The FHWA Sustainable Pavements Program

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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.
Sustainable
Green
Resource Responsible
Environmentally Friendly
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)

2) Development of Guidelines for a Sustainable Pavements Program

3) Evaluation and Assessment of Existing Tools

4) Technology Transfer and Deployment
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!
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
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?
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, 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
Current Program Framework

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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
4) Technology Transfer

- Move the information from paper to practice.

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