The Pay Item Catalog is a starting point for determining unit prices. While a two-year price history is typically used to obtain average bid prices, this range may not be acceptable for all items. Individual items need to be carefully evaluated based on many different factors that can influence the cost. An acceptable date range for price history can differ based on the specific item and the number of bids during the selected time-period. As an example, a current escalation in fuel cost can have a direct impact on asphalt prices which may indicate a different value as compared to the recent documented price history. Other factors such as Region location, type of work, quantity of item and cost trends can also impact the estimated cost per item. Engineering judgement should be used when evaluating and determining the appropriate estimated bid prices. If the data provided in the Pay Item Catalog is determined to be outdated, it may be advisable to research other resources (RS Means Heavy Construction Data Costs, vendors or suppliers, consultation with Regional Geotechnical and Materials group, etc.) to arrive at an appropriate bid price.

Consider the following when selecting the estimated prices for all items. The consideration of the Estimating Best Practices topics is to be documented at the ADP and PS&E project phases using the “Engineer’s Estimate Bid Price Worksheet” for the top 10% of all contract items ranked from highest to lowest by estimated cost (unit cost times quantity).

**Example:** An estimate with 150 items would require documentation of the top 15 items based on total item cost.

The worksheet is available on the HDM Chapter 21 website. See example on Page 4.

1. Review bid price histories
   a. Age of bid prices
   b. Region
   c. Type of Work
   d. Quantity
   e. Contractors’ Familiarity with Specifications
   f. Payment Method (Lump Sum, Fixed Price, Measured)
   g. When in the job will the contractor get paid (early like mobilization or at the end)

2. Notes
   a. Proposal Notes (e.g., Insurance Requirements, Special Notes)
   b. Notes in Plans that change Standard Sheets (as approved exceptions)
   c. Notes in Plans that change Payment of Work (as approved exceptions)

3. Work Complexity
   a. Production rate
   b. Routine vs unusual work

4. Subcontracting – DWBE, MWBE Goals
   a. Specialty work
   b. Experience
   c. Size of crews

5. Competition
   a. Program size for the Region and adjacent Regions
   b. Labor or Union issues
   c. Bid price trends
   d. Number of recent Case II’s

6. Specialized Equipment
   a. Own vs. rent
   b. Availability
   c. Rental cost
   d. Duration
   e. Cannot buy equipment for the state or others to own (VMS, PCs, vehicles) after completion

7. Inspection method
   a. Testing, proofs, etc.
   b. Consultant vs. State Inspection
   c. Measurement Method (Lump Sum, Area, Volume, Linear, Each, etc.)

8. Availability of materials
   a. Location of PCC and HMA plants
   b. Other projects in the area of the same type that could impact delivery
   c. Proprietary items

9. Borrow or Spoil Areas
a. Haul Distances  
b. Route restrictions  
c. Landfill Tipping fees

10. Staging Areas  
a. Proximity to work site  
b. Size of area  
c. Truck access for deliveries

11. Site Access  
a. Equipment Access  
b. Size of equipment  
c. Need for Cranes over travel lanes

12. Uncertainty  
a. Design level of detail (Plan detail, table, note, per EIC, or requires shop drawing)  
b. Survey method  
c. Familiarity with the specification (is it new or changed)  
d. SUE level of utility certainty  
e. Fuel price fluctuations between estimate and letting/award for fuel price adjustment

13. Structures  
a. Lead time for fabrication and delivery (e.g., bridge bearings, structural steel, precast units, signal poles)  
b. Availability of precast suppliers  
c. Lead time for precast materials (e.g., wall units)

14. Geotech  
a. Available subsurface information (i.e., borings)  
b. Depth and variability of rock  
c. Unsuitable material  
d. Need for additional borings  
e. Duration of embankment pre-loading

15. Utilities  
a. Coordination  
b. Type (elect vs gas vs gravity sewer)  
c. Size (7 kv vs 50 kv, 24” vs 72” sewer main)  
d. Criticality of utilities; degree of flexibility to shut down the utility

16. Railroad Agreements  
a. Flagging  
b. Allowable work windows

17. Environmental  
a. Hazardous Waste (volume and where is the disposal site)  
b. Contaminated Waste (volume and where is the disposal site)  
c. Archeological data recovery efforts in construction  
d. Wetland restrictions  
e. Additional permits

18. WZTC  
a. Complexity of work zone (set up once or daily)  
   i. Detours  
   ii. Stages – WZTC setups  
b. Nighttime Work (20% loss due to night time) – Assume 20% reduction in productivity for night work.  
c. Shift Work – Assume a 20% reduction in productivity for shift work due to transfer.  
d. Allowable work windows based on restrictions – traffic time, weekday/weekend, holidays  
e. Number of sites

19. Construction Contract Type/Project Delivery Method  
a. Traditional Design-Bid-Build (aka, low bid)  
b. Non-traditional Design-Bid-Build (e.g., Best Value, pre-qualification)  
c. Design-Build (contact the Project Management Office (PMO) for estimating guidance)

20. Warranties and Maintenance  
a. No warranties on Federal Aid projects  
b. Replacement parts (stockpile, ordering time)  
c. Response time  
d. Frequency of maintenance and the Parts and Labor
21. Completion Date
   a. Weather (cannot pave in rain)
   b. Season (Spring rains, Snow removal)
   c. Winter work (Winter paving or concrete – Are plants open)
   d. Cold weather concrete provisions are required
   e. Incentive and Disincentive Clauses
   f. Liquidated damages
   g. Time-related contract provisions (e.g., A+B, Lane Rental)
   h. Overtime for contractor
   i. Time to perform work – Impacts equipment, size of crew, overtime. Account for set-up time and clean-up time for each shift.
   j. Separate agreements needed for landscape items or extend duration
   k. Duration for Bonding, Insurance, final payments, etc.
Engineer’s Estimate Bid Price Worksheet

PIN: 1234.56  Project Descript.: Region 1 Paving Project

Comp. by:  Date Comp.: 10/27/17  Checked by:  Date Checked: 11/10/17

Item Number: 402.098203  Item Description: 9.5 F2 Top Course HMA, 80 Series

Region: 1 - Albany  County: Saratoga  Project Phase: ADP

Purpose of this Worksheet:
- To improve the accuracy of the independent Engineer’s Estimate of construction work.
- To provide Regional and Main Office Estimating Coordinators suggested considerations when determining estimated prices for items as per guidance in EI18-005.

Instructions:
Complete this worksheet for documentation of each of the top 10% of all contract items ranked from highest to lowest by estimated cost (unit cost times quantity).

Example: An estimate with 150 items would require documentation of the top 15 items based on total item cost.

See list of typical considerations provided in "Estimating Best Practices" available on the HDM Chapter 21 website (select only those that apply to your project). An evaluation of these items shall be completed at ADP and PS&E project phases.

<table>
<thead>
<tr>
<th>CONSIDERATIONS (Refer to “Estimating Best Practices” for list)</th>
<th>AFFECT ON ITEM BID PRICE?</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXAMPLE(S): Quantity of Item</td>
<td>Comment(s):</td>
</tr>
<tr>
<td></td>
<td>Unit Bid Price compared to recent project with similar quantity (e.g., 8,000 Tons).</td>
</tr>
<tr>
<td>Trending fuel price escalation</td>
<td>Comment(s):</td>
</tr>
<tr>
<td></td>
<td>Asphalt prices from Pay Item Catalog (PIC) to be increased based on a trending escalation in fuel prices.</td>
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<tr>
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<td>Comment(s):</td>
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<td>Comment(s):</td>
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</tr>
</tbody>
</table>

Unit Cost from Pay Item Catalog: $79.53  Adjusted Unit Price: $85.00