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**METHODS USED TO VALUE LAND**

**Sales comparison**

Sales of similar, vacant parcels are analyzed, compared and adjusted to provide a value indication for the land being appraised. This is the best method to use when appropriate land sale data is available.

- Standard Units of Measure of Value per Unit
  - Per Dwelling Unit site
  - Per square-meter
  - Per hectare
  - Per front-meter

**Adjustments for unique features**

- |            |             |                |             |
|------------|-------------|----------------|-------------|
| • location | utilities   | river          | traffic     |
| • zoning   | use density | topography     | regulations |
| • size     | view        | parks          | noise       |
| • access   | frontage    | transportation | utilities   |

Sales adjustment grid

Per dwelling unit site

VARIABLE	=	STANDARD	>	SUPERIOR	<	INFERIOR
Base Value - \$		\$80,000		\$80,000		\$80,000
Downtown - miles	5	0	3	+ 4,000	7	- 4,000
Size – square feet	10,000	0	12,000	+ 4,000	8,000	- 4,000
Transport - blocks	3	0	1	+ 8,000	6	- 6,000
Recreation - blocks	6	0	3	+ 4,000	10	- 3,000
Adjusted value - \$		\$80,000		\$100,000		\$63,000

**Proportional relationship**

- Compare a site to a known standard site value. The difference can be expressed as a percentage
- Make an estimate of value based upon the experience in other locations where land data already exists
- A chart can be created that illustrates the relationship of one type of land use and location, to another site of differing potential land use

- Adjustments for additional attributes and deficiencies could be made for each estimate by the comparative method

**Proportional land market values**

<b>USE - LOCATION</b>	<b>MAJOR CITY</b>	<b>SUBURBAN</b>	<b>DEVELOPING</b>	<b>RURAL</b>
<b>COMMERCIAL</b>				
Central business	20.00+			
Downtown area	10.00	5.00	2.50	
<b>Standard</b>	<b>3.00</b>	<b>2.00</b>	<b>1.00</b>	<b>.75</b>
Secondary	1.50-	1.00	.60	.50
<b>INDUSTRIAL</b>				
Prime	2.50+	1.75	1.50	.95
<b>Standard</b>	<b>1.50</b>	<b>1.00</b>	<b>.75</b>	<b>.65</b>
Inferior	.75-	.50	.40	.25
<b>HOME</b>				
Prime	1.50+	1.00	.75	.50
<b>Standard</b>	<b>1.00</b>	<b>.75</b>	<b>.60</b>	<b>.40</b>
Inferior	.65-	.45	.40	.25
<b>RURAL AND FARMING</b>				
<b>Acreage close-in</b>	<b>.20+</b>	<b>.15</b>	<b>.10</b>	<b>.05</b>
Acreage distant		.10	.05	.02
Intense farming			.03	.02

## Allocation

- Sales of improved properties are analyzed, and the prices paid are allocated between the land and the improvements. There tends to be a typical ratio of land value to property value (land + buildings) for specific categories of real estate, with similar characteristics, in specific locations.

### Sample Analysis

Unit number	Total value	- Building portion	= Land portion	Land factor Land/Total %
212	\$190,000	\$114,000	\$76,000	40%
321	\$181,000	\$105,000	\$76,000	42%
222	\$192,000	\$117,000	\$75,000	39%
311	\$192,000	\$119,000	\$73,000	38%
<b>Conclusion: Indicated Land Portion:</b>				40%

### Allocation applied

- Once the portion was determined and tested for accuracy, it could be applied to the market data for a particular category of real estate in a specific location. The calculation might be made as follows:

### Population Application

TOTAL VALUE X	LAND FACTOR =	LAND VALUE
\$163,000	.40	\$77,200
\$185,000	.40	\$74,000
\$189,000	.40	\$75,600

## Land residual techniques

Sale – Depreciated Cost = Land Value

- Land value is estimated by subtracting the estimated value of the depreciated improvements from the known sale price of the property.

SALE NUMBER	# 1	#2
SALE PRICE	\$150,000	\$180,000
DEPRECIATED COST	\$116,000	\$140,000
LAND RESIDUAL	\$34,000	\$10,000
SQUARE METERS	8,000	10,000
\$/SQUARE METER	\$4.25	\$4.00

### Income – Building Portion = Land Value

A model is created where the land is improved to its highest and best use. The gross income is estimated and all operating expenses and the return attributable to other agents of production are deducted. The net income imputed to the land is capitalized to derive an estimate of land value. A Hypothetical Building, on a Per Square Meter Basis. Using Income Method with 6% Return.

	Income	Value
Gross possible income	\$24	
Vacancy allowance	-1	
Operating expenses	<u>-5</u>	
Net income before land taxes	\$18	\$300
Recapture of building cost	<u>-1</u>	<u>-\$17</u>
Land Value Residual	\$17	\$283
Land Tax	<u>- 6</u>	<u>-\$100</u>
<b>Net Land Income</b>	<b>\$11</b>	<b>\$183</b>

### Ground rent capitalization

- This procedure is used when land rental and capitalization rates are readily available. Net ground rent, the net amount paid for the right to use and occupy the land, is estimated and divided by a land capitalization rate.

Comparable ground rents	Per SF	Location	Traffic	Parking	Adj. SF
Comparable ground rent 1	\$10.00	-\$0.50	-\$0.50	+\$0.75	+\$9.75
Comparable ground rent 2	\$9.50	-\$0.25	+\$0.50	-\$0.25	+\$9.50
Comparable ground rent 3	\$10.00	-\$0.00	-\$0.50	+\$0.00	+\$9.50
Subject market ground rent	\$9.50 rent per square foot / 10% = \$95.00 value per square foot				

### Subdivision development

- The total value of undeveloped land is estimated as if the land were subdivided, developed, and sold. Development costs, incentive costs, and carrying charges are subtracted from the estimated proceeds of sale, and the net income projection is discounted over the estimated period required for market absorption of the developed sites. This is the method used by developers to estimate the price they pay for raw land.

Total sales proceeds, 50 sites at \$50,000	\$2,500,000
Discounted at 15% over 50 months of sales	\$1,850,000
Subdivision cost, \$1,000 per site	\$ 50,000
Development cost, \$15,000 per site	\$ 750,000
Sale cost, 10% of gross sale price	\$ 250,000
Taxes, interest, carrying costs, 10%	\$ 50,000
Incentive profit, 10% of sale price	<u>\$ 250,000</u>
Net value of undeveloped land	\$ 500,000
Net value per hectare, 12.5 hectares	\$ 40,000
Net value per site, 50 sites	\$ 10,000

## **Land value maps**

- The market values, which have been calculated, should be displayed on a land value map. This will allow the assessor to review market data and land value conclusions. They can then judge whether equity has been achieved.
- A field review will allow making further necessary adjustments, for other variables observed in the review and finish the project. The assessor will find that by displaying the results of this analysis and the major adjustment criteria utilized, the public can understand the logic of the assessments.

## **Computer estimated land values**

- Many government agencies have already collected some data about land on a computer system. By analyzing the existing data against market transactions and trends, new land market estimates could be made.
- An entire country would be capable of annual reassessments, updated by computer data analysis. A simple model used for computer calculation of land values for 1,000,000 land sites could be based upon a careful analysis of the market value of a sample of 20,000 sites. A local valuation committee of land experts could define the land use classes, neighborhood areas and market values for each standard site in the area. A Geographic Information System can be used to display land values, characteristics and statistical data.

## **Advantages to using a computer assisted market update**

- Facilitate frequent update of market values ensuring equitable treatment of all taxpayers.
- Eliminate arithmetic errors in land value calculations.
- Improve the assessor's productivity in land value assessment.
- Employ standardized assessment techniques that have proven to be effective.

## **Land has market value for three reasons:**

1. The limited supply and "natural" productivity of the soil and natural resources,
2. The publicly provided services, including planning, improvements that increase the market value of land
3. The growth of communities and peoples' competitive demand for the exclusive use of prime locations.

## **The four principles of taxation:**

Adam Smith, in *The Wealth of Nations*, suggested that any "tax" should be a charge for services which benefit all people and are more efficiently preformed by a single cooperative effort. He postulated four principles of taxation, which any source of revenue should meet:

1. Light on the production of wealth, and does not impede or reduce production;
2. Cheap to collect, requiring few collectors, and easy to understand;

3. Certain; can't be avoided, little opportunity for corruption, and provides adequate revenue;
4. Equitable and fair, payment for benefits received, impartial, and just.

Collecting public revenue from land rent is the only revenue source, or "tax", that meets these criteria.

#### **WHY UTILIZE LAND VALUE TAXATION:**

LAND VALUE TAXATION is a fair way of paying for public services

LAND VALUE TAXATION encourages new capital investment

LAND VALUE TAXATION promotes the use of empty sites

LAND VALUE TAXATION helps prevent urban sprawl

LAND VALUE TAXATION cannot be avoided - unlike other taxes

LAND VALUE TAXATION is easy to assess and collect

LAND VALUE TAXATION would provide automatic compensation

LAND VALUE TAXATION facilitates lower interest rates

LAND VALUE TAXATION evens out the property cycle