LANE RENTAL

An Innovative Contracting Practice

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The Transportation Research Board Task Force on Innovative Contracting Practices was created in January 1987. Its mission was to solicit, compile, and study information on innovative practices that agencies in the United States and other countries use to contract for construction as they affect quality, progress, and costs and to suggest ways to improve contracting practices and quality in construction. The task force was composed of representatives from all segments of the highway industry, including contractors, consultants, trade associations, surety and bonding agents, state highway agencies (SHAs), and the Federal Highway Administration (FHWA). The final report of the task force was published in December 1991 as *Transportation Research Circular 386: Innovative Contracting Practices*. The report includes short- and long-term recommendations for the four major topic areas addressed by the task force: (a) bidding procedures, (b) materials control, (c) quality considerations, and (d) insurance and surety issues.

Experimental Project

Members of the task force requested that FHWA establish an experimental project that could be used to evaluate and validate the findings of the task force. In response to this request, FHWA initiated Special Experimental Project (SEP) 14 to implement applicable task force recommendations and other innovative contracting practices that states may propose to undertake and that are approved by FHWA.

An innovative contract bidding method currently being considered by a number of states for evaluation under SEP 14 is lane-by-lane rental during construction. Lane-by-lane rental, together with methods for bonus/rental charge and continuous site rental were developed and have been extensively applied in the United Kingdom under the general category of lane rental. The objective of these innovative concepts is to encourage contractors, through appropriate contract provisions, to lessen construction impacts on road users (i.e., reduce costs to road users during construction).

Lane Rental

Bonus/Rental Charge

The bonus/rental charge method, developed in the United Kingdom, is similar to the cost-plus-time (A+B) method of bidding approved for use on an experimental basis by FHWA in 1985. To date 10 states and the District of Columbia have used this method.

For the bonus/rental charge and the A+B methods, each bid consists of two parts: Part A, the dollar amount for all work to be performed under the contract, and Part B, the total number of days proposed by the bidder to substantially complete the project.

The successful bid is determined by the contracting agency as the lowest combination of the parts according to the following formula: A + (B × daily rental amount) = bid amount for award consideration. The daily rental amount specified in the contract is normally based on the daily cost of delays experienced by road users as a consequence of the project.

This method thus provides for the project to be awarded to the bidder submitting the lowest total bid—the aggregate bid of individual contract items and a bid for the total time required to complete the project. The formula is used only to determine the lowest bidder, not to determine payment to the contractor.

An example of the application of this method to determine the low bidder for a bridge replacement project follows.

- The contracting agency calculated the daily rental amount to be $5,000.
- Bidder 1 estimated the actual work items (Part A) to be $5,695,000 and that it would take 235 calendar days to complete the work (Part B). Thus, the contractor's bid for award purposes was the estimate for the actual work, $5,695,000, plus the rental amount, $1,175,000 (235 days multiplied by the $5,000 daily rental amount), for a total of $6,870,000.
- Bidder 2 estimated the actual work items somewhat higher at $5,758,000, but estimated completion of work in the lesser time of 215 calendar days. Thus, the total bid for award purposes was $6,833,000.

Consequently, even though Bidder 2 had a higher bid for the work items, the overall A+B bid was lower and Bidder 2 was

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Less-than-desirable roadway and traffic conditions in construction zones often result in high road user costs and unsafe conditions.

awarded the contract. As a result, the traveling public experienced a savings of $100,000 in road user costs at an increase in project costs of $63,000, or a net savings of $37,000. However, when the indirect benefits are considered of having the project opened sooner, such as the savings to the contracting agency of overhead costs and increased safety, the savings are much greater.

When the bonus/rental charge method is used, a disincentive provision must be incorporated into the contract to assess a daily rental amount should the contractor overrun the stated number of calendar days to complete the work. Additionally, an incentive provision may be incorporated to reward the contractor for early completion.

Thus, if the contractor overruns the number of days specified at the time of bid, an equivalent daily rental fee would be charged for additional occupation of the site. On the other hand, if an incentive provision were included in the contract, the contractor would receive an amount equal to the daily rental amount for each day completed before the completion date stated in the bid documents.

The bonus/rental charge method is not suitable for all projects. However, for critical projects that have significant impacts on road users, it can prove to be a valuable concept to minimize these impacts by allowing contractors the flexibility to establish their own completion time. Thus, the more efficient contractors are rewarded.

Additional advantages of this method are (a) the fundamental approach of the low competitive bidding system is maintained; (b) based on limited state usage to date, costs have not proven to be significantly higher, and contract times established by the contractors have been reasonable and normally shorter than anticipated, thus reducing inconvenience to the public; and (c) projects in which this method has been incorporated have generally attracted contractors who have efficient construction and engineering management practices and who have sufficient supervisory control to keep large projects on schedule.

Continuous Site Rental

The continuous site rental method (*1*) includes a daily rental fee assessment. The contractor pays the rental fee for each calendar day from the time of the notice to proceed through project completion. As applied in the United Kingdom, no completion date is specified in the project proposal by the contracting agency. The low bid is determined in the traditional manner, on the basis of the lowest bid amount for the items included in the contract. Unlike the bonus/rental charge method, the contractor does not indicate the number of days anticipated to construct the project until after award of the contract. The contractor submits a progress schedule to the contracting agency after award so that project staffing requirements can be determined. The rental fee indicated in the contract documents is once again based primarily on the costs of delay or inconvenience to the road user. The rental fee is charged even if the contractor is not working on a particular day and is deducted monthly from the amount due the contractor for work completed.

Although to date no state has expressed interest in using this method, several recommendations have been made to improve its administrative aspects. To maintain greater control of staffing and resources it was recommended that a final completion date be included in the contract by the contracting agency. Including a completion date would better ensure that the project is completed within a reasonable amount of time with respect to the contracting agency's construction program.

Because the contractor is required to pay a rental fee for each day of the contract, there is potential for contractor cash flow problems, especially early in the contract when fee payments may exceed the contractor's income. This has raised concern that bidders may alter their bids to eliminate this potential problem. To counter this possibility in the United Kingdom, a series of maximum percentages of the total bid amount are specified for specific groups of bid items in the contract provisions. If a contractor's bid exceeds any of the maximum percentages indicated, the bid is considered to be nonresponsive and is not considered for award.

Lane-by-Lane Rental

For the lane-by-lane method, a rental charge is assessed only when the contractor closes a portion of the roadway. The rental charge is based on the number and config-

TABLE 1 Example of Rental Charge Assessed Daily

Closure or Obstruction	Rental Charge ($)
One lane	20,000
One shoulder	5,000
One lane and shoulder	25,500
Two lanes	45,000
Two lanes and shoulder	50,000

NOTE: Example is for illustrative purposes only; appropriate rental charge must be determined for each project on a case-by-case basis.

uration of lanes closed. For example, the fee for having one lane and one shoulder closed would be less than that for having two lanes closed. In addition, higher rental amounts can be assessed for peak periods of the day. In all cases, the contract must clearly state when each rental rate applies. The purpose of lane-by-lane rental is to encourage contractors to plan their work to ensure that inconvenience to road users is kept to a minimum, in terms of both time and lane closures.

An example of the rental charge to be assessed for each lane and shoulder closure or obstruction per direction of traffic per calendar day is presented in Table 1. An example of the rental charge to be assessed for each lane and shoulder closure or obstruction per direction of traffic per hour is presented in Table 2.

The lane-by-lane rental method can be applied in several formats. One format would be to use normal project procedures and have the project advertised and awarded on the basis of the dollar amount of work to be performed by the low bidder. The contractor would then be charged for every closure at the rate stated in the contract documents.

Another format would be similar to that of the A+B concept. The contractor would in this case indicate the number of lane and shoulder closures needed to complete the project multiplied by the rental rates indicated by the contracting agency in the contract documents. The low bidder is determined by adding the total rent amount indicated by the bidder to the bid amount for the contract items. The total rent amount is used only to determine the lowest bid and not to determine payment to the contractor. If the contractor exceeds the number of closures indicated at the time of bid during construction, the contractor would be charged the respective rental fee for each additional closure. If, at the time of completion, the contractor has not applied all the closures initially indicated in the contract, the contractor would be given a bonus equal to the rental fee that was anticipated but not applied.

Determination of Rental Amount

A critical factor in the use of lane rental is determination of the appropriate rental dollar amount. To be effective and accomplish the objectives of applying these provisions, the rental amount must be of sufficient benefit to the contractor to encourage interest, stimulate innovative ideas, and increase the profitability of meeting tight schedules. If the financial benefit of completing quickly is not sufficient to cover the contractor's cost for the extra work, there is little incentive to accelerate production, and the lane rental provisions will not produce the intended results.

The rental amount should be calculated project by project, primarily on the basis of road user costs estimated to be incurred as a result of anticipated delays during project construction. Rental amounts may also include construction engineering inspection costs and traffic control and maintenance costs that are anticipated to be generated during construction of the project. The calculation of road user costs should be justified for each project and must be documented. Accepted SHA procedures or other documents (2–4) may be used for estimating road user costs.

TABLE 2 Example of Rental Charge Assessed Hourly

	Hourly Rental Charge ($)	
Closure or Obstruction	6:30–9:00 a.m. and 3:00–6:00 p.m.	All Other Hours
One lane	2,000	500
One shoulder	500	125
One lane and shoulder	2,500	625
Two lanes	4,500	1,250
Two lanes and shoulder	5,000	1,375

NOTE: Example is for illustrative purposes only; appropriate rental charge must be determined for each project on a case-by-case basis.

Conclusion

The innovative contracting methods discussed here are not suitable for all projects; most construction projects will continue to be awarded and administered using conventional methods. However, these concepts may provide innovative means to minimize impact on road users. FHWA has developed sample contract provisions for administering the A+B and the lane-by-lane rental methods. Contracting agencies interested in obtaining copies of these provisions should contact Federal Highway Administration, Contract Administration Branch (HNG-22), 400 Seventh Street, S.W., Washington, D.C. 20590 (telephone 202-366-0355).

References

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