Asphalt Risk Management at WYDOT

Larry Redd, P.E.
970-219-4732
larryredd@earthlink.net
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Asphalt Risk Management Study

- What:
  - Identify, develop, and compare options for asphalt risk mitigation for WYDOT
- Why:
  - Future uncertainties in price and material availability
- How:
  - Perform situation analysis – current snapshot and trends
  - Identify risks to WYDOT and contractors
  - Develop applicable strategies for risk mitigation
  - Compare strategies, and draw conclusions
  - Develop risk mitigation plan for WYDOT

Situation

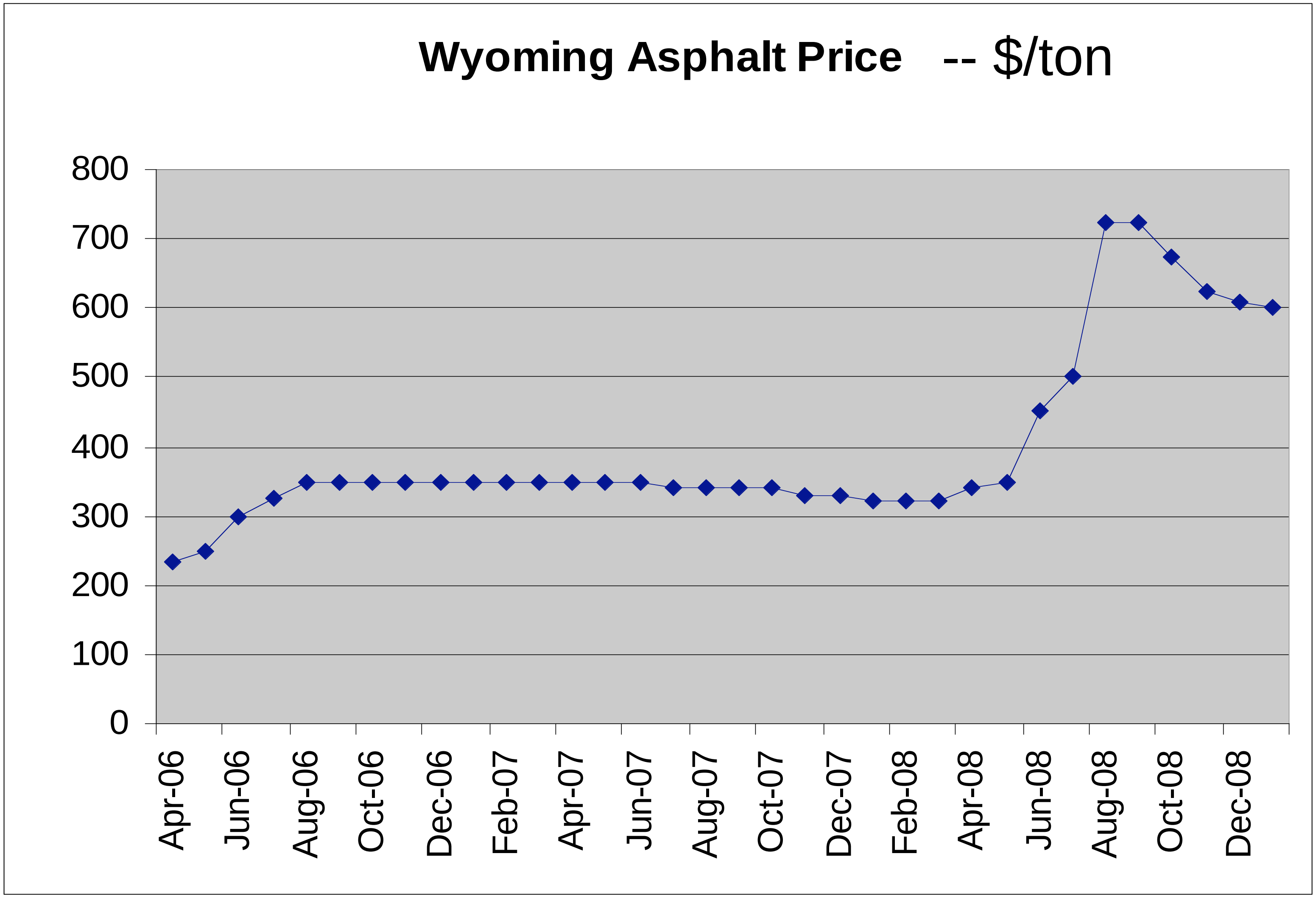
- Short and long-term dynamics in oil markets have been volatile, and may continue indefinitely
- Asphalt prices and availability:
  - have fluctuated significantly in recent years,
  - may become increasingly uncertain in the future
- Contractors are becoming less and less able to manage risks associated with material supply
- Most DOTs now have escalation language built into their contracts
- DOTs are thus assuming more of these risks, and need ways to mitigate them

Escalation at WYDOT

- Contractor must “opt into” escalation within 10 days after pre-construction conference
- Base Price Index (BPI) and Current Price Index (CPI) are used for adjustments
- No adjustments unless the index moves up or down 10% (from BPI)
- Adjustments = 90% of index movement
- Upward AND downward movements count!
- No adjustments for fixed price contracts

2008 – "The Perfect Storm"

- OPEC production cuts and other supply disruptions (Venezuela, Nigeria)
- Tight refining capacities
- Weak dollar (Federal Debt, Trade Balance, strong Euro, etc.)
- Pre-recession growth (Orient, fuel usage)
- Oil market speculation (NYMEX bubble)
- Coker capacity buildup (driven by light-to-heavy crude price differential) – this influence on asphalt price is a ***<u>long-term phenomenon</u>***

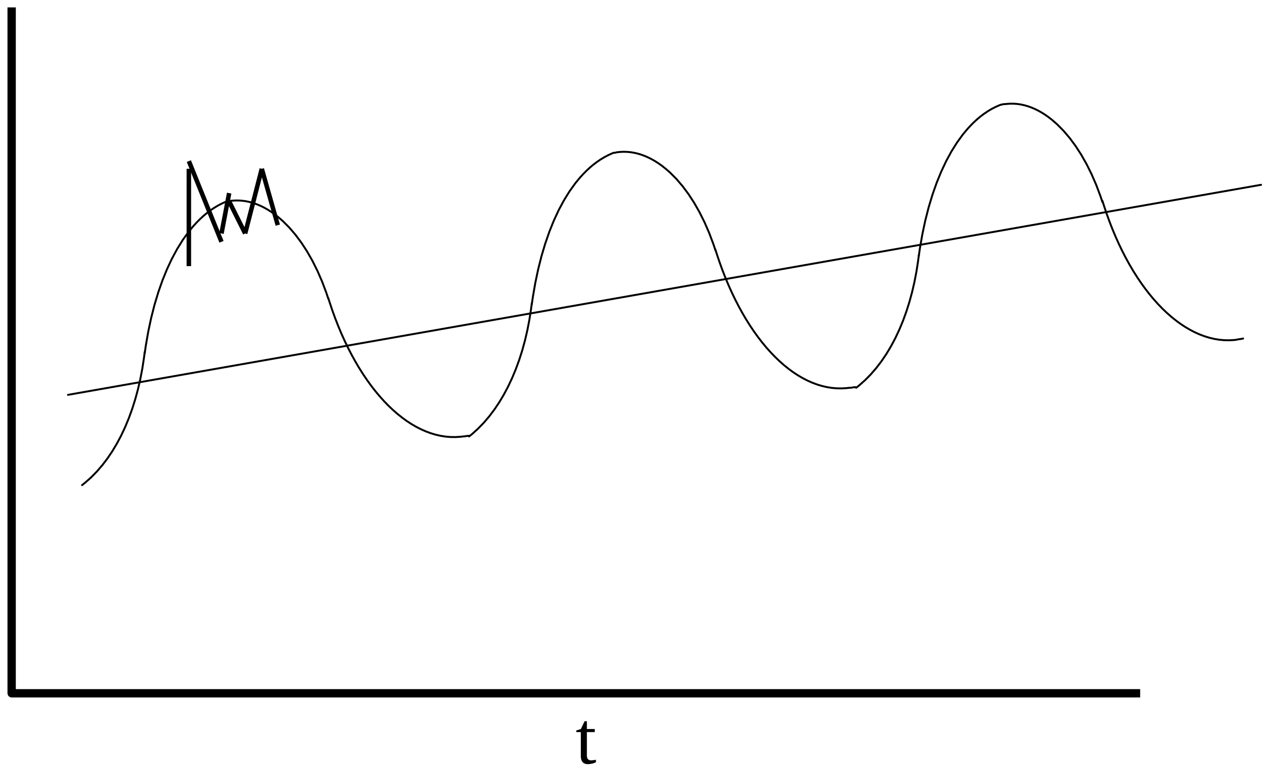


Wyoming Asphalt Price -- $/ton
800
700
600
500
400
300
200
100
0
Apr-06
Jun-06
Aug-06
Oct-06
Dec-06
Feb-07
Apr-07
Jun-07
Aug-07
Oct-07
Dec-07
Feb-08
Apr-08
Jun-08
Aug-08
Oct-08
Dec-08

Approach -- Details

1. Situation analysis of WYDOT's material usage, prices, sources, processes, contracting, supply disruptions, impacts, etc. – current and historical
2. Perform market analysis: identify trends and drivers in asphalt prices, regional price disparities & time delays, industry dynamics, cyclicality, refining capacities, etc.
3. Identify risks, both for WYDOT and for contractors
4. Develop various risk management options and strategies
5. Compare these options/strategies and make conclusions
6. Finalize strategy and develop a risk management plan
7. Next -- Look at fuels, concrete, and steel …(?)

Trends, Cycles, and Volatility



Types of Risk

- Price risk:
  - Long term (multi-year) – not feasible to manage
  - Intermediate term (within one year) – WYDOT now owns this risk, with the advent of “escalation”
  - Short-term (week-to-week volatility) – Contractors may still encounter some problems (even with escalation)
- Supply risk – short, intermediate, long term
  - avoiding supply disruptions during the paving season
- **Summary** – WYDOT implementing “escalation” language in their contracts shifts intermediate term risks from the contractor (about $7 MM in 2008), but short-term risks still exist for the contractor (estimated at $1 to 2 MM)

Potential Strategy Options

1. Current approach – contract "escalation clause" to largely shift price risks away from contractors to WYDOT (market moves)
2. Physical storage (e.g. 10K tons -- Capital cost of $2-3MM):
    - WYDOT own, rent, or lease storage, and operate it
3. Buying risk management services (for physical supply):
    - Asphalt storage, modification, or both
4. Implement strategies that are adaptable to forecasted behaviors in the materials markets – long-term plans
5. Opportunities to team with neighboring states (DOTs), counties, etc. on garnering supply:
    - Consistency of specs, transport feasibility, pooled amounts
6. Buying financial hedges (guarantees on material price and/or availability) – NYMEX, or other financial substitutes
7. Combinations of the above (e.g. 1 & 2, 1 & 3, etc.)

Comparison Criteria

- Extent and severity of risks reduced (per option)
  - Re: Material Price, Availability, and Volatility
- Other value associated with reducing these risks
  - Delays in construction (labor, equipment, etc.)
  - Crashes, injuries and fatalities – in construction zones
  - Additional WYDOT resources required
  - Impacts on commerce (primarily I-80)
- Costs of each option – initial, recurring
- Legality of each option, and feasibility
- WYDOT's risk tolerance and management objectives

Contractor Experiences -- 2008

- A real mix, from low impact to higher impact
- Suppliers varied in terms of honoring their commitments (on prices and volumes)
- About $1 million of price impacts (8 contractors)
- Several days of delays, at approx $20K per day
- Other costs (hauling, etc.) due to short supply
- Some contractors like, and rely on, “escalation”, but some prefer to continue with firm fixed prices
- Timing on invoices vs the index date (used for the “adjustment”) caught at least one supplier
- Other states vary in terms of contractor impacts

Contractor Experiences (cont) -- 2008

- WYDOT’s escalation adjustment does not allow firm fixed prices, thus contractors are currently not protected if supplier does not honor an agreement
- Some contractors feel the 10% “adjustment threshold” regarding escalation is high
- According to an AASHTO survey, the majority of states have some form of escalation language
- Not easy to gain consensus on risk management – some states ***had*** escalation language in their contracts, then abandoned it

NCHRP Study Effort (TRB)

- "Price Indexing in Transportation Construction Contracts" NCHRP 20-07/Task 274 (RFP)
- Proposals were due on April 24^{th}, 2009
- Objectives:
  - Identify current state of DOT practice in using price indexing or cost escalation clauses in construction contracts
  - Provide guidance for DOT staff making decisions about whether and how such clauses should be used
- Estimated 15 month study

Conclusions

- Current "escalation clause" for working with contractors is deemed to be a success but risks still exist for both WYDOT and contractors
- There appear to be reasonable alternatives for further risk mitigation (for both WYDOT and contractors) for future situations when price and availability issues may return (2012-2015)
- Asphalt may be more available and cheaper in the next few years due to forecasts of favorable refining incentives for making asphalt (vs. gas)
- May be advantageous to play "counter-cyclical" to the asphalt market (and perhaps concrete as well)

Next Steps

- Continue to monitor indicators related to future asphalt price, availability, and volatility
- Refine quantitative models for estimating the risks in the asphalt market (cyclical, and intermediate-term)
- Factor in experiences in other states (escalation, etc.)
- Map out business processes to implement "post escalation" risk mitigation strategies
- Perform similar study regarding concrete
- Factor materials market cycles into long-range strategies
- Consider a "Pilot Project" in 2010 for risk mgmt