

The FHWA Sustainable Pavements Program

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U.S. Department of Transportation
Federal Highway Administration

US DOT has defined Liveability as...

- Providing more transportation choices
- Expand location and energy efficient housing choices
- Improve economic competitiveness of neighborhoods
- Target federal funding toward existing communities
- Align federal policies and funding
- Enhance the unique characteristics of all communities

Sustainable Transportation can be defined as...

- *Sustainable Transportation* can be defined as providing exceptional mobility and access in a manner that meets development needs without compromising the quality of life of future generations. A sustainable transportation system is safe, healthy, affordable, renewable, operates fairly and limits emissions and the use of new and non-renewable resources.

FHWA Sustainable Highways Tool

IN-VEST

Infrastructure Voluntary Evaluation Sustainability Tool

- A web-based self-evaluation tool for measuring sustainability over the life-cycle of a transportation project or program – from system and project planning through design and construction, to operations and maintenance.



FHWA Sustainable Pavements Program Goals

- Support broad liveability and sustainability goals.
- Increase the body of knowledge regarding “sustainability” aspects of asphalt and concrete materials in pavement design, construction, and maintenance.
- Increase the use of “sustainable” technologies and practices in pavement design, construction, and maintenance.



Current Program Framework

- 1) Establishment and Coordination of a Sustainable Pavements Technical Working Group (TWG)
- 2) Development of Guidelines for a Sustainable Pavements Program
- 3) Evaluation and Assessment of Existing Tools
- 4) Technology Transfer and Deployment



Subject to funding availability

Current Program Framework

- 1) **Establishment and Coordination of a Sustainable Pavements Technical Working Group (TWG)**
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1) Sustainable Pavements Technical Working Group (SP TWG)

- TWG is composed of stakeholders in State DOT's, academia, industry, and other government agencies.
- Goal is for FHWA to gather feedback on the technical aspects of the Program.



Members and Friends of the SP TWG

- Agencies: DE DOT, WA DOT, Caltrans, NY DOT, LA DOT, City of Chicago, Ministry of Ontario
- Academia: Texas A&M, University of Arkansas, Michigan Tech, MIT, ISU-CP Tech Center, NCAT
- Industry: AI, NAPA, PCA, ACPA, Vulcan Materials, Koss, Construction, Heritage Research Group
- Friends: Broad representation from: Agencies, Academia, and Industry, and other interested individuals

Vision for the SP TWG

- Provide feedback and input to FHWA on aspects of sustainability and how it relates to pavements and materials.
- Review documents and deliverables.
- Formation of task groups focused on specific discussion topics.



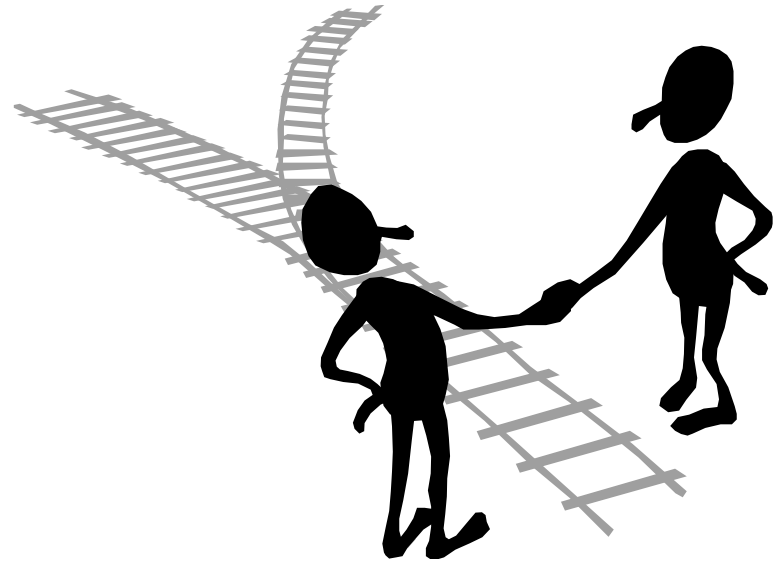
Current Status of the SP TWG

- Current funding allows for SP TWG to meet twice per year through 2012.
- First meeting was held in May 2011.
- Nearly 50 people in attendance; members and friends.
- Majority of the agenda focused on discussing sustainability, the state-of-the-knowledge, opportunities, and challenges.
 - Concrete industry perspective
 - Asphalt industry perspective
 - Agency perspective
 - Pavement assessments

SP TWG Meeting Outcomes

What do you get when you put an Agency Representative, an Academic, a Concrete Industry Representative, and an Asphalt Industry Representative together in a room?

- Common thoughts among all:
 - Longevity is key
 - Reduce, Reuse, Recycle
 - Cost is a challenge
 - Increased knowledge base needed



What is Next for the SP TWG?

- Compile feedback gathered at the SP TWG meeting in May.
- FHWA will formulate a framework for the FHWA Sustainable Pavements Program.
- Gather feedback on the framework.
- Put the plan into action!



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- 2) **Development of Guidelines for a Sustainable Pavements Program**
- 3) Evaluation and Assessment of Existing Tools
- 4) Technology Transfer and Deployment

2) Development of Guidelines

- Develop guidelines for the design and construction of sustainable pavements utilizing concrete materials.
- Develop guidelines for the design and construction of sustainable pavements utilizing asphalt materials.



What do we know today about sustainable pavements?

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- 2) Development of Guidelines for a Sustainable Pavements Program
- 3) **Evaluation and Assessment of Existing Tools, Materials, and Practices**
- 4) Technology Transfer and Deployment

3) Evaluation and Assessment of Existing Tools

- Assessment of existing tools, which determine the carbon footprint of pavement systems, rating systems, and life cycle assessments (LCA).
 - Boundaries and limitations
 - Practical use
- Evaluation of various sustainable materials.
- Evaluation of design and construction practices.



Evaluation of Sustainable Materials

- Physical properties
- Performance
- Guidelines for use and Specifications
- Life cycle cost



Evaluation of Design and Construction Practices



- ▶ Design guidance
- ▶ Construction considerations
- ▶ Impacts to other processes or practices
- ▶ Performance

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- 3) Evaluation and Assessment of Existing Tools
- 4) **Technology Transfer and Deployment**

4) Technology Transfer

- Move the information from paper to practice.



- Provide tools to stakeholders to enhance the sustainability of our pavement systems.

Questions and Answers

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