



**PERFORMANCE AUDIT REPORT**  
**Limited-Scope Audit**

**Highway Construction: Reviewing KDOT's Plans for  
Construction on Highway 183 South of Plainville**

**A Report to the Legislative Post Audit Committee  
By the Legislative Division of Post Audit  
State of Kansas  
July 2005**

# **Legislative Post Audit Committee**

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## **Legislative Division of Post Audit**

**THE LEGISLATIVE POST** Audit Committee and its audit agency, the Legislative Division of Post Audit, are the audit arm of Kansas government. The programs and activities of State government now cost about \$10 billion a year. As legislators and administrators try increasingly to allocate tax dollars effectively and make government work more efficiently, they need information to evaluate the work of governmental agencies. The audit work performed by Legislative Post Audit helps provide that information.

We conduct our audit work in accordance with applicable government auditing standards set forth by the U.S. Government Accountability Office. These standards pertain to the auditor's professional qualifications, the quality of the audit work, and the characteristics of professional and meaningful reports. The standards also have been endorsed by the American Institute of Certified Public Accountants and adopted by the Legislative Post Audit Committee.

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July 15, 2005

To: Members, Legislative Post Audit Committee

Representative John Edmonds, Chair  
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Representative Tom Sawyer

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This report contains the findings and conclusions from our completed performance audit, *Highway Construction: Reviewing KDOT's Plans for Construction on Highway 183 South of Plainville*.

We would be happy to discuss the findings presented in this report with any legislative committees, individual legislators, or other State officials.

Barbara J. Hinton  
Legislative Post Auditor

## Get the Big Picture

Read these Sections and Features:

1. **Executive Summary** - an overview of the questions we asked and the answers we found.
2. **Conclusion and Recommendations** - are referenced in the Executive Summary and appear in a box after each question in the report.
3. **Agency Response** - also referenced in the Executive Summary and is the last Appendix.

## Helpful Tools for Getting to the Detail

- In most cases, an “**At a Glance**” description of the agency or department appears within the first few pages of the main report.
- **Side Headings** point out key issues and findings.
- **Charts/Tables** may be found throughout the report, and help provide a picture of what we found.
- **Narrative text boxes** can highlight interesting information, or provide detailed examples of problems we found.
- **Appendices** may include additional supporting documentation, along with the audit **Scope Statement** and **Agency Response(s)**.

# EXECUTIVE SUMMARY

LEGISLATIVE DIVISION OF POST AUDIT

## Would the Approach To Widening Highway 183 Suggested by Some Local Residents Be Less Costly Than the Approach KDOT Has Adopted?

**KDOT is planning to reconstruct a six-mile stretch of U.S. Highway 183 between Plainville and Hays.** ..... page 2  
*Highway 183 serves as a direct connection from Plainville to Hays. KDOT has decided to reconstruct the Highway 130 feet to the west of the existing pavement, and tear out the existing Highway after construction is completed. Construction is planned to begin in early 2006 at an estimated cost of \$9.4 million.*

**KDOT didn't solicit input from local residents during the project's design phase.** ..... page 3  
*KDOT's written policy says that public involvement should be part of the development process on all highway projects. KDOT can use a variety of methods in soliciting this input. For this and other projects that use federal funding, KDOT follows federal law in determining the amount of public involvement required. The scope and environmental impact of the Highway 183 project didn't require KDOT to hold a public meeting or hearing.*

*After KDOT notified local landowners that they would be buying the right-of-way for the project, residents and landowners requested a public meeting on the design plan for the Highway. At the public meeting, held in July 2004, several residents asked KDOT to consider whether it would be less costly to reconstruct Highway 183 in its current location and detour traffic around the roadway during construction.*

**An alternative plan some residents suggested for expanding the Highway 50 feet to the west may have been less costly.** ..... page 4  
*Under this proposal, they said, KDOT could eliminate the cost of moving utilities on the east side of the road, and could reduce land acquisition costs because it would need 81 fewer acres of right-of-way. Other benefits local residents attributed to the plan included the Highway would be kept farther away from two houses along the route, a rental house in the path of the new Highway wouldn't need to be taken and destroyed, and less land would be removed from the county tax rolls.*

*KDOT officials estimate the local proposal for reconstructing Highway 183 just 50 feet to the west would cost about \$9 million, or about \$434,000 less than KDOT's plan to reconstruct the Highway 130 feet to the west.*

**KDOT officials told us they hadn't considered what local residents are proposing because of long detours.** ..... page 6  
*According to KDOT officials, closing Highway 183 would have meant detouring traffic 71 miles*

to the east through Russell, or 93 miles to the west through Wakeeney. KDOT officials cited several concerns with the long detour routes, including slowing the response times of emergency vehicles traveling to the Regional Medical Center in Hays, the negative impact on local businesses, and the overall cost to motorists in extra time spent driving during the Highway closure.

Local residents suggested another possible detour of just 50 miles to KDOT officials. KDOT officials estimated it would cost about \$4 million to improve the suggested route sufficiently to safely handle the increased traffic.

Local residents questioned KDOT's concern about having to close a highway and detour traffic, when it had done that same thing on past projects in the area. KDOT officials told us the detours on the past projects weren't as long as the ones proposed for this project and the Highway under construction didn't serve as a direct connection to a major urban area. We noted some local residents support KDOT's decision to leave the road open during construction, while others oppose it.

**If KDOT changed its approach to the project now, redesign and other costs likely would offset any potential cost savings.** ..... page 8  
*If the project were to be changed at this point, it likely would cost closer to \$10 million. According to KDOT officials, more than \$560,000 has already been spent to design and engineer the project. Redesigning the Highway, estimated to cost \$300,000, would delay bidding and construction processes for one year and add about \$250,000 in inflation.*

**Conclusion** ..... page 9

**APPENDIX A: Scope Statement** ..... page 10

**APPENDIX B: Agency Response** ..... page 11

This audit was conducted by Lisa Hoopes. Leo Hafner was the audit manager. If you need any additional information about the audit's findings, please contact Ms. Hoopes at the Division's offices. Our address is: Legislative Division of Post Audit, 800 SW Jackson Street, Suite 1200, Topeka, Kansas 66612. You also may call us at (785) 296-3792, or contact us via the Internet at LPA@lpa.state.ks.us.

# Highway Construction: Reviewing KDOT's Plans for Construction on Highway 183 South of Plainville

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The Kansas Department of Transportation (KDOT) has begun planning for a highway-widening project on a six-mile stretch of Highway 183 south of Plainville in Rooks County. To avoid creating long detours on the project, KDOT has proposed leaving the existing roadway in place during construction and building a parallel road directly west of the existing lanes. Once the new lanes have been constructed, the existing roadway would be removed.

Local residents have suggested it would be less costly for KDOT to create detours and use the existing road alignment to widen the road. According to the residents, when KDOT officials compared the cost of its plan to their plan, it concluded KDOT's plan would be less costly. However, local residents claim that KDOT's analysis was flawed.

Because of concerns the State may be spending more money than needed for this project, legislators have questioned whether the approach proposed by local residents could be more cost-effective and, if so, why KDOT did not adopt that approach. We addressed the following question in this limited-scope audit:

**Would the approach to widening Highway 183 suggested by some local residents be less costly than the approach KDOT has adopted?**

To answer this question, we reviewed cost estimates prepared by KDOT and local residents to determine the total cost of each design option. We interviewed local residents about their proposal and other concerns about the project. We also interviewed KDOT officials about the reasons for their design choice, the public involvement policies of the Department, past highway projects in the area, and several aspects and associated costs of the project. In addition, we reviewed correspondence from local residents in KDOT's files, which was both in favor of and against the KDOT project design. In addition, we traveled to Plainville to view the proposed project and possible detour options that exist.

In conducting this audit, we followed the applicable government auditing standards set forth by the U.S. Government Accountability Office. Our findings begin on the next page.

***Would the Approach To Widening Highway 183 Suggested by Some Local Residents Be Less Costly Than the Approach KDOT Has Adopted?***

**ANSWER IN BRIEF:**

*KDOT has chosen to reconstruct six miles of Highway 183 from the south end of Plainville to the Rooks County border by leaving the existing pavement in place during construction and building new lanes approximately 130 feet to the west. An alternative plan proposed by some local residents may have been about \$434,000 less costly if it had been considered when KDOT first began designing the project. However, KDOT officials say they never considered that approach because of the long detours and safety issues involved. Residents in the area appear to be split on whether Highway 183 should remain open or be closed during construction. If a new approach were taken to reconstructing the Highway at this point, it appears that redesign costs and costs caused by construction delays likely would offset any construction cost savings that may have existed.*

***KDOT Is Planning To Reconstruct a Six-Mile Stretch of U.S. Highway 183 Between Plainville And Hays***

Highway 183 serves as the direct connection from Plainville to Hays. That stretch of road has an average traffic volume of 3,000 vehicles per day, about 17% of which are commercial trucks. Many area residents use Highway 183 to get to work in either Plainville or Hays.

As noted below, the plan for this project changed in 1999:

- **KDOT's initial plan called for Highway 183 to be rehabilitated, which would have involved removing the top four inches of asphalt, re-paving the road, and widening the shoulders.** This plan was developed in 1996, when KDOT originally made the project part of the Comprehensive Transportation Plan. Its estimated cost was \$6.3 million.
- **KDOT changed the scope of the project when it decided to reconstruct Highway 183 by building a new highway parallel to the existing one but 130 feet to the west, and subsequently tearing out the old Highway.** Officials told us they made this decision in early 1999 after finding significant cracking and rutting on the 50-year-old pavement. Under this approach, traffic wouldn't have to be detoured because the existing Highway would stay open until the new Highway was completed.

The project is in late design phases and will go out for bids in October 2005. Construction is planned to begin in early 2006, and should be completed within eight months at an estimated cost of \$9.4 million. That cost includes purchasing an additional 120 acres of private land to the west of the existing pavement for right-of-way needs, moving utilities, constructing the new Highway, and demolishing the old.

***KDOT Didn't Solicit Input from Local Residents During the Project's Design Phase***

KDOT's written policy says that public involvement should be part of the development process on all highway projects. The purpose is to gather information and use it to make project decisions in the best interest of the public.

KDOT can use a variety of methods in soliciting this input. Besides public hearings and meetings, it may make the public aware of its plans by putting out information kits, news releases or articles, advertisements, and radio and TV reports.

For this and other projects that use federal funding, KDOT follows federal law in determining the amount of public involvement required. Federal law breaks highway projects into different classes and types. A project's class and type depends on its scope and environmental impact. *Figure I-1* below shows the types of projects requiring informational meetings or public hearings according to federal requirements.

Figure I-1 Federal Requirements for Public Hearings on Highway Projects				
Required Activity	Class I	Class II-A	Class II-B	Class III
Informational Public Meeting	Yes	No	No	No
Opportunities for Public Hearing	Yes	No	No	No
Example(s) of Type of Project	New freeway; highway project of four or more lanes on a new location	Utility installation; construction of bicycle or pedestrian lanes; highway landscaping	Reconstruction of an existing highway that doesn't change access to the area	Environmental impact isn't clearly established, and project isn't a Class I or II
<b>Source:</b> "Guidelines for Public Involvement & Class of Action Determination," Kansas Department of Transportation				

Highway 183 is a Class II-B project, which didn't require KDOT to hold a public meeting or hearing. According to KDOT officials, there usually isn't public concern when a project doesn't involve a detour. For the current project, after the project had been designed KDOT issued a news release and sent letters to affected landowners about acquiring their land to build the new highway.

**After KDOT notified local landowners that they would be buying right-of-way for the project, residents and landowners requested a public meeting on the design plan for the Highway.** A public meeting was held in July 2004. KDOT briefed Plainville public officials on the project design, the history of construction

done on Highway 183, historical and future estimated traffic trends, design options, detour considerations, and reasons for the reconstruction design chosen.

After the presentation, local residents attending the meeting raised a number of questions and concerns, including the following:

- whether it would cost less to reconstruct Highway 183 in its current position without moving it to the west
- whether the existing Highway would be removed after completion of the new construction
- whether one or more detours would be involved with the project and, if so, where and how long they would be
- if detours were involved, how closing the road would affect the response time for medical transfers to the Hays Regional Medical Center
- if more land were taken than needed, whether it would be returned to property owners after the project was completed
- whether property owners would be paid fair value for the land taken for right-of-way

At the public hearing, several residents asked KDOT to consider whether it would be less costly to reconstruct Highway 183 in its current location without moving it to the west, and detour traffic around the roadway during construction.

KDOT officials performed a preliminary analysis for this approach, which they considered would impact 25 feet on both sides of the existing Highway. Based on its analysis, KDOT indicated this approach would cost \$9.5 million, which was more than the planned project's \$9.4 million cost.

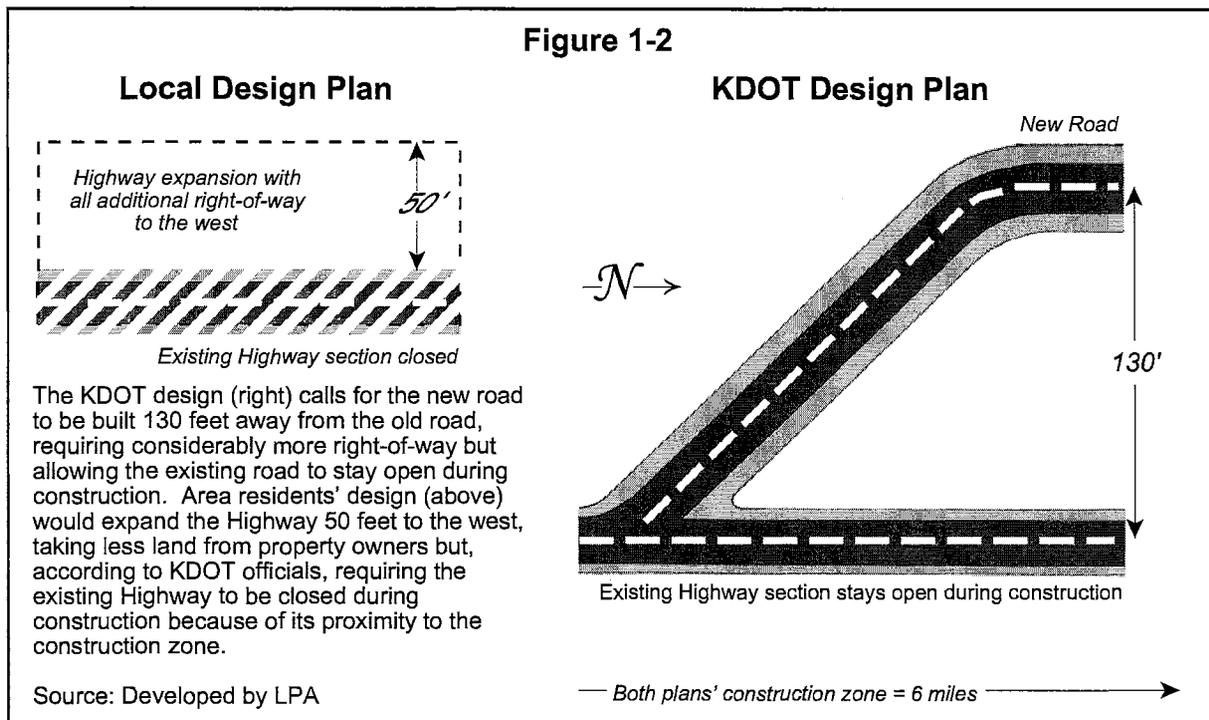
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***An Alternative Plan  
Some Residents  
Suggested for  
Expanding the Highway  
50 Feet to the West  
May Have Had Lower  
Construction and  
Right-of-Way Costs***

After getting the results of KDOT's preliminary analysis, several local residents suggested to the Secretary of Transportation and a legislator that a better option would be to add the 50 feet of additional land to the west side of the Highway. As shown in *Figure I-2* on the next page, this proposal would require the six-mile segment of Highway 183 to be closed during construction, so traffic would have to be detoured to another road.

Under this proposal, they said, KDOT could eliminate the cost of moving utilities on the east side of the road, and could reduce land acquisition costs because it would need 81 fewer acres of right-of-way (39 acres compared with 120 acres). In addition to lowered costs, the local residents attributed other benefits to their plan:

- the Highway would be kept farther away from two houses along the route



- a rental house in the path of the new Highway wouldn't need to be taken and destroyed
- less land would be removed from the county tax rolls
- a geological formation could be preserved

These local residents indicated that, if KDOT officials had considered this approach in their analyses, they would have concluded it was less costly than KDOT's plan to move the existing Highway 130 feet to the west.

KDOT officials told us they didn't fully understand the local residents' proposal to expand the road 50 feet to the west. At our request, they reviewed the proposal and provided some rough estimates of how certain costs might increase or decrease if this approach were adopted. From those estimates, we assembled the cost comparison shown in *Figure I-3* on the next page.

As the figure shows, estimates for the local proposal for reconstructing Highway 183 just 50 feet to the west were about \$9 million, or about \$434,000 less than KDOT's plan to reconstruct the Highway 130 feet to the west. (This comparison assumes both approaches had been considered at the time the reconstruction design was first being planned.)

**Figure I-3  
Comparison of Costs for KDOT Design and  
Design Proposed by Locals**

<b>Project Category</b>	<b>KDOT Design Costs (move Highway 130 feet west, and keep current Highway OPEN during construction)</b>	<b>Local Design Costs (add 50 feet west of Highway, CLOSE Highway during construction, and detour traffic)</b>
Construction	\$7,334,749	\$7,019,458
Construction Engineering	\$607,500	\$600,000
Utilities	\$327,840	\$327,840
Right-of-Way	\$146,500	\$47,000
Preliminary Engineering	\$729,000	\$729,000
Inflation	\$271,395	\$259,720
<b>Total Project Cost</b>	<b>\$9,416,984</b>	<b>\$8,983,018</b>

**Source:** LPA review of KDOT and locals' project cost estimates.

***KDOT Officials Told Us  
They Hadn't Considered  
What Local Residents  
Are Proposing Because  
Of Long Detours***

KDOT officials told us they hadn't considered closing Highway 183 during its reconstruction because of the impact of detours on the motoring public.

**According to KDOT officials, closing Highway 183 would have meant detouring traffic 71 miles to the east through Russell, or 93 miles to the west through Wakeeney.** These were the two routes KDOT officials determined to be suitable routes to handle all traffic that normally traveled Highway 183 on a daily basis. *Figure I-4* shows the project area and the detour routes considered.

KDOT officials cited several concerns with the long detour routes:

- Highway 183 is the main route to the Regional Medical Center in Hays from Plainville and the communities farther north, and closing the Highway would significantly slow emergency vehicle response times.
- Local businesses had expressed concerns that closing the Highway could have a negative impact their businesses. Several local business owners said delivery costs would have to be increased, and the extra time and cost to travel the detour would greatly impact their businesses.
- Nearly 400 people are estimated to commute daily between Plainville and Hays for their jobs. One business in Plainville said more than 40 of its employees come from Hays.
- The overall cost to the motorists in gasoline, maintenance and extra time spent driving during the Highway closure would be significant. (KDOT officials estimated \$17.7 million in users costs for the eight month project.)