

Call for Research Problem Statements for the Innovative Bridge Research and Deployment (IBRD) Program

Oklahoma Department of Transportation (ODOT) is soliciting research problem statements for the Innovative Bridge Research and Deployment (IBRD) Program. The focus of the IBRD is to promote, demonstrate, evaluate, and document the application of innovative designs, materials, and construction methods in the construction, repair, and rehabilitation of bridge and other highway structures. The funds allocated to any project will not exceed \$250,000 and this includes research, construction, and material.

The attached memorandum [from FHWA dated June 9, 2006](#) along with its Attachment describes the IBRD Program and funding criteria in full. The ideas must address one or more of the Goals A thru H listed under [Eligibility in the Attachment](#). The ideas must be submitted on paper or via email to ODOT's Planning & Research Division **no later than July 14, 2006**.

ODOT in collaboration with Oklahoma turnpike Authority (OTA) and the local Federal Highway Administration (FHWA) office will review the research problem statements and identify project(s) where the research can be applied. Then ODOT may contact the researchers for further information if their research problem statements are selected for consideration. Then ODOT will submit the candidate project(s) to FHWA in August 2006 for consideration for the IBRD funds.

Contact:

For questions related to the problem statement, please contact:
Walt Peters, P.E., Assistant Division Engineer, ODOT Bridge Division
Phone (405) 521-2606, (405) 522-0134 fax
E-Mail wpeters@odot.org

Submittal of Papers (**Due July 14, 2006**)
Oklahoma Department of Transportation
Planning & Research Division
200 N.E. 21st Street, Room 3-A7
Oklahoma City, Oklahoma 73105-3204
Phone (405) 521-2671, (405) 521-6917 fax
E-Mail spr@odot.org

Memorandum



Subject: **ACTION**: Request for FY 2006
Candidates for
the Innovative Bridge Research and
Deployment
Program (**Reply Due: August 15, 2006**)

Date: June 9, 2006

From: */s/ Original Signed by*
M. Myint Lwin, P.E.,
S.E.
Director, Office of
Bridge Technology

Reply to
Attn. of: HIBT

To: Directors of Field
Services
Resource Center
Director
Division
Administrators
Federal Lands Highway Division Engineers

The purpose of this memorandum is to announce the FY 2006 solicitation for candidate projects from the States for the Innovative Bridge Research and Deployment (IBRD) program, which is an expansion of the Innovative Bridge Research and Construction (IBRC) program. The focus of the IBRD is to carry out a program to promote, demonstrate, evaluate, and document the application of innovative designs, materials, and construction methods in the construction, repair, and rehabilitation of bridge and other highway structures.

For FY 2006, approximately \$2.2 million is available for the IBRC program, and approximately \$5.1 million for the IBRD program. Because the IBRD program is an expansion of the IBRC program, the funds will be combined into one fund for the IBRD projects. If full funding is not available at the time of award, the funds will be allocated on a pro rata basis to the approved projects.

Both TEA-21 and SAFETEA-LU allow the Federal share to vary, and instruct the Secretary of Transportation to determine the Federal share (percentage) of the cost of a project under this section. For FY 2006, actual percentages will depend on the number of eligible projects

submitted, the types of innovative material technologies, and the cost of the candidate projects as well as the amount of funds requested by the States. Please note that high cost project requests may be funded at less than 100 percent of the State's requested amount. With some possible exceptions, we anticipate that for FY 2006, the amount of IBRC/IBRD funds allocated to any one project will not exceed \$250,000. As in years past, we believe that the goals of the IBRD program will be better served by funding a larger number of small-to-medium sized innovative projects, rather than by concentrating funds in a smaller number of larger projects. The intent is to promote innovation in its broadest sense.

We are requesting your assistance in identifying FY 2006 candidate projects for IBRD. The projects shall meet one or more of the goals of the programs.

We are attaching additional information on the IBRD program, application procedures, and selection criteria for your use and information. The application procedures and selection criteria are similar to those announced in the *request for FY2005 candidates for the IBRC program*, dated April 18, 2005. Please discuss the program with your State department of transportation (DOT) to determine their interest in the program and to solicit candidate projects. Please also assist this office and your State by determining each candidate's eligibility, by assuring the completeness of each application, and by ranking projects in the order of the DOT's priorities.

We are requesting that candidate project submissions be received in Headquarters (HIBT-1) no later than August 15, 2006. Submissions received after this date may not receive consideration. Questions concerning this program should be addressed to Chien-Tan Chang, Office of Bridge Technology, at (202) 366-6749.

Attachments

ATTACHMENT No 1

INNOVATIVE BRIDGE RESEARCH AND DEPLOYMENT PROGRAM

2006 PROGRAM INFORMATION

(June 2006)

BACKGROUND

The IBRC program was established by the Congress in the *Transportation Equity Act for the 21st Century* (TEA-21) (Pub. L. 105-178). This program was continued in SAFETEA-LU. However, in section 5202 of SAFETEA-LU, Congress removed two goals of the IBRC program: Goal (E), the development of cost-effective and innovative techniques to separate vehicle and pedestrian traffic from railroad traffic; and Goal (F), the development of new nondestructive bridge evaluation technologies and techniques. In addition, this section added three goals to the IBRD Program: Goal (F), the documentation and wide dissemination of objective evaluations of the performance and benefits of these innovative designs, materials, and construction methods; Goal (G), the effective transfer of resulting information and technology; and Goal (H), the development of improved methods to detect bridge scour and economical bridge foundation designs that will withstand bridge scour. The eight goals of IBRD are listed under ELIGIBILITY of this Attachment.

FUNDING

Funds are provided to the States under the IBRD program to pay the Federal share of the cost of projects that demonstrate innovative accelerated bridge design and construction technology, and the application of innovative material technology in the repair, rehabilitation, replacement, or new construction of bridges and other highway structures. For each of the fiscal years 2005 through 2009, approximately \$13.1 million will be available. In FY 2006, this amount will be reduced to \$5.1 million for the technology deployment portion of the IBRD program after reduction of funds pursuant to the Departments of Transportation, Treasury, Housing and Urban Development, the Judiciary, the District of Columbia, independent *Agencies Appropriations Act 2006* (Pub. L. 109-115, Nov 30, 2005), the Department of Defense, *Appropriations Act 2006*, (Pub. L. 109-148, Dec. 30, 2005), and Sec. 5202(b)(3)(B) of the *Safe, Accountable, Flexible, Efficient Transportation Equity Act: Legacy for Users* (SAFETEA-LU).

FEDERAL SHARE:

In accordance with 23 U.S.C. 503(b)(5), the Secretary shall determine the Federal share of the costs for any project eligible under this program. The FHWA determines the Federal share for each project considering several factors, including the size of the project, the amount of funds requested for the project, and the available funding for the program. It is the goal to fund as many projects as possible at a 100 percent Federal share; however, because of the above considerations, some projects may be funded at a lower Federal share.

ELIGIBILITY:

- Funds are available for bridge projects that meet one or more of the eight program goals listed in 23 U.S.C. Section 503(b)(2):

Goals—the goals of the program shall include:

- A. The development of new, cost-effective, innovative highway bridge applications;**
- B. The development of construction techniques to increase safety and reduce construction time and traffic congestion;**

- C. The development of engineering design criteria for innovative products, materials, and structural systems for use in highway bridges and structures;**
- D. The reduction of maintenance costs and life-cycle costs of bridges, including costs of new construction, replacement or rehabilitation of deficient bridges;**
- E. The development of highway bridges and structures that will withstand natural disasters;**
- F. The documentation and wide dissemination of objective evaluations of the performance and benefits of these innovative designs, materials, and construction methods;**
- G. The effective transfer of resulting information and technology; and**
- H. The development of improved methods to detect bridge scour and economical bridge foundation designs that will withstand bridge scour.**

- The project may be on any public roadway, including State and locally funded projects.
- Funds may be used for costs of preliminary engineering, repair, rehabilitation, or construction of bridges or other highway structures, and costs of project performance evaluation including instrumentation and performance monitoring of the structure following construction.

These funds may be used for the Federal share of the cost of the repairs, rehabilitation, replacement, or new construction on the “innovative materials and accelerated bridge construction” portion of the project.

SELECTION CRITERIA:

The FHWA will use the following criteria to evaluate the submitted candidates for selection:

1. Projects that will meet one or more of the goals of the program in 23 U.S.C. Section 503(b);
2. Projects that will incorporate innovative materials and/or products that are readily available;
3. Projects that have been funded for design and for construction or rehabilitation;
4. Projects with designs, materials, and construction methods that have broad application;
5. Projects that leverage Federal funds with other public or private resources, will be given preference; and
6. Projects that are part of a large right of way improvement project.

In addition, the FHWA will use the following considerations in the evaluation of candidates for this program:

1. State priorities – For States that submit more than one project application, consideration is also given to the individual State’s priorities if specified.
2. Availability of innovative material and/or innovative material product – Preference is given to projects, which will apply an innovative material and/or a product made of an innovative material, which is readily available for application in other projects and in other States.
3. Expeditious completion of project – Preference is also given to projects that will be let for construction or rehabilitation works in a timely manner. An appropriate target date will be for projects to be let to bid by September 30, 2007. For large-scale projects, consideration is given to the State’s total funding plan to expedite the completion of the project.

4. Leveraging of private or other public funding – Because the annual requests for funding far exceed the available IBRD discretionary funds, commitment of other funding sources to complement the requested IBRD discretionary funding is an important factor.
5. Currently, the FHWA plans to request FY 2006 projects in June 2006, and make selections for FY06 projects by December 2006.

SOLICITATION PROCEDURE:

Each year, a memorandum is sent from the FHWA Headquarters Office of Bridge Technology to the FHWA division offices requesting the submission of candidate projects for a given fiscal year's funding. This solicitation is also published on the IRBD Web at <http://ibrd.fhwa.dot.gov> (being developed). The FHWA division offices provide this solicitation request to the State departments of Transportation (DOTs), who are the only entities that can submit candidates. The State DOTs coordinate with local and Federal agencies, universities and colleges, private sector entities, and nonprofit organizations within their respective States in order to develop viable candidate projects. The State DOTs submit the candidate applications to the FHWA division offices. After review and consultation with the DOT, the division office sends the **acceptable candidate** projects to the Director, Office of Bridge Technology (Attn: HIBT-1). Candidate projects for FY 2006 funding will be due in FHWA Headquarters on or about August 15, 2006.

The candidate project applications are reviewed and evaluated by a selection panel composed of representatives from the FHWA Office of Bridge Technology and the FHWA Office of Infrastructure R&D, and an allocation plan is prepared for presentation of the candidate projects to the Federal Highway Administrator, for the final selection of projects for funding.

SUBMISSION REQUIREMENTS:

Only State DOTs may submit applications for funding under this program. A prescribed format for a project submission is provided in the format of a project application form, and the following information should be included to properly evaluate the candidate projects. Those applications that do not include this information will be considered incomplete and will be rejected.

- **State** in which the project is located;
- **Priority Ranking** of the project as determined by the State DOT, if more than one project is submitted;
- **County** in which the project is located;
- **Structure Name & Location** – Provide the bridge name (if appropriate) and describe the specific location of the project, including route number/name and mileposts (if applicable), and feature(s) crossed by the bridge;
- **Structure Description** – Provide a description of the structure including type (e.g., continuous prestressed concrete box girder), number of spans, total length, and total width (out to out);
- **Innovation** – Specify the innovation (e.g., accelerate construction, self consolidate concrete, embankment erosion and resistance) that is being used in the project;
- **Proposed Work** – Describe the specific application of the innovation proposed in this particular request, and whether this is a complete project or part of a larger project;
- **Program Goals** – The State's submission should show how the application of the innovation would meet one or more of the IBRD program goals as stated above;
- **Letting Date** – The proposed letting date for the main project should be specified, in which the proposed candidate is a part;

- **Estimated Costs** – Provide the estimated cost of the project as follows: cost of the entire project; cost of the innovative portion of the projects, (e.g., an FRP composite deck) as well as preliminary engineering costs associated with the innovative portion of the project; and the cost of proposed activities to monitor and document the performance of the innovative application;
- **Amount of Federal IBRD Funds Requested** – Indicate the amount of Federal IBRD funds being requested; and
- **Commitment of Other Funds** – Indicate the amounts and sources of any private or other public funding being provided as part of this project. Only indicate those amounts of funding having documented commitments. The submission must include written confirmation of these commitments from the entity controlling the funds.

Note: Additional information on project applications can be submitted through FHWA Division Office by FedEx mail, if needed.

APPLICATION GUIDANCE:

- **Priority ranking** – Each State, in cooperation with the FHWA division office, is requested to prioritize their candidate projects.
- **Funding for repeated applications** – The States are encouraged not to submit candidate projects, which essentially duplicate a previous project using the same material in the same type of application if that original project was funded with IBRD funds.
- **High cost projects** – The FHWA will attempt to equitably distribute funds to an applicant State in accordance with the State's priorities. However, subject to special consideration, it is to be expected that high cost project requests may be funded at less than 100% of a State's requested amount. In FY 2006, the threshold amount will depend on the total number of eligible projects submitted as well as on the total amount of funds requested. **However, a reasonable estimate for the threshold amount for FY 2006 is \$250,000**

DECISION PROCESS FOR FUNDING:

Projects are to be screened for eligibility first by the FHWA division office and then subsequently evaluated by the Headquarters IBRD selection panel. Other considerations are:

- **Projects approved in Previous Fiscal Years** – Supplemental funding for projects, which were partially funded in previous fiscal years under IBRD program, will be considered but not guaranteed. Requests for supplemental funds are to be made in an FY 2006 application in response to this solicitation. These candidates will be prioritized along with all other FY 2006 candidates.
- **First Priority Projects** – Every attempt will be made to provide funds for each State's eligible highest priority project. As noted above, high cost project requests may be funded at less than 100% of the State's requested amount. If a State's highest priority project is determined to be ineligible under the IBRD program requirements, the second ranking project on the State's submission will be considered the State's highest priority project.
- **Flexibility to the State to switch funds to other candidate projects** – FY 2006 funding will be allocated to specific projects and those projects should be let to bid by September 30, 2007. However, the FHWA recognizes that legitimate circumstances may lead the State to propose transferring IBRD funds from one project to another. The division office will have the authority to approve such transfers and they should be guided by the following:
- The State may transfer IBRD funds from an eligible, funded project to one or more of their submitted eligible candidates, as they may deem appropriate.

- The project receiving funds must be one of the State's other eligible candidates but need not be one that was selected for IBRD funding by FHWA.
- The State must commit to building the projects from which IBRD funds are being taken, or provide the FHWA with adequate justification for not doing so.
- The amount of funds transferred to an alternate project may not exceed the cost of the innovative portion of the alternate project.
- For record-keeping purposes, it is requested that notification of the intent to fund the alternate project(s) (project name and amount) be provided to the Office of Bridge Technology.

STATE DEPARTMENT OF TRANSPORTATION'S RESPONSIBILITIES:

- Coordinate with State, local, and Federal agencies, universities and colleges, private sector entities and nonprofit organizations within the State to develop viable candidate projects;
- Ensure that the applications for candidate projects meet the submission requirements;
- Establish priorities for other candidate projects; and
- Submit completed applications to the local FHWA division office in a timely manner so that the submission deadline can be met.

FHWA DIVISION OFFICE RESPONSIBILITIES:

- Provide the solicitation memorandum and the program information to the State DOTs;
- Request candidate projects be submitted by the State to the FHWA division office in time to meet the submission deadline established in the solicitation;
- Help applicants complete information required in the application form;
- Review and prioritize all candidate applications submitted by the State prior to sending them to the FHWA Headquarters to ensure that they are complete and meet the submission requirements;
- Submit the candidate applications to FHWA Headquarters by the established submission deadline. Submission of these applications will be **by ONLINE** submission only;
- Review and approve/disapprove requests from the State to transfer IBRD funds from one eligible project to another eligible project. Send notification of the alternate project(s) funded (project name and amount) to the Office of Bridge Technology; and
- Record required application data in the IBRD online database via the IBRD home page at <http://ibrd.fhwa.dot.gov> (**being developed**). Separate instructions will be provided at a later date for entering the information directly via the Internet.

FHWA HEADQUARTERS PROGRAM OFFICE RESPONSIBILITIES:

- Request candidates from the States through the annual solicitation memorandum;
- Review candidate project submissions and compile program and project information for preparation of the allocation plan;

- Submit the allocation plan to the Federal Highway Administrator for approving final project selection; and.
- Allocate funds for the selected projects.

FHWA HEADQUARTERS PROGRAM OFFICE CONTACT:

Chien-Tan Chang
Senior Bridge Engineer – Planning and Coordination
Office of Bridge Technology (HIBT-1)
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Phone: (202) 366-6749 Fax: (202) 366-3077

ATTACHMENT NO. 2

2006 APPLICATION
For
INNOVATIVE BRIDGE RESEARCH AND DEPLOYMENT PROGRAM

State _____ State's Priority Ranking: # _____ of _____

Project type (new construction, replacement, rehabilitation, or repair) _____

NBI structure number _____ County _____

Structure Name and/or Identifying Description (e.g., Number/Name of Route on the Bridge and Feature Crossed) _____

Structure description (e.g., bridge type, number of spans, length, width, material)

Innovative material and/or innovative accelerated construction (describe the material and/or construction, how it is used and how the project meets one or more of the program goals)

Schedule for start of work (month/year): _____

Cost Estimates:

Total project cost:	P
Cost of "innovative material" portion of the construction	A
Preliminary engineering cost, if requested	B
Cost of innovative material performance evaluation (e.g., for a 2-year post-construction period)	C
PE costs + construction costs + evaluation costs = (A + B + C)	T
Total Federal Program Funds Requested	\$\$ _____

State Department of Transportation Contact Person

Name: _____

Title: _____

Agency: _____

Ph: _____

Fax: _____

E-mail: _____

Local Agency Contact Person (if applicable):

Name: _____

Title: _____

Agency: _____

Ph: _____

Fax: _____

E-mail: _____

FHWA Division Office Contact Person:

Name: _____

Title: _____

Agency: _____

Ph: _____

Fax: _____

E-mail: _____

INNOVATIVE BRIDGE RESEARCH & DEPLOYMENT PROGRAM

2006 ELECTRONIC DATA SUBMISSION REQUIREMENTS (DIVISION OFFICE ONLY)

The Division Office is requested to input the following basic application data to the IBRD database via the FHWA Web site. Separate instructions will be provided at a later date for submitting the information directly via the Web site. Those applications that do not include these items will be considered incomplete and returned for additional data.

- **State** in which the project is located;
- **Priority Ranking** of the project as determined by the State department of transportation;
- **County** in which the project is located;
- **Congressional District** in which the project is located;
- **Name of Congressional Representative** in whose district the project is located;
- **Structure Name & Location** – Provide the bridge name (if appropriate) and describe the specific location of the project, including route number/name and mileposts, if applicable and feature(s) crossed by the bridge.
- **Structure Description** – Provide a description of the structure including type (e.g., continuous prestressed concrete box girder), number of spans, total length and width (out to out);
- **Innovative Material, Innovative Construction & Specific Application** – Specify what innovative materials and/or construction (e.g. high performance steel/accelerated construction) are being applied in the project and what structural elements are involved (e.g., girders) and the application (e.g., superstructure). A checklist of “standard” terminology will be provided:
 - Innovative Material – specify FRP composite, etc.
 - Innovative Construction – specify accelerated bridge construction technology, etc.
 - Structural Element – specify deck, girder, etc.
 - Application – specify superstructure, substructure, etc.
- **Letting Date** – The proposed letting date for the project should be specified; and
- **Estimated Costs** – Provide the estimated cost of the project as follows:
 - Cost of the entire project.
 - Cost of the construction of just the innovative portion of the project (e.g., FRP composite deck).
 - Cost of preliminary engineering associated with the innovative portion of the project.
 - Cost of proposed activities to monitor and document the performance of the innovative material application.

Also include 2006 APPLICATION FOR INNOVATIVE BRIDGE RESEARCH AND DEPLOYMENT PROGRAM in attachment No. 2.

FHWA HEADQUARTERS PROGRAM OFFICE CONTACT:

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