

## Appendix C: Best Practices to Develop Final Construction Cost Estimates

Best management practices (BMPs) were evaluated by a working group comprised of district and division personnel that are involved in multiple aspect of the construction cost estimation process. The selected BMPs have been divided in the three major areas that are key to the selection of bid items and unit prices. The selection of bid items, selection of unit prices, calculation of quantities and their associated BMPs are shown below.

### *Selection of Bid Items*

- Utilize standard bid items rather than Special Spec items when possible. Special Specifications are great tools for getting specialized work done on construction projects. Contractors typically only have 3 weeks to review an entire construction proposal and prepare a bid to build the project. Special Specifications can be seen as a risk to the contractor that could result in higher bid prices than a similar standard specification.
- Utilize “regular” standard bid items. Consistent use of frequently used bid items will allow the bidding contractors to learn the districts preferences and anticipate the needs of construction projects. This can reduce the contractor’s perception of risk and result in more competitive bid prices.
- Utilize bid items with specified dimensions rather than variable dimensions.

### *Selection of Unit Prices*

When selecting the unit price for each bid item the estimator should first select a base unit bid price and then adjust to account for things like geographic location, quantity of item, and item availability.

**Historical Bid-Based Prices** are the most common source of base unit costs used by estimators for TxDOT projects. They are typically found in two forms, low bid average prices and monthly letting bid tabs. The best estimates are developed using a combination of both sources to select the most appropriate base unit price.

- Low bid average prices are
  - Compiled from monthly letting results by the Construction Division
  - Available as either statewide or districtwide averages
  - Available as 3-month or 12- month average low bid price
  - Can be found [here](#) on TxDOT.GOV.
- Adjustment factors
  - Should be applied to the assigned base unit prices to adjust for project specific factors (see table below)
  - Inflation rates should not be used as an escalation factor. Inflation is applied in the TxDOT Connect system
  - Adjust to market conditions and competitive bidding environment

### Chapter 3.3.3.2 Bid Price Adjustments

AASHTO *Practical Guide to Cost Estimating*, 1<sup>st</sup> edition 2013

	Urban Setting	Increase - confined workspace, high traffic, limits on work hours, night work Decrease - local contractors, materials, equipment and personnel
	Rural Setting	Increase - lack of local contractors, materials, equipment and personnel Decrease - open workspace, low traffic, no work hour restrictions
	Distance to Material Sources	Increase - if material sources are far from project location Decrease - if material sources are close to project location
	Terrain	Increase - projects with mountainous terrain or steep slopes  Decrease - project on level terrain
	Local Policies, Taxes, Restrictions, Air & Water Quality	Increase - most restrictions increase project cost
	Tribal Lands	Increase - tribal taxes could increase costs
	Large Quantities	Decrease - generally reduced unit cost because of supplier discounts, spread of mobilization, overhead, profit and waste over a larger quantities and increased production rates
	Small Quantities	Increase - generally increased unit cost because of higher supplier charges, decreased production rates and sub-contracting of small quantity items
	Extremely Large Quantities	Increase - extremely large quantities of can result in shortage or delay in delivery of some materials (structural steel, asphalt, concrete, etc.)
	Readily Available Items	Decrease - commonly used items are generally less expensive
	Non-Standard Items	Increase - rarely used items are generally more expensive
	Difficult Construction	Increase - examples include underwater activities and working near railroads
	Site Constraints	Increase - examples include work adjacent to historic structure or environmentally sensitive or hazardous sites and limited work space
	Mobilization	Increase - project that include require a large amount of equipment and staff to relocate or if the contractor will need to mobilize several times