

Multi-Agency Transportation, Land Use, and Climate Change Scenario Planning Project April 29, 2013

Summary

A multi-agency group of Federal agencies led by the Federal Highway Administration (FHWA) is seeking to partner with a metropolitan planning organization (MPO) and proximate Federal land management agencies (FLMAs) in the region to conduct a new study to advance the state of practice in incorporating climate change analysis – both mitigation and adaptation – in scenario planning. FHWA's Federal partners – the US DOT Volpe Center, US Army Corps of Engineers, Bureau of Land Management, Fish and Wildlife Service, National Park Service, US Forest Service, Federal Transit Administration, Federal Emergency Management Agency, National Oceanic and Atmospheric Administration, and Environmental Protection Agency – will provide technical assistance to the project.

Description of the Opportunity

In order to advance the state of practice in incorporating climate change analysis into scenario planning, the Federal partners are seeking to implement one pilot project in an inland area of the country. The Federal agencies are seeking to partner with a MPO and FLMA(s) to complete this study. The project will inform transportation and land use decision-making in the selected study area by using scenario planning to analyze strategies to reduce greenhouse gas (GHG) emissions and adapt to climate change impacts. The goals of the project are to: 1) advance climate analysis in scenario planning; 2) develop a transferrable process; 3) build partnerships; and 4) impact decision-making.

Background

The FHWA and its partners are launching this new project to build off of and complement previous FHWA climate change efforts, including scenario planning technical assistance, an earlier pilot in Cape Cod, Massachusetts, and a vulnerability assessment framework and related adaptation pilots across the United States.

The Interagency Transportation, Land Use, and Climate Change Cape Cod Pilot Project was a multi-agency project that took place between early 2010 and mid-2011. Conceived by a Federal interagency working group, it was jointly funded by FHWA, the National Park Service, and the U.S. Fish and Wildlife Service. The Pilot Project provided a transportation and land use development scenario for Cape Cod, Massachusetts, focused on reducing future GHG emissions and anticipating the potential impacts of sea-level rise on the region. This scenario was derived from a process of data collection, scenario development by a consultant and regional and local government representatives during a workshop, and scenario assessment. The outcomes of this scenario planning process informed and supported the Cape Cod region's long-range transportation planning (LRTP) and other related efforts, as well as the planning efforts of other local, state, and federal agencies, including the Cape Cod National Seashore.

This new project will undertake a more detailed climate change analysis than was possible with the timeframe, resources, and tools available to the Cape Cod pilot. In the intervening time

between that pilot and the present, FHWA and other organizations have developed planning tools for analyzing the effectiveness of transportation and land use strategies for reducing GHG emissions. In addition, the state of the practice in assessing vulnerability to climate change impacts and adaptation options has advanced. These advances will be helpful in developing and implementing a methodology for incorporating climate change analysis in scenario planning. Given that the pilot in Cape Cod focused on the coastal climate change impacts of sea level rise and storm surge, this new effort will focus on an inland area in order to explore impacts faced by these areas such as riverine flooding, heat waves, drought, wildfires, and responses to extreme weather events.

Roles and Responsibilities

The selected MPO and participating FLMAs will be expected to:

- Collect and provide existing data required for the project (such as data on vehicle miles traveled, emissions, demographics, etc.);
- Participate in all Planning Group and Technical Committee meetings/calls;
- Identify key local, regional, and state agencies (e.g., transportation, emergency management, environment, etc.) with which to coordinate on this project;
- Develop a stakeholder invitation list for a scenario planning workshop;
- Host and participate in a scenario planning workshop and the development of a refined scenario;
- Review interim and final reports on the project developed by the consultant and federal agencies;
- Integrate project results into the next update of their LRTP and other relevant work; and
- Provide advice to regions looking to complete a similar scenario planning process based on lessons learned from this project.

FHWA, the Federal partners, and associated consultants, in consultation and cooperation with the MPO and FLMA(s) will:

- Organize the Planning Group and Technical Committees;
- Work with the MPO and FLMAs to develop local project goals and evaluation criteria for scenarios;
- Collect data necessary to develop scenarios, using national/regional data when local data is not available;
- Implement methodologies to identify areas vulnerable to selected climate change impacts and characterize consequences of impact (such as methods discussed in the FHWA Climate Change and Extreme Weather Vulnerability Assessment Framework);¹
- Identify transportation GHG mitigation strategies, develop metrics to be included in the scenarios, and implement methodologies to analyze mitigation strategies (such as those in FHWA's Energy and Emissions Reduction Policy Analysis Tool);
- Develop pre-run sample scenarios;
- Organize and run a scenario planning workshop and develop break-out group scenarios;

¹http://www.fhwa.dot.gov/environment/climate_change/adaptation/resources_and_publications/vulnerability_assessment_framework/index.cfm

- Develop a refined scenario; and
- Develop a final technical report.

Funding

The FHWA will award one grant of approximately \$25,000 to \$50,000 (based on level of effort and need) to the selected MPO solely to cover MPO staff time to complete the tasks listed under Roles and Responsibilities. By Federal statute, a minimum 20% non-Federal match (80-20 cost share) is required for these funds to be awarded to the project area. Match above and beyond the 20% requirement is encouraged. In-kind contributions such as staffing can be counted towards the match.

In addition to the direct financial assistance, the Federal partners will deliver analysis and technical assistance (both directly and through a consultant) valued at approximately \$350,000 to \$600,000.

Application Process

MPOs interested in applying to this opportunity are asked to submit a letter of interest and letter(s) of support from at least one FLMA proximate to the proposed study area. FLMAs include Bureau of Land Management, US Army Corps of Engineers, Fish and Wildlife Service, Forest Service, and National Park Service. These letters should be submitted to FHWA by May 30, 2013. Please email letters of interest to tina.hodges@dot.gov with CC to benjamin.rasmussen@dot.gov. The Volpe Center (benjamin.rasmussen@dot.gov) is available to help MPOs reach out to FLMAs to garner a letter of support.

Required Contents for Application

1. Letter of interest submitted by the MPO. This should be 5 to 10 pages and include descriptions of the following elements:
 - **Climate change concerns for land use and transportation infrastructure in the region.** This section should briefly describe the region with a focus on GHG emissions and trends, the type of transportation infrastructure potentially impacted by climate change (e.g., signature structures, important culverts and road cuts, etc.), and the severity of those impacts on population, housing, and employment as well as their impact on the population's use of transit, highway, and other transportation networks. Consider including a map and a list of links to key studies, plans, and reports that would provide contextual information on the region's transportation, land use, and climate change issues.
 - **Past and current efforts related to this project, as well as demonstrated interest and support.** This section should describe efforts and/or documented interest by the MPO and partners in scenario planning, integrated land use and transportation planning, smart growth and transit-oriented development efforts, and climate change mitigation or adaptation activities. This section should also indicate how this project could be integrated into ongoing or future efforts.

- **Funding, staffing, and resources.** This section should describe the funding and resources the MPO will be able to dedicate to the project, and demonstrate how the non-Federal match requirement will be met. It should also list the staff who will be assigned to this project along with their qualifications and areas of expertise.
- **Data availability.** This section should describe – ideally in a table layout – the breadth/quality (in terms of years available, at what scale/level of detail, whether it is geo-coded, etc.) of relevant regional data that can be made quickly available for use in this project, such as:
 - Climate effects and impacts:
 - Riverine flooding
 - Drought
 - Excessive heat days
 - Increased frequency of extreme precipitation events
 - Wildfires
 - Increased frequency of severe storm events
 - Other (please specify)
 - Population and/or housing projections
 - Land use for study area – current and projected
 - Visitation/tourism data
 - Employment projections
 - Multi-modal (vehicles, transit, non-motorized) travel demand model
 - Vehicle miles traveled projections
 - Mode share – current and projected
 - Transportation energy use and/or greenhouse gas emissions and/or mitigation strategies
 - Air quality data, modeling, and regional emissions analyses for air quality conformity purposes
 - Other data desired to be integrated (please describe)
- **Response to solicitation criteria,** where not already covered in the above sections.

2. Letter(s) of support submitted by proximate FLMA(s), which include the following elements:

- Anticipated level of FLMA participation
- Relevant resources, studies, and/or data
- Ongoing or future planning efforts this project could help to inform

Other letters of support from local elected officials or other stakeholders are optional.

Selection Criteria

Projects will be selected based on the following criteria:

- Demonstrated interest and support;
- Potential benefit from technical assistance offered;

- Impact on decision-making (i.e., potential for the findings of the project to influence specific transportation, land use, hazard mitigation, and environmental decisions and planning documents);
- Availability of local match, staffing, resources and data;
- Type and severity of issues faced by the study area;
- Willingness and plans to share findings and processes nationally; and
- Existing collaborative approaches and partnerships.

Timeline

Dates are subject to change.

1. Solicitation distributed.
(April 30, 2013)
2. Letters of interest from area MPO and letter of support from partner public land(s) submitted to FHWA (email tina.hodges@dot.gov with a CC to benjamin.rasmussen@dot.gov)
(DUE: May 30, 2013)
3. Selection of study area and first meeting with study area.
(June - July 2013)
4. Identify and select scenario planning tool and consultant
(Summer - fall, 2013)
5. Collection of data and expert elicitation or climate change impact analysis/modeling
(Summer - fall, 2013)
6. Conduct scenario planning workshop
(Spring, 2014)
7. Develop selected scenario and analyze scenario performance
(Spring - summer, 2014)
8. Complete final products
(Summer - fall, 2014)

Contacts and Assistance in Connecting with FLMAs

To discuss this project, for more information, or for assistance in connecting with FLMA partners, please contact:

- Tina Hodges, Office of Natural Environment, FHWA, 202-366-4287, tina.hodges@dot.gov, or
- Ben Rasmussen, USDOT Volpe Center, 617-494-2768, benjamin.rasmussen@dot.gov

Resources

Resources related to the Cape Cod Pilot

- Interagency Transportation, Land Use, and Climate Change Cape Cod Pilot Project: Pilot Project One-Pager
http://www.volpe.dot.gov/coi/ppoa/publiclands/projects/docs/cape_cod_pilot_project_one_pager_092811.pdf

- A Framework for Considering Climate Change in Transportation and Land Use Scenario Planning: Lessons Learned from an *Interagency Pilot Project* on Cape Cod
http://www.fhwa.dot.gov/environment/climate_change/adaptation/resources_and_publications/cape_cod/index.cfm
- Interagency Transportation, Land Use, and Climate Change Cape Cod Pilot Project: Technical Scenario Report
http://www.volpe.dot.gov/coi/ppoa/publiclands/projects/docs/interagency_tech.pdf
- Interagency Transportation, Land Use, and Climate Change Cape Cod Pilot Project: Cape Cod Commission Action Plan
http://www.volpe.dot.gov/coi/ppoa/publiclands/projects/docs/ccc_action_plan.pdf

FHWA Resources related to scenario planning, climate change and extreme weather adaptation, and GHG mitigation

- FHWA Scenario Planning Website
http://www.fhwa.dot.gov/planning/scenario_and_visualization/scenario_planning/index.cfm
- FHWA Scenario Planning Guidebook
http://www.fhwa.dot.gov/planning/scenario_and_visualization/scenario_planning/scenario_planning_guidebook/
- FHWA Climate Change and Extreme Weather Vulnerability Assessment Framework
http://www.fhwa.dot.gov/environment/climate_change/adaptation/resources_and_publications/vulnerability_assessment_framework/index.cfm
- FHWA's Energy and Emissions Reduction Policy Analysis Tool
http://www.planning.dot.gov/FHWA_tool/default.asp
- FHWA's Reference Sourcebook for Reducing Greenhouse Gas Emissions from Transportation Sources
http://www.fhwa.dot.gov/environment/climate_change/mitigation/resources_and_publications/reference_sourcebook/index.cfm