

**Technology Deployment Initiatives and Partnership Program  
Request for Funding  
FY 2004**

**FHWA Strategic Goal Area:**

Environment

**FLH Technology Strategy:**

Advance Design Concepts and Construction Practices that Minimize Impacts

**Project Title:**

Predicting Potential Environmental Impacts on Public Land Transportation Projects

**Problem Statement:**

Has Federal Lands Highway (FLH) adequately benchmarked the potential environmental impacts along disturbed roadway corridors? Do completed construction projects demonstrate successful commitment compliance? National Environmental Policy Act (NEPA) documents and permit agreements outline environmental commitments, including detailing how impacts to the environment should be avoided, minimized, and mitigated, and providing information on how the commitments should be implemented. However, few environmental audits have been performed to benchmark the recommendations and verify the ultimate success of the commitments. Potential impacts are assessed in the planning phase of project delivery. While hosts of technical materials exist, limited data is available on the accuracy of predictions or the effectiveness of mitigation strategies on FLH projects. As a result, agency staff may have incomplete knowledge and guidance resulting in recommendations and practices that are counter productive for successful commitment compliance.

**Background:**

Environmental Streamlining and Stewardship is a primary goal area for the FHWA – one of its Vital Few goal areas. Stewardship requires agencies to go beyond compliance and to become both proactive and innovative. NEPA was intended to lead to better decisions. One way to measure effectiveness in achieving environmental goals is to compliment our NEPA documentation with after construction studies to quantify the success of our stewardship. Environmental approval in a cost effective and timely manner is achieved in part by FLH's ability to provide effective strategies.

**Benefits:**

Auditing the recommendations and commitments made during project delivery can improve our accuracy of prediction, determine the root cause of environmental performance problems, quantify the environmental benefits from mitigation, and improve our design of least-cost mitigation measures. The resulting compilation of information would represent a greatly improved industry standard supporting cost effective mitigation, demonstrate our commitment beyond compliance, be a basis for establishing regulatory flexibility, and meet our goal of continuous improvement. FLH, the Federal Land Management Agencies we serve, the regulatory agencies, and state/local government would realize benefits of this initiative.

**Scope:**

There are two major objectives to be met by this initiative. The first is to obtain after construction (post approval) data that shows the mitigation success of the measures carried out by the FLH Divisions. The second is to determine whether the impacts typically predicted and mitigation solutions recommended during NEPA are viable for the unique conditions found along highways. Meeting these two objectives would be demonstrated in a cohesive report that documents the data collected, evaluation processes used, and recommendations or conclusions based on the data and evaluation.

To assist in this objective, the FLH will form an advisory committee composed of FLH staff and other transportation agency representatives to select a list of common environmental impacts and their prescribed mitigation measures for study. The advisory committee will identify past FLH reconstruction and 3R projects that were completed between 3 and 10 years ago. A Request for Proposals for the development of monitoring protocols and data collection will be issued. The committee will steer this initiative by providing review, comment, and identifying additions, deletions, or modifications to the study.

This study will develop a concise and technically credible protocol to monitor the effectiveness of the selected mitigation efforts unique to highway construction projects. The study will evaluate the effectiveness of (commonly) selected mitigation measures in diverse range of environments found in Federal Lands at various post construction ages. The outcomes will be reviewed to determine the accuracy of the FLH NEPA predictions. A database of our success would be developed to increase effective forecasting. A final report will summarize the findings, identify areas of intervention, recommend revisions based on benchmarks and outcomes, and define a future audit process.

#### **Deployment Method:**

The primary deliverables of this initiative is the final report. The database developed will be transferred to the FLH environmental staff for ongoing data collection or reporting. An additional deliverable would be a summary pamphlet, to be distributed at public meetings, that shows justification for the mitigation measures selected by FLH for the mitigation of construction impacts.

Successful implementation will depend on 1) thorough dissemination of the information to FLH staff, 2) presentations to staff and other interested user groups to discuss the outcome and answer questions, and 3) inclusion of revised impact assessments and mitigation measures in future NEPA documentation.

The deployment audience beyond Federal Lands includes practitioners who construct roadways, such as DOT engineers, FLMA, resource agencies, and engineering consultants. The Technology Deployment team can use a variety of communication "tools" such as technical briefs, presentations, and the Resource Centers to acquaint other potential user groups.

**Estimated Costs:**

The estimated cost of this proposal including deployment is \$260,000.

**Duration:**

For the purpose of this initiative, a three-year duration is estimated.

**Champions:**

Champion for this initiative will be Ricardo Suarez.

A technical review team representing all FLH divisions will be composed of project delivery, construction, and legal staff.