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FINAL REPORT

## **PROVIDING ENGINEERING SERVICES TO COUNTIES**

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## **PREFACE**

The Kansas Department of Transportation's (KDOT) Kansas Transportation Research and New-Developments (K-TRAN) Research Program funded this research project. It is an ongoing, cooperative and comprehensive research program addressing transportation needs of the state of Kansas utilizing academic and research resources from KDOT, Kansas State University and the University of Kansas. Transportation professionals in KDOT and the universities jointly develop the projects included in the research program.

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## **ABSTRACT**

An engineer is required by law to safeguard the health, safety and welfare of the public. The current Kansas Statute states, “The Board of County Commissioners of each county shall appoint a licensed professional engineer, whose title shall be county engineer.” (K.S.A. 68-501). The statute needs to be changed because it is not economically or socially feasible for each county in the State of Kansas to hire a county engineer. Therefore, it is necessary for each county to have access to engineering services because engineering activities are conducted in every county sometime during the year.

Statute KSA 68-501 should also be changed for another reason. This statute gives the county commissioners the right to fire a county engineer without cause on June 1 of every year, if a majority of the commissioners do not believe the county engineer is doing an adequate job. This also pertains to road supervisors and highway administrators. Having this statute in place makes it more difficult to hire county engineers because of the fear of being fired on June 1 of each year. This Statute was brought up several times at meetings throughout the State.

As a result of this particular research project, a transportation break-through team of the Kansas Collaborative was developed. This Kansas Collaborative had three initiatives. One was to establish a local road engineer; two, to establish purchasing procedures using State contract pricing, and three, to establish a contract project notification procedure. These initiatives have been implemented.

To comply with the requirements of the State statutes, to protect the health, safety and welfare of the public, and to reduce the liability of counties, every county in Kansas should have access to engineering services. This can be attained by hiring a county engineer, hiring an engineer to work in two or more counties or to have a working relationship with an engineering consultant.

## **ACKNOWLEDGMENTS**

This research project could not have been completed without the KDOT monitor, Jim Gough. The members of the Advisory Committee listed in Appendix A had a definite impact on this project. Their comments and time were greatly appreciated. Ron Seitz, KDOT, helped to set up a meeting with the Secretary of Transportation and he wrote KDOT's White Paper found in Appendix E. The efforts of Ron Meredith from Riley County and Gene Merry, a commissioner from Coffee County, were particularly important on this project.

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## INTRODUCTION

This is a final report or a project report for K-Tran Project entitled “Providing Engineering Services to Counties”. As documented by K-TRAN Research Project KU/KSU 03-3, “A Study of the Duties of a County Engineer in the State of Kansas,” many duties of a county engineer require a professional engineer as defined by Kansas Statute KSA68-501, which requires counties to appoint a county engineer. About 75% of the Kansas counties do not have an appointed county engineer, which is against existing State statute. The purpose of this research project is to identify alternatives on how counties may obtain the services of a professional engineer, identify the means and funding, if appropriate, for counties to implement these alternatives and generate political support for implementation. It is important to realize that this effort is not to eliminate road supervisors or highway administrators, but to provide access to an engineer as appropriate for each county.

This research project was divided up into several tasks. Task One was to form a representative cross-section committee of stake holders to identify alternatives and means of implementation. The second Task was to submit information and background to this committee for its review and clearly identify the need to providing engineering services to counties. Tasks Three, Four, Five and Six were to hold a series of meetings to answer questions and understand the process to be used to the committee, then hold a brain storming meeting to determine possible ideas, then to hold another meeting to determine alternative evaluation criteria and weights, and then to have a last meeting to

come up with an implementation process. The last task was to develop and submit a report to KDOT.

What is the value of having engineering services in every county in the State of Kansas? An engineer is required, by law, to safeguard the health, safety, and welfare of the public. The current Kansas Statute states, "A board of county commissioners of each county shall appoint a licensed professional engineer whose title shall be County Engineer". (KSA68-501) Engineers perform work under an accepted code of ethics and the statutes, rules, and regulations of the Kansas State Board of Technical Professions. These standards require that an engineer protect the public at all times. To comply with the requirements of the State statutes to protect the health, safety, and welfare of the public, and to reduce the liability of counties, every county in Kansas should have access to engineering services. It is not economically or socially feasible for each county in the State of Kansas to hire a county engineer. However, it is necessary for each county to have access to engineering services because engineering activities are conducted in every county at some time during the year. K-TRAN report, KU/ KSU 03-3, 2005, developed a list of functions to be performed by an engineer based on the current Kansas statutes. (See Appendix C) Under engineering, the following tasks were listed: (1) establish standards for improvement projects such as bridges, culverts, and roads; (2) roadway bridge and culvert design; (3) bridge design for county crew construction; (4) size large culverts and bridges; (5) determine structural repairs on bridges and culverts (load bearing capacity); (6) compute runoff rates; (7) evaluate major flooding problems. Under bridge and road construction, the following tasks require an engineer: (1) submit State and Federal designed permit applications; (2) prepare construction

specifications, construction; and (3) inspection oversight. Under planning and zoning: (1) review new developments; (2) review drainage studies; (3) standards for new development. And, under safety: (1) engineering studies including installation of new traffic signs and the removal of existing traffic signs; (2) signing plans for projects and detours; (3) design of roadway safety improvements; (4) evaluate the speed limits. These and other activities under each of these categories could be performed by either an engineer or a non-engineer under the supervision of an engineer. There were also categories on maintenance of road network, administration, and miscellaneous, which lists other functions that could be done by either an engineer or a non-engineer.

### **Advisory Committee**

At the beginning of this project, an Advisory Committee was established. This Advisory Committee was made up of six county commissioners, two consultants who do work for the counties, three engineers, two road supervisors, two KDOT personnel, Gene Russell, Professor Emeritus from K-State and Tom Mulinazzi, Professor from KU. A list of the members of this Advisory Committee for providing engineering services to counties can be found in Appendix A. This committee met three times at the District Two, KDOT office in Salina. The first meeting was on May 17, 2005, the second meeting was on June 22, and the third meeting was on August 3, all in 2005. Minutes of the May 17 and June 22 meetings are contained in Appendix B. The purpose of the August 3 meeting was to discuss a meeting with the Secretary of Transportation, Deb Miller and the Assistant Secretary of State and Transportation Engineer, Warren Sick, Gene Merry, the Crawford County Commission, Chair of the County Commissioners and Tom Mulinazzi from August 2, 2005. The minutes of this meeting with the Secretary

are also included in Appendix B. This was a very hard working committee, the members of which were not afraid to express their opinions, even though other members of the Committee may not agree with them. This is what made the Committee very worthwhile. One of the recommendations of this Committee was to develop a tool box for engineers and county road supervisors to help them obtain engineering services in their county. Appendix B has a lot of these “tools” that the Advisory Committee recommended. There are several different agreements for professional services between a county and a consultant; and a qualification based selection coordinates; an agreement for engineering services for Federal Aid projects; and an agreement between a city and a consultant for engineering services. The Committee felt that a lot of the counties did not know where to go to find these documents.

Gene Merry was a member of this Advisory Committee. He is also the Chairman of the Kansas County Commissioners. He was very instrumental in the conduct of this research. He not only met with the Advisory Committee, but he attended the meeting with the Secretary of Transportation on August 2.

### **Other Meetings**

The researchers also met with a group of road supervisors and highway administrators to get their input into the process of how to provide engineering services to individual counties in Kansas. A second meeting was held with county engineers to discuss the same topic. It was decided not to have these two groups meet together because of the differences in opinions on how to get engineering services in counties. One thing became very obvious in all these meetings. There has to be a way to get engineering services into counties when an engineering function is being performed.

Conversations were held with several county road supervisors and county highway administrators, and they all stressed “their need for access to an engineer to answer questions which require engineering judgment or an engineering study”. Why is it a positive step to make engineering services available to every county? One reason is to minimize a county’s liability. Many of the standard references used in county projects require that an engineering study or engineering judgment be used to implement a project. For example, an engineer, or someone working under the direction of an engineer, is required to make the decision to install many traffic signs. Another reason is to allow the county to get the bigger bang for its buck. An engineer familiar with State programs can match county funds with State money. If an engineer cannot earn his or her salary by saving the county money, then the engineer is not doing his or her job.

In the conduct of this research, many possible alternatives for resolving the problem of not having engineering services in every county were developed. These were: (1) have a county extension/agent concept; (2) place a KDOT local road engineer in each of the six KDOT highway districts to serve as the local engineer for the counties in that district; (3) repeal the statute which states that an engineer can be fired without cause by a majority of the commissioners. This statute does hinder the retention of county engineers. (4) Go to the Missouri system of road management where KDOT would have responsibility for all the roads in Kansas. In other words, there would be no county roads system; (5) the State would give each county a significant amount of money to hire a county engineer; (6) set up county engineering districts throughout the State with an engineer hired by each district; (7) the State would certify available consultants to be responsible engineers for a county or a group of counties; (8) set up a

county intern program where civil engineering students receive scholarships but must work in a county for a year for every year that they have a scholarship; (9) provide graduate assistantships for graduate students who earn BS degrees in civil engineering and require them to work on county related problems; (10) expand the LTAP program to include assisting counties with engineering problems. The problem with this last solution is it would make the consultants angry because the LTAP program would be perceived as taking jobs away from the consultants. These ideas are not in any particular priority order. They are just initial thoughts of the project team and the committee.

On August 2, 2005, a meeting was held with the Secretary of Transportation, Deb Miller. Those in attendance were Secretary Miller, Assistant Secretary of State Transportation Engineer Warren Sick, Gene Merry, Coffee County Commissioner, the Chair of the County Commissioners, and Tom Mulinazzi, Professor of Civil Engineering. The meeting started by going over some of the points contained in the July 20, 2005 memorandum. The Secretary was not aware of the State statute which gave county commissioners the right to fire their county engineer or road supervisor on June 1 without cause. She was aware, however, of the statute requiring each county to have a county engineer. She agreed with rewording the statute to say something similar to; each county shall show proof of having access to engineering services. Dr. Mulinazzi then told the Secretary that the purpose of this meeting was to see if any money was available from KDOT to support getting engineering services into each county. Some of the points discussed were: (1) KDOT did see a value in this approach. (2) The Kansas Association of Counties might administer the distribution of this money. (3) KDOT would

study this and prepare a White Paper discussing what might be done. Warren Sick would be the contact person and will prepare this White Paper. In reality, Ron Seitz prepared the White Paper. (4) John Gough and Ron Seitz were appointed to represent KDOT on this committee. (5) Getting engineering in the counties would definitely be beneficial to KDOT. (6) It might be a good idea to make this a match between the counties and KDOT to give counties some ownership. (7) Rural road safety should be an emphasis of this program. (8) Warren was familiar with the previous effort to give \$40,000 to each county to support engineering services. (9) The new Federal Transportation Bill increases the money coming to KDOT. (10) KDOT would have to look at any commitment like this in relationship to future funding. (11) It might be better to use all State money for a project like this. Federal money brings additional strings. Federal money could be shifted to certain areas which could free up State money.

As a result of this meeting with the Secretary on August 2, 2005 a White Paper entitled "KDOT Support of Professional Engineering for Counties" was written on May 11, 2006. The complete copy of this White Paper is contained in Appendix E. This White Paper did recognize that the counties do need professional engineering services for the performance of many technical duties related to the design, construction, and maintenance of their transportation facilities. This White Paper contained seven options for KDOT to investigate. Option 1 was do nothing. Option 2 was to request legislation to be written creating a set aside program that would provide funding to reimburse counties for expenses incurred in obtaining engineering services in any of the methods outlined above. It was recommended in Option 2 that reimbursement for individual counties would be based on 80% of documented costs up to a maximum of \$40,000 per

year. Option 3 would set aside State Transportation fund dollars in KDOT's budget to provide a reimbursement program. Option 4 would establish a fund utilizing State Transportation dollars to provide a reimbursement program for counties requiring engineering staff or services. The State dollars set aside for this fund would be replaced with an equal amount of Federal Money. Option 5 – utilize Federal STP dollars to support the engineering function. Option 6 – revise the policy to allow the use of Federal matching funds for preliminary engineering on Federal aid projects. Option 7 – create or revise one or more positions in KDOT to function as a consultant to counties to provide them advice.

KDOT went through a fiscal analysis and came to the conclusion that option 2 or 4 would be considered and investigated further. Option 2 could be implemented as a private program for three years with a goal of having participation by 60% of the counties obtaining engineering services that are reimbursable under this program. What actually was implemented was KDOT giving the Kansas Associate of Counties a sum of money to hire a local road engineer. This was implemented in March of 2007. Norm Bowers is serving in that position right now and is doing an excellent job.

## **Conclusion**

As a result of this particular research project, a transportation break-through team of the Kansas Collaborative was developed. This Kansas Collaborative had three initiatives. One was to establish a local road engineer; two, to establish purchasing procedures using State contract pricing; and three, to establish a contract project notification procedure. Norm Bowers was hired as the local road engineer and he seems to be doing an excellent job. In conversation with several county engineers they

expressed an appreciation for Norm Bowers and his efforts, especially the bi-weekly updates, which he sends out to all county engineers and road supervisors. This, in itself, seems to be a very worthwhile outcome of having this local road engineer. As a result of a previous study done under the K-Tran Program, entitled “A Study of the Duties of a County Engineer in the State of Kansas”, a card was developed listing the road and bridge tasks in Kansas to be completed by a licensed engineer or under the direct supervision of an engineer, and those tasks which do not require an engineering license. This card is in Appendix C.

Statute KSA 68-501 County Engineer must be changed. It currently reads, “The Board of County Commissioners of each county shall appoint a licensed professional engineer whose official title shall be County Engineer.” It is strongly recommended that this statute be rewritten to say “The Board of County Commissioners of each county shall have a process in place to insure that the county has access to engineering services, either through a county engineer, a consultant, a county engineering district, or any other means to insure that engineering services are made available in each county.”

Statute KSA 68-501 should be changed for another reason. This statute gives the county commissioners the right to fire a county engineer without cause on June 1 of every year, if a majority of the commissioners do not believe the county engineer is doing an adequate job. This also pertains to road supervisors and highway administrators. Having this Statute in place makes it more difficult to hire county engineers because of the fear of being fired on June 1 of each year. This Statute was brought up several times at meetings throughout the State.

Two presentations were made based on the results of this research project. The first was on October 11, 2006 in Topeka, and the second was on November 8, 2006 in Manhattan. The purpose of these presentations was to let the county engineers, road supervisors, and highway administrators know the results of this research project and to get their feedback.

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