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INITIAL REPORT

## **SPECIAL EXPERIMENTAL PROJECT (SEP-14) ALTERNATE SURFACING BIDDING**

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**KANSAS DEPARTMENT OF TRANSPORTATION**

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## **Initial Report**

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A Report on Research Sponsored By  
THE KANSAS DEPARTMENT OF TRANSPORTATION  
TOPEKA, KANSAS

March 2009

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## **ABSTRACT**

This report contains a discussion of the alternate bidding process used on a highway project in Kansas. It discusses the background, bidding process, evaluation of the bids, and conclusions drawn from the experience. It also includes a customer survey and analysis of the bids submitted by contractors. The analysis of the bids received and the estimates made by Kansas Department of transportation (KDOT) show little difference in price, had KDOT selected the pavement type rather than let it as an alternate. The alternate bid process resulted in the agency receiving the least cost project. However, the objective of selecting surface type for the mainline pavement was not realized. The analysis also shows that had KDOT let the major work items such as surfacing, grading, and bridges, separately it may have realized additional savings. However, KDOT may have faced some challenges administering a project with multiple contractors.

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## EXECUTIVE SUMMARY

This is the initial report required as part of FHWA's Special Experimental Project No. 14 (SEP-14). The SEP-14 consists of non-traditional contracting techniques that deviate from the competitive bidding provisions in 23 USC 112 and its implementing regulations 23 CFR Parts 635 and 636. The Kansas Department of Transportation (KDOT) has a pavement type selection process that includes the comparison of initial and life cycle costs for different pavement types. Those cost differences and secondary factors are considered when selecting a pavement type. For some projects the estimated initial and life cycle costs are nearly equal for different pavement types. When nearly equal cost conditions exist the paving industries are strong in their criticism of KDOT's selected pavement type. To overcome this criticism and to hedge against spiraling costs KDOT chose to let a project using the alternate bid process. This report presents the contractors bids, a customer survey, and analysis of the various bid components. KDOT received the lowest total bid in the process. The surface type bid by the lowest bidder was Hot Mix Asphalt (HMA). Various analyses of the bids and the major work types are presented. They show that separate bids based on major work type, surfacing, grading, and bridges could have saved additional funds. Analysis of the bid items associated only with the mainline surfacing indicates that the lowest life cycle cost pavement was Portland Cement Concrete Pavement (PCCP). The objective to select surface type through the alternate bid process was not realized.

# **CHAPTER 1 - INTRODUCTION AND BACKGROUND**

## **1.1 Introduction**

The Kansas Department of Transportation (KDOT) submits this initial report under the provisions of Special Experimental Project No. 14 for the use of alternative contracting practices. An alternative bidding process was developed for pavement type surfacing selection. This report presents the results from that process. It will cover a brief history of KDOT's standard practice, concerns of the paving industry, scope of the alternate bid, the contracting process, effects on the bids received, estimates of cost, lessons learned, and reactions.

## **1.2 Background**

Pavement type selection has been very contentious for the KDOT. Regardless of the pavement type selected the industries are not satisfied with the selected type. The issue came to a head in 2001 when the Legislative Post Audit conducted an investigation of KDOT's pavement type selection process. Several recommendations resulted from the audit and KDOT addressed those recommendations. Regardless of that effort KDOT continued to be questioned about its pavement type selection. At center of the discussion was KDOT's ability to estimate construction costs in a period of spiraling costs, the thickness of the surfacing layers, and the future actions.

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# **CHAPTER 2 - DEVELOPING AN ALTERNATE BIDDING PROCESS**

## **2.1 Introduction**

The alternate pavement type bidding was considered by KDOT to take advantage of the cost competitive market between hot mix asphalt and Portland cement concrete pavement. Further, price instability in crude oil products, cement, and other pavement construction materials makes it difficult for the Agency to make a cost estimate that would be representative of the market prices at the time of letting.

## **2.2 Selection Process**

There is numerous occasions in the past where the Life Cycle Cost Analysis (LCCA) show the surfacing alternates to be very close in cost. With rising costs associated with paving materials and fewer lettings to obtain current costs there is a challenge to make accurate cost estimates. Competitive alternate bids could help ensure the agency obtained the least cost alternate. In addition the alternate bid process would put the pavement type selection in the hands of the paving industries. This would be a desirable feature since the industries frequently question the decisions made by the Agency regarding its surface selection. Increasing demand on available highway funds is pressuring KDOT to actively pursue methods that have the potential to enhance the use of tax dollars.

## **2.3 Industries Concerns**

Cost of initial construction during the selection process that takes place a year or more before letting does not reflect the costs at time of bidding. Plans must be complete 90 days prior to a letting to allow for final review, printing, and posting for letting. This plus

the time to complete the Plans may not allow the costs to be updated more than six months prior to letting. The life cycle actions used in the LCCA do not reflect what KDOT does using its Pavement Management System (PMS). Therefore the life cycle cost adjustment factor applied to Hot Mix Asphalt (HMA) does not reflect the costs to the agency over the analysis period. The LCCA actions result from the pavement design model DARWin. Actions selected by the PMS vary by performance level, deterioration curves, available funding, and contractor resources. The number and types of actions and their associated costs are different between the two methods. However, over a long period, 20 or more years, the costs and actions from the PMS and KDOT's rehabilitation programs reflect those used in the LCCA from DARWin.

## **CHAPTER 3 - BIDDING PROCESS**

### **3.1 The Alternates**

The surface type alternates and their associated thicknesses were determined using the AASHTO Guide for the Design of Pavements. The PCCP alternate consisted of 8.5 inches of concrete with 6 inch concrete shoulders over a 4 inch granular base over native subgrade soils. The HMA alternate consisted 11 inches of hot mix asphalt over lime treated subgrade soils. The lime treated subgrade is part of the structural section for the HMA alternate. For many decades KDOT stabilized subgrade soils on all new or reconstruction projects regardless of functional or structural needs, i.e. differential swell control, structural layer. Since differential swell potential was not an issue with the soils on this project, subgrade stabilization was not necessary for the rigid or flexible pavement sections. However, subgrade stabilization is considered a structural layer in the flexible but not in the rigid design. Therefore the subgrade stabilization was included in the flexible alternate for it economics.

### **3.2 The Plans**

The complete set of Plans for the alternate bid contained the Grading, Bridges, and Surfacing. The Plans were prepared with the PCCP grading template which is the thicker total, base plus surface, pavement section. Each surface alternate was listed with the appropriate bid items defining the work associated with the alternate surface type. Items such as square yards of PCCP or HMA surface, square yards of granular base, and compaction quantities were shown.

### **3.3 The Specifications**

KDOT's 2007 Standard Specifications were used. A special provision 07-PS0064 was used to determine the lowest bid for this project. No asphalt price adjustment factor was used on this project.

### **3.4 The Life Cycle Cost Adjustment**

The life cycle cost adjustment factor was computed for both PCCP and HMA. The life cycle actions for PCCP consist of 5% patching and a 3" structural overlay at 20 years and then a mill, 3% patching, and 3" structural overlay at 30 years for a 40 year life cycle. After 40 years the salvage value of the original PCCP and HMA are considered equal. The life cycle actions for the HMA consist of surface recycle plus a structural overlay at each of the 10 year periods. The future costs of the life cycle actions were brought back to today's cost using the present worth factor and a discount rate of 3%. The life cycle cost adjustment factor was plus \$358,100 for the HMA alternate.

## **CHAPTER 4 - EVALUATION OF THE BID**

### **4.1 Low Bid**

Five contractors submitted bids on this project. Two bids were received for the PCCP alternate and three bids were received for the HMA alternate. The low bid was based on the total bid plus the addition of the life cycle cost. The low bid with the adjustment factor was Venture Corporation. They were also the low overall bidder. The life cycle cost adjustment did not determine the low bidder.

### **4.2 Analysis of Bids**

Various analyses can be performed on the contractor's bids. One of the objectives was to determine pavement type selection. The contractor with the lowest surfacing bid was not the winning contractor. Since the Plans and Bid proposal included Grading, Bridges, and Surfacing each contractor had the opportunity to compete in three separate areas rather than surfacing alone. The lowest bidder chose the HMA alternate and was lowest by 2.8% compared to the bidder with the lowest PCCP alternate. The difference in cost between the HMA alternate and the PCCP alternate is \$624,375 excluding the \$358,100 life cycle cost adjustment that needed to be applied to the HMA alternate. When the life cycle cost adjustment is applied, the cost difference is 1.2%.

The lowest surfacing cost for all the surfacing on the project was submitted by the third lowest bidder. It was 6.5% lower than the winning bidder and 11.4% lower than the PCCP bidder. All the surfacing bid items shown on the Plans included not only the mainline surfacing but also the side roads and rehabilitation of an intersecting US route. The side roads and intersecting US route were surfaced with HMA products. This may have been a disadvantage to the contractors who submitted the PCCP alternate bid



because of the cost to mobilize two different paving material plants. When the Life Cycle Cost (LCC) adjustment was applied the third lowest bidder had the least surfacing cost. The PCCP bidder was 2.8% more and the winning bidder was 6.0% more.

The primary objective of the alternate bids was to determine the surface type on the mainline roadway. When only those bid items associated with the mainline surfacing are totaled the third lowest bidder had the least cost with the PCCP bidder 11.0% higher and the winner bidder 15.3% higher. However, when the LCC adjustment is applied to the mainline surfacing the PCCP bidder is the least with the third bidder 0.2% higher and the winning bidder 14.1% higher.

#### **4.3 Engineers Estimate**

The lowest bids for only the HMA and PCCP surfacing bid items were within 5% of the cost that KDOT had estimated in its pavement type selection process. The KDOT estimate for the HMA surfacing was 0.95% less than the winning contractors bid and the estimate for the PCCP surfacing was 1.27% higher than the lowest PCCP contractors bid. While the spiraling prices were a concern to KDOT and the Industry in making an estimate, the Agency did very well in estimating the cost of construction. This would indicate that the Agency has a good methodology to track and estimate surfacing construction costs.

#### **4.4 Survey Results**

A customer survey was developed and submitted to contractors, both bidders and potential bidders. The results of that survey is tabulated in Appendix A . A customer survey of the design community was also developed and those results are tabulated in Appendix B. Eleven contractors responded to the survey. All were familiar with the

project and either submitted bids as prime or as a subcontractor. The contractors were split in their view regarding the success of the alternate bid process accomplishing the objective to determine pavement type selection. There was little support for letting the project by separate work type, grading, bridges, and surfacing. Conflicts in scheduling, timeliness of completion, and coordination were the major reasons against having separate contracts for the work type. If separate contracts were let for the work type it would be difficult to assign the prime contractor to coordinate all of the work. Seven of nine contractors felt the alternate bid should apply only to the surfacing. Only one in ten contractors felt the bid package treated each alternate equally. The comments ranged from using the incorrect life cycle cost adjustment factor to inequities in the subgrade, base, and shoulder treatment. There were numerous suggestions for improving the alternate bid process. Two of the nine responses felt KDOT should select the surface type. Separate plans for each alternate should be developed so that all bid items are similar. In the case of this project the pavement thicknesses were not equal and therefore the grading quantities were different. The quantities for the thicker section were listed in the contract. One contractor felt the industry should be included in the design decisions. Two of the nine felt that some of the design features such as subgrade, base, and shoulders should be excluded from the alternates.

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## **CHAPTER 5 - CONCLUSION**

### **5.1 Bids**

The table in Appendix C shows the bids as submitted. The Agency obtained the lowest combined bid for the project. However the Agency might have been able to lower the total cost by letting each of the major types of work, grading, surfacing, and bridges separately.

### **5.2 Lowest Bid**

The lowest bid did not contain the lowest surfacing cost. The third lowest bidder submitted the least cost surfacing bid. The lowest bidder had the second highest surfacing costs but had the lowest grading and bridge costs. By combining the different work types the agency did not realize its objective for selecting pavement surface type through the alternate bid process. Had the agency let the project under three separate bids, grading, bridges, and surfacing, the potential lowest combined bid could have been \$279,537 less than the low bid. The bid tabs reflect and the customer survey confirm that the prime contractors utilized subcontractors, primarily in grading and bridges, in preparing their bid. It's assumed that the mobilization costs of the prime contractor include the subcontractor's mobilization costs also. If alternate bids are to be used again the agency should consider letting separate contracts for the grading, bridges, and surfacing. However, this presents new challenges in the administering of the contracts and work performed by different contractors on the same job. Further discussion on this topic can be found in Appendix A.

### **5.3 Surrendering Control**

Alternate bids cause the Agency to lose control over other factors other than the cost. Alternates bids do not allow the agency to consider local preference, maintenance capabilities, trends in future costs, etc. With the spiraling costs of single product one needs to consider what ramifications a decision made today based on costs will have in the future. Once a pavement type is selected the subsequent actions are tied to that pavement type as are the costs.

### **5.4 Future**

KDOT is currently studying the life cycle performance of HMA and PCC pavements. The objective is to capture the cost of all surfacing actions by pavement type over time. The cost of the actions will be used to determine the LCC for each pavement type on an annual basis. KDOT proposes to use a five year moving average to smooth out the spikes due to changes in paving costs or changes in materials or processes used. Since the Agency has been successful in estimating initial construction costs and if it is able to determine the life cycle costs of the different pavements then the Agency will be able to produce an accurate LCCA that can be used to select the pavement type. The selection of the pavement type by the Agency would allow the Agency to consider the Secondary factors in the pavement type selection process as well.

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## **APPENDIX A: CUSTOMER SURVEY (CONTRACTORS)**

1. **Are you familiar with the US-400 Alternate Bid Project?**  
YES-11 NO-0
2. **Did you submit a bid on this project as the Prime Contractor?**  
YES-4 NO-7
3. **Did you submit a bid on this project as a sub-contractor?**  
YES-7 NO-4
4. **Did you attend the pre-bid conference?**  
YES-9 NO-2
5. **Was the pre-bid conference helpful?**  
YES-9 No Response-2
6. **The objective of the alternate bid was to determine pavement type selection. Did the alternate bid package accomplish the objective?**  
YES-6 NO-5 (See Appendix A, Comments)
7. **As a Contractor, what concerns would you have if this project would have been let as separate Grading, Bridges, and Surfacing projects and the least cost of each was selected?**

Response 1- Conflicts in scheduling, management, and design (dirt grade designed to concrete alternate) possible problems if let separate-not everyone being on the "same page".

Response 2- Timeliness of completion overall combined cost.

Response 3- It would drag out the construction.

Response 4- None-Would have liked to bid bridges separate.

Response 5- Controlling the project.

Response 6- Separate contracts on some large grade, bridge, and pave contracts work well. However, any delay in letting the paving after the grading contract almost always results in higher costs for the owner. Aside from asphalt cement, contractors may secure firm contract quotes for materials required for a project. In times of high inflation, this may not be the best contracting method for the owner. In addition, there is often some duplication of budgeted expenses between separate contracts or an omission on responsibility to keep all contracts moving without unnecessary delay or expense. Lastly, separate contracts can lead to lack of creative and cost-efficient solutions to problems or warranted design changes on a project because several separate contractors may have conflicting priorities on the job. Coordinating the preparation of a value-engineering proposal to improve or reduce the cost of a project when multiple prime contractors are involved would be very difficult.

Response 7- Scheduling & project delays, as well as increased costs for project management. Generally, the lowest cost subcontractors are chosen and submitted in the bid.

Response 8- Coordination between contractors

Response 9- None

Response 10- I would be OK with both of these choices.

Response 11- No reply

**8. What difficulties do you see in administering a contract with multiple contractors, one each for the Grading, Bridges, and Surfacing?**

Response 1- If work is being done simultaneously; it would lose that sense of teamwork-possibility not everyone being involved in the decision making and resolution of problems.

Response 2- Seamless coordination and cooperation among all parties, redundant efforts and increased costs by owner due to multiple contracts to administer (inspection staff, meeting, progress estimates, change orders, etc.)

Response 3- None

Response 4- None, we had 3 contracts on 400 & no problems.

Response 5- All of the items of work can proceed at the s (Survey incomplete)

Response 6- The difficulties in administering separate contracts include a lack of authority on coordinating on-site activities (for example: who is responsible when a bridge crane impedes the progress of a grading or paving contractor?), which contractors' schedule governs with regards to keeping the overall project on schedule, will there be a seamless process of acceptance by the owner as one contractor finishes one part of a contract so the next contractor may occupy the same location on the project, and does the phasing of the project or the construction processes require continuous interaction between contractors in delivering each others' products?

Response 7- A suggestion is to let this type of project in two phases: Phase 1= Bridges & Grading, Phase II= Light Grading & Surfacing.

Response 8- Working days & damages

Response 9- Grading & Bridges need to be one contract at least

Response 10- No reply

Response 11- No reply

**9. Would it be more efficient to assign one of the Contractors as the Prime and the others as Subcontractors, if separate Grading, Bridges, and Surfacing contracts were let?**

YES-5 NO-6

**10. How would you assign the Prime?**

Response 1- Bid as one (1) contract.

Response 2- Largest contract amount or last major party responsible for project completion (likely the surfacing contractor).

Response 3- No reply

Response 4- No reply

Response 5- Qualification and experience



Response 6- The Prime would have to be assigned prior to the letting of the subcontracts.

Response 7-After discussing numerous scenarios, we don't see any feasible route to assign a prime contractor.

Response 8- No reply

Response 9- Probably surfacing contractor

Response 10- No reply

Response 11- No reply

**11. Should the alternate bid apply only to the Surfacing?**

YES-7      NO-2      NO Reply-2 (See Appendix A, Comments)

**12. Did you feel the bid package treated each pavement type alternate equally?**

YES-1      NO-9 and 1 "I don't know?" (See Appendix A, Comments)

**13. What could have been done differently to make the alternates equal?**

Response 1-No reply.

Response 2-The addendums eventually got the alternate designs relatively "equivalent", but it seems more analysis should have gone into the process before the projects were released for bidding.

Response 3-I don't feel the state uses the correct life cycle costs.

Response 4-Shoulder were an advantage to asphalt.

Response 5- Shoulder Design. Tied concrete vs. low grade.

Response 6- Perceived inequities on this project include the base sections, the shoulder sections, the edge wedge sections, and the subgrade sections.

Response 7- Future PCCP Patching and RCI was not included in Concrete LCCA although it continues to be used on contracts currently being let. This put the Asphalt Industry at a \$353,000 disadvantage when theoretically the predicted costs could have been equal-\$0.

Response 8- No reply

Response 9- KDOT needs to state one type of surfacing then there is no alternate to worry about.

Response 10- No reply

Response 11- Have equal subgrades

**14. What pavement design features could have been changed to make the alternates equal?**

Response 1-I think overall you did a good job, however; I, like others, question the Life Cycle Cost you utilize.

Response 2- As stated above, they eventually got close to equivalent, but only after several addendums.

Response 3- No reply.

Response 4- No reply.

Response 5- See 17 answer

Response 6- Either an equal section of edge wedge aggregate, base sections, and shoulder sections for both alternates, or including these products in the base bid section(s) of the proposal.

Response 7- For this specific project, the Flyash base was removed from the Concrete Alternate Bid at a late date, even though this type of base work has been required on similar projects in the area in the recent past.

Response 8- ???

Response 9- No reply

Response 10- No reply

Response 11- No reply

**15. From your perspective, were the notes, typical sections, and summaries included in the Plans clear and understandable?**

YES-9

NO-2 (See Appendix A, Comments)

**16. What ideas do you have for improving the way alternate surface types are presented in the Plans?**

Response 1- No reply

Response 2- If the alternate pavement designs result in differing earthwork or other related quantities (edge wedges), include the affected items in each alternate bid section to determine the overall equivalent cost.

Response 3- I think it was a good start to alternate bids.

Response 4- No reply

Response 5- Meet with industry to have equal pavement.

Response 6- We would suggest policies be developed on matters of subgrade/subbase sections and shoulder sections to keep the evaluation of the pavement selection focused on the driving lane pavements. Too many design features of these subgrade/subbase sections and shoulder sections are a result of owner preferences and not simply engineered products.

Response 7- The quantities in the proposal were slightly confusing, in that part of the Alternate flyash, etc., was combined with the side road surfacing items.

Response 8- No reply

Response 9- KDOT should determine the best type of surfacing for the area & not offer an alternate. I think alternate bids on surfacing will always be a problem. It is hard to balance out equally.

Response 10- KDOT needs to choose a pavement type they would like to have for each project. Leave the contractors out of the design.

Response 11- If the project was broken into sections, 1 mile long section for example. Smaller contractors would have to bid more on it and price always goes down.

## **Appendix A (continued): Comments to Yes and No Questions**

**Question 6-** Response: The alternate bid package resulted in the KDOT buying a pavement product. We do not believe the bid package resulted in KDOT purchasing the most cost effective pavement product for this project. The KDOT had determined that the two different pavement products for this project were close in costs for the Department over the foreseeable future of this roadway. But, there were many aspects of the designs included in the alternate bid sections of the proposal that did not appear to be equal based strictly upon what the bare-minimum design features needed to be for each alternate product solicited.

**Question 11-** Response 1: This question seems to recognize that virtually every aspect of a project design can be altered and every alteration will have a resulting change in cost. We prefer the owners design, specify, and purchase the products for which they have a history as opposed to simply specifying performance criteria to define the limits of the design options. How many alternates for shoulders does an owner need to design to purchase what they want?

Response 2: If design build were an option, bridges could be alternate bid (i.e. steel vs. conc.)

**Question 12-** Response: Eliminate the LCC amount added to AMA Pavement as it is speculative and subjective-equal designs should stand alone!

**Question 15-** Response: For the most part.

## **APPENDIX B: AGENCY/DESIGN FIRM RESPONSE**

1. Are you familiar with the US-400 Alternate Bid project?  
YES-4 NO-0
2. Did you prepare Plans or Specification for this project  
YES-1 NO-3
3. Did you provide other input to the Design, Construction or Specification process?  
YES-4 NO-0
4. Did you attend the pre-bid conference?  
YES-2 NO-2
5. Was the pre-bid conference helpful?  
YES-2 NO-0 conference.
6. The objective of the alternate bid was to determine pavement type selection. Did the alternate bid package accomplish the objective?  
YES-3 NO-1
7. What concerns would you have if this project would have been let as separate Grading, Bridges, and Surfacing?  
Response 1- No Concerns  
Response 2- The coordination of all contr. Who is to do what.  
Response 3- Multiple contracts to administer for the field office and problems associated with.  
Response 4- No reply
8. What difficulties do you see in administering a contract with multiple contractors, one each for the Grading, Bridges, and Surfacing?  
Response 1- Timely completion of each piece.  
Response 2- Multiple diaries, field doc., pay est. etc. Much more paperwork and time consuming.  
Response 3- No reply.  
Response 4- No reply.
9. Would it be more efficient to assign one of the Contractors as the Prime and the others as Subcontractors, if separate Grading, Bridges, and Surfacing contracts were let?  
YES-2 NO-2
10. How would you assign the Prime?  
Response 1- N/A  
Response 2- Most important item of work.  
Response 3- According to the controlling items of work.  
Response 4- No reply
11. Should the alternate bid apply only to the Surfacing?  
YES-4 NO-0

12. Did you feel the bid package treated each pavement type alternate equally?

YES-4 NO-0

13. What could have been done differently to make the alternates equal?

Response 1- Nothing

Response 2- No reply

Response 3- Include options for price adjustments for asphalt and cement.

Response 4- No reply.

14. What pavement design features could have been changed to make the alternates equal?

Response 1- None

Response 2- No reply

Response 3- No reply

Response 4- No reply

15. From your perspective were the notes, typical sections, and summaries included in the Plans clear and understandable?

YES-3 NO-1

16. What ideas do you have for improving the way alternate surface types are presented in the Plans?

Response 1- None. Process worked OK but from a district standpoint, I would have liked concrete pavement.

Response 2- This set of plans had many mistakes in them. Some major and some were not. You also have to hunt for items. Going page to page and back and forth. Items should be more together.

Response 3- No reply.

Response 4- No reply.

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## **APPENDIX C: CONTRACT BID ANALYSIS**



	<u>Contractor</u>		
	<u>Flexible "A"</u>	<u>Rigid "A"</u>	<u>Flexible "B"</u>
Bid Total:	\$22,090,669	\$22,715,044	\$22,876,212
% Difference	0.0%	2.8%	3.6%
Bid Total w/LCC Adjustment:	\$22,448,769	\$22,715,044	\$23,234,312
% Difference	0.0%	1.2%	3.5%
All Pavement Bid Items*:	\$4,556,678	\$4,766,429	\$4,277,142
% Difference	6.5%	11.4%	0.0%
All Pavement Bid Items w/Adj*:	\$4,914,778	\$4,766,429	\$4,635,242
% Difference	6.0%	2.8%	0.0%
M.L. Pavement Bid Items*:	\$3,653,762	\$3,517,490	\$3,167,682
% Difference	15.3%	11.0%	0.0%
M.L. Pavement Bid Items w/Adj*:	\$4,011,862	\$3,517,490	\$3,525,782
% Difference	14.1%	0.0%	0.2%
Grading*:	\$2,990,054	\$3,092,366	\$3,052,316
% Difference	0.0%	3.4%	2.1%
Bridges*:	\$10,728,901	\$10,728,901	\$11,800,361
% Difference	0.0%	0.0%	10.0%

\*- Set prices are excluded from the analysis.

**APPENDIX D: PROJECT SPECIAL PROVISION FOR  
ALTERNATE BIDDING**

**KANSAS DEPARTMENT OF TRANSPORTATION  
SPECIAL PROVISION TO THE  
STANDARD SPECIFICATIONS, 2007 EDITION**

**LOW BIDDER DETERMINATION FOR PAVEMENT SURFACE ALTERNATE**

For each project, KDOT uses Life Cycle Cost Analysis (LCCA) procedure to select the appropriate type of roadway surface; either Portland Cement Concrete Pavement (PCCP) or Asphalt Surface (HMA).

The LCCA for this project indicates that both PCCP and HMA surface type have a similar initial and Life Cycle Costs (LCC). Consequently, this project will be let with an alternate surface type. The Contractors shall bid on only PCCP or HMA surface type alternate.

The LCC is determined using current costs for the future actions needed for the maintenance of the roadway surface. The future action costs are standard for KDOT's design process for both types of pavement.

In order for KDOT to evaluate the alternate pavement surface selected by the Contractor, a sum of \$358,100 which represents the LCC will be added to the HMA pavement alternate, for comparison purposes only.

The LCC will not represent any additional payment to be made to the successful bidder and is used only for determining the low bid. The LCC is the difference in future rehabilitation costs for each pavement type which includes future actions needed between year 10 and 40.

Only on bids that HMA pavement alternate is selected by the Contractor, KDOT will add the LCC amount to the Contractor's total bid. This adjusted total bid will be compared with other bids that have PCCP pavement alternate selected by the Contractor. The Contractor with the lowest amount between the adjusted total bid on HMA pavement alternate and PCCP pavement alternate will be the successful bidder.

01-22-08 C&M (AR/RDR)

