

## Cost (Summation) Approach Job Aid

The cost (summation) approach is used to determine the value of the subject land (using comparable sales) and subject improvements (using “replacement cost new”). There are five key steps involved in completing a detailed analysis for the cost (summation) approach.

### 1. Determine the value of the subject land from comparable sales.

Key Term/Concept	Description/Explanation
Elements of comparison	<p>The elements of comparison are the characteristics of properties and transactions that cause the prices paid for real estate to vary. These elements of comparison include:</p> <ul style="list-style-type: none"> <li>• Real property rights conveyed</li> <li>• Financing terms</li> <li>• Conditions of sale</li> <li>• Market conditions</li> <li>• Location</li> <li>• Physical characteristics</li> </ul> <p>These elements must be researched and analyzed to determine if any adjustments to these elements are warranted within the market. Each element will be discussed and an adjustment made to the sale toward the characteristics that are evident in the subject.</p>
Valuing the land	<p>The first step in the cost approach – determine the value of the subject land – requires that the following sub-steps are completed:</p> <ul style="list-style-type: none"> <li>• Assemble unimproved (bare) land sales</li> <li>• Look for “puritans” (i.e., only one land class)               <ul style="list-style-type: none"> <li>– Examples of agricultural classes: soil classes, productivity index ranges, waste (non-productive), timber, bare land</li> <li>– Examples of recreational classes: woods, wetlands, hunting, water</li> </ul> </li> <li>• Develop soil class ratios</li> <li>• Ensure that the <b>sale</b> land value is at the time of sale</li> <li>• Ensure that the <b>subject</b> land value is adjusted to effective date</li> </ul>

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2. **Compute the replacement cost new (RCN) of the subject improvements.** (The effective date is used for current building cost.)

Key Term/Concept	Description/Explanation
Replacement cost new (RCN)	<p>Replacement cost new (RCN) is used for computing subject and sale improvements. RCN:</p> <ul style="list-style-type: none"> <li>• Is the most common cost used for these computations</li> <li>• Constructs new buildings to modern standards with modern methods</li> <li>• Should eliminate the concept of functional obsolescence/ depreciation</li> </ul> <p>The “reproduction cost” (i.e., cost of “reproducing” the subject) is rarely used and usually includes functional obsolescence; it is difficult to obtain cost data for such sales. Examples include “unique” buildings (e.g., Amish barn) and historical buildings.</p>

3. **Extract depreciation from sales at the “time of sale.”** (The sale date is used for RCN and land value.)

Key Term/Concept	Description/Explanation
Types of depreciation	<p>Depreciation is a loss in property value from any cause. Three types of depreciation include:</p> <ul style="list-style-type: none"> <li>• Physical depreciation               <ul style="list-style-type: none"> <li>– Loss in value by wear, tear, age and use (e.g., weather, pests, traffic)</li> <li>– Curable. Consider if the property is curable and the economic feasibility to cure (e.g., paint, roof, repair broken window, replace damaged siding). If the property is deemed incurable, this means that it cannot be corrected, or that doing so is in excess of contribution to value (e.g., cracked foundation, frame damage, sever smoke and/or fire damage)</li> </ul> </li> <li>• Functional depreciation/obsolescence               <ul style="list-style-type: none"> <li>– Loss in value from deficiencies in the structure, defects in the design, and/or changes in the industry (e.g., door to small/narrow on machine shed)</li> </ul> </li> <li>• External or economic depreciation               <ul style="list-style-type: none"> <li>– Loss in value due to off property influences that are usually incurable and/or you have no fix or solution for (e.g., depressed milk prices, prison in neighborhood)</li> </ul> </li> </ul>

## Cost (Summation) Approach Job Aid (continued)

4. Apply depreciation against subject RCN to obtain “depreciated RCN” or the “contributory value of improvements.” (The value of a particular component is measure in terms of its contribution to the value of the whole property.)

Key Term/Concept	Description/Explanation
Depreciation	<p>Depreciation can be applied by lump sum. It is important to use a consistent method from sales to subject. It is common to see three types of depreciation, and it <i>must</i> be applied in order: 1) physical, 2) functional, 3) external or economic</p> <ul style="list-style-type: none"> <li>• First determine economic life (EL):               <ul style="list-style-type: none"> <li>– Effective age (EA)* + remaining economic life (REL) = EL</li> <li>– Example: 10 + 30 = 40</li> </ul> </li> <li>* Effective age is based on the judgment of the appraiser; it is usually not the chronological age</li> <li>• Then determine depreciation:               <ul style="list-style-type: none"> <li>– <math>1/EL = \text{depreciation}</math></li> <li>– Example: <math>1/40 = 2.5\%</math> depreciation</li> </ul> </li> <li>• Then determine depreciation for the EL:               <ul style="list-style-type: none"> <li>– Depreciation x EA = depreciation for the EL</li> <li>– Example: <math>2.5\% \times 10 = 25\%</math></li> </ul> </li> </ul>
Compute depreciation of sales	<p>Note that land, RCN, and depreciation all need to be figured/ determined at time of sale.</p> <ul style="list-style-type: none"> <li>• Sale price – land = contributory value of improvements (or CV of improvements)</li> <li>• RCN – CV of improvements = accrued depreciation</li> <li>• Accrued depreciation should be broken down into physical, functional, and external/economic</li> <li>• <math>(\text{Total depreciation} - \text{external and functional depreciation}) / \text{EA} = \text{yearly physical depreciation}</math></li> </ul>

## Cost (Summation) Approach Job Aid (continued)

### 5. Add land value and depreciated RCN value for cost approach value

Key Term/Concept	Description/Explanation
Cost approach value	<p>After completing detailed analysis:</p> <p>CV of improvements + vacant land value = cost approach opinion of value. Example:</p> <p>\$665,440 (RCN) – \$367,994 (accrued depreciation) = \$297, 446 (CV of improvements)</p> <p style="text-align: center;"> <b>\$297,446 (CV of improvements)</b>            + <b><u>\$444,000</u> (vacant land value)</b>  <b>\$741,446</b> </p>

*For additional information on this approach, contact your supervisor/mentor.*