Virginia Tech TRANSPORTATION INSTITUTE
Driving Transportation with Technology

VTRC Virginia Transportation Research Council

NTEC Nottingham Transportation Engineering Centre

International Sustainable Pavements Workshop

January 7th – 9th 2010

Thomas Harman

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US DOT – Federal Highway Administration

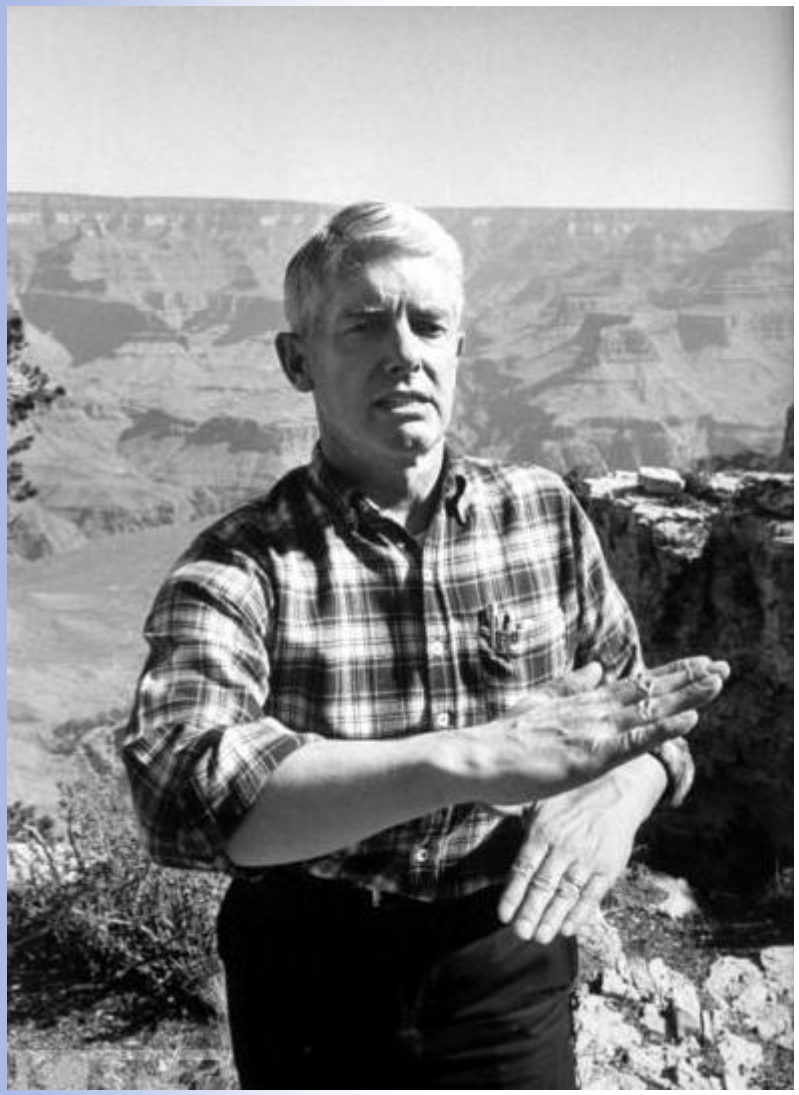
Office of Technical Services - Resource Center

Pavement & Materials TST

U.S. Department of Transportation
Federal Highway Administration

Thinking Green

David Brower, Land Conservationist



"We do not inherit the land from our fathers, we borrow it from our children."

Q. What "club" did he start?

EPA's Sustainability Definition

Sustainability means "meeting the needs of the present without compromising the ability of future generations to meet their own needs."

Sustainability

Livability

Climate Change

FHWA Livability: *Definition*

- *The Livable Communities Initiative:* Provides transportation choices that promote place-based transportation policies that are centered on people

- *Livable Communities:* Encourages mixed-use, multi-modal neighborhoods with highly-connected streets promoting mobility for all users

Climate Change & Adaptation

Our Role in Climate Change:

- FHWA is committed to improving transportation mobility and safety while protecting the environment, reducing greenhouse gas emissions, and preparing for climate change effects on the transportation system.
- FHWA is actively involved in efforts to initiate, collect, and disseminate climate-change-related research and to provide technical assistance to stakeholders.
- FHWA is also involved in climate change initiatives with the U.S. DOT Center for Climate Change and Environmental Forecasting and other partners.

Sustainability - FHWA Definition

- Sustainable Transportation means 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 nonrenewable resources.

Triple Bottom Line

What is FHWA's role in:

- *Economic development*:
  Ensure that the financial and economic needs of current and future generations are met.

- *Environmental stewardship*:
  Ensure a clean environment for current and future generations and use resources sparingly.

- *Social equity*:
  Improve the quality of life for all people and promote equity between societies, groups, and generations.

Office of Planning, Environment, and Realty

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Planning, Environment,
& Realty (HEP)

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LIVABILITY
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Office of Infrastructure… pavements

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Tom Harman
Pavement & Materials
TST
Resource Center
(OTS-RC-P&M)

Ongoing FHWA Environmental Activities

- Recycled Materials Resource Center (UNH, UW)
  - $500k/yr, RC-Mueller CORT
  - Coordinated with EPA
- High Recycled Asphalt Pavement (RAP)
  - Multiple Activities & TWG, HIPT-Bukowski
- Warm Mix Asphalt
  - Multiple Activities & TWG, HIPT-Bukowski/Corrigan
- Assessing Sustainability: Pavement Construction and Network Sustainability Management
  - $40k, RC-Harman, GRF at Virginia Tech
- This Workshop

New Activities, $760k/FY10

- Development of Guidelines for the Design and Construction of Sustainable Asphalt and Concrete
- Data Mining and an Evaluation Tool of Energy Requirements and Environmental Impacts of production, construction, and operation of various pavement technologies
- Identify the economic benefits of using alternate materials
- Defining and incorporating a Life Cycle Sustainable Assessment process for Asphalt Pavements
- Evaluation of Assessment Tools for Carbon Footprint of Concrete Pavements
- Develop methodologies to quantify sustainability factors for Pavement Type Selection and inclusion in RealCost

It's Good to be GREEN!