


**DATE:** February 26, 2009

**SUBJECT:** Alternate Bidding Policy - Revised  
Publication 242, Section 11.7

**TO:** District Executives

**FROM:** Richard H. Hogg, P.E.  
Deputy Secretary for Highway Administration

465-09-3



Attached is the revised Section 11.6 of the Pavement Policy Manual, Publication 242, entitled "Alternate Bidding." This policy has been developed to facilitate competition in the paving industry and to allow PennDOT to take advantage of fluctuating material costs without compromising sound engineering principles and practices. The impact is time increasing with respect to project design costs in order to realize potential savings in construction costs through alternate bidding.

Alternate Bidding is a process to allow both industries to be competitive and for PennDOT to realize lower costs. Rather than a predetermined pavement type selection based on a Life Cycle Cost Analysis (LCCA) and historical cost information, there is motivation to determine pavement type based on low bid. The LCCA methodology is used to develop cost adjustment factors for Alternate Bidding as specified in the attachment. Alternate Bidding is to be applied on any project requiring an LCCA as defined in Publication 242 and the attachment.

This revision replaces Strike Off Letter #465-09-02, dated January 26, 2009. References to pavement preservation projects were removed because of concerns regarding alternates that are either incomparable or not compliant with the Pavement Preservation Guidelines. PennDOT, the FHWA and industry will continue to pursue appropriate pavement preservation alternates for future consideration for Alternate Bidding.

If there are any questions concerning this policy, please contact Daryl St. Clair, P.E., Acting Director, Bureau of Maintenance and Operations, by calling (717)787-6899 or via email at [dstclair@state.pa.us](mailto:dstclair@state.pa.us).

Attachment

4650/JML/jml      7-1199

cc:    D. Spila, Policy Office, CKB 8<sup>th</sup> Floor  
      Bureau Directors, Highway Administration  
      Division Chiefs, Bureau of Maintenance and Operations, CKB 6<sup>th</sup> Floor  
      District PME/PM  
      R. Cominsky, Pennsylvania Asphalt Pavement Association  
      J. M. Becker PE, American Concrete Pavement Association, PA Chapter

## **11.6 ALTERNATE BIDDING**

The following guidelines on Alternate Bidding have been developed to facilitate competition in the paving industry and to allow PennDOT to take advantage of fluctuating material costs without compromising sound engineering principles and practices.

It is in the best interest of PennDOT to apply Alternate Bidding whenever appropriate so that both industries are competitive and lower costs can be realized. Rather than a predetermined pavement type selection based on an LCCA and historical cost information, there is motivation to determine pavement type based on low bid.

Alternate Bidding requires the determination of a “C” factor which accounts for future maintenance and user delay costs and is added to the construction cost so that the low bid is based on life cycle costs. Additional requirements for Alternate Bidding are as follows:

- Both industries must be made aware of the upcoming Alternate Bidding project through a formal announcement process.
- Alternates must be “equivalent,” meaning they are based on the same design life and compared over the same performance period.
- The bid package will indicate the appropriate “C” factors for each alternative, determined by PennDOT based on LCCA methodology for the project, described herein.
- Typical sections for all alternatives must meet RC standards, DM-2 and Pub. 242 requirements.
- Lane width, shoulder width, cross slope and all other geometric features unrelated to pavement type, shown on the Typical Sections must remain as per the plans.

### **11.6.1 Alternate Bidding for Structural Improvement Projects**

As stated in Section 11.2, an LCCA is required for all structural improvement projects in excess of \$3M on the Interstate System and \$15M on all other facilities, regardless of Federal or State Oversight. A structural pavement design is performed for new construction, reconstruction, structural overlay of an existing pavement, etc. Alternative structural designs are performed for each pavement type and the LCCA is performed to analyze which equivalent structure is most cost effective over a prolonged performance period. It is important that all practical alternatives are considered when performing an LCCA for these projects, from major rehabilitation with either a bituminous or concrete structural overlay to total reconstruction with either pavement type.

Alternate Bidding is to be applied to all projects that require an LCCA.

New construction, reconstruction projects and major rehabilitation projects that do not require an LCCA should also receive strong consideration for Alternate Bidding since they may constitute significant investment and opportunity for competition. The cost to perform an LCCA in order to determine “C” factors is significantly less than the potential savings in construction costs through Alternate Bidding.

### 11.6.2 “C” Factor Calculation – Structural Improvement Projects

Based on PennDOT’s prescribed pavement maintenance cycles, provided in Section 12.2, a full-depth bituminous pavement, preserved with cyclic overlays/inlays, has an expected structural life of 50 years. A properly maintained concrete pavement has an expected structural life of 55 years; this includes a future application of a bituminous overlay. Since there is no annual maintenance cost, both alternates can be analyzed over a 50 year period and the LCCA can be performed based on Present Worth (PW). The term “structural life” references the point in time when the pavement can no longer be preserved and reconstruction is necessary; this is different than design life.

The “C” factor is determined by summing the PW of the future maintenance and user delay costs:

$$C = (PW_{\text{maint}} + PW_{\text{user}})$$

Where:

C = “C” factor

$PW_{\text{maint}}$  = PW of future maintenance costs

$PW_{\text{user}}$  = PW of user delay costs