

STEP Implementation Strategy, Functions and Emphasis Areas

I. Purpose

The purpose of this document is to propose an implementation strategy for the Surface Transportation Environment and Planning Cooperative Research Program (STEP). The proposed strategy identifies functions, research emphasis areas, an implementation timeline, and a framework within which decisions will be made regarding project priorities and funding. The Federal Highway Administration (FHWA) is requesting comments on this document, and has established an FHWA Docket through which comments will be submitted. In addition, FHWA has established a website for STEP which it will use on a continuing basis as a major mechanism for informing the public regarding the status of the STEP, and to solicit input on the program governance. The website can be found at <http://www.fhwa.dot.gov/hep/step/index.htm>.

II. Description of STEP and Available Funding

Section 5207, Surface Transportation Environment and Planning Cooperative Research Program (STEP), of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) established a new cooperative research program for environment and planning research in section 507 of Title 23, United States Code, Highways (23 U.S.C. 507). The general objective of the STEP is to improve understanding of the complex relationship between surface transportation, planning and the environment.

The SAFETEA-LU authorized \$16.875 million per year for FY2006-FY2009 to implement this new program. However, due to obligation limitations, rescissions and the over-designation of Title V Research in SAFETEA-LU, \$11.914 million of the \$16.875 million authorized is available in FY2006 with similar amounts anticipated in future years. STEP is also the sole source of funds to conduct all FHWA research on planning and environmental issues in FY2006. In addition, Congress mandated several special studies, and STEP will be the funding source for those projects as well.

The \$11.9 million for STEP, in combination with other SAFETEA-LU research funding sources, is less than what was available to FHWA in prior years for planning and environmental research. On average, FHWA had \$27.1 million available for planning and environmental research in FY2003-2005 (including earmarks and designations). Thus, funding in FY 2006 represents a 39.2% reduction in FHWA environmental and research funding (see Figure 1 and Table 1). This means FHWA will have to make difficult choices among the many competing needs for planning and environmental research, and will not be able to fund all worthy research.

Figure 1: FHWA Research Funding for Planning and Environment, FY03-06

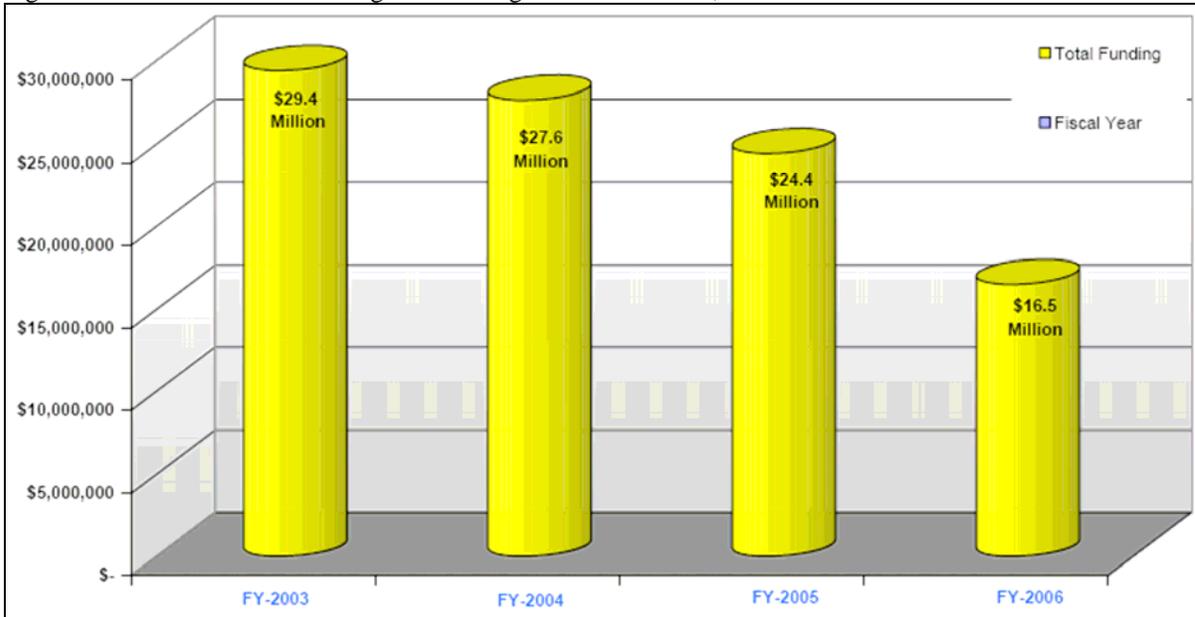


Table 1: FHWA Research Funding for Planning and Environment by Source, FY03-06

Funding Sources for HEP Research	2003	2004	2005	2006
Environmental Streamlining	\$ 6,954,500.00	\$ 6,557,237.00	\$ 5,301,463.00	\$ -
Surface Transportation Research	\$ 15,082,000.00	\$ 15,046,698.00	\$ 13,863,981.00	\$ -
Technology Deployment (TD) (excluding TELUS)	\$ 4,229,000.00	\$ 5,078,260.00	\$ 4,446,144.00	\$ -
TELUS (New Jersey Institute of Technology) *	\$ 894,000.00	\$ 940,419.00	\$ 823,360.00	\$ 706,022.00
Advanced Travel Forecasting Procedures (TRANSIMS)	\$ 2,235,375.00	\$ -	\$ -	\$ 1,853,308.00
Rural Transportation Research (New England Technology Institute)	\$ -	\$ -	\$ -	\$ 706,022.00
Center for Transportation Advancement and Regional Development	\$ -	\$ -	\$ -	\$ 441,264.00
Center for Environmental Excellence	\$ -	\$ -	\$ -	\$ 882,528.00
STEP	\$ -	\$ -	\$ -	\$ 11,914,125.00
Total Funds Available to HEP (2003 - 2006)	\$ 29,394,875.00	\$ 27,622,614.00	\$ 24,434,948.00	\$ 16,503,269.00

- TELUS is the Transportation, Economic and Land Use System. Funding was included in Technology Deployment for FY03-FY05

Congress mandated that the Federal share be 50% for research funded under Title V of SAFETEA-LU, including STEP. While this will not apply to contract funding, it will apply to STEP research funded through cooperative agreements and grants. Selective waivers of the non-Federal match may be possible, if justified, but USDOT has not determined the process, criteria, and authority for granting such waivers.

Section 507 of title 23 U.S.C. identifies certain characteristics of STEP regarding program content and administration. Regarding the program content, STEP may include research to:

- Develop more accurate models for evaluating transportation control measures and system designs for use by State and local governments to meet environmental requirements;
- Improve understanding of transportation demand factors;
- Develop indicators of economic, social, and environmental performance of transportation systems to facilitate alternatives analysis;
- Meet additional priorities determined through the transportation research and development strategic planning process identified in 23 U.S.C. 508; and
- Refine the scope and research emphases through outreach and in consultation with stakeholders.

In administering the program, USDOT and FHWA will ensure, to the maximum extent practicable, that:

- The best projects and researchers are selected based on merit, open solicitations, and selection by a panel of appropriate experts;
- Qualified, permanent core staff with ability to manage a large multiyear budget is used;
- Stakeholders are involved in governance of program; and
- There is no duplication with the Future Strategic Highway Research Program (SHRP II) (23 U.S.C. 510), which will be administered by the National Research Council of the National Academy of Sciences.

III. STEP Stakeholders

The number of stakeholders with an interest in environment and planning research is enormous and diverse, including these three tiers:

Tier I - Federal Agencies and Tribes: There are at least a score of Federal agencies with strong interest in transportation planning and environmental programs, including the Departments of Commerce, Defense, Homeland Security, Agriculture, Energy, Interior (DOI) and Housing and Urban Development, the Environmental Protection Agency (EPA), and the Centers for Disease Control and Prevention (CDC). Within each of these agencies, there are many discrete organizations/programs with an interest – e.g., National Park Service, US Forest Service, and Bureau of Land Management within the DOI. Within the US Department of Transportation (USDOT), FHWA partners with the Federal Transit Administration (FTA) on virtually all planning and environmental work, including research. FHWA also coordinates with the Federal Railroad, Aviation, Research and Innovative Technology, and Maritime Administrations, and with the Office of the Secretary of Transportation on Global Climate Change as well as other issues. Native American Tribes also have a major interest in research affecting their planning and environmental needs.

Tier II - State and Local Government: State Departments of Transportation (State DOTs) and Metropolitan Planning Organizations (MPOs) have a major interest in environment and planning research, as the research affects national policy and can also provide important tools, information, and training to meet day-to-day needs of these

agencies. In addition, local government transportation units (including transit operators as well as county public works departments and city transportation departments) depend on national environmental and planning research. State/local environmental and natural resource agencies and State Historic Preservation Officers also have a strong interest in planning and environmental research. There is also a growing interest by state/local health agencies in transportation planning and environmental research as it relates to “active living.”

Tier III - Transportation and Environmental Stakeholders: Within the transportation and environment sector, there are hundreds and perhaps thousands of nongovernmental stakeholders, such as the American Automobile Association, American Road & Transportation Builders Association, American Highway Users Alliance, Surface Transportation Policy Project, Defenders of Wildlife, American Association of Retired People, Sierra Club, Conservation Law Foundation, American Council of Engineering Companies, American Planning Association, League of American Bicyclists, National Trust for Historic Preservation, and others too numerous to specify here.

The views and interests of the research community, including universities, consultants, and nonprofit research organizations are also important to consider, however it is probably appropriate to differentiate these views somewhat, based on their strong vested interest in receiving STEP funding to conduct research.

FHWA faces a great challenge to involve all of the above stakeholders in STEP, considering the large number of interested organizations and the dramatic differences in their views and interests. Nonetheless, FHWA will make a strong effort to seek out and consider the views of all of the above interests in shaping STEP and carrying out the STEP program. FHWA has already held initial meetings with some of these groups to begin receiving input on the governance and strategic direction of STEP, and will continue this outreach in the future.

IV. Relevant Past Work

FHWA’s Office of Planning, Environment and Realty has undertaken several activities in past years that are pertinent to establishing STEP. These activities include research needs assessments, conferences, sponsoring multi-jurisdictional groups and panels focused on creating new research agendas for transportation planning, realty and environmental research. FHWA relied on the following in creating the STEP Implementation Strategy, and will continue to use these as key resource documents in the continued implementation of STEP. The documents are listed in chronological order.

Refocusing Transportation Planning for the 21st Century (TRB Conference Proceedings 20, Washington, DC, February 7-10, 1999 and Irvine, CA, April 25-28, 1999).

Documenting the proceedings of a two-part conference, this report contains (1) the recommendations of Conference I participants regarding a new vision for the transportation planning process and critical issues for research, and (2) specific research problem statements written as part of Conference II, building on the critical areas defined in Conference I.

(Not available in electronic form)

Environmental Research Needs in Transportation: Report of a Conference. Washington, DC, March 21-23, 2002.

This report contains the proceedings of a conference held in March 2002, which was intended to set an agenda for transportation/environmental research for a broad array of government and non-government entities with an interest in transportation planning and environment (not just for FHWA). In the proceedings are top research needs identified at the conference, along with background papers. These are organized into chapters for 15 topic areas.

http://trb.org/news/blurbs_detail.asp?id=3958

Surface Transportation Environmental Research: A Long-Term Strategy (TRB Special Report 268), 2002.

This report defines a broad research program to address and inform major public policy debates about the effects of surface transportation facilities and operations on the human and natural environments. The committee that conducted the study identified major gaps in knowledge that could be filled through a cooperative program of research involving federal agencies, states, and environmental organizations. The committee recommended creation of a new cooperative research program to carry out its recommended research agenda.

http://trb.org/news/blurbs_detail.asp?id=612

V. STEP Research Functions

In implementing STEP, it is important to establish the research functions for the program. The following STEP research functions are proposed for comment:

Outreach and Collaboration

As mandated in the legislation, and part of any well designed research program, FHWA will conduct outreach and solicit input on STEP program direction and governance, and will seek collaborative opportunities with other entities conducting research, including Federal partners. By seeking outreach at several different points in the decision-making process (see Section VII below), FHWA will attain a high degree of programmatic transparency. FHWA will work to develop measures of performance that will be assessed on a regular basis. FHWA will undertake outreach and collaboration in several different forms, including listening sessions, expert panels, peer exchanges, Federal Register notices, STEP email discussion groups, and domestic scans, among others. FHWA will also establish mechanisms for coordination with other entities

conducting research (such as the National Cooperative Highway Research Program and the Transit Cooperative Research Program (NCHRP, TCRP), SHRP II, EPA, CDC, DOI, FTA, other Federal agencies, State DOTs, and universities) to minimize duplication.

Conduct research

In implementing STEP, FHWA will conduct a needs-driven research program; building on past and future outreach to the research and user communities, and documented research needs assessments. FHWA will conduct research under STEP via competitive bids, grants, cooperative agreements, pooled funds, etc. FHWA will incorporate peer reviews into STEP research as much as possible. In addition, FHWA expects to share funding for various research activities with our partners and will use a variety of mechanisms to enable joint funding.

Deploy results and build capacity

For research to be meaningful to the practitioner communities, results of research must have a deployment component. Deployment and capacity building will be key aspects of the STEP program, being integrated into each emphasis area and project undertaken. Deployment and capacity building activities may take the form of information dissemination, training, peer-to-peer exchanges, domestic scans, workshops, technical assistance, presentations, web-conferences, etc.

VI. STEP Emphasis Areas

STEP will include the above functional goals within topical research emphasis areas. FHWA has identified proposed emphasis areas based on the SAFETEA-LU legislation, and by utilizing past research needs conferences and assessments, as discussed earlier. FHWA proposes 22 emphasis areas, which are listed in Table 2, first by major category, namely planning or environment, and second, in alphabetical order. There is no level of importance implied by the order.

VII. Implementation Framework for STEP

Incremental, Evolutionary Approach

While FHWA is putting programmatic, contractual, outreach and collaborative mechanisms in place to implement STEP during FY 2006, initial portions of the FY 2006 STEP program will begin in Spring 2006. Some critical research needs in transportation planning and the environment and some FHWA legacy programs and Congressional mandates must be funded in the interim. FHWA intends to take an incremental and evolutionary approach to STEP implementation and will ultimately work under a more structured implementation strategy.

Proposed Framework

Figure 2 illustrates a proposed framework for STEP research. The framework corresponds to the implementation timeline found in the next section. Major products for which FHWA will seek public and stakeholder feedback are bolded in the figure. The figure reads from top to bottom.

Table 2: Proposed STEP Emphasis Areas

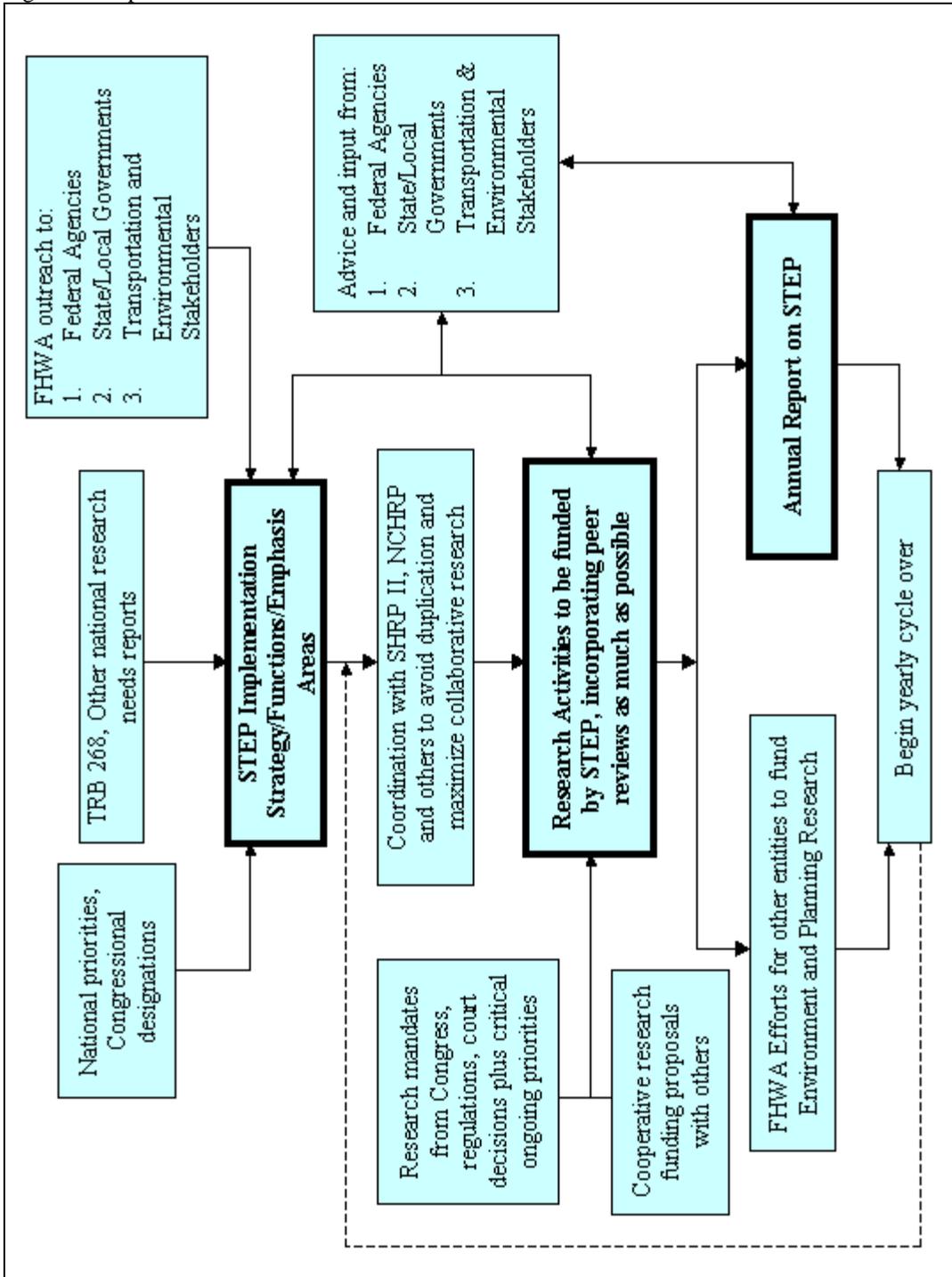
<p>STEP Emphasis Areas</p> <p><i>ENVIRONMENTAL</i></p> <ul style="list-style-type: none">• Air Quality (including Climate Change and Air Toxics)• Bicycle/Pedestrian/Non-motorized Travel• Billboards/ROW Management• Community/Neighborhood Impacts• Context Sensitive Solutions• Environmental Process Improvement• Historic Preservation• Human Health and Physical Activity• Noise• Water Quality and Wetlands• Wildlife, Vegetation, and Habitat <p><i>PLANNING</i></p> <ul style="list-style-type: none">• Freight Planning• Geographic Information Systems and Spatial Information• International Border Planning with Mexico and Canada• Land Use and Transportation• Operations Planning• Planning for National Security, Defense, and Interstate needs• Public Involvement (including Visualization)• Safety Planning• Scenario Planning• Statewide and Metropolitan Planning Process Improvement (including Planning Capacity Building)• Travel Modeling
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1. Initial Round of Input on Research Needs and Priorities: In formulating a proposed STEP framework, FHWA is relying on three major sources initially:

- National priorities as reflected in legislation enacted by Congress and Executive Branch policies;
- Research needs recommendations reflected in TRB reports and national conferences (e.g., those cited in IV. Relevant Past Work); and
- FHWA's initial meetings and STEP outreach with (a) Federal agencies; (b) State/local governments; and (c) transportation and environmental stakeholders.

2. Proposed STEP Implementation Strategy, Functions, and Emphasis Areas: Based on the initial input, FHWA is formulating and proposing (in this document) a STEP implementation strategy, functions, and emphasis areas.

Figure 2: Proposed STEP framework



3. Second Round of Input: FHWA will consider the advice and input received from #2 above, together with any cooperative research funding proposals we receive from others and also any legally binding research mandates in SAFETEA-LU, regulations, and court decisions, as well as critical ongoing collaborative research priorities, such as the Transportation Planning Capacity Building Program, supported by FHWA, FTA, the American Association of State Highway and Transportation Officials (AASHTO), the Association of Metropolitan Planning Organizations (AMPO), the American Public Transportation Association (APTA), and the National Association of Regional Councils (NARC). Special priority will be given to cooperative research proposals, where other entities are willing to provide meaningful funding for STEP research needs.

4. Coordination with SHRP II, NCHRP and Other Relevant Research Programs: As FHWA considers the Second Round of Input, we will coordinate with SHRP II, NCHRP, and other relevant research programs to avoid duplication and maximize collaborative research opportunities.

5. Proposed STEP Research Activities: Based on the above, FHWA will develop a set of research activities to be funded by STEP each year. The research activities will be done jointly in FY2006 and FY 2007, and then yearly in FY 2008 and FY 2009. Generally, the proposed STEP Research Activities will be made available for comment, then finalized and implemented. FHWA will incorporate peer reviews as much as possible and involve other Federal agencies, state/local government staff, and transportation and environmental stakeholders in the review, dissemination, and evaluation of the research results.

6. Annual Report: FHWA will produce an annual report on the use of STEP funds and make it available on the STEP website and through other means.

7. Ongoing Participation of Federal Agencies, state/local governments, and transportation and environmental stakeholders: FHWA will provide ongoing outreach and opportunities for stakeholders to participate in STEP, through shaping research priorities, providing funding for collaborative research, shaping specific research activities, and evaluating the results of STEP-funded research. As needed, we will revise the STEP framework and mechanisms to facilitate the ongoing involvement of stakeholders in STEP.

8. Influencing Other Research Programs: The research needs for environment and planning far exceed the funding available through STEP. Other Federal agencies, other organizations, and research programs bear a responsibility and provide opportunities to help meet environment and planning research needs. FHWA will seek to influence these other research programs to help meet the research needs identified through our STEP outreach.

VIII. STEP Implementation Timeline

The following is a proposed timeline for the implementation of STEP.

December 2005

Conduct initial meetings with other Federal agencies, state/local transportation partners, and stakeholder groups (an initial round of meetings has occurred, and more will be conducted if desired by stakeholders)

January 2006

Present overview of STEP at TRB Annual Meeting (completed)

February 2006

Develop STEP Implementation Strategy/Goals/Emphasis Areas
Publish Federal Register Notice soliciting feedback on STEP Implementation Strategy/Goals/Emphasis Areas

Spring 2006

Conduct outreach for STEP by emphasis area, review research needs, and identify gaps
Coordinate with SHRP II, NCHRP and others to avoid duplication
Develop priorities for and fund critical, short-term research funding
Develop Draft FY 2006/07 Research for comment (yearly)

Summer 2006

Conduct outreach, listening sessions at TRB Mid-year conference on Draft FY 2006/07 Research Activities (yearly)
Conduct continued outreach by FHWA HEP Offices by STEP emphasis area (ongoing)

Fall 2006

Announce Final FY 2006/07 Research Activities (yearly)

Winter 2006/07

Implement 2006/07 Research Activities, through appropriate procurement methods, agreements and partnerships

January 2007

Solicit comment on FY 2006 STEP Annual Report (yearly)
Hold meetings and discussions on STEP at the TRB Annual Meeting

Spring-Winter 2007

Repeat process to identify FY 2008 Research Activities

IX. Opportunities for Stakeholder Involvement

Several stakeholders have expressed an interest in the ways in which they can provide input. Within the proposed framework for implementing STEP, FHWA envisions several key points in the process where various forms of stakeholder input will be needed. These will likely include, but not be limited to:

- Input and feedback on STEP programmatic structure, governance, implementation strategy, goals, and emphasis areas;
- Input from potential funding partners on collaborative research opportunities;
- Input, advice, and feedback on yearly-proposed Research Activities (both programmatically and by emphasis area);
- Input and advice during listening and outreach sessions at the TRB Annual Meeting, and other venues; and
- Input and feedback on the STEP Annual Report.

A variety of opportunities for stakeholder feedback, input and advice for STEP will occur. This will be done to get input on the overall approach to shaping and implementing the STEP as well as to further define needed research emphasis areas and set priorities for the program. Once STEP emphasis areas are finalized (after considering stakeholder input), they will be posted on the website. FHWA then envisions a variety of stakeholder input opportunities that will vary by emphasis area. After STEP emphasis areas are finalized, FHWA intends to identify specific points of contact within the Office of Planning, Environment and Realty for each emphasis area and will post them on the STEP website.

Within STEP, FHWA anticipates that requests for proposals or other competitive contracting mechanisms to conduct research will be developed to address emphasis areas. Work under STEP will be consistent with the legislative requirements and FHWA intends to encourage development of proposals for potential cooperative and jointly funded projects using a variety of competitive arrangements. Therefore, unsolicited proposals will not be the likely mechanism for receiving funding under the STEP. However, as with any research envisioned by external parties, FHWA receives unsolicited proposals through an existing, formal FHWA process (see “A Guide to Federal Highway Administration Policies and Procedures for Submitting Unsolicited Proposals”, <http://www.fhwa.dot.gov/aaa/gtup.htm>).

As the STEP evolves, FHWA expects to follow the same, or a very similar, timeline as that described in section VIII above. The timeline, and any updates or revisions, will also be posted on the STEP website to aid stakeholders in understanding key points in time when they can provide input.