



RTI Semi-Annual Progress Report

Form SemiAnnl
(2/2006)
(GSD-EPC)

Fiscal Year 2007

Date of This Report: August 1, 2007 Project Number: TPF-5(106) / 9-4973 RMC: 5

Period Covered by This Report: March 1, 2007 through August 31, 2007

Project Title: Guidelines for Designing Bridge Piers and Abutments for Vehicle Collisions

	Name	Agency	Phone	Fax	Email
Research Supervisor	Gene Buth	TTI	979-845-6159	979-845-6107	g-buth@tamu.edu
Researcher	Roger P. Bligh	TTI	979-845-4377	979-845-6107	rbligh@tamu.edu
Researcher	William F. Williams	TTI	979-862-2297	979-845-6107	w-williams@tamu.edu
Researcher	Dominique Lord	TTI	979-458-1218		d-lord@tamu.edu
Researcher	Nauman Sheikh	TTI	979-845-8955	979-845-6107	nauman@tamu.edu

1. Requested Changes for Possible Project Modification

Project Personnel: No change of researchers. Mark Bloschock, PD has retired from TxDOT and Gregg Freeby has replaced him as PD.

Work Plan: The project is behind schedule because of the late start. Not all the work planned for this fiscal year will be accomplished during this fiscal year. The FY07 work needs to be carried over into FY 08. Therefore, a modification is necessary.

Deliverables Table: No changes.

Project Termination: No change anticipated

Project Budget: Expenditures during the current fiscal year will be less that budgeted. Approximately \$16,000 will be expended during FY 07 and approximately \$59,000 of the funds budgeted for FY 07 will remain. If policy allows, the remaining funds need to be carried into FY 08. Therefore, a modification is necessary.

2. **Equipment** No equipment purchased.

3. Progress to Date, by Task

This project will develop warrants for design requirements and design loads for vehicle collisions with bridge piers. Warrants will be based on the results of accident analyses performed in task 1c and risk analysis methodology from task 1d. Design loads will be developed on the basis of information from the literature review, computer simulations of collisions, analysis of highway crashes, and full-scale vehicle crash tests.

Phase 1:

1a. Literature review-

The literature search has been completed and applicable documents have been collected and reviewed by the researchers.

Researchers will continue to monitor literature for any new publications.

1b. Computer simulations of vehicle/bridge column and abutment collisions-

Researchers have used a single-unit truck finite element model to simulate a collision with a rigid bridge pier. The model is working properly.

Additional simulations will be performed during the next reporting period.

1c. Accident survey and analysis study-

Researchers, assisted by TxDOT personnel have identified six accidents that have occurred in Texas where heavy vehicles have collided with bridge piers. Detailed information has been collected on two of them.

Accidents from other states will be identified and detailed information on them will be collected.

1d. Development of a risk analysis methodology for vehicle/bridge column and abutment collisions (analogous to AASHTO LRFD vessel impact requirements)

No work has been performed on this task.

1e. Detailed justification and work plan for research (if any) to be conducted under Phase 2 of the project-

No work has been performed on this task.

1f. Provide facilities and host a meeting to present Phase 1 results to project sponsors, including pooled fund project contributors from other state DOT's-

No work has been performed on this task.

Phase 2:

No work has been performed on Phase 2.

4. Progress on Development of “Product” Deliverables

No Product deliverables have been developed.

Product #	Product Description	Progress to Date & Implementation Status
P1	Guidelines supplementing current AASHTO LRFD Specifications for collision loads on piers and abutments, including example utilizing proposed methodology.	
P2	Presentation materials in suitable format for use in introducing concepts and new methodology to bridge design engineers.	

5. Meetings/Conferences

A project meeting with the researchers and TxDOT personnel is being scheduled for August 22, 23 or 24.

6. Possible Candidates for Formal Presentations at the Upcoming RMC Meeting

Not at this time.

7. Miscellaneous

Texas Department of Transportation maintains the information collected through this form. With few exceptions, you are entitled on request to be informed about the information that we collect about you. Under §§552.021 and 552.023 of the Texas Government Code, you also are entitled to receive and review the information. Under §559.004 of the Government Code, you are also entitled to have us correct information about you that is incorrect. For inquiries call 512/465-7403.