

## **Equalization of Property Valued by the State**

Prepared by the Nebraska Department of Revenue, Property Assessment Division  
for the Annual Equalization Meeting of the Tax Equalization and Review Commission  
April 30, 2013

Property valued by the state includes those companies or industries for which the Property Tax Administrator (PTA) is statutorily responsible for determining a taxable valuation each year. The PTA is charged with this duty by the following statutes:

[Neb. Rev. Stat. § 77-5022](#). Commission; annual meeting; powers and duties.

The commission shall annually equalize the assessed value or special value of all real property as submitted by the county assessors on the abstracts of assessments and equalize the values of real property that is valued by the state. . . .

[Neb. Rev. Stat. § 77-5030](#). Property Tax Administrator; certify distributed taxable value.

On or before August 10 of each year, the Property Tax Administrator shall certify the distributed taxable value of the property valued by the state, as equalized by the commission, to each county assessor.

The methodology used by the PTA to develop the real property equalization rate for property valued by the state is:

The abstract valuations for the property classes of residential (which includes residential, recreational, and agricultural residential dwelling and home site land), commercial and industrial, minerals, and agricultural outbuildings and farm site land are used to weight the levels of value as determined by the Commission for each class of real property respectively to develop the state's equalization rate.

In those counties (or classes of property within a county) where the Commission was not able to determine a level of value pursuant to [Neb. Rev. Stat. § 77-5023](#), the abstract values are weighted by an assumed level of value equal to the statutory level of value for the class of property.

The state's equalization rate is applied to the real property portion of companies valued by the state.

## **Appraisal Process for Property Valued by the State**

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April 30, 2013

Property valued by the state includes those companies or industries for which the PTA is statutorily responsible for determining a taxable valuation as of January 1 of each year.

The following information explains the appraisal methodology used annually by the Nebraska Department of Revenue Property Assessment Division, (Division), in determining the taxable valuations for railroad companies and public service entities.

Railroad companies and public service entities are fully described in statutes and regulations as follows:

- 1) Railroads; [Neb. Rev. Stat. Chapter 77](#) Article 6 and Title 350 Nebraska Administrative Code [Regulation 30-006](#), and
- 2) Public Service Entities; [Neb. Rev. Stat. Chapter 77](#) Article 8 and Title 350 Nebraska Administrative Code [Regulation 30-005](#).

### **Unit Value Concept**

Most appraisal authorities agree that the unit value concept is the most appropriate way to value the property of a railroad or a public service entity located in a number of counties and state taxing jurisdictions. The unit value concept is unique in that all operating property, real and personal is valued as a unit or “going concern value.” Here, the operating property of the company is valued in use as an entity. This differs from the summation approach wherein each separate property is valued at its highest and best use.

Unit appraisals are preferable to summation appraisals in utility valuation work for the added reason that evidence of unit value is more readily available for utility properties than evidence of fractional values. The properties owned by railroads and public service entities, although composed of separate and identifiable assets (such as: locomotives, freight cars, railroad tracks, right-of-ways, buildings, power plants, pipelines, transmission lines, etc.), are operationally interdependent and the value of one part cannot effectively or accurately be estimated except as part of the unit value of the enterprise as a whole.

According to the National Conference of Unit Valuation States, (NCUVS), Unit Valuation Standards (*see Web site: [www.ncuvs.org](http://www.ncuvs.org)*).

*The unit value concept is superior to fractional or summation appraisals for valuing public utility/public service property because it properly captures “going concern value.”*

*NCUVS Standard I.E.*

The concept of value (market value, fair market value, and fair cash value) pertains to a measure of worth of a good or thing. That measure of worth can be realized in an open and competitive market where buyers and sellers are free to meet and where interactions of supply and demand are not impeded by coercion, compulsion, or restrictions. The valuation of a railroad or a public service entity is premised on the principle that an investor, when purchasing this type of property, is purchasing a future income stream and does not place any of the specific value on the assets that may come with the purchase. The monetary return is a function of the parts working together to generate income, in essence a “unit.”

Valuation is a disciplined procedure which complies with well-defined ground rules which, as a whole, are contained in an orderly plan of action known as the “appraisal process.”

*The appraiser’s initial responsibility is to define the unit. In defining the unit, an appraiser should consider the following criteria:*

- 1) The nature of the properties to be appraised.*
- 2) The manner in which the properties are used.*
- 3) The permissible and most probable use of the properties.*
- 4) The ownership and control of the properties.*
- 5) The most probable grouping of assets that would be sold as a unit.*
- 6) The appraiser is satisfied that the unit is operated to economically maximize profits and is not managed to forgo profitability for the benefit of a parent or affiliate.*
- 7) The availability of auditable financial statements prepared in the normal course of business (i.e., income statements and balance sheets). Preference should be given to units with audited financial statements as opposed to units with un-audited financial statements.*

*NCUVS Standard I.D.*

In determining the unit valuation the three generally accepted approaches to value, (cost approach, income approach, and market approach), are considered relevant data in arriving at the final estimate of value.

*A unit value appraisal considers the three basic approaches to value:*

- 1) Cost*
- 2) Income*
- 3) Market (Sales Comparison or Stock and Debt)*

*NCUVS Standard I.A.*

## **Cost Approach**

The cost approach is based upon the principle of substitution that an informed purchaser will pay no more for a property than the cost of acquiring a substitute of equal value or use.

Cost does not necessarily equal value. For large unique, special properties, designed primarily to generate income, the ultimate relationship between a cost measure and market value depends on the earning power of the property.

Original cost less depreciation is used by the Division in unit value appraisals. A utility plant at net book value (cost less depreciation) may be adjusted for economic obsolescence, if applicable. Additions may then be made for leased equipment, materials and supplies, construction work in progress, and other applicable property.

The Division considers two methods for estimating the economic obsolescence attributable to the company. The internal rate of return method is when a company's actual internal rate of return is compared to the overall industry or comparable risk companies' capitalization rate. The obsolescence factor is then applied to total plant. The net plant is then reduced by this amount. The other method is the income deficiency/efficiency method which compares what a company should earn from net plant to what a company actually did earn. The percent of obsolescence/premium is then used to adjust the net plant, if applicable.

## **Market Approach**

Comparable sales would be a reliable indicator of value if the information were available. However, railroads and public service entities are rarely sold or usually include more than just the operating utility property. Therefore, the stock and debt indicators determine the value of a company's assets by appraising the value of the shareholder's equity and liabilities of the company. The stock and debt approach is a substitute based on the balance sheet equation that states:

$$\text{Assets} = \text{Liabilities} + \text{Owner's Equity.}$$

The first step is to determine the amount of stock and debt outstanding as of the appraisal date. Inventory is based on financial data as of December 31 of each year.

The next step is to estimate the market value of the individual securities. Current market stock and debt prices are obtained from various financial sources. If a company's stock or debt is not publicly traded, an allocation of the parent stock is made to the subsidiary.

The third step is to add the current liabilities. This step is based on the theory that for all the assets on the asset side of the balance sheet to be represented both the long-term debt and the short-term debt should be included in the valuation.

The final step is to adjust for the non-assessable assets, if applicable. This is necessary because

the railroad or public service entity may own assets such as stocks and bonds in other companies, not subject to assessment by the PTA. To determine the percent of stock or debt attributable to the operating company, the Division analyzes several methods, such as: comparing the operating company's (balance sheet) assets to the parent's total assets, and the operating company's net income to the parent's net income. Analysis is generally based on the historical ratios over the past three years; it is a subjective analysis for the appraiser to determine the percentage of operating property.

### **Income Approach**

The income approach is based on the premise that "property is worth what it can earn." The income approach involves converting dollars of anticipated income into dollars of value. Since an investor or purchaser is interested in future benefits from ownership of a company, two elements will lead to the purchase price; the expected future benefits and a required rate of return on the investment. The basic income formula is:

$$\text{Value} = \text{Income} / \text{Rate} \quad (\text{income divided by rate})$$

There are essentially three problems to solve in the income approach: (1) the estimation of future income, (2) the estimation of the capitalization rate, and (3) the selection of the proper capitalization method.

When an income producing property is appraised using the income approach, the future income is estimated from the viewpoint of a typical investor. Future income is the livelihood for an income producing property and it is the present worth of all future net benefits that are sought in the appraisal. Several methods are employed to estimate future income:

*An appraiser may consider the following techniques to forecast future income: straight or weighted historical average, percentage change, performance ratios, regression analysis, analyst forecasts, last year's income, company forecast, and/or other generally accepted techniques.*

*NCUVS Standard III.C.1.*

Anticipated net operating income for railroads and public service entities is estimated to be capitalized in the income approach. Net operating income is income after expenses, depreciation, and taxes, but before interest expense. This level of income excludes all income from operations and investments that are not directly related to public utility operations. It is the income level available to the debt and equity holders of the public utility or railroad.

Other adjustments to the net operating income that may be considered are projections of income for any amounts of taxable property that are not already in the operating plant, such as construction work in progress (CWIP). To determine the future income to be contributed from CWIP, the Division applies the operating company's rate of return on other plants to the CWIP. The present value of the CWIP earnings for one year is then added to the correlated income.

These adjustments to the income projections should reflect one-time extraordinary income or expense items. These items are not expected to be repeated in the normal course of business in the future.

### **Capitalization Rate**

The Division uses the band-of-investment method when determining the capitalization rate. There are three factors to be considered: 1) equity rate, 2) debt rate, and 3) capital structure. The percentages of equity and debt are multiplied by their respective rates, resulting in a weighted rate for each part of the capital structure. The sum of these weighted rates is the overall capitalization rate.

*The components of a capitalization rate are:*

- a) Equity Rate*
- b) Preferred Rate*
- c) Debt Rate*

*NCUVS Standard III.B.1.*

#### **Factor one: Determining the Equity Rate of Return.**

The cost of equity or equity rate of return must be commensurate with the security's risk. The rate to be determined must be consistent with the rate of return the typical investor would expect. It must be "forward looking." Therefore, the financial models utilized should measure future expectations, rather than past history.

The first step in determining the capitalization rate is to determine the companies to be used in the Division's study.

*A discount rate, overall capitalization rate, and/or the components of these rates (equity rate, preferred rate, debt rate) may be derived from an analysis of comparable companies. The standard for determining comparability is not "perfect" comparability, but rather "reasonably similar". It is based upon as objective and comparable data as possible, but experience and judgment must be used in drawing conclusions from the data. When determining comparability, the appraiser may analyze:*

- a) Industry Class*
- b) Risk*
- c) Growth*
- d) Profitability*
- e) Size or physical characteristics*
- f) Other characteristics.*

*NCUVS Standard III.B.5.*

One must also keep in mind the following standard:

*When deriving the equity portion of an industry capitalization rate, the comparable used should be sufficient in number as to be representative of that industry.*

*NCUVS Standard III.B.6.*

Financial models are then used to determine the equity rate. In determining the cost of equity or rate of return to equity for use in the income approach, the cost of common equity, or the investor-required rate of return on a public utility's common equity is most often considered. This is the rate at which the marginal investor who set the common-share price capitalizes the expected earnings, and the rate which investors require as a condition for purchasing. Stated another way, it is that rate which will induce an equity investor to invest capital in the subject property after considering other available investments. The greatest amount of risk is to that of the equity investor, because they risk receiving variable returns. The final determination of the equity rate is a subjective decision by the appraiser based upon the best available information.

*The methods used to derive each of the components of yield capitalization include:*

- a. An "equity rate" may be determined by the following:
  - (1) Dividend Growth Model (discount cash flow)
  - (2) Capital Asset Pricing Model
  - (3) Risk Premium Model
- b. A "preferred rate" is the annual dividends divided by the market value of the preferred stock.
- c. The "debt rate" is determined by analysis of yield to maturity.

*NCUVS Standard III.B.4.*

### **Discounted Cash Flow Model (DCF)**

Formula:  $K = D1/Po + G$ , where:

K = Equity Rate of Return

D1 = Projected Dividends per share the investor expects to receive over the coming year

Po = Stock Price

G = Growth is the annual percentage rate at which the marginal investor expects the dividend to grow in the future

The premise of the DCF model is that the price of stock today is worth the present value of future dividends and the expected price appreciation, or growth. The DCF formula is a ratio of the investor's expected return to the price paid for a share of common stock. It is a complex method that requires some subjective judgment from the appraiser. An investor's return from common stock investment consists of two components: the current dividend yield, and the future return received (or lost) in years to come as the dividend grows or decays.

## Capital Asset Pricing Model (CAPM)

Formula:  $K = R_f + B(R_m - R_f)$ , where:

K = Equity Rate of Return  
R<sub>f</sub> = Risk-free rate  
B = Beta  
R<sub>m</sub> = Overall Market Return

The underlying concept is that an investor must be rewarded for assuming risk as opposed to investing in nearly risk-free securities, such as treasury bills. To induce investment in equity with its greater risk, the opportunity for greater returns must be evident. The greater the risk, the greater return the investor will require. In the CAPM formula, the risk premium is measured by the expected return of the overall market less the risk free rate.

Risk-free rate of return (R<sub>f</sub>, safe rate) is measured by using the interest rate of the debt instrument that is considered risk-free.

Return on the Market (R<sub>m</sub>) is obtained from financial service firms.

Beta (B) is a measurement of market risk. Beta estimates are published regularly by financial service firms.

## Risk Premium Model

Formula:  $K = R_f + B(R_p)$ , where:

K = Equity Rate of Return  
R<sub>f</sub> = Risk-free rate  
B = Beta  
R<sub>p</sub> = Risk Premium

The risk premium model is similar to the CAPM, however, the risk premium is based on a historical return on common stock less the risk free rate.

Risk Premium (R<sub>p</sub>) is the rate of return on common stocks in general minus the risk-free rate.

## Factor two: Determining the Debt Rate.

The cost of debt is determined from an analysis of sample industry companies in comparison to valued companies. In most appraisals, the Division uses the current cost of debt available as of December 31 of the prior year, which is obtained from financial sources. The definition of market value assumes payment in “cash or its equivalent” and “financing, if any is on terms generally available...at the specified date and typical for the property type.”



### **Factor three: Determining the Capital Structure.**

The capitalization rate can be viewed as an average of the rates assigned to each element of the capital structure, weighted by the respective percentages of each element. The appraiser must determine how the prospective buyer would finance a purchase.

*A capital structure is made up of equity and debt percentage (ratios). The percentages are calculated using market or book values relative to total capital.*

*NCUVS Standard III.B.7*

Once the appraiser has determined the equity rate, debt rate, and capital structure, the overall capitalization rate can be determined using the band of investment method. This is a subjective decision by the appraiser; overall rates are calculated for specific industries and each subject company.

### **Reconciliation**

The final analytical step in the valuation process is the reconciliation of the value indicators into a single dollar figure or a range into which the value will most likely fall. The nature of reconciliation depends on the appraisal problem, the approaches that have been used, and the reliability of the value indications derived.

The appraiser examines the separate indicators in the valuation approaches used. The relative dependability and applicability of each approach are considered in reconciling the value indicators into a final estimate of defined value. The importance of reconciliation in the appraisal process comes from its functions as a funnel and a filter to the entire appraisal process. As a funnel, reconciliation focuses the flow of the steps in the appraisal process toward the final value estimated as each step builds on the preceding step. As a filter for the appraisal process, reconciliation is the final step in the process and is, in essence, a sifting for quality and accuracy before the report of final value. Reconciliation is an important step in the appraisal process because of its function in focusing the flow of each preceding step toward a final value estimate. In addition, it is the step that filters the assumptions, data, and conclusions for relevancy, quality, and accuracy. Without the final step, in which the appraiser reviews the analysis used and checks the mathematical computations in the application of the approaches, there is no assurance of a logical, well supported value estimate.

*Reconciliation is not a mechanical process that applies arbitrary weights to the three approaches to value, but is a process by which an appraiser considers all factors and conditions pertinent to each approach to value.*

*NCUVS Standard V.A.*