Instructions for Adjusting Costs Using Tables

1. Table Assumptions. Table 1 and table 2 are prepared by fiscal year (beginning 2 October, ending 30 September/1 October) with the indices based on the first day of each quarter. These tables provide an acceptable means of updating existing project costs. For computation purposes, CWCCIS uses 1967 as the base year, with an assigned value of 100.00.

a. Table 1 Quarterly Cost Indices by CWWBS Feature Code. Table 1 displays indices on a quarterly basis for more exact short-term and long-term escalation. Table 1 is updated twice each year. See figure 1, How to Update/Escalate by Quarterly Indices.

b. Table 2 Yearly Cost Indices by CWWBS Feature Code. Table 2 displays indices on a yearly basis for long-term forecasting. These indices are developed by averaging quarterly indices for each year. Table 2 is updated twice each year. See figure 2, How to Update/Escalate by Yearly Indices.

c. Table 3 State Adjustment Factors. Table 3 is prepared on a state-by-state basis. The state area cost factors are developed from a representative breakdown of labor, materials, and equipment. Table 3 is used to compare or adjust a project cost prepared for a project in one state to a project located in another state. Note that Alaska and Hawaii are not considered in the national average. This table is updated annually. See figure 3, How to Adjust Costs by Using State Adjustment Factors.

d. Table 4 Historical State Adjustment Factors. Table 4 is historical data. This table is used for information only and displays the last 10 years of state adjustment factors.

2. How to Update a Project Cost. Indices used in any calculation must be from the same table and CWWBS Feature Code. State adjustment factors should only be utilized after the project cost has been moved through time as needed using the appropriate cost indices. The figures on the following pages illustrate the use of each table.

3. Engineering/Technical Instruction Updates. The tables and examples in this document are updated as follows: Updates to table 1 and table 2 occur in March and September; updates to table 3 and table 4 occur in March only.

The following formula is used for the purpose of updating/escalating an existing project cost.

$$\frac{\text{Cost Index: Quarter A}}{\text{Cost Index: Quarter B}} \text{ x Cost in Quarter B (Known)} = \text{Cost in Quarter A (Unknown)}$$

Cost Index A is the cost index for the quarter the project costs are updated to.
Cost Index B is the cost index for the quarter the project costs are updated from.

Note: Both cost indices must be from the same table and Feature Code.

EXAMPLE:

Assume the following:

You have a project cost of $500,000

Date of the project cost is 1 Nov 2016 (1st Qtr FY17)
Feature Code is 04, Dams – Cost Index is **828.34**

You want to escalate the project cost to 1 Mar 2019 (2nd Qtr FY19)
Feature Code is 04, Dams – Cost Index is **890.72**

$$\frac{\text{FY19 Qtr 2: } \mathbf{890.72}}{\text{FY17 Qtr 1: } \mathbf{828.34}} \text{ x } \$500{,}000(\text{1st Qtr FY17}) = \text{Cost in 2nd Qtr FY19}$$

1.075 X $500,000 = $538,000

Figure 1. How to Update/Escalate Using Quarterly Indices

The following formula is used for the purpose of updating/escalating an existing project cost.

$$\frac{\text{Cost Index: Year A}}{\text{Cost Index: Year B}} \text{ x Cost in Year B (Known)} = \text{Cost in Year A (Unknown)}$$

Cost Index A is the cost index for the year the project costs are updated to.
Cost Index B is the cost index for the year the project costs are updated from.

Note: Both cost indices must be from the same table and Feature Code.

EXAMPLE:

Assume the following:

You have a project cost of $500,000

Date of the project cost is 1 Oct 2014 (FY15)
Feature Code is 04, Dams – Cost Index is **806.93**

You want to escalate the project cost to 1 Oct 2017 (FY18)
Feature Code is 04, Dams – Cost Index is **861.72**

$$\frac{\text{FY18: } \mathbf{861.72}}{\text{FY15: } \mathbf{806.93}} \text{ x \$500,000 (FY15)} = \text{Cost in FY18}$$

1.068 X $500,000 = $534,000

Figure 2. How to Update/Escalate Using Yearly Indices

The following formula is used to adjust or compare project costs from one state to another.

$$\frac{\text{State Factor for State A}}{\text{State Factor for State B}} \text{ x Cost in State B (Known)} = \text{Cost in State A (Unknown)}$$

The state factor for state A is the factor for the state where the project costs are needed.
The state factor for state B is the factor for the state where project costs were developed.

Note: First, update project costs to the desired year by using table 1 or table 2. Then use the state adjustment factor to change the cost to another state. In addition, use figure 1 or figure 2 for methods to compute the escalation.

EXAMPLE:

The following example utilizes data from the September 30, 2019 edition of this publication.

Assume the following:

You have a project cost of $500,000 developed in the state of Washington, dated or escalated to the current FY.

Location of the project: Washington State (state B)
State adjustment factor for Washington State as of 9/30/2019 is **1.07**

Location of the desired costs for comparison: Pennsylvania (state A)
State adjustment factor for Pennsylvania as of 9/30/2019 is **1.08**

$$\frac{\text{PA State: } \mathbf{1.08}}{\text{WA State: } \mathbf{1.07}} \text{ x \$500,000 (WA)} = \text{Cost in PA}$$

1.009 X $500,000 = $505,000

Figure 3. How to Adjust Costs Using State Adjustment Factors