

# DRISI

CALTRANS DIVISION OF RESEARCH,  
INNOVATION AND SYSTEM INFORMATION

# Research Notes

Pavement

DECEMBER 2023

Project Title:  
Environmental LCA Updates and  
Applications

Task Number: 3820

Start Date: 06/30/2020

Completion Date: 09/30/2023

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## Environmental LCA Updates and Applications

This task will continue conduct LCA evaluations and specifications on recycling and construction quality.

### WHAT IS THE NEED?

This task will develop additional/improved algorithms for Life Cycle Analysis (LCA) for the range of design, construction, maintenance, and rehabilitation strategies used in California. Caltrans needs to address additional issues required to meet AB32 greenhouse gas (GHG) emission targets and category pollutant regulations using environmental LCA.

### WHAT ARE WE DOING?

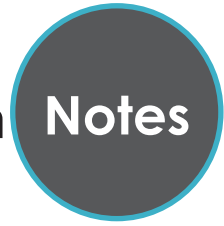
This task will expand, improve, and update California Department of Transportation (Caltrans) capabilities to address additional issues required to meet Assembly Bill (AB) 32 GHG emission targets and category pollutant regulations using LCA. A triennial update of life cycle inventory (LCI) databases using updated data from government and other sources, and industry environmental product declarations (EPD) will be completed to remain within ISO quality requirements for data not more than 1 to 3 years old. Outside critical review of LCI will be initiated. Additional/improved data and algorithms for LCA for the range of design, construction, maintenance, and rehabilitation strategies used in California, including technology changes such as new materials production, new construction equipment, new materials, and new pavement structures will be developed.

### WHAT IS OUR GOAL?

The goal of this continuing task is to include LCA evaluations and specifications on recycling and construction quality, including new approaches to using recycled tire rubber, in-place recycling, use of RAP/RAS, new types of asphalt rejuvenators, new SCM alternatives to fly ash, use of recycled plastic in asphalt, smoothness specifications, and performance related specifications for asphalt and concrete pavement construction.



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## WHAT IS THE BENEFIT?

Environmental LCA developed to date need to be enhanced using a triennial update of life cycle inventory (LCI) databases. Caltrans will also benefit with the added questions related LCA evaluations of policies and specifications on recycling and construction quality.

## WHAT IS THE PROGRESS TO DATE?

This research task was completed on September 30, 2023.

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