

Final Report for Innovative Contracting Practices

“No Excuse Incentive”

Special Experimental Project No. 14 (SEP-14)

(Issued June 26, 2007)

Prepared by

Connecting Idaho Partners

for

Idaho Transportation Department

Submitted to

Federal Highway Administration

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- Appendix B: "No Excuse Incentive" Cost Justification, June 28, 2007
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Project Information

Bid Date:	August 7, 2007
Contract No.	7067
ITD Key Number:	09814 and 10557
Federal Project:	A009(814) and A010(557)
Location:	I-84, Broadway Interchange to Eisenman Interchange, Boise, ID
Project Description:	Crack and seat of the existing 40 year old Portland Cement Concrete (PCC) pavement, and add a total of 0.55 feet, in three lifts, of asphalt concrete overlay for the 6.1-mile, 4-lane divided section of I-84 from the Broadway Interchange to the Eisenman Interchange east of Boise, including shoulders, roadside slopes, and traffic control
Prime Contractor:	Western Construction, Inc.
Owner Agency:	Idaho Transportation Department (ITD)
Project Engineer:	Daris Bruce, P.E., Resident Engineer (ITD)

Purpose

The purpose of this report is to document the results of an innovative contracting method used by the Idaho Transportation Department (ITD) called a “No Excuse Incentive”. The concept was developed based on research about innovative contracting practices used by ITD on other projects and innovative practices used by other states. This particular concept was approved for use on a reconstruction project along I-84 in Ada County, Idaho by the Idaho Division of the Federal Highway Administration (FHWA) under the provisions of Special Experimental Projects No. 14 (SEP-14). The original SEP-14 Work Plan, dated June 26, 2007 and the associated cost justification, dated June 28, 2007, are included as Appendices A and B, respectively. FHWA’s July 17, 2007 letter approving the SEP-14 “No Excuse Incentive” is included as Appendix C. This final report is a requirement of the SEP-14 work plan, as approved by the FHWA.

Background

The I-84, Broadway Interchange to Eisenman Interchange project was originally scheduled to be constructed as two projects. The first, a 3.7-mile segment between the Gowen Interchange and the Eisenman Interchange (Key No. 09814), was to be constructed in the fall of 2007. The second, a 2.4-mile segment between the Broadway Interchange and the Gowen Interchange (Key No. 10557), was to be constructed in the summer of 2008. The pavement in both sections was extremely deteriorated, and the second segment is closer to Boise and carries a higher traffic volume.

A decision was made to combine the projects and advertise both as a single project, based on the following factors:

- 1) Advancing construction of the Broadway to Gowen segment would minimize a second season of major construction and traffic control.
- 2) Including both project segments into one project would increase public convenience by minimizing the construction period.
- 3) Partially completing the project (as described below) prior to winter shutdown would promote safer driving conditions.
- 4) Sealing the roadway surface prior to winter shutdown would support surface maintainability.
- 5) Completing the majority of construction in one season rather than two would likely avoid additional costs due to inflation in material costs.

The SEP-14 “No Excuse Incentive” was applied to the I-84, Broadway Interchange to Eisenman Interchange Crack and Seat with Overlay Pavement Rehabilitation project, which was divided into 3 segments, and incentives were provided based on specific completion dates.

The Segment I incentive totaled \$400,000 based on the following criteria:
“Segment I shall be the completion and acceptance of the lower two of the three lifts of plant mix on eastbound/westbound Broadway IC to Gowen IC (Sta 2849+50 to 2976+00) and associated pavement marking and open to traffic by December 22, 2007.”

The Segment II incentive totaled \$200,000 based on the following criteria:
“Segment II incentive will be paid upon the completion and acceptance of the lower two of the three lifts of plant mix on the eastbound lanes of the Gowen IC to Eisenman IC (Sta 2976+00 to 3171+83) and associated pavement marking and open to traffic by December 22, 2007. No incentive will be paid for Segment II unless Segment I is completed within the time frames established for Segment I incentive. Segments II and III are interchangeable, and the Contractor may choose which one follows Segment I.”

The Segment III incentive totaled \$200,000 based on the following criteria:
“Segment III incentive will be paid upon the completion and acceptance of the lower two of the three lifts of plant mix on the westbound lanes of the Gowen IC to Eisenman IC (Sta 2976+00 to 3171+83) and associated pavement marking and open to traffic by December 22, 2007. No incentive will be paid for Segment II or Segment III unless Segment I is completed within the time frames established for Segment I incentive. Segments II and III are interchangeable and the contractor may choose which one follows Segment I.”

The Contract also stated, “For purposes of calculation and the determination of entitlement to the ‘No Excuse Incentive’ stated above, the ‘No Excuse Incentive’ completion date will not be adjusted for any reason, cause or circumstance whatsoever, regardless of fault.”

Bidding Outcomes

The contract was advertised on July 16, 2007. The original bid period was two weeks, with the bid opening to be held on July 31, 2007. On July 20, 2007, Addendum #1, which corrected an error on the hot mix asphalt items, was issued. Addendum #2 was issued on July 31, 2007. This

addendum corrected an error on the portable concrete guardrail item and extended the bid opening to August 7, 2007. No pre-bid meeting was held during the bid period. Bids were opened on August 7, 2007 at 2:00 p.m.

Three (3) contractors submitted bids for this project:

Idaho Sand and Gravel Co.	\$15,697,508	95%
Central Paving Co.	\$15,363,685	93%
Western Construction, Inc.	\$11,959,346	72%
Engineer's Estimate	\$16,513,480	100%

Bids ranged from \$11,959,346 to \$15,697,508. The low bid was \$4,554,135 less than the engineer's estimate of \$16,513,480.

When bids are less than 75% or greater than 10% of the engineer's estimate, it is standard practice to perform a bid justification. Connecting Idaho Partners (CIP) provided a bid justification to ITD, recommending contract award to Western Construction. No irregularities were found in the bidding process, and nothing about the bidding process was contested. The contract with Western Construction, Inc. was signed on August 21, 2007.

Evaluation of the Bidding Outcomes

Based on recent projects bid, it was determined that the number of bids received was similar to the number expected had the "No Excuse Incentive" not been offered.

The bids were evaluated, a justification was prepared, and the contract was awarded to the low bidder, Western Construction, Inc.

CIP developed an initial survey regarding the impact of the "No Excuse Incentive" provisions on the bidding process in order to obtain more specific feedback from the construction contracting industry. This "No Excuse Incentive" Questionnaire 1 is attached as Appendix D.

Questionnaire 1 was distributed to the three contractors who bid the project, as well as to two personnel from CIP and two personnel from ITD. A total of four (4) responses were received, and the compiled survey results can be found in Appendix E.

In brief, the results of the survey regarding the bidding process were:

1. The concept of the "No Excuse Incentive" caused the prime contractors to use accelerated schedules in determining their bids in order to achieve the incentive. Comments from bidders included, "The incentive forced us to look outside normal construction methods and procedures to determine how to meet the milestone date. This encouraged us to be more innovative in our approach."; and "Added costs to the bid for the accelerated schedule, and increased overtime labor costs."

2. Compared to other forms of incentivization bidding for accelerating the work, the bidders were mixed in whether they approached this “No Excuse Incentive” differently in preparing their bids. Respondents rated the clarity of the “No Excuse Incentive” provisions at least as clear as those for other incentivization bidding techniques, and no responses indicated that the “No Excuse Incentive” provisions were less clear than other methods.
3. All of the bidders said that the incentive amounts were sufficient to warrant an effort to accelerate the work.
4. All of the bidders said that the contract documents were sufficiently clear to prepare their bids.
5. The bidders were generally positive toward this approach, but did express some concerns related to the applicability of a “No Excuse Incentive,” such as the schedule being potentially unrealistic depending upon the scope of the project, the bidder’s risk, its not being a valid approach on every job, and the historic situation of ITD rarely offering incentives.

Construction Outcomes

The contract was issued to Western Construction, Inc. on August 21, 2007. The contractor began work on September 30, 2007, and the second lift of pavement was completed on November 10, 2007, well before the “No Excuse Incentive” deadline of December 22, 2007.

The contractor’s progress schedule clearly indicated from the beginning of the contract the intent to achieve the “No Excuse Incentive” dates. The contractor mobilized sufficient manpower and equipment to accelerate the work beyond normal production rates.

In total, the contractor placed 83,000 tons of plant mix during this time period, which represents an average of 4,500 tons of plant mix placed per day. Historical data show that typical plant mix placement on ITD projects averages 2,000 tons per day.

Evaluation of the Construction Outcomes

Based on the construction outcomes, it can be concluded that the “No Excuse Incentive” was effective at encouraging the contractor to accelerate the work and achieving the open to traffic outcomes desired by the department. The value and structure of the incentive was such that the outcomes were physically achievable, financially feasible, and sufficiently risk averse that the contractor was willing and interested in pursuing the incentive.

In addition to analysis of the construction outcomes, a ten question survey was developed to obtain feedback from the contractor and key staff responsible for executing the contract regarding the impact of the “No Excuse Incentive” provisions on the construction process. The survey form “No Excuse Incentive” Questionnaire 2 is attached as Appendix F. The survey was distributed to the contractor, ITD’s District 3 Resident Engineer, a representative of ITD Headquarters

Construction Section, CIP's construction manager and CIP's project construction manager. Compiled survey results are available in Appendix G.

In brief, the results of the survey regarding the construction process were:

1. The contractor stated that the "No Excuse Incentive" required proactive steps to accelerate the work including working longer hours, using extra crews, and using additional equipment. Additionally, it was noted that "Costs were increased because work was being performed around the clock. There were additional safety procedures that had to be taken for night work. Light plants were placed at all locations."
2. The contractor's intent was to achieve the maximum incentive. Contractor's comment, "The contractor was focused on maintaining the schedule, praying for good weather, and actively working toward a goal." ITD comments included, "Good scheduling, extra resources, initiated change orders to modify some contract requirements such as work times and project access to expedite the work."; and "Prepared and executed an aggressive schedule. Made a point of being very proactive and used the steps in question 1 to earn maximum bonus."
3. There was general agreement that there was adequate time for effective decision-making, given the conditions of the "No Excuse Incentive".
4. There were mixed views on whether administrative costs were impacted due to the "No Excuse Incentive".
5. There was little, but more positive, impact to the relationship between ITD and the contractor due to the "No Excuse Incentive".
6. There was no impact to quality of construction due to the "No Excuse Incentive".
7. There was little to no impact to safety in the work zone due to the "No Excuse Incentive". However ITD noted that increased night work had the potential for increased safety issues, but that this potential needed to be balanced against the overall shorter schedule that the work zone had to be in place.
8. There was general agreement about the positive impact on the productivity and effectiveness of the contractor's workers, with one exception—that working longer hours could possibly lead to less effectiveness.
9. There was general agreement that there was no impact to the productivity or effectiveness of ITD or consultant staff due to the "No Excuse Incentive".
10. Other noteworthy thoughts from those involved with the project follow:

Contractor: "The NEI is crystal clear regarding the bonus. Other incentive/disincentive methods create more arguments. This is the simplest I/D to administer."

ITD: “The contractor did not have to expend much extra effort to complete the work within the time allotted; thus I question the accuracy of the working days allotted, the milestone dates and the effectiveness of the provision. Basically I feel this type of incentive is hard for a contractor to bid and pushes excessive risk onto the contractor which in turn gets passed on in higher prices to the owner. This type of incentive is definitely a gamble and could lead to problems when the owner delays the contractor. The combining of the “no excuse incentive” with other I/D provisions such as the lane rental included in the contract for phase 3 complicates any analysis or comparison of I/D provisions.”

CIP: “In my discussions with the Inspection team, most agreed that the Contractor was far less concerned with potential nickel and dime change order issues than usual, and seemed to keep their eye focused more on the big picture that was the NEI. The Contractor also seemed to come to the table more as a partner on the project. One important item that I’ve also discussed with the Inspection team is how the total potential NEI amount far outweighed the QC Incentive/Disincentive. The Contractor could have potentially taken up to a \$200,000 QC hit, but this would have been far outweighed if they obtained the full \$800,000 NEI. Even though this did not happen, it was possible by the contract. One suggested improvement on future NEIs is to evaluate the maximum payout of the NEI vs. the QC I/D and perhaps specify a minimum level of quality to obtain the full NEI.”

Conclusions

The use of the “No Excuse Incentive” approach for this project was effective in achieving the desired results. The project was able to rehabilitate a 6.1-mile section of severely deteriorated pavement and open it to traffic several months and an entire winter in advance of the timing under a traditional approach. The contractor delivered on an aggressive schedule, maintained a safe work zone, produced a quality pavement, and achieved the maximum incentive, while completing the project below the Engineer’s Estimate.

Recommendations

1. Consider use of a NEI where it is beneficial to finish a project or element of a project by a certain date but not necessarily beneficial to finish the entire project earlier than that date. An example could involve the opening of a bridge or a roadway to accommodate holiday traffic or a major event. Another example might be the rehabilitation of a deteriorated facility and opening it to traffic before a severe winter season – our case in point. In both cases, finishing before the milestone provides high value and improved safety benefits to the traveling public.

Once a decision is made to use a NEI, consider the following:

2. The NEI must be based on a sound "User" and "Other" costs analysis reflecting value to the traveling public and the agency. While it is difficult to quantify actual cost savings as a result of using the NEI, some savings were realized in the form of reduced maintenance costs (ITD did not

have to continue to replace damaged concrete panels in the roadway), and there were also savings due to constructing the major portion of the project in 2007 prior to the escalation of the price of asphalt that occurred in 2008. Safety benefits were also realized by completing most of the roadway resurfacing prior to the winter season, thereby giving the traveling public a smoother surface to travel on.

3. The schedule requirements need to be aggressive, but realistic. The schedule requirements to achieve the NEI must be based on a comprehensive, construction activity related, and aggressive approach.
4. For a pavement project, mitigate possible risk of lower quality pavement due to the NEI amount being substantially greater than the pavement QC incentive/disincentive amount. For example, add a statement that the NEI requires minimum pavement quality factors to be achieved.
5. Provide for or make allowances for timing of any final material quality test results that relate to “acceptance” and the milestone date(s).