail cooperatives)	

Pathway 3: Build Strategic Partnerships		
PCC Coalitions	Map similarities and differences regarding authorities and leadership across jurisdictions	
	Develop compatible and (when possible) coordinated policies, programs, and regulations built on shared language, concepts, and timelines	
	Convene working groups to collaborate on federally funded, locally implemented initiatives and policy elements like embodied carbon targets	
	Share data and best practices for co-learning across jurisdictions	
External Partnerships	Create and leverage existing forums for key industry stakeholders to understand and overcome barriers in the market	
	Intentionally engage Indigenous and other historically underserved community groups to understand their priorities related to low-carbon construction	
	Host and leverage existing forums to connect with non-PCC jurisdictions within the region and share best practices	

HOW WE ARE DOING SO FAR

As the map below highlights, every PCC jurisdiction has taken the first step to policy action by including embodied carbon in their climate action plans or announcing pledges or commitments to address low-carbon construction (see 'Planned Actions' on map). Additionally, many of the PCC jurisdictions are implementing or working toward government procurement policies commonly referred to as "Buy Clean". Buy Clean policies use a combination of disclosure, incentives, and standards to leverage the significant purchasing power of public agencies to encourage a shift toward lower-carbon options in the broader construction market. Multiple jurisdictions are implementing or planning to implement policies prioritizing targeted support for small, women-, and/or BIPOC-led businesses and developing training to increase industry capacity to implement low-carbon construction techniques. Cities have been leading the way in implementing policies around zoning, reuse, and deconstruction since they have greater control over buildings being constructed. Most recently, embodied carbon requirements are beginning to show up in building code proposals and by-laws across the region. Figure 2 below shows current policies and plans in PCC member jurisdictions as of December 2022.

Development of the Low-Carbon Construction Sector in the Pacific Coast Region

Overall, action around embodied carbon and policy in the PCC region is growing but requires increased awareness and a clear regional commitment to thrive. Most current public sector actions are in the planning stages, voluntary, or impact a small range of projects or materials. This low-carbon construction action plan aims to help align action across the region and strengthen the ability of both the public and private sectors to take the lead on low-carbon construction. Implementing this action plan will require more alignment and collaboration across sectors and stakeholder groups. We look forward to partnering with elected officials, the private sector, members of impacted communities, and others to create an equitable, low-carbon construction sector in the Pacific Coast region.

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