

Introduced by _____

First Reading _____

Second Reading _____

Ordinance No. _____

Council Bill No. B 368-12

AN ORDINANCE

authorizing a public infrastructure development cost allocation agreement with Boone County, Missouri for replacement of the Rustic Road bridge over the North Fork of Grindstone Creek; and fixing the time when this ordinance shall become effective.

BE IT ORDAINED BY THE COUNCIL OF THE CITY OF COLUMBIA, MISSOURI, AS FOLLOWS:

SECTION 1. The City Manager is hereby authorized to execute a public infrastructure development cost allocation agreement with Boone County, Missouri for replacement of the Rustic Road bridge over the North Fork of Grindstone Creek. The form and content of the agreement shall be substantially as set forth in "Exhibit A" attached hereto and made a part hereof as fully as if set forth herein verbatim.

SECTION 2. This ordinance shall be in full force and effect from and after its passage.

PASSED this _____ day of _____, 2013.

ATTEST:

City Clerk

Mayor and Presiding Officer

APPROVED AS TO FORM:

City Counselor

**PUBLIC INFRASTRUCTURE DEVELOPMENT
COST ALLOCATION AGREEMENT**

THIS AGREEMENT dated the _____ day of _____, 2013, is made by and between Boone County, Missouri, through its County Commission (herein "County"), and the City of Columbia, Missouri (herein "City").

IN CONSIDERATION of the performance by each party of the respective obligations described herein, the parties agree to and with the following:

1. **BACKGROUND AND PURPOSE OF AGREEMENT** – The City and County may enter into cooperative agreements with governmental parties when necessary to improve public infrastructure. The City and County has determined that there is a need for reconstructing existing public infrastructure consisting of a bridge replacement on Rustic Road over the North Fork of Grindstone Creek located about a mile south of State Route WW and near the proposed Stadium Boulevard (Route 740) extension. The existing bridge is structurally deficient, is narrow and deteriorating. The County applied for and received a grant with the Federal Highway Administration (FHWA) through the Missouri Department of Transportation (MoDOT) to be used towards replacement of the bridge. The type of grant is in FHWA Innovative Bridge Research and Deployment (IBRD) program and will also involve the University of Missouri as a partner with project evaluation and monitoring of innovative design elements. The grant will partially fund the total project improvements, the remainder will be equally funded by the City and County. This improvement will remove the current load restricted crossing serving a long dead end road; that is half in the County and half within the City limits. It has been further determined that is appropriate and reasonable to share the responsibilities for designing, constructing and administering the installation of this improvement as well as allocating an agreed cost of these improvements to be paid as a shared expense by the City and County. The County and the Missouri Highway Commission have entered into a separate agreement for cost share. For these purposes, the City and County are entering into this written agreement to memorialize the terms and conditions of their agreement.
2. **PROJECT** - The improvements to be designed, constructed and installed under this agreement shall be known as: Rustic Road Bridge over the North Fork of Grindstone Creek.
3. **SCOPE OF IMPROVEMENTS** - The general scope of the improvements to be constructed and installed for the Project under this agreement are described as follows:

Reconstruction of an existing bridge built in 1930 and modified in some way in 1950. The bridge will be removed and replaced with a prefabricated bridge system superstructure with Geosynthetic Reinforced Soil (GRS) abutments with a single span (approx. 58') with a 22' wide roadway deck. The project will require hiring a design consultant, moving utilities, and acquiring right of way. The proposed improvements

include: constructing the new bridge, building a temporary by-pass, and re-working the bridge approaches. All design costs, utility relocation costs, and right of way acquisition expenses are also made a part of this agreement.

4. **DESIGN AND CONSTRUCTION** - The project will be designed an outside Engineering Consultant to be determined, (the "Engineer") and paid as a part of project costs; plans and specifications shall be approved by the City and County; the project shall be administered as provided in paragraph 5 and 6 below. The project shall be constructed, subject to the allocation and payment of costs set forth in the agreement and subject to the other terms and conditions of this agreement. All work shall be in accordance with plans prepared by the Engineer and approved by the City and County.
5. **RIGHT OF WAY AND EASEMENTS** - All construction work shall be performed within City and County right of way and easements. The City is responsible for acquiring by negotiation or condemnation all additional easements or property for the project. No construction work shall be performed with respect to the project unless and until all easements, or other property are obtained by negotiation or by condemnation. All acquisition or settlement costs shall counted towards the City's contribution for project costs as provided in paragraph 8 below.
6. **PROJECT ADMINISTRATION** - The County is responsible for informing and communicating with property owners affected by the project with respect to the requirements of the project. The County will be responsible for coordinating, administering and implementing construction work through its construction bidding process. All construction work shall conform to plans prepared by the Engineer and approved by the City and County. The County will be responsible for project staking and inspection of construction work for compliance of the plans and specifications. All construction work shall be subject to final City and County approval upon final inspection. The parties agree to comply with all terms and conditions of this agreement and the City and County acceptance of the roadway for maintenance as a condition to final acceptance of work.
7. **COMPLIANCE WITH OTHER LAWS** - The agreement requires all parties to comply with all other federal, state and local laws, rules, and regulations pertaining to public works contracts as may be applicable to the City when performing or contracting for performance of construction work required under this agreement, including without limitation domestic and Missouri products purchasing statutes.
8. **ALLOCATION AND PAYMENT OF PROJECT COSTS** - City's contribution for project costs including acquiring additional easements or property shall be a sum not to

exceed seventy five thousand dollars (\$ 75,000). No contract for construction shall be awarded if the lowest and best bid for the Project exceeds the construction budget for the project, including amount established for contingency, unless the parties to this agreement agree to supplement the funding for the project to meet construction costs and contingencies. In the event overall project costs do not require expenditure of all monies appropriated to fund the obligations created by this agreement, each party shall be entitled to a refund based upon a proportionate percentage which reflects their respective contributions.

9. **ENTIRE AGREEMENT AND AMENDMENT OF AGREEMENT**- This agreement constitutes the entire agreement of the parties and supersedes all prior negotiations and agreements between the parties, written or verbal, and may be amended only by a signed writing executed with the same formality as this agreement. All parties to this agreement acknowledge that by executing this agreement they have read, considered and understand the terms and conditions of this agreement and consequences thereof.
10. **AUTHORITY OF REPRESENTATIVE SIGNATORIES** - The signatories to this agreement executing this Agreement in a representative capacity affirmatively represent that they obtained all resolutions and orders necessary to enter this agreement and are duly authorized to enter into this agreement and bind the parties which they represent to all terms and conditions contained herein.
11. **BINDING EFFECT** - This agreement shall be binding upon the parties hereto and their respective heirs, personal representatives, successors in interest and successors and assigns in office.
12. **SECTION HEADINGS** - All section headings contained herein are for convenience of reference only and are not intended to define or limit the scope of any provision of this Agreement.
13. **EXECUTION** - This Agreement may be executed in any number of counter-parts, each of which shall be deemed to be an original but altogether shall constitute but one in the same Agreement.
14. **MUTUAL OBLIGATION OF GOOD FAITH PERFORMANCE** - The parties hereto mutually pledge and agree to exercise reasonable diligence and good faith in the performance of their respective obligations under this Agreement and to cooperate to the greatest extent practicable in fulfilling the general terms and conditions and objectives of this Agreement.
15. **IN WITNESS WHEREOF**, the individual parties constituting and representing the City and County, through their original and duly authorized representative signatories have executed this Agreement on the day and year first above written.

BOONE COUNTY, MISSOURI
Through Its County Commission

By: _____
Dan Atwill, Presiding Commissioner

ATTEST:

County Clerk

FORM APPROVED:

By: _____
County Counselor

COLUMBIA, MISSOURI

By: _____
Mike Matthes, City Manager

ATTEST:

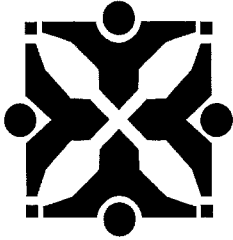
Sheela Amin, City Clerk

APPROVED AS TO FORM:

By: _____
Fred Boeckmann, City Counselor

I hereby certify that this Contract is within the purpose of the appropriation to which it is to be charged, account no. 440-8800-528.49-90, C00531, and that there is an unencumbered balance to the credit of such account sufficient to pay therefore.

John Blattel, Director of Finance



Source: Public Works

John

Agenda Item No:

To: **City Council**
From: **City Manager and Staff**

MH

Council Meeting Date: Dec 17, 2012

Re: Cost Share Agreement with Boone County for Rustic Road Bridge Replacement

EXECUTIVE SUMMARY:

Staff has prepared for Council consideration an ordinance authorizing the City Manager to execute a cost share agreement between the City of Columbia and Boone County regarding the replacement of the Rustic Road Bridge over the North Fork of Grindstone Creek.

DISCUSSION:

The City of Columbia and Boone County have determined that there is a need for the reconstruction of existing public infrastructure consisting of a bridge replacement on Rustic Road, over the North Fork of Grindstone Creek, located about a mile south of State Route WW and near the proposed Stadium Boulevard (Route 740) extension. The existing bridge was built in 1930 and modified in 1950. The bridge is structurally deficient, narrow and deteriorating. The bridge will be removed and replaced with a prefabricated bridge with a single span (approx 58') with a 22' wide roadway deck. There are approximately ten homes, south on the dead end road, with no other access. This improvement will remove the current load restricted crossing that is half in the County and half within the City limits. The project will require hiring a design consultant, moving utilities, and acquiring right of way. All design costs, utility relocation costs, and right of way acquisition expenses are also made a part of this agreement. Boone County will be the lead agency on the project.

Boone County applied for, and received, a grant from the Federal Highway Administration (FHWA) through the Missouri Department of Transportation (MoDOT), to be used towards replacement of the bridge. The type of grant is in the FHWA Innovative Bridge Research and Deployment (IBRD) program and will also involve the University of Missouri as a partner, with project evaluation and monitoring of innovative design elements. The grant will partially fund the total project improvements, and the remainder will be equally funded by the City and County. The County and the Missouri Highway Commission have entered into a separate agreement for cost share. For these purposes, the City and County are entering into this written cost allocation agreement to memorialize the terms and conditions of their agreement for the cost share.

FISCAL IMPACT:

The City's contribution for project costs shall not exceed \$75,000. Funds have been transferred from the Annual Streets project.

VISION IMPACT:

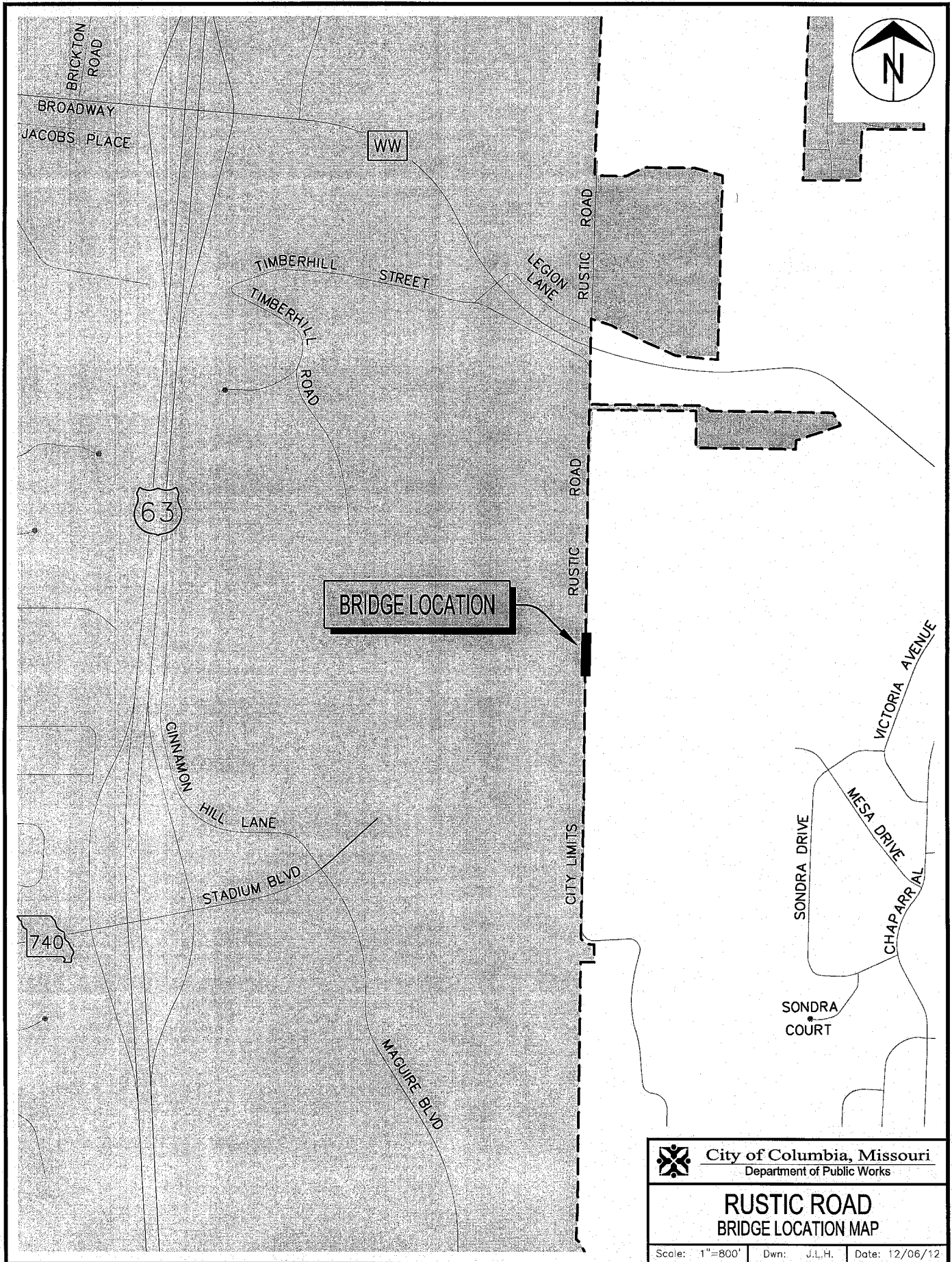
<http://www.gocolumbiamo.com/Council/Meetings/visionimpact.php>

A network of safe roadways in and around the City will provide sustainable, efficient mobility to vehicular travel and other modes in a complimentary manner.

SUGGESTED COUNCIL ACTIONS:

Authorize the City Manager to execute a cost share agreement between the City of Columbia and Boone County regarding the replacement of the Rustic Road Bridge over the North Fork of Grindstone Creek.

FISCAL and VISION NOTES:					
City Fiscal Impact Enter all that apply		Program Impact		Mandates	
City's current net FY cost	\$0.00	New Program/ Agency?	No	Federal or State mandated?	No
Amount of funds already appropriated	\$100,000.00	Duplicates/Epands an existing program?	No	Vision Implementation impact	
Amount of budget amendment needed	\$0.00	Fiscal Impact on any local political subdivision?	No	Enter all that apply: Refer to Web site	
Estimated 2 year net costs:		Resources Required		Vision Impact?	Yes
One Time	\$0.00	Requires add'l FTE Personnel?	No	Primary Vision, Strategy and/or Goal Item #	13
Operating/ Ongoing	\$0.00	Requires add'l facilities?	No	Secondary Vision, Strategy and/or Goal Item #	13.3
		Requires add'l capital equipment?	No	Fiscal year implementation Task #	



COPY

Innovative Bridge Research and Deployment Program

FY2012 APPLICATION FORM

State Missouri

State's Priority Ranking: # 1 of 3

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

NBI structure number 21932 Missouri off-system # 3310004 County Boone

Congressional District Ninth

Name of Congressional Representative Blaine Luetkemeyer

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

Rustic Road bridge (new number 33100041) over the North Fork of Grindstone Creek

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

Con-Struct prefabricated bridge system superstructure with Geosynthetic Reinforced Soil (GRS) abutments

Single span (approx. 58') with 22'-0 roadway width and 12" Kansas corral rails

Innovative designs, materials and construction methods (describe the designs, materials, and/or construction methods; and how they promote Accelerated Bridge Construction and supports FHWA's Every Day Counts Initiative on Accelerating Technology & Innovation Deployment). Each application (proposal) shall include and address the following items:

1. Project Name: **GRS and PBES technology on Bridge No. 33100041**
2. Project classification/technology: **Geosynthetic Reinforced Soil Integrated Bridge System with Con-Struct Prefabricated Bridge Elements to accelerate construction**
3. Project Summary: See Below
4. Project Description:
 - a. Describe designs, materials and construction methods;
 - b. Describe how the project(s) meet the FHWA's Every Day Counts (EDC) Initiative on Accelerating Technology & Innovation Deployment; and
 - c. Technical merits (technical details, quality of innovation, technically sound, cost effective, likelihood of having a lasting impact on the State, and likelihood of having a national lasting impact.) **Note:** Please limit the narrative (proposal) on this section to 4 pages.

Please see the attached Summary and Project Description.

Schedule for start of work (month/year): July 2012 Letting

2012 Discretionary Grant Programs

Cost Estimates:

Total project cost:	P <u>\$270,000</u>
Preliminary engineering cost, if requested	A <u>\$30,000</u>
Cost of "innovative material/method" portion of the construction	B <u>\$166,000</u>
Cost of documenting construction practice evaluation and lessons learned	C <u>\$40,000</u>
PE costs + construction costs + evaluation costs = (A + B + C + D)	T <u>\$236,000</u>

Total Federal Program Funds Requested \$236,000

Commitment of Other Funds Boone County and the City of Columbia are covering other project costs.

State Department of Transportation Contact Person:

Name: Bill Stone
Title: Research Administrator
Agency: Missouri Department of Transportation
Ph: 573-526-4328
Fax: 573-526-0857
E-mail: William.Stone@modot.mo.gov

Local Agency Contact Person (if applicable):

Name: Derin Campbell, P.E.
Title: Chief Engineer of Resource Management
Agency: Boone County, MO
Ph: (573) 886-4480
Fax: (573) 886-4340
E-mail: dcampbell@boonecountymo.org

FHWA Division Office Contact Person:

Name: Ken Foster
Title: Division Bridge Engineer
Agency: FHWA Missouri Division
Ph: 573-638-2613
Fax: 573-636-9283
E-mail: ken.foster@dot.gov

Project Name: Geosynthetic Reinforced Soil Integrated Bridge System and Prefabricated Bridge Elements on Bridge No. 33100041

Project Classification: GRS-IBS and PBE to Replace Existing Structure

Summary and Project Description:

The existing bridge is Structurally Deficient and in need of replacement.

Bridge 3310004 is a narrow, deteriorating and under strength one-lane bridge located directly on the Columbia city limits. Traditional methods to replace the superstructure might be able to increase the load posting, but they cannot provide a wider driving surface.

Missouri has many small state and off-system bridges that will need to be replaced or rehabilitated in the near future. GRS bridge systems and PBE have the potential to be low-cost options for rehabilitating or replacing these smaller bridges. While several states have tried GRS technology on bridges, Missouri has yet to adopt this technique. By utilizing IBRD funds to take the risk out of funding both of these innovative technologies, MoDOT, local public agencies and Missouri contractors can get experience and develop a comfort with Geosynthetic Reinforced Soil Integrated Bridge Systems and prefabricated bridge elements like Con-Struct.

The Con-Struct Prefabricated Bridge System is composed of galvanized steel tub girders which are made composite with a precast concrete deck. The trapezoidal shape requires no welding or lateral bracing which eliminates fabrication of cross frames and the construction time required to erect them. Once the beam and deck sections are placed, they can be tied together by transverse post-tensioning and/or a cast-in-place concrete tie pour. The Con-Struct Prefabricated Bridge System also is quick and relatively inexpensive. It can be delivered and erected for roughly the same cost as a concrete box culvert and reduces / eliminates disturbance to the underlying stream. This system has the potential to be a great option for these smaller bridges, especially like this project where environmental concerns would likely eliminate using a box culvert and where the city plans to build a multi-use pedestrian trail in the future.

GRS-IBS technology is a market-ready technology used in several states. By combining GRS with Prefabricated Bridge Elements, the construction process can be greatly accelerated. User costs are especially difficult to quantify at this location as the bridge provides the only access to school buses, emergency vehicles and other services to homes on the south side of the creek. A lengthy bridge closure and temporary detour route would greatly impact these families and their livelihoods.

We believe this project meets the Every Day Counts Initiative for:

The use of GRS-IBS and prefabricated bridge superstructure elements will Accelerate Technology and Innovation Deployment and shorten program delivery time by reducing the time and cost associated with deep foundations and superstructure construction. (See emphasis areas A and B below.)

We believe this project qualifies under four IBRD emphasis areas:

A. The development of new, cost-effective, innovative highway bridge applications:

GRS-IBS and PBE are new technologies being deployed for bridges and Missouri does not have any experience with GRS and the Con-Struct prefabricated bridge system. In order for local public agencies and MoDOT to be comfortable with these innovative and relatively new bridge systems, a pilot project is needed. Success of a pilot project could pave the way for this innovation to become an option for low-volume bridges in Missouri. The galvanized girders and composite precast deck lead to a long lasting structure that can be built quickly. Since the trapezoidal shaped girders are an efficient shape compared to traditional girders, it is of a lighter weight and may be a more viable option for future superstructure replacement projects where the substructure is still in good condition but can't be overstressed.

B. The development of construction techniques to increase safety and reduce

construction time and traffic congestion: Both the GRS-IBS system and PBE can be used to accelerate bridge construction. The quick foundation construction along with the use of prefabricated bridge elements can significantly reduce construction time compared to traditional bridge designs. By reducing construction time, it is safer for drivers and workers as well as reducing the congestion associated with work zones. Work zones put the traveling public and construction workers at higher risk. The Con-Struct Prefabricated Bridge System can also be used to accelerate bridge construction. The Con-Struct system is prefabricated with the final driving surface so it can be delivered, installed and opened to traffic in one day.

D: The reduction of maintenance costs and life-cycle costs of bridges, including costs of new construction, replacement or rehabilitation of deficient bridges: The Con-Struct Prefabricated Bridge System allows for the steel girders to be hot-dipped galvanized to protect the steel from corrosion and provide 50+ years of maintenance free protection. The precast concrete deck is precompressed during the fabrication process thereby reducing or eliminating temperature and shrinkage cracks in the deck. By reducing cracks in the deck, the amount of water and chloride infiltration is significantly reduced thus extending the life of the bridge deck.

F: The documentation and wide dissemination of objective evaluations of the performance and benefits of these innovative designs, materials, and construction methods:

The project team (Boone County, City of Columbia, MoDOT and the University of Missouri-Columbia) plans to document this new technology and publish a project summary report. If the project is successful, presentations at conferences and peer exchanges will be planned. Project information will also be shared with LTAP program members as these technologies appear to be ideal for smaller rural projects.

Project Evaluation:

Project evaluation is expected to be conducted primarily by the University of Missouri at Columbia (UMC) with supporting monitoring by MoDOT. The work by UMC will concentrate on evaluating the abutment capacities and deformations, along with the impact of flow velocities and pore water pressure on the performance of the abutments during construction and in-

2012 Discretionary Grant Programs

service. Evaluation of the GRS-IBS and prefabricated bridge elements will also involve observation and documentation of the installation feasibility and general performance of the system over time. Perceptions of the contractor and the inspector from the local public agency will also be documented to determine if there were any constructability issues.