



<http://www.cte.ncsu.edu/cte/EEConference/workshop.asp>

Cross-Cutting Environmental Research Needs Workshop - Climate Change, Energy, Livability, and Sustainability

Final Report

The final report documenting the activities during the Cross Cutting Environmental Research Needs Workshop is available in two parts:

- [Final Report](#) (PDF:1.45MB)
- [Final Report Appendices](#) (PDF:998KB)



White Papers

- The white papers outlined future research needs organized by the four cross-cutting topic areas.
- [Research Needs Workshop White Papers on Climate Change, Sustainability, Energy, and Livability](#) (PDF:300KB)
- An extensive table listing over 120 relevant recent and ongoing research activities was also developed.
- [TRB White Paper Research Matrix](#) - Revised (PDF:176KB)



Contributors: FHWA STEP and AASHTO-SCOE Reps

White Paper 1

- ADC10 Environmental Analysis in Transportation
- ADD20 Social and Economic Factors of Transportation
- ADD30 Transportation and Land Development

White Paper 2

- ADA60 Public Involvement in Transportation
- ADC30 Ecology and Transportation
- ADC50 Historic and Archeological Preservation in Transpo



White Paper 3

- ADC20 Transportation and Air Quality
- ADC60 Waste Management and Resource Efficiency in Transpo
- ADC40 Transportation-Related Noise and Vibration
- AV030 Environmental Impacts of Aviation

White Paper 4

- ADC70 Transportation Energy
- ADC80 Alternative Transportation Fuels and Technologies
- ADD40 Transportation and Sustainability
- ADD50 Environmental Justice in Transportation

Workshop Report

- **Top Ranked Research Ideas: Workshop Participants**
- **Top Ranked Research Ideas: Conference Attendees**
- **Synthesized Top Ranked Research Ideas, Arranged by Topic Area**
- **Conduct of Research – 46 recommendations**
- **Definitions**
- **100 Research Ideas – need vetting (Practitioner/National Policy)**
- **List of contacts to write problem statements**
- **Table of Recent and Ongoing Research Related to Highest Ranked Research Ideas (120 Research Efforts – post 2007)**
- **Methodology & Forms**

Climate Change

NP or P	Research Topic	Workshop Votes	Conference Votes	Total Votes
P	Need better models and methodologies; sensitivity to mitigation strategies, quantifying GHGs/carbon, validating progress toward GHG objectives	44	74	118
P	How to address uncertainty related to climate change impacts (esp. cumulative impacts) in environmental impact analysis, planning, policy, etc.	43	71	114
NP	Trade-offs and consequences of different GHG/climate change strategies; realization that all options have consequences	26	22	48
NP	Communicating climate change to decision makers, practitioners, and system users	25	63	88
NP	How does transportation pay for adaptation in the context of declining gas tax revenues?	18	43	61
NP	Air quality conformity will be affected by climate change: often generators of pollution are outside the region. How can we collect mitigation fees from source polluters?	18	28	46
NP	Facilitation of wildlife movement vis-à-vis transportation networks and transportation planning in the face of climate change	16	70	86
NP/P	Extreme climate events—impacts to design and construction standards and specifications, including regional specifics	14	16	30
NP	Integrated planning approaches to address adaptation (multi-sectoral)	12	16	28
P	How are (or will) strategies for climate change on transportation projects take into account cultural considerations, especially with respect to environmental justice populations and historic values/historic preservation	12	75	87

Reflections

- There is a large demand for dialogue on cross-cutting issues
- Need to maintain databases that track, sort, and display research to support user needs
- Note the overlap between the 4 topics
- Need to develop narratives that weave these topics together
- Research is underway in highly ranked areas
- Research output is overtaking research implementation
- Other?

Sort/Display option for research findings

	Climate Change	Energy	Livability	Sustainability
Planning				
Project Development				
Construction				
Operations				
Maintenance/ Asset Mgmt				

Sort/Display option for research findings

	Mitigation	Adaptation
Planning		
Project Development		
Construction		
Operations		
Maintenance/Asset Mgmt		

Next Steps FHWA

- Gulf Coast Study II
- Mitigation Tools & Models
- Operations and Climate Change
- Updated Scenario Planning
- NEPA Climate Change Guidance
- Livability Guidebook
- Sustainability Evaluation Tool
- CSS National Dialogue
- Planning & Environment Linkages, Ecological
- Timeliness

Next Steps FHWA

- FHWA is seeking feedback on the FY2011 STEP. Stakeholders may suggest lines of research to be pursued under the five STEP emphasis areas: Environment, Planning, Real Estate Services, and Tools to Support Environment and Planning. Feedback is accepted until **September 30, 2010**. Visit the STEP website at:

<http://knowledge.fhwa.dot.gov/cops/step.nsf/home/>