

SUSTAINABILITY + ASPHALT PAVEMENT TECHNOLOGY



The Federal Highway Administration (FHWA) launched its Sustainable Pavement Program in 2010 to promote sustainability principles and practices as they apply to the design, construction, and performance of highway pavements. The word “sustainable” in the context of pavements refers to system characteristics that reflect a pavement’s ability to:

- + Achieve engineering goals for which it was constructed
- + Preserve, and ideally, restore surrounding ecosystems
- + Use financial, human and environmental resources economically
- + Meet basic human needs such as health, safety, equity, employment, comfort & happiness¹

BENEFITS OF BEING MORE SUSTAINABLE

Sustainability goes far beyond just recycling of materials, but instead focuses on key economic, environmental, and social considerations. Opportunities for improving pavement sustainability exist throughout its life cycle, from the materials and mix design stages and through the construction and end-of-life stages.



Reduced pavement life-cycle costs



Reduced energy and noise, and improved air quality



Improved safety and ride, and conservation of resources

FHWA OUTREACH

FHWA’s multi-tiered approach makes information available on sustainability through:

Education outreach through webinars & workshops

Guidance & tech brief documents

www.fhwa.dot.gov/pavement/sustainability/



MEASURING SUSTAINABILITY



LIFE-CYCLE COST ANALYSIS

Examines the economic impacts of pavement alternatives



LIFE-CYCLE ASSESSMENT

Quantifies the environmental impacts associated with a product or system



SUSTAINABILITY RATING SYSTEMS

List of sustainability best practices with an associated common metric

¹ “Towards Sustainable Pavement Systems: A Reference Document.” U.S. Department of Transportation/Federal Highway Administration. Accessed April 14, 2020. https://www.fhwa.dot.gov/pavement/sustainability/ref_doc.cfm.

MOBILE ASPHALT TECHNOLOGY CENTER



The FHWA Mobile Asphalt Technology Center (MATC) partners with transportation professionals to improve the durability, safety, sustainability, and quality in the asphalt paving process by showcasing materials and construction best practices, technologies, and tools.

SUSTAINABILITY

LCA BENCHMARK TOOL
LCCA REAL COST
INVEST

MATERIALS

ASPHALT MIXTURE
PERFORMANCE TESTING
MACROTEXTURE &
SAFETY TOOLS
ONSITE MATERIALS
QUALITY TESTS

CONSTRUCTION/ QUALITY CONTROL

NONDESTRUCTIVE TESTS
THERMAL PROFILER
DIELECTRIC PROFILING

SUSTAINABLE PAVEMENTS PROGRAM

PRODUCTS

TECH BRIEFS

[Pavement Sustainability](#)
[Strategies for Improving Sustainability of Asphalt Pavements](#)
[Climate Change Adaptation](#)
[Life-Cycle Assessment](#)
[Pavement Life-Cycle Thinking](#)
[Data Needs for Pavement LCA](#)

MORE PRODUCTS

[Sustainable Pavements Reference Document](#)
[LCA Framework Document](#)
[Sustainable Pavements Road Map](#)
[Sustainable Pavement Program Checklist](#)

CASE STUDIES

Improved Asphalt Pavement Sustainability Through Perpetual Pavement Design
Sustainability Rating Systems as Applied to Pavements
In-Place and Central Plant Recycling of Asphalt Pavements in Virginia



GET INVOLVED

It's easy to become involved in the Sustainable Pavements Program. You can become a Friend of the SPTWG and attend future meetings, [sign up for monthly newsletters](#), [view available webinars](#) on various sustainability topics, and [download our resources](#).

For more information, contact Heather Dylla, FHWA (heather.dylla@dot.gov)
www.fhwa.dot.gov/pavement/sustainability/