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Texas A&M Transportation Institute

Price Adjustment Clauses: Report

Technical Report: 0-6799-1

Cooperative Research Program

TEXAS A&M TRANSPORTATION INSTITUTE
COLLEGE STATION, TEXAS

TEXAS DEPARTMENT OF TRANSPORTATION

in cooperation with the
Federal Highway Administration and the
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16. Abstract

Price adjustment mechanisms exist to account for fluctuations in commodity or labor prices and have been used for highway construction in 47 states. They are useful in stabilizing bid prices in times of economic uncertainty and preventing defaults on contracts. This study examined the feasibility of establishing price adjustment practices on highway construction contracts in Texas. Researchers found that there is not a consensus among TxDOT districts or contractors about using price adjustment clauses (PACs), but those who favor such would use them for longer term, higher value projects if they were to be instituted. Because there is not a clear agreement at this time among contractors and among TxDOT personnel interviewed, implementation of PACs on construction projects cannot be recommended.

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PRICE ADJUSTMENT CLAUSES: REPORT

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DISCLAIMER

This research was performed in cooperation with the Texas Department of Transportation (TxDOT) and the Federal Highway Administration (FHWA). The contents of this report reflect the views of the authors, who are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official view or policies of the FHWA or TxDOT. This report does not constitute a standard, specification, or regulation.

This report is not intended for construction, bidding, or permit purposes. The engineer (researcher) in charge of the project was David E. Newcomb, P.E. #111003.

The United State Government and the State of Texas do not endorse products or manufacturers. Trade or manufacturers' names appear herein solely because they are considered essential to the object of this report.

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INTRODUCTION

BACKGROUND

A price adjustment clause (PAC) is a contractual mechanism that allows a contractor to be at least partially protected against material or fuel price increases that may occur between the contract award and the execution of the work. This is done by having an owner accepting the risk for escalating prices by offering a PAC that pays the contractor for any increases above an agreed-upon threshold (trigger value). Frequently, there is a minimum contract duration and contract amount to which a PAC is applied, although this is not always the case. Also, many PACs contain provisions for the contractor to provide a rebate to the owner in the event of decreasing commodity prices. PACs are used in a number of industries in order to mitigate the amount of uncertainty inherent in contract work. In a recent the National Cooperative Highway Research Program (NCHRP) study (Skolnik, 2011), 47 out of 50 state departments of transportation (DOT) use price adjustment clauses. The reasons for DOTs using PACs include:

- Decreased bid prices.
- More bidders and fewer bid retractions.
- Better market stability.
- Better reliability in the supply chain.
- More consistent contractor profit margins.

However, there are a number of risks and disadvantages associated with PACs such as:

- The accuracy of indices.
- Agency start-up costs.
- Added agency administrative costs.
- Price adjustment payouts.
- Political and industry resistance.

OBJECTIVE

This study examined the feasibility of establishing price adjustment practices on construction contracts in Texas.

SCOPE

A literature review presents the current state of knowledge of commodity price fluctuations, PACs, their use in other states, and what others see as their advantages and disadvantages. Next, detailed interviews with the Texas Division of the Federal Highway Administration (FHWA), surrounding state DOTs, as well as California and Pennsylvania are presented to understand their positions on PACs. Texas Department of Transportation (TxDOT) district personnel were interviewed concerning whether PACs should be instituted in Texas, how

PACs should work, and what materials and fuels should be included if PACs are implemented. Trade associations and contractors were interviewed to gain their perspectives on the impact of PACs on the highway contracting industry in Texas. Finally, conclusions are presented based upon the work accomplished in this project.

RESEARCH APPROACH

LITERATURE REVIEW

The research began with a review of literature available on the subject of price adjustment practices in the U.S. Commodity price trends for asphalt, fuel, cement, and steel are presented as a backdrop to the rationale that has been applied to the development of PACs. Two studies conducted in Texas were examined along with a very comprehensive national study by NCHRP. The NCHRP study incorporated surveys of all the DOTs in the country along with 100 contractors.

OTHER AGENCIES

Interviews were conducted with the Federal Highway Administration and six DOTs other than TxDOT. The FHWA was interviewed to gain a national perspective on PACs and an understanding of how the federal government views their use. These included the surrounding states of Louisiana, Arkansas, Oklahoma, New Mexico, and two states with extensive PAC experience: California and Pennsylvania. Of these states, only Arkansas does not have a PAC. Figure 1 shows a map of states interviewed.

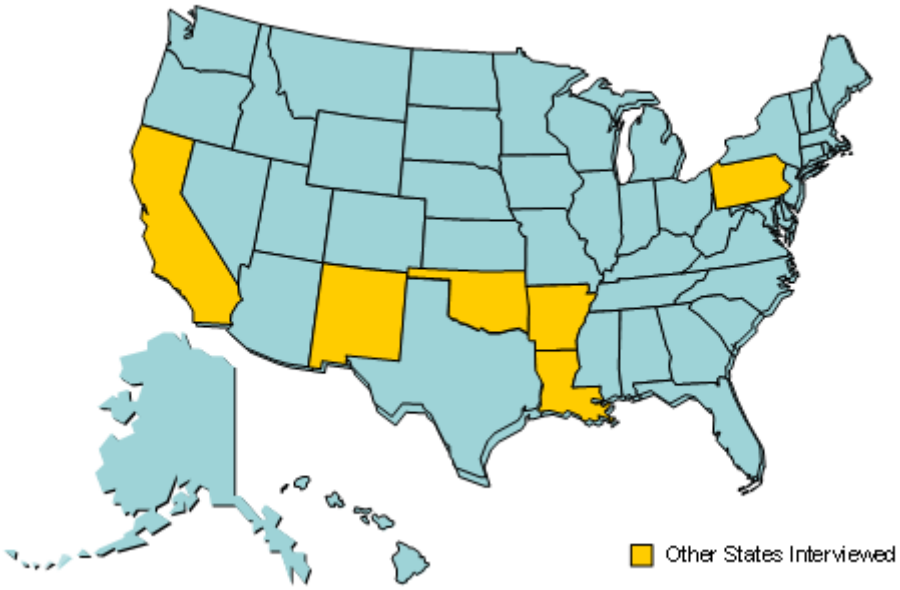

Figure 1. Other State DOTs Interviewed for PAC Practices.

Questions posed to these agencies included the following:

Does your state use a PAC?

1. If yes:
    a. What are the strengths and weaknesses of PACs?
    b. Are PACs advantageous to your DOT?
    c. What impacts do PACs have in the total project cost scenario and overall project programming and funding?
    d. If prices escalate how does the DOT pay for the increase in costs?
    e. What impact does a PAC have on competition in your state?
    f. What materials or fuels are covered under your PAC?
    g. Do you use a minimum project time or minimum project cost or a combination to initiate the use of a PAC? If so, what are they?
    h. At what price escalation rate is the PAC triggered?
    i. What impact has the PAC had on administrative cost?
    j. How is the PAC administered? Centrally or on a district basis?
    k. Do you use PACs on other types of contracts (e.g., maintenance, mowing)?
    l. Are the industries in your state satisfied with your use of PACs?
        i. Trade associations
        ii. Contractors
        iii. Material suppliers
2. If no:
    a. Why not?
    b. Have you considered instituting PACs in the past?
    c. Are you considering implementing them in the future?

TXDOT DISTRICT INTERVIEWS

Personnel from 15 TxDOT districts were interviewed either in person or over the telephone. In many instances, the representative was the District Engineer, but in some cases, the District Construction Engineer was interviewed. Figure 2 shows the districts interviewed and their geographical distribution. The list of questions posed to district personnel included:

1. What do you think a PAC is for?
2. What are the strengths and weaknesses of PACs?
3. Would PACs be advantageous or not to TXDOT? Why?
4. What impact would PACs have in the total project cost scenario and overall project programming and funding?
5. If prices escalated how would the district pay for the increase in costs on the contract?
6. What impact would the use of a PAC have on competition in your district?
7. What materials or fuels should be covered under PACs?
8. Would you use a minimum project time or minimum project cost or a combination to initiate the use of a PAC?
9. At what price escalation rate should PACs be triggered?
10. What impact would you estimate for administrative costs to implement a PAC?
11. How do you think the PAC should be administered?

12. If you were the director would you implement a PAC?
13. Should PACs be used on maintenance contracts for such things as trucking, mowing, etc.?

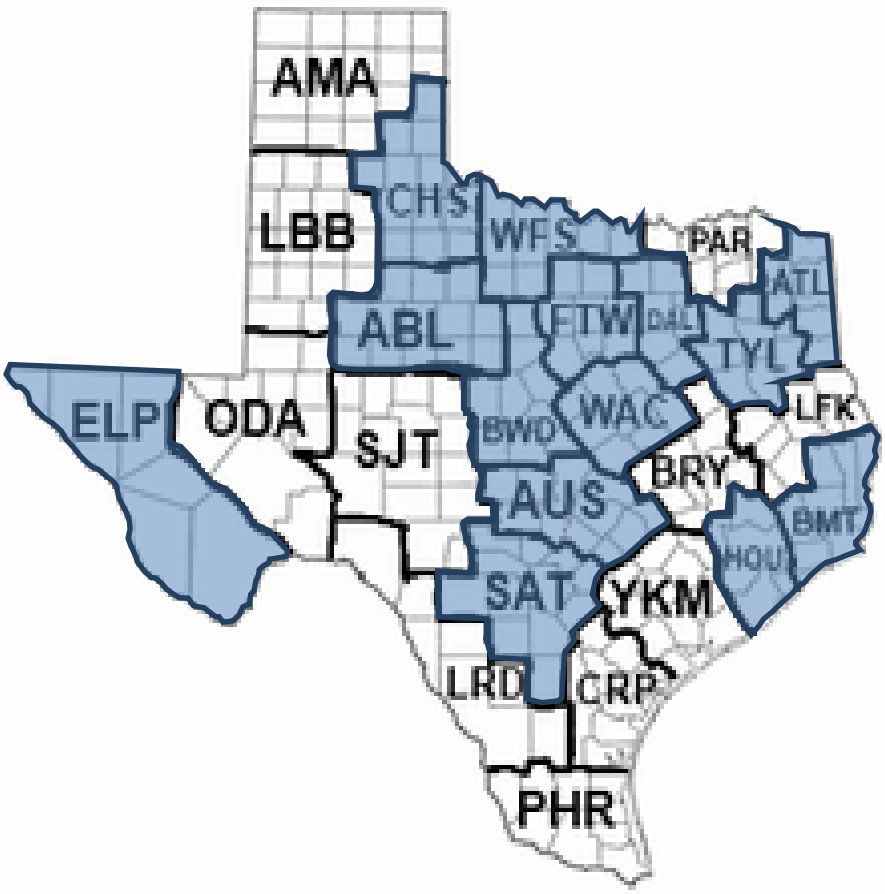

Figure 2. TxDOT Districts Interviewed.

CONTRACTOR INTERVIEWS

Eleven contractors and materials suppliers were formally interviewed and one was informally interviewed. These included asphalt mix producers, asphalt paving contractors, concrete paving contractors, seal coat contractors, aggregate suppliers, and a precast panel manufacturer. The company profiles of the 11 contractors formally interviewed are listed in Table 1 with the type of company they identified themselves as and whether they perform work in other states. At the request of the Associated General Contractors (AGC), the contractors were assigned numbers to preserve their anonymity. Also presented in this table are the estimated annual revenue and the percent of work performed for TxDOT. Only one of the contractors interviewed was a publicly held company. Annual revenues ranged from $50 million to $500 million with the majority being less than $100 million. The percent of work performed for TxDOT ranged from 35 percent up to 100 percent. The percent of TxDOT work does not correlate to the size of the annual revenue for these companies.

Contractors were interviewed individually either in person or by telephone. Eleven of the contractors were formally interviewed with a set of questions and one was informally interviewed. Below is the list of questions each of the contractors was asked:

1. Please describe your business:
    a. materials supplier, contractor, types of construction
    b. private or publicly held company
    c. amount of work from TxDOT on an annual basis (or percentage of total revenue)
    d. total annual revenue
2. What do you think a PAC is for?
3. What are the strengths and weaknesses of PACs?
4. Would PACs be advantageous to you? Why or why not?
5. What impact would the use of a PAC have on competition?
6. What impact would you estimate for your profit margin?
7. Would you be more inclined to submit bids if PACs were available?
8. Should PACs be mandatory or at the contractor's option?
9. What materials or fuels, if any, should be covered under PACs?
10. What would you consider an appropriate minimum project time or minimum project cost or a combination to initiate the use of a PAC, if at all?
11. At what price escalation rate should PACs be triggered, if at all?

Table 1. Contractors Interviewed.

Contractor No.	Type of Work	Private or Publicly Held	Annual Revenue, $M	TxDOT Work, % of Revenue
1	Contractor/Material Supplier (Asphalt Mix, Ready Mix, Aggregate)	Public	500	60
2	Contractor and Material Supplier (Asphalt Mix and Ready Mix)	Private	100	100
3	Paving Contractor, Barricades and Striping	Private	75–100	80
4	Contractor and Materials Supplier (Asphalt Mix, Aggregate)	Private	50–60	60
5	Contractor – Heavy Civil and Materials Supplier (Asphalt Mix)	Private	60	35–40
6*	Contractor and Materials Supplier (Asphalt Mix)	Private		
7	Contractor and Materials Supplier (Prefab Concrete)	Private	150	75
8	Material Supplier	Private	75–80	90
9	Contractor and Materials Supplier (Asphalt Mix)	Private	70	50
10	Contractor and Materials Supplier (Asphalt Mix, Aggregate)	Private	130	95
11	Contractor and Materials Supplier (Asphalt Mix, Aggregate)	Private	65–80	45–50
12	Contractor, Flood Control	Private	420	90

LITERATURE REVIEW

GENERAL USE OF PRICE ADJUSTMENT PROCEDURES

Skolnik (2011) gives some perspective on price adjustment clauses by discussing their use in industries outside of the highway construction arena. These businesses all require the consideration of risk of volatile commodities in the context of long-term commitments or highly competitive environments. Construction in the energy sector for natural gas, coal, or petroleum facilities have price adjustment clauses due to the high cost and long-term nature of their contracts. Airline companies and electricity providers have provisions for fuel surcharges or fuel adjustments in their billing to customers. Thus, it is not an unusual circumstance for construction companies, commodity providers, or service providers to account for their volatile costs in dealing with their customers.

CONSTRUCTION COMMODITIES

The rising costs of construction fuels and materials have been a reality of the last 15 years. Diesel, asphalt, steel, and cement have all experienced profound price increases during this period with some price decreases in the past two years. Figures 3 and 4 show the increase in prices for crude oil (1986-2012) and portland cement (1986-2010), respectively. Figure 5 shows how the price of diesel fuel has changed from 1994 through 2012. Figure 6 presents the changes in Texas liquid asphalt prices from 2001through 2012. The reasons for these price fluctuations (both increasing and declining) have been mainly attributable to:

- Competition for raw materials from developing nations who are improving their infrastructure.
- Increases in crude oil prices, especially in 2008.
- Declining or stagnant global economy since 2008.

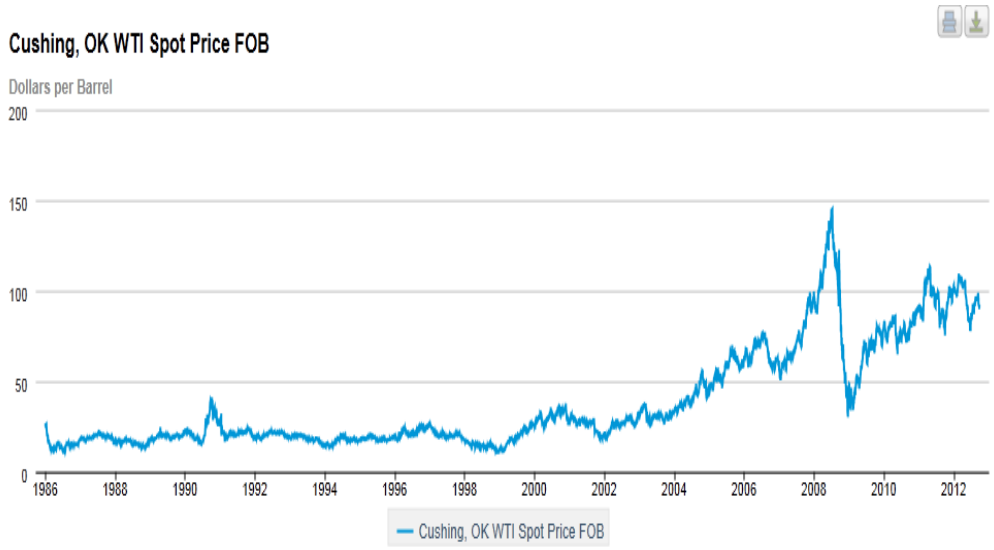

Figure 3. Crude Oil Prices, 1986–2012 (Energy Information Administration, 2012).

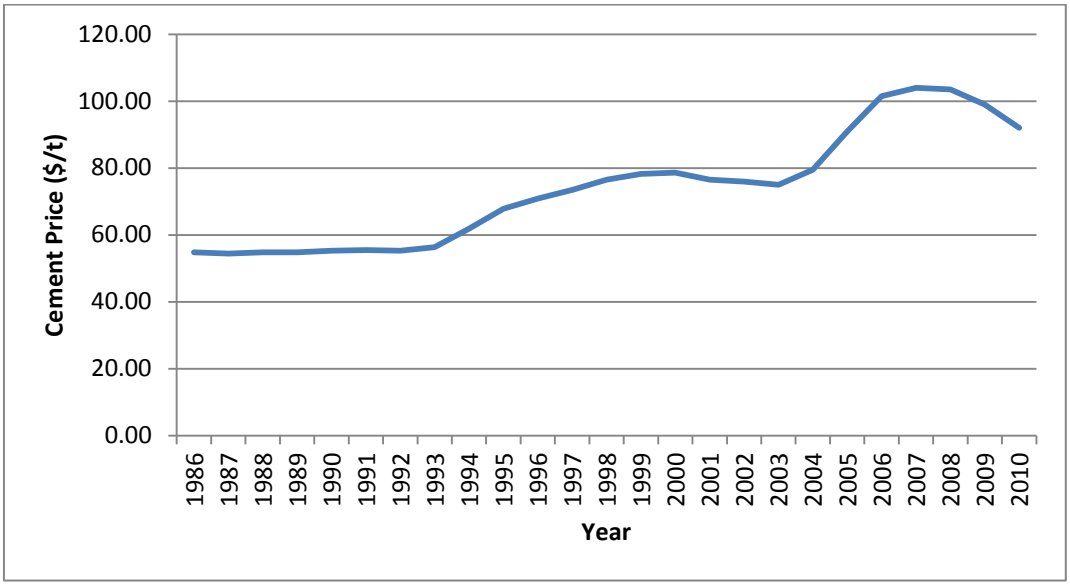

Figure 4. Cement Prices, 1986-2010 (U.S. Geological Survey, 2012).

Figure 5. Price Fluctuations in Diesel Fuel Prices, 1994–2012 (Energy Information Administration, 2012).

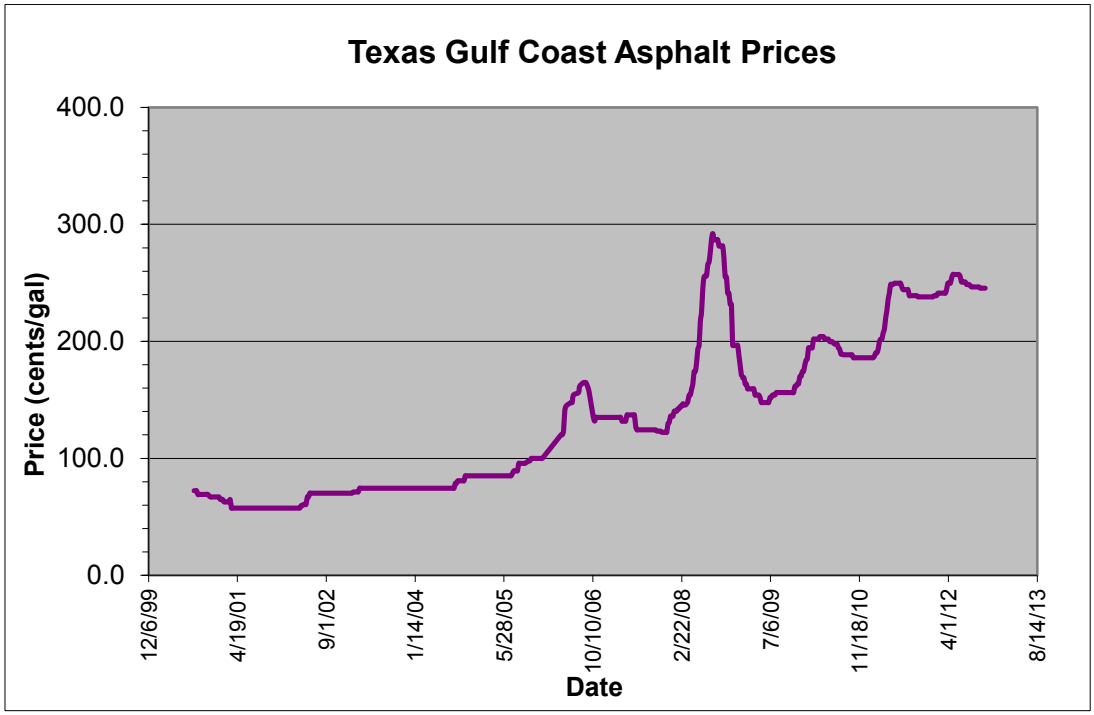

Figure 6. Changes in Asphalt Binder Prices from 2001 through 2012 (Peterson, 2012).

Emerging economies have placed demand pressures on construction commodities that have not existed before. The International Cement Review reported in 2010 that China consumed over half of all cement produced globally (over 1.8 billion metric tons out of 3.3 billion metric tons) with India consuming the second largest amount (212 million metric tons) (International, 2012). Global asphalt demand is projected to increase by about 4.1 percent per year from 2010 to 2015, and while the largest increases in the asphalt market are expected to occur in North America, China alone is expected to account for 20 percent of the world's demand for asphalt

(Freedonia Group, 2012). Currently, the increase in global capacity for producing steel is outpacing the increase in consumption, but once again, China and India are the leading consumers of this commodity (Ernst & Young, 2012). It is likely that the demand for building materials in China and India will continue to be high in the near term as their economies continue to expand. This situation will continue to place pressure for higher construction material prices in the U.S.

The price of crude oil has a profound effect on both construction activities in terms of fuel prices and construction materials in terms of production and delivery. For instance, a great deal of fuel is spent in the excavation and grading portion of highway projects through heavy equipment operations. Aggregate base course materials often involve substantial hauling costs depending upon the location of the aggregate source. The production of portland cement is an energy intensive process involving the high-temperature sintering of minerals. Asphalt mixtures require elevated production temperatures for properly combining liquid asphalt and aggregate. Thus, all construction activities and materials involve energy consumption and so they are subject to price fluctuations in crude oil.

While a declining or stagnant economy is not healthy for business or government revenues, it has a profound effect on the construction materials market. Private and public sectors are impacted by the reduction in funds available for construction projects, reducing the availability of projects and increasing the competition among contractors. The increased competition drives bid prices down resulting in lower costs for the projects that are available. This is evident by examining the trends in Figures 3 and 4 where a spike in diesel and asphalt mixture prices occur in 2008, just prior to the economic recession, followed by a sharp decline in prices as the recession began. However, it can be seen that the prices have been rising since that time.

Uncertainty about the future costs and markets has always been an issue associated with construction activities. If it were possible to anticipate these changes, there would be relatively little risk associated with construction contracting. As it stands, however, risk assessment is one of the most important aspects of bidding for construction projects. Generally speaking, contractors attach a premium to risks to ensure their profitability through unforeseen circumstances (Zhou, 2011). This premium is reflected in higher bid prices for certain items of work, and the greater the uncertainty the higher the premium. Project duration is another factor affecting uncertainty as changes in costs in the short-term tend to be lower and easier to anticipate than long-term trends. For instance, referring to Figure 3, a contractor beginning a two-year project in 2004 would have faced an approximately 100 percent increase in the price of diesel fuel by 2006. If the contractor had considered the previous 2 years (2002 to 2004) as an indication of fuel price escalation, he may have only anticipated a 30 percent increase in diesel prices, which could have been devastating in some highway projects. Also, in times of rapid price increases commodity suppliers are less likely to quote firm prices for long-term contracts, again increasing the risk that the contractor must pass on to the owner. Risks in highway construction are associated with uncertainties about the project, and these risks are reflected in

premiums that contractors assign to certain bid items to help ensure their profitability. These premiums will result in higher project costs for the owner.

BUDGETARY CONSIDERATIONS

The Texas Department of Transportation has seen a profound decrease in its purchasing power as the prices of commodities have increased in recent years. Pandit et al. (2009) found that the average construction contract doubled in cost from 1997 to 2006. These price increases have come at a time when many highway agencies have found their revenue streams either being held flat or decreasing. The result of the price increases and revenue problems is that agencies can afford to fund fewer projects, are forced to reduce operating budgets, and must defer critical activities such as maintenance. These dire conditions force agencies to explore cost savings opportunities through non-conventional approaches.

Damnjanovic et al. (2009), in a report for TxDOT, noted that there were many strategies that could be employed to reduce or contain construction costs and improve the competition among bidders for transportation projects. They asked an expert panel to rank the effectiveness of 24 potential strategies, and the use of a price adjustment clause at the time of bidding was ranked eighth. The authors noted that a price adjustment clause would result in bidders lowering the risk premium associated with the uncertainty of commodity price fluctuations, especially on longer term contracts. Other material-specific strategies listed in the top 10 overall methods included:

- Evaluate restrictions on imported materials.
- Create material sources by TxDOT.
- Evaluate local market conditions for availability of resources to effectively plan construction lettings.
- Utilize owner buying power.
- State-owned batch plants and crews for small and isolated jobs.

There have been relatively few studies conducted on price adjustment clauses, and yet 47 states use them in some fashion (Skolnik, 2011).

STATE-OF-THE-PRACTICE

The current thinking regarding the use of price adjustment clauses is captured in Skolnik's work (2011) for NCHRP and in an American Association of State Highway and Transportation Officials (AASHTO) survey from 2009 by Oie et al. Skolnik managed to obtain responses from all 50 states while the 2009 AASHTO survey reflected responses from 40 states. He also received input from 100 contractors concerning their opinions of PACs. In addition to obtaining an update of the 2009 AASHTO information, Skolnik also asked state DOTs and contractors about their opinions on the effectiveness, costs, and barriers to the implementation of PACs.

Figure 7 shows the broad results of the survey of states done for the NCHRP study (Skolnik, 2011). At that time, 47 states had PACs for various commodities with 41 states having adjustments for fuel and 40 having adjustments for asphalt cement. Fifteen states had PACs for steel and four states accommodated price changes for cement. States having no provisions for PACs include Texas, Arkansas, and Michigan.

States having PACs use a trigger value for escalation rates in determining when to activate price adjustments. Figure 8 (Skolnik, 2011) shows that, for most commodities, states use a value of between 0 and 10 percent, with the most common interval being between 5 and 7.5 percent, although a few states go as high as 15 to 20 percent.

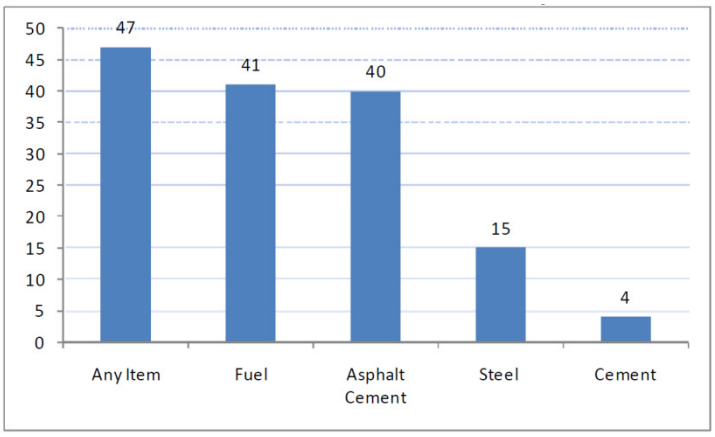

Figure 7. Price Adjustment Clauses in Use by Various States (Skolnik, 2011).

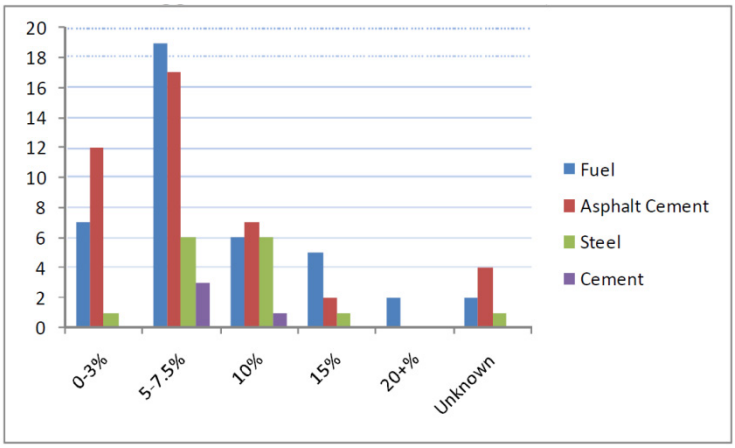

Figure 8. Escalation Rate PAC Trigger Values for Construction Commodities Used by Various States (Skolnik, 2011).

Skolnik (2011) captured the administrative issues associated with the implementation of price adjustment clauses in construction contracts. On average he found that states expended about 1000 man-hours per year managing price adjustment programs and about $3500 per year on subscriptions to bid tabs services. Programming to begin implementation ranged from $5000 to $50,000. Over the time period of 2006 through 2009, Skolnik presented data from 19 states

regarding disbursements versus reimbursements under PAC programs. For these states, the average annual payments exceeded reimbursements by about $11 million, less than 1.5 percent of total highway spending. However, in 2009, reimbursements from contractors were higher than payouts by DOTs.

In surveying DOTs about their perceptions of PACs, Skolnik (2011) found that the main benefit to PACs came from better bid pricing with 78 percent of the agencies indicating a significant benefit and 17 percent showing at least a small benefit. The next biggest benefit listed by DOTs was in contractor stability with over half indicating a significant benefit and about 22 percent showing a small benefit. Beyond these two issues, DOTs believed to a lesser extent that PACs led to an increased number of bidders. Sixty-one percent of the DOTs indicated that the benefits to the agency were substantial, and another 35 percent say their benefit is at least small. When asked what items should be covered under PACs, about 80 percent of the responding DOTs suggested that fuel and liquid asphalt would be beneficial to index while cement and steel were less worthwhile to include in a PAC program. The biggest barriers to the implementation of PACs cited by DOTs included administrative costs and contractor resistance. About 25 percent of the agencies said that the creation of a DOT policy and the lack of updated fuel usage factors (most recent FHWA figures are from 1980) were hindrances to the implementation of PACs.

Skolnik (2011) stated that the overall consensus among the 100 contractors included in his survey was that PACs were good for all parties including agencies, contractors, and suppliers. In general, contractors believe that the price fluctuations in 2004 and 2008 reinforced the need and benefits of PACs. When PACs are not available almost all the contractors in the survey said they added premiums to their bids and a significant number (38 percent) said they would not be as likely to submit bids. As with the agency responses, contractors largely perceive a greater stability in the industry when PACs are available and said that their bid prices are lower when PACs are used. Most contractors believed that material suppliers and subcontractors also benefitted from PACs. There was about an even division among contractors when it came to the question of whether the DOT risk was increased or reduced. However, 82 percent of the contractor respondents think that DOTs realize significant benefits from PACs. Furthermore, contractors had a favorable opinion concerning the use of PACs for all the commodities (fuel, asphalt, steel, and cement) considered in the study.

SUMMARY

There have not been a large number of studies conducted on the need for and impacts of price adjustment clauses on construction markets and DOT operations and budgets. On the basis of this literature review, the following observations are made:

- Price adjustment mechanisms exist in other industries to account for fluctuations in commodity prices. Examples include airline fuel surcharges, utility energy surcharges, and price adjustment provisions in energy facility construction.

- Prices for steel, fuel, liquid asphalt, and cement have all undergone profound price changes over the past 15 years due to global pressures, rising crude oil prices, and economic stagnation.
- Price adjustment clauses for highway construction have been implemented in 47 out of 50 states.
- The primary advantages of using PACs in highway construction projects are:

    - Greater stability in the construction market.
    - Lower bid prices for DOTs.

- For states having PACs, the payout due to price escalation has exceeded returns from contractors on average at about $11 million per year. This is less than 1.5 percent of the total highway construction budget.
- Most DOTs and contractors polled by Skolnik (2011) view the role of PACs in highway construction favorably.

AGENCIES OTHER THAN TXDOT

FEDERAL HIGHWAY ADMINISTRATION

The current FHWA guidance on PACs is found in Technical Advisory T 5080.3, dated December 10, 1980, with an updated Memorandum on Price Adjustment Contract Provisions, dated August 21, 1990 (later updated on April 7, 2011). The original document is currently being reviewed and revised. The new policy statement from FHWA is expected to be released in late 2012.

The 1980 memo outlines the approach to be taken to minimize the effects of volatility in commodity prices in order to obtain competitive bids from contractors. It presents sample wording for Price Adjustment Clauses from states with successful programs. The FHWA maintains that price adjustments should apply to de-escalation as well as the escalation of commodity costs. It encourages setting a maximum ceiling on price adjustments as well as minimum level. The guidance suggests that states establish their own indexes for the materials to be covered. It states that contractors should not be given the option of accepting or rejecting a PAC. It discusses methods to account for fuel usage for the purpose of a fuel PAC. It goes on to give fuel factors for various construction activities on the basis of a 1974 Transportation Research Board document. These fuel factors are currently being revised in National Cooperative Highway Research Program Project 10-81, Fuel Usage Factors in Highway and Bridge Construction.

The Texas Division Office of FHWA stated that a PAC would provide relief for contractors during periods of escalation and allow the DOT to save money during de-escalation. They noted that a PAC would allow both contractors and the DOT to minimize expenditures, but that TxDOT would need additional staff to oversee the program and that the management of the program could be cumbersome. The FHWA Texas Division Office is neutral on whether PACs would be advantageous to TxDOT. The FHWA thought that competition might be tighter on projects as some contractors might be more inclined to submit bids and that successful contractors would need to hone their estimating skills. It could potentially close the gap between the engineer's estimate and the successful bid. If increased costs created overruns in budgets, the DOT would probably need to adjust funds between projects or delay some projects until the next year. The FHWA recommended considering the historical record and items that are the biggest components of bids when selecting which commodities to cover with a PAC. The FHWA had no opinions concerning the size or lengths of contracts to be covered by PACs or the escalation rate that would trigger them. They did suggest drawing on the experience of other DOTs. The FHWA division office thought that PACs should be centrally administered and that administrative costs within TxDOT would increase. The division believes PACs should be considered on other types of contracts as well as construction and that they should be based on the impact of individual bid items. The Texas Division of FHWA said they would support the use of PACs so long as they are a part of the contract bidding documents and not a change order to an existing contract.

OTHER DEPARTMENTS OF TRANSPORTATION

Arkansas

The Arkansas DOT does not use PACs in their construction contracts. This was a DOT decision made several years ago. At that time, they were requested to evaluate the use of PACs when the price of liquid asphalt was rapidly increasing and the DOT saw that unit bid prices were increasing as well. When they studied trends in more detail they found the bid prices either remaining constant or even increasing when asphalt prices were decreasing. Even as recently as 2007, when asphalt prices increased sharply, there was no request from the industry to consider PACs, and the Arkansas Chapter of AGC has no position on the subject. This led to the DOT's decision not to include PACs in contracts.

There is no move within the Arkansas DOT to consider PACs as the industry seems to be satisfied with the current method of contracting. However, one note of interest is that Arkansas generally does not let many turn-key projects. Most projects are staged with surfacing work being a separate project. This means that the surfacing project occurs over a shorter duration and the contractor is more likely to get a firm quote, especially for liquid asphalt.

California

The California Department of Transportation (Caltrans) uses a PAC for liquid asphalt, and they view the system favorably. The strength is that PAC assigns risk to the entity best positioned to handle it, but they also acknowledge they have no better ability to forecast prices than private industry. They establish contingency for each project in order to cover potential fluctuations in prices, and this is established on historical variations in asphalt prices. In order to set aside the appropriate contingency funds, the state uses a formula that accounts for the project duration on asphalt quantity noting that short term projects do not carry as much risk as long term projects. The resident engineer must confirm that the needed contingency funds exist prior to starting the asphalt paving on a given project. To maintain the required contingency, it may be necessary to delay the letting date of some projects.

Caltrans believes that the asphalt PAC has increased competition by reducing bid prices, which has allowed smaller contractors to get into the highway construction business. They noted that asphalt suppliers and asphalt mix plant owners control the market and the competitiveness of smaller contractors. They use a price change of 10 percent as the trigger for invoking the PAC. The trigger was originally set at 5 percent, but was changed three years ago.

There is an administrative cost impact in Caltrans' PAC system as the calculations are performed manually in district offices. While the staff does extra work, it is absorbed in other tasks related to the project. The PAC is originated at the central office, but implemented by the resident engineer. Monthly estimates are prepared by the resident engineer, which include PAC adjustments, and then forwarded to the district for quality control checks before being submitted to the central office for payment. An asphalt PAC is also used in maintenance contracts.

Caltrans noted that the development of its asphalt PAC was a collaborative effort involving Caltrans, contractors, and suppliers. To this point, there have been no negative comments from contractors or material suppliers.

Louisiana

The Louisiana Department of Transportation and Development (LaDOTD) has Price Adjustment Clauses for fuel and liquid asphalt. The main strength they see in PACs is that the contractors do not need to include escalation into their bids. However, it is sometimes difficult to manage when conflicts arise between the date of purchase and the date of placement, but this is specified and manageable if it is properly handled. Auditing can pose a challenge with PACs. All that said the LaDOTD does consider PACs to be advantageous to them.

PACs can make budgeting more difficult due to unknown pricing, and they make project cost more uncertain. If prices escalate, the LaDOTD Project Manager is required to secure the additional funding to handle project overages, and they may need to work with the finance staff to ensure funding availability. In some cases, other projects may need to be deferred until the following year, but LaDOTD has always found a means to pay for their obligations.

In Louisiana, liquid asphalt and fuel are the two commodities covered by PACs, although the LaDOTD has considered using the consumer price index to apply PACs to all contract items. To date, they have not been successful in formulating this all-encompassing approach. For fuel, LaDOTD includes gas, diesel, and natural gas for specific work items such as earthwork, flexible base, asphalt paving, asphalt production, concrete paving, etc. Fuel is only covered for projects over a minimum quantity of specific bid items such as cubic yards of embankment. Liquid asphalt is covered on all contracts regardless of quantity. Both fuel and asphalt PACs are triggered at a rate of change of 5 percent.

Administratively, the LaDOTD has found that PACs are relatively easy to administer with the XiteManager software although there is occasionally an exception that requires manual calculations. The PAC has been in place long enough to become a standard practice. Separate items are established within the contract monthly estimate for payment or reimbursement from PACs. The Louisiana provision for price adjustment is found in Appendix A. Currently, the LaDOTD uses PACs only on construction contracts. To this point, all parties except the portland cement industry are satisfied with the process, but the cement industry would like to see a PAC for its product.

New Mexico

The New Mexico DOT (NMDOT) uses PACs for both asphalt and portland cement, but there has not been much interest in the portland cement index until recently. They have also discussed a steel PAC but there is not much interest in writing a PAC for that commodity. A copy of the PAC used in New Mexico is found in Appendix B, and a copy of the price index for that state may be found in Appendix C. The main strength of the PAC that they have found is that with the state assuming the risk for price increases, the contractor can bid a project without

attaching a premium for the risk and provides a better bid on a level playing field. The main drawback according to the state DOT is the effort required to track the index and adjustments.

The NMDOT believes there is an advantage to the DOT with the asphalt PAC, but is less certain about a fuel PAC. They did acknowledge that price increases could impact other projects. In order to pay for a price increase the approach is to delay some projects until the next budget cycle, or revise the scope of future projects. The NMDOT stated that there was good competition during letting because of the level playing field that a PAC creates.

They use their PACs on all projects with no minimum time or contract amount required. The trigger rate of change is included in their specification at 10 percent. PAC adjustments are handled like change orders normally would and have become part of the usual department business process, so it is difficult to discern any additional administrative costs. The PAC is administered centrally in New Mexico and carried out at the district level in terms of coordinating with contractors and executing the change orders. PACs are used only on construction contracts. To this point, all industry parties including trade associations, contractors, and material suppliers are satisfied with the process; the DOT has received no negative comments.

Oklahoma

Oklahoma DOT (ODOT) started using a PAC for liquid asphalt in June 2006. Prior to this, the ODOT was reluctant to include PACs in their contracts, but some contractors were forced out of business due to price volatility at that time. Although a majority of ODOT engineers and administrators favored the implementation, there was a fairly large minority and some of the larger contractors opposed it at the time. However, the contractors now strongly favor it because they were unable to obtain firm price quotes from some of the asphalt suppliers during project bidding.

The ODOT views the PAC as a mechanism to shift risk from the contractor to the DOT, but bid prices were lowered about $0.50 to $1.00/ton and the DOT is better positioned to handle price volatility. It protects contractors from possible bankruptcy, and it protects the DOT from having to deal with possible defaults on contracts. The risk that comes with a PAC is that escalation payouts make budgetary planning more uncertain. The ODOT believes that the PAC has a stabilizing influence on their work and is therefore advantageous to them and the industry.

The impact of the PAC on the total ODOT budget has been about 0.5 percent, and as far as individual projects are concerned, if the total project budget is exceeded then a new contract is executed to complete the work. Additionally, ODOT may choose to execute a preliminary change order to reflect project budget adjustments. Contracts are managed on an individual basis, so there is no need for a state-wide contingency. The district engineers meet with their district commissioner in order to make budget adjustments near the end of the year. The districts have the option to borrow from the next year's budget, or defer planned projects until the following fiscal year.

The ODOT cannot assess the impact of the PAC upon competition because it is difficult to understand what would have happened without it. The number of bids was about the same

before and after the PAC implementation. The PAC was instituted as a mandatory feature of the contract; there is no opt-in/opt-out feature. In this way, all contractors are bidding on the same basis, and the industry had no problem with this requirement.

Oklahoma has PACs for both liquid asphalt on any asphalt paving project, and fuel for earthwork contracts of a minimum of 180 days and 50,000 cubic yards. The PAC is activated at a change level of 3 percent for either asphalt or fuel.

The PACs have not created much additional administrative burden as XiteManager handles most of the functions automatically. There is a subscription fee of about $2000/year for a bid tabs service, and there is a minor amount of staff time involved for managing and executing change orders. The payment adjustments are handled centrally. The ODOT uses the last price index at the end of the month for the following month and asphalt indexing is done on the price of the mix. When determining the asphalt content subject to price adjustment, ODOT uses an asphalt binder use factor included in the specification for specific mixes assuming no reclaimed asphalt pavement in the mix. There are occasionally problems when asphalt mix is placed one month and paid for in the following month, but this is a rare issue. The ODOT also uses PACs on maintenance contracts that are let annually on a statewide basis.

The asphalt contracting industry has been satisfied with the current PAC system in Oklahoma, and there has been no negative reaction from other industries within the state. The state DOT would not have adopted the asphalt PAC without the industry's blessing. The state has considered expanding the system to cover steel, but there are numerous obstacles to overcome.

Pennsylvania

The Pennsylvania DOT (PennDOT) uses PACs to cover price fluctuations in liquid asphalt, diesel fuel, and steel. Each of these materials has its own size and price change requirements before it is initiated.

Price adjustments to liquid asphalt (Appendix D) are applied to projects requiring 100 tons or more of asphalt and are initiated when the index change is 10 percent or more either up or down. Diesel fuel price fluctuations of 5 percent are subject to price adjustment for all earthwork of more than 50,000 cubic yards, aggregate subbase and base of more than 5000 tons, asphalt paving of more than 5000 tons, concrete paving of more than 10,000 square yards, structural work of more than $1,000,000, and milling of more than 10,000 cubic yards. Fuel usage factors for various items of work are included in the specifications. Separate from their standard specifications PennDOT has developed a special provision for steel price fluctuations. Contractors may opt in or out of the steel PAC (Appendix E) based upon the particular category (e.g., guard rail, reinforcement bars, piles). The price index fluctuation trigger for steel in Pennsylvania is 5 percent with no minimum quantity mentioned in the special provisions. Appendix F contains the date on steel prices in Pennsylvania from July 2008 through February 2012. The price of steel was at its peak in September 2008 ($1028/ton) and that the price fell to a low in about August of 2009 to $611/ton. The steel PAC is considered for the date of invoice from the steel mill and cannot predate the date of letting.

SUMMARY

Based on interviews with FHWA and selected state DOTs, the following observations can be made:

- FHWA is neutral on the implementation of PACs in Texas, but would support their use if they were instituted. They will soon have new guidance to replace their 1980 memo.
- The Arkansas DOT has not adopted the use of PACs as they noted that as commodity prices increased, so did bid prices, and that bid prices increased even when commodity prices fell. Furthermore, the industry in Arkansas has not requested PACs in contracts.
- Caltrans uses an asphalt PAC based upon historical price fluctuations and project duration. The industry seems satisfied with it, and Caltrans views it favorably.
- The Louisiana DOTD has PACs to cover both fuel and asphalt. While they acknowledge occasional disputes regarding the system, the DOTD believes that the PACs are beneficial to both the agency and contractors.
- The New Mexico DOT has instituted PACs for liquid asphalt and cement, although they acknowledge that there is more interest in the asphalt PAC. They believe the effort to track the prices and administer the program pays off in increased competition for projects.
- The Oklahoma DOT has PACs to cover asphalt on all paving projects and fuel on large earthwork projects.
- The Pennsylvania DOT use PACs to account for price fluctuations in asphalt, fuel, and steel. They specify minimum quantities of materials before instituting PACs.
- Both Louisiana and Oklahoma have experienced minimal administrative costs in managing PACs due to automating the computations through the XiteManager software.
- No DOT, regardless of whether they use PACs or not, reported any dissatisfaction from the construction industry.

TXDOT DISTRICTS

TXDOT DISTRICT ENGINEERS

When asked about their understanding of the purposes of a Price Adjustment Clause, engineers in TxDOT districts said that PACs offered a means to mitigate contractor risk by adjusting the price paid for a commodity for increases outside the control of the contractor, especially on long-term contracts. It would be a way for TxDOT to get lower bid prices by assuming some of the risks for commodity price escalation. One district representative offered that the risk mitigation served TxDOT as well as the contractor. Another noted that asphalt pavement construction was frequently among the last activities during construction on long term contracts (greater than three years) and if unforeseen price increases occurred, the contractor may try to save money by cutting corners. It would help deal with delay disputes was another view offered. TxDOT engineers are well-versed in their understanding of PACs and their intended purpose.

The district representatives were asked to state the strengths and weaknesses of PACs as they viewed them. The strengths of PACs were that contractors might bet better bids from suppliers, it would help small contractors, bid prices would be better, post-construction claims due to price escalation would decrease. Furthermore, it would help ensure paying a fair price for the commodity, and TxDOT could recover money if prices decrease. Bid prices should decrease as contractors have to assume less risk. The process would help keep the contractor whole by using a prescribed procedure to deal with price adjustments. TxDOT would also be able to recover money if prices go down over a period of time. Among the weakness mentioned were that large contractors would oppose the institution of PACs, and that it might help some contractors stay in business that should not be. On the other hand, concern was also expressed that some contractors would be hurt by potentially large amounts of de-escalation. Some contractors may not bid as aggressively as they would without a PAC, and some contractors excel at projecting their costs. Two districts said that the impact on the overall district budget could cause some projects to be delayed, or there would need to be a contingency allowance for particular projects in the current system. The department would need to make sure there is not a perception of providing extra money for the same amount of work. There was a concern that market manipulation could take place if the procedure to determine indices was not carefully thought out. There was also concern in two districts that if adjustments were made too frequently, the administration of the contract could become cumbersome. The engineers in the districts understood the strengths and weaknesses of price adjustment clauses.

When asked if PACs would be advantageous to TxDOT, five district representatives felt that it would be beneficial for the most part, four were neutral, and three were more negative. Those who favored PACs believed that it was beneficial because the department would receive lower bid prices, that in a volatile market it would help everyone, reduce delay disputes particularly on long projects, and provide contractors with more flexibility and options. Those

who were neutral said that the PAC would need to work for escalation and de-escalation of prices. District representatives who were more negative did not see the escalation and de-escalation balancing out over the long view, and one stated that he was not in favor of contractors placing their financial risk on the department. There is not a strong consensus among the district representatives, but more believe that a PAC would be a benefit.

The impact of PACs on the cost of projects and overall programming and funding was of primary concern to the district representatives. Overruns or under-runs on individual projects would mean less certainty in predicting overall costs. With overruns, a mechanism would need to be established to either provide the extra money needed to complete projects or a method would need to be determined to provide for deferring certain projects to the next fiscal year. In the event of under-runs, a means of accelerating the construction of future planned projects would need to be developed. There were districts that did not believe it would pose much of a challenge and others that saw it as a major issue to be dealt with. In considering how to pay for potential overruns, three districts said that they would probably defer scheduled work until the following year if necessary and two districts thought that a contingency fund would need to be established. There were also comments to the effect that the districts could take care of this by the same means used in accounting for ride quality adjustments or change orders. One district commented that TxDOT must make constant adjustments to its program any way. While there were acknowledged probable impacts on budgets with PACs, districts believed there were mechanisms that could be put into place to handle them.

The impact on bid competition was projected to be good, at least initially, with some districts believing that it would be positive over the long term. One district cautioned that the PAC would need to be carefully crafted to prevent contractors from gaming the system. Two districts believed it would help contractors who are local and smaller more so than those who are larger. One district thought it would bring in more bidders, and two others believed it would help competition by leveling the bidding conditions between large and small contractors. Two other districts did not think PACs would have an impact on the current competition. It will be important to consider the ramifications of a PAC on competition and to establish a fair means of applying the clause so that TxDOT receives the benefit of any improvement in competition and does not suffer from a manipulation of the system.

The district representatives were asked what commodities should be covered by PACs. Four responded that items incorporated into the final product should be covered including cement, asphalt, steel, aggregate base, and emulsions. Seven favored including fuels in the PACs, but there were questions regarding how to gauge fuel consumption since it was expendable. Two thought that the most volatile commodities, fuel and asphalt, should be tried first to see what impact PACs would have. In one instance, a representative was not in favor of fuel being covered by a PAC. One district representative with experience in PACs, said that when steel had a PAC in an opt-in/opt-out system, the contractors all opted out and that cement did not have an escalation rate that triggered the PAC. A review of past commodity volatility

should be conducted and methods for calculating fuel consumption rates are needed if Texas considers implementing a PAC.

Most of the districts believed that there should be some minimum time of contract or dollar value before including a PAC. However, in two of the districts the engineers said they would not have minimum time or contract values, but apply PACs to all contracts. Of those who said they would apply PACs to longer term projects, the minimum time varied from 12 months up to 36 months. For minimum contract values, only one respondent offered a value of $20 million. Another engineer stated that the minimum should not be based on a total contract value but rather on the amount of a commodity used in the contract. For the most part, TxDOT districts would like to apply PACs to longer term, higher value projects if they were to be instituted.

There was not a strong feeling among the districts regarding the escalation rate at which PACs should be triggered. Three felt that somewhere between 5 and 10 percent would be appropriate while two others thought that it should be set at a higher level to allow contractors to take some risk and avoid constant administrative effort on the part of TxDOT. Another engineer thought that there should be no minimum rate of change since it could be tracked and accounted for automatically in the accounting system. It was stated that a review of other state practices and a dialog with the AGC would be prudent before establishing a minimum rate. The trigger point for the escalation rate would need some thoughtful consideration and input from stakeholders.

The administrative issues were discussed with the district representatives in terms of costs and how the PAC would be administered. The district representatives generally thought that administrative costs would be relatively low once the PAC was instituted and automated. One engineer expressed the need to properly implement the PAC and the work needed to integrate the PAC with plans, specifications and engineering activities, write the clause, develop a fund balance check to ensure liquidity, checks required for the district and central office to ensure correct contract documents, etc. Another suggested automatic price updates coordinated with the release of monthly indices. Two districts thought that more effort would be needed on a district level than a central level to administer PACs while five others thought that a centrally administered system with possible regional indices might work best. Two districts thought it would be best to have statewide indices to avoid issues of where the material was purchased versus where it is used. One district raised the question of how to pay for stockpiled materials or materials-on-hand. This same district mentioned that if the PAC baseline is set as the month of the start of the contract, then adjustment would be needed for materials on hand. Thus, there would not be an incentive for the contractor to procure materials ahead of the start of work. By and large the administrative issues with PACs are not viewed as substantial.

When asked if they would implement a PAC, most were conservatively positive about the prospect. One said yes with no qualifications, one said no because of industry resistance and the need for contractors to take risk, five said they would apply it only to selected projects first to how well it works, and two wanted more research and analysis before proceeding. If TxDOT

decides to proceed with a PAC, a step-wise process of using a shadow clause for one year to understand the impacts before actual implementation might be a prudent way to proceed.

The use of PACs on maintenance contracts has already been instituted by some districts and not by others. The response from two districts is that it depends on the length of the contract and most of their maintenance contracts were short-term. Another noted that it has escalation contracts on multi-year contracts but that not many contractors exercise their options. One districted pointed out that the SmartBuy system has price adjustment and that they use PACs on flagging, trucking, and routine maintenance with quarterly adjustments. In this case, there is an opt-out clause for both the contractor and TxDOT and escalation is applied to the contract amount, not just commodities. Another district also noted the use of price adjustments in the SmartBuy program. Two districts thought that fuel PACs might be good on maintenance contracts since they tend to be fuel intensive, while another district said that PACs on maintenance contracts would not be good because they are fuel intensive. There was not a consensus on the application of PACs to maintenance contracts.

District representatives had a number of questions concerning how PACs would be implemented and their history elsewhere. One asked whether other Texas agencies had PACs and whether these would be for all bid items or just selected commodities. One wondered how contractors currently anticipate commodity prices in their bidding. Another reiterated that the PAC needed to apply to escalation and de-escalation and that opting out of the PAC should only be possible after the bid letting.

To summarize the views of TxDOT districts:

- TxDOT engineers understand the purposes of PACs as well as their strengths and weaknesses.
- Most district engineers believe that PACs would be a benefit.
- Districts believed there were mechanisms that could be put into place to handle any budgetary issues created by PACs.
- The ramifications of PACs on competition need to be understood, and there needs to be a fair means of applying the clause.
- A study of past commodity volatility should be conducted and methods for calculating fuel consumption are needed if Texas implements PACs.
- TxDOT districts mostly would like to apply PACs to longer term, higher value projects if they were to be instituted.
- The trigger point for the escalation rate would need some thoughtful consideration and input from stakeholders.
- By and large the administrative issues with PACs are not viewed as substantial.
- A step-wise process of using a shadow clause before actual implementation might be a prudent way to proceed.
- There was not a consensus among districts on the application of PACs to maintenance contracts.

TEXAS CONTRACTORS

Of the 12 contractors interviewed for this project, nine were opposed to the institution of price adjustment clauses in TxDOT contracts and three were favorable to the use of PACs. All of the contractors interviewed stated that the purpose of PACs was to shift or spread the risk of rising commodity prices between the contractor and material supplier on one side and the agency on the other side. All of the contractors acknowledged advantages to the contractor in the event of unexpected price increases. Six contractors said that the agency also benefits in terms of rebates when the price decreases and from the stability of contracting industry by avoiding contract defaults. The strengths of PACs were seen as providing a stable bidding climate, not having to put a premium in bids to mitigate risk thereby reducing bid prices, and providing security on long-term projects. The weaknesses in PACs were that it limits contractors' abilities to balance their own gains and losses, the potential for suppliers to impose unintended price increases, reduction in competitive pressure, keeping less viable contractors competitive, and the effort to track prices or indexes. On the whole contractors are not favorably disposed to PACs although they understand the rationale for them as well as their strengths and weaknesses.

When asked why they would either support or oppose the implementation of PACs, contractors gave a variety of reasons. For those opposed, three contractors said they have good relationships with their materials suppliers and these offer them an advantage in managing risks, four mentioned that it would encourage marginally profitable contractors to bid on projects, two stated that their innovation in tight markets has kept them ahead of their competition, and another thought that an undue effort would be expended in tracking costs. Contractors who favored PACs thought that a PAC would help stabilize the market by providing protection from catastrophic price increases, especially on long-term construction projects. The main arguments against PACs were seen as keeping non-competitive companies viable, reducing competitiveness of good contractors by limiting innovation and impinging on economic advantages while the main argument for PACs was the improved stability of the construction industry.

Profitability and competition in the wake of PAC implementation were expected to remain unchanged by most contractors in the survey. Five contractors thought that profits would not change under a PAC, one believed there could be a slight increase and two thought there might be a slight decrease in profitability. Three contractors were emphatic that PACs would severely impact their profitability. In terms of the PACs' impact on competition, six of the contractors interviewed thought that the number of bidders per project would not be changed. Two contractors thought that a PAC might suppress bidding competition, and three thought that competition would increase. For the most part, contractors believe that a PAC will neither decrease nor increase the number of bidders for a given contract, but some did believe that it may attract lower quality bidders. All but one contractor thought they would bid the same number of jobs regardless of the presence of PACs.

In some states, contractors have the option of whether to use a PAC after a project is let. The contractors interviewed for this study were about evenly divided with five being in favor of

an opt-in/opt-out procedure versus five being opposed to it, and two not offering an opinion. Those favoring the choice of opting into the PAC reasoned that they are not needed on all work, and the contractor should make that determination. However, this group cautioned that the system would need to be established in a way that allowed for fair bidding. Those opposed to opt-in/opt-out procedures also expressed a desire to ensure fair competition. One contractor who did not offer an opinion on optional PACs stated that contractors would be divided over this issue and those who opposed it would view the option as a first step toward mandatory PACs. It is clear that this contractor is correct in his perceptions of the industry's opinions of optional PACs.

Contractors were asked what materials or fuels should be covered by PACs if they were implemented. Six said that the PACs, if implemented, should cover a wide variety of materials including liquid asphalt, fuel, lime, cement, electricity, and steel, although most said that petroleum products should be considered first. Three were focused on petroleum products only such as liquid asphalt, diesel, and transportation fuels for PACs. One said that no commodities should be covered in any event.

When asked if there should be a minimum project time and/or contract amount where PACs, if implemented, should be applied, all contractors but one mentioned longer term contracts and higher cost projects. One contractor said there should be no minimum time or contract price but a minimum asphalt mix quantity of 5000 tons. Two said the minimum time requirement should be 6 months. Six others said that PACs should be used when contract times exceed one year, while one wanted two years and another said three years. One contractor said that there should be no minimum contract amount. Another used a minimum contract amount of $250,000 to $500,000 while two mentioned a minimum value of $1,000,000. Each of the following amounts was favored by individual contractors: $5,000,000; $20,000,000; $25,000,000; and $100,000,000.

When asked what rate of change in index or price should trigger the PACs, four contractors said 5 percent and three said 10 percent. One contractor suggested that, if implemented, the escalation triggers should be correlated to those in the Texas SmartBuy system. Two contractors said that prices should be adjusted quarterly. One said that while a trigger value of say 5 percent could be used, even without a PAC, the contractor would probably add 5 percent to the bid to cover contingencies. Another contractor believed that the complexity of bidding and pricing would preclude the usefulness of PACs and trigger values. One contractor suggested that the trigger value should not be sensitive to allow the contractor to absorb some measure of risk while another said that in order to control cost, the trigger value should be small.

When asked if they had anything to add, a number of contractors had some thoughts they wished to share:

- If a supplier does not do a good job of quoting prices, they should not be bailed out. Contractors should analyze the risk inherent in their bids and account for it.
- TxDOT had an escalation clause in the 1950s but it was eliminated because it was administratively cumbersome.

- TxDOT has always been good about working with contractors and has not experienced a large number of defaults due to materials escalation. AGC does a good job of keeping TxDOT informed of impending price swings. Good contractors manage and control risk.
- There will probably be a shortage of asphalt in the future as many refineries are moving away from asphalt production.
- Adjacent states have PACs. If prices increase, suppliers may favor those states with PACs over those without PACs.
- Risk taking is part of the service provided by the pre-qualified contracting community.
- If TxDOT wants to use a PAC and costs go up, then TxDOT should pay the difference. If TxDOT uses indices, they need to be based on the different regions within the state. How would you handle delayed starts?

The following conclusions may be drawn from the contractor interviews:

- Most contractors interviewed did not view PACs favorably although they understand the rationale for them as well as their strengths and weaknesses.
- Contractors who favored PACs thought they would help stabilize the market by providing protection from catastrophic price increases.
- The main arguments against PACs were seen as keeping non-competitive companies viable, reducing innovation and eliminating economic advantages.
- The majority of contractors believed profitability and competition would remain unchanged.
- Contractors are evenly divided on the question of whether PACs should be mandatory or optional if they are implemented.
- Most contractors believed that, if implemented, PACs should be applied on longer term contracts and higher cost projects.
- When asked what rate of change in price should trigger a PAC, if implemented, the most frequent answer was 5 to 10 percent.

CONCLUSIONS AND RECOMMENDATIONS

There are a number of issues involved in the decision of whether to implement price adjustment clauses in construction contracts to mitigate the effects of price increases in commodities. It is a decision that requires balancing the wishes and exposure of the construction industry against the risk assumed by an owner agency in either not instituting PACs (possible contract defaults and industry instability) or instituting them and potentially suffering from shortfalls and deferred construction projects. Texas currently has price adjustment procedures in place for its SmartBuy program. The question of whether to institute PACs for TxDOT construction projects remains, and will require considerable deliberation both within the agency and with its stakeholders. In the end, the decision should be made in the interest of the state and the taxpayers.

CONCLUSIONS

Based upon the literature review conducted for this study, the following conclusions can be drawn:

- Price adjustment mechanisms exist in other industries to account for fluctuations in commodity prices. Examples include airline fuel surcharges, utility energy surcharges, and price adjustment provisions in energy facility construction.
- Prices for steel, fuel, liquid asphalt, and cement have all undergone profound price changes over the past 15 years due to global pressures, rising crude oil prices, and economic stagnation.
- Price adjustment clauses for highway construction have been implemented in 47 out of 50 states.
- The primary advantages of using PACs in highway construction projects are:
    - Greater stability in the construction market.
    - Lower bid prices for DOTs.
- For states having PACs, the payout due to price escalation has exceeded returns from contractors on average at about $11 million per year. This is less than 1.5 percent of the total highway construction budget.
- Most DOTs and contractors polled by Skolnik (2011) view the role of PACs in highway construction favorably.

Based upon in-depth discussions with FHWA and other state DOTs, the following conclusions are warranted:

- FHWA is neutral on the implementation of PACs in Texas, but would support their use if they were instituted. They will soon have new guidance to replace their 1980 memo.
- The Arkansas DOT has not adopted the use of PACs as they noted that as commodity prices increased, so did bid prices, and that bid prices increased even when

commodity prices fell. Furthermore, the industry in Arkansas has not requested PACs in contracts.

- Caltrans uses an asphalt PAC based upon historical price fluctuations and project duration. The industry seems satisfied with it, and Caltrans views it favorably.
- The Louisiana DOTD has PACs to cover both fuel and asphalt. While they acknowledge occasional disputes regarding the system, the DOTD believes that the PACs are beneficial to both the agency and contractors.
- The New Mexico DOT has instituted PACs for liquid asphalt and cement, although they acknowledge that there is more interest in the asphalt PAC. They believe the effort to track the prices and administer the program pays off in increased competition for projects.
- The Oklahoma DOT has PACs to cover asphalt on all paving projects and fuel on large earthwork projects.
- The Pennsylvania DOT use PACs to account for price fluctuations in asphalt, fuel, and steel. They specify minimum quantities of materials before instituting PACs.
- Both Louisiana and Oklahoma have experienced minimal administrative costs in managing PACs due to automating the computations through the XiteManager software.
- No DOT, regardless of whether they use PACs or not, reported any dissatisfaction from the construction industry.

The following observations are based on the interviews with TxDOT district personnel:

- TxDOT engineers understand the purposes of PACs as well as their strengths and weaknesses.
- Most district engineers believe that PACs would be a benefit.
- Districts believed there were mechanisms that could be put into place to handle any budgetary issues created by PACs.
- The ramifications of PACs on competition need to be understood, and there needs to be a fair means of applying the clause.
- A study of past commodity volatility should be conducted and methods for calculating fuel consumption are needed if Texas implements PACs.
- TxDOT districts mostly would like to apply PACs to longer term, higher value projects if they were to be instituted.
- The trigger point for the escalation rate would need some thoughtful consideration and input from stakeholders.
- By and large the administrative issues with PACs are not viewed as substantial.
- A step-wise process of using a shadow clause before actual implementation might be a prudent way to proceed.
- There was not a consensus among districts on the application of PACs to maintenance contracts.

Interviews with contractors yielded the following conclusions:

- Most contractors interviewed did not view PACs favorably although they understand the rationale for them as well as their strengths and weaknesses.
- Contractors who favored PACs thought they would help stabilize the market by providing protection from catastrophic price increases.
- The main arguments against PACs were seen as keeping non-competitive companies viable, reducing innovation, and eliminating economic advantages.
- The majority of contractors believed profitability and competition would remain unchanged.
- Contractors are evenly divided on the question of whether PACs should be mandatory or optional if they are implemented.
- Most contractors believed that, if implemented, PACs should be applied on longer term contracts and higher cost projects.
- When asked what rate of change in price should trigger a PAC, if implemented, the most frequent answer was 5 to 10 percent.

RECOMMENDATIONS

- Because there is not a clear agreement at this time between contractors and TxDOT personnel interviewed, implementation of PACs on construction projects cannot be recommended. However, a decision not to institute PACs is still a decision and carries risks as outlined in this report, especially the lack of stability in the industry in times of high price variability and the potential for contract defaults.
- In the event that PACs are ever to be considered:
    - It is recommended that TxDOT undertake a study of past price fluctuations of commodities being considered to understand what trigger values of price changes would be most advantageous to mitigating risk.
    - Discussions with stakeholders should take place to define the conditions under which PACs would be employed including project duration and contract amounts.
    - TxDOT should use them for both price increases and decreases.
    - TxDOT should use the AASHTO XiteManager software to automate calculations of payouts and rebates.

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APPENDIX A
LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
PROVISIONS FOR PRICE ADJUSTMENT

PAYMENT ADJUSTMENT (02/12): Section 109 Measurement and Payment of the 2006 Standard Specifications and the supplemental specifications thereto, is amended to add the following.

This project is designated for payment adjustment for asphalt cements and fuels in accordance with Subsection 109.09 as follows.

109.09 PAYMENT ADJUSTMENT (ASPHALT CEMENTS AND FUELS).

(a) General: Payment for contract items indicated herein will be adjusted to compensate for cost differentials of Performance Graded (PG) asphalt cements, gasoline, and diesel fuel when such costs increase or decrease more than 5 percent from the Department's established base prices for these items. The base price indices for asphalt cements and fuels will be the monthly price indices in effect at the time bids are opened for the project. The base price indices for asphalt cements will be as stated in paragraph (b) below. The base price index for fuels will be as stated in paragraph (c) below.

Payment adjustments will be made each monthly estimate period when a price index for this period varies more than 5 percent from its respective base price index. The monthly price indices to be used with each monthly estimate will be the price indices for the month in which the estimate period begins.

If the project is placed in default, payment adjustments will be based on the monthly price indices used for the last monthly estimate period prior to the project being placed in default, unless a monthly price index decreases in which case the lower monthly price index will be used.

If it is determined after completion of work on any eligible item that the total quantity paid to date must be adjusted to reflect more accurate quantity determinations, the Department will prorate the additional quantity to be added or subtracted over all previous estimate periods in which the item of work was performed in order to determine additional payment adjustments. If payment adjustments were made during any of these partial estimate periods, this added or subtracted quantity that has been prorated will likewise have payment adjustments calculated and included.

(b) Performance Graded (PG) Asphalt Cements: The base price index will be the monthly price index in effect at the time of bid opening as shown elsewhere herein. The monthly price indices will be the average, excluding the extreme outliers, of the unit prices for PG 64-22, the average, excluding the extreme outliers, of the unit prices for PG 70-22m, and the average, excluding the extreme outliers, of the unit prices for PG 76-22m. The monthly prices for each of these asphalt materials will be F.O.B. refinery or terminal as determined from the quoted prices effective on the first calendar day of each month from suppliers of these materials. Suppliers considered are those who have requested to participate in the liquid asphalt index determination and have supplied materials on DOTD projects within the past twelve months. These suppliers and materials shall be listed on the Department's Qualified Products List (QPL 41) and must be marketed in Louisiana. For Asphalt Cements not listed above, the following shall be considered equivalent for payment adjustments:

Pay Item Equivalents Eligible for Asphalt Pay Adjustment

Performance Graded Asphalt Cement	Equivalent PG Asphalt Cement for Payment Adjustment
PG 58-28	PG 64-22
PG 64-22	PG 64-22
PG 70-22m	PG 70-22m
PG 76-22m	PG 76-22m
PG 82-22rm	PG 64-22

Payment adjustments will be made in accordance with the following formulas:

If Monthly Price Index exceeds Base Price Index,

$$P_a = (A - 1.05B) \times C \times D \times (1.00 + T)$$

If Base Price Index exceeds Monthly Price Index,

$$P_a = (0.95B - A) \times C \times D \times (1.00 + T)$$

Where:

P_a = Price adjustment (increase or decrease) for asphalt cement.

A = Monthly Price Index for respective PG 64-22, PG 70-22m, or PG 76-22m in dollars per ton/megagram.

B = Base Price Index for respective PG 64-22, PG 70-22m, or PG 76-22m in dollars per ton/megagram.

C = Tons/megagrams of asphaltic concrete.

D = Percent of respective asphalt cement, per job mix formula, in decimals.

T = Louisiana sales tax percentage, in decimals.
(Note: Local tax is not considered)

The engineer will furnish the weights (mass) of asphaltic concrete placed during the monthly estimate period with the respective asphalt cement content, excluding the asphalt content in reclaimed asphaltic pavement (RAP) as per job mix formula. If the asphalt cement content changes during the estimate period, the respective weight (mass) of asphaltic concrete produced at each cement content will be reported.

All contract pay items using PG 58-28, PG 64-22, PG 70-22m, PG 76-22m, and PG 82-22rm shall be eligible for payment adjustments of asphalt materials; except no payment adjustment will be made for contract pay items under Subsection 510-01, "Pavement Patching", Section 507, "Asphaltic Surface Treatment", nor for any emulsions or cutbacks.

Item 510-02, Pavement Widening, and all contract pay items under Sections 501 (excluding tack coat), 502 and 508, will be eligible for payment adjustments of asphalt materials. No payment adjustment will be made for other asphalt materials, including emulsions and cutbacks.

The base price indices for asphalt cements and fuels will be posted on the DOTD internet website before the 10th calendar day of each month at the following URL: www.dotd.louisiana.gov/lettings/lac_price_index/priceindices.asp.

(c) Fuels: The base price index for this project will be the monthly price index in effect when bids are opened for the project. The monthly price index will be the minimum price quotations for unleaded gasoline and No. 2 diesel fuel listed for the New Orleans area in *Platt's Oilgram and Price Report* effective on the first calendar day of each month.

Payment adjustment will be made in accordance with the following formulas:

If Monthly Price Index exceeds Base Price Index,

$$P_a = (A - 1.05B) \times Q \times F$$

If Base Price Index exceeds Monthly Price Index,

$$P_a = (0.95B - A) \times Q \times F)$$

Where:

P_a	=	Price adjustment.
A	=	Monthly Price Index in dollars per gallon/liter.
B	=	Base Price Index in dollars per gallon/liter.
Q	=	Pay Item Quantity (Pay Units).
F	=	Fuel Usage Factor Gal (L)/Pay Unit.

The following is a listing of contract pay items that are eligible for payment adjustment and the fuel usage factors that will be used in making such adjustment. Contract items that expand the items listed herein by use of letter or number designations are also eligible for fuel price adjustments; for example:

Item 601-01-G, Portland Cement Concrete Pavement 8 inches (200 mm) thick.

ELIGIBLE CONTRACT PAY ITEMS & FUEL USAGE FACTORS FOR FUEL PAYMENT ADJUSTMENT[7]

ITEM NO.	PAY ITEM	UNITS	MIN. ORIGINAL CONTRACT QUANTITY FOR PAY ADJUSTMENT	FUEL USAGE FACTORS	
				Diesel[2]	Gasoline
203-01[1]	General Excavation	gal/cu yd	10,000 cu yd	0.29	0.15
203-02	Drainage Excavation	gal/cu yd	10,000 cu yd	0.29	0.15
203-03[1]	Embankment	gal/cu yd	10,000 cu yd	0.29	0.15
203-04	Nonplastic Embankment	gal/cu yd	10,000 cu yd	0.29	0.15
203-07	Borrow (Vehicular Measurement)	gal/cu yd	10,000 cu yd	0.29	0.15
301-01	Class I Base Course	gal/cu yd	3,000 cu yd	0.88	0.57
301-02	Class I Base Course (" Thick)	gal/sq yd	50,000 sq yd	0.04	0.03
302-01	Class II Base Course	gal/cu yd	3,000 cu yd	0.88	0.57
302-02	Class II Base Course (" Thick)	gal/sq yd	50,000 sq yd	0.04	0.03
303-01	In-Place Cement Stabilized Base Course	gal/sq yd	50,000 sq yd	0.04	0.03
304-02	Lime Treatment (Type B)	gal/sq yd	50,000 sq yd	0.04	0.03
304-03	Lime Treatment (Type C)	gal/sq yd	50,000 sq yd	0.04	0.03
304-04	Lime Treatment (Type D)	gal/sq yd	50,000 sq yd	0.04	0.03
305-01	Subgrade Layer (" Thick)	gal/sq yd	50,000 sq yd	0.04	0.03
308-01	In-Place Cement Treated Base Course	gal/sq yd	50,000 sq yd	0.04	0.03
401-01	Aggregate Surface Course (Net Section)	gal/cu yd	3,000 cu yd	0.88	0.57
401-02	Aggregate Surface Course (Adjusted Vehicular Measurement)	gal/cu yd	3,000 cu yd	0.88	0.57
501-01	Thin Asphaltic Concrete	gal/ton	1000 ton	2.40[3]	0.2
502-01	Superpave Asphaltic Concrete	gal/ton	1000 ton	2.40[3]	0.2
502-02	Superpave Asphaltic Concrete	gal/cu yd	500 cu yd	4.80[4]	0.4
502-03	Superpave Asphaltic Concrete (" Thick)	gal/sq yd	10,000 sq yd	0.13[5,6]	0.01[6]
508-01	Asphaltic Concrete (SMA)	gal/ton	1000 ton	2.40[3]	0.2
510-02	Pavement Widening	gal/sq yd	3,000 sq yd	0.86	0.24
601-01	Portland Cement Concrete Pavement (" Thick)	gal/sq yd	15,000 sq yd	0.11	0.15

1 If project has both 203-01 & 203-03, only the item with larger quantity is eligible.
2 For fuel adjustment purposes, the term "diesel" shall represent No. 2 or No. 4 fuel oils or any of the liquified petroleum gases, such as propane or butane.
3 If natural gas or coal is used instead of diesel for aggregate drying and heating the fuel usage factor shall be 1.67 gal/ton.
4 If natural gas or coal is used instead of diesel for aggregate drying and heating the fuel usage factor shall be 3.34 gal/cu yd.
5 If natural gas or coal is used instead of diesel for aggregate drying and heating the fuel usage factor shall be 0.09 gal/sq yd.
6 Per inch of thickness.
7 No fuel adjustment will be allowed for waste oil.

ELIGIBLE CONTRACT PAY ITEMS & FUEL USAGE FACTORS FOR FUEL PAYMENT ADJUSTMENT (METRIC)[7]

ITEM NO.	PAY ITEM	UNITS	MIN. ORIGINAL CONTRACT QUANTITY FOR PAY ADJUSTMENT	FUEL USAGE FACTORS	
				Diesel[2]	Gasoline
203-01[1]	General Excavation	l/m^3	7,600 m^3	1.44	0.74
203-02	Drainage Excavation	l/m^3	7,600 m^3	1.44	0.74
203-03[1]	Embankment	l/m^3	7,600 m^3	1.44	0.74
203-04	Nonplastic Embankment	l/m^3	7,600 m^3	1.44	0.74
203-07	Borrow (Vehicular Measurement)	l/m^3	7,600 m^3	1.44	0.74
301-01	Class I Base Course	l/m^3	2,300 m^3	4.36	2.82
301-02	Class I Base Course (mm Thick)	l/m^2	41,800 m^2	0.18	0.14
302-01	Class II Base Course	l/m^3	2,300 m^3	4.36	2.82
302-02	Class II Base Course (mm Thick)	l/m^2	41,800 m^2	0.18	0.14
303-01	In-Place Cement Stabilized Base Course	l/m^2	41,800 m^2	0.18	0.14
304-02	Lime Treatment (Type B)	l/m^2	41,800 m^2	0.18	0.14
304-03	Lime Treatment (Type C)	l/m^2	41,800 m^2	0.18	0.14
304-04	Lime Treatment (Type D)	l/m^2	41,800 m^2	0.18	0.14
305-01	Subgrade Layer (mm Thick)	l/m^2	41,800 m^2	0.18	0.14
308-01	In-Place Cement Stabilized Base Course	l/m^2	41,800 m^2	0.18	0.14
401-01	Aggregate Surface Course (Net Section)	l/m^3	2,300 m^3	4.36	2.82
401-02	Aggregate Surface Course (Adjusted Vehicular Measurement)	l/m^3	2,300 m^3	4.36	2.82
501-01	Thin Asphaltic Concrete	l/Mg	900 Mg	10.01[3]	0.83
502-01	Superpave Asphaltic Concrete	l/Mg	900 Mg	10.01[3]	0.83
502-02	Superpave Asphaltic Concrete	l/m^3	400 m^3	23.77[4]	1.98
502-03	Superpave Asphaltic Concrete (mm Thick)	l/m^2	8,400 m^2	0.59[5,6]	0.45[6]
508-01	Asphaltic Concrete (SMA)	l/Mg	900 Mg	10.01[3]	0.83
510-02	Pavement Widening	l/m^2	2,500 m^2	3.89	1.09
601-01	Portland Cement Concrete Pavement (mm Thick)	l/m^2	12,500 m^2	0.5	0.68

1 If project has both 203-01 & 203-03, only the item with larger quantity is eligible.
2 For fuel adjustment purposes, the term "diesel" shall represent No. 2 or No. 4 fuel oils or any of the liquified petroleum gases, such as propane or butane.
3 If natural gas or coal is used instead of diesel for aggregate drying and heating the fuel usage factor shall be 6.97 l/mg.
4 If natural gas or coal is used instead of diesel for aggregate drying and heating the fuel usage factor shall be 16.53 l/m^3.
5 If natural gas or coal is used instead of diesel for aggregate drying and heating the fuel usage factor shall be 0.41 l/m^2.
6 Per mm of thickness.
7 No fuel adjustment will be allowed for waste oil.

APPENDIX B
NEW MEXICO DEPARTMENT OF TRANSPORTATION
PROVISIONS FOR PRICE ADJUSTMENT

NOTICE TO CONTRACTORS

CN XXX / XXX
October 14, 2011

Monthly Asphalt Binder Price Adjustment Procedures

An adjustment will be made to the original Contract for asphalt binder if the industry monthly price index of asphalt binder fluctuates. Adjustment is not optional.

Items subject to adjustment are: Asphalt Binder (in HMA Complete, WMA Complete and OGFC Complete).

Submit applicable mix designs, including percentage of asphalt binder, for inclusion in the price adjustment for the pay item listed above in the Contract.

For **increasing prices** (The monthly adjustment shall apply on those contracts whose monthly fluctuations have a (B / C) ratio greater than 1.1). Use Equation (1).

Equation (1): $A = (B – (1.1 \times C)) \times D$

For **decreasing prices** (The monthly adjustment shall apply on those contracts whose monthly fluctuations have a (B / C) ratio less than 0.9). Use Equation (2).

Equation (2): $A = (B – (0.9 \times C)) \times D$

Where:

A – Monthly adjustment to the Contract for asphalt binder

B – Average monthly price index per ton of asphalt binder (based on the published NM index price corresponding to the month the binder was actually placed on a project).

C – Base Price Index (average selling price per ton of asphalt binder at time of bid opening based on the published NM index price).

D – Tons of asphalt binder placed for the subject month.

Monthly Adjustment: The asphalt binder tonnage shall have an adjustment determined above by either Equations (1) or (2), as appropriate. All adjustments shall be based on the average monthly price index per ton of asphalt binder corresponding to the date (month) the binder was actually placed on a project.

For the purposes of making these calculations, the Department's State Materials Bureau will maintain a database of monthly price indexes. This index will be based on the average of the major suppliers in New Mexico. This index will be maintained by the NMDOT and published on the NMDOT Plan, Specifications & Estimates (PS&E) Bureau website. The published monthly base price index will be calculated using the following formula:

Price Index = Average of the reported average weekly selling prices using the last four reported weeks on or prior to the last day of a given month as published by the New Mexico price index.

A twenty-four month (24) month running summary of the published monthly price index will be sent, by Department e-mail, to each District Engineer, Assistant District Engineer, State Construction Bureau, the Albuquerque office of the Associated Contractors of New Mexico for distribution to their members, and other interested parties at the beginning of each week.

Quarterly Departmental (Internal) Validation Process

The Department internally will validate its price index on a quarterly basis against published regional market indices and trends. The Department will use the average weekly selling price for the Rocky Mountain region, as reported by the "Asphalt Weekly Monitor©," published by Poten and Partners, Inc., New York, New York for this validation process. The Department will adjust its index and/or revert to the information published by Poten and Partners, Inc to ensure the indexed price for asphalt binder represents the New Mexico market as accurately as possible.

APPENDIX C
NEW MEXICO DEPARTMENT OF TRANSPORTATION
ASPHALT PRICE INDEX

New Mexico DEPARTMENT OF TRANSPORTATION
MOBILITY FOR EVERYONE

State Materials Bureau
ASPHALT DESIGN UNIT
P.O. Box 1149, Santa Fe, NM 87504-1149

New Mexico Asphalt Rack-Price Index

Current Data

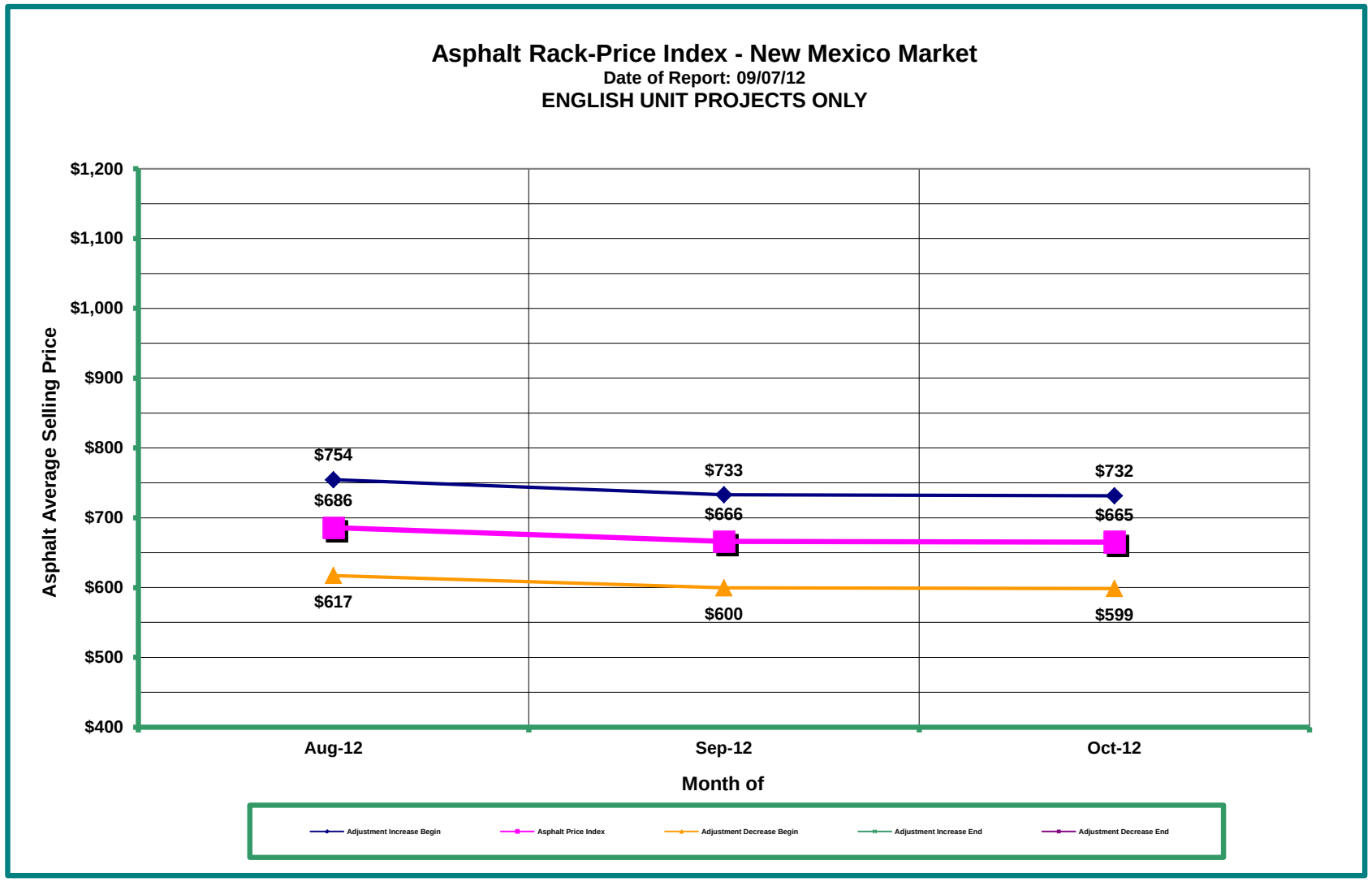
CURRENT NM ASPHALT RACK PRICE INDEX					
(For English Unit Projects)					
Month of	Price Index	Price Turn-On Limits		Price Turn-Off Limits	
		Increase	Decrease	Increase	Decrease
Aug-12	$686	$754	$617		
Sep-12	$666	$733	$600		
Oct-12	$665	$732	$599		
Nov-12					
Dec-12					
Jan-13					
Feb-13					
Mar-13					
Apr-13					
May-13					
Jun-13					
Jul-13					
Aug-13					
Sep-13					
Oct-13					
Nov-13					
Dec-13					
Jan-14					
Feb-14					
Mar-14					
Apr-14					
May-14					
Jun-14					
Jul-14					

New Mexico DEPARTMENT OF TRANSPORTATION
MOBILITY FOR EVERYONE

State Materials Bureau
ASPHALT DESIGN UNIT
P.O. Box 1149, Santa Fe, NM 87504-1149

Current New Mexico Asphalt Rack-Price Index

(As per Asphalt Price Modification IDC from State Construction Engineer Mr. Joe S. Garcia, dated July 28, 2008)



New Mexico DEPARTMENT OF TRANSPORTATION
MOBILITY FOR EVERYONE

State Materials Bureau
ASPHALT DESIGN UNIT
P.O. Box 1149, Santa Fe, NM 87504-1149

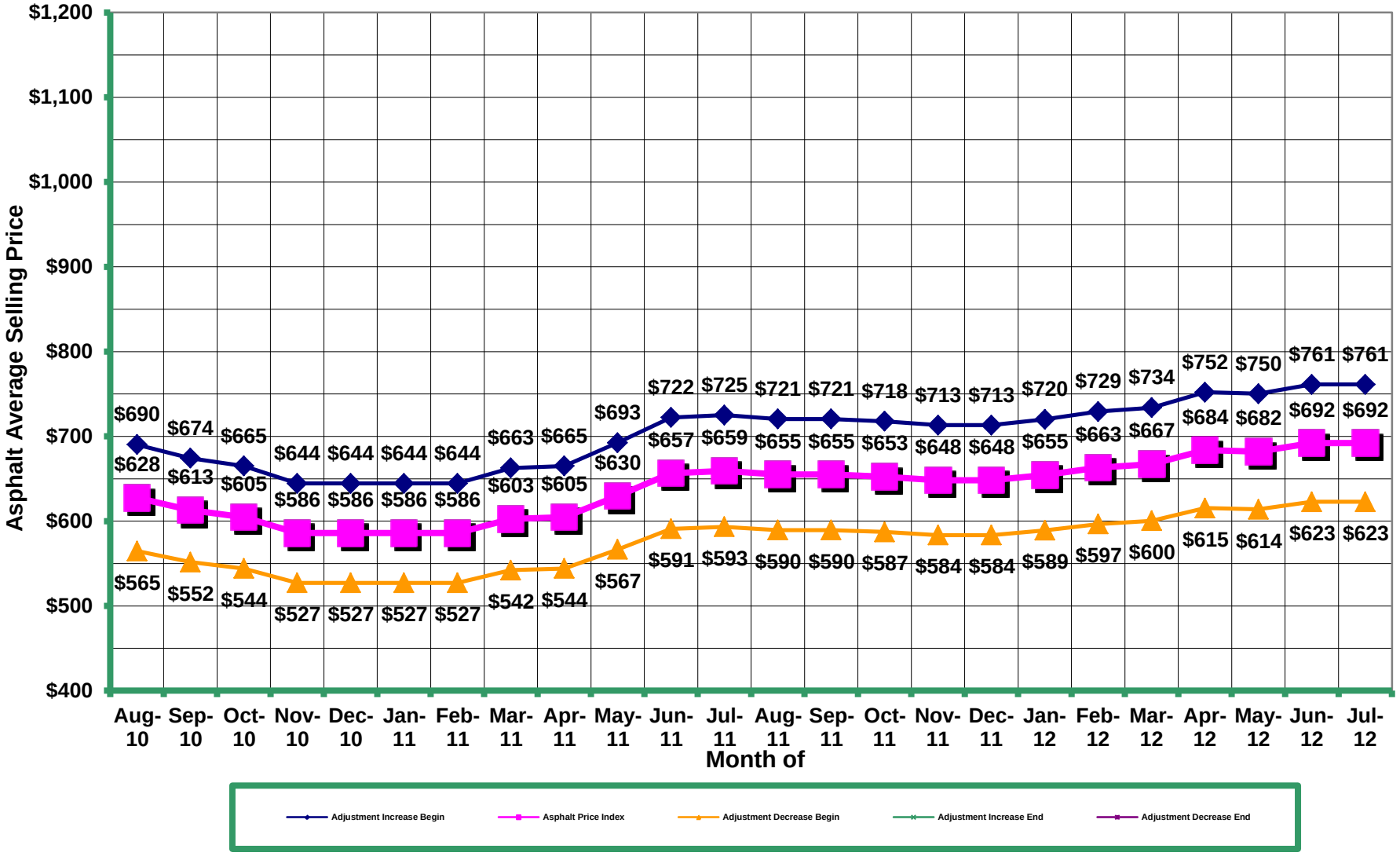
New Mexico Asphalt Rack-Price Index
2-Year R-Price Index Data (Aug 10 - Jul 12)

NM ASPHALT RACK PRICE INDEX Aug 2010 - Jul 2012 (For English Unit Projects)					
Month of	Price Index	Price Turn-On Limits		Price Turn-Off Limits	
		Increase	Decrease	Increase	Decrease
Aug-10	$628	$690	$565		
Sep-10	$613	$674	$552		
Oct-10	$605	$665	$544		
Nov-10	$586	$644	$527		
Dec-10	$586	$644	$527		
Jan-11	$586	$644	$527		
Feb-11	$586	$644	$527		
Mar-11	$603	$663	$542		
Apr-11	$605	$665	$544		
May-11	$630	$693	$567		
Jun-11	$657	$722	$591		
Jul-11	$659	$725	$593		
Aug-11	$655	$721	$590		
Sep-11	$655	$721	$590		
Oct-11	$653	$718	$587		
Nov-11	$648	$713	$584		
Dec-11	$648	$713	$584		
Jan-12	$655	$720	$589		
Feb-12	$663	$729	$597		
Mar-12	$667	$734	$600		
Apr-12	$684	$752	$615		
May-12	$682	$750	$614		
Jun-12	$692	$761	$623		
Jul-12	$692	$761	$623		

Asphalt Rack-Price Index - New Mexico Market

August 2010 to July 2012

ENGLISH UNIT PROJECTS ONLY



New Mexico DEPARTMENT OF TRANSPORTATION
MOBILITY FOR EVERYONE

State Materials Bureau
ASPHALT DESIGN UNIT
P.O. Box 1149, Santa Fe, NM 87504-1149

New Mexico Asphalt Rack-Price Index

2-Year R-Price Index Data (Aug 08 - Jul 10)

NM ASPHALT RACK PRICE INDEX Aug 2008 - Jul 2010 (For English Unit Projects)					
Month of	Price Index	Price Turn-On Limits		Price Turn-Off Limits	
		Increase	Decrease	Increase	Decrease
Aug-08	$800	$880	$720		
Sep-08	$851	$936	$766		
Oct-08	$836	$920	$753		
Nov-08	$778	$856	$700		
Dec-08	$763	$839	$686		
Jan-09	$706	$777	$636		
Feb-09	$650	$715	$585		
Mar-09	$558	$614	$503		
Apr-09	$543	$598	$489		
May-09	$543	$598	$489		
Jun-09	$543	$598	$489		
Jul-09	$561	$617	$505		
Aug-09	$567	$624	$510		
Sep-09	$572	$629	$515		
Oct-09	$564	$621	$508		
Nov-09	$562	$618	$506		
Dec-09	$562	$618	$506		
Jan-10	$562	$618	$506		
Feb-10	$593	$652	$533		
Mar-10	$636	$700	$573		
Apr-10	$650	$715	$585		
May-10	$664	$730	$597		
Jun-10	$665	$732	$599		
Jul-10	$656	$721	$590		

New Mexico DEPARTMENT OF TRANSPORTATION
MOBILITY FOR EVERYONE

State Materials Bureau
ASPHALT DESIGN UNIT
P.O. Box 1149, Santa Fe, NM 87504-1149

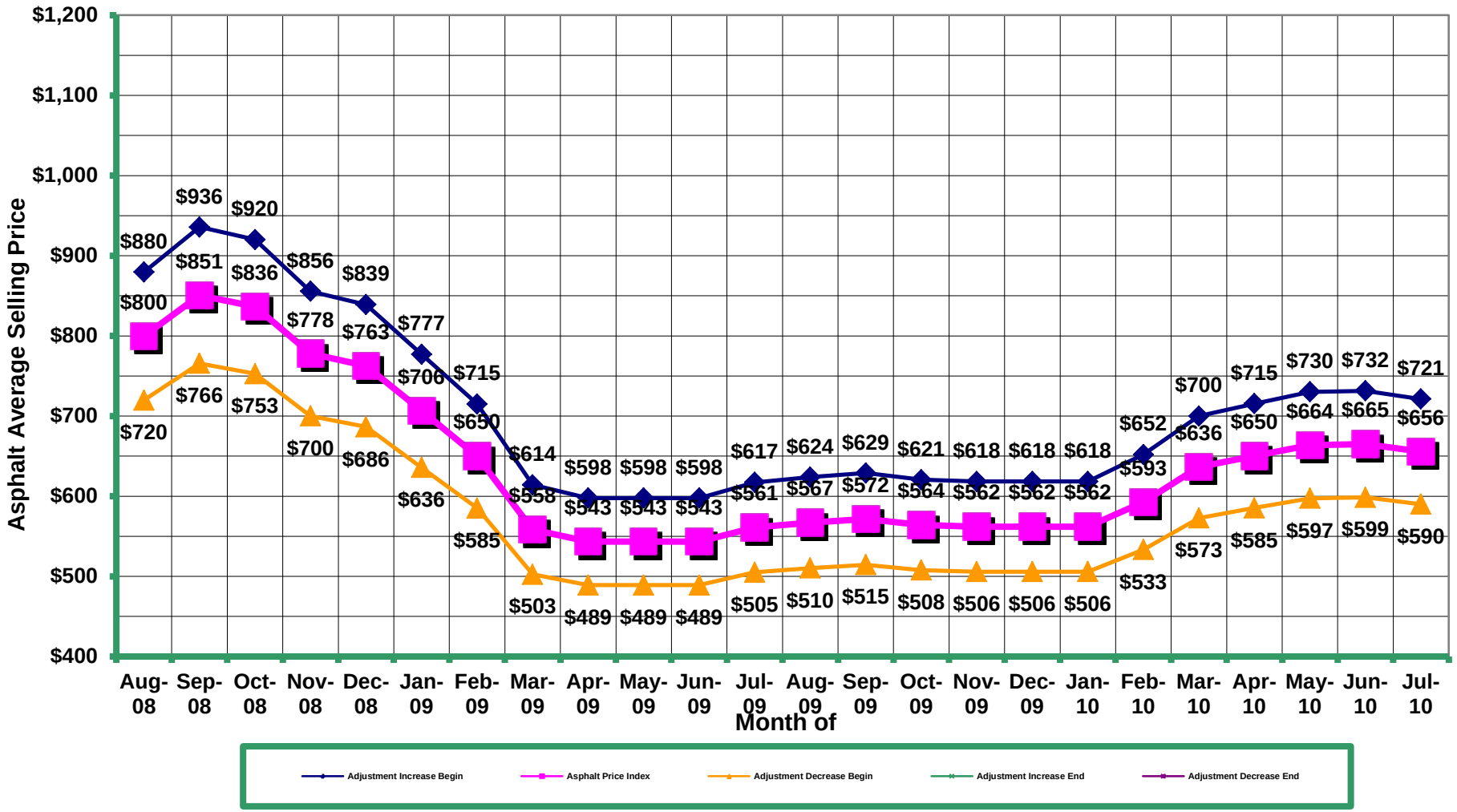
New Mexico Asphalt Rack-Price Index August 2008-July 2010

(As per Asphalt Price Modification IDC from State Construction Engineer Mr. Joe S. Garcia, dated July 28, 2008)

Asphalt Rack-Price Index - New Mexico Market

August 2008 to July 2010

ENGLISH UNIT PROJECTS ONLY



APPENDIX D
PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
PROVISIONS FOR PRICE ADJUSTMENT FOR LIQUID ASPHALT

110.04 PRICE ADJUSTMENT OF BITUMINOUS MATERIALS—These requirements provide for a price adjustment, in the form of a payment to the Contractor or a rebate to the Department, for fluctuations in the cost of asphalt cement used in the bituminous materials placed as part of the construction work specified in the following Sections:

309 360 430 460 471 653
316 409 431 461 480 654
320 410 439 467 481 656
341 419 440 469 482 657
342 422 450 470 651

Applicable contract items include any modified standard or nonstandard item where the work to be performed involves placement of one or more of the bituminous materials specified in these Sections.

(a) General. These price adjustment provisions apply only to projects where more than 90 tonnes (100 tons) of asphalt cement, including asphalt cement residue contained in emulsions or cut backs, will be used in the bituminous materials specified or indicated for placement.

The Department posts monthly index prices for asphalt cement (PG 64-22) using price data obtained, on the last Wednesday of the preceding month, from a survey of producers who do business in Pennsylvania. Data provided by producers serving the eastern portion of the state is averaged to compute the index price for Zone 1 (Districts 3-0, 4-0, 5-0, 6-0, and 8-0). Data provided by producers serving the western portion of the state is averaged to compute the index price for Zone 3 (Districts 1-0, 10-0, 11-0, and 12-0). The index price for Zone 2 (Districts 2-0 and 9-0) is computed as the average of the index prices for Zone 1 and Zone 3.

The price index in the proposal, IB, will be the index price posted by the Department, determined as specified above, for the month in which the project is advertised.

The price index at the time of placement, IP, will be the index price posted by the Department, determined as specified above, for the month during which the applicable material is placed.

(b) Price Adjustment Criteria and Conditions. The following criteria and conditions will be considered in determining a price adjustment for bituminous materials:

1. No Price Adjustment. When the ratio IP/IB falls within the range of 0.90 to 1.10, no price adjustment will be made for any bituminous material placed during the relevant month.

2. Price Rebate. When the ratio IP/IB is calculated to be less than 0.90, the Department will receive an automatic price rebate determined according to the following formula:

$$P.R. = (0.90 - IP/IB)\ (Q)\ (IB)$$

where:
P.R. = Price Rebate
IP = Price Index for the last Wednesday of the month preceding the month in which the material is placed (One-Month Price Adjustment Period)
IB = Price Index in the Proposal
Q = Quantity tonnes (tons) of Bitumen in Mixture placed

3. Price Increase. When the ratio IP/IB is calculated to be greater than 1.10, the Contractor will receive a price increase determined according to the following formula:

$$P.I. = (IP/IB - 1.10)\ (Q)\ (IB)$$

where:
P.I. = Price Increase
IP = Price Index for the last Wednesday of the month preceding the month in which the

material is placed (One-Month Price Adjustment Period)
IB = Price Index in the Proposal
Q = Quantity tonnes (tons) of Bitumen in Mixture Placed

4. Equivalent Tonneage (Tonnage).

4.a Square Meter (Square Yard) Basis. For bituminous mixtures placed on a square meter (square yard) basis, the equivalent tonneage (tonnage) is computed as follows:

Metric Only: Bituminous Mixture Tonneage Placed = (0.000 001) (A) (D) (d)
where:

A = Surface Area (square meters)
D = Design Depth (millimeters)
d = Design Density* (kilograms per cubic meter)
* *min min Mass by Bitumen Percent Placed Tonneage Mixture ous Bitu Mixture ous Bitu in Tonneage Bitumen

English Only: Bituminous Mixture Tonnage Placed = (0.000375) (A) (D) (d)

where:
A = Surface Area (square yards)
D = Design Depth (inches)
d = Design Density* (pounds per cubic feet)
* *min min Weight by Bitumen Percent Placed Tonnage Mixture ous Bitu Mixture ous Bitu in Tonnage Bitumen
* The Design Density will be obtained from the approved JMF (Form TR-448A, Job Mix Formula Report) for the bituminous mixture placed. The Design Density will be the ―Lab Density‖ listed on the applicable JMF. The Design Density (i.e. Lab Density) obtained from Form TR-448A will be converted to the proper units by multiplying by the density of water, 997.1 kg/m3 (62.4 pounds per cubic foot).
** The Percent Bitumen will be obtained from the approved JMF (Form TR-448A, Job Mix Formula Report) for the bituminous mixture placed. The Percent Bitumen will be the ―Virgin AC%‖ listed on the applicable JMF.

4.b Liters per Square Meter (Gallons per Square Yard) Basis. For bituminous material placed on a liters per square meter (gallons per square yard) basis according to specification, and residue content according to Bulletin 25, the equivalent tonneage (tonnage) is computed as follows:

Metric Only: Bitumen Tonneage = (0.001) (A) (a) (g)

where:
A = Surface Area (square meters)
a = Actual Residue Application Rate (liters per square meter)
g = Specific Gravity of Bituminous Material

English Only: Bitumen Tonnage = (0.004164) (A) (a) (g)
where:

A = Surface Area (square yards)
a = Actual Residue Application Rate (gallons per square yard)
g = Specific Gravity of Bituminous Material

4.c Liter (Gallon) Basis. For bituminous material placed on a liter (gallon) basis, the equivalent tonneage (tonnage) is computed as follows:

Metric Only: Bitumen Tonneage = (0.001) (g) (p) (No. of liters)

where:
g = Specific Gravity of Bituminous Material

p = % Asphalt in Emulsion
English Only: Bitumen Tonnage = (0.004164) (g) (p) (No. of gallons)

where:
g = Specific Gravity of Bituminous Material
p = % Asphalt in Emulsion

5. Expiration of Contract Time. If bituminous materials or mixtures are placed after expiration of contract time and liquidated damages are chargeable, the value for IP used to compute the price adjustment will be either the price index at the time of actual placement or the price index at the time contract time expired, whichever is less.

6. Approval. Should the price index at time of placement, IP, indicate an increase of 50% or more over the price index in the proposal, IB, do not furnish bituminous material for the project without prior written approval.

7. Payment/Rebate. The price adjustment will be paid, or rebated, upon approval of a work order to be prepared after completion of all work. Cumulative price adjustments amounting to less than $500 will be disregarded. Upon written request by the Contractor, partial payments may be made, before total completion, when the unpaid accrued price increase exceeds $10,000 or once every 12 months.

8. Inspection of Records. The Department, through the Office of Inspector General, reserves the right to inspect the records of the prime contractor and its subcontractors and material suppliers to ascertain actual pricing and cost information for the asphalt cement used in the bituminous materials incorporated in the work.

9. Extra Work. If applicable items of work, as specified herein, are added to the contract as extra work, as specified in Section 110.03, no price adjustment will be made for fluctuations in the cost of asphalt cement used in any bituminous materials placed in the performance of the extra work, unless otherwise approved. The current price for asphalt cement is to be used when preparing required backup data for extra work to be performed at a negotiated price. For extra work performed on a force account basis, reimbursement for material costs along with the specified overhead and profit markup will be considered to include full compensation for the current cost of asphalt cement.

Metric Only: Bitumen Tonneage = (0.001) (g) (p) (No. of liters)
where:
g = Specific Gravity of Bituminous Material
p = % Asphalt in Emulsion
English Only: Bitumen Tonnage = (0.004164) (g) (p) (No. of gallons)

where:
g = Specific Gravity of Bituminous Material
p = % Asphalt in Emulsion

5. Expiration of Contract Time. If bituminous materials or mixtures are placed after expiration of contract time and liquidated damages are chargeable, the value for IP used to compute the price adjustment will be either the price index at the time of actual placement or the price index at the time contract time expired, whichever is less.

6. Approval. Should the price index at time of placement, IP, indicate an increase of 50% or more over the price index in the proposal, IB, do not furnish bituminous material for the project without prior written approval.

7. Payment/Rebate. The price adjustment will be paid, or rebated, upon approval of a work order to be prepared after completion of all work. Cumulative price adjustments amounting to less than $500 will be disregarded. Upon written request by the Contractor, partial payments may be made, before total completion, when the unpaid accrued price increase exceeds $10,000 or once every 12 months.

8. Inspection of Records. The Department, through the Office of Inspector General, reserves the right to inspect the records of the prime contractor and its subcontractors and material suppliers to ascertain actual pricing and cost information for the asphalt cement used in the bituminous materials incorporated in the work.

9. Extra Work. If applicable items of work, as specified herein, are added to the contract as extra work, as specified in Section 110.03, no price adjustment will be made for fluctuations in the cost of asphalt cement used

APPENDIX E
PENNSYLVANIA PRICE ADJUSTMENT PROVISIONS FOR STEEL

STANDARD SPECIAL PROVISION

Detail

Index or Category: General Provisions Related
Status: Active
Sequence ID: 4902
District: CO
Version: C
Provision Name: a04902 PRICE ADJUSTMENT FOR STEEL COST FLUCTUATIONS

Usage Information

Measurement: English-IP
Edit Body: No
Include on all projects: Yes
Edit Header: No
Include on all federally funded projects: No
Edit Project Specific Details: No
Include on all 100% State funded projects: No
Instructions for Usage: For use on all projects. Attach the Steel Escalation Option form. Use with G-a04902 (Measurement: Metric) entitled "Price Adjustment for Steel Cost Fluctuations: Metric Conversion" for metric projects.

For use on projects let after May 11, 2012.

Effective From: 05/11/2012
To: 01/01/2199

Associated Items

Item Number	Description
No records found.	

Header

PRICE ADJUSTMENT FOR STEEL COST FLUCTUATIONS

Provision Body

These requirements provide for a price adjustment, in the form of a payment to the Contractor or a rebate to the Department, for fluctuations in the cost of the steel used in the applicable materials placed as part of the construction work specified in Sections 620, 621, 948, 1002, 1005, 1050, 1056, 1080, and 1085.

(a) General. These price adjustment provisions apply to items in the contract Schedule of Prices, as specified above, including any modified standard or non-standard item where the work to be performed includes incorporation of one or more of the applicable steel materials specified in the above Sections and addressed herein. Additionally, items in the Component Item Schedule (CIS) for an "as-designed" or alternate design structure, as well as work performed under a design-build contract, will be included when applying the specified price adjustment requirements, provided the work to be performed includes incorporation of one or more of the applicable steel materials specified in the above Sections and addressed herein. Terminal sections, end treatments, transitions, and transition treatments associated with guide rail and metal median barrier work; as well as mechanical splice systems, pile tip reinforcement, high load multi-rotational bearings, shear connectors, and scuppers; will not be subject to the price adjustment criteria and conditions specified herein.

To elect to have these price adjustment provisions apply to one or more of the steel product categories identified herein, when planned for incorporation into a specific project, advance notification must be submitted to the Department. The apparent low bidder is required to submit the Steel Escalation Option

form attached to the proposal, via fax, to (717) 705-1504, or email to steeloptions@pa.gov by 3:00 pm prevailing local time within 7 calendar days after the bid opening. When the seventh calendar day after the bid opening falls on a day PENNDOT offices are closed, submit the Steel Escalation Option form by 3:00 pm prevailing local time on the next business day. If a properly completed Steel Escalation Option form is not provided by the apparent low bidder within the time specified, the Department will consider the option to apply these price adjustment provisions to the project to be declined. Furthermore, if a Steel Escalation Option form, when provided within the specified time, has been completed such that the Department is unable to ascertain the bidder's intention with regard to the inclusion of any one of the applicable steel product categories, the Department will consider the option to apply these price adjustment provisions to that product category to be declined. No further opportunity to elect steel escalation for the project or an individual steel product category will be made available. In the event the apparent low bid is rejected, the next lowest bidder will be notified to submit the Steel Escalation Option form by 3:00 pm prevailing local time within 7 calendar days after notification.

The Department posts a monthly index price for steel ($ per ton) based on data obtained from the U.S. Department of Labor (USDOL), Bureau of Labor Statistics, which publishes monthly Producer Price Index (PPI) values for various commodities. The statewide index price for steel will be based on the PPI value posted by USDOL for "Semi-finished Steel Mill Products" (Series ID: WPU101702). The Department will post its monthly index price for steel after the USDOL lists the PPI value on which it is based as final.

The "base / benchmark" index price, SB, will be the steel index price posted by the Department, determined as specified above, for the month in which project letting occurred.

The "invoice" index price, SI, will be the steel index price posted by the Department, determined as specified above, for the month in which applicable steel material is invoiced.

Steel material will be considered invoiced as of the date when an invoice from the steel mill providing the necessary raw material is sent to the Contractor or to a subcontractor, fabricator, manufacturer, or supplier. The steel price adjustment provisions specified herein are not applicable to raw steel material having a mill invoice date that precedes the project letting date. On a quarterly basis, provide documentation of the invoice date for applicable steel material incorporated into the work during the prior 3-month period. Documentation is to be in the form of a tabulation that lists all material invoiced during the period, in chronological order by invoice date; the quantity invoiced; and the applicable contract item(s) and corresponding project location(s) where the invoiced quantity or portion thereof was incorporated, along with copies of supporting invoices. Have a representative of the Contractor, authorized to make such statements, certify that the information provided in the tabulation is complete and accurate and may be relied upon by the Department.

Failure to provide the required tabulation within 10 calendar days of the end of each, applicable 3-month period will result in the Department computing a price adjustment (rebate or increase) using a value for SI that results in the greatest possible price rebate or least possible price increase based on the monthly index prices posted by the Department, to date, since work on the project began.

(b) Price Adjustment Criteria and Conditions. The following criteria and conditions will be considered in determining a price adjustment for steel cost fluctuations.

1. No Price Adjustment. When the ratio SI/SB falls within the range of 0.95 to 1.05, no price adjustment will be made for applicable steel material having an invoice date that falls within the month for which the SI index price was posted.

2. Price Rebate. When the ratio SI/SB is calculated to be less than 0.95, the Department will receive an automatic price rebate, for applicable steel material having an invoice date that falls within the month for which the SI index price was posted, to be determined in accordance with the following formula:

$$P.R. = (0.95 - SI / SB) (SB) (ST)$$

where:

P.R. = Price Rebate

SI = Index price for the month in which applicable steel material is invoiced.

SB = Index price for the month in which project letting occurred.

ST = Quantity (tons) of applicable steel material incorporated into the work during the applicable 3-month period.*

*Computed based on the quantity paid, under applicable contract items, on current estimates processed during the 3-month period addressed in the tabulation provided by the Contractor. Not to exceed the total tonnage of applicable steel material invoiced during the month for which the SI index price was posted, as shown on the Contractor's tabulation.

3. Price Increase. When the ratio SI/SB is calculated to be greater than 1.05, the Contractor will receive a price increase, for applicable steel material having an invoice date that falls within the month for which the SI index price was posted, to be determined in accordance with the following formula:

$$P.I. = (SI / SB - 1.05) (SB) (ST)$$

where:

P.I. = Price Increase

SI = Index price for the month in which applicable steel material is invoiced.

SB = Index price for the month in which project letting occurred.

ST = Quantity (tons) of applicable steel material incorporated into the work during the applicable 3-month period.*

* Computed based on the quantity paid, under applicable contract items, on current estimates processed during the 3-month period addressed in the tabulation provided by the Contractor. Not to exceed the total tonnage of applicable steel material invoiced during the month for which the SI index price was posted, as shown on the Contractor's tabulation.

4. Equivalent Tonnage. For applicable steel material furnished under a separate contract item, under a design-bid-build contract, or under a design-build contract the equivalent steel tonnage will be computed as indicate in the following sections.

For design-build contracts, provide an itemized breakdown of the applicable steel materials addressed herein incorporated into the work and indicate the quantity of each actually installed. Indicated quantities should be based on field measurements or take-offs from the approved plans or shop drawings and be equivalent to those used to compute payments made against the Lump Sum construction item on current estimates.

4.a Guide Rail and Metal Median Barrier. For applicable guide rail and metal median barrier components (i.e. rail elements, posts, and rubbing rail) furnished under separate contract items or as part of a single contract item for guide rail / metal median barrier complete in place, the equivalent steel tonnage is computed as follows:

4.a.1 Guide Rail or Median Barrier Rail Element (Weak Post or Strong Post).

Steel Tonnage (ST) = 7.84 (Q) / 2000

where:

Q = Quantity (linear feet) of weak post or strong post guide rail element paid on current estimates processed during the applicable 3-month period

4.a.2. Type 2W Posts.

Steel Tonnage (ST) = 8.67 (L) (Q) / 2000

where:

L = Length of each post (feet) as required by the Standard Drawings or as specified

Q = Quantity (each) of Type 2W posts paid on current estimates processed during the applicable 3-month period.

4.a.3 Type 2S Posts.

Steel Tonnage (ST) = 9.17 (L) (Q) / 2000

where:

L = Length of each post (feet) as required by the Standard Drawings or as specified

Q = Quantity (each) of Type 2S posts paid on current estimates processed during the applicable 3-month period

4.a.4 Rubbing Rail.

Steel Tonnage (ST) = 8.56 (Q) / 2000

where:

Q = Quantity (linear feet) of rubbing rail paid on current estimates processed during the applicable 3-month period

4.b Reinforcement Bars. For applicable reinforcement bars furnished under a separate contract item, as a component item associated with an alternate design structure, or as a component item associated with a design-build contract, the equivalent steel tonnage is computed as follows:

Steel Tonnage (ST) = (Q) / 2000

where:

Q = Quantity (pounds) of reinforcement bars paid on current estimates processed during the applicable 3-month period.

4.c Piles. For applicable steel beam bearing piles, cast-in-place concrete bearing piles, cast-in-place concrete piles, and steel pipe piles, furnished under a separate contract item, as a component item

associated with an alternate design structure, or as a component item associated with a design-build contract, the equivalent tonnage is computed as follows:

4.c.1 Steel H-Piles.

Steel Tonnage (ST) = (UW) (Q) / 2000

where:

UW= Unit Weight of the Steel Beam* (pounds per foot)

Q = Quantity (linear feet) of steel piles paid on current estimates processed during the applicable 3-month period.

* The unit weight of steel will be the second of the two numbers associated with the size designation for the beam as cited in the item description (i.e. If the item description is "Steel Beam Bearing Piles, HP12x74", the unit weight of the steel is 74 pounds per foot).

4.c.2 Cast-in-Place Concrete Piles.

Steel Tonnage (ST) = 2.80 (D) (Q) / 2000

where:

D = Diameter of the steel shell (inches)*

Q = Quantity (linear feet) of cast-in-place concrete piles paid on current estimates processed during the applicable 3-month period.

* From the approved structure Plans or field measurements. For cylindrical shells of varying diameter, a weighted average diameter will be used, computed based on the number of shells of each diameter actually installed. For tapered shells, an average diameter will be used, computed as the average of the shell diameters at the butt end and at the tip.

4.c.3 Pipe Piles.

Steel Tonnage (ST) = 6.70 (D) (Q) / 2000

where:

D = Diameter of the steel pipe (inches)*

Q = Quantity (linear feet) of pipe piles paid on current estimates processed during the applicable 3-month period.

* From the approved structure Plans or field measurements.

4.d Steel Sign Structure. For applicable steel sign structures constructed under a separate contract item, the equivalent tonnage is computed as follows:

Steel Tonnage (ST) = (Q) / 2000

where:

Q = Quantity (pounds) of steel in each sign structure, or portion thereof, paid on current estimates processed during the applicable 3-month period.*

*Not to exceed the estimated weight of each sign structure as indicated on the structure Plans.

4.e Fabricated Structural Steel. For applicable fabricated structural steel; furnished under a separate contract item, as a component item associated with an "as-designed" or alternate design structure, or as a component item associated with a design-build contract; the equivalent tonnage is computed as follows:

Steel Tonnage (ST) = (Q) / 2000

where:

Q = Quantity (pounds) of fabricated structural steel girders, rolled beams, angle, and plate paid on current estimates processed during the applicable 3-month period.

4.f Precast Reinforced Concrete Box Culverts and Prestressed Concrete Bridge Beams. For applicable precast reinforced concrete box culvert segments and prestressed concrete bridge beams; furnished under a separate contract item, as a component item associated with an "as-designed" or alternate design structure, or as a component item associated with a design-build contract; the equivalent tonnage is computed as follows:

Steel Tonnage (ST) = (UW)(Q)/2000

where:

UW= Unit Weight (pounds per foot) of reinforcing steel in a box culvert segment or of reinforcing steel and prestressing strands in a prestressed bridge beam.*

Q = Quantity (linear feet) of precast reinforced concrete box culvert segments and prestressed concrete bridge beams paid on current estimates processed during the applicable 3-month period.

* Submit documentation indicating the weight (pounds) of reinforcing steel included in and the length (feet) of each box culvert segment, and the weight (pounds) of mild reinforcing steel and prestressing strands included in and the length (feet) of each prestressed bridge beam. UW will be computed as the average of the unit weight of steel (i.e. weight of steel divided by length) in each box culvert segment, or as the average of the unit weight of steel (i.e. weight of steel divided by length) in each prestressed bridge beam. Documentation must be submitted at the time required shop drawings are submitted for approval.

5. Payment/Rebate. The price adjustment will be paid, or rebated, upon approval of a contract adjustment to be prepared on a quarterly basis as applicable work is completed. Cumulative quarterly price adjustments amounting to less than $1,000 will be disregarded.

6. Expiration of Contract Time. When eligible materials are purchased after expiration of contract time and liquidated damages are chargeable, the value for SI used to compute the price adjustment will be either the index price for the month in which applicable steel material is invoiced or the index price at the

time contract time expired, whichever is less.

7. Final Quantities. Upon completion of the work and determination of final pay quantities, a final contract adjustment may be prepared to reconcile any difference between estimated quantities previously paid and the final quantities. In this situation, the value for SI used in the price adjustment formula will be the average of all SI values previously used for computing price adjustments.

8. Inspection of Records. The Department, through the Office of Inspector General, reserves the right to inspect the records of the prime contractor and its subcontractors and material fabricators and suppliers to ascertain actual invoicing dates and quantity information for the steel material used in the performance of applicable items of work.

9. Extra Work. When applicable items of work, as specified herein, are added to the contract as Extra Work, in accordance with the provisions of Section 110.03, no price adjustment will be made for fluctuations in the cost of the steel used in manufacturing the materials placed during performance of the extra work. The current price for steel is to be used when preparing required backup data for extra work to be performed at a negotiated price. For extra work performed on a force account basis, reimbursement of actual material costs, along with the specified overhead and profit markup, will be considered to include full compensation for the current cost of steel.

Project Specific Details

Audit Information

Created By	Created On	Modified By	Modified On
Nikki L Krise/PennDOT	03/15/2012 12:22:11 PM	SYSTEM	05/10/2012 09:05:38 PM

APPENDIX F
HISTORICAL STEEL PRICES IN PENNSYLVANIA

Steel Index Price Summary

Month & Year	PPI Index Value*	Steel Index Prices	
		$/TON	$/TONNE
July 2008	337.2	$959.00	$1,057.00
August 2008	358.5	$1,020.00	$1,124.00
September 2008	361.3	$1,028.00	$1,133.00
October 2008	327.8	$933.00	$1,028.00
November 2008	271.6	$773.00	$852.00
December 2008	255.1	$726.00	$800.00
January 2009	252.3	$718.00	$791.00
February 2009	235.4	$670.00	$739.00
March 2009	229.4	$653.00	$720.00
April 2009	221.6	$630.00	$694.00
May 2009	220.6	$628.00	$692.00
June 2009	220.6	$628.00	$692.00
July 2009	218.7	$622.00	$686.00
August 2009	214.8	$611.00	$674.00
September 2009	220.2	$626.00	$690.00
October 2009	219.0	$623.00	$687.00
November 2009	215.9	$614.00	$677.00
December 2009	218.0	$620.00	$683.00
January 2010	224.0	$637.00	$702.00
February 2010	228.2	$649.00	$715.00
March 2010	235.6	$670.00	$739.00
April 2010	240.9	$685.00	$755.00
May 2010	241.7	$688.00	$758.00
June 2010	241.5	$687.00	$757.00
July 2010	239.2	$681.00	$751.00
August 2010	238.7	$679.00	$748.00
September 2010	239.3	$681.00	$751.00
October 2010	237.8	$677.00	$746.00
November 2010	240.9	$685.00	$755.00
December 2010	242.3	$689.00	$759.00
January 2011	246.4	$701.00	$773.00
February 2011	255.2	$726.00	$800.00
March 2011	259.8	$739.00	$815.00
April 2011	264.0	$751.00	$828.00
May 2011	262.9	$748.00	$825.00
June 2011	268.3	$763.00	$841.00
July 2011	268.8	$765.00	$843.00
August 2011	268.5	$764.00	$842.00
September 2011	268.4	$764.00	$842.00
October 2011	268.3	$763.00	$841.00
November 2011	265.5	$755.00	$832.00
December 2011	264.0	$751.00	$828.00
January 2012	266.4	$758.00	$836.00
February 2012	264.5	$752.48	$829.00

*From the U.S. Department of Labor, Bureau of Labor Statistics. Producer Price Index-Commodities posting for Semifinished Steel Mill Products (Series ID: WPU101702).