COURSE ONE

PRINCIPLES OF PROPERTY VALUATION

PRE-TEST

PRINCIPLES OF PROPERTY VALUATION

PRETEST

Circle your answer choice.				
1	A	B	C	D
2	A	B	C	D
3	A	B	C	D
4	A	B	C	D
5	A	B	C	D
6	A	B	C	D
7	A	B	C	D
8	A	B	C	D
9	A	B	C	D
10	A	B	C	D

SCORE:

NUMBER CORRECT
PERCENTAGE

Please use the answer sheet provided to complete this test

1. An appraisal is:
a. An opinion of value
b. A loan commitment
c. A certificate of value
d. A scientific fact

2. Market Value is defined in Property Tax Rule 204. Which of the following is <u>not</u> considered a main point in this definition:
a. A knowledgeable buyer
b. Price is estimated in U.S. money
c. Exposed on the market for a reasonable length of time
d. Seller is represented by legal counsel

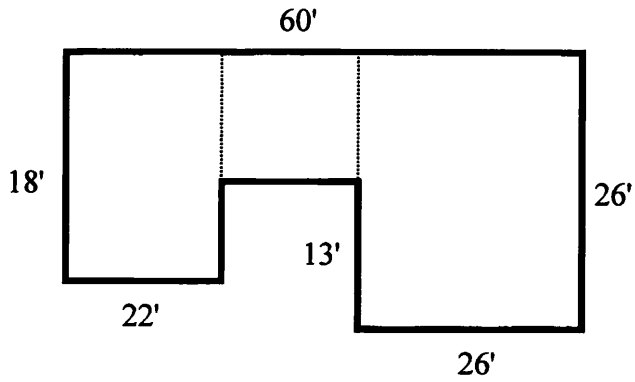
3. Which of the following is <u>not</u> a basic method for legally describing property:
a. Indexing system
b. Metes and Bounds System
c. Lot and Block System
d. Government Survey System

4. The estate in real property where the owner has the greatest power over the title that is possible to have is called:
a. Grantor Holder in Due Course
b. An Estate Forever
c. Fee Simple Absolute
d. Exclusive Ownership

5. The value of any component of property consists of what its addition adds to the value of the whole, or what its absence detracts from the value of the whole. This is the definition for which economic principle:
a. Highest and best Use
b. Supply and Demand
c. Substitution
d. Contribution

6. Which of the following would cause economic obsolescence in a commercial building:
a. Outdated fixtures
b. Inadequate parking in the area
c. Inadequate building design
d. Deferred maintenance

7. Using the figures illustrated in the following diagram, and assuming that the house is drawn to scale, calculate the number of square feet in the improvement.



a. 1254 square feet
b. 1188 square feet
c. 1304 square feet
d. 1228 square feet

8. To arrive at a discount rate by the Band-of-Investment method, you find that 80% of the required capital can be borrowed at 8%. The equity position would require a 10% return. What is the indicated interest rate:

a. 8%
b. 8.4%
c. 9.6%
d. 10%

9. In the sales comparison approach to value, the selling price of a comparable property is:
a. Treated as the cost approach
b. An average of market sales
c. Automatically equal to market value
d. Adjusted to indicate the estimated value of the property being appraised

10. Which of the following is generally considered the most important factor affecting property value:

a. Physical condition
b. Neighborhood influences
c. Location
d. Square footage

PRINCIPLES OF PROPERTY VALUATION

SECTION ONE

INTRODUCTION

LEARNING OBJECTIVES

On completing this section the student should:

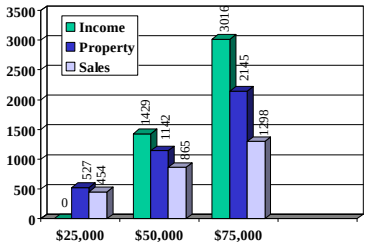
- ✓ Be familiar with Idaho's Ad Valorem System
- ✓ Know the Certified Tax Appraiser requirements
- ✓ Know the role of the Assessor
- ✓ Understand the role of the State Tax Commission

LEARNING OBJECTIVES

SECTION ONE

- Idaho's Ad Valorem System
- Certified Tax Appraiser
- Role of the Assessor
- Role of the Tax Commission

Estimated 2004 Taxes, Family of Four Various Income Levels

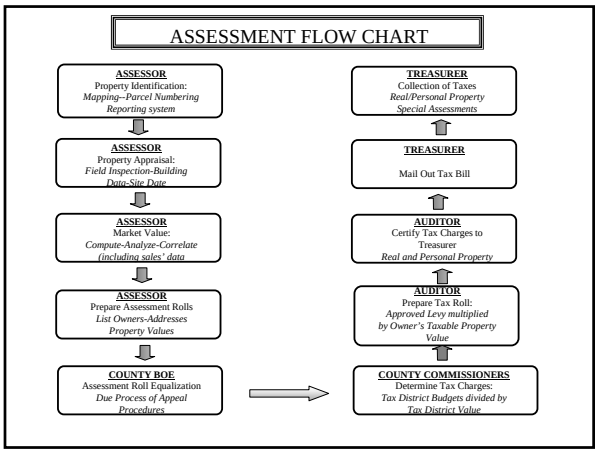


Estimates for Boise, based on District of Columbia studies of largest city in each state

Role of the Assessor

- Locate and identify
- Inventory
- Classify
- Estimate market value
- Calculate taxable value
- Assessment rolls
- Defend Value during appeals

Idaho Code 63-208, Administrative Rule 217



Certified Tax Appraiser

- Complete Course 1 and Course 2
- Have at least 12 months assessment or appraisal experience
- Apply to the State Tax Commission for certification

To Maintain Certification

- Complete 16 hours of continuing education the first year after
- Complete 32 hours of continuing education within the preceding 2 years

Role of the Tax Commission

OVERSIGHT DUTIES

- Sets performance standards
- Analyzes work of assessor
- Responds to non-compliance
- Assesses operating property
- Establishes administrative rules
- Requires assessors to attend meetings
- Provides for equalization

Idaho Code 63-105A

Role of the Tax Commission

Technical Assistance

- Manuals and schedules
- Forms
- Training and education
- Certification
- Research
- Valuation assistance
- Software

Section 1
Introduction

Taxation is, in fact the most difficult function of government and against which citizens are most apt to be refractory. The general aim is, therefore, to adopt the mode most consonant with the circumstances and sentiments of the country.
Thomas Jefferson

1.1 Idaho's Ad Valorem Property Tax System

The property tax in Idaho is known as an *ad valorem* tax. Ad Valorem is a Latin term meaning "according to value." Property taxes in Idaho are based on the market value assessment of property, with a few exceptions, hence the term *ad valorem* taxes.

The Idaho Constitution, Article 7, outlines a system of taxation designed to ensure that taxpayers are guaranteed certain rights and remedies in the process of tax assessment. Title 63 of the Idaho Code further outlines Idaho's ad valorem tax system. Additionally, the Tax Commission promulgates property tax rules. A calendar for property assessment including key statute citations are included at the end of this section.

Property tax within Idaho (when compared to other forms of taxation) is considered to be a progressive tax, meaning that those who have the greatest ability to pay, bear the greatest tax burden. Property tax is also considered the most stable form of taxation in that it is not as subject to economic fluctuations, and although property tax undergoes annual revisions, it remains the mainstay of local government revenue structures within the State. The property tax has gone from being the most significant revenue source in territorial days to a shrinking, although critical, component of modern government revenues. Government revenues can be thought of as either income taxes, sales taxes, fees, or property taxes. Idaho property taxes fund the following types of districts:

county	junior college	weather modification
city	library	watershed
schools	mosquito abatement	highway
auditorium	recreation	water
ambulance	port	flood control
cemetery	regional airport	fire
pest control	sewer	hospital

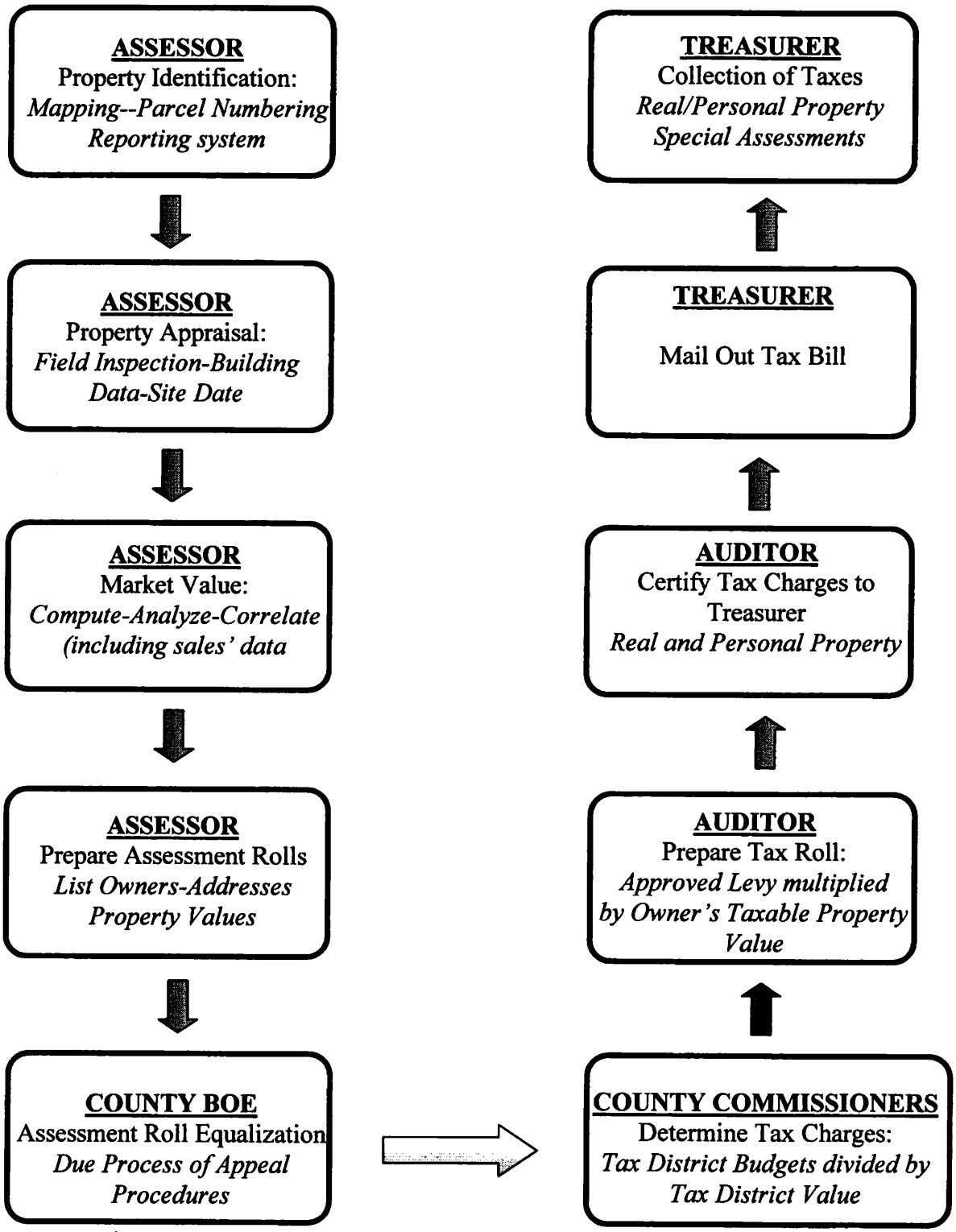
1.2 The Role of the Assessor

In the State of Idaho each county elects an Assessor for the purposes of identifying, listing and calculating the value of all taxable property within the jurisdiction. An additional responsibility of the assessor is to register motor, recreational vehicles and distribute licenses and permits. The flowchart on the following page demonstrates the steps that an assessor follows in meeting his or her mandate.

The Assessor has the responsibility to maintain full and accurate records of all parcels within the county. He or she or the members of their staff will conduct an on-site inspection of each property to verify the accuracy of the plat record and collect information on any improvements to the land on each parcel. After a property has been located and identified, it is assigned a parcel number as a way of identifying the property for tax purposes. As new tracts of land are added or subdivided, a new tax number is assigned.

Property is also identified as to its situs or location for tax purposes. In some instances, personal property will reside in one jurisdiction for only part of the year. The assessor must make value determinations based on the length of time that property is physically within his jurisdiction.

ASSESSMENT FLOW CHART



The assessor then classifies property as real, personal or operating. Classification of property determines how it is to be assessed. Briefly, real property is defined as land and improvements permanently attached to land. Examples of real property include improvements to the land such as grading and clearing; improvements attached to the land such as buildings and permanent fixtures. Intangibles such as property easements are also considered real property. Personal property can best be defined by what it is not; property that is not classified as real property is considered personal property. As a rule of thumb property is considered personal when it can be moved without rendering it unusable or by damaging the real estate that is around it. Operating property is a class of property that is centrally assessed by the Tax Commission. Examples of operating property include:

Utility and transportation type properties	Private railcars
Certain types of telecommunications	Pipelines
Railroads	Gas distribution lines
Electric generators, transmission, and distribution	Barge lines

After a property has been located, identified, and classified, the assessor determines its market value. All the data about the property that has been collected until this point as well as information about the community, the local economy, and especially the selling prices of similar properties are used when determining market value. Many states assign value at a certain percentage of the market value; this percentage is known as the assessment ratio. In Idaho, the assessment ratio is set at 100 percent of the market value. The property's taxable value is calculated by estimating the market value and deducting any exemptions such as home owner's exemption, and properly licensed motor vehicles.

All taxpayers have the right to appeal the value that their property has been assessed at. The appeal must be made in writing and within a specified time frame. It is the duty of the Assessor to defend the assessed value as well as the methods used in the valuation of a property.

1.3 The Certified Property Tax Appraiser

The assessment of property is not a 'set in stone' enterprise. The increasing complexity of valuing property coupled with advances in technology have made the appraisal process much more accurate. It has also made the job of the appraiser more demanding. The appraiser must not only understand the principles and practices of appraisal and mass appraisal, but also remain current on innovations in appraisal practice. Idaho Code and the rules established by the Tax Commission require that *any person with the exception of county assessors, members of the County Board of Equalization and State Tax Commissioners, making decisions regarding final values for assessment purposes shall be certified as a property tax appraiser.* The Tax Commission encourages independent appraisers working under contract with State or County governments to become certified. The Tax Commission has established the requirements by which an individual may receive and maintain certification. To receive certification the applicant must:

1. Complete Tax Commission or IAAO Course I and IAAO Course 102 (or the equivalent).
2. Have a minimum of twelve months property tax appraisal or assessment experience.
3. Apply to the State Tax Commission for certification (forms are available).

Certification is maintained by: completing sixteen hours of continuing appraisal education the first year after receiving certification, and 32 hours of continuing education within the preceding two years.

1.4 Role of the Tax Commission

The Tax Commission has the ultimate responsibility to ensure equity in Idaho's tax system. In order to meet its statutory mandates, the Tax Commission acts as an oversight and equalization agency and provides technical assistance to the assessors and county personnel. Oversight is dictated by statute in the following areas:

* Setting performance standards
* Analyzing the work of the assessor
* Responding to non-compliance
* Directly assesses all operating property
* Establishes administrative rules in order to clarify statutes

The Tax Commission is also charged with providing technical assistance in the following areas

Provides forms and manuals

Provides for the training and education of county personnel in mapping, appraisal and professional development.

Certifies ad valorem appraisers

Conducts research on assessment related issues

Assists in the valuation of special purpose properties

Provides custom assessment related software

CALENDAR FOR PROPERTY ASSESSMENTS AND VALUATIONS

The following major events concerned with real and personal property tax programs indicate the "as of" or "not later than" date, whichever applies.

DATE	CODE	ACTIVITY
January 1	63-205(1)	Assessment date of all property (12:01 a.m.)
March 1st Mon.	63-510	County to deliver prior year subsequent & missed property roll valuations
March 15	63-302	Personal Property Statement must be filed with county assessor
April 15	63-706 63-602G	Claims for property tax reduction (Circuit Breaker) must be filed with the county assessor. Final date to apply for Homeowner's Exemption if an application was not made during prior year or if primary residence changed during the current year.
May 15	63-706(2)	County commissioners meet as Board of Equalization for property tax reduction claims (Circuit Breaker)
June 1st Mon.	63-308	No later than 1st Monday of June Assessment Notice mailed to taxpayer
June 20	63-903(4)	Second installment on real and personal property payable without becoming delinquent
June 4th Mon.	63-501A 63-310	Last day to file a protest before the County Board of Equalization for value assessed on the primary roll. Property roll delivered by assessor to county clerk
July 2nd Mon.	63-602AA 63-602X 63-501 63-509	Board of Equalization decides to grant requests for hardship exemptions. Board of Equalization decides to grant casualty loss exemption requests. Board of Equalization must complete equalization of property roll and adjourn. Board of Equalization delivers property roll and any changes to County Auditor.
July 4th Mon.	63-509(1)	County Auditor sends abstract of the property roll to the State Tax Commission.
August 2nd Mon.	63-108(1)	Tax commission meets as a State Board of Equalization
August 4th Mon.	63-110	Equalization of assessments by State Tax Commission
September 2nd Mon.	63-801	All property tax levies set by Board of County Commissioners.
September 3rd Mon.	63-810(2)	Certified copies of property tax levies forwarded to Tax Commission and various county offices by county clerk.

November 1st Mon.	63-811 63-709	Equalized assessment rolls, real and personal, with taxes computed, delivered by county auditor to tax collector. Tax Commission certified property tax reduction reimbursement to county auditors.
November 4th Mon.	63-301 63-501(2)	Subsequent property assessment rolls delivered by county assessor to county commissioners. County Board of Equalization meets to equalize assessments on subsequent roll.
December 1st Mon.	63-509(2)	Abstract of subsequent property assessment roll forwarded by county auditor to State Tax Commission.
December 20	63-903(3)	First installment on personal & real property taxes payable without becoming delinquent.

PRINCIPLES OF PROPERTY VALUATION

SECTION TWO

VALUE THEORY

LEARNING OBJECTIVES

On completing this section the student should:

- ✓ Know what property is
- ✓ Know property rights vs. Governmental powers
- ✓ Understand the concept of market value
- ✓ Understand the principles of value

LEARNING OBJECTIVES

SECTION TWO

- **What is Property?**
- **Property Rights v. Government Powers**
- **Market Value**
- **Principles of Value**

What is property?

REAL PROPERTY:

All interests, benefits, and rights inherent in the ownership of physical real estate

PERSONAL PROPERTY:

Includes removable items not permanently attached to, and part of, the real state

<<The Dictionary Of Real Estate Appraisal, Third Edition>>

PERSONAL PROPERTY

- **Includes movable objects that are not permanently attached to the land.**
- **The removal of the property will not render it unusable or damage the surrounding real estate.**

REAL ESTATE

- The physical land and appurtenances affixed to the land
- Immobile and tangible

REAL PROPERTY

- **The sum of both tangibles**
- **And intangibles: all interests, benefits, and rights associated with the ownership of the property**

REAL OR PERSONAL ?

- **What is the method of attachment?**
- **What are the intentions of the parties?**
- **Is it adaptable?**
- **What is the agreement between the parties?**

Operating Property

- Utility and transportation type properties
- Certain types of telecommunications
- Railroads
- Electric generators, transmission, distribution
- Private railcars
- Pipelines
- Gas distribution lines
- Barge lines
- Wind farms

RIGHTS OF OWNERSHIP

BUNDLE OF RIGHTS

- Right to **S**ell
- Right to **L**ease or rent
- Right to **U**se
- Right to **G**ive away
- Right to **E**nter or leave (real property)
- Right to **R**efuse to do any of these

Remember – "SLUGER"

OWNERSHIP RIGHTS

Fee Simple Absolute

Greatest Possible Degree of Ownership

Encumbrances

Deed Limitations

Subdivision Restrictions

Mechanic Liens

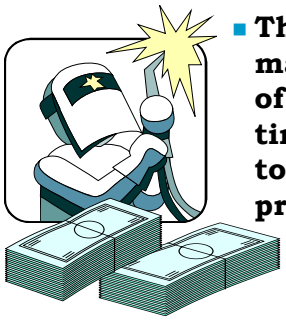
Easements or Right-of-Ways

POWERS OF GOVERNMENT

- **T**axation
- **E**minent Domain
- **P**olice Power
- **E**scheat

Remember – "*TEPE*"

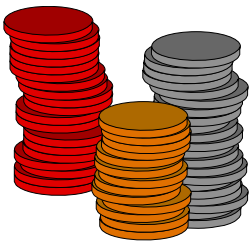
COST



- **The sacrifice made (in terms of money, time, and labor) to acquire property.**

PRICE

- **The amount of money (in U.S. dollars) given or expected in exchange for property.**



VALUE

- **The present worth of future benefits that accrue to property ownership**

VALUE POSSESSES:

- **D**esire or demand
- **U**tility
- **S**carcity
- **T**ransferability

Remember – "*DUST*"

FORCES THAT EFFECT VALUE

- **P**olitical or governmental
- **E**conomic
- **P**hysical characteristics
- **S**ocial

Remember – "*PEPS*"

MARKET VALUE

- **Expressed in money**
- **Arms length transaction**
- **Most probable price**
- **Informed buyer and seller**
- **Reasonable market exposure**
- **Willing and able buyer and seller**

Principles of Values

- Anticipation
- Change
- Conformity
- Contribution
- Surplus Productivity
- Substitution
- Time Value of Money
- Balance
- Contribution
- Variable Proportions
- Consistent Use
- Competition

HIGHEST AND BEST USE

- **The concept in appraisal and in assessment law requiring that each property be appraised as though it were being put to its most profitable use given probable <u>legal</u>, <u>physical</u>, and <u>financial</u> constraints.**

» Property Appraisal and Assessment Administration

HIGHEST AND BEST USE

- Legally Permissible
- Physically Possible
- Financially Feasible
- Maximally Productive

Idaho Code 63-208 (1)

- "The rules promulgated by the state tax commission shall require each assessor to find market value for assessment purposes of all property, except that expressly exempt under chapter 6, title 63, Idaho Code, within his county according to recognized appraisal methods and techniques as set forth by the state tax commission; provided, that ***the actual and functional use shall be a major consideration when determining market value for assessment purposes."***

Section 2

Value Theory

"If the multitude is possessed of real estate, the multitude will take care of the liberty, virtue, and interest of the multitude in all acts of government"

John Adams

Before undertaking the task of valuing property for taxation, it is essential to understand the nature of property and key economic principles that allow for its valuation.

What is property?

Our founding fathers viewed the right to own property as so essential that we find it enumerated in the Fifth Amendment of the Constitution along with life and liberty. We hold the right to property as fundamental yet if asked the question, "What is property?" a probable response would include things such as buildings, land or machinery. In a legal sense, this not an entirely accurate view. Property is not only the viewable, bricks and machines, it is also the *right* of an individual to own, enjoy and dispose of a thing.

It is helpful to begin the discussion of what property is by looking at its three primary categories: personal, real, and operating. *Personal property* includes movable objects that are not permanently attached to the land. *Real property* is seen as the sum of both tangibles (actual physical property) and intangibles (all interests, benefits, and rights associated with the ownership of the property). At times the line between real and personal property appears vague, therefore it is helpful to consider the following questions;

Method of attachment. "Is it attached with nails, screws, concrete?"

Intentions of the parties. "Do they mean for it to stay forever with the property?"

Adaptability. "Was it specially built for the property?"

Agreement between parties. "Was it verbal, in writing?"

For assessment purposes there is a third classification of property. Operating property contains elements of the first two. It is defined in Idaho Code as 63-201.10

> *"franchises; rights-of-ways; roadbed; tracks; pipelines; barges; equipment and docks; terminals, rolling stock; equipment; power stations; power sites; lands; reservoirs, generating plants, transmission lines, distribution lines and substations; and all immovable or movable property operated in connection with any public utility, railroad or private railcar fleet, wholly or partly within the state, and necessary to the maintenance and operation of such road or line, or in conducting its business and shall include all title and interest in such property, as owner, lessee or otherwise".*

2.2 Real Estate vs. Real Property

An important distinction is also made between real property and real estate. Real estate is the physical land, attachments, and structures. We can then think of real estate as being both immobile and tangible. When an assessor values a property he or she is not valuing the real estate alone, he or she is also considering the rights or intangibles associated with the property. The six fundamental rights identified with the ownership of property:

Bundle of Rights

The right to use
The right to sell
The right to lease or rent
The right to enter or leave (real property)
The right to give away
The right to refuse to do any of these

These rights are referred to as the *bundle of rights*. Real property is the real estate plus the bundle of rights. Property ownership that possesses the greatest degree of ownership is considered a *fee simple title.* It is often the case that property rights are not complete, it's possible for them to be limited or divided by external factors. An ad valorem appraiser views all property as being fee simple when determining value.

2.3 Ownership Rights vs. Governmental powers

The rights involved in property ownership are not absolute. As with individual rights, these bundle of rights are weighed against the power of the government. In the United States, real property is subject to, and limited by, the four primary powers of government. ***Taxation*** is the power of government to raise revenue through assessments. ***Eminent domain*** is the power to take the property for public use in exchange for payment of just compensation. ***Police power*** is the power to place restrictions on property for the purposes of promoting the public welfare. ***Escheat*** is the power to have property revert to the state for nonpayment of taxes or when a decedent who dies without a will or statutory heirs.

These governmental powers restrict the rights of individual property owners and can affect the value of property. Local ordinances might, for example prohibit businesses on the property from being open of Sundays or selling alcoholic beverages, or covenants might specify that businesses on the property may not compete with certain enterprises. If a restriction is upheld in court, the rights of the property are restricted and thus its value may be diminished or increased. A key to the appraisal process is to understand that the process involves *the valuing of property rights,* and appraisers must be familiar with the specific local, state and federal laws which have jurisdiction over all property.

2.4 Private Encumbrances on Ownership Rights

Private encumbrances may also affect an owner's fee simple title. Such encumbrances might include: the rights of other owners in the property, mortgages, easements, building restrictions (as found on condominiums or subdivisions) and financial obligations such as liens. Court judgments against a property, including enforcement of liens, must be satisfied by a foreclosure sale if necessary.

2.5 What is Value?

We often find that value, price and cost are used interchangeably in our everyday discussions. There are, however, meaningful distinctions between them. ***Cost*** is considered the sacrifice made (in terms of money, time, and labor) to acquire property. The term cost in appraisal often is related to the production not the exchange of property. ***Price*** is the amount of money given or expected in the exchange for property. It is what the purchaser agrees to pay and a particular seller agrees to accept for a property. ***Value*** is not easily defined in a few sentences, or by using a few examples. In a general sense, value is defined by the Real Estate Dictionary, 3rd edition, *as* "the present worth of future benefits that accrue to real property ownership."

In order for a thing to have value, it must possess the following attributes: desire or demand, utility, scarcity and transferability. ***Desire or demand*** refers to the purchaser's wish for an item to satisfy a human need (example shelter, clothing, food). It also refers to individual wants beyond what is essential to life. ***Utility*** is the ability of a product to create a desire for possession of a thing. Utility should not be confused with usefulness, diamonds for example have utility because they create a desire to own in our minds, and because it is the hardest substance it has usefulness in many industrial applications. ***Scarcity*** is the present and anticipated supply of an item in view of its availability. If the demand for an item is constant or if it increases, the scarcity or lack of an item will increase its value. ***Transferability*** involves the ability of an item to change possession or ownership. The question here is whether an item can be transferred from one owner to the next.

2.6 Forces That Effect Value

Along with these attributes there must exist both the ability of an individual or group to acquire goods or services with cash or the equivalent and the monetary power to fill the needs and desires of the market. There are four primary external forces that effect the value of real property:

Political (governmental) regulations: building codes, zoning, environmental requirements, fire regulations

Economic adjustments: supply/demand relationships, wage levels, price levels, interest rates

Physical characteristics: views, topography, perculation, access

Social ideas and standards: consistent land use, snob appeal, family size, crime rates

2.7 Market Value

The touchstone of ad valorem appraisal is market value. In Idaho, assessors are required by statute to value all property at market value. Market value is defined by code 63-201.10 as *the amount of United States dollars or equivalent for which, in all probability, a property would exchange hands between a willing seller, under no compulsion to sell, and an informed, capable buyer, with a reasonable time allowed to consummate the sale, substantiated by a reasonable down or full cash payment.* There are six essential points that are included in the preceding definition of market value. They include:

1. It is expressed in terms of money.

2. That it includes its most probable price. It is not the highest, lowest, or average price.

3. Implies a reasonable time for exposure to the respective market.

4. Implies that the buyer and seller are informed of the uses to which property may be put.

5. Requires an arms-length transaction in the open market.

6. Requires a willing buyer and seller, with no advantage to either party.

Market Value considers the property within the marketplace. Through fact and logic the market value estimate is the most probable value that exists within that marketplace.

There are other ways to look at valuing property. The investment value represents the value of a specific investment to a particular investor. The going concern value refers to the total value of property, including both real property and intangible personal property that contributes to a business's value.

2.8 Principles of Value

Principles are defined as a comprehensive and fundamental law, doctrine or assumption. In understanding market behavior, the appraiser uses their knowledge of economic principles in order to understand current and predicted activity of the market. In the end the appraiser does not set or decide value. He or she measures the market and from this analysis and develops an opinion of value. By understanding the following principles of valuation, an appraiser can provide the most accurate assessment possible.

Anticipation	Time Value of Money
Change	Balance
Conformity	Contribution
Contribution	Variable Proportions
Surplus Productivity	Consistent Use
Substitution	Competition

Anticipation relates to the idea that value can go up or down in expectation or anticipation of some benefit or detriment affecting the property. In the real estate market, the current value of a property is not normally based on its history of price or costs; rather it is based on the market's perceptions of the future benefits of acquisition. In applying the concept of anticipation the assessor must use caution as to not let personal opinion or bias sway his determination of value.

Time value of money considers that the amount of money, or the value of a commodity in dollars, expected to be received in the future is always worth less than an equal amount actually in hand at the present.

Change is the principle that market value is never constant because of the influences of various social, economic, governmental and environmental forces. When these forces are in balance, they reach a point of equilibrium. This equilibrium is generally short lived, however, because of aging, or natural events which affect property over time. With this in mind we always consider that the market value is determined for a specific point in time.

Balance states that the greatest value in property will occur when the type and size of improvements and uses are proportional to each other as well as to the land. A good example of this is to consider a developer who is determining how many bedrooms to include in a single-family house being developed for sale on the residential market. The typical single-family house in this residential market has three bedrooms. It may not be economic to include a fourth bedroom if the cost to build exceeds the value added to the property.

Conformity maintains that property value is created and sustained when the attributes of a property are in accordance to the demands or desires of the market. The styles and amenities of a property may conform to the market for many reasons, including the shared preferences of the community and economic pressures. Progression in value occurs when, the value of a lesser-quality property is favorably affected by the presence of a better-quality property; regression in value occurs when the value of a better quality property is affected adversely by the presence of a lesser-quality property.

Contribution is the concept that the value of any component of property consists of what its addition adds to the value of the whole, or what its absence detracts from the value of the whole. In essence the total value of all parts of the property may not equal the total costs. Constructing a large deck onto a small house will probably increase value less than the cost of the improvement.

Variable proportion argues that the larger the investments in structures and improvements on land will produce larger net income (excess of income over expenses) up to a certain point (law of increasing returns). At this point, the maximum in value has been reached (point of diminishing returns) After that point, additional investments and improvements made on a property will not produce a proportionate return from an additional investment (law of decreasing returns).

Surplus Productivity is the net income to the land or property remaining after the costs of all other agents of production have been deducted. These agents of production typically include labor, management and capital. Information about the surplus productivity of land is essential in determining what the highest and best use is for the land.

Consistent Use is the concept that the land should not be valued on the basis of one use, while the improvements are valued on the basis of another.

Substitution is the principle that a property's value tends to be set by the potential cost of acquiring or producing an equally desirable substitute property, assuming no costly delay in making the substitution. The substitution of one property for another may be considered in terms of its use, structural design or earnings. This principle is the linchpin to the three approaches to valuation, cost, sales comparison and income.

The cost to acquire a property may be the cost to purchase a similar location and construct a building that is equivalent. This is the basis of the cost approach method. Or, the cost of acquisition may be the price of acquiring an existing property of equal utility. This is the basis of the sales comparison approach. In regard to income producing property, an equally desirable substitute might be an alternative investment property that produces equivalent investment returns with similar risks. This is the basis to the income approach to valuation.

Competition is applied in value theory based on the idea that the potential for making a profit (when markets are not in equilibrium) will tend to attract new buyers or sellers seeking to purchase or sell a property, which will tend to increase the price of property.

2.9 Highest and Best Use

The way in which a property is used or should be used plays an essential role in its valuation. In 1893 the United States Supreme Court stated: "The value of property results from the use to which it is put and varies with the profitableness of that use, present and prospective, actual and anticipated. There is no pecuniary (monetary) value outside of that which results from such use." The principle of Highest and Best Use considers a basic assumption that the price a buyer will pay and a seller will accept for a property is based on his or her conclusions about the most profitable use of the site or property.

Several types of information are needed to identify the highest and best use of a property. General information includes social, economic, governmental, and environmental (also called physical) information. These are needed to understand the general market for the property being appraised. Site-specific information includes what is known about the immediate site, improvements to the site, and off-site influences.

General information should first be analyzed for the trade area, region, and city. This enables the appraiser to see market forces in a broad perspective. The information should then be examined from the narrower perspective of the neighborhood itself, so that the appraiser can understand how general forces affect the particular property. The appraiser then studies the market to identify the specific use and the supply and demand factors that are at work. The appraiser decides how these factors affect the value of the specific property.

A site's present use is more likely to be its highest and best use when the property is located in a stable or steadily growing environment. This is less likely to be the case in neighborhoods undergoing rapid change. The appraiser should not automatically conclude, however, that a change in the highest and best use has occurred simply because an adjacent property is upgraded or deteriorates. The total effect of supply and demand must be considered. Once a highest and best use has been determined, the use must meet the following four criteria:

Legally Permissible

Are there zoning, private restrictions, building codes or environmental regulations?

Physically Possible

Will the proposed improvement actually fit on the property?
Is there sufficient physical size to allow for drainage, sewage disposal, parking, etc?
Will topography and subsoil allow development?

Financially Feasible

Of the physically possible and legal uses which ones will actually produce a net income sufficient to attract an investor?

Maximum Productive

Of all the uses considered, which use produces the greatest net return and is highest and best use?

CASE PROBLEM
HIGHEST AND BEST USE ANALYSIS

You are appraising a 20 year old house, four-bedroom, single-family house in a growing neighborhood of similar houses. The nearest shopping is two blocks away, in a prosperous, well-maintained shopping center. Zoning regulations in the community limit multifamily residential land use to locations on the other side of the shopping center. Population within the region is expected to increase.

A developer has proposed tearing down the house and replacing it with garden apartments.

What would be your conclusions as to highest and best use of this property, based on an analysis of market factors and the likely behavior of buyers and sellers?

What new information might change your conclusions?

Review
Section 2
Value Theory

1. What is property?

2. What are the bundle of rights associated with the ownership of property?

3. What is the difference between real property and personal property?

4. What is eminent domain?

5. Property ownership that possesses the greatest degree of ownership is considered _____ _____ _____.

6. In Idaho, Assessors have the choice not to value property at market value - True or False?

7. The highest and best use of the property is always its current use - True or False?

8. What are the external forces that affect values? (hint: PEPS)

9. The four elements of value are:

10. An appraisal is considered to be an opinion of value - True or False?

PRINCIPLES OF PROPERTY VALUATION

SECTION THREE

APPRAISAL PROCESS

LEARNING OBJECTIVES

On completing this section the student should:

- ✓ Be familiar with the appraisal process
- ✓ Know how to gather, verify and report data
- ✓ Know the three approaches to value
- ✓ Know how appraisal findings are reported

LEARNING OBJECTIVES SECTION THREE

- Be familiar with the appraisal process
- Know how to gather, verify and report data
- Become familiar with the three approaches to value
- Know how appraisal findings are reported

Appraisal Process

- 1. Define the problem
- 2. List data needed and sources
- 3. Gather, verify, and record data

Appraisal Process

4. Determine information for three approaches to value
5. Calculate data
6. Reconcile data for final value estimate

The Appraisal Problem

- **Identify the real estate**
- **Identify the property rights**
- **Use of the appraisal**
- **Define the value method**
- **Date of value estimate**
- **Scope of the appraisal**
- **Other limiting conditions**

Appraisal Reports

- **Form**: Forms may vary from checklists to special buildings and property records. Used by VA, FHA, and Banks. Example: The URAR
- **Letter**: Summarizes the basic information about the property, followed by an opinion of value.
- **Narrative**: A detailed presentation of how data was processed to arrive at an estimate of value. Used in the appeal process.
- **Demonstration**: Narrative report used by professional organizations to examine candidates for designation.

Approaches to Value

- **Sales Comparison (Market)**
- **Cost**
- **Income**

Sales Comparison (Market)

Sales Price of Comparable Property

(+ or -) Adjustments* =

Indicated Value of Subject

* NEVER ADJUST SUBJECT PROPERTY

Sales Comparison Approach

House A is deemed comparable to the subject property, however this sale has a garage and the subject does not. All other factors are the same.

House A sold for: $97,000

Price of the Garage: -$7,000

Subject's Value: $90,000

Cost Approach

Cost of Improvements New from Cost Manual (RCN)

(-) Depreciation on Improvements Calculated from the Market

(+) Site (Land) Value Calculated from the Market

(=) Total Property Value

Cost Approach

A warehouse that would cost $300,000 to construct new today has depreciated 25% in its lifetime and is on land valued at $90,000. What is the property's value?

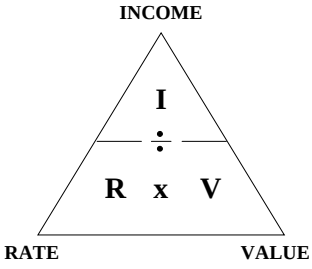
(RCN – Depreciation) + Land Value = Total Property Value

Cost Approach

$300,000(RCN) X 0.25(Dep) = Depreciated $

$300,000 (RCN) – $75,000 (Dep)
+ $90,000 (Land) =
$315,000 (Value)

Income Approach



Income Approach

A buyer requires a 10% return on her investment. The commercial property she wishes to purchase produces a net income of $75,000 per year. What is she willing to pay?

(÷) Income = Value
Rate

(Income) $75,000 = $750,000 (Value)
(Rate) 10%

Income Approach

To receive a 12% return on an investment of $100,000, what would be the required net income of the purchased property?

Rate x Value = Income

(Rate) 0.12 X (Value) $100,000
= (Income) $12,000

Math Review

Land to Building Ratios

You have determined the Land to Building Ratio to be 1:4 for the subject property. Land sales indicated a land value $10,000.

$10,000 X 1 Part = $10,000 (Land)
$10,000 X 4 Parts = $40,000 (Building)

$10,000 X 5 Parts = $50,000
(Total Property Value)

Math Review

Converting Ratios into Decimals or Percentages

Example: 1/5 1 divided by 5 = .20 or 20%

2/3 2 divided by 3 = .6666 or 66.66%, rounded to 67%

12/54 12 divided by 54 = .2233 or 22.33%, rounded to 22%

Math Review

- Example: Decimals into Percentages

.30 = 30%
24.5% = .245
1.20 = 120%

To convert a **decimal** into a **percentage**, move the decimal point two places to the ***right***.

To convert a **percentage** into a **decimal**, move the decimal point two places to the ***left***.

Section 3
The Appraisal Process

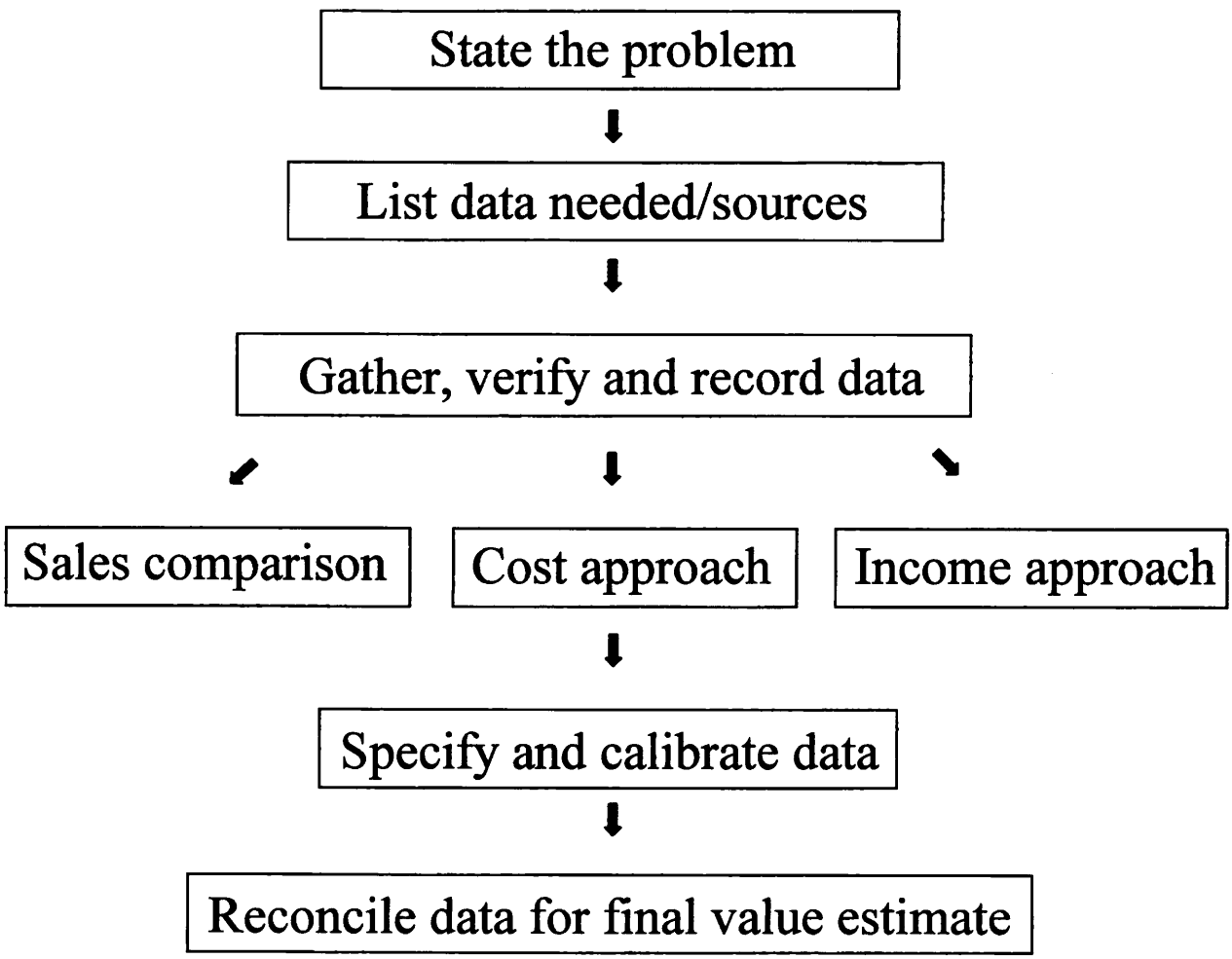
"From principles is derived probability, but truth or certainty is obtained only from facts."

Nathaniel Hawthorne

3.1 Introduction

The appraisal process is a method of collecting, analyzing and processing data to produce a thorough, well-reasoned and consistent value estimate. This section will provide an overview of the appraisal process and show how the assessor integrates the steps in appraisal with the assessment process. The following steps are to be used by an assessor in estimating value whether appraising an individual property or conducting a mass appraisal:

The Appraisal Process



3.2 Stating the Problem

The first step in the valuation process is to develop a clear statement of the appraisal problem. In doing this the appraiser establishes limits of the appraisal and eliminates any ambiguity about the nature of the assignment. Idaho Code identifies most of the appraisal problem. The statement of the problem should include:

Identification of the real estate
Identification of the property rights to be valued
Use of the appraisal
Definition of the value
Date of the value estimate
Description of the scope of the appraisal
Other limiting conditions

Identification of the Real Estate

Identification of real estate includes both an address and a legal description of the property in question. An accurate mapping system is essential to an assessor when determining value. Assessment maps (also known as cadastral maps) show the boundaries of land and give the size and location of each property in relation to other properties. Section 5 of this manual will discuss legal descriptions in more depth.

Identification of the Property Rights to be Valued

As we have already indicated, when appraising a property, the assessor is required *to consider all the rights that may legally be owned or its fee simple title.* However, where valuation of fractional interests are permitted, such as lease hold interests on air, water or mineral rights, the appraiser must identify such interests.

Use of the Appraisal

The purpose of appraisals are always to estimate value, however the appraiser must first determine its intended use. In the context of this course we have identified the function of our appraisal to be for the purposes of property taxation. Other functions of appraisal might include obtaining a mortgage loan or insurance.

Definition of Value

The assessor must identify the value that is being sought, whether it is market value, value in use, investment value, assessed value or insurable value.

Date of the Value Estimate

Strictly speaking, the estimate of value is effective only on the date of appraisal. For the appraiser the date of the appraisal is important because, as indicated in our discussion of the economic principle of change, conditions and trends may substantially effect value over a short period of time. Most of the time the date for ad valorem purposes in the State of Idaho is January 1st.

Description of the Scope of the Appraisal

The scope of the appraisal refers to the extent of the process in which data are collected, confirmed and reported. The scope is described to protect third parties whose reliance on the appraisal report may be affected by this information.

Other Limiting Conditions

Identification of the real estate and the property rights to be appraised, the date of the value estimate, the use of the appraisal, and the definition of value all aid in sustaining the appraisal. Some limiting conditions are also applicable. Being aware of limiting conditions is essential and it is good practice for the appraiser to include any limiting conditions and other considerations on an appraisal report.

3.3 Listing the Data Needed and Sources

Without a clear idea of the sources of available data and their reliability, the appraiser would be unable to perform their job properly. By knowing the exact type of information needed and where to find it, the appraiser is able to accomplish the task efficiently and accurately. It is important to consider what approaches are being used to estimate value before beginning the process of data collection. Depending on the problem or problems to be addressed by the appraiser, one approach may be given greater emphasis over other approaches to value estimation.

There are three types of data gathered for appraisals: general data, specific data, and future market data. General data consist of information about local, national and international trends in the social, economic, political, and environmental forces that could affect property value. Specific data relate to the property being appraised and to comparable properties. These data include the legal, physical, location, cost, and income and expense information about the properties and the details about comparable sales.

The final type of data to be gathered deal with the competitive position of the property in its future market. It is helpful to view data in the context of the economic principle of supply and demand. Supply data might include inventories of existing and proposed competitive properties, vacancy rates, and absorption rates. Demand data may include population, income, employment, and survey data pertaining to potential property users.

3.4 Gathering, Verifying, and Reporting Data

The following chart shows the types of data to be gathered and some typical sources:

General data on the region
Newspapers, chamber of commerce, public utilities, planning and zoning committees, US census data

General data on the city
City Hall, courthouse information, assessor's offices, property managers and associations

General data on the neighborhood
Public transportation officials, real estate brokers, neighborhood organizations

Data on the site (subject or comparable)
Inspections, utilities, planning and zoning committees, title companies, owners

Building data
Architects, builders, engineers, managers

Sales data for the Market Comparison Approach
Buyers and sellers, banks, title companies, appraisers, assessor's office, Internet, disclosure forms

Cost data for the Cost Approach
Architects, builders, cost service, local material suppliers, surveys

- Income and expense data for the Income Approach
  Property owners and managers, financial statements, publications

Data Forms

The best way to be certain that no detail of the property, its area, or the approaches to value are overlooked is to use a form or a specified format for recording the necessary information. An organized form specifies the types of information needed and provides a place to record this information. There are three questions you need to answer when developing a data collection form;

1. What must I know?
2. What should I know?
3. What is good to know?

Data Form Example: Sales

What types of information do we need to know about sales?

1. Sale Price
2. Sale Date
3. Legal property description

What types of information should we know?

1. The parties to the sale (buyers and sellers)
2. Financing (amount, terms, interest rate, etc)
3. Circumstances of the sale (reason) arms-length (ratio)
4. Personal property included

What types of information are good to know?

1. Person verifying information
2. Contact Phone number
3. Comment section
4. Preparers name and date information was gathered

After developing a form that includes the types of information needed and the appropriate sources have been determined, the interview is the next step in the process. An effective interview considers the following:

A form that requires a minimum amount of writing during the interview

Begin with straightforward-yes questions to build momentum

Ask for the opportunity to check back with them if you have a need

Review information immediately after interview

Good photographs can be a significant help

Offer to exchange information

SALES VERIFICATION

SELLER
BU
AD SS

LEGAL DESCRIPTION

1. TOTAL SALE PRICE $ _____ DATE OF SALE: Month _____ Year _____

2. DOWN PAYMENT $_____ LOAN AMOUNT $_____ INTEREST RATE _____ % YEARS _____

FINANCING ☐ Conventional ☐ VA ☐ FHA ☐ Cash ☐ Private ☐ IHA ☐ Other _____

3. IF FURNITURE, FIXTURES, ETC. WERE INCLUDED IN TOTAL PRICE, PLEASE ESTIMATE THE VALUE AND LIST THE ITEMS INCLUDED.

Value $_____ Items _____

4. THIS SALE WAS: ☐ An Ordinary Transaction ☐ A Trade ☐ An Estate Sale ☐ A Foreclosure

☐ Between Family ☐ An Easement ☐ A Condemnation ☐ Other _____

THE TYPE OF PROPERTY WAS: ☐ Commercial ☐ Residential ☐ Agricultural ☐ Other _____

WAS THIS BARE LAND? ☐ Yes ☐ No

WAS A MANUFACTURED HOME INCLUDED AS PART OF THE SALE? ☐ YES ☐ NO

IF THE PROPERTY WAS RENTED AT THE TIME OF SALE, WHAT WAS THE RENTAL AMOUNT? _____ mo. _____ yr.

EMARKS AND CONDITIONS OF THE SALE _____

N RE: _____ DATE: _____

RK PHONE: _____ HOME PHONE: _____

RESIDEN L APPRAISAL DATA COLLECTION FORM

County Assessor's Office

Parcel # _____

Owner _____

_____

Property Address _____

Legal Description _____

_____

_____

Affix 2" label here

_____

DATA SOURCE

1 Owner
2 Tenant
3 Vacant/Not Home
4 Interior Refusal
5 Total Refusal
6 Estimated
7 Transfer
8 Other

IMPROVEMENT INFORMATION

Dwelling # R _____
Category _____
Grade _____
Condition E VG G A F P
% Complete _____ %
Year Built _____
Effective Year _____
Year Remodeled _____

Owner Occupied *YES* *NO*

MANUFACTURED HOME:

Make _____
Model _____
Serial # _____
Width _____ FT
Length _____ FT
Decal # _____
Decal Year _____

House Type _____

NOTES

Inspected By _____ Date Inspected _____ Sale Date _____

Neighborhood _____ Review Year _____ Sale Price _____

Property Class _____ Date Occupied _____ Image # Disk_____ Pic _____

ROOMS	Wall Height	Finished % or Sq Ft	Living Rooms	Dining Rooms	Great Rooms	Kitchens	Dens	Bed Rooms	Other Rooms	2-Fix Baths	3-Fix Baths	4-Fix Baths	5-Fix Baths	Extra Fixtures	Water Heaters	Kitchen Sinks
Basement																
First Floor																
Attic Loft ½ ¾ 2 3																

FOUNDATION	ROOF TYPE	ROOF MATERIAL	HEATING	COOLING	BUILT-INS	EXTERIOR COVER		INTERIOR
Concrete Block	Gable	Built-Up	Heat Pump	Evaporative System	Base Allowance	Aluminum	Stucco	Drywall
Formed Concrete	Hip	Enamel Steel	Electric Radiant Ceiling	Forced Cool Air	Oven	Vinyl	Stone	Paneling
Piers	Gambrel	Comp Shingle	Electric Radiant Floor	Hot Water System	Range	Steel	Block	Plaster
Wood	Mansard	Shakes – Med	Electric Baseboard	Package Unit	Microwave	Brick	Asbestos	Wood
Stone	Flat / Shed	Shakes – Heavy	Forced Hot Air:	Window Units	Dishwasher	Brick Veneer		Log
Slab	A-Frame	Aluminum	*Gas*	Central Air	Fan / Hood	Wood		Knotty Pine
None	Complex	CGI	*Oil*		Cook Top	Wood B&B		
		Metal	*Electric*		Garb Disposal	T1-11 Plywood		
		Cedar Shingle	*Propane*		Trash Comp	Hard Board		
		Clay Tile	Wood Stove	**FIREPLACE**	Vacuum System	Log		
			Wall Units	Fireplace	Security System	Log Veneer		
				Double				
				Stacked				

GARAGE/CARPORT

☐ Garage ☐ Carport
☐ Attached ☐ Detached
☐ Finished ☐ Unfinished
Dimensions ____ X ____
Grade _____
Condition _____
Year Built _____
Effect Year _____
Est. Value $ _____

GARAGE/OTHER

☐ Garage ☐ _____
☐ Attached ☐ Detached
☐ Finished ☐ Unfinished
Dimensions ____ X ____
Grade _____
Condition _____
Year Built _____
Effect Year _____
Est. Value $ _____

IMPROVEMENT - OTHER

#	DESCRIPTION	SIZE / AREA	YR BLT	GRADE	COND
1					
2					
3					
4					
5					
6					
7					
8					
9					

#	DESCRIPTION	SIZE / AREA	YR BLT	GRADE	COND
10					
11					
12					
13					
14					
15					
16					
17					
18					

LAND DETAIL

INFLUENCE	WATER	TOPO	UTILITIES	CONDITION
None	Lake	Level	Electricity	Improving
View	River	High	Public Water	Static
Water	Creek	Low	Public Sewer	Declining
Forest	Swampy	Rolling	Private Well	Blighted
			Septic System	Agricultural

CAT	QUAN	UNIT	TYPE	METHOD	ADJ %	ADJUSTMENT REASON
					%	
					%	
					%	
					%	
					%	

This form is for appraiser's reference purposes only. Official county appraisal records are stored electronically. Printouts are available if needed.

Revision 2004-09-20

COMMERCIAL APPRAISAL DATA COLLECTION FORM

County Assessor's Office

'rcel # _____

/ner _____

_____

Property Address _____

Legal Description _____

_____

Affix 2" label here

_____

_____

Inspected By _____

Date Inspected _____

Review Year _____

Neighborhood _____

Property Class _____

Date Occupied _____

Image # Disk _____ Pic _____

Sale Date _____

Sale Price _____

DATA SOURCE

1 Owner
2 Manager
3 Tenant
4 Vacant
5 Total Refusal
6 Estimated
7 Transfer
8 Other _____

LAND DETAIL

INFLUENCE	WATER	TOPO	UTILITIES	CONDITION	CAT	QUAN	UNIT	TYPE	METHOD	ADJ %	ADJUSTMENT REASON
None View Water Forest	Lake River Creek Swampy	Level High Low Rolling	Electricity Public Water Public Sewer Private Well Septic System	Improving Static Declining Blighted Agricultural						%	
										%	
										%	
										%	

IMPROVEMENT INFORMATION / SKETCH

Primary Use _____

Record # C_____ Grade/Rank _____

Year Built _____ Condition E VG G A F P_

'ective Year _____ % Complete _____ %

ar Remodel _____ Category _____

Use M&S Occupancy Refernce Guide to determine Grade/Rank using the four criteria below:

Exterior Walls _____

Interior Finish _____

Mechanicals Minimal Adequate Good Other: _____

HVAC _____

Floor Level / Occupancy Size-% of total	Floor:	Size:	Floor:	Size:	Floor:	Size:
Commercial Use / Occupancy Type						
Fire Sprinkler Type	Dry Wet Other None	SF	Dry Wet Other None	SF	Dry Wet Other None	SF
/AC Type 1 – (if not typical)		SF		SF		SF
.VAC Type 2 – (if not typical)		SF		SF		SF
Wall Height / Ceiling Height	Wall:	Ceiling:	Wall:	Ceiling:	Wall:	Ceiling:
Wall Type 1 – (if not typical) – LF or %		LF		LF		LF
Wall Type 2 – (if not typical) – LF or %		LF		LF		LF
Class / Framing Type 1 – SF or %	A B C D P S	LF	A B C D P S	LF	A B C D P S	LF
Class / Framing Type 2 – SF or %	A B C D P S	LF	A B C D P S	LF	A B C D P S	LF
M&S Rank Override	Occupancy:	Wall Type:	Occupancy:	Wall Type:	Occupancy:	Wall Type:

Floor Level / Occupancy Size-% of total	Floor:	Size:	Floor:	Size:	Floor:	Size:
Commercial Use / Occupancy Type						
Fire Sprinkler Type	Dry Wet Other None	SF	Dry Wet Other None	SF	Dry Wet Other None	SF
HVAC Type 1 – (if not typical)		SF		SF		SF
HVAC Type 2 – (if not typical)		SF		SF		SF
Wall Height / Ceiling Height	Wall:	Ceiling:	Wall:	Ceiling:	Wall:	Ceiling:
Wall Type 1 – (if not typical) – LF or %		LF		LF		LF
Wall Type 2 – (if not typical) – LF or %		LF		LF		LF
Class / Framing Type 1 – SF or %	A B C D P S	LF	A B C D P S	LF	A B C D P S	LF
Class / Framing Type 2 – SF or %	A B C D P S	LF	A B C D P S	LF	A B C D P S	LF
M&S Rank Override	Occupancy:	Wall Type:	Occupancy:	Wall Type:	Occupancy:	Wall Type:

CLASS / FRAMING TYPE CODES:

A: Fireproof Steel Frame
B: Reinforced Concrete Frame
C: Masonry Bearing Walls
D: Wood/Steel Framed Exterior Walls
P: Wood Frame/Metal Walls
S: Metal Frame & Walls

RANK OVERRIDES:

0.6 Cheap
1.0 Low
1.5 Fair
2.0 Average
3.0 Good
3.5 Very Good
4.0 Excellent

IMPROVEMENTS - OTHER ITEMS NOT INCLUDED IN BASE SPECIFICATIONS

	DESCRIPTION	SIZE / AREA	COUNT	YR BLT	GRADE	COND	BASE RATE	EXTENDED VALUE
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								

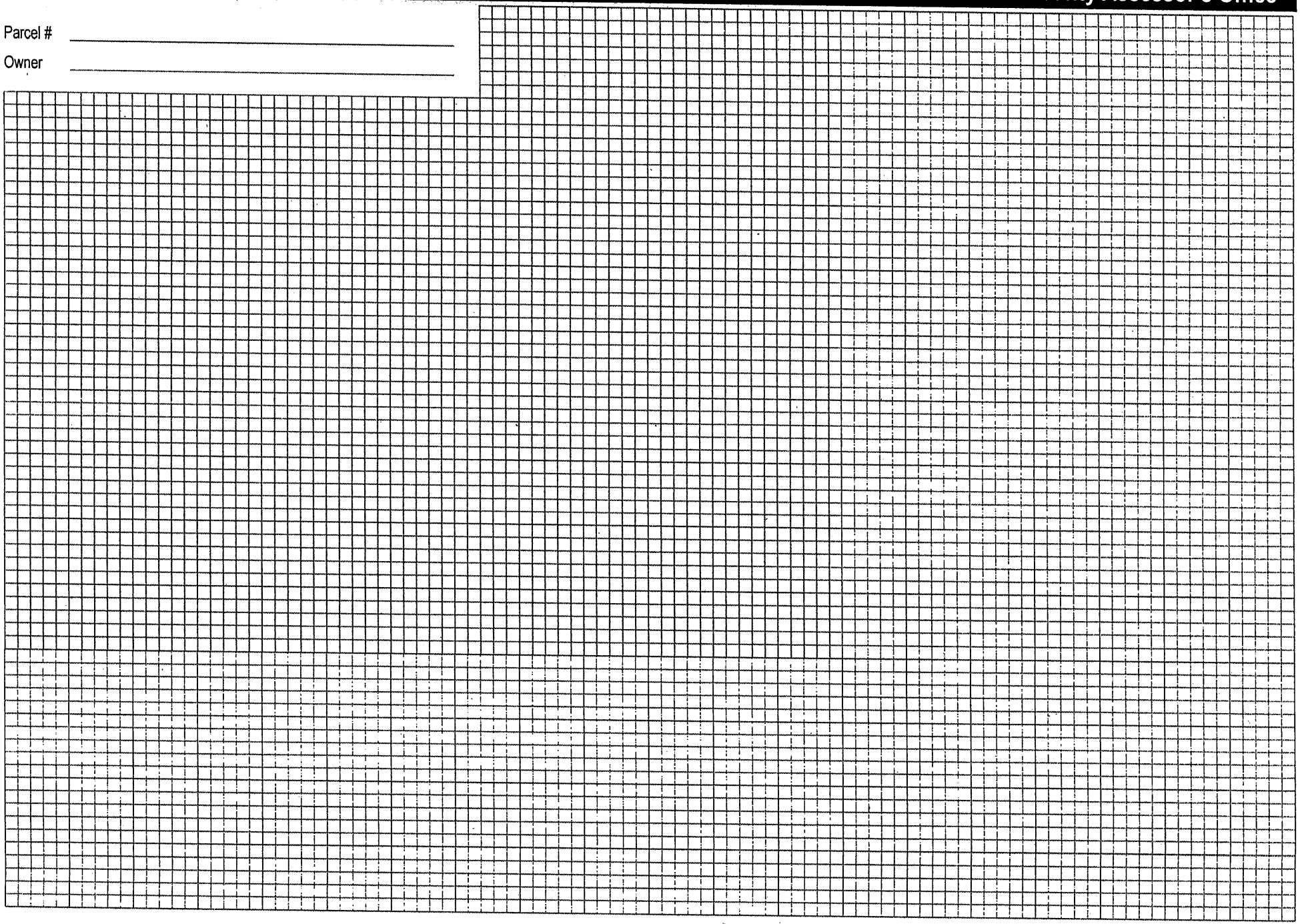
NOTES

APPRAISAL DATA COLLECTION GRID

County Assessor's Office

Parcel # _____

Owner _____



This form is for appraiser's reference purposes only. Official county appraisal records are stored electronically. Printouts are available if needed.

Revision 2004-09-20

Appraisal Reports

An appraisal report is the tangible evidence that the appraiser has followed all the logical steps of the appraisal process. The appraiser must present all the facts, reasoning and conclusions in a concise and clear format. Appraisals can be presented in one of four ways:

1. **Form** The form appraisal is made on a special form designed to record pertinent data and value conclusions. Forms may vary from checklists to special building and property records. Government agencies such as assessors' offices, the Veterans Administration and the Federal Housing Administration (FHA), use the form appraisal, as do many non-governmental organizations such as banks and savings and loan associations.

2. **Letter** An appraisal report can be in the form of a business letter. It is usually one or two pages long and summarizes the basic information about the property, followed by an opinion of value. Although the letter appraisal is an abbreviated narrative appraisal, the assessor must perform the same logical steps in the appraisal process required in any other format.

3. **Narrative** The narrative appraisal report is a detailed presentation of how data was processed to arrive at an estimate. This type of appraisal report is essential during the appeals process.

4. **Demonstration** The demonstration appraisal report is a narrative report used by professional organizations to examine candidates for a professional designation.

X X

UNIFORM RESIDENTIAL APPRAISAL REPORT

Property Description — File No.

SUBJECT

Property Address	City	State	Zip Code
Legal Description		County	
Assessor's Parcel No.	Tax Year	R.E. Taxes $	Special Assessments $
Borrower	Current Owner	Occupant ☐ Owner ☐ Tenant ☐ Vacant	
Property rights appraised ☐ Fee Simple ☐ Leasehold	Project Type ☐ PUD ☐ Condominium (HUD/VA only)	HOA$	/Mo.
Neighborhood or Project Name	Map Reference	Census Tract	
Sales Price $	Date of Sale	Description and $ amount of loan charges/concessions to be paid by seller	
Lender/Client	Address		
Appraiser	Address		

NEIGHBORHOOD

Location	☐ Urban	☐ Suburban	☐ Rural	Predominant occupancy	Single family housing PRICE $ (000) / AGE (yrs)	Present land use %
Built up	☐ Over 75%	☐ 25-75%	☐ Under 25%	☐ Owner	Low	One family
Growth rate	☐ Rapid	☐ Stable	☐ Slow	☐ Tenant	High	2-4 family
Property values	☐ Increasing	☐ Stable	☐ Declining	☐ Vacant (0-5%)	Predominant	Multi-family
Demand/supply	☐ Shortage	☐ In balance	☐ Over supply	☐ Vacant (over 5%)		Commercial
Marketing time	☐ Under 3 mos.	☐ 3-6 mos.	☐ Over 6 mos.			( )

Land use change: ☐ Not likely ☐ Likely ☐ In process — To:

Note: Race and the racial composition of the neighborhood are not appraisal factors.

Neighborhood boundaries and characteristics:

Factors that affect the marketability of the properties in the neighborhood (proximity to employment and amenities, employment stability, appeal to market, etc.):

Market conditions in the subject neighborhood (including support for the above conclusions related to the trend of property values, demand/supply, and marketing time -- such as data on competitive properties for sale in the neighborhood, description of the prevalence of sales and financing concessions, etc.):

PUD

Project information for PUDs (if applicable) -- Is the developer/builder in control of the Home Owners' Association (HOA)? ☐ Yes ☐ No

Approximate total number of units in the subject project ____. Approximate total number of units for sale in the subject project ____.

Describe common elements and recreational facilities:

SITE

Dimensions ____ Corner Lot ☐ Yes ☐ No

Site area ____

Specific zoning classification and description ____

Zoning compliance ☐ Legal ☐ Legal nonconforming (Grandfathered use) ☐ Illegal ☐ No zoning

Highest & best use as improved ☐ Present use ☐ Other use (explain)

Utilities	Public	Other	Off-site Improvements	Type	Public	Private
Electricity	☐		Street		☐	☐
Gas	☐		Curb/gutter		☐	☐
Water	☐		Sidewalk		☐	☐
Sanitary sewer	☐		Street lights		☐	☐
Storm sewer	☐		Alley		☐	☐

Topography ____
Size ____
Shape ____
Drainage ____
View ____
Landscaping ____
Driveway Surface ____
Apparent easements ____
FEMA Special Flood Hazard Area ☐ Yes ☐ No
FEMA Zone ____ Map Date ____
FEMA Map No. ____

Comments (apparent adverse easements, encroachments, special assessments, slide areas, illegal or legal nonconforming zoning use, etc.):

DESCRIPTION OF IMPROVEMENTS

GENERAL DESCRIPTION		EXTERIOR DESCRIPTION		FOUNDATION		BASEMENT		INSULATION	
No. of Units		Foundation		Slab		Area Sq. Ft.		Roof	☐
No. of Stories		Exterior Walls		Crawl Space		% Finished		Ceiling	☐
Type (Det./Att.)		Roof Surface		Basement		Ceiling		Walls	☐
Design (Style)		Gutters & Dwnspts.		Sump Pump		Walls		Floor	☐
Existing/Proposed		Window Type		Dampness		Floor		None	☐
Age (Yrs.)		Storm/Screens		Settlement		Outside Entry		Unknown	☐
Effective Age (Yrs.)		Manufactured House		Infestation					

ROOMS	Foyer	Living	Dining	Kitchen	Den	Family Rm.	Rec. Rm.	Bedrooms	# Baths	Laundry	Other	Area Sq. Ft.
Basement												
Level 1												
Level 2												

Finished area above grade contains: Rooms; Bedroom(s); Bath(s); Square Feet of Gross Living Area

INTERIOR	Materials/Condition	HEATING	KITCHEN EQUIP.	ATTIC	AMENITIES	CAR STORAGE:
Floors		Type	Refrigerator ☐	None ☐	Fireplace(s) # ☐	None ☐
Walls		Fuel	Range/Oven ☐	Stairs ☐	Patio ☐	Garage # of cars
Trim/Finish		Condition	Disposal ☐	Drop Stair ☐	Deck ☐	Attached
Bath Floor		COOLING	Dishwasher ☐	Scuttle ☐	Porch ☐	Detached
Bath Wainscot		Central	Fan/Hood ☐	Floor ☐	Fence ☐	Built-In
Doors		Other	Microwave ☐	Heated ☐	Pool ☐	Carport
		Condition	Washer/Dryer ☐	Finished ☐		Driveway

COMMENTS

Additional features (special energy efficient items, etc.):

Condition of the improvements, depreciation (physical, functional, and external), repairs needed, quality of construction, remodeling/additions, etc.:

Adverse environmental conditions (such as, but not limited to, hazardous wastes, toxic substances, etc.) present in the improvements, on the site, or in the immediate vicinity of the subject property:

Valuation Section

UNIFORM RESIDENTIAL APPRAISAL REPORT

File No.

COST APPROACH

ESTIMATED SITE VALUE . . . . . = $ _____

ESTIMATED REPRODUCTION COST-NEW OF IMPROVEMENTS:

Dwelling _____ Sq. Ft @ $ _____ = $ _____

_____ Sq. Ft @ $ _____ = _____

_____ = _____

Garage/Carport _____ Sq. Ft @ $ _____ = _____

Total Estimated Cost-New . . . . . = $ _____

Less Depreciation: Physical | Functional | External _____ = $ _____

Depreciated Value of Improvements . . . . . = $ _____

"As-is" Value of Site Improvements . . . . . = $ _____

INDICATED VALUE BY COST APPROACH . . . . . = $ _____

Comments on Cost Approach (such as, source of cost estimate, site value, square foot calculation and, for HUD, VA and FmHA, the estimated remaining economic life of the property): _____

SALES COMPARISON ANALYSIS

ITEM	SUBJECT	COMPARABLE NO. 1		COMPARABLE NO. 2		COMPARABLE NO. 3	
Address							
Proximity to Subject							
Sales Price	$		$		$		$
Price/Gross Liv. Area	$ ☐	$	☐	$	☐	$	☐
Data and/or Verification Sources							
VALUE ADJUSTMENTS	DESCRIPTION	DESCRIPTION	+ (-) $ Adjustment	DESCRIPTION	+ (-) $ Adjustment	DESCRIPTION	+ (-) $ Adjustment
Sales or Financing Concessions							
Date of Sale/Time							
Location							
Leasehold/Fee Simple							
Site							
View							
Design and Appeal							
Quality of Construction							
Age							
Condition							
Above Grade Room Count	Total Bdrms Baths	Total Bdrms Baths		Total Bdrms Baths		Total Bdrms Baths	
Gross Living Area	Sq. Ft.	Sq. Ft.		Sq. Ft.		Sq. Ft.	
Basement & Finished Rooms Below Grade							
Functional Utility							
Heating/Cooling							
Energy Efficient Items							
Garage/Carport							
Porch, Patio, Deck, Fireplace(s), etc.							
Fence, Pool, etc.							
Net Adj. (total)		☐ + ☐ -	$	☐ + ☐ -	$	☐ + ☐ -	$
Adjusted Sales Price of Comparable			$		$		$

Comments on Sales Comparison (including the subject property's compatibility to the neighborhood, etc.): _____

ITEM	SUBJECT	COMPARABLE NO. 1	COMPARABLE NO. 2	COMPARABLE NO. 3
Date, Price and Data Source for prior sales within year of appraisal				

Analysis of any current agreement of sale, option, or listing of the subject property and analysis of any prior sales of subject and comparables within one year of the date of appraisal:

INDICATED VALUE BY SALES COMPARISON APPROACH . . . . . $ _____

INDICATED VALUE BY INCOME APPROACH (If Applicable) Estimated Market Rent $ _____ /Mo. x Gross Rent Multiplier _____ = $ _____

RECONCILIATION

This appraisal is made ☐ "as is" ☐ subject to the repairs, alterations, inspections, or conditions listed below ☐ subject to completion per plans and specifications.

Conditions of Appraisal: _____

Final Reconciliation: _____

The purpose of this appraisal is to estimate the market value of the real property that is the subject of this report, based on the above conditions and the certification, contingent and limiting conditions, and market value definition that are stated in the attached Freddie Mac Form 439/Fannie Mae Form 1004B (Revised _____).

I (WE) ESTIMATE THE MARKET VALUE, AS DEFINED, OF THE REAL PROPERTY THAT IS THE SUBJECT OF THIS REPORT, AS OF _____ (WHICH IS THE DATE OF INSPECTION AND THE EFFECTIVE DATE OF THIS REPORT) TO BE $ _____.

APPRAISER:

Signature _____

Name _____

Date Report Signed _____

State Certification # _____ State _____

Or State License # _____ State _____

SUPERVISORY APPRAISER (ONLY IF REQUIRED):

Signature _____ ☐ Did ☐ Did Not Inspect Property

Name _____

Date Report Signed _____

State Certification # _____ State _____

Or State License # _____ State _____

3.5 Approaches To Value

We have now reached the point in the appraisal process in which all the data that has been gathered, verified and recorded is specified and then calibrated. There are three approaches to value: sales comparison approach, cost approach and the income approach. No one approach is perfect or necessarily more important than any other, however depending on the purpose and the function of the appraisal not all three approaches will always be relevant for every property.

Sales Comparison Approach

The sales comparison approach is based on the concept of value in exchange and is most useful when a number of similar properties have recently been sold in the subject property's market. Using this approach, an appraiser produces a value estimate by comparing the subject property with similar properties called comparable sales. The characteristics of the sold properties are analyzed for their similarity to those of the subject property. No two parcels are exactly alike, therefore the prices of the sold properties must be adjusted to the subject property to take into account any differences.

In using this method the appraiser will:

1. Find properties that have sold recently and are similar to the property that is the subject of the appraisal.
2. Note any dissimilar features in the sales properties
3. Make adjustments, **ADJUSTMENTS ARE ALWAYS MADE TO THE SOLD PROPERTIES**
4. Use the following formula to calibrate value:

SALES PRICE OF COMPARABLE PROPERTY +/- ADJUSTMENTS = INDICATED VALUE OF SUBJECT

The appraiser adds the value of a feature present in the subject property, but not the comparable, and subtracts the value of a feature present in the comparable, but not the subject property. After going through this process for each of the comparable properties, the appraiser selects a value for the subject property that is the adjusted value of the comparable(s) most like the subject.

Example: Sales Comparison

House A (comparison property) which sold for $97,000, is comparable to House B (subject property), but has a garage valued at $7,000. House B, has no garage. In this case, using the formula for the market comparison, the value reached is shown below:

Sale price of comparable property "A"	$97,000
(less) value of the garage	<$7,000>
Indicated value of subject property "B"	$90,000

Cost Approach

The economic principle of substitution applies to the cost approach of valuation. This approach is particularly useful in valuing new or nearly new improvements because the construction costs are easier to estimate and there is less depreciation. In the cost approach, the appraiser:

1. Estimates the value of the improvements to their cost **NEW** (at the date of the appraisal)(RCN).
2. Subtracts any loss in value from cost new owing to the **DEPRECIATION** of the improvements.
3. Adds an estimate of the value of the site itself, usually found by the market comparison approach, to the depreciated value of the improvements.

DEPRECIATION may occur through either physical **DETERIORATION** (Effects of wear and tear or the elements) or **OBSOLESCENCE**. OBSOLESCENCE can be

1. Functional such as outmoded room layout or design.
2. Economic or external, caused by changes in external factors, such as zoning, environmental restrictions, property's highest and best use, or supply and demand.

Example: Cost Approach

A warehouse that would cost $300,000 to construct new today has depreciated 25% in its lifetime and is on land valued at $90,000. The property's total estimated value using the cost approach formula:

Cost New		Depreciation		Land Value		Property Value
$300,000	minus	(25% x $300,000)	plus	$90,000	=	$315,000

The estimate value of the property is $315,000.

Income Approach

In the income approach, the present value of the future benefits of property ownership is measured. The buyer of a single-family residence makes the purchase in order to enjoy the benefits the property will afford to the buyer in the future. Similarly, the buyer of an investment property pays the price in order to receive future benefits (the annual income stream generated by rents). The assessor must consider using the income approach for the following reasons:

Often there is no reliable sales data available of the property. This is particularly true in the case of industrial and commercial property where sales are infrequent

Investors in income producing properties rely almost exclusively on the income approach in making decisions to buy or sell

The income approach can be a valid check on the value indicators provided by the cost and sales comparison approaches to value.

Idaho statute requires the assessor to consider all factors that affect market value.

If the property's net income is known, as well as the market's required rate of return on investment, value can be computed by using the formula given below:

$$\frac{\text{Net Income}}{\text{Rate of Return}} = \text{Property Value} \qquad \text{OR} \qquad I \div R = V$$

Example 1: Income Approach

A buyer requires a 10% return on her investment. She is interested in a medical office building that produces a net income of $75,000 per year. The buyer would be willing to pay the following:

$$\frac{\$75{,}000}{10\%} = \$750{,}000$$

The property value that would produce the expected net income is $750,000.

If a buyer has a given amount to invest, and wants a specific rate of return on his investment, he would use a variation of the formula given above.

Property Value x Rate of Return = Net Income

or $V \times R = I$

Example 2: Income Approach

To receive a 12% return on an investment of $100,000, what would be the required net income of the purchased property?

$$\$100{,}000 \times 12\% = \$12{,}000$$

Remember that the Income Approach is based on the Net Annual Income. Rents are not net income. All the operating expenses must be subtracted from Gross Income (rents plus any other income).

Reconciliation (correlation)

Finally the approaches used (cost, market and income) are correlated to a final value estimate.

Math Review

One last consideration to be made when gathering and recording data is its format. Appraisers often need to describe how one number is related to another. That is, what part or proportion the second number is of the first. To do so, they may use a decimal, which the proportion is expressed in tenths, hundredths, thousandths, and so forth:

.3 is 3/10, or three tenths, or 3 out of 10 parts

.245 is 245/1000, or two hundred and forth-five thousandths, or 245 out of 1000

1.20 is 120/100, or one hundred and twenty hundredths, or 120 out of 100 parts

The same proportion can be expressed as a percentage. Like the decimal, a percentage is based on multiples of ten, but each percentage expresses 1/100, or one one-hundredth, of a number. Therefore, the figures shown above would become:

30 *percent (.3= .30)*

24.5 *percent*

120 *percent*

Unlike the decimal and percentage, the ratio does not have to be based on multiples of ten. Instead, the two parts of a ratio can add up to any total. For example:

A ratio or 1:4 means that for every 1 of something, there are 4 of something else.

One common example is the proportion of land value to improvement value in regards to the total value of a property. If that ratio, or proportion, is 1:4, then for every $1 of value attributable to the land, $4 can be attributed to the improvement. In the above example the total value will be $5 for every $1 of land value. You cannot know the actual dollar amount unless you know either the first number or the second number in the ratio. If you know the land value is $40,000, for instance, then the total value is $200,000.

$40,000 x 1 = $40,000 Land

$40,000 x 4 = $160,000 Improvement

$40,000 x 5 = $200,000 Total

Converting Ratios to Decimals

Any ratio, therefore, can become a fraction , expressing the proportion of one number to another:

1 out of a total of 5 is the same as 1/5

6 out of a total of 7 is the same as 6/7

14 out of a total 54 is the same as 14/54

And, any fraction can become a decimal. Just remember that the slash (/), or line between the numbers, means "divide by".

1/5 means 1 divided by 5

6/7 means 6 divided by 7

14/54 means 14 divided by 54

Once you divide, the result is expressed in the form of a decimal. Any decimal can easily become a percentage. Just multiply by 100.

1/5 = 1 divided by 5 = .20 or 20%

6/7 ≐ 6 divided by 7 = .8571 or 85.71%

14/54 = 14 divided by 54 = .2593 = 25.93 %

One advantage of decimals and percentages is that they can easily be "rounded off" to simplify the information. In the example, 85.71 percent could become 86 percent, and 25.93 could become 26 percent, if you needed only whole number percentages for a specific purpose.

Review
Section 3
Appraisal Process

1. What are the three approaches to value?

2. The Assessor is required to consider property at its fee simple title - True or False?

3. What is the appraisal date for ad valorem purposes in the State of Idaho?

4. What are some typical sources of information about sales data that an appraiser may find useful?

5. State law requires the appraiser to consider all three approaches to appraise property - True or False?

6. In the sales comparison approach, adjustments are always made to the subject property - True or False?

7. The income approach is most frequently used with what type of property?

8. What type of appraisal report is the best to prepare for appeals?

9. Express the following numbers as percentages

   A. 23/67
   B. .279
   C. 4/5

PRINCIPLES OF PROPERTY VALUATION

SECTION FOUR

LEGAL DESCRIPTIONS

LEARNING OBJECTIVES

On completing this section the student should:

- ✓ Know what a Legal Description is
- ✓ Know the Public Land Survey System
- ✓ Know the Metes and Bounds System
- ✓ Know the Lot and Block system
- ✓ Know how to use the above systems

LEARNING OBJECTIVES
Section 4

- Know what a Legal Description is
- Know the Public Land Survey System
- Know the Metes and Bounds System
- Know the Lot and Block system
- Know how to use the above systems

GOVERNMENT SURVEY

U.S. RECTANGULAR SURVEY SYSTEM

Assigned by Federal Statues – Nationwide

East-West lines are called Base Lines

North-South lines are called Meridians

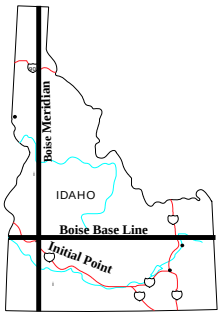
Idaho's Meridian is known as:

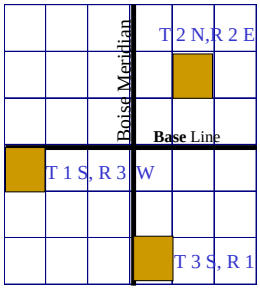
THE BOISE MERIDIAN

Townships and Ranges

- **Township**: Each six-mile division north or south of the baseline is called the township north or township south.
- **Range**: Each six-mile division east or west of the principle meridian is called a range east or range west.

Boise Base Line and Boise Meridian





TOWNSHIP 1 SOUTH, RANGE 3 WEST

- **TOWNSHIP**
  - 36 Sections
  - 6 Miles Square

Acre = 43,560 Sq. Ft.

1 **Mile** = 5,280 Ft.

- **SECTION**
  - 1 Mile Square
  - 640 Acres

North

6	5	4	3	2	1
7	8	9	10	11	12
18	←				13
19					24
30	29	28	27	26	25
31	→				36

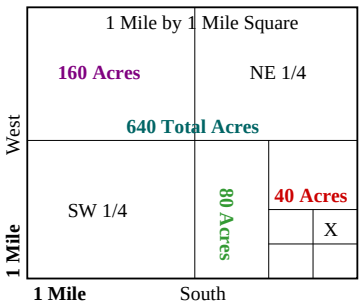
West

East

South

SECTION 36, T9N, R14E

North



West

East

South

NOTE:

Read Legal Descriptions beginning with the last entry

NE4,SE4,SE4

____Acres

Government Lots

- Not all townships are perfectly regular, containing 640 acres. Causes of irregularities include:
  - Survey errors
  - Bodies of water
  - Government reservation boundaries
- These discrepancies are corrected on the north and west side of the township through the use of fractional or *government lots*.

Example 4-6

METES AND BOUNDS

OLDEST MANNER OF DESCRIBING LAND

- Property boundaries were set by a buyer and seller walking the perimeter of a property, establishing landmarks as they walked. The six components are:
- A township and range reference
- A starting monument
- Directions from that monument to the parcel's point of beginning (POB)
- Actual metes and bounds that start at the POB
- Area of the parcel
- Any exclusions or qualifiers

Example 4.8

METES AND BOUNDS

BEARINGS & DISTANCES

Bearings: Measurements by Degrees (60º)
Minutes (') Seconds (")
Distances: Measurements by Feet
Example: "South 60º East 300 feet"
Early measurements are sometimes listed in chains.
One chain = 66 feet.

Exercise 4-8

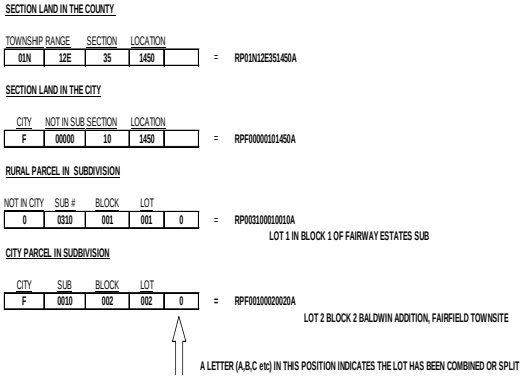
Uniform Parcel Numbering System

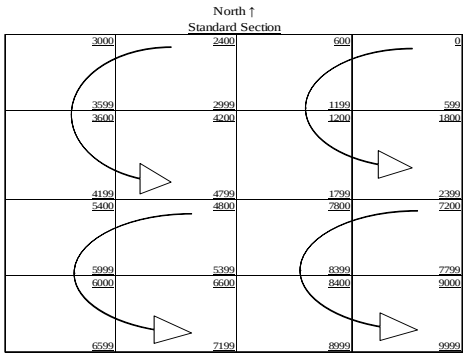
- The Uniform Parcel Numbering system is described in Idaho Code 63-209 and Administrative Rule 218
  - Idaho Code, 63-209. **Assessor's Plat Record**. "All parcels of real property shall be numbered pursuant to a uniform numbering system to be established by the state tax commission…"
- A parcel number system that allows each property to be uniquely identified by twelve numbers or letters.

Parcel Numbering

- Section land in county (rural)
  - RP05N27E256341
- Section land in city (urban)
  - RPB00000347827
- Subdivision land in county (rural)
  - RP088200040230A
- Subdivision land in city (urban)
  - RPE01620008012A

Example 4-6





LOT and BLOCK SUBDIVISION

- Descriptions for Subdivisions and Townsites
- City and Rural Subdivisions
- Record Subdivision Plat
- Approved by Planning and Zoning Department
- Approved by County Commissioners
- Lot 10, Block 2, of Kingston Subdivision, XX County, State of Idaho.

Section 4
Legal Descriptions

"One who wishes to know about the world must learn about its particular details."

Heraclitus

4.1 Introduction

The property must be identified before an appraiser can find comparable catalog improvements and calculate depreciation or obsolescence. Identification of property for the purpose of valuation is not as simple as locating a street address; a sufficient legal description of the land itself is required. This section will focus on how properties are identified; what information is needed to complete a full site description and analysis, and how this information is used by the appraiser.

In everyday life, a house is identified by its street address. In conveyance, a sufficient "legal description" of the land itself is required. Legal descriptions look at the land boundaries that differentiate separate ownerships of the land. The land that is included in a legal description is referred to as a parcel, lot, plot, or tract.

Idaho Code provides direction to the assessor on how to map property. Subdivision and metes-and-bounds parcels must be mapped according to plats and deeds, while township-range-and-section lands must be mapped according to their original government surveys. It also mandates each county assessor to maintain a "full, accurate, and complete" plat book-maps showing all parcels in his/her county.

Idaho code also requires the assessor to determine "true ownership" of each parcel. A property's legal owner and the type of ownership can be ascertained from public records maintained by the county clerk and recorder. Local title or abstract companies may also provide information. When there is a dispute, "true ownership" must be viewed as the person with the most proximate interest in receiving the assessment notice and tax bill for a property.

4.2 Government Surveys

If you have ever taken a drive in the country, you might notice that most roads run north to south or east to west. This pattern resulted from the need to find a more convenient way of describing land being acquired during the territorial expansion of the United States. The government, needing to sell off the large tracts of land in a quick and orderly fashion, developed the US. Rectangular Survey System. This system is also referred to as the Government Survey System and it provides the framework for all Idaho land ownership.

4.3 Lines and Townships

The initial reference points for government surveys were assigned by federal statutes. From these reference points, true north and south and east and west lines were drawn. The east-west lines are called *base lines* and the north-south lines are called *meridians*. Each meridian has its own name. The meridian that is located in Idaho is known as the Boise Meridian and it is crossed by it own base line (See figure 4-2). The rectangular survey is divided by north-south range lines about six miles apart, and east-west township lines that are also approximately six miles apart.

Townships are the rectangles that are created by these lines. Each township is numbered to identify it by either the range line or the township line. You can find how far north or south on the Boise Base Line a township is, and then how far east or west of the Boise Meridian it is. Look at figure 4-2 for the Boise Meridian and Base Line, and for some townships. The "T" stands for township, the "R" stands for range.

Figure 4.1

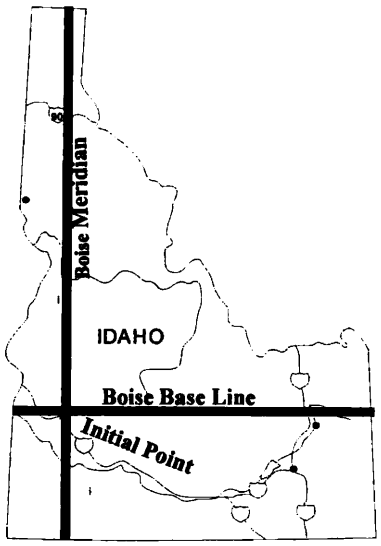
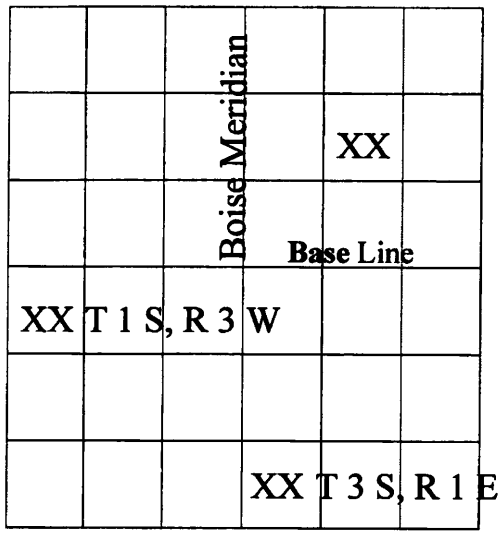


Figure 4.2

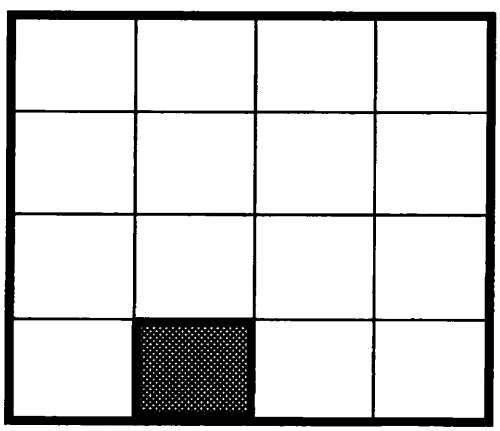


4.4 Sections

Each township is broken down into 36 sections, each about one mile square and contains 640 acres.. Sections are a basic part of most property descriptions. The sides run approximately north-south and east-west. Sections are further broken down into aliquot parts, usually quarters or halves. The key to reading legal descriptions of section lands is to read backwards.

Look at figure 4-3, the last part of the description is "Boise Meridian". Look at this first; it tells you that you are looking at a property in Idaho. The next-to-last part of the description is "T55N, R4W". This tells you what township in Idaho the parcel is in. The next part is "Section 24". This tells you which section of the township you are looking at. Next is "SW¼". This designates the Southwest quarter. The last part of the description, "SE ¼" tells you that it is the Southeast quarter of the Southwest quarter. It describes a parcel approximately 40 acres in size.

Figure 4.3



SE 1/4 SW 1/4, Section 24, T 55 N, R 4 W, Boise Meridian

Government Lots

In some cases, a quarterquarter section that should be a forty, isn't. In these cases, the old time surveyors created government lots. Figure 4-6 shows several examples of government lots: along the west side of a township, along a river, and outside a government reservation.

Government Lot 6 of Section 31 has 45.25 acres. Almost all townships have lots along their north and west edges.

Government Lot 2 in Section 32 has 37.39 acres. Because the government didn't want to make settlers pay for rivers, they only charged them for land. The line dividing land and water is called a meander line.

Government Lot 9 in Section 31 has 37.79 acres. Government lots are often found when you come to Indian reservation or state boundaries, or to places where a new survey meets an old survey.

Corners

When the old-time General Land Office surveyors marked out sections, they used monuments to mark corners. (A corner is a mere spot on the earth's surface; a monument is a stone, post, pipe, or brass cap used to mark that spot.) On most sections, the surveyors marked four corners--the northeast, northwest, southeast, and southwest corners--and four quartercorners--the north, south, east, and west quartercorners. See Figure 4-7 for examples. These corners and quartercorners are important monuments for dividing up sections, and for starting metes and bounds descriptions.

Figure 4-6

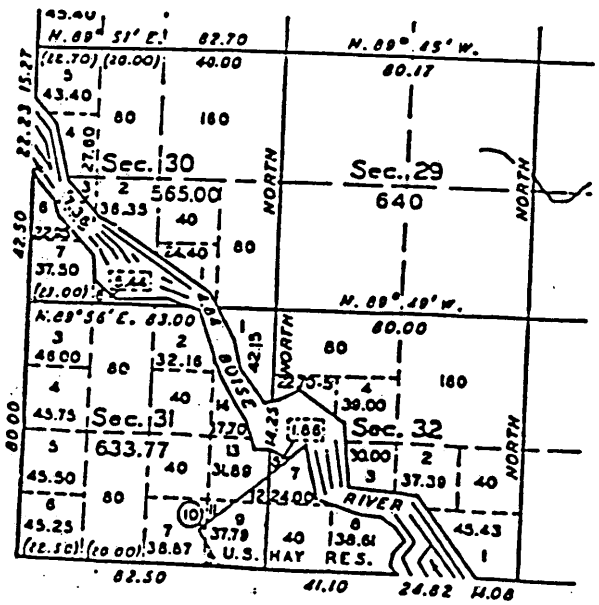
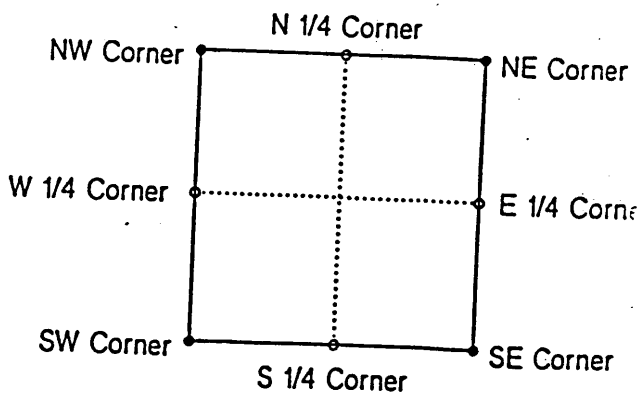
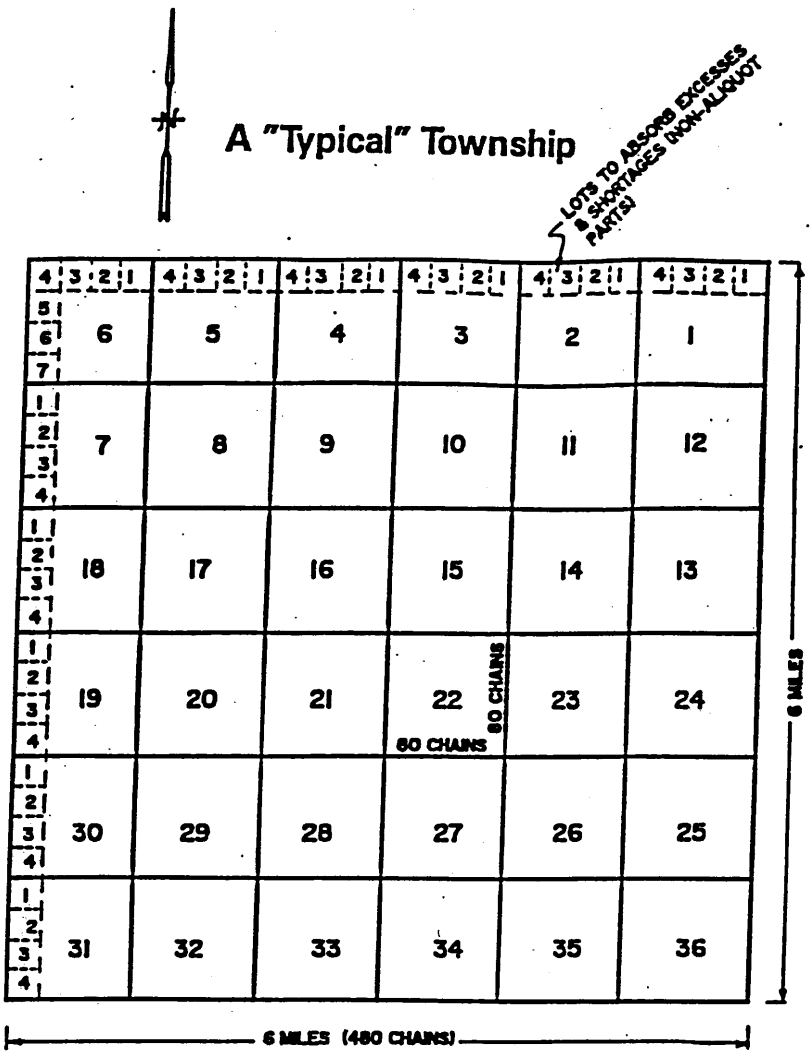


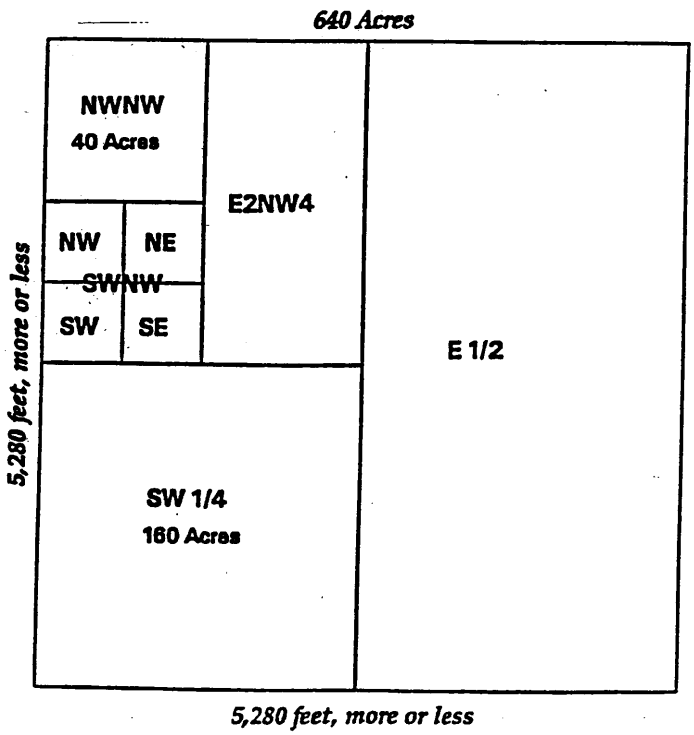
Figure 4-7



A "Typical" Township



A "Typical" Section



Exercise 4-A

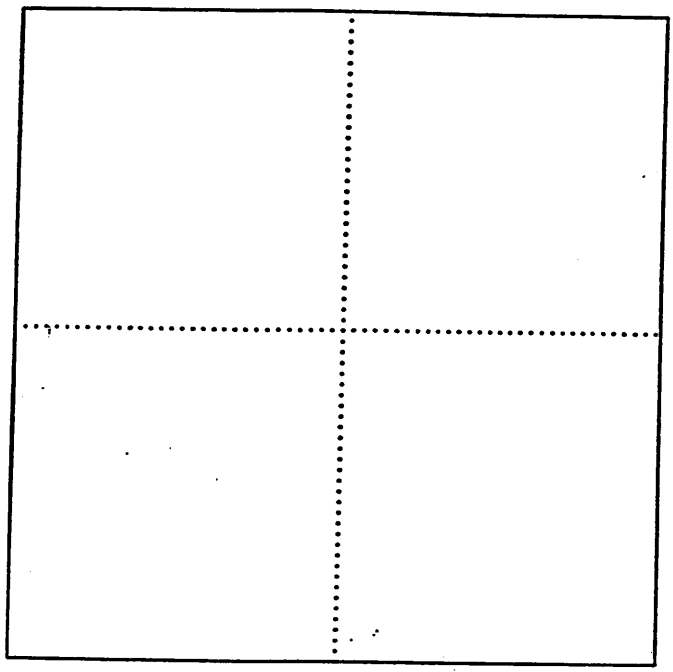
A: SE 1/4

B: NWNW

C: SE4SW4

D: W2W2SW4

E: S 1/2 NE 1/4
and
NE 1/4 NE 1/4



Exercise 4-B

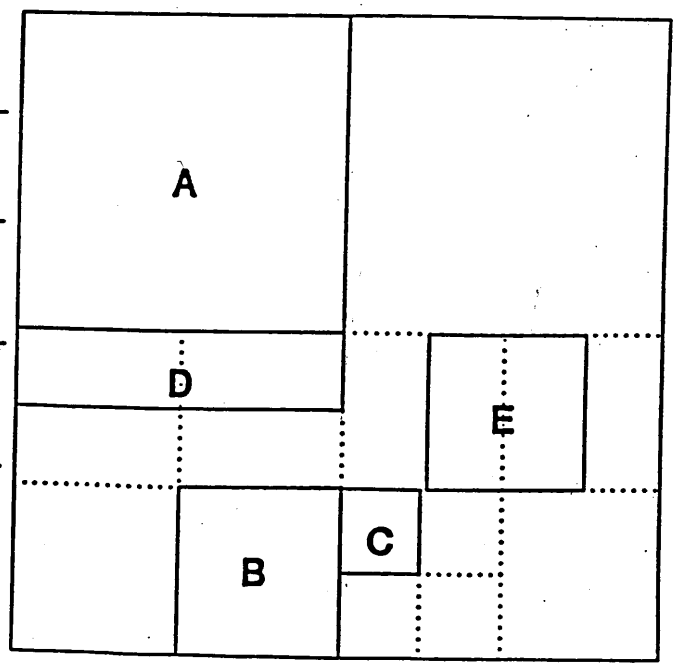
A: _____

B: _____

C: _____

D: _____

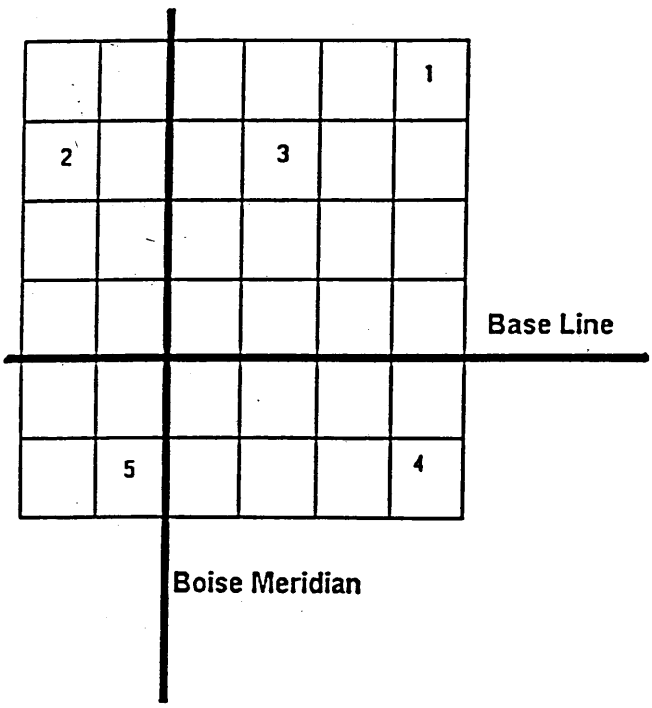
E: _____
and
_____



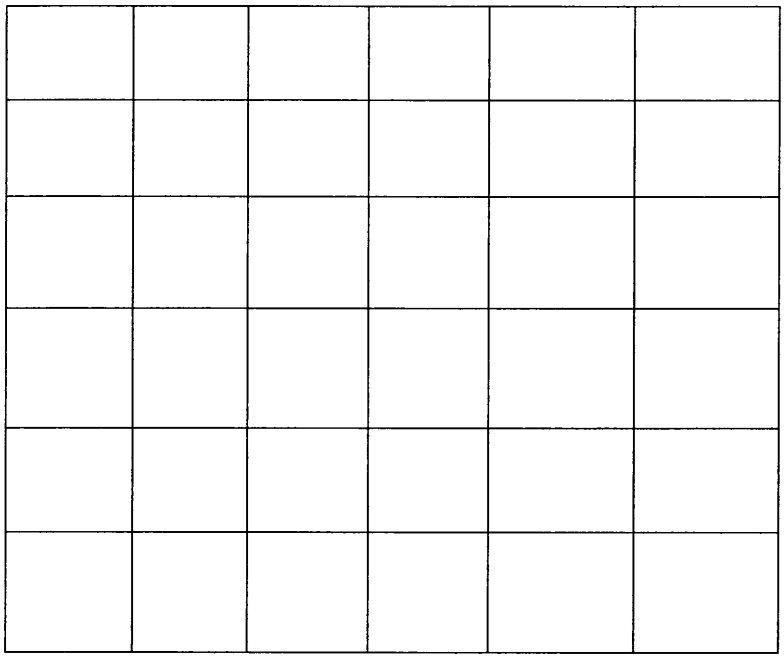
Replaces Exercise 4-A and 4-B

TOWNSHIP AND RANGE QUIZ

1. In the accompanying drawing, below, what township is labeled "1" _____
2. In the accompanying drawing, below, what township is labeled "2" _____
3. In the accompanying drawing, below, what township is labeled "3" _____
4. In the accompanying drawing, below, what township is labeled "4" _____
5. In the accompanying drawing, below, what township is labeled "5" _____



6. In the diagram below, label the sections by number as they occur in a standard township.



7. When one breaks a section into quarter sections are all four quarter sections supposed to be the same size?

_____

8. Are all sections supposed to be the same size?

If so, what size? _____

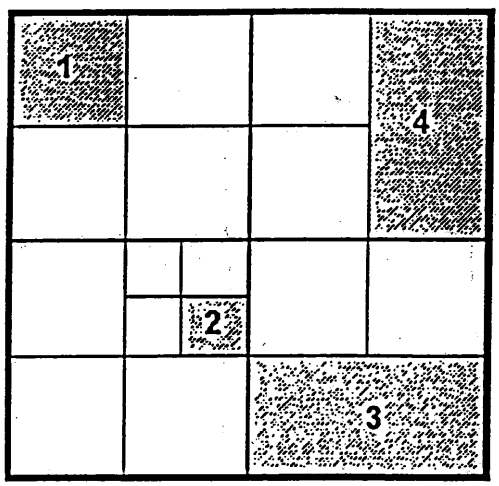
If not, why not? _____

_____

_____

9. Write a legal description for the tracts marked in the diagram below and calculate the acreage. (Hint: The area of this section is 640 acres.)

1. _____ _____ _____ _____ _____ _____ Acres = _____
2. _____ _____ _____ _____ _____ _____ Acres = _____
3. _____ _____ _____ _____ _____ _____ Acres = _____
4. _____ _____ _____ _____ _____ _____ Acres = _____



Section 14, T9N, R14E

4.5 Metes and Bounds Descriptions

The oldest form of surveying land is the metes and bounds system, in which land is identified by describing its boundaries. This system is from a time when property boundaries were set by a buyer and seller walking the perimeter of a property, establishing landmarks as they walked. A metes and bounds description has six parts:

1. A township and range reference
2. A starting monument
3. Directions from that monument to the parcel's point of beginning (POB)
4. Actual metes and bounds that start at the POB
5. Area of the parcel
6. Any exclusions or qualifiers

4.6 Bearings

Directions are usually given with bearings. Bearings combine names of directions (north, east, etc) with numbers. A typical bearing is "North 42˚ East". To find it, you start pointing due north, and then work your way in an easterly direction for 42 degrees. "South 88˚ West" is found by pointing due south, and then swinging 88 degrees in a west direction. A full circle has 360 degrees. Also, degrees can be broken down into minutes and seconds. Thus 5˚ 17' plus 2˚52' equals 7˚69', which is the same as 8˚09'. IC 50-1304 and IC 55-1911 require accuracy to be 1:5000 or better.

4.7 Distances

Distances are usually given in feet. Earlier measurements are sometimes listed in chains. One chain is equal to 66 feet. When you measure distances on a map, you must know its scale. Many plat maps are at a scale of "One inch equals 200 feet". This means that one inch on the map equals 200 feet on the ground. Many aerial photos are at 660 scale or one inch on the aerial equals 660 feet on the ground.

Six-sided rulers used to measure at different map scales, are themselves called scales. When you want to measure at 200 feet to the inch, you use the scale labeled "20". When you want to measure at one inch equals 100 feet, you use the "10" scale.

4.8 Typical Descriptions

A typical Metes and Bounds description follows:

A portion of the Northeast Quarter of Section 15, Township 8 North, Range 24 East, Boise Meridian, Lemhi County, Idaho, more particularly described as:

- Starting at the northeast corner of said Section 15, thence going N 89˚ 12'44" W 518.44 feet along the north line of said section;
- thence going S 1˚58'32" E 221.33 feet to a brass cap, the true Point of Beginning;
- thence going N 60˚ E 200 feet to a lava rock;
- thence going S 30˚ E 300 feet to a 5/8 inch diameter piece of rebar;
- thence going S 60˚ W 200 feet to a brass cap;
- thence going N 30˚ W 300 feet more or less to the Point of Beginning;
- Containing 1.38 acres more or less;
- Excluding a 30 foot right of way for Geertson Creek Road.

The first part of the description located you in the government survey system (Section 15, T8N, R24E); the second part told you exactly which monument you tie in (the northeast corner); the third part got you to the point of beginning (by two courses); the fourth part was the exterior metes and bounds (the 200, 300, 200, and 300 foot courses); the fifth part gave out the area (1.38 acres); and the sixth part named an exclusion to the parcel (the road).

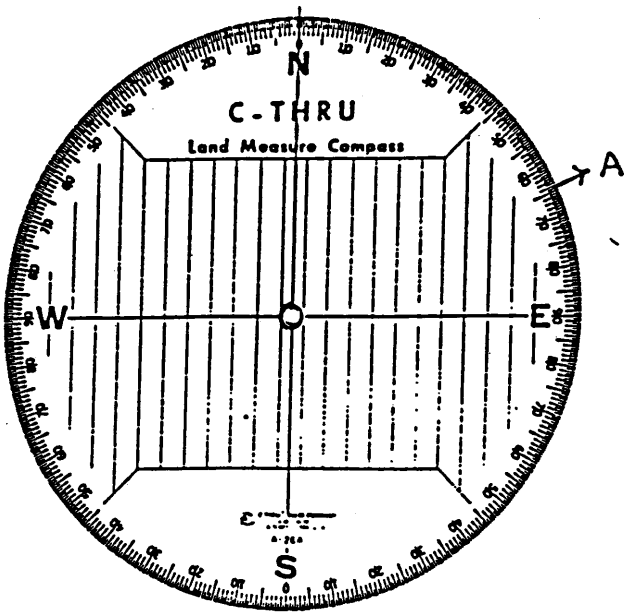
4.9 Tax Numbers

Tax numbers are used to simplify metes and bounds descriptions. As new metes and bounds parcels are created, the assessor assigns a new number. Tax numbering varies from county to county. The description above might have tax number 78-138 (for the 138th new description of 1978) or tax number 2543-6 (for the sixth new parcel “split” off the mother parcel number 2543); or number 08N24E150220 (an official parcel number).

4.10 Parcel Numbering

The standard system for numbering parcels within the counties, cities in sections, subdivided land in city and subdivided land in the county.

BEARINGS AND DISTANCES QUIZ



Exercise 4-C

A : N64°30'E

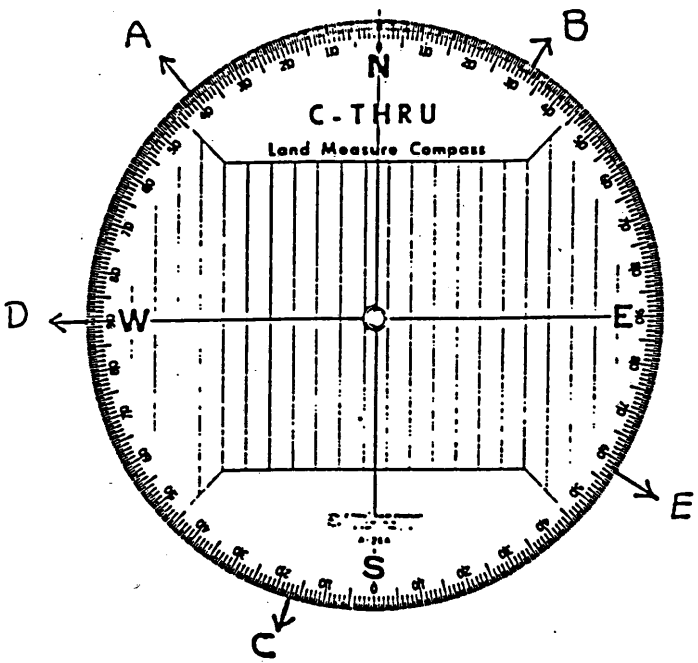
B : S10°W

C : N10°E

D : N85°W

E: S63°17'22"E

F : N0°E



Exercise 4-D

A :

B :

C :

D :

E :

Exercise 4-E

100 SCALE

_____ _____feet

_____ _____feet

_____ _____feet

1000 SCALE

_____ _____feet

_____ _____feet

_____ _____feet

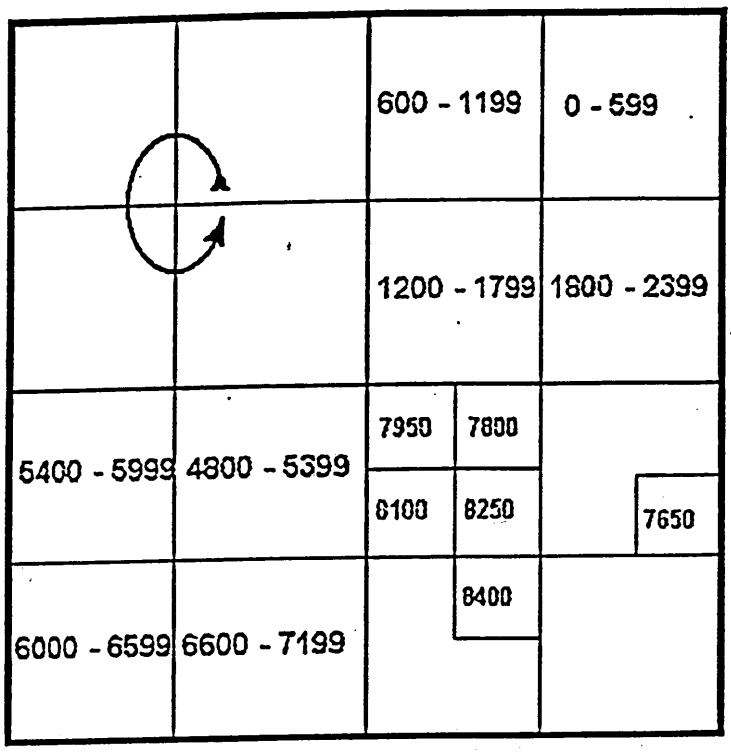
Section Land in County			
TWP	RGE	SEC	Number
XXX	XXX	XX	XXXX
05N	27E	25	6341

Section Land in City			
CITY Letter	ZEROS	SEC	Number
X	XXXX	XXX	XXXX
B	0000	034	7827

Subdivided Land in City				
CITY Letter	SUBDIVISION	BLOCK	LOT	W/C
X	XXXX	XXX	XXX	X
L	8820	004	023	A

Subdivided Land in County				
ZERO	SUBDIVISION	BLOCK	LOT	WC
X	XXXX	XXX	XXX	X
0	1620	008		

PARCEL NUMBERING SAMPLE



PARCEL NUMBERING EXERCISE

Check whether the following parcel numbers are urban, rural, subdivided or not.

Parcel Number	City		County			
	Subdivided	Not Subdivided	Subdivided	Not Subdivided	Metes/bounds	TWP/RGE
C27200030040						
12S23E145420						
0122000A003B						
M00000173642						

Lot and Block Descriptions

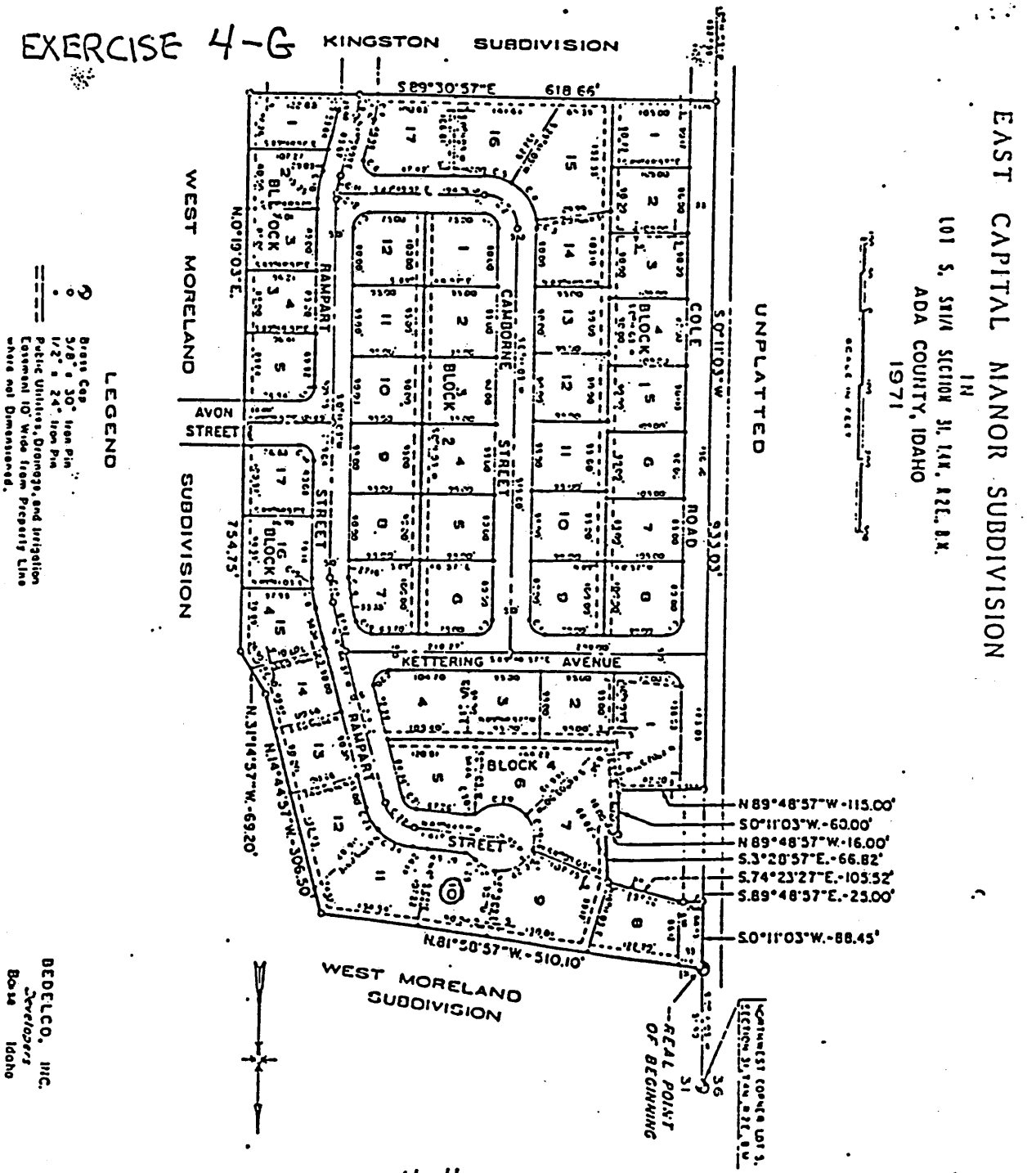
The last type of legal descriptions is the lot and block description, used in subdivisions and townsites. They are a shorthand way of describing a metes and bounds parcel. Before you can use this type of description, you must file a subdivision plat and have it approved by the county planning and zoning commission, the county surveyor, and the county commissioners.

A typical lot and block description is, "Lot 10 of Block 4 of East Capital Manor Subdivision, Ada County, Idaho". Exercise 4-G shows that subdivision's recorded plat. Find this parcel.

Now, put an "A" in Lot 2, Block 3; and a "B" in Lot 3, Block 2.

About the only thing that can go wrong in a subdivision is to confuse one block's lots with another's--so be careful!!

EXERCISE 4-G



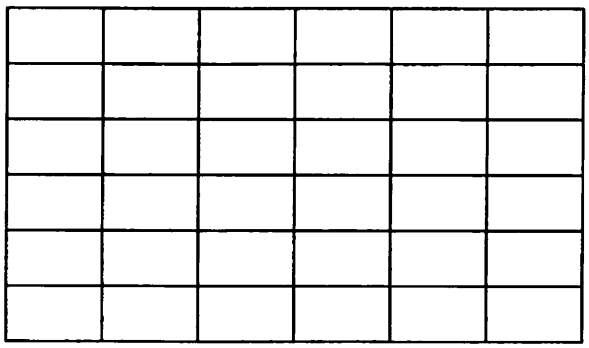
Review
Section 4
Legal Descriptions

1. What are the three types of legal descriptions used in appraisal?

2. In a government survey, lines running east-west are called _____ . And lines running north-south are called _____ .

3. There are _____ Sq. Ft in one acre.

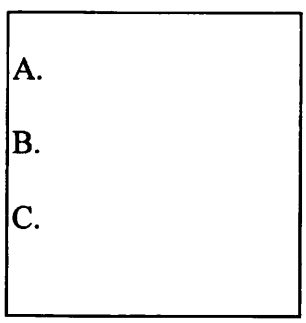
4. Identify the following sections 3,22 and 30 in the following township.



5. What are bearings?

6. One chain is equal to _____ feet.

7. List the area described in A, B, and C on the following section.



PRINCIPLES OF PROPERTY VALUATION

SECTION FIVE

SITE VALUATION

LEARNING OBJECTIVES

On completing this section the student should:

- ✓ Understand how data is collected and analyzed for the valuation of land.
- ✓ Know how to apply three approaches to site valuation.
- ✓ Be able to calculate a site value using the sales comparison method.

LEARNING OBJECTIVES

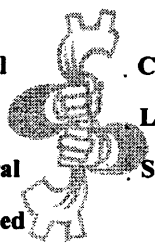
SECTION FIVE

- ✓**Understand how data is collected and analyzed for the valuation of land.**
- ✓**Apply 3 approaches to site property.**
- ✓**Be able to calculate a site value using the sales comparison method.**

SITE

- Land that is improved and ready to be used for a specific purpose.

LAND CLASSIFICATION



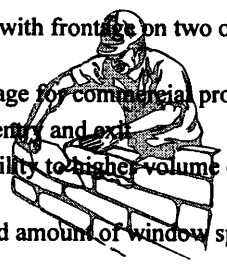
- **Residential**
- **Industrial**
- **Agricultural**
- **Undeveloped**
- **Commercial**
- **Land in transition**
- **Special purpose**

FRONTAGE

- **The measured distance along which a property abuts a street, stream, railroad or other public way.**

CORNER INFLUENCE

- Properties with frontage on two or more streets.
- An advantage for commercial property:
  - ease of entry and exit
  - accessibility to higher volume of street traffic
  - increased amount of window space



WIDTH

- Width is normally measured along the front of a parcel.
  - Normal shaped lots width and frontage are the same
  - Irregular shaped lots width can be an average measurement.

DEPTH

- **The distance from the front to the rear line of a parcel.**

SHAPE

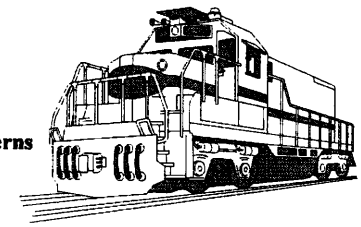
- **The outer dimensions of a parcel**
- **An odd shape can have a negative effect on value**

TOPOGRAPHY

- **Physical features of a site**
- **Includes:**
  - **slope**
  - **contour**
  - **grading**
  - **trees**
  - **soil conditions**

OFF SITE IMPROVEMENTS

- **Includes**
  - **streets**
  - **sidewalks**
  - **lighting**
  - **traffic patterns**



Section 5
Site Valuation

5.1 Introduction

In the appraisal of property, there are two distinct entities to be considered; land or the "non-wasting" portion of property, and improvements or "wasting" portion. In order to accurately estimate the value of a parcel for the assessment roll, land and improvements are appraised separately. This allows the trends and factors effecting both to be studied individually. This section will focus on the collection and analysis of the data required for land valuation, emphasizing the sales comparison approach.

A site is land that is improved so that it is ready to be used for a specific purpose. A site will have developments both on and off-site that make it suitable for a particular use. Off-site improvements include water, drainage, and sewer systems, utility lines, and access to roads. On-site improvements may include landscaping, and supporting structures.

As previously discussed in Section 4, the first step in valuation is identification of the property. The appraiser must know its size, location, attributes and physical characteristics. Once the land has been properly identified and described an analysis can be made. This analysis includes site-specific data, the trends and factors influencing value (PEPS) and a physical inventory of the site.

Once the site is analyzed, the appraiser must classify the land. Land may be classified as residential, commercial, industrial, land in transition, agricultural, special-purpose, or undeveloped. After classification is made, the appraiser can tentatively determine the site's highest and best use.

5.2 Site Analysis

Political, economic, physical characteristics, and social factors have a significant effect on the value of property. Understanding the nature and extent of these factors will assist the appraiser in developing the regional, city, neighborhood and site data, and in selecting the appropriate valuation method.

We have all heard the saying that the three most important factors in the value of real estate is location, location, location. While location is extremely significant, there are other physical characteristics that influence value including;

Frontage is the measured distance along which a property abuts a street, stream, railroad or other public way. The frontage may or may not be the same width of the property because of an irregular shape. Frontages may also exist on more than one side. The measurement is usually expressed in front feet.

Corner influence is usually seen as an advantage for commercial properties in that it provides a greater ease of entry and exit, accessibility to higher volume of street traffic and an increased amount of window space. Properties with frontages on two or more streets may have a higher or lower unit value than neighboring properties with a frontage on one street.

Width is normally measured along the front of a parcel. With normal shaped lots, the width and frontage are the same; with irregular-shaped lots, width can be an average measurement either larger or smaller than the frontage.

Depth is the distance from the front to the rear line of a parcel. Depth adjustments are important when land is appraised on a front foot basis. Taking into consideration that the front value of land will be higher and that the value diminishes with depth, appraisers use a depth table to determine the scaled value.

Shape has a direct relationship to its value. The effect that an unusual shape has on value depends on its probable use. For example, an odd shaped parcel may be appropriate for a dwelling, but unacceptable for certain types of commercial or industrial properties.

Topography is the physical features of a site, such as slope, contour, grading, trees and soil conditions. Sites may differ in value due to these physical characteristics. For example, steep slopes may also impede building construction.

The value of a site depends a great deal on the types and conditions of the ***off-site improvements***, such as streets, sidewalks, lighting and traffic patterns. For instance, street width is important to commercial and industrial property for transportation needs. The improvements on surrounding parcels may also effect value.

5.3 Land Valuation Methods

The most reliable way to value land is by the sales comparison method. When few sales are available, however, or when value indications produced need support, other procedures are used. The six recognized procedures used to obtain land value are: sales comparison, allocation, abstraction, development, income or capitalization of ground rent, and land residual capitalization method. In this course we will focus on the three most frequently used methods of site valuation: Sales Comparison, Allocation (used for unique parcels) and the Capitalization of ground rent.

5.4 Sales Comparison Method (Market Approach)

The sales comparison or market data method of valuing land requires only two steps; 1. Discover and verify sales of comparable land that has recently sold; 2. Adjust the sales to the subject property.

1. Discovering and Verifying Sales

When researching comparable sales, its necessary to identify and list all pertinent information connected with the comparable sale. This will help identify the sales that fit the standards related to a fair market transaction; or whether there are limiting conditions that affect the sale price of the comparable. Among the data to be recorded are:

Names of grantor and grantee (buyer and seller)

Verified Sales Price

Date of Sale

Description of property (includes legal description and site analysis)

Terms of Sale

Zoning, potential for change, allowable density, surrounding use

It is necessary to build and maintain an up-to-date file system of land sales. Sources of this type of information include:

Buyers	Sellers
Brokers	Appraisers
Newspaper Reports	Multiple Listing Services

2. Adjusting Sales

For appraisers, the two principle applications of the sales comparison approach in land valuation are : the units of comparison and the base lot method.

5.5 Units of Comparison

In applying the units of comparison method, the appraiser will first stratify the jurisdiction by market (geo-economic) area and then by zoning or use types. Once this grouping process has been completed, an average or typical per unit value for each stratum is found. The favored method for determining the average or typical value is to calculate the median or mean sale price per unit. The median is preferable to use at times when there are few sales within the strata or there exists an extreme in value that will skew the mean average.

Typical Units of Comparison

Price per Unit (apartments)
Price per Sq. Foot (warehouses, industries)
Price per guest room (hotels, motels)
Total property price and price per square foot of gross living area
Price per seat (theaters)
Price per front foot (vacant land)
Price per round or membership (golf courses)

When not enough sales are available for analysis, the appraiser can combine similar strata, adding older sales adjusted for time, or using residual land values (sale price less building value). When comparative unit values are established for each stratum, they are refined to the individual parcel level. One method of doing this is to figure unit values for a particular block face. This will address most land values in an area, leaving only minor adjustments for individual parcels.

5.6 Base-Lot Method

In the base-lot method the assessor establishes a value of the standard or "base" parcel in each stratum through a traditional sales comparison analysis. The base lot could be an actual lot or a hypothetical lot used to serve as a benchmark in establishing values for individual parcels.
The base-lot method assumes that the site characteristics are typically similar for most of the lots and the primary factors in land values are things such as size, view and traffic. Suitable percentage adjustments for these factors will have already been established through paired sales analysis of other market research. The time adjusted sale price for each comparable is adjusted to the base lot using the percentage adjustment.

5.7 Adjustments

No two properties are alike. They might have the same size and physical characteristics, but each parcel has a unique location that is likely to create a difference in value. The typical differences that require adjustments are:

1. Time of Sale
2. Atypical financing
3. Location
4. Physical characteristics

Appraisers design the adjustment process to figure what the comparable property would have sold for if the differences between it and the subject property did not exist. The sale price of the comparable property is adjusted to account for as many of its differences from the subject property as possible. **Adjustments are always made to the comparable (sale) property.**

5.8 Adjustment Techniques

Adjustments are made to the sale price by; adding or subtracting dollars, adding or subtracting percentages or multiplying percentages. The major adjustments made of the sale properties include the date of sale, atypical financing, and physical characteristics or location. When adjustments are made using lump-sum dollar amounts; the order in which the adjustments are made will not affect the final adjusted sale price. When percentage amounts are being used, it is necessary to make adjustments in a certain order.

Example: Adjustments

A residential lot sold one year ago for $30,000. The market value for this type of property has increased 10% during the past year. Lot Characteristics; size 100 x 125, no alley, the street is paved, with concrete curb, gutter and sidewalks.

A lot on the next street is to be valued. The sale above is considered a comparable sale. The subject property is the same size as the lot above, but there is an alley and the street is gravel with no curb, gutter, or sidewalks.

In this example, the market data analysis indicates that the street improvements are worth $4500, the alley influence $500 and the time of sale $3,000. With this information in hand, a couple of adjustments should be made to the comparable sale to align it with the subject property. The first is a time adjustment (comparable sale of $30,000 x 10% = $3,000). The street improvements should be deducted (-$4,500) and the value of the alley, considered a positive influence, is added at $500. The net result is an indicated value of $29,000. This is one indicator for the value of the subject property. If possible, several comparable sales should be reviewed and adjusted, if necessary, to get a strong indication of the subject property's value.

The market value of the subject is determined after selecting several comparable sales and making the appropriate adjustments. The greatest weight is normally to be given to the sale(s) requiring the least adjustments.

5.9 Allocation Method

The allocation method of site valuation is helpful when there are no sales available for comparison. This method uses the economic principle of balance which states that there is a proportional relationship among the four agents of production. Land being one of the agents of production should comprise a part of the total property value. Under this concept, a portion of the total property value is assigned to the land. This portion is determined using the sales of improved properties and are derived from: site values in previous years, land-to-improvement ratios for comparable properties and analysis of new construction on similarly classified sites. For example, in a given area it has been determined that sites represent 20 percent of the total property value, the allocation is 1:4- one part land to four parts improvements. For a $90,000 property, land represents one-fifth or 20 percent, therefore:

20% x 90,000= $18,000

5.10 Capitalization of Ground Rent Method (Income Approach)

The capitalization of ground rent method of site valuation utilizes the income approach to valuation and is based on the premise that value is the present worth of future benefits. This method is most relevant to farm and commercial land leased on a net basis where no vacant land sales are available to process the sales comparison approach. If there is market data available on a particular use to estimate the income potential, then the income can be capitalized into an indication of value. The formula that is used for direct capitalization is:

Income ÷ Rate = Value

Assume for example that a site located in downtown was recently leased on a net basis at a rate of $10,000 per year for ten years. If the appropriate capitalization rate is 10 percent, then the indicated land value is:

$10,000/.10= $100,000

The capitalization rate to be used should reflect current market analysis. The preferred method of determining the direct capitalization rate is through market abstraction. Leases that are outdated do not represent the current market and therefore should not be used.

Land valuation is an essential component in determining the total value of real estate. It requires a detailed site analysis and an understanding of how trends and factors influence value. Both site analysis and valuation employ the principles and techniques pertinent to the approaches to value, particularly the sales comparison approach.

Site Valuation Problem
Sales Comparison Technique

Subject Description:

A level residential lot located at 520 Poplar Avenue measures 75' x 180', or 13,500 sq. ft. (*For this problem the narrow measurement should always be considered the frontage.)* Drainage and soil conditions are average requiring no special landscaping for this level site when improvements are constructed.

Adjustments:

Based on your analysis of sales and other neighborhood information you decide that the following adjustments are reflected by the market:

Time (date of sale)	6% increase per year
Landscaping Required	worth 7% more than level
Location (two blocks east of subject)	worth 5% more
Location (two blocks west of subject)	worth 5% less

The following are verified, arms-length, sales comparable to the subject:

Sale #1
312 Pine Ave, two blocks east of the subject property on a lot that measures 90' x 180', or 16,200 sq. ft., and qualifies as having an excellent and level building site. The sale price one year ago was $28,500.

Sale #2
516 Cottonwood Way, on a 75' x 180', or 13,500 sq. ft. Lot with topography problems that will require special landscaping if an improvement is constructed. The sale price last month was $24,000.

Sale #3
707 Chokecherry Ave., two blocks west of the subject property on a lot measuring 100' x 160', or 16,000 sq. ft. This lot will also require special landscaping. Its sale price 20 months ago was $25,500.

What should you select as the best unit(s) of comparison?

What is your estimate of the market value of this site using the sales comparison technique? (Please use the form on the next page to set up a sales comparison grid analysis in reaching your opinion of value.)

Site Valuation Problem Form
Sales Comparison Technique

For a residential lot the most common units of comparison are square feet and front feet.

Sales Data:

Property ID	Lot Size	Area (sq.ft.)	Sale Price	Price/FF	Price/SF
Subject					
Sale #1					
Sale #2					
Sale #3					

Time Adjustment:
(Note, time adjustments are always made first. The nets of the other adjustments are then applied to the time-adjusted selling prices.) ____% per year/ 12 months= ____% per month.

	Adj. Factor	Adj'd Sale Price	Adj'd FF Value	Adj'd SF Value
Sale #1				
Sale #2				
Sale #3				

Other Adjustments:

	Landscaping % ±	**Location % ±**	**Net Adj'd % ±**	**Net Adj'd Price**	**Net Adj'd FF Value**	**Net Adj'd SF Value**
Sale #1						
Sale #2						
Sale #3						

Your estimated values for the subject property using multiple units of comparison are:
Net Adjusted Price
Front Foot Method
Square Foot Method

Final Value Estimate:

Review
Section 5
Site Valuation

1. Land depreciates - True or False?

2. List some physical characteristics that influence value.

3. The most reliable way to value land is the _____ method.

4. Given the following information, calculate the value of the subject site using the adjustment method.

> A residential lot sold 6 months ago for $70,000. The market value for this type of lot has increased 10% during the past year. It is a corner lot, located on a paved street with curbs and gutter and sidewalks. You have identified a drainage problem on the comparable site.
>
> The subject lot is located on the next street. The above sale is considered to be comparable with the following adjustments. There are no street improvements on the subject lot (no curbs, gutters or sidewalks).
>
> Adjustments are 5% for drainage, and 5% for street improvements.

PRINCIPLES OF PROPERTY VALUATION

SECTION SIX

THE COST APPROACH

LEARNING OBJECTIVES

On completing this section the student should:

- ✓ Understand the principle of substitution and the Cost Approach
- ✓ Know the formula used in the cost approach
- ✓ Know the methods used to estimate replacement cost new
- ✓ Be familiar with cost manuals
- ✓ Compute a local cost modifier

LEARNING OBJECTIVES SECTION SIX

- Understand the principle of substitution as applied to the cost approach
- Know the formula used in the cost approach
- Understand the methods used to estimate replacement cost new
- Become familiar with cost manuals and how they are used
- Be able to compute a Local Cost Modifier

SUBSTITUTION

"A well informed, reasonable purchaser will tend to pay no more for a property than the cost of acquiring an acceptable substitute with similar utility"

Cost Approach

Formula:

$$LV + (RCN\text{-}D) = V$$

Direct Costs

The expenditures for labor and materials used in construction.

- Building permits
- Labor
- Material storage
- Contractor profit and overhead
- Materials, products, equipment
- Utility costs (power, etc)
- Performance bonds

Indirect Costs

Expenditures or allowances necessary but not always included in the contract

- Architectural and engineering fees
- Administrative expenses
- Appraisal, consulting fees
- Taxes during construction
- Interest payments during construction
- Advertising and sales expenses
- Construction loan fees
- Title and legal expenses

Reproduction Cost

The cost to produce an exact replica of a building or improvement using the same or very similar materials, design, and workmanship

Replacement Cost

The cost to produce a building or improvement having the same utility, but using modern materials, design and workmanship.

Quantity Survey Method

Description	Material	Labor	Total
Concrete blocks: 98 per tier x 12 tiers = 1,176 x $1.01	$1190.70		$1190.70
Labor: 1,176 x $.88		$1034.88	1034.88
Gable ends: 400 blocks x $1.01	405.00		405.00
Labor: 400 blocks x $ .88		352.00	352.00
Steel rods: 364 linear feet x $.45	163.80		163.80
Labor: 364 linear feet x $.11		40.04	40.04
Concrete lintel: 2.13 cubic yards x $90.00	171.70		171.70
Labor:		22.50	22.50
Mortar: 1576 blocks x $.23	354.60		354.60
Labor: forms removal		112.50	112.50

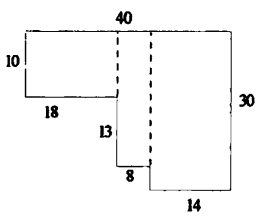
Unit-In-Place Method

Cost estimate for industrial property
Occupancy: industrial manufacturing

Class: A fireproof steel frame — Cost rank: 2.0 Average
Effective age: 1 year — Condition: 6.0 Excellent
Number of stories: 10 — Average story height: 27.0
Floor area: 113,270 — Cost as of 2/95

Component	Units	Cost	Replacement Cost new
Excavation/site prep			
Site prep	113,270	$0.17	$19,256
Foundation			
Concrete	113,270	1.90	215,213
Frame			
Steel	113,270	5.81	658,099
Floor structure			
Concrete on ground	113,270	3.04	344,341
Floor cover			
Hardener and sealer	113,270	0.52	58,900
Terrazzo	1,560	6.15	9,594
Vinyl composition tile	7,100	1.26	8,946
Subtotal			77,440

Calculating Square Footage



A 10 x 18= 180
B 23 x 8= 184
C 30 x 14= 420
Sq Ft. = 784

Calculating a Local Cost Modifier

1. Select a representative sample from recent home sales (excluding atypical sales)
2. Determine sales price of improvements (total sales price - estimated land value) SP - LV = IV
3. Develop a cost estimate for the improvements of each sale using cost manual
4. Divide the total sales price of improvements by the total of the cost estimates from the manual.

Local Cost Modifier

Example

Sale #	Sales Price	Estimated Land Value	Sales Price of Improvements	Cost Factor Estimate
1	$75,000	$15,000	$60,000	$60,500
2	78,000	14,000	64,000	63,680
3	110,000	22,000	88,000	84,920
4	81,000	16,000	65,000	64,800
44	79,500	13,500	66,000	64,500
45	85,000	18,500	66,500	65,000
	$3,510,000	$ 702,000	$ 2,808,000	$2,705,900

2,808,000 = 1.037 LCM
2,705,900

Steps to the Cost Approach

1. Estimate land value
2. Estimate the cost new of existing improvements
3. Calculate depreciation
4. Calculate the depreciated cost
5. Calculate the total property value

$$LV + (RCN\text{-}D) = V$$

Section Six
The Cost Approach

6.1 Introduction

The cost approach is based on the economic principle of substitution which says that a well informed, reasonable purchaser will tend to pay no more for a property than the cost of acquiring an acceptable substitute with similar utility. The cost approach is often referred to as the summation approach because property value is the sum of the land value and the depreciated value of improvements. The formula used in the cost approach is:

$$LV + (RCN\text{-}D) = V$$

The cost approach requires estimates of land value, the current cost of constructing the improvements and accrued depreciation. The land value (*LV*) reflects the value of the site as if vacant and available to be developed to its highest and best use (see Section 5). Depreciation is subtracted from the current construction costs (*RCN-D*) to obtain an estimate of the improvement value. The cost approach, when applied correctly can yield consistent results, however it is most useful for newer properties because construction costs are easier to estimate and there is less adjustment made for depreciation.

6.2 Data Required

In addition to the construction cost and market data, the cost approach requires descriptive data on the improvements being appraised. The appraiser should conduct a physical inspection of both the interior and exterior, land and improvements. A typical survey would include:

Designed use	Dimensions and areas	Plumbing and baths
Foundation	Interior finish	Year built and effective age
Basements	Framing	Number of stories or height
Exterior walls	Roofs	Electrical service
Garages and parking		

6.3 Cost Estimation

Cost consists of all the labor, materials and expenditures required to complete the construction of the structure. Costs are often classified as either direct or indirect.

Direct costs (also referred to as hard costs) are expenditures for the labor and materials used in the construction of improvements. Direct costs include:

- Building permits
- Labor used in construction
- Materials storage
- Contractors profit and overhead
- Materials, products, equipment
- Security during construction
- Utility costs (power, etc)
- Performance bonds

Indirect costs (or soft costs) are expenditures or allowances that are necessary for construction, but are not generally included in the construction contract. These include but are not limited to:

- Architectural and engineering fees
- Title and legal expenses
- Appraisal, consulting fees
- Taxes during construction
- Interest payments during construction
- Administrative expenses
- Insurance
- Construction loan fees
- Advertising and sales expenses

Cost is estimated based on either reproduction or replacement cost. *Reproduction cost* is the cost of producing an exact replica of a building or improvement using the same or very similar materials, design, and workmanship. Reproduction costs are most often used on unique properties where the value is associated with the design of the building and the materials used. The State Capital building is an example of a unique property where a cost to reproduce would likely be used.

Replacement cost is the cost of producing a building or improvement having the same utility, but using modern materials, design and workmanship. Most appraisal assignments use the replacement cost when determining the value of improvements. When replacement cost is used, functional obsolescence (a form of depreciation) is generally eliminated.

6.7 Methods of Estimating Costs

The four methods used in estimating costs on improvements include; quantity survey, unit-in-place, square foot and trended original cost.

Quantity survey method. Also referred to as the engineering breakdown method takes into consideration all the components of constructing a building from the number of bricks to the labor involved in construction. The method will produce the most detailed cost estimate, however, it is generally too time consuming and expensive for ad valorem appraisal work. The following table provides an example of how costs are calculated using the quantity survey method.

Quantity Survey Method

Description	Material	Labor	Total
Concrete blocks: 98 per tier x 12 tiers = 1,176 x $1.01	$1187.76		$1187.76
Labor: 1,176 x $.88	.....	$1034.88	1034.88
Gable ends: 400 blocks x $1.01	404.00		404.00
Labor: 400 blocks x $ .88		352.00	352.00
Steel rods: 364 linear feet x $.45	163.80	163.80	
Labor: 364 linear feet x $.11		40.04	40.04
Concrete lintel: 2.13 cubic yards x $90.00	191.70		191.70
Labor:		22.50	22.50
Mortar: 1576 blocks x $.23	362.48		362.48
Labor: forms removal		112.50	112.50

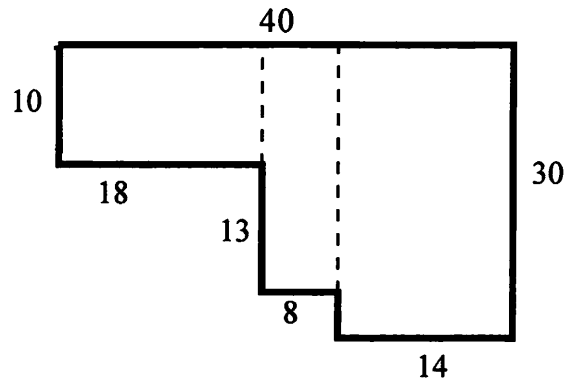
Unit-in-Place method. This method segregates all the units of construction (e.g. plumbing, electrical, heating) and computes a cost estimate for each. This method is most frequently used by architects and others requiring a specific degree of accuracy.

Unit-In-Place Method

Cost estimate for industrial property

Floor area: 113,270

Component	Units	Cost	Replacement Cost new
Excavation/site prep			
Site prep	113,270	$0.17	$19,256
Foundation			
Concrete	113,270	1.90	215,213
Frame			
Steel	113,270	5.81	658,099
Floor structure			
Concrete on ground	113,270	3.04	344,341
Floor cover			
Hardener and sealer	113,270	0.52	58,900
Terrazzo	1,560	6.15	9,594
Vinyl composition tile	7,100	1.26	8,946
Subtotal			77,440
Total			1,314,349



Square foot or Comparative method. Construction costs are reduced to units per square foot of floor area. The subject construction is compared to the most comparable standard building. Adjustments are made to compensate for the differences between the standard building and the subject. This is the method most widely used by appraisers to estimate cost new, for standard construction types and on both residential and commercial improvements. Accurately measuring and calculating the square footage of the improvement is essential. Square footage is calculated in the following manner:

10 x 18= 180
23 x 8= 184
30 x 14= 420
Sq Ft. = 784

Trended Original Cost Method. The trended original cost is also referred to as the trended-investment, trended cost or indexed cost. This method considers the actual total cost at the time of construction adjusted or trended to reflect current costs. Costs at the time of construction are sometimes referred to as original or historical cost.(Historic cost is always the cost to the first buyer. Original cost is the cost to the current owner which may or may not be the historic cost.) The trended method is most frequently used to value personal property and improvements for which comparable cost information is not available, as well as structures that are too large to reasonably establish cost based on the quantity survey or unit-in-place method.

6.8 Cost Manuals

The best method for gathering cost information is to make a thorough analysis of actual construction of comparable properties that have taken place in the area of the subject property. However, disclosure problems and the lack of new construction in the area often prevents the appraiser from developing accurate cost surveys. In the absence of a local cost manual, there are several publications that provide cost and trend multipliers (See the end of this section for a bibliography of cost manuals).

Cost manuals are developed from actual market data. Direct cost of labor and materials are included as well as the indirect or soft costs, which are necessary for a finished product. Most published cost manuals will also be calibrated for specific geographic regions and base dates. Look at the following example from the Marshall and Swift cost manual. The local cost multiplier considers the geographic location, the time of construction, and the building class.

Example-Use of Cost Manuals

The replacement cost of an Eastern District brick apartment building built in April of 1994 was $1,000,000.
The multiplier under Class C built in 1994 is 1.095.
$1,000,000 multiplied by 1.095 is 1,095,000.
This would be the current replacement cost new as of October 1997.

EASTERN					
YEAR OF FORMER COST	CLASS A Fireproofed Steel Frame	CLASS B Frame	CLASS C Masonry Bearing Walls	CLASS D Wood Frame	CLASS E Metal Frame and Walls
OCT 1997	1.009	1.008	1.003	.999	1.009
JUL 1997	1.020	1.020	1.015	1.010	1.019
APR 1997	1.028	1.029	1.024	1.017	1.027
JAN 1997	1.031	1.033	1.029	1.027	1.029
OCT 1996	1.038	1.040	1.038	1.041	1.034
JUL 1996	1.047	1.049	1.046	1.052	1.042
APR 1996	1.048	1.049	1.045	1.051	1.044
JAN 1996	1.052	1.051	1.045	1.048	1.047
OCT 1995	1.058	1.056	1.050	1.052	1.054
JUL 1995	1.066	1.061	1.055	1.052	1.063
APR 1995	1.065	1.060	1.055	1.053	1.066
JAN 1995	1.075	1.072	1.065	1.063	1.077
OCT 1994	1.087	1.085	1.077	1.072	1.090
JUL 1994	1.092	1.090	1.082	1.073	1.094
APR 1994	1.105	1.103	**1.095***	1.096	1.105
JAN 1994	1.127	1.127	1.120	1.130	1.127

6.9 Local Cost Modifier

A Local Cost Modifier (LCM) is used to adjust the cost factors to localities and appraisal dates different from the published manual's base location and date. In developing an LCM, the following procedures are used.

1. Select a representative sample of recent new home sales from the local market area. *These sales should be typical of the current market and not reflective of abnormal discounts, unusual financing, or other nontypical influences.*

2. Determine the sales price of the improvements. The total sales price, less the estimated land value, equals the sales price of the improvements.

SP - LV = IV

3. Develop a cost estimate for the improvements of each sale using the cost factors indicated in the cost manual you are using (ie Marshall Swift).

4. Divide the total of the sales price of the improvements(removing any outliers) by the total for the cost estimates from the manual. The result is the Local Cost Modifier.

Sale #	Sales Price	Estimated Land Value	Sales Price of Improvements	Cost Factor Estimate
1	$75,000	$15,000	$60,000	$60,500
2	78,000	14,000	64,000	63,680
3	110,000	22,000	88,000	84,920
4	81,000	16,000	65,000	64,800
44	79,500	13,500	66,000	64,500
45	85,000	18,500	66,500	65,000
TOTALS	$3,510,000	$ 702,000	$ 2,808,000	$2,705,900

$$\frac{2,808,000}{2,705,900} = 1.038 \text{ LCM}$$

PROBLEM
Local Cost Modifier

Given the following information, compute the Local Cost Modifier:

Sale # Price	Total Sales	Estimated Land Value	Sales Price of Improvements	Replacement Cost/Manual
1	$85,000	$17,500		$64,200
2	92,000	18,400		70,250
3	89,300	20,000		66,500
4	55,600	12,500		45,400
5	78,400	16,500		58,700
6	81,200	14,000		64,200
7	86,200	17,500		65,300
8	88,400	18,500		67,400
9	87,200	19,000		64,900

6.10 Developing Local Cost Manuals

Local cost manuals are also used for determining value and have many advantages over third party manuals. The biggest advantage of the local cost manual is that it is calibrated very specifically to the local market. The disadvantage is that it requires a great deal of research and maintenance.

Designing a local cost manual includes the following steps: (1) determine the building types to be included, (2) determine typical building specifications for each model, (3) determine construction costs for each model at various size increments (4) determine the relationship between construction cost and size, (5) develop adjustments for variations from base specifications, (6) test the schedules by applying them to known building costs. For appraisal purposes, buildings are classified according to one or more of the following criteria:

1. ***Design types.*** Buildings are first classified on the basis of the use for which they are designed. The four basic design types are residential, commercial, industrial and rural. The square foot costs of a building varies considerably depending on the type. Two buildings may be identical in area, shape, quality, and type of construction but have different square-foot costs because of the differences in structural components or quality of finish detail. Each design type may have several subtypes.

Residential	Commercial	Industrial	Rural
Single family	Retail	Warehouses	Barns
Apartments	Supermarkets	Light industrial	Sheds
Condominiums	Office buildings	Heavy industrial	Grain elevators
Hotel-motel	Medical buildings		
	Restaurants		
	Hospitals		
	Theaters		

2. ***Construction types.*** Construction type refers to the structural characteristics of a building. The letters A, B, C, D, and S are frequently used in Marshall & Swift to designate five recognized structural types. These types may be identified by the following descriptions:

   Class A Structures-- Buildings have fireproofed structural steel frames carrying all wall, floor, and roof loads. Wall, floor, and roof structures are built of non-combustible materials.

   Class B Structures-- Buildings have fireproofed reinforced concrete frames carrying wall, floor, and roof loads. Wall floor, and roof structures are built of non-combustible materials.

   Class C Structures-- Buildings have exterior walls built of non-combustible material. Interior partitions and roof structures are built of combustible materials. Floor may be of concrete or wood frame.

   Class D Structures-- Buildings have wood or steel frames.

   Class S Structures-- Specialized buildings that do not fit in any of the above.

3. ***Quality Classes.*** Quality classes rank buildings according to the types of materials used and the quality of workmanship. If two buildings are of the same design, construction type, size and shape, and one has better materials and workmanship, it will have a higher square-foot cost.

4. ***Floor area.*** The fourth classification is floor area. Considering size only on a square-foot basis, a smaller building is more expensive than a larger building in an equivalent class. The reason for this is the amount of outside wall area required to enclose a building, which is usually expressed as a ratio of one lineal foot of enclosing wall to 10, 15, 20 or 30 feet of floor area enclosed.

5. *Building Shape*. The shape classification considers any cost differences as caused by variations in building outlines. The most economical building to construct is a square building. The greater the deviation from the square shape the higher the square foot unit cost of construction. This is an extension of the effect on cost per square foot of the ratio of lineal feet of wall to enclosed floor area. It also reflects the higher cost of constructing building corners. In addition, shape classification considers differences in cost of various types of roofs. The least costly is the flat roof; the most expensive is the steep-pitched, cut-up-roof with many ridges, valleys and dormers.

6.11 Calculating Value Using Cost Approach

The process of implementing the cost approach can be reduced to five basic steps:

Step One- *Estimate land value.*

As we have discussed in Section 5 of this manual, land value is most commonly calculated using one of three methods; sales comparison, allocation, or the capitalization of ground rent. The land value will, later be added to the adjusted value of improvements.

Step Two-*Estimate the present cost to replace or reproduce the existing improvements.*

The next step in the cost approach is to determine the cost of improvements. After a physical inspection of the property has been made, you will need to make the decision whether to calculate a reproduction or replacement cost new. Calculations will be completed using quantity survey, unit-in-place, square foot, or trended cost methods. When using a published cost manual, adjustments to the local market will be made using a local cost modifier.

Step Three-*Calculate depreciation*

We will discuss depreciation on the next section.

Step Four- *Find the depreciated cost*

The depreciated cost of the improvement is found by deducting the amount of depreciation from the replacement of reproduction cost new.

Step Five- *Calculate the Total Property Value*

The total property value is calculated by adding the total land value to the depreciated value of the improvements.

Residential Property Problem

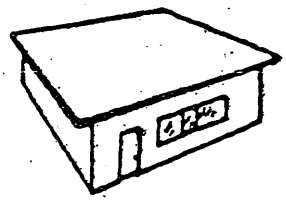
You are appraising a class four, single family residence. An analysis of new construction indicates that the local cost modifier is 1.04. Comparable land is selling at $3 a square foot. Calculate the replacement cost new for the property.

Specifications:

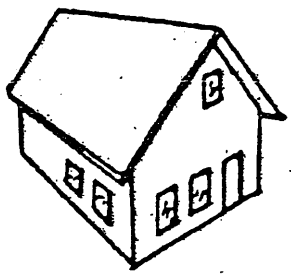
Quality Class –4

Age: 2 years old

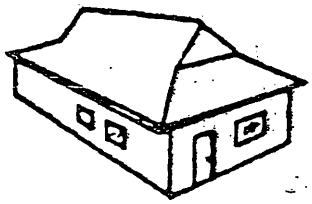
Dimensions: 1200 sq. feet main floor with living, dining area, kitchen, and half bath,
1080 sq. feet second floor with 3 bedrooms and two full baths
Exterior walls: Brick veneer front 220 S.F. face of first level only, remaining- standard siding
Heating: forced air gas
Fireplace: interior masonry brick, single raised hearth
Roofing: composite shingle, med. weight, 3 tab
Floor covering: carpet and vinyl
Plumbing: 2.5 baths- standard equipment, jetted tub, stall shower w/door, tile, Laundry tub
Interior components: basic unit, built-in microwave
Counter tops: tile and composite
Garage: 720 sq. feet. It is attached, unfinished, composite shingle, med. weight roof 3 tab, automatic door opener.



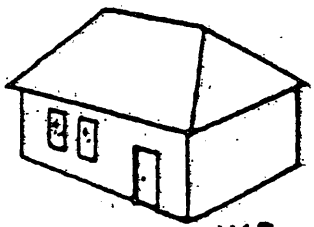
FLAT



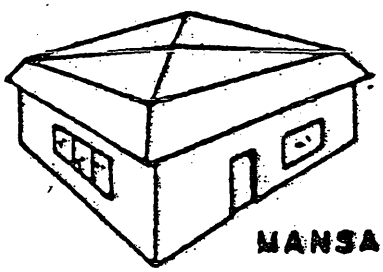
GABLE



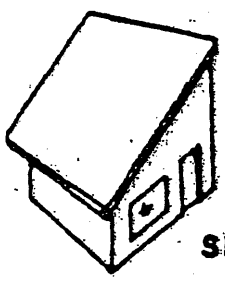
GABLE - HIP



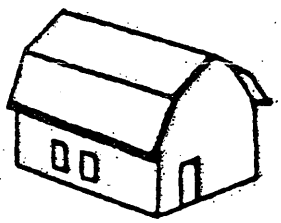
HIP



MANSARD



SHED



GAMBREL

Conventional

Class — 4 (cont.)

Item	Base Specifications
Foundation	Crawl space excavation; spread footing; continuous concrete or masonry perimeter wall; vent openings; access opening; interior piers; backfill and grading
Exterior Wall	Stud frame construction; insulation; sheathing and fair quality painted siding or equivalent construction; fair quality exterior doors and windows; some ornamental trim; may have optional items such as window boxes and shutters
Roof	Gable, hip, or comparable design; wood frame construction; ceiling joists; fair quality solid sheathing; medium weight composition shingle cover; ceiling insulation; gutters and downspouts
Floor	Wood frame construction with underpinning, subflooring, and underlayment; or concrete slab; fair quality hardwood flooring and finish or carpet; fair quality resilient cover in appropriate areas
Partitions	Wood frame construction; fair quality textured plaster or drywall with painted surfaces; fair quality doors, hardware and trim; painted or stained fair quality softwood millwork; similar material for ceiling cover and interior wall
Interior Components	Quantity of cabinetry proportionate to overall house size; cabinets of fair quality particleboard or plywood with hardwood veneer; fair quality plastic or tile countertop and backsplash; wardrobe and linen closets with shelving; fair quality hardware; narrow to moderate width stairway of straight design with softwood rail, and fair quality carpet or softwood tread cover
Electrical	Entry service; multi-circuit panel; nonmetallic sheathed cable wiring; adequate number of convenience outlets; fair quality light fixtures; range and dryer outlets
Plumbing	Rough-in plumbing costs only
Heating-Cooling	None in base specifications
Exterior Components	Fair quality open front entry porch, integrated with house design; concrete or wood steps and floor; extension of dwelling roof or separate roof structure adequate to cover entry area

Conventional

Class — 4

Cost Factor Tables

One Story Base Factors
(Floor Area — Cost Per Sq. Ft.)

	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600	1,700	1,800	1,900
0	$66.45	62.63	59.66	57.29	55.35	53.73	52.36	51.18	50.16	49.27	48.49	47.79	47.16
10	66.02	62.30	59.40	57.08	55.17	53.58	52.23	51.07	50.07	49.19	48.41	47.72	47.10
20	65.60	61.98	59.15	56.87	55.00	53.43	52.11	50.97	49.98	49.11	48.34	47.66	47.04
30	65.20	61.67	58.90	56.67	54.83	53.29	51.98	50.86	49.88	49.03	48.27	47.59	46.99
40	64.80	61.36	58.65	56.47	54.66	53.15	51.86	50.76	49.79	48.95	48.20	47.53	46.93
50	64.42	61.06	58.41	56.27	54.50	53.01	51.75	50.65	49.70	48.87	48.13	47.47	46.87
60	64.04	60.77	58.18	56.08	54.34	52.88	51.63	50.55	49.61	48.79	48.06	47.40	46.82
70	63.67	60.48	57.95	55.89	54.18	52.74	51.52	50.45	49.53	48.71	47.99	47.34	46.76
80	63.32	60.20	57.73	55.71	54.03	52.61	51.40	50.36	49.44	48.64	47.92	47.28	46.71
90	62.97	59.93	57.50	55.52	53.88	52.48	51.29	50.26	49.36	48.56	47.85	47.22	46.65

	2,000	2,100	2,200	2,300	2,400	2,500
0	$46.60	46.09	45.63	45.21	44.82	44.46
10	46.55	46.04	45.58	45.16	44.78	44.43
20	46.49	45.99	45.54	45.13	44.74	44.39
30	46.44	45.95	45.50	45.09	44.71	44.36
40	46.39	45.90	45.45	45.05	44.67	44.33
50	46.34	45.85	45.41	45.01	44.64	44.29
60	46.29	45.81	45.37	44.97	44.60	44.26
70	46.24	45.76	45.33	44.93	44.57	44.23
80	46.19	45.72	45.29	44.89	44.53	44.20
90	46.14	45.67	45.25	44.86	44.50	44.16

Second Floor Factors
(Floor Area — Cost Per Sq. Ft.)

	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600
0	$44.13	41.59	39.90	38.69	37.78	37.08	36.51	36.05	35.67	35.34	35.06	34.82	34.61
10	43.82	41.39	39.76	38.59	37.70	37.02	36.46	36.01	35.63	35.31	35.04	34.80	34.59
20	43.52	41.20	39.62	38.49	37.63	36.96	36.41	35.97	35.60	35.28	35.01	34.78	34.57
30	43.24	41.01	39.49	38.39	37.55	36.90	36.37	35.93	35.57	35.26	34.99	34.76	34.55
40	42.97	40.84	39.37	38.30	37.48	36.84	36.32	35.89	35.53	35.23	34.96	34.73	34.53
50	42.72	40.67	39.25	38.21	37.41	36.78	36.27	35.85	35.50	35.20	34.94	34.71	34.52
60	42.47	40.50	39.13	38.12	37.34	36.73	36.23	35.81	35.47	35.17	34.92	34.69	34.50
70	42.24	40.34	39.01	38.03	37.27	36.67	36.18	35.78	35.44	35.14	34.89	34.67	34.48
80	42.01	40.19	38.90	37.95	37.21	36.62	36.14	35.74	35.40	35.12	34.87	34.65	34.46
90	41.80	40.04	38.79	37.86	37.14	36.57	36.10	35.70	35.37	35.09	34.85	34.63	34.44

Exterior Wall
Segregated Costs

	Sq. Ft.	Lin. Ft.	Each
Exterior Cover; protective cover not included			
Wood			
board and batten; cedar	$ 3.00		
prefinished particle board; lap siding, 8"	2.55		
prefinished particle board; sheet siding, 4' × 8'	1.15		
shingles; cedar	6.75		
bevel siding; redwood or cedar	4.15		
Metal			
aluminum or steel; lap siding	5.15		
with backer; add	5.15		
Vinyl	4.45		
Masonry veneer			
brick	15.50		
stone:			
cultured stone	16.80		
natural stone	20.70		
Stucco; 2 coats	5.15		
Synthetic Stucco;			
Dryvit	8.00		
Synergy	10.80		
Exterior Openings; includes installation, frame, trim and hardware			
Front doors; flush			$ 590.00
wood, 6 raised panels (fir)			820.00
wood, 6 raised panels (oak)			1,570.00
steel, 6 raised panels			630.00
fiberglass, 6 raised panels			930.00
double door			1,910.00
Side lites			
clear glass (each side)			300.00
leaded glass (each side)			750.00
Rear doors; flush			400.00
one lite, with cross buck			
steel			450.00
wood			690.00
wood, 6 raised panels (fir)			820.00
steel, 6 raised panels			630.00

Conventional

Class — 4

Cost Factor Tables (cont.)

Basement Factors
(Floor Area — Cost Per Sq. Ft.)

	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400
Unfinished	$23.67	21.21	19.57	18.40	17.52	16.83	16.29	15.84	15.47	15.15	14.88
Low Cost Finish	32.18	29.54	27.78	26.52	25.57	24.84	24.25	23.77	23.37	23.03	22.74
Finished Per Class	39.22	36.34	34.43	33.06	32.03	31.23	30.59	30.07	29.63	29.26	28.95
	1,500	1,600	1,700	1,800	1,900	2,000	2,100	2,200	2,300	2,400	2,500
Unfinished	$14.65	14.44	14.26	14.10	13.96	13.83	13.71	13.61	13.51	13.42	13.34
Low Cost Finish	22.49	22.27	22.07	21.90	21.74	21.60	21.48	21.36	21.26	21.16	21.08
Finished Per Class	28.67	28.43	28.22	28.04	27.87	27.72	27.58	27.45	27.34	27.24	27.14

Attic Factors
(Floor Area — Cost Per Sq. Ft.)

	200	300	400	500	600	700	800	900	1,000	1,100	1,200
Unfinished	$21.69	16.58	14.02	12.49	11.47	10.74	10.19	9.77	9.43	9.15	8.91
Low Cost Finish	29.69	24.43	21.80	20.22	19.16	18.41	17.85	17.41	17.06	16.77	16.53
Finished Per Class	37.13	31.55	28.76	27.09	25.98	25.18	24.58	24.12	23.75	23.44	23.19

Conventional

Class — 4 (cont.)

Adjustment Factors

Foundation

Apply cost to ground floor area		SQ. FT.
Wood frame on masonry piers	–	$1.20

Roof

Apply costs to ground floor area		SQ. FT.			SQ. FT.
Composition shingle, medium weight arch.	+	$ .55	Baked enamel, alum.	+	$1.70
Pressed fiber, imitation shake panel (i.e. Woodruf)	+	1.35	Cedar shake, medium weight	+	1.70
			Cedar shingle	+	2.70

Interior Components

		EACH			EACH
APPLIANCES			STOVES AND FIREPLACES (cont.)		
Basic set: drop-in range, hood-fan, dishwasher, garbage disposer	+	$1,365	**Fireplaces**		
Range, drop-in, self clean	+	620	Direct vent, gas fired; facia surround, nonbrick	+	$2,075
Oven, single self clean	+	560	Interior masonry,		
Cooktop	+	390	mantel high face brick,		
w/built-in exhaust and grill	+	620	raised hearth		
Microwave oven, built-in	+	450	single	+	3,200
Hood-fan	+	150	see-through	+	4,300
Dishwasher	+	450	backed	+	5,600
Garbage disposer	+	145	stacked	+	6,100
			ceiling high brick, per fireplace	+	250
STOVES AND FIREPLACES			Prefab. metal box and flue, mantel high face brick	+	2,800
Stoves			Additional features:		
Wood stove w/flue	+	1,950	Outside brick chimney;		
Pellet stove w/flue	+	2,700	one story	+	650
Gas stove w/flue	+	1,900	two story	+	900
		SQ. FT.			
Floor and wall heat shield	+	$ 9.00			

Conventional

Class — 4 (cont.)

Adjustment Factors

Plumbing

	EACH		EACH
FIXTURES			
Full Bath: tub w/shower over or shower stall, lavatory, toilet	+ $1,550	Stall shower, w/door, tile	+ $1,290
Half Bath: lavatory, toilet	+ 680	Garden tub	+ 1,330
Bathtub, enameled steel or fiberglass	+ 590	Jet tub	+ 2,180
add for:		Lavatory, china	+ 330
shower w/fiberglass surround	+ 280	Toilet, standard	+ 350
shower w/tile surround	+ 440	Kitchen sink:	
sliding glass door	+ 270	Stainless steel, double	+ 640
Stall shower, w/door, fiberglass	+ 980	Laundry tub, single fiberglass	+ 280
		Water heater	+ 530

Heating — Cooling

Area Heated/Cooled square feet:	800	1000	1,200	1,400	1,600	1,800	2,000	2,200	2,400
Electric baseboard, wall units, or ceiling cable	$1.40	1.35	1.30	1.25	1.20	1.15	1.10	1.05	1.05
Forced air heating	2.25	2.10	1.90	1.75	1.60	1.45	1.30	1.20	1.15
Forced air heating and cooling	4.85	4.30	3.80	3.30	2.90	2.70	2.50	2.40	2.30
Heat pump	5.50	4.90	4.40	3.80	3.40	3.10	3.00	2.80	2.70

Conventional

Class — 4

Garage

ATTACHED

Garage unfinished with interior firewall only. Construction feature comparable to house, slab floor, minimum lighting and outlets.

	FLOOR AREA — COST PER SQ. FT.						
	200	300	400	500	600	700	800
0	$35.90	31.56	29.39	28.09	27.23	26.61	26.14
25	34.45	30.89	29.01	27.84	27.05	26.48	26.04
50	33.29	30.32	28.67	27.62	26.89	26.36	25.95
75	32.35	29.83	28.37	27.41	26.74	26.25	25.86

	SQ. FT.	LIN. FT.	EACH
Finished			
Low cost wallboard or equivalent	+ $2.44		
Plaster or textured drywall	+ 3.04		

DETACHED

Garage unfinished with construction features comparable to house, slab floor, minimum lighting and outlets.

	FLOOR AREA — COST PER SQ. FT.						
	200	300	400	500	600	700	800
0	$42.36	35.40	31.93	29.84	28.45	27.46	26.71
25	40.04	34.33	31.31	29.44	28.17	27.25	26.56
50	38.18	33.42	30.77	29.08	27.92	27.06	26.41
75	36.67	32.62	30.28	28.75	27.68	26.88	26.27

	SQ. FT.	LIN. FT.	EACH
Finished			
Low cost wallboard or equivalent	+ $2.54		
Plaster or textured drywall	+ 3.12		

ADJUSTMENT FACTORS

	SQ. FT.	LIN. FT.	EACH
ATTIC; apply cost to attic area			
Storage; pull down stairs, subfloor	+ $2.90		
ROOF			
Composition shingle, medium weight arch.	+ $ .55		
Pressed fiber, imitation shake panel (i.e. Woodruf)	+ 1.35		
Baked enamel, alum.	+ 1.70		
Cedar shake, medium weight	+ 1.70		
Cedar shingle	+ 2.70		
AUTOMATIC DOOR OPENER			+ $300.00

Building Cost Manuals

Boeckh Building Valuation Manual. Milwaukee; Thompson Publishing Co., 1979. 3 vols.

> Vol 1- *Residential and Agricultural;* Vol 2-*Commercial*; Vol 3- *Industrial and Institutional.* Uses 1979 cost database and includes a wide variety of building models. Built up from unit-in-place costs converted to const per square foot of floor or ground area. *Boeckh Building Cost Modifier* is published bimonthly for updating and current modifiers.

Building Construction Cost Data. Duxbury, Mass.; Robert Snow Means Co., annual

> Lists average unit prices on may building construction items for use in engineering estimates. Components arranged according to uniform system adopted by the American Institute of Architects, Associated General Contractors, and Cosntruction Specifications Institute.

Dodge Building Cost Calculator & Valuation Guide. New York: McGraw- Hill Information Systems Co. (looseleaf service, quarterly supplements).

> Lists building costs for common types and sizes of buildings. Local cost modifiers and historical local cost index tables included. Formerly called the *Dow Building Cost. Calculator.*

Marshall Valuation Service. Los Angeles: Marshall and Swift Publication Co. (looseleaf service, monthly supplements)

> Cost data for determining replacement costs of buildings and other improvements in the United States and Canada. Includes current cost multipliers and local modifiers.

Residential Cost Handbook. Los Angeles: Marshall and Swift Publication Co. (looseleaf service, quarterly supplements).

> Presents square-foot method and segregated-cost method. Local modifiers and cost-trend modifiers included.

Governmental Cost Manuals

Review
Section 6
The Cost Approach

1. The economic principle associated with the cost approach is:

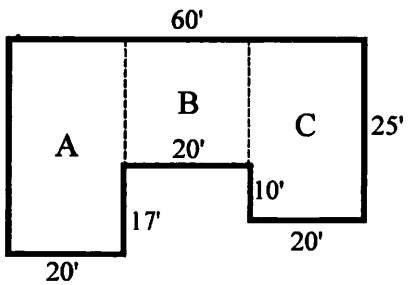
2. The formula used in calculating the cost approach is:

3. Some examples of direct costs include:

4. Some examples of indirect costs are:

5. What is the difference between replacement cost and reproduction cost?

6. Calculate the square footage of the following building:



7. The four methods of calculating cost are:

8. The trended original cost method is used most frequently on the following property:

   a. large industrial property
   b. undeveloped commercial property
   c. income producing property
   d. residential property

9. Calculate a local cost modifier using the following information:

Sale	Total Sales Price	Estimate Land Value	Sales Price Of Improvement	Replacement Cost/ Manual
1	$136,500	$17,500		$128,310
2	143,750	19,000		133,090
3	132,950	16,500		123,970
4	154,900	11,500		142,640
5	146,000	16,000		124,420
6	150,500	19,500		136,300
7	127,250	15,500		120,400
8	145,900	19,000		133,700
9	141,250	18,750		131,540
10	137,000	16,500		129,720

PRINCIPLES OF PROPERTY VALUATION

SECTION SEVEN

DEPRECIATION

LEARNING OBJECTIVES

On completing this section the student should:

- ✓ Know what accrued depreciation is
- ✓ Know the three causes of depreciation
- ✓ Be familiar with other classifications of depreciation
- ✓ Know three methods of measuring accrued depreciation

LEARNING OBJECTIVES
SECTION SEVEN

- **Know what accrued depreciation is**
- **Know the three causes of depreciation.**
- **Be familiar with other classifications of depreciation**
- **Know three methods of measuring depreciation**

Accrued Depreciation

"The difference between the market value of an improvement and its reproduction or replacement cost."

<The Appraisal Institute

Causes of Depreciation

- Physical Deterioration
- Functional Obsolescence
- Economic Obsolescence

Physical Deterioration

"Loss in value due to wear and tear and the forces of nature"

- Normal Use
- Breakage
- Neglect
- Moisture
- Exposure
- Insect Infestation

Functional Obsolescence

"The loss in value due to the inability of a structure to perform adequately the function for which it is used."

Modernization **Deficiency**

Superadequacy

Economic Obsolescence

"Depreciation that results from factors outside the properties boundaries"

Market shifts

Governmental Action

Curable vs. Incurable

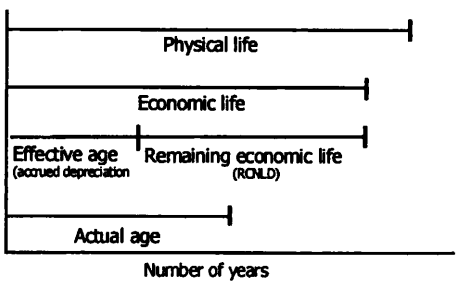
Curable:

The value added to the repaired improvement exceeds the cost of the repair

Incurable:

As of the date of the appraisal, the cost to repair an item equals or exceeds the gain in value.

Depreciation and Time



Market Comparison Method by Abstraction

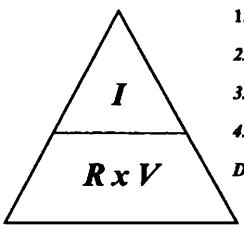
- 1. Find Recent Sales of Similar Properties
- 2. Subtract Land Value from Improvements
- 3. Estimate Replacement Cost New
- 4. Subtract Improvement Value from RCN
- 5. Divide Depreciation by Effective Age

Market Comparison Method
Example

- Total Sale Price of Comparison $58,000
- Subtract Land value $15,000
- Equals Contributory Building Value **$43,000**
- Estimate RCN (1250sqft @ $40 per sq.ft) $50,000
- Loss in Value $ 7,000
- Divided by Effective Age of 14 years $ 500
- Convert to Annual Depreciation Rate **.01** or **1%**

  ($500/$50,000 = .01or 1.0% per year)

Capitalization Of Income Method



1. *NI / Cap = PV*
2. *PV- LV=BV*
3. *RCN - BV=Depreciated Value.*
4. *BV / RCN= % good*

Dep. = (1 - % good)

Straight Line Mthod

1. **Effective Age / Economic Life equals**

   Total Depreciation
2. **Depreciation x RCN equals**

   Depreciated Amount
3. **RCN - Depreciation + Land equals**

   Total Property Value

Section 7
Depreciation

7.1 Introduction

When the cost approach is used to estimate value, consideration must be made for the difference between an improvement's reproduction or replacement cost new and its market value. This difference is called *accrued depreciation.* Accrued depreciation may also be described as a loss in value from any cause.

Most of us are familiar with accrued depreciation as it is used in accounting. A distinction is made between accounting depreciation and the depreciation used by appraisers. Accounting or book depreciation is generally considered to be the difference between the original cost of an item and its current book value. The goal of the accountant in using depreciation is to spread an asset's acquisition cost over the time the asset is in use. Income tax considerations and industry practice are the driving factors; while attempts to measure market value are of lesser concern.

For appraisal, the purpose of accrued depreciation is to measure, the loss in value of an item as compared to its cost new. This measurement must reflect the loss in value on the appraisal sale. Thus, reproduction or replacement cost new (RCN) minus accrued depreciation equals market value estimate. The appraiser's chief consideration is the loss in value whether it is through age, physical wear, outdated design or any other factor.

7.2 Causes of Depreciation

The causes of depreciation are often grouped into three categories: physical deterioration, functional internal obsolescence, and economic external obsolescence. It is important to note that a problem from any or all of these categories may or may not show a value loss in the market. For example, economic factors that are ordinary cyclical trends should not influence value, while a new economic condition that is anticipated to be permanent into the future may have a substantial influence on value.

7.3 Physical Depreciation

Physical depreciation is the loss in value due to wear and tear and the forces of nature. All structures suffer from decay do to tension, friction, compression and the chemical changes that occur with the exposure to the environment. Physical deterioration begins the moment an item is produced and continues throughout its life. Some causes of physical deterioration are through normal use, breakage, neglect, insect infestation, moisture, and exposure. Proper maintenance can slow physical deterioration, but it can not halt it completely. Physical obsolescence is classified as either *curable* or *incurable.*

Curable physical deterioration occurs when the value added to the repaired improvement equals or exceeds the cost of the repair. Leaky roofs, broken plumbing, cracked windows and worn out floor coverings are some of the obvious examples of curable physical obsolescence.

Incurable physical obsolescence is deterioration that, at the date of the appraisal, is not economical to repair or replace. In essence, the cost to cure the problem exceeds the gain in value. Generally, physical components that are not easily accessible, or that would require extensive alterations, such as those found in the framework, foundation, subfloor and ceiling structures, are more likely to suffer from incurable physical deterioration.

7.4 Functional Obsolescence

Functional obsolescence is loss in value due to the inability of a structure to perform adequately the function for which it is used. Functional obsolescence is often the result of changes in demand, design and technology. It can take the form of out dated design, deficiency or materials. When dealing with replacement cost new, it is typically not necessary to adjust for functional obsolescence since the cost new estimate reflects current technology, design, and materials.

In reproduction cost models, functional obsolescence can be classified as curable or incurable, depending on whether the cost to cure is economically justified as of the appraisal date.

Examples of *curable functional obsolescence* might include, outdated kitchen or bath fixtures, water-heating units that are too small, few electrical outlets, low hanging pipes(in industrial buildings) or the absence of a ventilation system. In these examples it is assumed the value derived from correcting the problem exceeds the cost.

Incurable functional obsolescence occurs when the cost of correcting the condition exceeds the increase in value. Examples include outmoded design, poor room arrangement, no garage (and no space to build one) and inadequate front footage on a commercial structure.

7.5 Economic Obsolescence

Economic obsolescence sometimes referred to as environmental, or external obsolescence is the loss in value as a result of factors outside the property's boundaries. Economic obsolescence might be caused by changes in a property's highest and best use. These changes might be due to shifts in the market, governmental actions, or the subject property being superadequate for its surroundings. It may also be the result of external factors such as inadequate public service, lack of parking facilities in a commercial setting, narrow streets and heavy traffic flow in a residential area or the proximity to industrial property. Economic obsolescence is seldom considered curable; the appraiser will measure its effect, either good or bad, from the market.

A key to remember when distinguishing functional obsolescence from economic obsolescence is that functional obsolescence is always internal or within the subject property's boundaries. Economic obsolescence is external or always outside of the subject property's boundaries. And, the distinguishing difference between curable and incurable is whether or not the benefits exceed the cost.

7.6 Concerns in Application

Depreciation is only considered a penalty in so far as the market recognizes it as diminishing the value of the improvement. For example, the value of buildings often *appreciate* in value because of economic factors such as the scarcity relative to the demand that exists in the market. In these situations, the appraiser will need to exercise caution.

An appraiser's use of replacement cost rather than reproduction cost will affect the estimation of depreciation. Most forms of functional obsolescence are eliminated when replacement cost new is used, however the appraiser should research the subject property to determine if economic obsolescence influences the value of the property. Consider an industrial building with poor layout and a 20 ft story height, where the market standard is currently 16 ft story height. A replacement cost estimate would be based on a building with a 16 ft. story height, while a reproduction cost estimate would be based on a 20 ft. story height.

7.7 Age/Life Concepts

As we have just discussed there are three traditional views of depreciation: physical, functional and economic obsolescence. Generally, appraisers take measurements of these types of depreciation directly from market sales to determine depreciation percentages; however, as in the case of industrial property, the market for properties is often too inactive and the properties themselves are too varied to allow depreciation development directly from sales. Therefore studies (age/life, service lives, etc.) are done to estimate the time it takes for a new property to be replaced. This estimate of time is an estimate of the economic life. Once the economic life is determined a logical form of depreciation (straight line, accelerated, etc.) is applied that best fits the market value from what is known (i.e., conclusions from how other types of property sell).

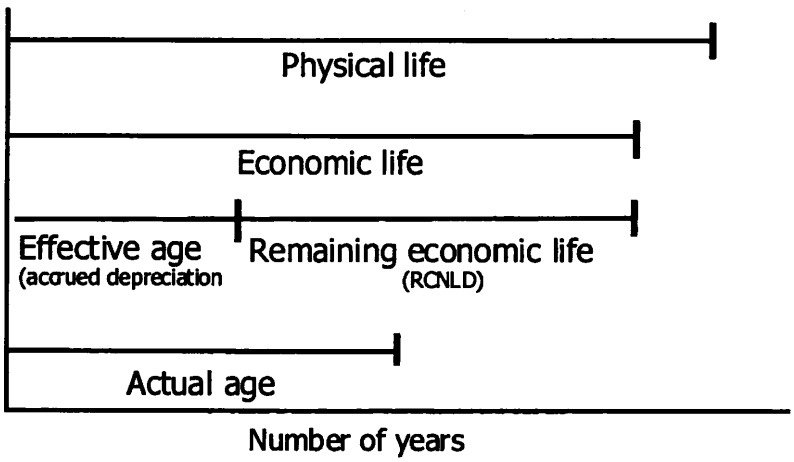
The appraisal concept of accrued depreciation is often based on age and life relationships, which relate to the improvement as a whole as well as its individual components. Theoretically, an improvement or component loses most of its value over its economic or useful life; however, there are several factors that need to be considered when considering age and depreciation. In estimating the total depreciation of an improvement, the age-life concepts used by the appraiser are *economic life, effective age and remaining economic life (REL).*

A property's *economic life* begins when the asset is built and put into service and ends when it no longer contributes any value to the property. This period is generally shorter than a buildings actual physical life in that many buildings outlive their economic usefulness.

Remaining economic life is the estimated period over which the property is expected to continue to contribute positively to property value.

Effective age is the age based on the condition and utility of a structure. Structures built at the same time and performing the same function do not necessarily depreciate at the same rate as indicated by the market. Maintenance may differ from structure to structure. If a building is better maintained than other buildings in its market area, the effective age will be less than its actual age. Conversely, if a building is poorly maintained, its effective age may be greater than its actual age.

Depreciation and Time



7.8 Methods of Estimating Depreciation

As with all other aspects of appraisal, a field inspection is the necessary first step in determining accrued depreciation. The appraiser should make notes of all conditions that diminish utility, and consider their combined effect on market value.

Appraisers employ several methods to measure accrued depreciation. The three methods discussed in this manual are oriented to the actions of the buyers and sellers in the market, and are not intended to be all inclusive but representative of the diverse methods in common use. The three methods we will discuss are as follows:

1. Market Comparison or Sales Data Method
2. Capitalization of Income
3. Age-Life Method or the Straight Line Method

7.9 Market Comparison Method

Sometimes referred to as the market abstraction method; the market comparison approach borrows from the sales comparison approach to value. It reflects the sales in the market of similar or benchmark properties and abstracts the accrued depreciation for the entire property.

The steps in the process are as follows:

1. Improvements of similar age, condition and desirability which have sold recently are documented.

2. The estimated value of the land (site value) is deducted from the selling price of each improvement. This results in the contributory value of the improvement to the total sales price.

3. Estimate the replacement cost new (RCN) of the improvements.

4. Subtract the contributory value of the improvement from the cost new and this will give you the indicated dollar amount of depreciation.

5. Express the dollar amount of depreciation as a percentage figure. You can then apply this percentage to the subjects.

Example- Market Comparison or Abstraction Method

1. Total sales price of a comparable property $120,000
   Less estimated value of land -34,800
   Contributory value of the improvement $85,200

2. Calculated Replacement Cost New of improvement $98,000

3. The percent good would be:
   Contributory value of improvement / Replacement Cost New=
   85,200/98,000 = 87% good

4. Depreciation is expressed in percentage or dollar value
   $12,800 (loss in value) / $98,000= .13 or 13% Depr.

5. The estimated effective age of the sale property is 13 years.
   (Determined from on site inspection)
   $12,800/ 13 years= $984.62 Depr. per year

6. Depreciation per year/RCN= annual straight line depreciation percentage
   $984.62/98,000= .01 or 1% annual straight line depreciation*

* This annual depreciation rate for the comparable property is used as the rate to calculate the subject property's depreciation. For example, a subject with an effective age of 14 years would have accrued depreciation. Estimated as follows:

14 yrs x .01/yr= .14 or 14% accrued depreciation or 86% good

7.10 Capitalization of Income Method

This is a method of depreciation using the income approach to value. The following steps are used:

1. Net income is capitalized into an estimate of value for the entire property.

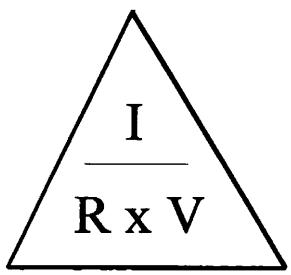
2. The value of land is deducted from the total property value indicating the value of improvements.

3. This value is then compared with the RCN value to show the percentage of the building value remaining.

Example-Capitalization of Income Method

RCN on an improvement is $250,000
Net income of property is $38,000
Site Value is $120,000
Capitalization Rate is 12.5%

Income Formula:



Net Income ÷ Cap Rate= Property Value

$38,000 ÷ .125= $304,000

Property Value - Site Value= Building Value

$ 304,000 -120,000= $184,000

RCN - Building Value = Depreciation

250,000 - $184,000 = $66,000

Building Value ÷ RCN=Percentage good

$184,000 ÷ 250,000= .736 or 73.6%

Therefore the depreciated percentage of the improvement is : 26.4% (1-.736)

7.11 Economic age Life or Straight Line Method

This method allocates a uniform percentage of value loss each year over the useful life of an improvement. This method assumes that on average, the improvement will depreciate at a constant rate each year over its economic life. For example, if an improvement is estimated to have a total economic life of 50 years and no salvage value, depreciation will be calculated at 2 percent(1/50) a year for the duration of its economic life.

This method requires that the appraiser accurately estimate the economic life of the subject and either its effective age or remaining economic life. For example assume that an improvement has an economic life of 50 years, an effective age of 15 years (remaining economic life of 35 years). The replacement cost new is $85,000. The estimated depreciation and value of the structure are computed as follows:

Depreciation= 15/50= .30
Depreciation= .30 x $85,000= $25,500
RCNLD= $85,000-$25,500=$59,500

The straight line method has the advantage of simplicity . However, this method assumes that depreciation occurs evenly throughout the life of the improvement. The reality for some wasting assets is that they depreciate more rapidly in early life and more slowly later; this makes accelerated methods more applicable with such assets.

7.12 Depreciation Schedules

The methods previously discussed are found most often in single-property appraisal. In mass appraisal for ad valorem purposes, depreciation is usually estimated by referencing depreciation schedules which show the typical loss in value at various ages or effective ages. These schedules usually recognize loss in value due to all sources, i.e. physical obsolescence, functional and external obsolescence. There are exceptions, since different types of structures depreciate at different rates, schedules should be tailored to specific types of structures or personal property groups.

The Idaho State Tax Commission under the direction of the Personal Property Coordinator prepares a series of property valuation schedules. The schedules reflect trend and depreciation factors calibrated to the Idaho market. The schedules include what is referred to as a composite factor that considers both trend and depreciation in one factor. This composite factor is often used in valuing personal property. For properties going to appeal it is often preferable to estimate replacement cost new and depreciation separately.

Two well known sites on the Internet together with some adjustments, will give the appraiser the tools to develop his own schedules independent of the Tax Commission. From these Internet sites, schedules can be developed to approximate market values.(For more information contact the Commission at 334-7733.)

The valuation schedules are to be considered as guides for the appraiser who does not have enough local information to arrive at a valuation. Schedules should be modified to the local market annually and any modifications to the schedule should be fully documented and kept on file. As with all methods used to calculate depreciation, any improvement in exceptional condition or subject to unusual functional or economic depreciation should be valued on a case-by-case basis.

Problem
Capitalization of Income

Calculate the depreciation and the depreciation % on the subject property given the following information:

Net Income of property $120,000
RCN on improvements is $800,000
Site Value $214,285
Overall Cap Rate 14%

Problem
Straight Line Method of Depreciation

Calculate the replacement cost new less depreciation (RCNLD) using the straight line method, given the following information:

Remaining economic life: 20 years

Total Economic life: 60 years

RCN= $95,000

Review
Section 7
Depreciation

1. What is the difference between appraisal depreciation and accounting depreciation?

2. What are the three categories of depreciation?

3. List four examples each of incurable and curable physical obsolescence.

4. Economic obsolescence is generally curable – True or False?

5. The appraiser should use an improvement's actual age or effective age when calculating depreciation?

6. Calculate the accrued depreciation and the accrued depreciation percentage on the following property using the capitalization of income method.

RCN on an improvement is $298,000
Net income of property is $ 25,000
Site Value is $ 124,500
Capitalization rate is 6.0%

7. An improvement has an economic life of 40 years, and actual age of 20 years and an effective age of 15 years. The replacement cost new of the improvement is $27,000. What would be the RCNLD (hint: use the straight-line method of depreciation)?

8. Depreciation Types

Match the proper form of depreciation with the causes of decreased utility.

Cause of decreased utility	**Form of Depreciation**
_____ Basement stairway in poor condition	
_____ Aging basic structure	A. Curable physical deterioration
_____ Small kitchen cabinets	B. Incurable physical deterioration
_____ Manufacturing plant has moved next door to subject residence	C. Curable functional obsolescence (modernization)
_____ Linoleum floor in kitchen worn out	D. Incurable functional obsolescence
_____ Water heater is six years old	E. Curable functional (superadequacy)
_____ $40,000 house has gold-plated door knobs	F. Economic Obsolescence
_____ Plumbing fixtures are outdated	G. Ordinary obsolescence
_____ Office lacks central air conditioning	
_____ Heating system is ten years old	
_____ Basic structure has effective age of twenty-five years	
_____ Excess capacity in an industrial plant caused by a dwindling raw material supply	
_____ Interior of structure needs painting	
_____ Heavy traffic on residential street	
_____ Inadequate ventilation	

PRINCIPLES OF PROPERTY VALUATION

SECTION EIGHT

SALES COMPARISON APPROACH

LEARNING OBJECTIVES

On completing this section the student should:

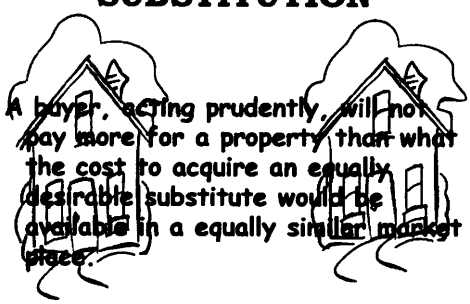
- ✓ Know how the sales comparison approach is used in an appraisal
- ✓ Know how to calculate sales comparison approach adjustments
- ✓ Understand the economic principles used
- ✓ Know how units of comparison are applied

LEARNING OBJECTIVES

SECTION EIGHT

- Know how the sales comparison approach is used in an appraisal.
- Know how to calculate sales comparison approach adjustments.
- Understand the economic principles used.
- Know how units of comparison are applied.

SUBSTITUTION



A buyer, acting prudently, will not pay more for a property than what the cost to acquire an equally desirable substitute would be available in a equally similar market place.

CONTRIBUTION

The value of an attribute depends largely on it's contribution to the whole and is based on it's market value not it's original replacement cost.

COST vs. VALUE REPORT

Project	$Costs	$Recovered	%
Two-story Add	$55,687	$46,220	83%
Kitchen	$ 8,507	$ 7,997	94%
Kitchen	$21,262	$20,412	96%
Bathroom Add	$11,645	$10,597	91%
Siding	$ 5,458	$ 3,984	73%
Deck Add	$ 6,172	$ 4,444	72%
Office	$ 8,103	$ 5,429	67%

<Friendly Exchange Magazine Spring 1997

SALES COMPARISON APPROACH

STRENGTHS

- Courts Prefer the Market Approach
- Simple and Easy to Understand
- Reflects the Most Current Market Data

WEAKNESSES

- Insufficient Sales Data
- Not Appropriate Valuing Unique Properties
- Subjective Adjustments Distort Estimates

1. DEFINING THE APPRAISAL PROBLEM

- Purpose and Function
- Description
- Classification
- Highest and Best Use

2. SUBJECT DATA COLLECTION AND ANALYSIS

- **PHYSICAL INSPECTION**
  - Quality and Physical Condition
- **NEIGHBORHOOD**
  - Location, Location, Location
- **SITE**
  - Dimensions and Improvements
- **IMPROVEMENTS**
  - Measurements, Age, Amenities, Use

3. COMPARABLE DATA COLLECT AND VERIFY

RELIABLE SALES INFORMATION

- Sale Price and Sale Date
- Financing Terms
- Type of Transfer
- Names and Addresses of Buyer and Seller

3. COMPARABLE DATA COLLECT AND VERIFY

- **RELIABLE INFORMATION** CONT.
  - Relationship of Buyer and Seller
  - Physical Characteristics
  - Property Rights Conveyed
  - Other related circumstances

LAND INFORMATION

CHARACTERISTICS INFLUENCE VALUE

- Location Location Location
- Market Area and Neighborhood
- Size, Shape, Topography and Dimensions
- Zoning, Current Use and Legal Restrictions
- Utilities and Public Services

LAND INFORMATION

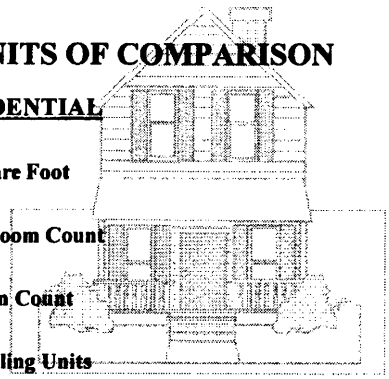
OTHER FACTORS INFLUENCE VALUE

- View
- Traffic Flow
- Corner Influence
- Water or Golf Course Frontage
- Nuisances or Nonconforming Land Uses
- Flooding, Fires, Earthquakes

SOURCES OF SALES INFORMATION

- **Real Estate Document**
- **Sales Questionnaires**
- **Buyers and Sellers**
- **Real Estate Agents**
- **MLS Agency**
- **Title Company**
- **Financial Institution**
- **Deed Recordings**
- **Closing Statements**
- **Assessment Records**
- **Appraisals**
- **Advertisements**
- **Other Appraisers**
- **Data Centers**

4. UNITS OF COMPARISON



- **RESIDENTIAL**
  - Square Foot
  - Bedroom Count
  - Room Count
  - Dwelling Units

4. UNITS OF COMPARISON

- **APARTMENTS**
  - Number of Units
  - Square Foot
  - Room Count
  - Gross Income Multipliers

4. UNITS OF COMPARISON

- **INDUSTRIALS**
  - Square Foot
  - Cubic Foot
  - Production Units
  - Man Hours

4. UNITS OF COMPARISON

- **HOTELS - MOTELS**
  - Price per Guest Room
- **THEATERS**
  - Price per Seat
- **GOLF COURSES**
  - Price Per Round,
  - Membership
- **SKI RESORTS**
  - Price per skier visit
- **MOBILE HOME PARKS**
  - Price per Parking Pad
- **MARINAS**
  - Price per Slip
- **AUTO REPAIR SHOPS**
  - Price per Bay
- **VACANT LAND**
  - Price per Front foot,
  - Square Foot, Acre

5. ADJUSTMENTS

- FINANCING
- TIME OR MARKET CONDITION
- LOCATION
- PHYSICAL CONDITION OR AGE
- PHYSICAL CHARACTERISTICS

5. ADJUSTMENT

- **COMPARE:**
  - Identical Properties to Subject
  - Sale Properties to Other Sale Properties
- **FIND:**
  - The Value Difference of the Attribute
- **APPLY:**
  - Value Differences to the **Comparable**

6. APPLICATION

- Adjustment Differences are Made to the Comparable Sales
- Adjustments **Superior** to the Subject are **Subtracted** from the Comparable Sale
- Adjustments **Inferior** to the Subject are **Added** to the Comparable Sale

Section 8
Sales Comparison Approach

8.1 Introduction

In the world of ad valorem appraisal, sales are everything. Information about sales are used in all three of the approaches and when applied appropriately, will yield the most accurate results. The sales comparison approach emphasizes information derived from the market.

The sales comparison approach rests on the economic principle of substitution which states that a buyer acting prudently, will not pay more for a property than what the cost to acquire an equally desirable substitute would bring in the market. In other words, the appraiser can look at recent sales prices of similar properties and estimate the value of the subject property.

The principle of contribution is also applied to this approach. This principle is tied to the concept that the value of a component of a property depends upon its contribution to the whole. After an appraiser verifies recent sales prices of comparable properties, adjustments are made to these sales prices. These adjustments are necessary to account for any value differences between the comparable and subject property. The amount of each adjustment is not based on the original construction cost of the attributes, but on the contribution each makes to value in the market.

8.2 Strengths and Weaknesses of the Sales Comparison Approach

The strength of the sales comparison approach is its use of the most recent market information to arrive at a value. Courts have placed the greatest reliance on evidence from bonafide market sales of comparable properties as the market value of properties and are the basis for judgment made in the other approaches.

Difficulties arise with this approach when the data is not sufficient, or of adequate quality to justify a market comparison. It is also not appropriate to rely on when valuing one-of-a-kind properties where several adjustments to comparable properties would be needed.

8.3 Steps in the Sales Comparison Approach

The basic steps in the sales comparison approach are:

1. defining the appraisal problem
2. collecting and analyzing data on the subject property
3. selecting and analyzing the appropriate comparable
4. selecting appropriate units of comparison
5. making reasonable adjustments based on the market
6. applying the data to the subject property

8.4 Defining the Appraisal Problem

The description and classification of the subject property, knowledge of its highest and best use, and an understanding of the purpose and function of the appraisal needs to be defined.

8.5 Classification and Description

The first step in the sales comparison approach is to conduct a physical inspection of the subject property. The attributes of the property are generally recorded on a property appraisal report form. In order to classify the property, the appraiser will consider the property in its entirety. This includes the site, its improvements and the neighborhood in which the property is located. The types of data the appraiser will need to gather on the subject property include:

Overall quality and physical condition
Amenities
Size
Functional use (for example layout, equipment, architecture)
Age

8.6 Highest and Best Use

As with other aspects of the sales comparison approach, determination of a property's highest and best use should be based on market analysis. In making a comparison of the market, the appraiser will find that a property's value within the market will generally reflect its highest and best use.

8.7 Collection and Analysis of Comparable Sales

Reliable information about sales prices and attribute values is essential to the sales comparison approach. The appraiser must gather timely and accurate information about any characteristic a comparable property possesses that might affect value in the market. The sales confirmation and verification process is perhaps the most important step in the appraisal of property. If it is not done well or consistently, estimated values are incorrect and inequity will result.

8.8 Selecting Comparable Sales

The selection of comparable sales, like appraisal itself, is a subject that requires study and experience. Not all sales have significance to the appraiser. Remember, it is the primary duty of an appraiser within an ad valorem system to assess in accordance with the principles of market valuation. Before each comparable sale may be used as an indicator of market value, it must meet the following criteria:

1. Buyer and seller are typically motivated.
2. Both parties are well informed, and are not acting out of duress.
3. A reasonable time is allowed for exposure in the open market.
4. Payment is made in terms of cash or the equivalent

The price represents the normal consideration for the property sold and is not encumbered by atypical financing or constraints. Once the appraiser has a sense of the appropriate comparables, they will need to collect on-site data for each.

8.9 Land Information

Land information for the sales comparison approach should include all factors and characteristics that exert an influence on local land values: location, market area and neighborhood, size, shape, and dimensions, zoning, current use, other legal restrictions, the availability of utilities and other public services, and topography.

In addition, other factors such as view, traffic flow, corner influence, susceptibility to flooding, lake or golf course frontage, airport noise and other nuisances, or nonconforming surrounding land uses may be important. Depending on the market, the appraiser must decide which characteristics to maintain routinely as an influence on value and which to provide for only as needed.

8.10 Sales Information

The types of information the appraiser will want to gather include

- Sales price
- Date of Sale
- Name of buyer and seller
- Type of transfer
- Relationship between buyer and seller
- Types of financing
- The portion of interest that is being transferred
- And other circumstances related to the sale

There are several potential sources for gathering sales information. They include:

- Real estate transfer documents
- Transfer tax records
- Assessment records
- Government and private mortgage insurers
- Multiple listing services
- Newspaper advertisements
- Market data centers
- Commercial publications
- Sales
- Title companies
- Mortgage loan records
- Real estate brokers files
- Deed records
- Private appraisers
- Financial institutions
- Real estate agencies,
- Interviews with buyers, sellers, or their agents
- Internet

8.11 Verifying Data

Verification of data is often a problem for an appraiser with many properties to appraise and a large quantity of sales and rental information. However, it is essential that all key data be verified. Transactions should be verified with the buyer and seller when at all possible.

8.12 Units of Comparison

When determining the value of improved property, the appraiser will select the appropriate class for the subject and comparable. These units of comparison will allow logical uniform comparisons to be made of similar classes of property. For residential property, typical units of comparison include: dwelling unit, square foot of building, room and bedroom units. For apartment houses, unit, room, square foot of building, and gross income multipliers are appropriate units of comparison. For industrial properties, square foot and cubic foot of buildings are used.

8.13 Adjustment Techniques

The sales comparison approach compares the subject property with a significant number of similar properties that have sold recently. Since it is often not possible to identify a large number of like properties, the appraiser also looks at slightly dissimilar properties and adjusts their sales prices to account for differences in the value of their attributes.

8.14 Paired Sales Analysis

The paired sales analysis is a technique for determining the value of significant attributes. The sales to be compared should be identical in all characteristics except the attribute being evaluated. The difference in value between the properties is an estimate of the value of the attribute (for example, two bathrooms instead of one). As in comparing subject and comparable properties, a significant number of such pairs need to be examined. Look at the following example:

The following technique would be used to develop an analysis of the market on a particular adjustment having value in the market. . Standard adjustments include those made for financing, time or market conditions, location, and physical condition.

Paired Sales Analysis Example

One comparable sale has four bedrooms and sold recently for $140,000. Another comparable property has three bedrooms and otherwise has the same significant attributes. It sold recently for $ $135,000. Thus you conclude that buyers and sellers in this real estate market consider a four-bedroom house is worth $5,000 more than a three bedroom house, assuming all other attributes are the same. The indicated adjustment is $5,000.

$ 140,000
-135,000
$5,000

After a paired sale analysis has been completed, the appraiser is now prepared to apply the adjustment values to the comparable to arrive at an estimate of value for the subject property. When calculating the value of the subject property, the appraiser will add to the sale price the amount of the adjustment if it is not present in the comparable property and will subtract the value of the adjustment if it is found in the comparable and not the subject. For example if the subject property has four bedrooms and the comparable has three then an adjustment will need to be made to the comparable property. In completing a paired sales analysis, the conclusion was that there is $5,000 difference in value, that difference is added to the comparable property as an adjustment.

Adjustments are always made to the comparable property - never to the subject.

Paired Sales Analysis Problem

The first step will be to conduct a paired sales analysis to determine the value of adjustments to be made on comparable properties. The first thing to decide is what are the significant attributes to use for estimating value in this market.

1._____
2._____
3._____
4._____

Satisfactorily verified information is available on five neighborhood properties that sold in the past year and differ from each other only in the significant attributes listed below:

#1 sold last week for $162,000: brick construction, one-car garage, four bedrooms.

#2 sold 2 weeks ago for $158,000. It has brick construction, no garage, three bedrooms.

#3 sold 6 months ago for $146,000. It has wood construction, no garage, three bedrooms.

#4 sold 10 days ago for $157,000. It has wood construction, one-car garage, three bedrooms

#5 sold this week for $155,000. It has wood construction, no garage, three bedrooms

Paired Sales Analysis Problem

Adjustment for Date of Sale ____% per year or ____% per month

Sale #_____ $_____ (current)

Sale #_____ $_____ ( )

Difference_____

Adjustment for exterior construction: $_____

Sale #_____ $_____ (_____ construction)

Sale #_____ $_____ (_____ construction)

Difference_____

Adjustment for garage: $_____

Sale #_____ $_____ (One-car garage)

Sale #_____ $_____ (No garage)

Difference_____

Adjustment for Bedrooms: $_____

Sale #_____ $_____ (4 bedrooms)

Sale #_____ $_____ (3 bedrooms) * as adjusted for garage

8.15 Application of Adjustments

The final step is to calculate a value on the subject property based on adjusted comparable values. A grid is generally developed, showing data in a organized format. The appraiser may make adjustments to comparables using lump-sum dollar amounts, cumulative percentages, multiplicative percentage or some combination of dollar amounts and percentages.

When making adjustments to a comparable property it is important to remember, for conditions that are superior to the subject property, the value of the adjustment is subtracted from the total value of the comparable property. When a condition is inferior to the subject, then the adjustment value is added to the total sales price of the comparable property. For example if the comparable is in an area that you conclude to be ten percent better than the subject property, an adjustment to the comparable sale will be made by subtracting 10% from the total sales price of the comparable.

Problem
Determining Value Using Sales Comparison

Using the adjustment values of the significant attributes you have calculated in the paired analysis problem, adjust the following sales to estimate a final value for the subject property

Subject	Sale #1 $	Sale #2 $	Sale #3 $	Sale #4 $	Sale #5 $
Time	Last week	Two weeks	Six months	Ten days	This week
Exterior Brick	Brick $	Brick $	Wood $	Wood $	Wood $
Garage 0 Car	1 car $	no garage $	no garage $	1-car $	no garage $
Bedrooms 4	4 bdrms $	3 bdrms $	3 brdrms $	3 brdrms $	3 brdrms $
Total adjstmnts	$	$	$	$	$
Adj Sale price	$	$	$	$	$

The estimated value of the subject property is $_____

Review
Section 8
Sales Comparison Approach

1. What is the primary economic principle behind the sales comparison approach?

2. When is it the most appropriate to use the sales comparison approach?

3. Before a sale may be considered comparable it must meet what four criteria?

4. What are the units of comparison used in the appraisal of residential property?

5. Adjustments are always made to the subject property – True or False?

6. After completing a paired sales analysis you have concluded the following:

    a. $3,000 per bedroom adjustment
    b. $10,000 for exterior construction
    c. 10% per year time adjustment
    d. $ 1,500 for garage

The subject property is a three bedroom, brick construction, with attached garage.

The following sales are considered comparable. Determine the value of the subject property using the information provided (Remember: ADJUSTMENTS ARE ALWAYS MADE TO THE COMPARABLE PROPERTY)

Subject	**Sale #1** $93,000	**Sale #2** $100,900	**Sale #3** $ 100,200
Time	Last week	1 year ago	3 weeks
Exterior Brick	Wood construction	Brick construction	Wood construction
Bedroom 3	3 bedroom	3 bedroom	4 bedroom
Garage Attached	No garage	No garage	No garage
Total adjustments			
Adjusted sale price			

Estimated Value of Subject Property $_____

PRINCIPLES OF PROPERTY VALUATION

SECTION NINE

INCOME APPROACH

LEARNING OBJECTIVES

On completing this section the student should:

- ✓ Know how the economic principles apply to the income approach
- ✓ Know the IRV formula
- ✓ Know how to calculate and apply capitalization rates
- ✓ Know how to calculate a gross income multiplier

Section 9
The Income Approach

Learning Objectives

- **Know how the basic economic principles of anticipation and supply and demand apply to the Income Approach**
- **Know the basic formula for the Income Approach**
- **Know how to calculate and apply capitalization rates**
- **Know how to calculate a Gross Income Multiplier**

Income Approach

- **The income capitalization approach** is one of the three approaches to value. In this approach, the ***anticipated*** benefits (income or rent) is converted to an estimate of value of the income producing property.

Income Approach

- **Income capitalization** is based upon the economic principles of:
  1. **Anticipation** – value is created by the expectation of benefits to be derived in the future.
  2. **Change** – investor's expectations of changes in income levels, the expenses required to ensure income, and probable increases or decreases in property must be addressed and forecast.

Income Approach

- **Competition** – competition means that an excess of one type of facility will decrease the value of all such facilities. Excess competition destroys balance. Competition is created by the potential for profits, which attracts new buyers and sellers to a market. Competition among buyers may lead to shortages, which increases prices and profits to sellers.

Income Approach

- **Substitution** – the prices, rents, and rates of return of property tend to be set by the current prices, rents, and rates of return for equally desirable substitute properties. The principles of substitution is market-oriented and provides the basis for estimated rents and expenses and selecting the proper discount rate or capitalization rate for the subject property.

Income Approach

- **Supply** – the amount of product that producers are willing to sell under various conditions during a given period.
- **Demand** – the amount of product buyers are willing and able to buy during some period, given the choices available to them.

Income Approach

- **POTENTIAL GROSS INCOME**
  - Vacancy & Collection Loss
  + Miscellaneous Income
  = **EFFECTIVE GROSS INCOME**
  - Allowable Expenses
    (Operating Expenses & Reserves for Replacement)
  = **NET OPERATING INCOME**

Calculating Potential Gross Income

- **Gross Income Estimate** (Potential Gross Income – **PGI**)
- Potential gross income is the annual economic rent for the property at 100% occupancy.
  - Exercise 9-4

Calculating Effective Gross Income

1. Estimate Potential Gross Income
2. Estimate allowances for Vacancy and Collection Loss
3. Subtract Vacancy and Rent Loss from PGI
4. Add Miscellaneous Income

This equals

EFFECTIVE GROSS INCOME

Exercise 9-6

Net Operating Income

- 1. Estimate operating expenses and reserves for replacement
- 2. Deduct expenses from EGI to determine Net Operating Income (NOI)

Allowable Operating Expenses

- **Management**
- **Salaries and Fringe Benefits**
- **Yard Care**
- **Utilities**
- **Insurance**
- **Reserves for Replacement**
- **Repairs and Maintenance**
- **Legal & Accounting Fees**

Improper Expenses

- **Income tax payments**
- **Depreciation charges**
- **Payments for capital improvements**
- **Principle and Interest on Loans**
- **Franchise Fees**
- **Real Estate Taxes***

*** Since real estate taxes are included in the capitalization rate, they are not considered an allowable expense in determining net operating income.**

Reserves for Replacement

1. Estimate the economic life of the item
2. Estimate replacement cost new
3. Multiply the RCN by the number of units in the project.
4. Divide by the number of years in the items economic life.

Example

Refrigerators ($500) X 50 Apt. ÷ 10 yrs of economic life = $2,500 per year

Exercise 9-11

Income Approach

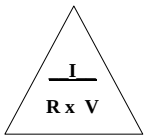
- The **IRV** formula (equation)

1. I (income) = Rate X Value
2. R (rate) = Income ÷ Value
3. V (value) = Income ÷ Rate

Income,Value and Rate Formulas

If you know the Income and Rate, you can find Value by using the following formula

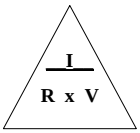
$$\text{Value} = \frac{\text{Income}}{\text{Rate}}$$



Income,Value and Rate Formulas

If you know the Value and Rate, you can find Income by using the following formula

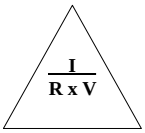
Income = Rate x Value



Income,Value and Rate Formulas

If you know the Income and Value, you can find Rate by using the following formula

$$\text{Rate} = \frac{\text{Income}}{\text{Value}}$$



Overall Capitalization Rate (Ro)

- The overall capitalization rate represents the percentage of net operating income in relation to total property value.
- Used in direct capitalization
- Does not distinguish between land rate and improvement rate components.

Market Comparison Method

1. Uses IRV equation
2. Known components of the IRV equation:
   - A) Net operating income
   - B) Property value
3. Net operating income divided by the property value equals overall capitalization rate (Ro)

Example

- You are appraising a retail commercial property. To derive a proper overall capitalization rate (Ro) from market sales, you have found a similar retail property which recently sold of $1,500,000 and has an EGI of $300,000. Total expenses amount to $85,400 annually. What is the indicated Ro for the comparable sale?

Example

Effective Gross Income: $300,000
Total Expenses & Reserves: -$85,400
Net Operating Income: $214,600

Overall Capitalization Rate (Ro):

$$\frac{\text{NOI}}{\text{Property Value}} = \frac{\$214,600}{\$1,500,000} = 0.143 \text{ or } 14.3\%$$

Band of Investment Method

1. The weighted average of the mortgage and equity components.
2. Mortgage Capitalization Rate (Rm) is the percentage of the original loan that is required to be paid annually
3. Equity capitalization rate (Re) is the percentage of the original equity investment that is represented by the income available to the original equity investment.

Example

- You have determined that typical commercial properties in your market area are financed with 75% debt and 25% equity. Typical financing terms for comparables to the subject property require 8.7% of the amount borrowed. The typical equity capitalization rate would be 10% for the equity investor. What is the overall rate (Ro) using the Band-of-Investment method?

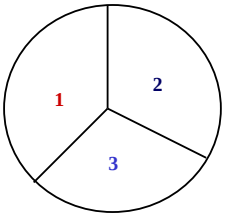
Example

Capital	Portion		Cap Rate		Product
Debt	0.75	X	0.087	=	0.0652
Equity	0.25	X	0.100	=	0.0250
Totals	1.00 Overall Rate (**Ro**) = 0.0902				
	or 9.02%				

Exercise 9-18

Capitalization Rates
3 components

1. **D**iscount Rate
2. **R**ecapture Rate
3. Effective **T**ax Rate



Discount Rate

- Also known as the Overall Yield Rate (Yo), reflects the Return **On** Investment.
  - Income to the property such as Rent.
- Used in historical capitalization methods of developing the Land Capitalization Rate.

Recapture Rate

- Provides for the Return **Of** Investment in the wasting portion of the asset. This is similar to the depreciation rate for the improvement.
- One of the Components of the Building Capitalization Rate.

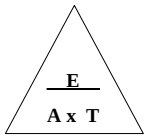
Effective Tax Rate

- Reflects the relationship between the real estate taxes and the value of the property
- Methods of Developing the Effective Tax Rate
- The **EAT** Equation
  - **E** = the effective tax rate
  - **A** = the assessment level
  - **T** = the Tax Rate

Effective Tax Rate

by using the following formula

Effective Tax = Assessment Level X Tax Rate



Assessment Level

- The level of assessment is the ratio of assessed value to full market value. In many jurisdictions, the taxable value of the property is equal to the appraised value of the property. In others, the taxable value is a fractional amount of the appraised value as set by state statutes. When the appraised value equals the taxable value, the level of assessment is 100%.

Effective Tax Rate

Is the ratio of the annual real estate taxes to the total property value

Example:

The assessment level is 40% of market value and the current tax rate is $5.00 per hundred. The effective tax rate is:

Assessment Level	**0.40**
Tax Rate	**x 0.05**
Effective Tax Rate	**.02 or 2%**

Gross Income Multiplier

- The **VIF** formula is also known as the gross income multiplier.

1. **V** (value) = Income X Factor
2. **I** (income) = Value ÷ Factor
3. **F** (factor) = Value ÷ Income

Gross Income Multipliers

Residential GRM

- Residential
  - Duplexes
  - Residences

$$\frac{\text{Sale Price}}{\text{Monthly Rental Income}}$$

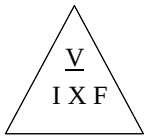
Commercial GIM

- Commercial
  - Apartment Buildings
  - Shopping Centers

$$\frac{\text{Sale Price}}{\text{Gross Annual Income}}$$

Problem

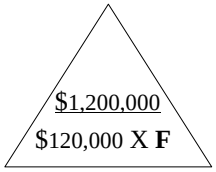
- You derived a value of $1,200,000 for a city parking lot. You calculated the annual income earned to be $120,000. Using VIF, calculate the income factor for this property.



Solution

F = $1,200,000 ÷ 120,000

F = 10



Exercise 9-29

Section 9
The Income Approach

9.1 Introduction

Income producing property is traditionally purchased as an investment. The income approach is appropriate for most income producing property and is based on the income attributable to the property. Types of property that an income approach can be performed on include ski areas, offices, apartments, utilities, and industrial property.

9.2 Economic Principles and the Income Approach

The income approach, as with the other two approaches to value, are based on basic economic principles. The principle of anticipation is fundamental to the income approach. Value is created by the expectation of future benefits, therefore value can be defined as the present worth of all rights to these future benefits. A property's market value tends to be set by the cost of acquiring an equally desirable and valuable substitute property, assuming that no costly delay is encountered in making the substitution. This principle underlies each of the three approaches to value - cost, sales comparison, and income.

The principle of supply and demand is also relevant to the income approach. Both income streams and rates of return are determined by the market. The rents charged by an apartment owner typically are constrained by the rents charged by the competition. In order to estimate the rate of return and forecast future benefits, appraisers will consider the relative demand versus the supply of a particular type of property.

9.3 Determining Income

The income approach estimates value by the capitalization or conversion of income into value. The first major step in this process is determining the income so that it can be capitalized.

The appraiser uses one or more levels of income in estimating value. The type of property and the function of the appraisal will determine what income level is used and how it is calculated.

Potential Gross Income (PGI) is the total potential market rent attributable to the subject property at full occupancy before any deductions.

Effective Gross Income (EGI) is the potential gross income of the property adjusted for vacancy and collection losses. This adjustment takes into account all losses due to unoccupied space, turnover, and unpaid rent by tenants.

Net Operating Income (NOI) is the actual or anticipated income remaining after all operating expenses have been deducted from effective gross income. Net income is typically expressed in an annual amount. In some appraisals a single year's NOI represents a steady stream of income that is expected to continue for a certain number of years. More often, the income may represent a starting level of income that is expected to change in a prescribed pattern over a number of years.

Procedures will differ depending on the type of income-producing property being appraised. For rent producing properties, the following steps are used to calculate Net Operating Income:

1. Estimate the Potential Gross Income (PGI)
2. Estimate the allowances for Vacancy Collection and Rent Loss (VC)
3. Subtract Vacancy and Rent Loss from the Potential Gross Income (PGI)
4. Add the Miscellaneous Service Income. This will give the Effective Gross Income (EGI)
5. Estimate operating expenses and any reserves for replacement.
6. Deduct expenses from the EGI to determine the Net Operating Income (NOI)

9.4 Step 1: Estimating the Potential Gross Income (PGI)

Potential gross income considers income from rent at full occupancy. Rent at full (100%) occupancy is called economic or market rent. Economic rent can be estimated from an analysis of the market. Current rental data is collected on comparable properties and applied to the subject property.

Economic Rent Problem

You are appraising a 15-Unit Apartment Building. No rental information is available on the subject property. The building has a gross area of 8,000 square feet. All units are one bedroom and one bath. You have verified the rents of four other properties along the street. These apartment units are comparable to the subject property in age and quality. The rents verified are for one-bedroom, one-bathroom units.

Comparable

1. Gross area is 8,500 square feet, 15 units, PGI is $90,000.

2. Gross area is 7,800 square feet, 13 units, PGI is $85,800

3. Gross area is 9,200 square feet, 16 units, PGI is $95,040

4. Gross area is 7,200 square feet, 12 units, PGI is 77,760

Determine the following:

1. The monthly rent per square foot of gross area,
2. The average square foot area per apartment and the indicated monthly rent per apartment on the subject property.

Use the following page to develop an economic rent estimate for the subject property

Developing Economic Rent											
Sale No.	Gross Annual Income		Gross Monthly Income		Total Sq. Ft Area of Building		Sq. Ft Area Per Month		Sq.Ft Area Per Apartment		Monthly Rent per Apartment
1		÷ 12 =	$	÷		=		x		=	$
2		÷ 12 =	$	÷		=		x		=	$
3		÷ 12 =	$	÷		=		x		=	$
4		÷ 12 =	$	÷		=		x		=	$

Using the rental information on the four comparables, what is the economic rent of the subject?
Rent per square foot per month _____. Rent per apartment unit per month _____.

Subject Property

Total Sq. Ft. Area of Building		Economic Rent Per Sq. Ft. Per Month		Total Monthly Rent		Potential Annual Gross Income
_____	x	_____	=	_____	x 12 =	_____

Using the rent per square foot, what would be the monthly rent per apartment unit for the subject?

Sq. Ft. Area Per Apartment		Rent Per Sq. Ft. Per Month		Monthly Rent Per Apartment
_____	x	_____	=	_____

9.5 Step 2 - Estimating Allowances for Vacancy Collection and Rent Loss

The next step in the process is to calculate the effective gross income. This first requires an estimation of the income lost through vacancies and non-payment of rent.

In the real world, a building rarely operates at full capacity throughout its useful (economic) life. During the life span there will be periods of vacancy between the date on which one tenant vacates and the date on which the new tenant takes occupancy. Occasional loss of rent is brought about by the need to remodel and rent loss may occur from the tenants' inability to pay.

There is no typical allowance for vacancy and collection loss. The vacancy factor for any particular property is usually determined by a study of other comparable properties and an analysis of their rental histories, as well as the recent history of vacancies in the subject. Since it is future income being capitalized in most instances, it is ultimately the future vacancy and collection loss that is estimated. There are a number of factors that influence the percentage of vacancy and bad debt loss. Among the more important are:

Competitive conditions (vacancy rates in the area)
Lease Durations
Tenant credit ratings
Local economics
Location
Past history as a prediction of the future

Vacancy and Rent loss is generally expressed in a percentage form. This percentage is deducted from the total Potential Gross Income to arrive at the Effective Gross Income total.

9.6 Step 3 - Estimating Miscellaneous Income

- Miscellaneous income is derived from additional items (i.e. revenue from laundry, pop machines, parking, storage units, etc.)

Effective Gross Income Problem

Based on an analysis of comparable properties in the neighborhood, you estimate that a reasonable vacancy and bad debt (collection) loss allowance is 8%. This percentage is further substantiated by property managers in the area whose records indicate that typical vacancies run between 6.5% and 9%. You have estimated the PGI to be $98,500.

What would you estimate of the effective gross income be:

Potential Gross Income	$ _____
Less-Vacancy and Collection Loss @ (8%)	$ _____
Miscellaneous Income	$ _____
Effective Gross Income	$ _____

9.7 Step 4: Determining Operating Expenses

The value of an income-producing property is measured by the net income it can be expected to earn during its remaining useful life. Determining Net Operating Income (NOI) first requires estimating the probable future expenses of operating the property. These expenses, when deducted from effective gross income, produce the Net Operating Income (NOI).

EGI-Expenses = NOI

9.8 Expenses

After the Effective Gross Income has been estimated, the property's expenses must be analyzed. Information about operating expenses are provided by the owner's operating statement on the subject as well as the comparables. However, not all the income and expenses listed by the accountant on the operating statement are to be considered by the appraiser.

Expenses for appraisal purposes are generally classified as (1) operating, or (2) reserves for replacement.

9.9 Operating Expenses

Operating expenses are the typical expenses that are necessary to obtain and maintain the income. As mentioned previously, the owner's operating statement will include expenses that are not to be considered by the appraiser. Typical expenses that are allowed for ad valorem purposes include; management, salaries, cleaning, utilities, supplies and materials, repairs and maintenance and insurance.

Management. Management is an allowable expense to include in the income approach. Management is generally stated as a percentage of the Effective Gross Income. The rate to be applied to the subject property is based on what the typical charges are for management services in the area.

Salaries. This category includes the salaries and benefits of the employees. Such employees typically include on-site managers, maintenance personnel, grounds keepers, housekeeping staff, and other employees needed to keep the property running and competitive with other properties.

Utilities. Charges for gas, electricity, water, sewer, garbage removal, and telephone services are included in this category if paid by the owner.

Supplies and Materials. Included in this category are the day-to-day cleaning and maintenance items used in the operation of the property. Spare parts, tools or appliances are not considered supplies and materials.

Repairs and Maintenance. This category includes expenses necessary to keep the property operating and covers the repair of such items as the roof, water heaters, cooling systems, broken glass and painting. This category should not be confused with the *reserves for replacement.* Expenses in the reserves for replacement category is the annual charge set aside for the replacement of short-lived items (items having an economic life shorter than the building & generally longer than a year). Repairs and maintenance are the expenses incurred in the maintenance of the property.

Insurance. Property insurance is an allowable expense considered necessary in the operation of an income-producing property. Many insurance premiums are for more than one year of coverage. In such cases annual proration is necessary.

Property taxes. Property taxes may be considered an expense item in the income approach. However, in appraising for ad valorem assessment purposes, property taxes are usually included as an effective tax rate as part of the overall capitalization rate. We will discuss more about effective tax rates later in this section.

Expenses Not Included

Expenses for appraisal purposes do not include expenditures beyond the direct operation of the income producing property. There are four types of expenses that are not considered operating expenses for real and personal property. They are:

1. Financing costs (mortgage principal and interest payments)
2. Income tax payments (personal liability of owners)
3. Depreciation charges (on building or other improvements)
4. Payments for capital improvements (such as refrigerators, new roof, storm windows, etc.)

Financing costs and depreciation charges are represented in the appraisal value. Like property taxes, they are considered in the capitalization rate. Payments for capital expenditures, where appropriate, are accounted for in reserves for replacement.

9.10 Reserves for Replacement

Reserves for replacement are allowances set up for the replacement of short-lived items. A short-lived item is expected to complete its economic life more quickly than a long-lived item such as the structure or foundation. Reserves should be set up to replace short-lived items such as ranges, refrigerators, heating units, elevators, roofs and other items whenever buyers and sellers consider them in valuing property. The appraiser calculates the reserves for replacement as an annual expense in the following manner:

1. Estimate the economic life of the item
2. Estimate the replacement cost new
3. Calculate the percentage of reserve per year by dividing 100 percent by the economic life of the item.
4. Multiply the replacement cost new by the percentage per year . This results in the annual charge or the annual reserve for replacement expense for that item.

Example

The economic life of a water heater is 15 years. The cost of replacement is $700.

$$\$700 \div 15 = \$47 \text{ annual expense}$$

9.11 Reconstructing an Operating Statement

When an appraiser receives an operating statement, they will need to eliminate the expenses that are not allowable for assessment purposes. This process is called reconstructing the operating statement. When analyzing and reconstructing an operating statement keep in mind the following:

1. If the property has no manager and the owner performs all the management functions, an estimated cost for management must be included as an expense. On the other hand two properties may be identical but one is owned by a local individual while the other is owned by a vacational company having several properties all over the country and additional management expenses at their home office in which a portion is attributed to each property. For comparison and uniformity these added management expenses should be omitted.

2. Rent-free space occupied by personnel may not appear in the rent schedules represented to the appraiser. In such cases, the appraiser must assign rental values which are comparable to the rental values assigned to similar spaces in the building. The expenses must be increased in a like manner by the same amount.

3. In cases where accounting records are kept on a cash basis, insurance policies covering a multi-year period are sometimes paid in one year. The statement would show a three-year cost incurred in one year. The appraiser must prorate the cost to reflect the annual cost.

4. In ad valorem appraisal, a provision for property taxes is made in the capitalization rate, and property taxes are thus not to be considered an operating expense.

5. Future depreciation or appreciation will be included in the recapture component of the capitalization rate, thus not included in the operating expenses.

Problem
Reconstructing An Operating Statement

Directions: Using the information provided by the Owner's Income and Expense Statement and the following supplemental information; calculate the property's Net Operating Income before Recapture and Taxes. Use the form provided on the following page to complete the Reconstructed Operating Statement.

Supplemental Information

The subject property is a 15-unit apartment complex.
Rent is $1500 a month per unit.
Vacancy and Collection Loss for the area is at 5%
Current management fees are 8% of effective gross income

Economic life of short-lived property:

Refrigerators, ranges	15 years
Carpet	5 years
Roof Covering	15 years
Water Heater	15 years
Interior Paint	4 years

Owner's Operating Statement of Income and Expenses
XYZ Apartments
December 31, 20___

Rental Income	$270,000	
Total Income		**$270,000**
Real Estate Taxes	15,050	
Insurance (3 year premium)	5,200	
Salaries	4,800	
New roof cover	10,000	
3 refrigerators ($650 price per each)	1,950	
3 stoves ($560 price per each)	1,680	
Utilities	1,580	
Advertising	1,500	
Lawn care	3,000	
Interior paint- 5 units ($650 price per unit)	3,250	
Depreciation	32,000	
Carpet- 5 units ($1000 per unit)	5,000	
Supplies	600	
Misc. Maintenance	1,450	
Total Expenses		**$87,060**
Net Operating Income		**$182,940**

Reconstructed Income and Expense Statement
XYZ Apartments

Potential Gross Income	$_____
Less vacancy and collection loss (5%)	_____
Add misc. Income	_____
Effective gross income	$_____

		Expense (Dollars)
Operating Expenses		
Management Expense		_____
Insurance		_____
Salaries		_____
Supplies		_____
Misc. Maintenance		_____
Utilities		_____
Advertising		_____
Lawn Care		_____
Reserves for Replacement		
New roof cover	(_____)	_____
Refrigerators	(_____)	_____
Stove	(_____)	_____
Interior paint	(_____)	_____
Carpet	(_____)	_____
Total Operating Expenses and Reserves for Replacement		_____

Effective gross income	_____
Less Operating Expenses	_____

Net Operating Income (before discount, recapture, and taxes) $_____

(Extra credit: What is the ratio (as a percent) of the expenses to EGI? _____)

9.12 Income, Value and Rate Formulas

Capitalization in its simplest form is achieved by dividing the present income by an appropriate rate of return to estimate the value of the income stream. The formula used to estimate the value today of income expected in the future is known as the *IRV formula:*

Value = Income ÷ Rate

$$V = I \div R$$

As we have discussed in previous sections, *IRV* can be expressed in other forms to calculate an unknown income or rate when value is known.

Income = Rate x Value

$$I = R \times V$$

or

Rate = Income ÷ Value

$$R = I \div V$$

The *IRV* formula is the foundation for determining value based on income. In order to use the model to find an estimate of value, income and rate must be known. Income is typically the annual net operating income (NOI) expected, and the rate is the capitalization rate appropriate for the subject property and the level of income as of the date of the appraisal.

9.13 Income Capitalization Approach Methods

Two methods, direct capitalization and yield capitalization, are used to convert potential income into a value estimate. These methods utilize different data to arrive at a determination of the potential income stream of a property.

Direct Capitalization is a method used to convert an estimate of a single year's income into an indicator of value in one step. This is accomplished by either dividing the income estimate by an appropriate rate or by multiplying the income estimate by an appropriate income factor.(Remember **IRV**)

Yield Capitalization is a method used to convert future benefits into present value by discounting each future benefit at an appropriate yield rate or by developing an overall yield rate that expresses the investment's income stream, value changes and yield rate.

It is important to understand the differences between the direct and yield capitalization methods. In the direct capitalization, the income being capitalized is reflective of one year's income and the capitalization rate is derived directly from comparable sales that reflect similar expectations for quality, quantity and duration in the market place. Direct capitalization is sometimes referred to as ratio capitalization since the rate reflects the ratio of one year's income to value.

Yield capitalization considers all future years' income cash flows that are discounted and the capitalization rate is based on the investors' expectations of return on and return of invested capital from alternate investments of comparable risk. In other words, yield capitalization reflects all the expected income and all the expected return. It is commonly refereed to as discounted cash flow analysis (DCF). For the purposes of this course, we will focus on the direct capitalization approach to value.

9.14 Income Capitalization

The idea that the investor anticipates a complete recovery of the investment plus a payment for the use of the capital prevails in the real estate market just as it does in other markets. The term *return of capital* refers to the recovery of invested capital (principle); the term *return on capital* refers to the additional amount received (interest) by the investor as compensation for use. Thus, the appraiser assumes that the objective of the investor is twofold:

1. A return *of* the investment
2. A return *on* the investment

In considering the income of a property investors are concerned with the quality, quantity and duration of the income for the property being appraised. They examine t*he quality of the income* or the reliability versus the risk; Higher rewards are required in return for accepting a higher risk.

The quantity of the income relates to how much income a property can produce. *The durability of the income* considers the length of time the income will be received. The rate that indicates the return required to attract investment capital is the link or relationship between the future income and a value. The selection of rates becomes essential in the capitalization of income.

Selection of Rates

Understanding what rates are and how they are used is of critical importance in the income approach. A small difference in the rate will result in a significant value difference. Look at the following example:

$40,000 (Net Operating Income) = $333,333 value
.12 (capitalization rate)

$40,000 (Net Operating Income) = $363,636 value
.11 (capitalization rate)

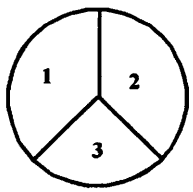
A difference in the capitalization rate of only one percent creates a difference in value of over $30,000 dollars.

9.15 Development of Discount, Recapture and Effective Tax Rates

There are several ways that an appraiser can formulate a capitalization rate. They can look to the market, analyzing comparable properties that have sold recently and form an opinion based on the capitalization rate found. Or the appraiser may also estimate the capitalization rate by analyzing the component parts of the capitalization rate and then structure one for the subject property.

There are traditionally three components of a capitalization rate:

1. The discount rate component
2. The recapture rate component
3. The effective tax rate component



This compound or combined rate takes into consideration all aspects of value related to the market.

9.16 Discount rate - Return on Investment

The return on a real estate investment is referred to as the discount rate. There are two methods that may be used in developing the discount rate.

1. Band-of-investment method
2. Market Comparison method

The Band-of-investment method is the typical method for determining the discount rate. It is also referred to as the weighted average cost of capital. This method takes into account all individuals (or bands of investment capital) that have an interest in the real estate being appraised. Not every investor will be satisfied with the same rate of return on an investment. For example, the owner may regard his or her position as more risky than that of the first or second mortgage holder. Each mortgage creates a lien on the property. If the owner defaults, the property may be sold to pay such liens, and the owner receives only those proceeds that may remain from the sale of the property. Since the owner's interest is generally considered inferior to those lien holders, they may require a higher return on the investment.

The interest rate developed by the Band of Investment Method is based on: (1) the rate of mortgage interest available, and (2) the rate of return on equity. For example, assume a case in which a first mortgage covering 70% of the value of the property can be obtained at 8% interest, and the buyer requires a return of 12% on the equity portion. Using the Band of Investment Method, the discount rate could be developed as follows:

	% of Total Property Value		Interest Rate		Product
First Mortgage	70%	x	8%	=	.056 or 5.6%
Equity	30%	x	12%	=	.036 or 3.6%
TOTAL	100%				.092 or 9.2%

The interest rate on 100% of the value is 9.2%.

The procedure for secondary financing is the same. For example, suppose a first mortgage of 70% is obtainable at 10 ½ %, a second mortgage of 15% is obtainable at 12% interest and the equity of 15% requires a 15% return. The discount rate would be developed as follows.

	% of Total Property Value		Interest Rate		Product
First Mortgage	70%	x	10.5%	=	.0735 or 7.35%
Second Mortgage	15%	x	12%	=	.018 or 1.80%
Equity	15%	x	15%	=	.0225 or 2.25%
TOTAL	100%	x			.01140 or 11.40%

In the Band-of-Investment Method, each portion of the property's ownership or interest is multiplied by the rate of return required to attract money into that type of ownership position.

Problem

Calculating Band-of-Investment

An appraiser has been asked to establish an overall rate to be used in the capitalization of the net income produced by a commercial property. It will carry a 60% first mortgage at a 10% interest rate and a second mortgage of 20% with an interest rate of 13%. Equity for this type of investment requires a 14% return. What is the Overall Rate to be applied to this property?

9.17 Recapture Rate

The return *of* the invested capital is also called the recapture of the investment. In the analysis of income produced by land, there is no need to include a recapture component. The assumption is that land does not depreciate, recapture of the investment can be done entirely through resale. A building or improvement can depreciate. Its value may decrease with the passage of time. The appraiser therefore, adds to the discount rate an additional percentage that will provide for the recapture *of* the investment in the building or improvement during its remaining economic life.

9.18 Straight-line Method of Recapture

The simplest form of computing the recapture rate is the straight line method. Under this method, total future depreciation is spread over the remaining useful life of the improvement in equal annual amounts. When the improvement is 100% depreciated and presumably economically useless, all of the investment will have been returned to the investor through annual charges.

To find the recapture rate using the Straight-line Method, divide the total future depreciation (in the following example, 100%), by the remaining years of useful (economic) life of the improvement. For example the annual recapture rate for an improvement with a 20 year remaining economic life is .05 or 5%.

100% ÷ 20 years = .05 or 5% Annual Recapture Rate

The straight-line method of recapture requires a good knowledge of the remaining economic life of a given improvement. As with the cost approach to value, the appraiser may utilize a cost manual calibrated to the local market to arrive at a determination of the remaining economic life of the improvement*.

***For most appraisal classes, recapture rates are positive, but in the real world, due to appreciation, recapture rates are often negative.**

9.19 Effective Tax Rate

When the income approach is used to estimate property value, the practice of using property taxes as an expense item is based upon a estimated market value and leaves the final value conclusion open to error. This difficulty is resolved by developing an effective tax rate and including this rate as a component of the overall capitalization rate.

The effective tax rate is the ratio of the annual real estate taxes to the total property value. Where the level of assessment is 100% of the market value, the effective tax rate and the actual tax rate are the same. Where fractional levels of assessment are used, the effective tax rate equals the ratio of the tax rate to the assessment level. The effective tax rate is obtained by multiplying the official tax rate by the level of assessment. Look at the following example:

> The assessment level is 40 percent of market value and the current tax rate is $5.00 per hundred. The effective tax rate is:

Assessment Level		.40
Tax Rate	x	.05
Effective Tax Rate	=	.02 or 2%

The effective tax rate may also be calculated when the dollar amount of the real estate taxes and the market value of the property are known (IRV formula). This is achieved by dividing the expected taxes by the market value of the property.

Expected Taxes		Property Value		Effective Tax Rate
$4,000	÷	$200,000	=	.02 or 2%

9.20 Calculating an Overall Capitalization Rate (OAR)

After the discount, recapture, and effective tax rates have been determined for the subject property, it is simply a matter of adding the three components together to come up with a combined capitalization rate. This rate is then plugged into the IRV formula to compute the value estimate for the subject property.

When computing the value for the property, land and buildings are treated separately. The reason for this difference is that land is a non-wasting asset; it does not depreciate. The recapture component of the capitalization rate considers the depreciation of wasting assets. Therefore, when the overall rate is calculated, the ratio of land to building is needed.

Example
Calculating an Overall Rate

Given the following information calculate an Overall Rate:

Remaining economic life 25 years.

A first mortgage at 9 percent interest can be obtained for 70 percent of the property value.

A second mortgage at 10 percent interest can be obtained for 10 percent of the property value.

The investor expects a yield rate of 12 percent.

The effective tax rate is 2.8 percent.

Assuming that the land represents 25 percent of the total value, what is the Overall Rate?

Recapture Rate
1 ÷ 25 = 4.0%

Discount Rate	
Band-of-Investment	
1st	.70 x .09 = .063
2nd	.10 x .10 = .010
equity	.20 x .12 = .024
	Total Rate = .097
	Or 9.7%

Effective Tax Rate
2.8 %

Land Rate:

Discount Rate	+	Tax Rate	=	Rate for land	x	Percent of Value	=	weighted OAR for land
9.7	+	2.8	=	12.5	x	.25	=	3.125

Building Rate

Discount Rate	+	Tax Rate	+	Recap Rate	=	Rate for Building	x	% of Value	=	weighted OAR building
9.7	+	2.8	+	4.0	=	16.5	x	.75	=	12.375
								OAR Property	=	15.500

9.21 Residual Techniques

There are three techniques for capitalizing net income into value: (1) the building residual technique; (2) the land residual technique; (3) the property residual technique. In appraisal, a residual is the income remaining after all deductions have been made.

Building Residual Technique

To use the building residual technique, the appraiser must know the value of the land, which is usually found by analyzing comparable sales.

First, the appraiser deducts the amount of net operating income that must be earned by the land to compute its value. The balance of the net income is thus earned by the building. The building income is then capitalized at the discount rate plus the rate of recapture and the effective tax rate to arrive at the building's value.

Land Residual Technique

The land residual technique follows the same procedures as the building residual technique except in this technique the balance of net income for the land is computed and then capitalized figuring in the discount and effective tax rates only.

The land residual technique is used when there is no comparable sales information to arrive at an estimate of value for the land portion. It is also used when the building is new or nearly new and represents the highest and best use of the land. When the building is new, value typically is assumed to be equivalent to the

reproduction cost.

Property Residual Technique

In the property residual technique, the land and buildings are valued as a single unit. This technique must be used when the building is very old, or when it is difficult to make reliable estimates of either the land or building value. It is the most common method and arguably more objective than the land and building residual techniques.

9.22 Market Comparison Method

The market comparison method involves dividing the net income after recapture and after property taxes have been deducted, by its sale price. The IRV formula is expressed as:

$$I \div V = R$$

Applying the formula results in the indicated discount rates for comparable properties. The appraiser will look at the range of discount rates from available comparable properties to establish the appropriate discount rate to be applied against the subject property.

Problem

Market Comparison Method to Find the Overall Rate

The subject property is a building with the annual net income of $21,000. Determine the appropriate overall rate for the subject property given the following information.

Comparable Sales

Property	Selling Price	Net Income	Overall Rate
A.	$272,000	$23,600	
B.	$188,000	$16,000	
C.	$254,000	$22,000	
D.	$221,000	$19,200	

What is the subject's indicated value?

9.23 Gross Income Multipliers

Another technique for finding a value estimate using the direct capitalization approach is through a Gross Income Multiplier.

Gross Income Multipliers (GIM) are used to compute an indicator for a given property based on the relationship between the gross income and Sale Price of similar properties. In this model Potential Gross Income or Effective Gross Income may be used. While the Gross Income Multiplier is most typically identified with residential income properties such as apartments or duplexes, it may be used on any income producing property where there exists sufficient sales market data.

GIM is calculated by dividing the property value of selling price by the property's potential gross income at the time of sale. Comparable sales and income data are collected and a GIM is estimated for the subject based on the range found in the comparable properties.

Example

A ten unit apartment complex sells for $450,000. The Potential Gross Income is $64,000. Therefore the GIM (Gross Income Multiplier) is:

Sales Price ÷ PGI = GIM

$450,000 ÷ $64,000 = 7.03

After the appropriate income and the GIM are determined for the subject property, the income formula is used to estimate value. For example, in appraising a property that has an Effective Gross Income of $75,000 and in the analysis of comparable properties recently sold, the appraiser has concluded that the Gross Income Multiplier is 8.01, using the *VIF* formula, the estimated value for the property is $600,750. (Factors are similar to some rates, however factors will always be greater than 1).

Value = Income x Factor

$75,000 x 8.01 = $600,750

V

I | F

A Gross Rent Multiplier or Gross Rent Monthly Multiplier (GRM or GRMM) may be developed for use with monthly rentals. Single family residence are not typically purchased for their income producing potential, however the appraiser may use this income method to serve as a check on the market or cost value estimates. GRMM is found by dividing the sales price of the house by its monthly rent.

Example

A single family residence sells for $110,000. This residence rents for $ 820 per month. Therefore the GRMM for this single family residence is :

Sales Price	÷	Monthly Rent	=	GRMM
$110,000	÷	$820	=	134

Problem
Gross Income Multiplier

You are appraising a commercial building and you have acquired the following data on three recently sold comparable properties.

These sale properties are comparable to the subject property in condition, location, size, land-to-building ratios and remaining economic life.

Develop a value estimate for the subject property using the Gross Income Multiplier method.

Sale No.	Annual PGI	Sales Price
1.	$24,000	$200,000
2.	$34,000	$300,000
3.	$26,000	$220,000
Subject	$31,000	_____

Review
Section 9
Income Approach

1. State the formula for using a GRM (Gross Rent Multiplier) – or GIM (Gross Income Multiplier).

2. The income approach is based on which principles?

3. Finish this statement: High Risk = High Rate = _____ ?

4. The overall cap rate is the direct relationship between the annual net income and what component?

5. What are the formulas for the three approaches to value?

6. The capitalization rate converts future _____ into _____.

7. The _____ is also referred to as the weighted average cost of capital.

8. An example of an improper expense on the property owner's income and expense statement would be?

   A. Yard care
   B. Legal and accounting fees
   C. Real estate taxes
   D. Repairs and Maintenance

PRINCIPLES OF PROPERTY VALUATION

SECTION TEN

COMPUTER ASSISTED MASS APPRAISAL & RATIO STUDIES

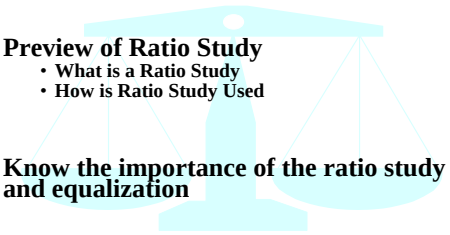
LEARNING OBJECTIVES

On completing this section the student should:

- ✓ Understand CAMA basics
- ✓ Become familiar with a ratio study report
- ✓ Understand the use of a ratio study in mass appraising
- ✓ Know the basic appraisal math
- ✓ Know the importance of the ratio study and equalization

LEARNING OBJECTIVES
SECTION TEN

- **Understand CAMA basics**
- **Preview of Ratio Study**
  - **What is a Ratio Study**
  - **How is Ratio Study Used**
- **Know the importance of the ratio study and equalization**



C A M A

Computer Assisted Mass Appraisal

Computers

Digital Cameras

Geographic Information System (GIS)

Modeling

Multiple Regression Analysis (MRA)

Feedback

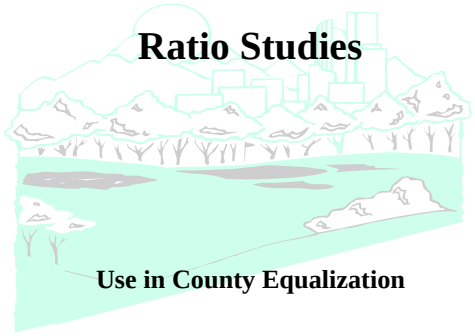
Data Management

- Model Specification
  - – Query, select data, statistical, and graphic capabilities
- Model Calibration
  - – Statistical testing
  - – Appropriate Neighborhood Variables
  - – Edit Data

Multiple Regression Analysis (MRA)

- Statistical Technique for Estimating Unknown Data Based on Known and Available Data.
- Studies Numerous Variables And Considers Their Impact On Value Simultaneously.
- Does Not Produce Separate Land and Building Values.

Ratio Studies



Use in County Equalization

Ratio Study

- **Measure the relationship between assessed or appraised values and market values (with sales prices or independent appraisals serving as proxies for market value)**
- **Two primary aspects of appraisal accuracy are studied:**
    1. **Assessment Level**
    2. **Uniformity**

General Uses of Ratio Studies

- Mass appraisal performance evaluation
- Compare and equalize assessments on different property classes or groups
- Produce uniformity in effective tax rates when taxing districts cross assessment jurisdiction lines
- Ensure uniform savings from exemptions
- Test compliance with statutory requirements for assessment level and uniformity.
- Statistical evidence in appeals involving groups of taxpayers or large class, such as utilities.

When to do Ratio Studies

- **Baseline Study**: To establish assessment conditions at start of reappraisal
- **Completion Study**: To test whether changes have improved conditions based on sales info used in reappraisal process
- **Final Study**: To test whether changes have improved conditions when new sales info taken into account.

How is the Ratio Study Applied?

- If average (or median) ratio is 100%, property is considered assessed at market value.
- STC rules permit ± 10% for county compliance (percentages relate to averages, not individual assessments).

Information Used for Ratio Studies

- **Sales of real property- Must meet standard definition of "arms length transaction" so sales price reflects market value.**
- **Sales must constitute representative sample- Must reflect typical ratios between assessed value and sale price for property category being studied. Must reflect assessment conditions on selling and non-selling properties. Should be sufficient quantity to reflect location influences and property characteristics that affect value.**
- **Sales are gathered by each county- Data is reviewed by STC staff.**

THE END

LEARNING OBJECTIVES SECTION TEN

- *Understand CAMA basics*
  - *Introduction to Pro Val*
- *Preview of Ratio Study*
  - *What is a Ratio Study*
  - *How is Ratio Study Used*
- *Know the basic appraisal math*
- *Know the importance of the ratio study and equalization*

C A M A

Computer Assisted Mass Appraisal

Computers

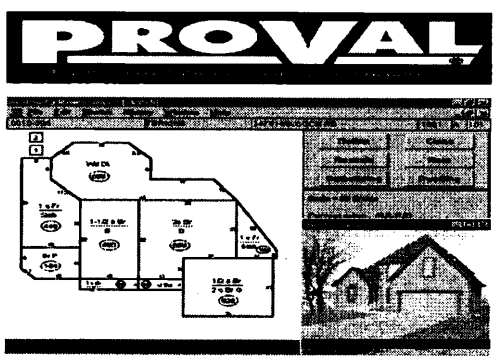
Digital Cameras

Geographic Information System (GIS)

Modeling

Multiple Regression Analysis (MRA)

Feedback



ProVal® Sketch Entry

- With the one of a kind entry program, ProVal® becomes the sketch driven appraisal information system. Get the sketch information correct, and the rest of the database information will automatically be generated from the sketch information. There is never any need to enter data twice

Parcels can then be valued by cost, market, comparable sales, income, trending, or reconciled value.

Ratio Studies

Use in County Equalization

Ratio Study

- Is the relationship between the Sales Price and the Assessment Value
- Provides a comprehensive report card on appraisal work
  1. Assessment Level
  2. Uniformity Level
  3. Reliability Level

What is a Ratio Study?

- Statistical study based on comparison (ratio) between assessed value and sale price (as proxy for market value).
- Statistics developed based on ratios calculated for [illegible]
- Statistics provide information about two aspects of assessment quality:
  - Level- How close overall assessments are to market value; and
  - Uniformity- How much variation there is between assessments of similar parcels.

How is Ratio Study Used?

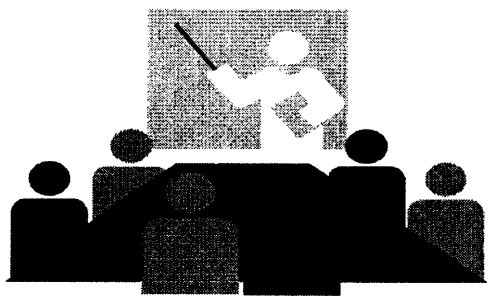
- Information for county equalization required in Idaho Code 63-109.
- County equalization - If average ratio in any category is not between 90% and 110% of market value, county is notified in February or March and must fix before August or STC may order adjustment.

	Market Value	Assessed Value	Trending
County A	\$100,000	\$100,000	0
County B	\$100,000	\$90,000	11.11%

Information Used for Ratio Studies

- **Sales of real property- Must meet standard definition of "arms length transaction" so sales price reflects market value.**
- **Sales must constitute representative sample- Must reflect typical ratios between assessed value and sale price for property category being studied. Must reflect assessment conditions on selling and non-selling properties. Should be sufficient quantity to reflect location influences and property characteristics that affect value.**
- **Sales are gathered by each county- Data is reviewed by STC staff and county assessor.**

THE END



Section 10
Computer Assisted Mass Appraisal (CAMA)
& Ratio Studies

Introduction

This section will complete your introduction to the principles of ad valorem assessment and appraisal in Idaho. Arguably we have saved the best for last. This presentation on statistics and assessment will only serve as an introduction, however, it will hopefully stir your interest and enthusiasm for many classes in the future.

10.1 Computer Assisted Appraisal

Computer Assisted Mass Appraisal (CAMA) is just that, using computers to assist us in our appraisal work. Everything from digital cameras to computer generated assessment notices qualifies as CAMA. In the past, CAMA has mostly meant keeping records and producing assessment rolls, notices and tax bills (with possibly a self calculating cost approach thrown in for the appraisers). Today with the advent of PC's, and the many readily available CAMA software packages for those PC's, appraisers are doing virtually everything with computer assistance.

Automated comp retrieval and the processing of these comps into a sales comparison approach, sketch capabilities that produce the square footage and computations, and different types of regression modeling now that are basic parts of any reasonably complete CAMA system. Mass Appraisal can be defined as using statistical processes to test and establish value estimates against sales prices.

Testing or quality control is typically accomplished through the use of Sales Ratio Studies. Ratio studies will be discussed after this CAMA section. Methods and techniques of computer assisted appraisal are being referred to, more and more, as models. Modeling is broken down into two steps or components: 1) Model Specification, and 2) Model Calibration.

A model is often a mathematical representation of how something works. In appraisal, it is an equation that explains the relationship between various variables and value. For example, if one house is 100 square feet larger and 10 years older, the value is $XXX,XXX. Modeling provides a method of consistently valuing like and different properties. Of course analysis is still needed to specify and calibrate valuation models. Accurate models capture and quantify the supply and demand relationships in the market.

Model Specification is the setting up of models or the expressing of value factors in a formula. Regression formulas may provide for the separation of land and improvement values or estimate one lump sum. Models today often specify between 5 and 10 variables in explaining the variation in selling prices. Consider Sandy Smith, appraiser, and the model he/she developed:

Value (Y) = Square Footage (X_1) times the Coefficient (b_1) or

$$Y = X_1 \times b_1$$

We refer to "Y" as the dependent variable and X_1, X_2, X_3 and so on, as the independent variables. "Y" is usually sales price or value, but can be something else such as a capitalization or depreciation rate. Consider the following examples of independent variables for residential property.

Square Footage Main	Land Size/Frontage
Square Footage Secondary	Design
View	Plumbing Fixtures
Effective Age	Extra Features
Class (quality factor)	Heating/Cooling (or A/C)
Neighborhood (location)	Garage/Carport Square Footage

Model Calibration is the process of estimating coefficients in a mass appraisal model. Think of it as the computer developing adjustment weights for quantitative (such as square footage or age) and qualitative (such as class or view) variables.

It can't be stressed enough that good data is necessary to generate good values from models. The collection and editing of data is the most expensive part of the appraisal process, but it is often the most important part as well. An analyst might spend 6 months getting data ship shape, then take less than one month building and calibrating a model that will revalue the entire county. A good revaluation program will stress quality control on data collection, tabulation and data entry. Even if your valuation on someone's house is correct, it's not worth much if you can't convince them of that because you have their square footage wrong. This is saying nothing of the difficulty of calibrating a model that has to deal with sloppy data.

In closing out this section, lets consider multiple regression analysis and its relationship to CAMA. Multiple Regression Analysis (MRA) can be presented in the additive model below.

$$Y = b_0 + (b_1 * X_1) + (b_2 * X_2) + (b_3 * X_3) + \ldots + (b_n * X_n)$$

MRA uses least squares analysis to place a line of best fit to sales data. This line is represented by an equation that can be used to predict value not only for the selling properties but also for the non-selling properties as well. One of the nice things about MRA is it always provides an assessment ratio of 100%, unless you program it otherwise, and it finds the optimum uniformity for the variables provided. The line of best fit represents the positioning that has the minimum amount of squared misses summed for all the sales included in the model. Note b_0 represents the constant, or the point where the line crosses the Y-axis in a simple equation.

In our normal analysis such as the cost approach, we handle individual (independent) variables one at a time, and unfortunately they are often independent of one another. Such is the finite human mind. In modeling, we (the computer) can handle numerous variables and consider their impact on value simultaneously. Only two decades ago an appraiser had to be able to do the math (several days worth) to use regression analysis, now appraisers need only know how to run the computer and understand what it tells them. Best wishes in your power use of computers!

10.2 Sales Ratio Studies

Ratio Studies can be used in equalization, assessment planning and appraisal work. They are absolutely essential to any property tax system. In sales ratio studies, sales prices of arm's length transactions are compared to assessments or appraiser estimates of market value. Taken collectively, the results of a ratio study provide a comprehensive report card on appraisal work.

Ratio studies provide feedback on assessment level (such as 100%), uniformity (dispersion or horizontal inequity), and assessment bias (vertical inequity). A sales ratio is represented below.

Sales Ratio = Assessed Value / Sales Price

97.20% = 128,305 / 132,000

With representative sales and ratio studies we can improve the fairness of property taxes by improving the uniformity of appraised values. We can target poor assessments and make changes to reappraisal priorities, and we can analyze our appraisal models to be sure that they are working. This can result in public confidence and improved efficiency in our ad valorem property tax system. A very noble goal. Lets consider the following sales ratio study and review the terminology and various sections.

A full presentation of the math, statistics and standards related to ratio studies is beyond this course and the time available. We do hope that this brief discussion will provide you with a foundation upon which you can interpret future discussions and references involving ratios and ratio studies.

For a more in depth discussion on ratio studies you may want to refer to the STC Idaho Ratio Study Manual (1998) and the publication by the International Association of Assessing Officers (IAAO), Standard on Ratio Studies (1990). Both documents are periodically updated and provide comprehensive discussions on sampling, types of studies, reliability, and other matters. It is strongly recommended that all assessors and deputy appraisers take the STC Ratio Study Seminar as soon as possible. It is normally taught throughout the state during the fall months.

PRINCIPLES OF PROPERTY VALUATION

GLOSSARY

GLOSSARY

This Glossary is a compendium of the following authoritative sources and are taken verbatim or paraphrased:

Property Appraisal and Assessment Administration, published by the International Association of Assessing Officers.
Glossary of Real Property Ad Valorem Tax Assessment Terms published by Wayne Moore.

4-3-2-1 Rule- Rule that states that the first 25% of depth represents 40 % of the value; the second 25%, 30% of the value; the third 25%, 20% of the value; and the final 25%, 10% of the value.

65/35 Rule- Rule states that the value of the triangular lot with its base on the facing street will be approximately 65% of that of a rectangular lot of the same frontage and depth. The value of the triangular lot with its apex on the facing street will be 35% of that of a rectangular lot of the same frontage and depth.

Abstract Method- Method of land valuation whereby improvement values obtained from the cost model are subtracted from sales prices of improved parcels to yield residual land value estimates.

Abstract of Value- A report or display which provides a summary of land, structure and total value for each parcel in a selected area with the grand totals by land use classification at the end.

Ad Valorem Tax- Tax Levied based on the value of an item, an example is property tax.

Adaptive Estimation Procedure(AEP)- A computerized procedure using properties of which sales prices are known to produce a model that can be used to value properties for which sales prices are not known. Also called feedback.

Adjusted Sale Price- The sale price that has been adjusted for the effects of time, financing and personal property.

Adjustments- Modifications in the reported value of a variable, such as sale price. These adjustments can be used to estimate market value in the sale comparison approach, for example, by adjustments for differences between comparable and subject properties.

Age/Life- A method of estimating accrued depreciation based on the age of the property and its economic life. Also called straight line depreciation.

Air Rights- Property interest in the space beginning a specified distance above the surface level

of a parcel and extending for a specified distance.

Allocation Method- Method of land valuation used in the absence of vacant land sales, by using a typical ratio of land to improvement value.

Annual Assessment Posting- The act of moving the tax lien date assessed value and tax lien owner name to a special computer storage location for permanent reference.

Anticipation- Market value accounts for the present worth of future benefits or determents associated with the ownership of property.

Appeal- The informal or formal action by an owner of a parcel to seek a change in the assessed value of a parcel.

Appeal Period- The established period during which owners may file a formal appeal if they desire to contest the assessed value of a parcel.

Appraisal- The estimate of value for the purpose of revaluation and eventual assessment.

Appraisal Date- The date as of which the assessments for a tax year are made.

Appraisal Foundation- The organization authorized by Congress as the source of appraisal standards and appraiser qualifications.

Appraisal Institute- A leading organization of professional real estate appraisers. This organization confers professional designation of MAI and SRA.

Appraise- The act of estimating the value of a parcel.

Appraised Value- An estimate of the actual value of a property before the application of the legal assessment ratio and partial exemptions.

Arm's Length Sale- A sale between two unrelated parties, each of whom is reasonably knowledgeable of market conditions and under no undue pressure to buy or sell.

Assessed Value- The monetary amount which a property is entered on the assessment roll for purposes of computing the tax levy. Assessed values differ from the assessor's estimate of actual value for three major reasons; fractional assessment ratios, partial exemptions, and decisions by assessing officials to override market value estimates.

Assessing Jurisdiction: The organization with the statutory authority to estimate value for the purpose of ad valorem taxation in a geographic area comprised of all legal parcels which exist inside a defined boundary.

Assessment Class- The official or statutory groupings of parcels according to use which is

generally needed for application of tax policy and tax rates.

Assessment Class Code- The single character code which designates major assessment class: Agriculture=A; Commercial=C; Exempt= E; Industrial=I; Mineral= M; Residential=R; Multifamily=S; Utility=U.

Assessment Date- The status date for tax purposes. Appraised values reflect the status of the property and any partially completed construction as of this date.

Assessment Level- An overall indication of the level of the tax base relative to the prevailing value standard such as market value.

Assessment Notice- The official communication (legal Notice) to the owner of a parcel stating the assessed value of the parcel on the tax lien date.

Assessment Roll- The official listing of assessed values as the tax lien date upon which tax liability (bills) will be calculated.

Assessment Sale Ratio- The assessed value of a parcel divided by the sales price of the same parcel.

Assessment Year- the 365 days either beginning or ending on the assessment date.

Associated Parcel- A parcel which is related to the subject parcel in some manner such as common ownership.

Assessor- The head of an assessment jurisdiction, which may be an elected or appointed position.

Attribute- A characteristic of a property.

Balance- The principle that the greatest value in property will occur when the type and size of improvements and uses are proportional to each other as well as to the land.

Base Line- A principle east-west line in the rectangular land survey system.

Base-lot Method- A method of appraising land parcels whereby each parcel to be appraised is compared with a parcel of known value, called the base lot.

Building Permit- A document issued by a local code enforcement and inspection department allowing construction to begin. A copy of the permit is normally forwarded to the Assessor's office for tracking new construction.

Bundle of Rights- The six basic rights associated with the private ownership of property; right to use, sell, rent or lease, enter or leave, give away, or refuse to do any of these.

Cadastral Map- A map displaying property ownership boundaries, dimensions, and other useful

information, such as parcel identification numbers.

Capitalization of Ground Rent- Method of estimating land value in the absence of comparable sales, applicable to farmland and commercial land leased on a net basis.

Capitalization of Income Method- Method of estimating accrued depreciation similar to the sales comparison method except that values based on the income approach are used instead of comparable sales.

Capitalization Rate- The ratio between net income and value. The current value of a property can be estimated by dividing its current or stabilized net income by the appropriate capitalization rate.

Child Parcel- A new parcel created by splitting it out of one or more existing parcels.

Change- The tendency of the social and economic forces affecting supply and demand to alter over time, thus influencing market value.

Comparative Unit Method- the most widely used method of cost estimating. Direct and indirect costs are summed and divided by an appropriate unit to derive a cost per unit.

Condominium- A special form of property ownership whereby the owner receives full property rights and interest in a specifically described part of the structure and an undivided interest in the common areas and land. This form of ownership requires a master deed conforming to local statutes.

Conformity- Is the principle that the value of a property depends in part on its relationship to its surroundings.

Consideration- The sale price officially recorded as the transaction price either as part of the deed or on the conveyance form when a property is transferred from a grantor to a grantee.

Consistent Use- The concept that land should not be valued on the basis of one use, while the improvements are valued on the basis of another.

Contribution- The value of property component is measured in terms of its contribution to the value of the whole, rather than by its cost alone.

Conveyance Form- A document required by some jurisdictions to be completed and filed when a deed is recorded. The form usually contains questions concerning the circumstances of the transfer.

Corner Influence- An effect on value found most often in commercial properties because of

greater ease of entry and exit, accessibility to higher volume of traffic and increased show-window and advertising space.

Corporation- An incorporated jurisdiction, most commonly a city.

Cost to Cure- Estimated cost to correct or replace a component or defect within a property.

Cost of Development- A method that projects improvements to the land, estimates the total revenues and development costs, and calculates the value residual to the land after subtraction of all costs, expenses, and profit.

Cost Approach- The method of estimating the value of property by: (1) estimating the cost of construction based on replacement or reproduction cost new or trended historical cost (often adjusted by a local multiplier); (2) subtracting depreciation; and, (3) adding the estimated land value.

Cost Index- An index showing the variation in construction costs over time.

Cost Manual- Cost manual is a set of cost factors organized in schedules or tables, with instructions for their use.

Curable- That part of depreciation that can be revised by correcting deferred maintenance and modeling to relieve functional obsolescence.

Date of Sale (date of transfer)- The date upon which the sale is agreed. This is considered to be the date the deed, or other instrument of transfer, is signed.

Deed- The instrument normally used to convey rights in a parcel.

Deed/Warranty- A form of conveyance by which the Grantor (and usually heirs) agree to defend the title and interest transferred to the Grantee from claims of rights and interests by third parties. The extent of the warranty defines the different types of warranty deeds.

Demand/ Schedule showing the amount of a goods or service that would be purchased at various prices during a given period.

Depreciation- The loss in value to property, after construction or purchase.

Depreciation Schedules- Tables used in mass appraisal which show the typical loss in value to various ages or effective ages for different types of properties.

Depth Factor- Standard, mechanical technique for determining the values of an urban land lot having certain depth from the value of a base lot having different dimensions.

Direct Cost- Cost incurred in construction on the site. Examples include materials, labor,

supervision and utilities.

Divided Rights- Rights to property that have been divided among several owners in partnerships, joint tenancy, tenancy in common, and time sharing.

Easement- A right held by one party to use the land of another party (usually the owner) for a specific purpose such as placement of utility lines or access to another property.

Economic Life (years)- The period of time during which buildings or other improvements on a property are expected to contribute positively to the value of the total property. At the end of this period, the improvements are normally demolished and replaced.

Economic (external) obsolescence- A course of depreciation which is a loss in value as a result impairment in utility and desirability are caused by factors outside the property's boundaries.

Economic Rent- See market rent.

Effective Age- The typical age of structure with respect to condition and utility, as of the appraisal date.

Effective Tax Rate- The tax rate expressed as a percentage of market value.

Engineering Breakdown Method- A detailed age/life method that can be used in conjunction with the quantity- survey of unit-in-place methods of estimating RCN.

Equalization- The process by which an appropriate governmental body attempts to ensure that property under its jurisdiction is appraised equally at market value, is otherwise required by law.

Equity- The degree to which the levy burden is fairly distributed among parcels in jurisdictions which use the market value standard, equity is indicated by the coefficient of dispersion.

Exemption, Characteristic- That portion of the value of a parcel which is exempt from taxation because a feature of the property and its associated value is considered to have a social good such as energy savings, environmental pollution control, open space or green space.

Exemption, Circumstances- Relief from taxation because of the circumstances of the owner such as senior citizen status, low income status or disability.

Exemption, Economic Development- Relief from taxation given as an incentive to encourage economic development in a particular area or "redevelopment zone". This often involves the appraisal function to estimate value before and after the redevelopment investment by the owner in order to determine the exempted value portion.

Exemption, Homestead- Relief from taxation because the parcel contains an owner occupied

main residence. The appraisal function usually must quantify the portion of the property which qualifies and verify occupancy.

Exemption, Organizational- Exemption from taxation because the parcel is owned by a qualifying tax exempt organization and used for tax exempt purposes.

Exemption Code- The code used to indicate a particular type of exemption.

Federal Rectangular Survey System- A surveying system used extensively in North America based upon a rectangular grid of townships made up of 36 sections of one square mile each.

Fee Simple Absolute (fee simple)-Complete interest in a property subject only to government powers and limits specifically cited in the deed.

Fixture- An item of equipment that, because of the way it is used, the way it is attached, or both, has become an integral part of a building, or other improvement. Once the fixture becomes an integral part of the building, it is classified as real property.

Fractional Assessment- Assessments that by law or by practice have assessment ratio/levels different from one.

Fractional Section- A subdivision of a township containing more or less that 640 acres of land. Typically accounting for the average or deficiency in acreage is done on the north and/or west side of a section, fractional sections are found on the north and/or west side of a township.

Functional Obsolescence- A cause of depreciation which is a loss in value due to inability of the structure to perform adequately, the function for which it is used.

Functional Utility- The ability of improvements to satisfy market standards and demands.

GeoCode- The string of characters used to convey the geographic location of the parcel, either as coordinates for a GIS map database or from a standard surveying system such as the Federal Rectangular Surveying System.

Geodetic Control Network- A system of monuments used as reference points in constructing maps and surveys through triangulation.

Geographic Information System (GIS)- One type of computerized mapping system capable of integrating spatial data (land information) and attribute data among different layers on a base map.

GPS Control Point- Ground positioning satellite reference point on the earth's surface.
Grantee- The party to whom property rights are conveyed by a deed.

Grantor- The party who grants (conveys, sells, transfers) property rights by deed.

Highest and Best Use (H&B)- Most profitable use at a specific time, given legal, physical and financial limitations.

Historical Cost- The original cost of a building, improvement, or personal property as opposed to the current replacement, or reproduction cost.

IAAO- International Association of Assessing Officers.

Income Approach- The method of estimating the value of property based on income capitalization. Income figures should reflect current market conditions and typical management.

Incurable- A part of depreciation where it is not economical to correct the condition, and if corrected, the cost of correction would exceed the value.

Indirect Costs- Costs incurred in construction away from the site. Examples are fees, permits, insurance and loans.

Intangible Personal Property- Rights over tangible real and personal property, but not rights of use and possession, for example, notes bonds, stocks, patents, mortgages, copyrights, and insurance policies.

Instrument- Another name given to deeds and other evidence of property interest which are recorded in the records office.

Land Contract- A contract between a deeded owner and buyer to purchase a parcel. The buyer does not become the legal owner until the contract is fulfilled and the and the transfer is recorded a deed.

Land Description Systems- See Legal Descriptions

Law of Variable Proportions- Often called law of decreasing returns or the law of proportionality which states that when the quantity of one productive service is increased by equal increments, the quantities of other productive services remaining fixed, the resulting increment of product will decrease after a certain point.

Leasehold Rights- the interest in a property associated with a lessee (tenant).

Legal Acreage- Acreage as stated in the deed, not necessarily actual or calculated acreage.

Legal Descriptions- written descriptions of the physical boundaries of property rights.
Legal Parcel- the entity described by a properly recorded legal description.

Levy- The total amount of tax revenue that a taxing authority is permitted to collect to fund its budget.

Levy Rate- The mathematical factor (millage) which must be applied to the tax base of a taxing authority in order to produce the tax revenue which the taxing authority is permitted to collect.

Lien- The legal right to take or hold property of a debtor as payment or security for a debt.

Local Multiplier- An adjustment to replacement or reproduction cost new or historical cost, to reflect local costs.

Long-lived Items- Items that are the basic structure of a building and are not usually replaced during economic life. Examples include the foundation, roof structure, and framing.

Lot and Block Survey- A plat in which a larger parcel of land is subdivided into small units for the purpose of sale.

Market Value- The most probable sale price of a property in terms of money in a competitive and open market, assuming that the buyer and seller are acting prudently and knowledgeably, allowing sufficient time for the sale, and assuming that the transaction is not affected by undue stimuli.

Mass Appraisal- The systematic appraisal of groups of properties as a given date using standardized procedures and statistical testing.

Meridian- A principle north-south line in the rectangular land survey system.

Metes and Bounds- A land description system in which boundaries are described as distances between two semi-permanent points or as lines following compass bearings.

Millage, Mill Rate- One mill is one-thousandth of one dollar or one-tenth of one cent. Used as a rate to calculate amount of taxes.

Mineral Rights- Interest in the minerals which may exist below the parcel surface.

Model Specification- The formal development of a model in a statement or equation, based on data analysis and appraisal theory.

Model Calibration- The development of adjustments, or coefficients based on sales analysis, that identifies specific factors that have an actual effect on market value.

Model- Mathematical equations used to analyze quantities of data. Most of the models used in

real estate appraisal are based on one of the three approaches to value.

Multiple Regression Analysis (MRA)- A statistical technique similar to correlation used to analyze data in order to predict the value of one variable (dependent), such as market value, from the known values of other variables (independent) such as lot size, number of rooms, etc.

Neighborhood- The environment of a subject property that has a direct and immediate impact on its value.

Neighborhood Analysis- A study of the relevant forces which influence property values within the boundaries of a homogenous area.

Net Income- The income expected from a property, after deduction of allowable expenses.

Nominal Tax Rate- A mathematical expression of the relationship between the tax levy and the total assessment for a jurisdiction.

Observed Condition Breakdown Method- This method breaks down deprecation into all its various components; curable physical deterioration, incurable short-lived-item, physical deterioration, incurable basis structure (long-lived items), physical deterioration, curable functional obsolescence, incurable functional obsolescence, and economic (external) obsolescence.

Overall Age/Life Method- Method of estimating accrued depreciation based on straight-line depreciation in which the building is assumed to depreciate by a constant percentage each year over its economic life.

PAAA- Property Appraisal and Assessment Administration.

Parcel Identifiers- A code, usually numerical, representing a specific land parcel's legal description.

Parcel- An area of land capable of being conveyed by a single legal description.

Partial Interest- Property rights in a parcel shared in common with another party.

Party- Any entity which may have interest of any type in a legal parcel.

Percent Complete- An estimate of the amount of new construction completed for a parcel on the tax lien date when work is not finished on the building permit.

Personal Property- Property that is not real is personal. Characteristic of personal property is its movability without damage to itself or the real estate.

Physical Deterioration- A cause of depreciation which is a loss in value due to wear and tear and

the forces of nature.

Plat- A map which shows the division of land into lots or parcels.

Plat Number- the identifying number of a recorded subdivision map called a plat.

Price- Amount paid for an item.

Private Encumbrances- Private hindrances that affect value and sale price such as: easements, condominium controls, and deed or subdivision restrictions.

Property Tax Levy- The total amount of money to be raised from the property tax as set forth in the budget of a taxing jurisdiction.

Property- an aggregate of things, or rights to things, which are protected by law. There are two basic types of property- real and personal.

Quantitative- Pertaining to the objective nature of some variables of interest. It can be measured or counted with little ambiguity. For Example, number of bathrooms, year built, additions, or size.

Quantity Survey Method- Method of cost estimating which requires complete itemization of all construction, labor, and material costs by components and subcomponents and all indirect costs.

Quarter Section- A subdivision of a section containing 160 acres more or less, described by referencing the center pointing the Section, i.e. the NE 1/4 is north and east of the center point.

Range Lines- Lines in succeeding six mile increments on either side of a Meridian.

Ratio Study- A study of the relationship between appraised values and market values. Indicators of market values may be either sales, or independent appraisals. The common interest in ratio studies is the level and uniformity of the appraisals.

RCN- Replacement Cost New also signifies Reproduction Cost New.

Reassessment- The act of applying new assessed value to a group of parcels, possibly the entire jurisdiction, following statutory rules including exemption criteria and fractional multipliers where applicable to establish the basis for computation of tax liabilities.

Real Property- The rights, interests and benefits connected with real estate.

Real Estate- The physical parcel of land and all improvements permanently attached.
Reconciliation, Correlation- The final step in the appraisal process which resolves the differences

that result from the application of the three approaches to value.

Rectangular Coordinates- A land description system where boundaries are described as lines running from points on a X and Y grid.

Rectangular Land Surveys- Land description systems based on permanent, uniformly sized rectangular grids which can be subdivided into smaller units of land.

Regular Section- A one square mile subdivision of a township containing 640 acres.

Remaining Economic Life- The number of years remaining in the economic life of a structure as of the appraisal date, and provides a basis for estimating replacement costs new less depreciation.

Replacement Cost- The cost of constructing a substitute structure of equal utility using current materials, design and standards.

Reproduction Cost- The cost of constructing a replica, or identical structure, using the same materials, construction standards, design and quality of workmanship.

Revaluation- The act of estimating a new value for one or more parcels, and possibly the entire jurisdiction, following the established valuation process.

Sales Comparison Approach- method of estimating accrued deprecation through the comparison of sale prices of similar properties.

Sales Comparison Method- the method of estimating the value of a property based on an analysis of sales of similar properties.

Sale Price- The price for which a property was sole.

Sales Ratio Study- A ratio study which uses sales prices as proxies for market values.

Separated Rights- Rights to property that have been separated by deed such as: air, mineral, water, and leaseholds.

Short-Lived Items- Items of a structure which have a shorter life than the basic structure. For example: roofing, water heaters, floor covering and interior finish.

Single Property Appraisal- systematic appraisal of properties one at a time.

Site Amenities- The specific location-related attributes of a property; such as topography, utilities, street traffic, view, etc.

Site Value- The value determined by an appraiser after viewing all evidence and concluding that

none of the standard computed results yield the best indication of value for land.

Situs- The physical location of property.

Situs Address, Free Form- The physical location address of the primary structure on the parcel in normal presentation format.

Special District- A legal entity related to a group of parcels and organized for the specific purpose such as a utility improvement district, local improvement district or road improvement district.

Split- The process of creating new parcels from existing parcels.

Stratify- For purposes of analysis, to divide a sample of observations into two or more subsets, according to some criterion, or set of criteria.

Subdivision- a platted map which has been approved by the proper local agency and recorded in the proper manner by a developer.

Substitution- A property's value tends to be set by the potential cost of acquiring or producing an equally desirable substitute property.

Supply- A schedule showing the amount of a good or service that would be offered for sale at various prices during a given period.

Surplus Productivity- The income from a property remaining after the costs of labor, management, and capital have been paid. This income is attributable to land.

Tax Abatement- A reduction in the tax liability of a specific parcel for a specific period of time based on a policy or statute.

Tax District- A combined identifier for the unique set of taxing authorities which together collect taxes from a group of parcels with a single combined tax district composite tax rate.

Taxable Value- The basis used to calculate taxes; net value after all exemptions are considered.

Tenancy in Common- Parties with interest in property who are not joint tenants but rather, hold a specified fractional undivided interest in property (example co-owners).

Time-adjusted Sale Price- An amount of money, or the value of a commodity in dollars, expected to be receivable in the future is always worth less than an equal amount actually in hand at the present.

Title- An official legal document which is accepted as proof of ownership or the collection of all

elements constituting proof of ownership.

Township- An approximately 36 mile division of land employed in the Rectangular Land Survey System. Townships are bounded by two successive range lines on the east and west and two successive township lines on the north and south.

Township Lines- Lines in succeeding six mile increments on either side of a base line.

Transfer- Official ownership change as indicated by a recorded deed.

Trended Original Cost- Method of cost estimating which obtains an estimate of the reproduction cost of a structure by trending its original, or historical cost with a factor from an appropriate construction cost index.

Trending- The practice of increasing future certified values by applying a percentage factor, generally derived form analysis of market sales, to current certifies values in order to compute new values.

Unit-In-Place Method- Is a method of cost estimating which is a segregated cost expresses all the direct and some of the indirect costs of structural components and units.

United States Public Land Survey Systems- A rectangular land survey employed in most of the United States, based on township lines and base lines.

Units of Comparison- A property as a whole or some smaller measure of the size of the property used in the sales comparison approach to estimate a price per unit.

Valuation- The act of using the established appraisal process to estimate a new value for a parcel.

Valuation Process- The systematic procedure used by the assessing jurisdiction to insure that value estimates are made in a uniform, objective and consistent manner which results in the best equity possible utilizing the resources provided for that purpose.

Value in Use- The value of property for a specific use.

Value in Exchange- The amount an informed purchaser would offer in exchange for a property under given market conditions.

Value Model- The specific set to tables and computations used to establish value.

Value Standard- The measure against which assessed values are compared to determine if they adhere to statutory requirements.

Variable Proportions- Also called the law of decreasing returns, this states that as quantities of

one productive factor increase and the quantities of other productive factors remaining fixed, the resulting additional increments of product or output will decrease after a certain point.

Zoning- The allowable uses for which a parcel may be developed according to current community and regional planning ordinances.