

Embodied Carbon Analysis and Lifecycle Assessment



Sustainability goals, metrics, and requirements are now being widely integrated into the planning, design, and construction phases for the rehabilitation and construction of public infrastructure, often to support broader community climate initiatives. The objective of these requirements is to foster the development of more resilient, equitable, and sustainable communities, and to achieve this, sustainability must be thoughtfully, and quantifiably, interwoven into the all phases of project decision making and execution.

Sustainable material selection at the design phase involves intentional alternatives analysis and planning, as well as significant coordination between design disciplines and local material suppliers to determine best pathways to economically reduce embodied carbon over the life cycle of the infrastructure.

Embodied carbon analysis and lifecycle assessment is developed consistent with Envision credits Climate Resilience (CR) 1.1 – Reduce Net Embodied Carbon and Leadership (LD) 3.3 – Conduct Life Cycle Economic Evaluation.

Detailed quantification of material sourcing from regional and recycled content is performed during the design phase in order to meet embodied carbon and clean construction goals. Targeted recycled, regional, and sustainable content metrics within the specifications will ensure the key performance indicators are met by the contractor during construction.

