Welcome!

To the Agricultural Lands & Support Buildings Appraisal Course.

Presented by

Wyoming Department of Revenue, Property Tax Division, Appraisal Services Group.

- Thank you for turning off your cell phones.

Your Instructors Are…

- David Franck /Appraiser, Appraisal Services Group.
- Brian Judkins/Appraiser,

  Appraisal Services Group.

Class Outline

- Monday
  - Introduction
    - Brief overview of the class
  - Chapter One
    - Classification of Agricultural Lands
    - Quiz
  - Chapter Two
    - Determining Productivity

Class Outline

- Tuesday
  - Chapter Three
    - Agricultural Land Valuation Study.
    - Quiz
  - Chapter Four
    - Appraisal of Agricultural Land
    - Quiz

Class Outline

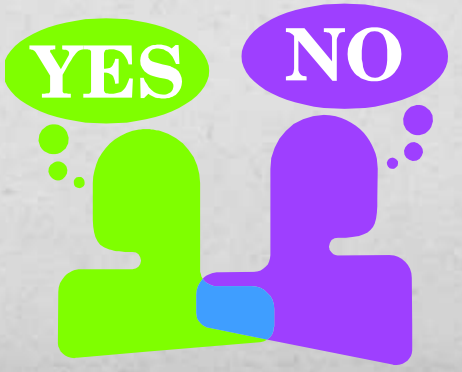
- Wednesday
  - Chapter 5
    - Defending the Productivity Value
    - Quiz
  - Chapter 6
    - Appraisal of Agricultural Support Buildings

Class Outline

- Thursday
  - Chapter Six Continued
    - Quiz
  - Chapter Seven
    - Agricultural Personal Property
    - Quiz
  - Final Review
- Friday
  - Final Exam

Introduction

- Over the next few days students will learn the statutes and rules pertaining to agricultural lands and classification.
- Please keep in mind that the methods taught in this course are the state prescribed methods. We are aware that practices may vary in individual assessors offices.



Introduction Continued…..

- Participants will also be discovering who should qualify for agricultural classification and why. What the DOR's role is in the valuation of agricultural land and the Assessors role.
- We will also be taking an in-depth look at the DOR "Agricultural Land Valuation Study", how to use it and how the final dollar amounts per acre are derived.
- Finally students will be learning to inspect and appraise agriculture support buildings and personal property.

Overview and History

- The constitution of the State of Wyoming in Title 97-15-011 (b) states "All taxable property shall be valued at its full value as defined by the legislature <u>except agricultural and grazing lands which shall be valued according to the capability of the land to produce agricultural products under normal conditions</u>".

Overview and History

- Responsibilities of the Department of Revenue Property Tax Division.
  - Determines the standards and productivity sources used in the assessment of agricultural lands. The "Mapping and Agricultural Manual" Published by the Property Tax Division is the official source for all agricultural land valuation standards.

Overview and History

- Responsibilities of the Department of Revenue Property Tax Division.
  - The Property Tax Division determines the categories and soil productivity classification.
    - NRCS Published Soil Surveys
    - Approved Third Party Soil Surveys
      - Aerial and infrared photography
      - Satellite Imagery
      - Crop Yield Surveys

Overview and History

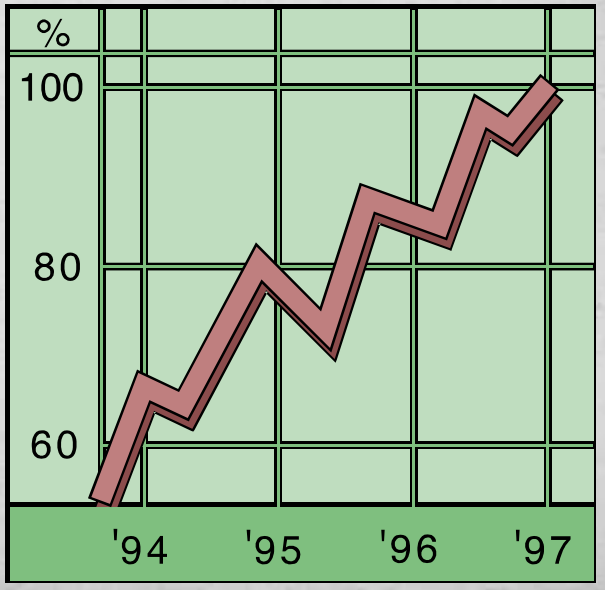
- Responsibilities of the Department of Revenue Property Tax Division.
  - County Land Resource Area (LRA) Maps
    - LRA maps are groupings of croplands and rangelands with similar productivity levels.
    - There are 5 LRA groupings for cropland and rangeland, LRA-1 through LRA-5. LRA-1 contains the most productive areas and LRA-5 the least productive.
    - Groupings are based on similar amounts of precipitation, topography and productivity levels.

Overview and History

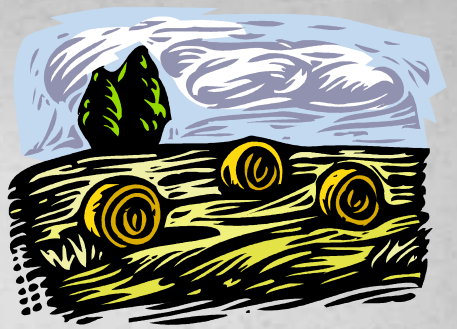
- Determine the valuation amounts on all agricultural land.
- Agricultural Land Valuation Study.
  - Based on the income approach to value and the lands productive capability
    - Wheat production
    - Hay production
    - Grazing fees per animal unit month
- Net Operating Income
- Capitalization Rate

Overview and History

- Capitalization Rate
  - 5 Year Weighted Average
  - Farm Credit Services Bank in Omaha
    - Long Term Portfolio Interest Rates
    - Chosen by the Agricultural Research Committee.



Overview and History



- Commodity Pricing
  - WASS/NASS, Wyoming Agricultural Statistics Service
  - 3 Commodities
    - All Hay
    - All Wheat
    - Grazing Rental Rate per AUM on private range land
  - 5 Year Weighted Average
  - Time Lag on Published Prices

Example

- Lets use a visual aid to further understand this offset.

Overview and History

- Production Levels/Yields for each Commodity
  - Capability Classes
    - Class I, Class II, Class III, Class IV, Class V-VIII
    - Classes derived from NRCS
      - Based on soil morphology, topography and climate
  - Yields
    - Stocking Rates
      - USDA Tech Range Sheet
    - Bushels
      - Developed by the Ag community based on what the dry land wheat producer could expect to yield under normal conditions per soil type
    - Tons
      - Developed by Ag community based on what the irrigated hay producer could expect to yield under normal conditions per soil type

Overview and History

- Net Operating Income
  - Crop Land, Tenant-Landlord Share
    - Expenses typically paid by the landlord
    - Net operating income per bushel of wheat
    - Net operating income per ton of hay
  - Range Land
    - Not Tenant-Landlord
    - Expenses
      - Water and fence
    - Net operating income per AUM

Chapter 1, Classification of Ag Land

- The Three Approaches to Value
  - Sales Comparison (Market) Approach
  - Cost Approach
  - Income Approach
- Lets look at all three approaches and how they relate to agricultural lands.

The Cost Approach

- Estimating the replacement cost new of the improvements subtracting out depreciation and adding in a land value.
- Does this apply to agricultural land?
- This approach can be eliminated rather quickly as there is no way to develop a reproductive or replacement cost on earthly soil.
  - We will be utilizing this approach to value later in the course as it relates to agricultural improvements.

Sales Comparison or Market

- Utilizes the sales from similar farm ground or grazing land as comparables to estimate the value of the subject property
- Could this be accomplished on agricultural lands?
- This approach to value could very well be used for agriculture land appraisals
- But…
- The Constitution of the State of Wyoming eliminates the sales comparable approach to value

Wyoming Agriculture Statutes

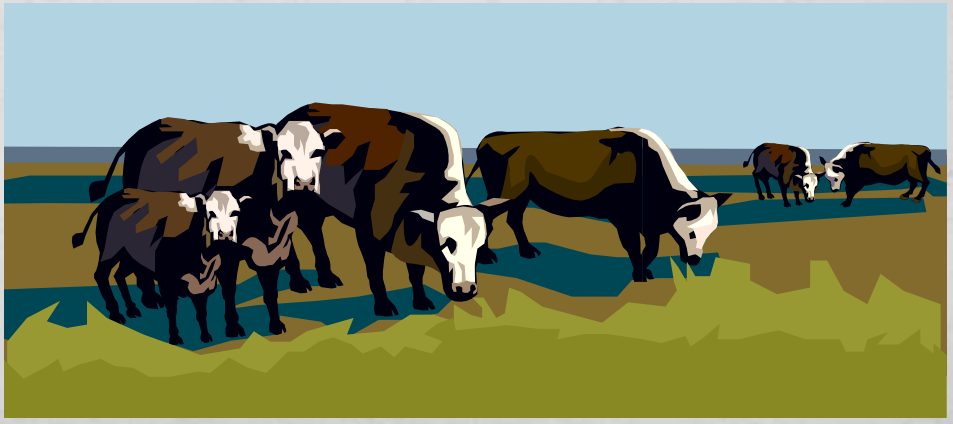
- "(b) The legislature shall prescribe the percentage of value which shall be assessed within each designated class. All taxable property shall be valued at its full value as defined by the legislature **except agricultural and grazing lands which shall be valued according to the capability of the land to produce agricultural products under normal conditions.** "

Income Approach

- Agricultural land is valued in Wyoming using the Income Approach to value.
- We will discuss in detail the Income Approach and how the value per acre is derived in Chapter 3.
- Lets move on.

Agricultural Purpose

- Defined in W.S. 39-13-101 (a)(viii)
- Consistent with the land's capability to produce
  - Cultivation of the soil for production of crops
  - Production of timber products or grasses for forage
  - Rearing, feeding, grazing or management of livestock



Chapter 10, Designation of Agricultural and Non-Agricultural Lands

- Guidance in the designation of agricultural and non-agricultural lands for property taxation can be found in the Chapter 10 Rules. If in doubt always refer to statute and rule!!!
  - Agricultural– "means the primary use of the land is to produce crops, harvest timber or graze livestock for commercial purposes consistent with the land's capability to produce." See also: 39-13-103(b)(x)(II)- The land is not part of a platted subdivision, except for a parcel of thirty-five (35) acres or more which otherwise qualifies as agricultural land
  - Agricultural Operation– "shall mean a business in the primary pursuit of activities that attempt to produce agricultural products by the application of management, capital and labor, consistent with accepted agricultural practices."

Requirements from Wyoming Statutes

- To qualify for agricultural designation the land must be used for the primary purpose of growing crops or grazing livestock for commercial purposes.
  - Financial Constraints: "If the land is not leased land, the owner of the land has derived annual gross revenues of not less than five hundred dollars ($500.00) from the marketing of agricultural products, or if the land is leased land the lessee has derived annual gross revenues of not less than one thousand dollars ($1,000.00) from the marketing of agricultural products" W.S. 39-13-103(x)(B)(III)

Department of Revenue Rules

- Affidavit for agricultural Classification
  - Every Producer must complete the affidavit.

Department of Revenue Rules

- Chapter 10
  - Classification of Agricultural Lands
  - Valuation of Agricultural Lands
  - Methodology of Agricultural Lands
  - Assessment of Agricultural Lands
- Pieces from the Chapter 10 Rules will be covered throughout the entire course.

Irrigated Crop, Dry Crop, Range Land

- Classification
  - Performed by the Assessor
  - Qualifying agricultural practices or activities will place the land in:
    - Irrigated Crop
    - Dry Crop
    - Range Land
  - There is NO other classification of Ag land

Irrigated Crop Land

- Actively Farmed
  - Cultivated
  - Crop Growing
  - Harvested
- Artificial Water Application
  - Center Pivot
  - Flood Irrigation
  - Linear Move Sprinkler

Irrigated Crop Land

- Keep in mind:
- Management decisions on crop practices should not change the classification of the land.
  - Grazing cattle on a normally productive alfalfa hay field rather than irrigate and harvest the crop **for one season** does not change the classification from irrigated to range land.
  - The same is also true for irrigated farm ground which is not irrigated due to lack of water or other intervening causes.

Irrigation equipment, do the Assessors value this?

- NO!!
- The Department of Revenue has included all costs for irrigation equipment and maintenance when determining the value per acre for irrigated land.

Irrigated Crop Land

- As defined by the DOR Regular Rules in Chapter l0.
  - "Irrigated Crop Land means any land, which has water applied to it by artificial means for the purpose of producing food or fiber, or Christmas, ornamental and nursery trees. **The value of irrigation and sprinkler systems, used in applying water to agricultural land, is included in the productivity formula and should not be valued seperately."**

Irrigated Acreage Example

- Remember Pi (3.1416…..)?
- Acreage of a circle = Pi x R^2 / 43,560 (square footage in one acre)
- End gun can increase the acreage covered by a pivot.
- Pivot length is 900’ and the end gun reaches an additional 100’. R = 900+100 or 1000’
- Acres irrigated = 3.1416 x 1000 x 1000 / 43560

  = 72 Acres.

Acreage Calculation Problem

- A farmer has installed a center pivot on the NW1/4 of a section of land he owns. All together he owns a section and a half of land. The center pivot has a radius of 1,300'. There is no end gun on the pivot. The remainder of the land is used as range land.
- What is the total acreage owned?
- How many acres are irrigated?
- How many acres are range land?

Acreage Calculation Solution

- 1 section = 640 acres so 640 acres + 320 acres =960 acres total.

- Irrigated land : 3.1416 x 1300^2 or (1300 x 1300)= 5,309,304 / 43,560 = 122 acres

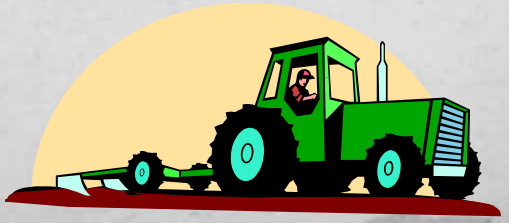
- Range land : 960 – 122 = 838 acres.

Dry Crop Land

- Farming practices must be present without artificial water sources applied.
  - Mechanically tilling and harvesting the land
  - Strip farming
  - "No Till" farming practices
  - Crop Rotations

"No Till" Farming

- A producer will spray the ground for weed control and leave the land idle until next planting season
- Or after a crop is harvested the field is cultivated in a manner which leaves large amounts of plant residue.
- This farming practice accomplish two things,
  - The plant residue provides for erosion control throughout the winter
  - The plant residue acts as a natural fertilizer adding nitrogen and nutrients to the soil.



Crop Rotation

- Allows for several different crops to be grown on the same tract of land in a cycle.
  - For example; if winter wheat is the first crop after harvest in the summer, during the fall planting season the producer will leave the land idle, and in the spring plant sunflowers or corn to be harvested that fall. Many producers when the land is left idle throughout the winter season will use it as winter pasture for livestock
  - Next season the producer will plant winter wheat again and the cycle starts over

Strip Farming

- First, get your mind out of the gutter!! This is not driving the tractor naked.
- The field is divided into narrow strips; one strip is actively producing the crop, the other strip is in summer fallow.
- Meaning after the crop is harvested the producer will leave the wheat stubble in the field and let the land lay idle over the winter.
- The strip which was left idle last winter will be prepared over the summer and drilled or planted to wheat for next years crop and so on.

Dry Crop Land

- As defined by the DOR Regular Rules in Chapter 10.
  - "Dry Crop Land means any land which is cultivated and harvested by mechanical means, and is used in the production of cereal grains and row crops, alfalfa, legumes or grass hay, including sub-irrigated hay meadows, or Christmas, ornamental and nursery trees without the artificial application of water."

Sub-irrigated Hay Meadows

- Sub-irrigated hay meadows/fields are not to be classified as irrigated crop land.
  - The water source is natural
  - Make sure your appraisers can distinguish the difference between irrigated hay and sub-irrigated hay field
- Christmas, ornamental and nursery tree farms, the land growing the trees is to be classified as dry crop (unless they are watered via an artificial means).

Range Land

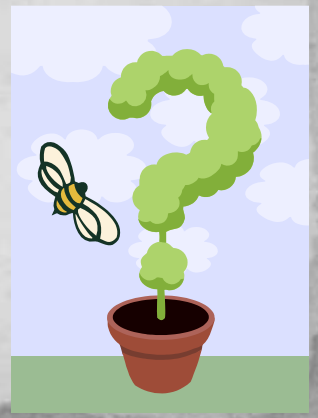
- Grazing of Livestock
  - Sheep
  - Cattle
  - Horses
- Land is not cultivated
- Forest lands

Range Land

- As defined by the DOR Regular Rules in Chapter 10.
  - "Rangeland" means any land, which is used for livestock production, and cannot or has not been cultivated, by mechanical means. Wasteland and inaccessible land shall also be included in this category. The presence of trees is not considered a detriment to production and the land shall be valued as rangeland under the premise that the presence of trees is a management choice of crop or mix of crops. If the forestland is neither grazed nor produces timber products, it is not qualified as agricultural land."

Who Qualifies? Agriculture –vs.- Non-Agriculture

- All 40 acre land owners? 35 acre land owners?
- 4-H animals only?
- Large vegetable gardens?
  - When they sell the vegetables in a farmers market?
- Not everyone with acreage in rural areas will qualify for agricultural classification.
- Chapter 10, DOR Regular Rules will aid in the classification process.



Chapter 10 Department of Revenue Regular Rules.

- Activities on land which occur after the crop is harvested or the animal has been raised do not qualify the land for agricultural assessment.
- Storage practices or activities by a non-producer will not qualify his land for agricultural assessment.
  - For example; an individual with 10 acres has three 10,000 bushel grain bins on his property. He rents the grain bins to the producer who owns the land surrounding his property for storage of the most recent crop harvested. This will not qualify the 10 acres for agricultural land.
- Processing activities, whether or not by a producer, on a parcel of land will not qualify for agricultural assessment. This would include pasteurizing and bottling milk, cheese making, honey candy, slaughtering, manufacturing, dressing and packing meat.

What is Processing?

- Processing is defined as:
  - In general, processing begins with those activities typically carried out at the first level of trade beyond production, which activities enhance the value of primary agricultural products. Milling grain, pasteurizing milk, packaging vegetables and milling timber constitute processing. Packaging products for transport to either the wholesale or retail markets does not constitute processing, but packaging them for sale does. The test is whether the packaging used for transport is suitable packaging for retail processing, as would slaughtering livestock. The producer's interim storage or slaughter prior to sale to wholesaler or other middleman is not processing.

Chapter 10 DOR Regular Rules, Cont.

- Grazing on land by any animal kept as a hobby will not qualify his land for agricultural assessment if this is the only activity. Hobby animals kept in conjunction with true agricultural practices which produce a monetary incentive consistent with the land's capability to produce are OK.
- If the only activity is harvesting shrubs or seeds that grow wild on the land, the land will not qualify for agricultural assessment. If this activity is completed in addition to true agricultural practices which produce a monetary incentive consistent with the land's capability to produce, agricultural assessment may apply.
- Hunting, fishing or the harvesting of game animals or birds on the land will not qualify the land for agricultural assessment if this is the only activity. True agricultural practices which produce a monetary incentive consistent with the land's capability to produce must be present as well.
- If the land is part of a "Platted Subdivision" it can potentially be disqualified from agricultural assessment.

Non-Agricultural Lands Would Include the Following:

- Land which is located within neighborhood boundaries and classified as residential, commercial, industrial or rural, whether vacant or improved.
- Land which is actively in transition from agriculture to residential, commercial or industrial in use. This would include the creation of a plat for the purpose of development.
- Residential subdivisions (unless qualified under 39-13-103)
- Farmstead lands, this is one or more acres of land occupied by the buildings and residence of a ranching or farming operation.
- All land associated with commercial retail stores, shops, parking lots, high-rises, shopping centers, offices, apartments, warehouses, commercial feed lots, dude ranch facilities, and other lands used for commercial income purposes.

Non-Agricultural Lands Would Include the Following, Continued.

- Land or land with improvements which are designed or have been altered to accommodate industrial uses for assembling, processing or manufacturing a product or for providing a service.
- Land in which the topsoil has been removed to an extent the topography no longer allows agricultural activities.
- Resort and recreational lands, this includes all land associated with dude ranch facilities, summer houses and mountain cabins.
- Subdivision parcels of land 35 acres or smaller. These will qualify only if the property owner provides proof that the land is an integral part of the operation and is used in the production of crops or livestock.
- All land that is zoned for purposes that exclude agricultural use.

The Sworn Affidavit

- Every property owner attempting to have their property classified as agricultural land must complete an affidavit.
- The affidavit must be returned to the County Assessor in the jurisdiction the property resides
- Pursuant to DOR Ch. 10 Rules and W.S. 39-13-103 (b)(x)(A)

In addition to the Affidavit….

- You should collect at least one of the following:
  - IRS Schedule F, (Form 1040) Profit or Loss From Farming
  - Copy of the grazing lease between a land owner and the producer
  - Brand inspection certificate
  - Sales invoice for livestock

Classification Problem #1-pg. 20

- Mr. & Mrs. Jones own all of section 3, 4 and 1/2 of section 5 in XYZ County. His land has always been classified as agriculture, as they raise cattle. The quarter section across the road from his house has gone up for sale. The property has been divided into 4 40 acre parcels and offered for sale as "no covenants come build your dream home, and own your own ranch" Mr. Jones purchased all 4 40 acre parcels and is in the process of drilling an irrigation well on the property so he can begin raising his own hay for his ranching operation.
- How would you classify the quarter section he just bought? Give your reasoning.

Classification Problem #2-pg. 20

- A very wealthy individual from an east coast state has purchased an historic 2,500 acre ranch in XYZ County. The individual built a 12,000 square foot home on the most scenic portion of the ranch. The individual brings his family out and they spend their summers living in the home. The remainder of the land is still used as a cattle ranch and he has a ranch manager on staff that cares for the cattle.
- How do you classify this property? Give your reasoning.

Classification Problem #3-pg.21

- A family purchased 20 acres out of their parent's ranch to build a house on. They fenced off their 20 acres to separate them from their parent's larger pasture. Both the husband and wife have jobs in town. They plan to use the 20 acres for their children's animals when they get older. Currently the land has 2 of their parent's horses grazing on it. The horses are used in the ranching operation. The husband and wife have applied for agricultural classification on the 20 acres.
- Do you give the agricultural classification? Give your reasoning.

Conservation Reserve Programs

- CRP Lands
  - Crop land taken out of production
  - Planted to native grass
  - Left idle for 10 years
  - Receives annual payment
- Damaged grazing lands
- Land taken out of production for a period of over 3 years without enrolling in a conservation reserve program is a management decision and the land will no longer qualify for agricultural assessment.

Field Work

- Utilize your sources
  - FSA, Farm Service Agency
  - County Extension Office
  - Department of Revenue
  - Infrared Photography
- Is agricultural activity still present?
  - Livestock grazing?
  - Current crop growing?
  - Recent crop harvested?

End of Chapter 1

- Time for a quiz?

Chapter 2-Determining & Identification of Productivity

- Soil and climate are key factors in the ability to produce agricultural products
- Per Wyo. Statute productivity is based on average yields under normal conditions.
- Three categories of ag. land:
  - Irrigated Crop Land
  - Dry Crop Land
  - Range Land

W.S. 39-13-103(x)

- The following shall apply to agricultural land:
- (A) The department shall determine the taxable value of agricultural land and prescribe the form of the sworn statement to be used by the property owner to declare that the property meets the requirements of subparagraph (B) of this paragraph. In determining the taxable value for assessment purposes under this paragraph, the value of agricultural land shall be based on the current use of the land, and the capability of the land to produce agricultural products, including grazing and forage, based on average yields of lands of the same classification under normal conditions;

W.S. 39-13-103(x)

- (B) Contiguous or noncontiguous parcels of land under one (1) operation owned or leased shall qualify for classification as agricultural land if the land meets each of the following qualifications:
  - (I) The land is presently being used and employed for an agricultural purpose;
  - (II) The land is not part of a platted subdivision, except for a parcel of thirty-five (35) acres or more which otherwise qualifies as agricultural land;

W.S. 39-13-103(x)

- (III) If the land is not leased land, the owner of the land has derived annual gross revenues of not less than five hundred dollars ($500.00) from the marketing of agricultural products, or if the land is leased land the lessee has derived annual gross revenues of not less than one thousand dollars ($1,000.00) from the marketing of agricultural products; and

W.S. 39-13-103(x)

- (IV) The land has been used or employed, consistent with the land's size, location and capability to produce as defined by department rules and the mapping and agricultural manual published by the department, primarily in an agricultural operation, or the land does not meet this requirement and the requirement of subdivision (III) of this subparagraph because the producer:

W.S. 39-13-103(x)

- (1) Experiences an intervening cause of production failure beyond its control;
- (2) Causes a marketing delay for economic advantage;
- (3) Participates in a bona fide conservation program, in which case proof by an affidavit showing qualification in a previous year shall suffice; or
- (4) Has planted a crop that will not yield an income in the tax year.

W.S. 39-13-103(x)

- (C) If needed, the county assessor may require the producer to provide a sworn affidavit affirming that the land meets the requirements of this paragraph. When deemed necessary, the county assessor may further require supporting documentation.

Soils

- All soils are categorized using the NRCS Land Capability Classification System.
- Classes are governed by a series of limitations such as:
  - Length of frost free days
  - Precipitation
  - Texture
  - Salinity
  - Alkalinity
  - Drainage, stoniness, slope,etc.

Cropland Groupings

- Soils are grouped in classes ranging from Class I to Class VIII.
- These groupings are based on limitations that restrict their use such as erosion, moisture, soil limitation (shallow, stony), and climatic limitaions.
- The smaller the roman numeral the fewer limitations placed on the soil. The larger the numeral the more limitations present in the soil.

Cropland Groupings…continued

- Growing season is a key limitation to soil classes

Land Class	Growing Season
Class II	At least 120 frost-free days
Class III	At least 90 frost-free days
Class IV	At least 60 frost-free days

Cropland Groupings…continued

- There are no Class I irrigated or dry cropland soils in Wyoming.
- There are no Class II dry crop lands in Wyoming.
- Seldom will irrigated cropland soils achieve a Class II irrigated assignment. This is primarily due to lack of an adequate supply of water during the growing season.

Rangeland Groupings

- Rangeland productivity is estimated using the USDA "Technician Guide to Range Sites and Range Condition" based on Animal Unit Months (AUM).
- NRCS Range Site is "An area of rangeland where climate, soil and relief are sufficiently uniform to produce a distinct natural plant community."
- There are roughly 40 different range sites in Wyoming.

Rangeland Groupings…Continued

- Rangeland is based on the AUM's it can support.
- AUM means Animal Unit Months.
- .4 AUM's means the land can support .4 of a cow calf pair for a period of one month.
- If we do the math, 1 AUM / .4 = 2.5 so if we run the math through It would take 2.5 acres to support one AUM (to check our math: .4 AUM's X 2.5 Acres = 1.0).

Rangeland Groupings…continued

- The Division developed the "range land AUM's per acre" system to handle these 40 range sites and consolidated them into 5 range groupings.
- These groupings are a mix of sites with similar AUM production.
- The range groupings are categorized as R-1, R-2, R-3, R-4, R-5 and Waste.
- R-1 is the most productive and R-5 is the least productive. - See page 27 in your manual.

With Soil Survey Information

- NRCS Soil Surveys are preferred source of productivity data.
- When a published survey is available the County must base their productivity on this survey.
- These surveys may be a published hardcopy or the newer digital Soil Survey Geographic (SSURGO).
  - Both of these are uniform in format.

Soil Survey… Continued

- In the past our staff soil scientist cut and mounted the soil maps to be used along with mylar ownership maps.
- NRCS has told us hardcopy surveys will no longer be published.
- SSURGO has replaced the hardcopy as the new format.

Soil Survey…continued

- The Department is responsible for processing SSURGO data into a format that complies with the Wyoming agricultural valuation program.
- This processed SSURGO data is provided to the county in the form of a digital map with a copy of the State's soil database.
- The Department reviews SSURGO data of bordering counties to ensure uniformity and works with NRCS to correct any inconsistensies.

Soil Survey…Continued

- What happens when there is no published soil survey?
- Look at the map in your textbook. The blue areas indicate areas with no published soil survey.

Without Soil Survey Information

- Outside contractors may be used to develop "pseudo" soil surveys.
- The County may use historical crop yields.
- Remember the Department must approve any alternative method.
- Once a published method becomes available the County must migrate to using the published data.

Cropland LRA Groupings

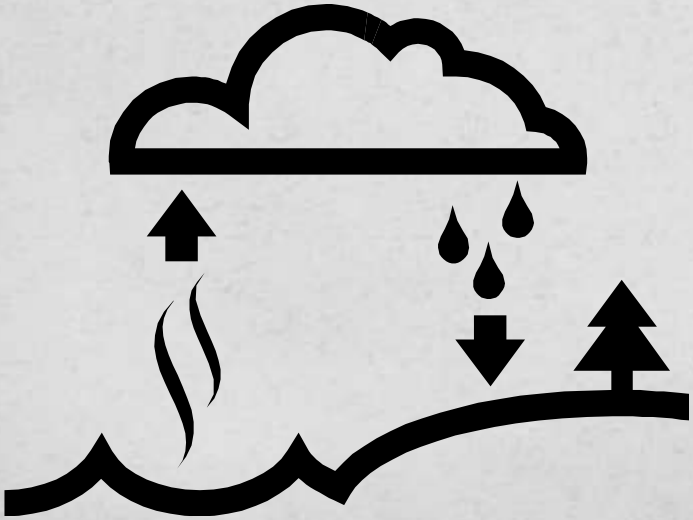
- The Department grouped related climatic areas into five generalized Land Resource Areas (LRA's)
- Grouped according to precipitation patterns, length of growing season and general soil type/landscape
- See Diagram on page 33 of your Text.

Irrigated Cropland LRA's

- Irrigated and Dry croplands use the same classification system: Natural Resources Conservation Service Land Capability Classification system.
- Irrigated cropland was further generalized by grouping regions primarily by length of growing season – see the bottom of page 33 in the Text.

Dry Cropland LRA's

- Unlike irrigated cropland dry croplands are dependent on natural rainfall.
- The dry crop LRA's have been generalized based on natural precipitation.- See page 34 in the Text.



Rangeland LRA's

- Precipitation is key when valuing rangeland.
- NRCS has derived 17 detailed precipitation zones.
- The Department grouped these zones into four generalized LRA's based on precipitation and general soil type/topography. – See page 36 in your Text.

Land Use

- All agricultural land in Wyoming will fall into one of three land uses for property tax purposes: Irrigated, Dry Crop, or Rangeland.
- It is the Assessor's responsibility to accurately locate, identify and inventory the lands use.
- The Assessor may use soil surveys, color infrared photography, aerial photography, USGS orthophotos, topographic maps and site visitations to achieve this task.

Land Use Determination

- There are three basic techniques for land use determination.
  - Land Based Identification
  - Aerial Based Identification
  - Specific Land Use Indicators

Land Based Identification

- Most fundamental
- Go to the site a take a look.
- DOR Rules specify that all property must be physically inspected every six years.
- This method can be time consuming and winter snowfall can make land use difficult to determine with an on site visit.

Aerial Base Identification

- This method is much more time efficient
- This could be aerial photography, satellite imagery, etc.
- Irrigated circles and strip farming are usually easily identified from aerial sources.
- Refer to pages 39-44 in your Text.

Specific Land Use Indicators

- Again, imagery is very helpful here.
- Irrigated cropland can be readily identified using infrared imagery (see page 43 in your Text)

Specific Land Use Indicators…

- Rangeland could potentially be identified by viewing livestock fences shown in aerial photography.
- Wasteland areas are more easily found and identified by using some sort of aerial imagery.
- Irrigated ground can often be identified by the evidence of sprinkler systems, ditches and canals, etc.
- Use the tools you have available to do the best job you can with the time you have.

Agricultural Parcel Layers

- Ownership plays a key in mapping agricultural land.
- Legal descriptions are most often identified using the rectangular survey, lot and block or metes and bounds descriptions.
- A good portion of the agricultural land in Wyoming is based on the rectangular survey. Section, Township and Range.
- See page 53 in your text for examples.

Rectangular Land Survey

- 36 Sections in a township
- Each Section is 640 acres.
- A half section is 320 acres (640/2).
- A quarter section is 160 acres (640/4).
- A quarter, quarter is 40 acres(640/16 or 160/4).

End of Chapter 2

- Time for another quiz

Chapter 3, the Ag Study!

- History
  - In Chapter 1 we covered the legal stand point, the Wyoming Statutes and DOR Rules, for agricultural land appraisal in Wyoming property taxation.
  - Title 39-13-103(b) indicates that the DOR "shall determine the taxable value of agricultural land."

Income Approach to Value

- Net operating income divided by a capitalization rate to derive a value. Remember IRV!!!

  - Value = $\frac{\text{Net Operating Income}}{\text{Capitalization Rate}}$

More on the income approach

- Based on the appraisal principal of "Anticipation".
  - Which means, the current value is the present worth of all anticipated future benefits to be derived from the property. This anticipated future benefit is the income the property owner is expecting to receive from owning the property.
  - For agricultural lands, it is the income the producer is expecting to receive from raising a crop or livestock on their land.

Crops Raised and Income…

- Do all producers in Wyoming raise the same commodities?
- Of course not.
- Our farmers raise wheat, beans, hay, barley, corn, beets, sunflowers, and…. you get the idea.
- Livestock producers raise cattle, goats, llamas, alpaca, sheep, etc.
- How does the DOR appraise each producers land based on the commodities they raise?
- The simple answer is, we don't.

The Agricultural Research Committee

- Included members from the agricultural community, the DOR, a Wyoming County Assessors, and the University of Wyoming.
- This committee decided that each of the three classes of land would be appraised by applying the commodity that was raised most often on each class of land.
- In other words, for dry crop land wheat is the most common produced crop in our state.
- Hay is the most common irrigated crop.
- Range lands are not as complicated as crop land, the grazing lease rate on private lands per AUM is used.

Continued:

- Net operating income is calculated on each class of land with the commodities indicated by the agricultural research committee.
- The Department of Revenue uses the Wyoming Agricultural Statistics Service (WASS) as its primary data source for all commodities pricing information
  - WASS/NASS publishes state-wide averages off ALL HAY and ALL WHEAT grown and sold in the State of Wyoming.
    - WASS annually surveys Wyoming producers, and buyers of the commodities grown and sold in the State of Wyoming.
  - Range Land monthly rental rates per AUM on private lands are also researched and published by WASS.
    - Government leases on state lands and federal lands are not included.

Continued:

- The WASS publication is a true reflection of what Wyoming producers are actually receiving
- So regardless of what crop is raised, for all producers with dry crop land, the land value is based on the wheat commodity.
- Irrigated land value is based on hay, regardless of what crop is being raised.
- If a rancher raises sheep, his land value is based on the AUM rate.

Our Commodities and Net Income

- Our Goal = Net Operating Income
- Market Years
  - All Hay
    - Market Year = June 1st previous year to May 31st current year.
  - All Wheat
    - Market Year = July 1st previous year to June 30th current year.
  - AUM Monthly Rental Rate
    - Market Year = January 1st previous year to December 31st previous year.
- Basically we are a year behind, the appraised value per acre for 2015 (set in 2014) is based on 2013 commodity prices.

Commodity Pricing Continued…

- To eliminate extreme fluctuations in the market the committee decided that a five year weighted average would be used on all commodity prices
- A five year weighted average is calculated by taking the 2013 price and multiplied by 5, the 2012 price multiplied by 4, the 2011 price multiplied by 3, the 2010 price multiplied by 2 and the 2009 price multiplied by 1. Total the product for each year and divide by 15.

The 2010 Commodity Pricing Table

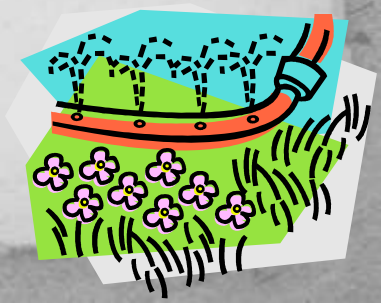
- The dollar amount indicated by the red arrow is the 5 year weighted average for each commodity.
- This 5 year weighted average price per ton, per bushel or AUM is our starting point.

Commodity Prices

Year	Irrigated Crop Land $ Per Ton (All Hay) Avg. $/Ton	5yr.Wt.Avg.	Dry Crop Land $ Per Bushel (All Wheat) Avg. $/Bushel	5yr.Wt.Avg.	Range Land $ Rent Per AUM Avg. $/AUM	5yr.Wt.Avg.
2004	$73.50	$87.73	$3.20	$3.25	$13.90	$13.44
2005	$74.50	$82.17	$3.48	$3.37	$14.80	$13.98
2006	$101.00	$86.10	$4.53	$3.78	$15.10	$14.45
2007	$109.00	$93.23	$6.68	$4.78	$15.40	$14.87
2008	$114.00	$102.10	$6.51	$5.53	$15.70	$15.26

Net Operating Income For Irrigated Crop Land

- Based on a tenant-landlord share
  - Measured in price per ton of hay sold
- 60% - 40%
  - The landlord share is 40%
- All operating expenses are deducted from the landlord's share
- Operating Expenses were Developed by University of Wyoming Department of Agriculture
  - They Include:
    - Water costs
    - Irrigation system maintenance



Irrigated Crop Lands NOI Continued…

- The expenses are converted to a Percentage of net operating income = 50%
- Additional Deduction for Seed Year, 15%

5 Year Weighted Commodity Price

Year	Ann. Commodity Price		5 Yr. Wtd. Price
2007	$114.00	x 1 =	$114.00
2008	$98.00	x 2 =	$196.00
2009	$91.50	x 3 =	$274.50
2010	$139.00	x 4 =	$556.00
2011	$201.00	x 5 =	$1,005.00
			2,145.50/15
5 Year Weighted Average Rate			= $143.03

Calculating Net Operating Income for Irrigated Crop Land

5 Year Weighted Average Price of Hay Per Ton= $143.03

Tenant – Landlord Share 60% - 40% X .40

Landlord Share = $57.21

Expenses

This includes water costs, irrigation system maintenance,

Expenses total 50%(57.21x .5) = $28.61

Less deduction for seed year of 15% (28.61 x .85)= $24.31

Net operating Income Per Ton of Hay = $24.31

Irrigated Crop Land Example

- Calculate the Net Operating Income (NOI)using the following information:
  - Tenant Landlord Share: 60-40
  - Expenses: 50%
  - Seed Year Deduction: 15%
  - 5 Year Weighted Price of Hay: $108.85

Irrigated Crop Land Solution

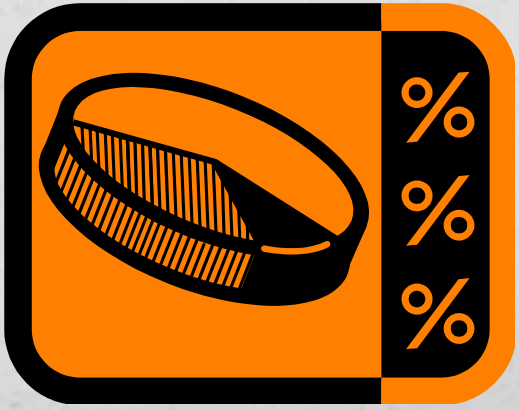
Landlord Share	$108.95 x .40 =	$43.58
Minus Expenses		x .50
		$21.79
Less Seed Year Deduction		x .85
Net Operating Income Per Ton		$18.52

Net Operating Income for Dry Crop Land

- Based on a tenant-landlord share
  - Measured in Bushels of Wheat
- 66.67% - 33.33%
- Landlord Share is 33.33%
- Operating expenses were developed by the Wyoming Wheat Growers Association.
- Which are the costs the landlord incurs in producing the crop
  - Herbicides
  - Pesticides
  - Fertilizer

Dry Crop Land NOI Continued…

- Expenses total 32% of the landlords net operating income
- Additional Deduction of 50% for summer fallow



Dry Crop 5 Year Wtd. Average

Year	Ann. Commodity Price		5 Yr. Wtd. Price
2007	$6.42	x 1 =	$6.42
2008	$4.45	x 2 =	$8.90
2009	$5.63	x 3 =	$16.89
2010	$6.44	x 4 =	$25.76
2011	$7.60	x 5 =	$38.00
			95.97/15

5 Year Weighted Average Rate = $6.40

Calculating NOI For Dry Crop Land…

5 Year Weighted Average Price of Wheat Per Bushel = $6.40

Tenant – Landlord Share 66.67% - 33.33% X 33.33%

Landlord Share = $2.13

Expenses

This includes herbicides, pesticides, fertilizer and all expenses associated with producing the product.

Expenses total 32% (1.82 x .68)= $1.45

Additional deduction for summer fallow 50% (1.24 x .5)= $ .73

Net Operating Income Per Bushel of Wheat = $ .73

Dry Cropland Example

Calculate the Net Operating Income (NOI) for Dry Cropland using the following information:

Tenant-Landlord Share: 66.67%-33.33%

Expenses: 32%

Summer Fallow Deduction: 50%

5 Year Weighted Average Price of Wheat: $6.80

Dry Cropland Solution

Landlord Share:	$6.80 x .3333 =	$2.27
Less Expenses:		x .68
		$1.54
Less Summer Fallow Deduction:		x .50
Net Operating Income Per Bu.:		$0.77

Net Operating Income for Range Land..

- Much simpler calculation
- No tenant landlord share
- 5 year weighted average monthly rental grazing rate on private lands per AUM
- Expenses, from the University of Wyoming's Department of Agriculture
  - Stock water
  - Fence maintenance
  - Totals 10%
- No additional deductions.

Rangeland Weighted Average

Year	Ann. Commodity Price		5 Yr. Wtd. Price
2007	$15.70	x 1 =	$15.70
2008	$16.00	x 2 =	$32.00
2009	$16.60	x 3 =	$49.80
2010	$17.60	x 4 =	$70.40
2011	$18.70	x 5 =	$93.50
			261.40/15

5 Year Weighted Average Rate = $17.43

Calculating NOI For Range Land..

5 Year Weighted Average Monthly Rental Rate Per AUM = $17.43

<u>Expenses:</u>

This includes stock water and fencing expenses

Expenses total 10% (17.43 x .9)= $ 15.69

Net Operating Income Per AUM = $ 15.69

Rangeland Example

Calculate the Net Operating Income (NOI) for Rangeland using the following information:

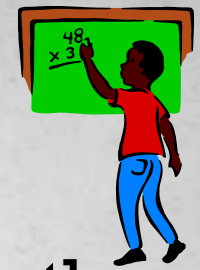
5 Year Weighted Average Pasture Rent: $18.80

Expenses: 10%

Rangeland Solution

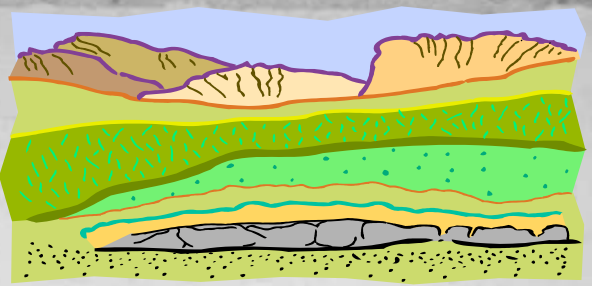
5 yr. wtd. Avg. Rent:	$18.80
Less Expenses:	x .90
Rangeland NOI:	$16.92

Yields…



- The yields received are directly related to the soils productivity and LRA's
- What is the significance of yields in the income approach to value?
  - All soils are capable of producing X bushels of wheat
  - All soils are capable of producing X tons of hay
  - All soils are capable of grazing X number of AUM's per month
- The net operating income we calculated is multiplied by the yield the soil is capable of producing.
  - This result is the actual net income received per acre.

Yield Tables…



- The Yields per acre in the Study are set and do not change
- The agricultural research committee developed the original yield production tables in use today
  - They are the yields a producer can expect to receive in each LRA based on the soil capability class under **normal conditions** (per Wyoming Constitution).
- The five Land Resource Areas which cover the state are a grouping of soils similar in topography, precipitation, growing season, elevation, etc

More on the Yield Tables…

- LRA 1 would be the most productive areas in the state and LRA 5 would be the least productive
- Each LRA has soils with different capability classes
- The capability classes are a result of the soil itself; for example loamy or sandy soils are each capable of producing at various rates with the factors of the LRA's in place
- Soils with a capability class of I are the most productive, soils with a capability class of V-VIII are the least productive
- Beyond capability class V is waste land, rock outcroppings and water.
- The Department of Revenue grouped classes V, VI, VII and VIII into one soil class

Yield Table for Irrigated Crop Land

Yield Table Irrigated Crop Land - Hay Tons Per Acre					
		Soils	Capability	Class	
LRA	Value Range	II	III	IV	V-VIII
1-2-3	High	5.5	4.5	3.5	2.5
1-2-3	Low	4.5	3.5	2.5	1
4-5	High		4	3	2
4-5	Low		3	2	1

Yield Table for Dry Crop Land

Yield Table Dry Crop Land - Bushels Per Acre

LRA	Value Range	Soils Capability Class		
		III	IV	V-VIII
1-2-3	High	34	28	22
1-2-3	Low	28	22	13
4	High	31	22	16
4	Low	22	16	10
5	High	46	34	22
5	Low	34	22	16

Yield Table for Range Land

Yield Table/Stocking Rate Range Land - AUM's Per Acre

LRA	Value Range	Soils Capability Class					
		R-1	R-2	R-3	R-4	R-5	Waste
1	High	2.40	0.80	0.60	0.40	0.30	0.20
1	Low	1.50	0.60	0.40	0.30	0.20	0.00
2	High	2.35	0.60	0.40	0.30	0.20	0.10
2	Low	1.15	0.40	0.30	0.20	0.10	0.00
3	High	2.00	0.40	0.30	0.20	0.10	0.05
3	Low	1.00	0.30	0.20	0.10	0.05	0.00
4	High	2.00	0.40	0.30	0.20	0.10	0.05
4	Low	1.00	0.30	0.20	0.10	0.05	0.00
5	High	1.60	0.30	0.20	0.10	0.05	0.01
5	Low	0.80	0.20	0.10	0.05	0.01	0.00

Yield Tables

- High and Low Ranges
  - Developed so the assessor can appraise agricultural land more closely to actual production levels in their county
- Grouping of LRA for crop lands
  - Was done based on the similarities in production amounts on the crops raised in those areas

Capitalization Rate…

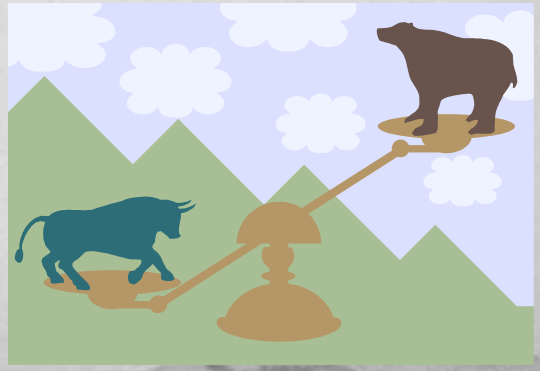
- Capitalization is the process of restating market value; appraisers will convert the future benefits of property ownership, the anticipated net operating income, into an expression of present worth, value.
- Two definitions need to be covered to help with the understanding of the income approach to value and the capitalization rate
  1. **Capitalization of Income** - The act of determining the present worth of anticipated income.
  2. **Capitalization Rate** - Any rate used to convert an estimate of future income to an estimate of value; the ratio of net operating income to market value.

Capitalization Rate Continued…

- Plays a key roll in the income approach to value
  - Lower the percentage the higher the resulting value
  - Higher the percentage the lower the resulting value
- For this reason appraisers need to use care in selecting an appropriate capitalization rate for the property there are appraising.
- The investors return on investment and return of investment should be looked at.
  - The return on investment is the difference between the investor's income and all expenses in that period.
  - The return of investment depends on the resale value of the property

Investors Return On & Of Investment

- How does this apply to the capitalization rate used in the value of agricultural lands?
- It Doesn't
- The agricultural research committee determined what the capitalization rate the Department of Revenue would use.
- It is…
- 5 year weighted average on the long term portfolio rate from the Farm Credit Bank of Omaha.



Why use the Long Term Portfolio Rate from a bank in Omaha?

- This decision was made for 2 reasons
  1. To maintain uniformity while having the land valued on a state wide basis; all producers are valued with the same capitalization rate
  2. The agricultural business is too volatile for there to be a capitalization rate for each individual producer or County.

Lets Calculate the Cap Rate.

- A 5 year weighted average is used, similar to the commodity prices.

Capitalization Rate

- The final capitalization rate table:

Cap Rate Calculations

Year	Ann. Avg. Rate		5 yr. weighted rate
2009	6.561%	X 1	= 6.561
2010	6.768%	X 2	= 13.536
2011	6.234%	X 3	= 18.702
2012	5.554%	X 4	= 22.216
2013	5.305%	X 5	= 26.525
			87.540/15 = 5.836%

5.836% would be the cap rate used in 2014 for the 2015 Ag. Land Valuation Study.

Capitalization Rate Example

- Calculate the 5 year weighted average cap rate using the following information:

Year	Annual Average Rate
2009	5.50%
2010	5.40%
2011	5.25%
2012	4.80%
2013	4.52%

Capitalization Rate Example

- Solution:

Year	Annual Average Rate		5 Year Wtd. Rate
2009	5.50%	X 1 =	5.50%
2010	5.40%	X 2 =	10.80%
2011	5.25%	X 3 =	15.75%
2012	4.80%	X 4 =	19.20%
2013	4.52%	X 5 =	22.60%
			73.85/15
			= 4.923%

Cap Rate Problem

Calculate the 5 year weighted average cap rate using the following information:

2007	5.5%
2008	5.2%
2009	5.0%
2010	5.6%
2011	5.5%

Cap Rate Solution

Year	Ann. Average Rate		5 Yr. Wtd.Rate
2007	5.5%	x 1 =	5.5
2008	5.2%	x 2 =	10.4
2009	5.0%	x 3 =	15.0
2010	5.6%	x 4 =	22.4
2011	5.5%	x 5 =	27.5
			80.8/15
5 Year Weighted Average Rate			= 5.387%

Irrigated Crop Land Value Calculation Per Acre

- We now have all the pieces in place to populate the formula to arrive at our land value per acre.
- Net Operating Income = Net operating income per ton of hay * yield per Acre
- Capitalization rate = 5.836%
- Value per Acre = Net Operating Income / Capitalization Rate
- Irrigated Land in LRA 1-2-3, capability class II high value range the appraised value per acre would be calculated as follows:

$$\frac{\text{5.5 Tons Per Acre X \$18.12 Per Ton}}{\text{5.836\%}} = \text{\$1,708 Per Acre}$$

Irrigated Crop Land Example

- Calculate the value per acre of irrigated land using the following information:

  - Cap rate is 4.25%
  - Yield is 3.5 Tons per acre
  - Net operating income is $18.85 per ton.

Irrigated Crop Land Example

- Solution:

$$\frac{3.5 \times 18.85}{.0425} = \$1{,}552 \text{ Per Acre}$$

Dry Crop Land Value Calculation Per Acre

- The same calculation is performed for dry crop only with the applicable data inserted in the formula
- Net Operating Income = Net operating income per bushel of wheat X yield per acre
- Capitalization rate = 5.836%
- Value per Acre = Net operating Income / Capitalization Rate
- Dry Crop Land in LRA 1-2-3, capability class III high value range the appraised value per acre would be calculated as follows:

$$\frac{\text{34 Bushels Per Acre X \$.62 Per Bushel}}{5.836\%} = \$361 \text{ Per Acre}$$

Range Land Value Calculation Per Acre

- The same calculation is performed for range land with the applicable data inserted in the formula
- Net Operating Income = Net operating income per AUM X yield per acre
- Capitalization Rate = 5.836%
- Value per Acre = Net Operating Income / Capitalization Rate
- Range Land in LRA 1, capability class R-1and high value range the appraised value per acre would be calculated as follows:

$$\frac{\text{2.40 AUM's per Acre X \$14.04 per AUM}}{\text{5.836\%}} = \$577 \text{ Per Acre}$$

Wrapping it all up!

- The calculations are made for each capability class and value range per LRA for all 3 classifications of agricultural land
- The study is usually completed in November on an annual basis and mailed to all interested parties

Case Study

- Calculate the value for one acre of irrigated land using the following information:
- Interest Rates for 2009-2013 are 5.2,5.4,5.8,5.7,5.9 respectively.
- Hay prices 2009-2013 are 198, 202, 208, 205, 212 respectively
- Yield for this LRA and soil class is 3.5 ton/acre
- Landlord share is 40%, expenses 50%, seed year is 15%.

Cap Rate Solution…

Year	Rate		5 Yr. Wtd. Avg.
2009	5.2	x 1 =	5.2
2010	5.4	x 2 =	10.8
2011	5.8	x 3 =	17.4
2012	5.7	x 4 =	22.8
2013	5.9	x 5 =	29.5
			85.7/15
			= 5.713%

Weighted Hay Price Solution

Year	Hay Price		5 Yr. Wtd. Avg.
2009	198	x 1 =	198
2010	202	x 2 =	404
2011	208	x 3 =	624
2012	205	x 4 =	820
2013	212	x 5 =	1060
			3106/15
			=$207

NOI Solution

5 Year Wtd. Average Hay Price:	$207
Less Landlord Share	x .40
	$82.80
Less Expenses	x .50
	$41.40
Less Seed Year Deduction:	x .85
NOI =	$35.19/Ton

Value Per Acre Solution

$$\frac{3.5 \text{ Tons} * \$35.19}{.05713} = \$2156 / \text{Acre}$$

End of Chapter 3!

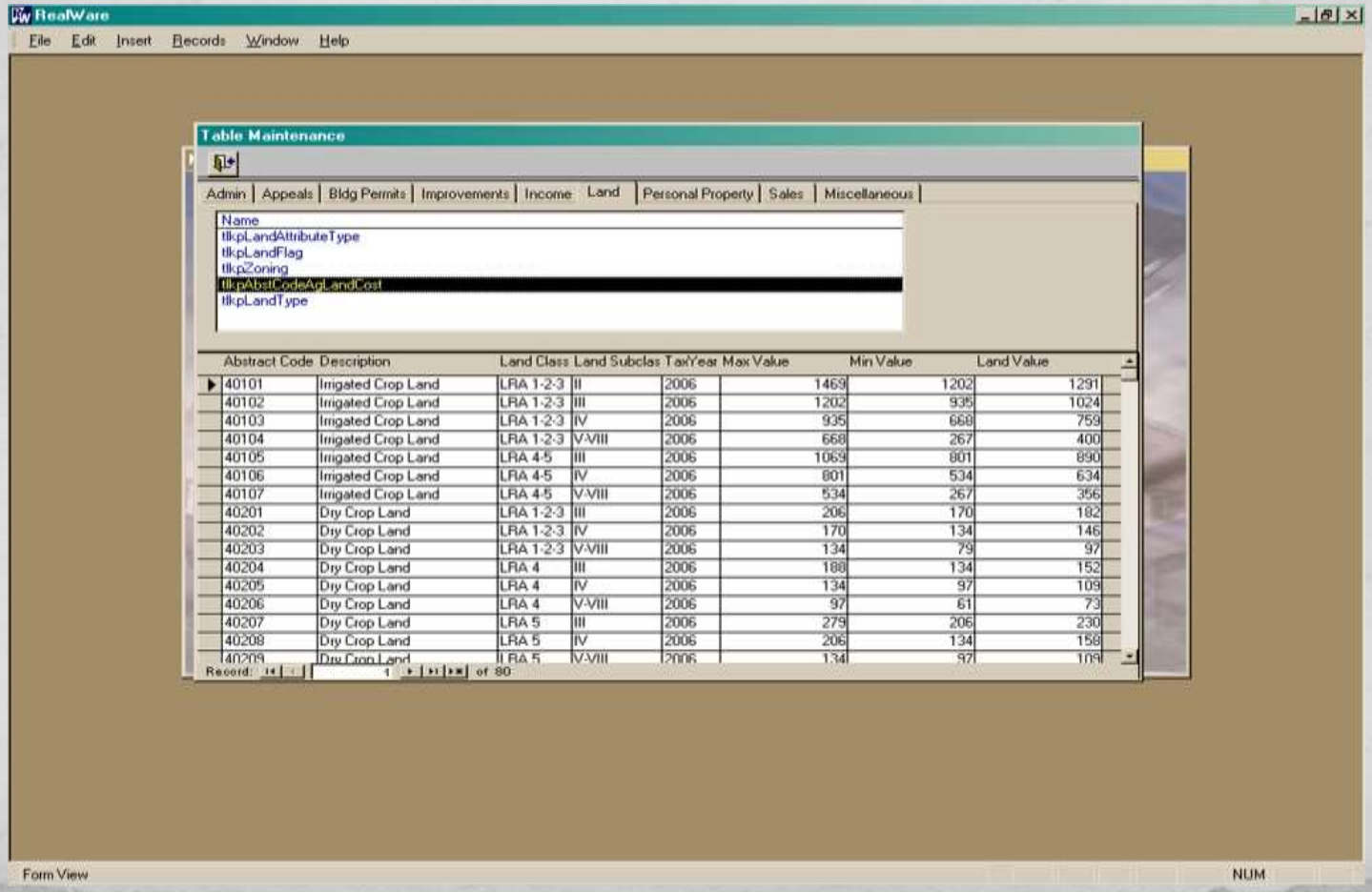
- Time for a quiz!!!

Chapter 4 Appraisal of Ag. Land

- State CAMA System, RealWare
  - All the appraised values for agricultural land are stored within a table in RealWare
  - The Department of Revenue on an annual basis pushes or uploads the current years high and low value range into each jurisdictions server once the Agricultural Land Valuation Study has been completed and published
  - Each jurisdiction updates their selected value for each class of land after the upload has taken place
  - Security to access this table is limited to the assessor and any individuals the assessor has given authorization

What is this table in RealWare?

- The tlkpAbstCodeAgLandCost table



Abstract Codes…

- All agricultural lands have been assigned a unique abstract code which specifies the classification and productive level of the land
- These codes are 5 digits in length and cannot be edited or modified
- All agricultural lands abstract codes will begin with a 4
- The second and third digit in the number will represent the class of land
  - 01 is irrigated crop land
  - 02 is dry crop land
  - 03 is range land
- The remaining 2 digits relate to the capability class and LRA of the land

Irrigated Crop Land Abstract Codes

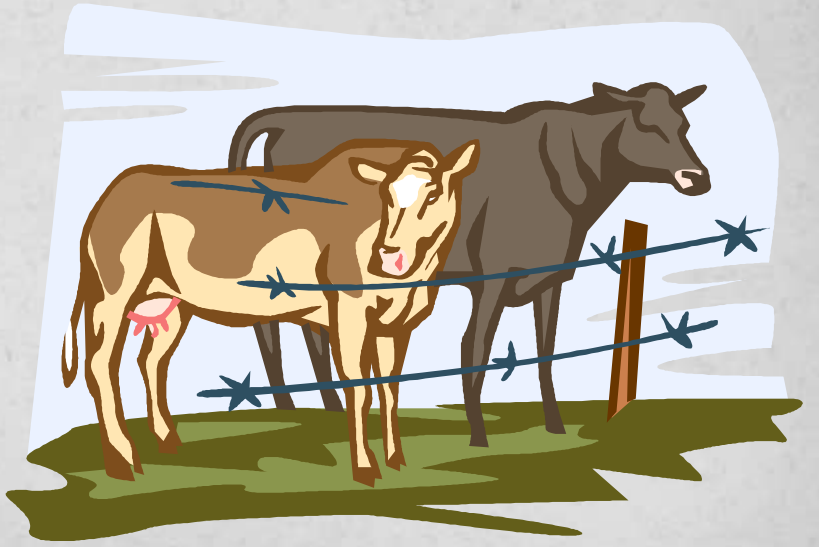
40101 - Agricultural Production - Irrigated Crop Land - LRA 1-2-3 Class II
40102 - Agricultural Production - Irrigated Crop Land - LRA 1-2-3 Class III
40103 - Agricultural Production - Irrigated Crop Land - LRA 1-2-3 Class IV
40104 - Agricultural Production - Irrigated Crop Land - LRA 1-2-3 Class V-VIII
40105 - Agricultural Production - Irrigated Crop Land - LRA 4-5 Class III
40106 - Agricultural Production - Irrigated Crop Land - LRA 4-5 Class IV
40107 - Agricultural Production - Irrigated Crop Land - LRA 4-5 Class V-VIII

Dry Crop Land Abstract Codes

40201 Agricultural Production - Dry Crop Land - LRA1-2-3 Class III
40202 Agricultural Production - Dry Crop Land - LRA1-2-3 Class IV
40203 Agricultural Production - Dry Crop Land - LRA1-2-3 Class V-VIII
40204 Agricultural Production - Dry Crop Land - LRA4 Class III
40205 Agricultural Production - Dry Crop Land - LRA4 Class IV
40206 Agricultural Production - Dry Crop Land - LRA4 Class V-VIII
40207 Agricultural Production - Dry Crop Land - LRA5 Class III
40208 Agricultural Production - Dry Crop Land - LRA5 Class IV
40209 Agricultural Production - Dry Crop Land - LRA5 Class V-VIII

Range Land Abstract Codes

40301 Agricultural Production - Rangeland - LRA1 Class R-1
40302 Agricultural Production - Rangeland - LRA1 Class R-2
40303 Agricultural Production - Rangeland - LRA1 Class R-3
40304 Agricultural Production - Rangeland - LRA1 Class R-4
40305 Agricultural Production - Rangeland - LRA1 Class R-5
40306 Agricultural Production - Rangeland - LRA1 Class Waste
40307 Agricultural Production - Rangeland - LRA2 Class R-1
40308 Agricultural Production - Rangeland - LRA2 Class R-2
40309 Agricultural Production - Rangeland - LRA2 Class R-3
40310 Agricultural Production - Rangeland - LRA2 Class R-4
40311 Agricultural Production - Rangeland - LRA2 Class R-5
40312 Agricultural Production - Rangeland - LRA2 Class Waste
40313 Agricultural Production - Rangeland - LRA3-4 Class R-1
40314 Agricultural Production - Rangeland - LRA3-4 Class R-2
40315 Agricultural Production - Rangeland - LRA3-4 Class R-3
40316 Agricultural Production - Rangeland - LRA3-4 Class R-4
40317 Agricultural Production - Rangeland - LRA3-4 Class R-5
40318 Agricultural Production - Rangeland - LRA3-4 Class Waste
40319 Agricultural Production - Rangeland - LRA5 Class R-1
40320 Agricultural Production - Rangeland - LRA5 Class R-2
40321 Agricultural Production - Rangeland - LRA5 Class R-3
40322 Agricultural Production - Rangeland - LRA5 Class R-4
40323 Agricultural Production - Rangeland - LRA5 Class R-5
40324 Agricultural Production - Rangeland - LRA5 Class Waste



Crop Yields

- Actual yields a farmer receives will vary depending on several management and environmental factors
  - Good farmers and bad farmers
  - Wet years and Dry years
  - Soils capability, should it even be farmed?

- To account for this, the Department of Revenue built in the High and Low value range

- Each production yield table, discussed in Chapter 3, High and Low range will cover the average yields producers could achieve in your jurisdiction

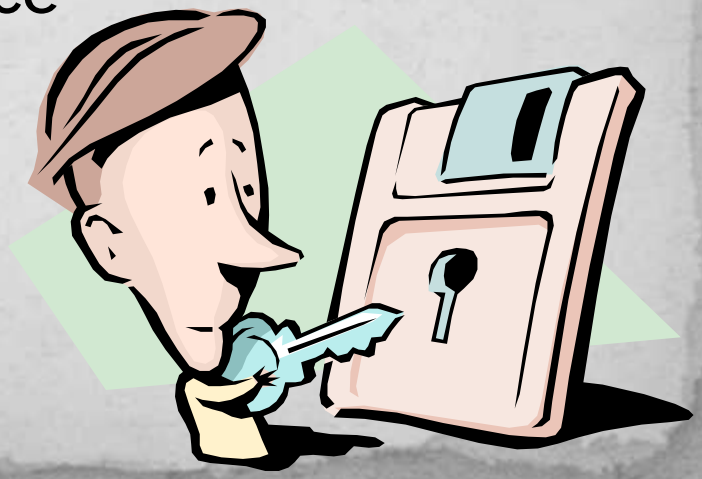
Crop Yields Continued…

- To properly appraise agricultural lands it is vital that the appraiser who is completing the appraisal on agricultural land know the production yields for their jurisdiction

- How can the production yields be obtained for my jurisdiction?

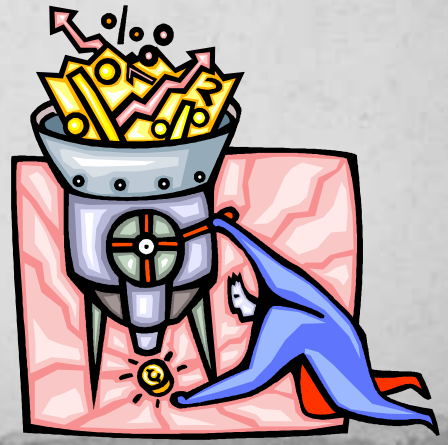
Sources for Production Yields

- Wyoming Agricultural Statistics Service, WASS
- Farm Service Agency, FSA
- Grain Elevators, local farmers cooperative
- United States Department of Agriculture, USDA, National Agricultural Statistics Service, NASS, Census Data.
- Actual producers
- Insurance Agents, Crop Insurance
- Internet



Wyoming Ag. Statistics Service (WASS)

- Annually publishes their book in August of every year
- This publication contains data on all agricultural activity in the state of Wyoming
- Crop data is listed for each county and region of the state
- Build databases tracking the yields received in your specific jurisdiction
- Compare actual production to the yields provided in the Agricultural Land Valuation Study.



Farm Service Agency (FSA)

- This office will have records of all the acres enrolled in the PFC, Production Flexibility Contracts and DCP, Direct Counter-Cyclical Program
  - DCP - provides payments to producers computed using the base acres and payment yields.
  - PFC – 85% of the contract acreage multiplied by the farm program payment yield.

Grain Elevators & Farmers Cooperatives

- Grain Elevators, local farmers cooperative's
- Counties which have a large number of acres planted to grains, for example wheat, will have grain elevator's nearby.
- During harvest season the manager of the elevator will be keeping track of all grains received and should have a good idea of what yields area producers are receiving.

Final Three Sources for Yield Data

- United States Department of Agriculture, USDA, National Agricultural Statistics Service, NASS, Census Data.
  - This governmental organization has a web site which contains a tremendous amount of data on agricultural lands and production in Wyoming.
- Actual producers can be very beneficial in obtaining information on yields they are receiving. Building a relationship and educating the public on why this information is crucial in the appraisal process.
- Insurance Agents who sell crop insurance will know the yield there insured received
- The internet is an endless supply of data.
  - All of the organizations previously discussed have a website with all the data relating to crop yields on line.
  - The exception is the producers.
  - Four out of the six data sources can be accessed from a personal computer in your office.

Precipitation

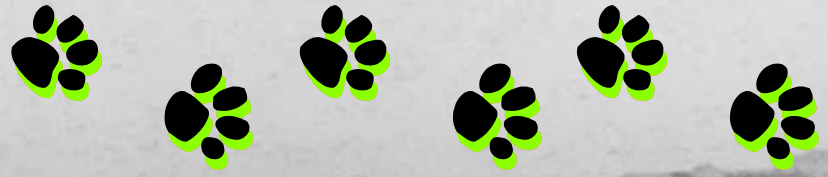
- Rain and snow fall amounts are directly related to crop yields
- Most crops will not grow in Wyoming with out a source of water
- Producers who rely on ditch water from reservoirs can be affected by a lack of precipitation

Precipitation Continued…

- Should yearly changes in precipitation be used to change the classification or appraised values?
  - Appraisers need to develop a reliable history of precipitation data to rely on when making classification or value changes
  - Management decisions by a producer which change the use of the land for a season due to a lack of precipitation will not necessarily change the classification of the land
  - Classification changes should only be made when the use of the land is consistent over a three year period

Precipitation Continued…

- Track precipitation annually to develop a history of the amounts in your jurisdiction
- The precipitation data the Department of Revenue utilizes is on a state wide average and may not be a reflection of your specific area
- Droughts are not always statewide; by tracking this information in house you can directly correlate a drop in production or a decrease in the yields to precipitation
- This should aid you in selecting the appropriate appraised value
- Important! Precipitation alone should not be an overriding factor when raising or lowering values for agricultural land

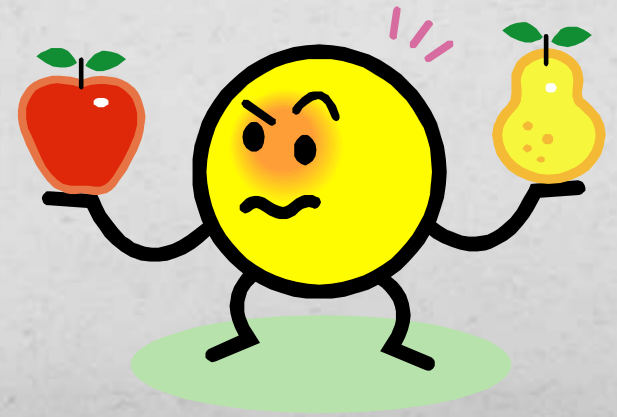


Precipitation Continued…

- Sources for Precipitation Data
  - NRCS, Natural Resource Conservation Service
  - National Weather Service
    - The National Weather Service tracks and publishes on their website monthly precipitation totals for all weather stations throughout Wyoming

Selecting the Appropriate Appraised Value

- The selected values for agricultural lands are the sole responsibility of the assessor or the staff member the assessor has put in charge of this task
- Topics we discussed up to this point should be providing the appraiser with the knowledge base to accurately appraise agricultural lands in their respective jurisdictions



Selecting the Appropriate Appraised Value, Dry Land

- Lets look at an example
- If we are appraising the dry crop land for Goshen County. Goshen County is in LRA 1-2 The production levels we would be concerning ourselves with are;

Yield Table Dry Crop Land - Bushels Per Acre

LRA	Value Range	Soils Capability Class		
		III	IV	V-VIII
1-2-3	High	34	28	22
1-2-3	Low	28	22	13

Selecting the Appropriate Appraised Value, Dry Land

- For example lets assume the class III soils are producing an average of 36 bushels of wheat per acre. The selected value for Class III Dry Crop should be the "High" Value.
- Lets assume the class IV soils are producing an average of 25 bushels of wheat per acre. The selected value for Class IV Dry Crop should be in the middle of the "High" and "Low" Value range.
- Lets assume the class V-VIII soils are producing an average of 15 bushels of wheat per acre. The selected value should be towards the "Low" Value Range.

Selecting the Appropriate Appraised Value Continued…

- Lets look at this another way, shall we…
- We can also back in the production to achieve a value.
- The assessor tracks production and knows the dry land wheat producers average 25 bushels per acre.
  - This average is for all classes of land in their jurisdiction.
- If you selected the low value range for all classes of land every year are you over or under valuing the producers?

Hmmm…Lets See…

- The average of 28 bushels for Class III, 22 bushels for Class IV and 13 bushels for Class V-VIII is 21 bushels per acre.
  - 28+22+13/3 = 21 Bushels per Acre
- You are under valuing your dry crop land
- But if you select the High value, 34 bushels for Class III, and 28 bushels for Class IV and the low value 13 bushels for Class V-VIII you will have an average of 25 bushels per acre which is right on actual production for your jurisdiction.
  - 34+28+13/3 = 25 Bushels per Acre

Backing In To a Value

- DOR NOI is $0.75/ Bu.
- DOR Cap Rate is 5.50%
- You have determined that on average LRA 3 Soils Class III lands are producing 30 Bu./Acre.
- What could your value be?

Backing In To a Value

- Income (NOI * Yield) / Rate = Value
  - $0.75 * 30 / .0550 = $409/Acre

Backing Into a Value…

- Lets Look at this in Excel

Two Common Mistakes in Ag Land Appraisal

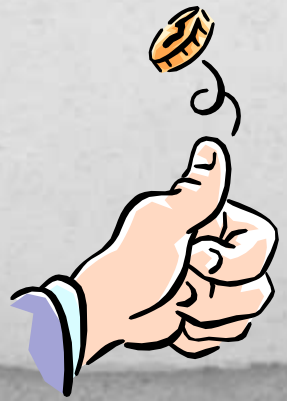
- Simply selecting the low or high value every year "because it's always been done that way."
  - Hopefully from the example above you can see the importance of tracking production and selecting a value based on your production.
- Selecting a value within the high and low range which is the same every year
  - In doing this Assessors fail to realize they will be changing the production yield the producers are receiving every year.
  - In this case the appraiser may very well be valuing the agricultural land at a level of production not realistic to their jurisdiction
- This applies to all classes of land, not just dry crop land.

Selecting the Appropriate Appraised Value, Irrigated Crop Land

- Goshen County is located in LRA 1-2 for crop land. The production levels the appraiser will be working with are;

Yield Table Irrigated Crop Land - Hay Tons Per Acre

LRA	Value Range	Soils Capability Class			
		II	III	IV	V-VIII
1-2-3	High	5.5	4.5	3.5	2.5
1-2-3	Low	4.5	3.5	2.5	1



Selecting the Appropriate Appraised Value, Irrigated Crop Land

- The same applies here as in dry crop, through tabulation and by utilizing your soil surveys and GIS integration you should be able to map out where the soil classes lie
- By tracking production yields on tons per acre of hay and the precipitation amounts across your jurisdiction you will be able to select with the range of values for each class of soil which represents the production levels your producers are experiencing

Selecting the Appropriate Appraised Value, Range Land

- The Land Resource Areas which apply to Goshen County for range land are LRA 2 and LRA 3
- The following production levels will apply to range land;

Yield Table/Stocking Rate Range Land - AUM's Per Acre

LRA	Value Range	Soils Capability Class					
		R-1	R-2	R-3	R-4	R-5	Waste
2	High	2.35	0.60	0.40	0.30	0.20	0.10
2	Low	1.15	0.40	0.30	0.20	0.10	0.00
3	High	2.00	0.40	0.30	0.20	0.10	0.05
3	Low	1.00	0.30	0.20	0.10	0.05	0.00

Selecting the Appropriate Appraised Value, Range Land

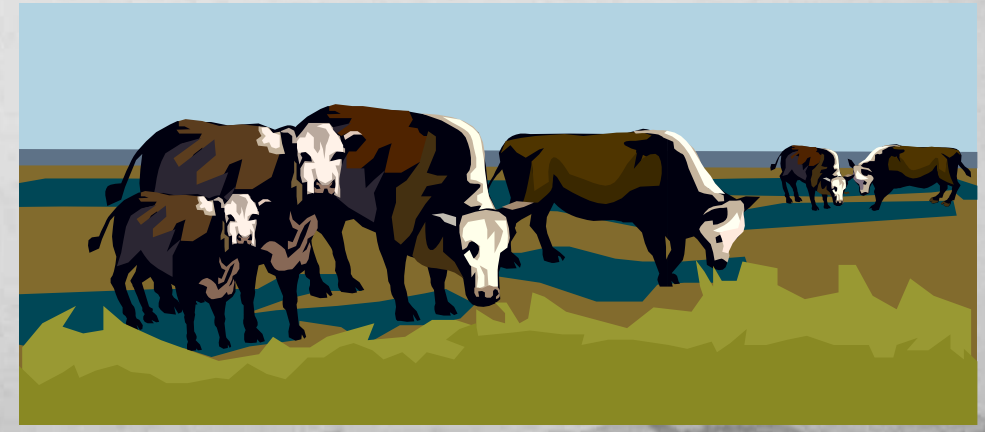
- Production levels for range land are more difficult to track as it is based on stocking rates for the forage that exists, precipitation, topography and growing season.
- Wyoming range land needs precipitation for the forage to sustain itself while being grazed through the growing season. Lack of moisture on grazed pastures can result in those lands sitting idle for a year to let the plant community rebuild itself to sustain the allotted AUM's per acre.
- The production stocking rates listed in the Agricultural Land Valuation Manual were derived from the United States Department of Agricultural, USDA, 1988 Technical Guide to Range Sites and Range Condition. The USDA published stocking rates for each range site classification is based on soil morphology and range condition.

Selecting the Appropriate Appraised Value, Range Land

- Appraisers should be familiar with precipitation amounts and the normal stocking rates for your jurisdiction
- For example R-1 Soils in LRA 2 could have a stocking rate of 2.35 to 1.15 AUM per acre.
  - If producers are normally grazing at a rate of 2 AUM's per acre and the precipitation amounts support this stocking rate, this could be your selected production level to appraise range land
  - Or rely on the weighted AUM calculated by the Department of Revenue

Selecting the Appropriate Appraised Value, Range Land

- Another example lets say the south end of Goshen County which is LRA 2 and predominantly is covered by R-3 soil classification.
  - The precipitation that this area receives is consistently below normal, and has been for a number of years. To appraise this area of the county the appraiser could select the low range stocking rate.



Selecting the Appropriate Appraised Value, Continued…

- Up to this point we have only discussed climatic and actual production levels in the selection of the appropriate appraised value. There are other things to consider when selecting the appraised value per acre.

Selecting the Appropriate Appraised Value, Continued…

- Inaccuracies in the data - This would occur when discrepancies in production amounts on soil symbols occur in the soil survey. Due to time constraints on when the NRCS could correct the problem, the appraiser could move up or down with in the range of values, until the discrepancy is rectified.
- Equalization - This would occur when to soil survey boundaries touch. The soil symbols may not match as they cross boundaries. The same is true here, due to time constraints on when the NRCS could correct the problem, the appraiser could move up or down with in the range of values, until the discrepancy is rectified. State Board of Equalization orders could also apply.

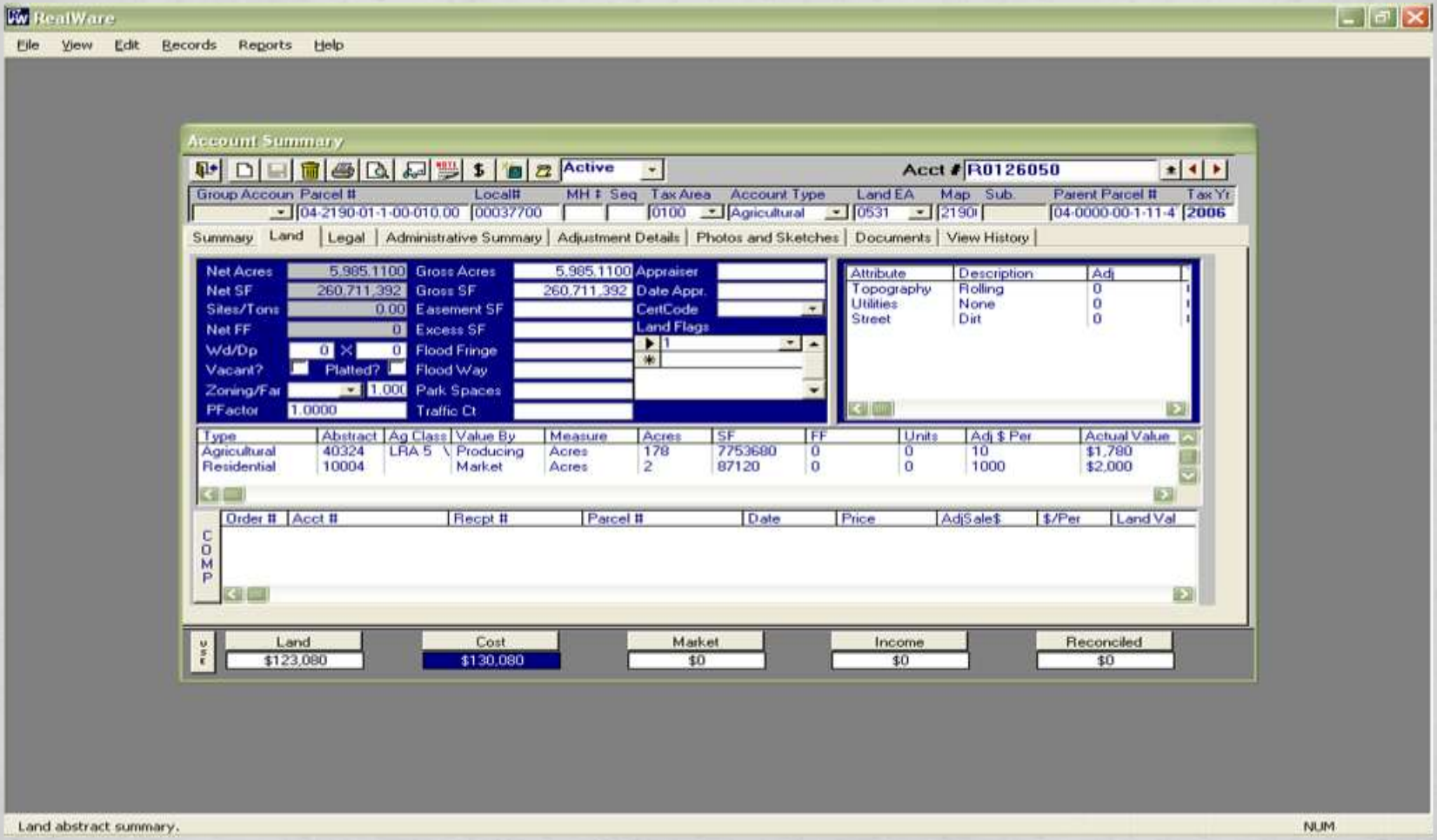
Home Site

- The portion of land classified as agricultural which contains building improvements
- For Example
  - A residence or barn, the land under these improvements will not be classified and appraised as agriculture. The appraiser should remove from the total acreage the number of acres of land used in direct connection with the home site from agricultural classification
  - This land is referred to as the "home site" and is to be appraised at its full market value
  - Any improvements on agricultural land which remove a portion of the agricultural land out of production should be classified as the home site
  - To determine the number of acres to be removed from production the appraiser must make a decision as to the number of acres of land that is used in direct connection with the building improvements

Home Site Continued…

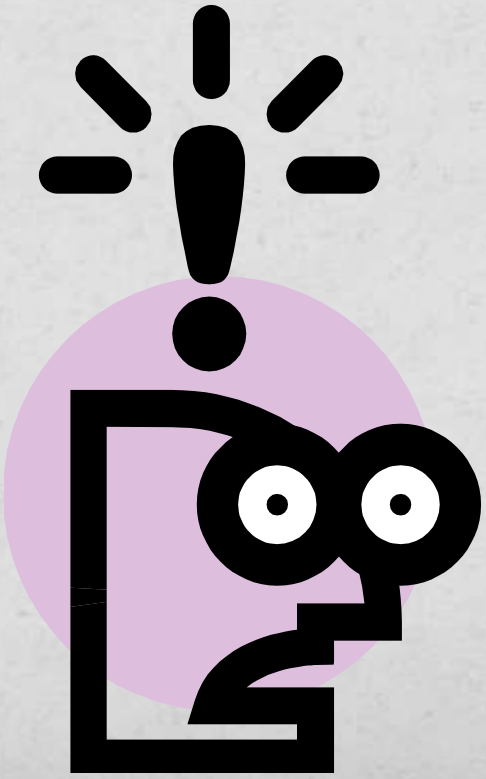
- This can be done in a variety of ways, with the use of GIS software being perhaps one of the most accurate. The Department will not dictate the method used to estimate this acreage but we do encourage the appraiser to be uniform and fair in these acreage estimates. Keep in mind that Wyoming Statutes state that the property must be valued at it's current use, so if an appraiser arbitrarily sets farmsteads at 5 acres across the county and a producer has only ½ acre actually occupied by the farmstead, the appraiser could find themselves in violation of the State Statutes.

Home Site example in RealWare



The End of Chapter 4!

- Time for another quiz!!!



Chapter 5, Defending the Productivity Value

- Occasionally the property owner will disagree with the appraised value placed on their agricultural land.
- Appeals will also include the assessment classification, non-agricultural assessment or agricultural assessment. Once a formal appeal has been filed with the Assessors office, the three parties involved have distinct rolls.
  - State Department of Revenue
  - County Assessor
  - Property Owner

State Department of Revenue

- Creator of the Agricultural Land Valuation Study and will support or defend all data and the values contained within it
  - The formula and variables used to derive at the appraised productivity value per acre
  - The Land Resource Areas and the guidelines imposed on the Assessor as outlined in Chapter 10 of the Department of Revenue's Regular Rules
- This includes the determination of standards, general methodology, and productivity sources used in the valuation of agricultural lands
- Will ensure the assessor is staying within the high and low value range and utilizing the appropriate Land Resource Areas

Wyoming Department of Revenue, Will **Not**

- Explain or defend assessors selected value
- Defend approved third party soil surveys
- Play any roll in appeals over the classification of the land, determination and classification is the sole responsibility of the assessor

County Assessor

- Selects a value within the high and low value range
- Defend the value selected
  - Should have the data on hand to support their decision
  - Explain to the property owner, when questioned why they have selected the value for each classification of land
- Classification of the land
- Notify each property owner of their appraised value and classification every year

Property Owner

- The burden of proof lies with the property owner
  - Any disagreements must be properly supported with good data
  - Responsibility of the property owner to fully educate themselves on the taxation of agricultural lands
    - Department of Revenue Chapter 10 Rules and State Statutes and Constitution
    - Department of Revenue's Agricultural Land Valuation Study
    - Land Resource Maps

The end of Chapter 5!

- You guessed it, time for another quiz!

Chapter 6, Agricultural Support Buildings & Residence

- Wyoming statutes state that all property except agricultural land will be valued at is fair market value
- What is fair market value?
- Defined by Wyoming statutes it is:
  - "Fair market value" means the amount in cash, or terms reasonably equivalent to cash, a well informed buyer is justified in paying for a property and a well informed seller is justified in accepting, assuming neither party to the transaction is acting under undue compulsion, and assuming the property has been offered in the open market for a reasonable time."

Appraising at Fair Market Value

- In order to appraise a property at its fair market value there must first be a market for the property
- This is not always the case for agricultural support buildings
- Solution:
  - 3 approaches to derive value in appraisal
    - Sales Comparison
    - Cost
    - Income

Appraisal's 3 Approaches to Value

- The sales comparison approach is estimating value utilizing the sales of comparable properties.
- The income approach is estimating value based on the future projected benefits or income to be derived from the property.
  - Remember Chapter 3
- The cost approach estimates the replacement cost new, subtracting out depreciation and adding the land value.

Words of Caution

- The appraiser should use caution and follow USPAP, Uniform Standards of Professional Appraisal Practice, when deciding to exclude one of the approaches to value in completing the appraisal
- If you choose to value your agricultural support buildings using the cost approach to value, you must be able to explain why you are excluding the income and sales comparison approach

Lets look at the Cost Approach

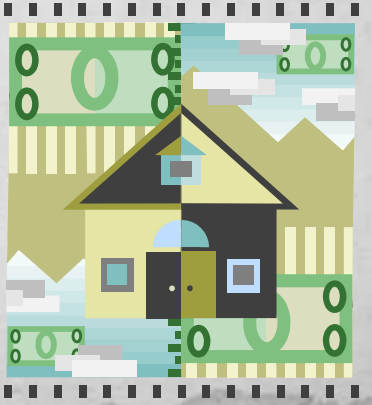
- Appraiser must have a good reliable source of cost data.
- Marshall & Swift is the most widely known and recognizable source for cost data in the appraisal profession.
- Marshall & Swifts 2 Publications
  - Residential Cost Handbook
  - Marshall Valuation Service

Marshall Valuation Service

- Section 17
- "Sheds and Farm Buildings"
- This sections will contain a base square foot cost for the buildings you will be encountering while appraising a farm or ranch property

Agricultural Residence

- The agricultural residence is no different than a residence located within the city limits, subdivisions and rural subdivisions
- They are all single family residential properties and should be valued at their respective market value
- With an agricultural residence the appraiser needs to distinguish which buildings are associated with the residence
- For example:
  - detached garage or shed
  - barns and chicken coops



Agricultural Residence Continued..

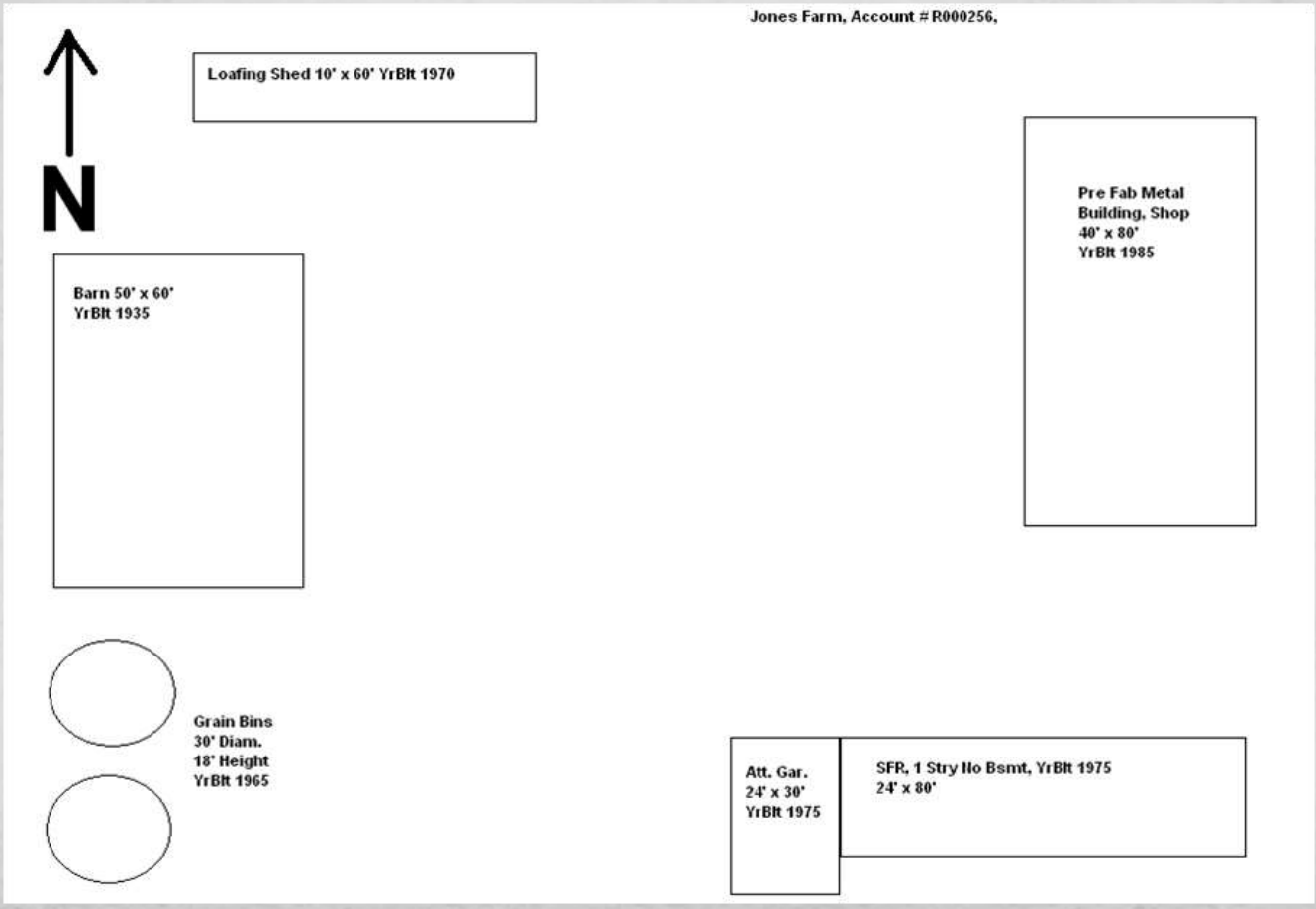
- The entire property will be valued as one final estimate of market value with each structure contributing its respective contributory value
- The difficulty arises in what is the contributory market value for a chicken coop or cattle loafing shed
- For residences located in the city limits, probably not much
- Rural subdivisions, possibly there is a contributory market value
- Does your sales data include properties with agricultural support buildings?
- If so, do you have enough data or sales to actually derive a contributory market value for agricultural support buildings?
- This is usually why residences are valued at market and agricultural support buildings at cost.

Site Map

1. Will aid the appraiser on identification of new construction.
2. Will aid the appraiser on buildings removed.
3. Will aid the appraiser to identify the previous appraisers listing of the buildings.
4. Will aid in explaining valuation to the public.
5. A site map can make things easier for new employees not familiar with the property.

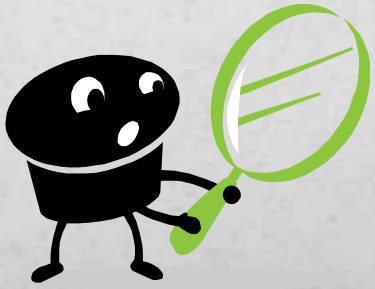
Site Map

- See Example Below:



Inspection

- Appraisal inspection should always be thorough and detailed regardless of the property being appraised
- Mistakes commonly made by appraisers in the assessment profession are they only collect data which is required for computer entry
- All characteristics that the appraiser discovers should be documented and reported regardless of whether or not they contribute to value
- Dated photographs of the agricultural support buildings can be very useful in the appraisal process



Approach each structure with the following goals…..

1. What is the building the appraiser is appraising? Is it a barn, horse arena, farm equipment shop, detached garage? Proper identification of the buildings is very important as each building has a unique base square foot cost with certain amenities included in that cost. Improper identification could result in the over or under appraisal of the building.
2. Is the building currently in use? If so what is it being used for? Is the use the intended purpose for which the building was constructed?
3. What are the materials used to construct the building? Is it a wood pole building, concrete block, steel frame or wood frame? Are the materials used or where they new at the time of construction. Was the building professional built or self built?
4. What utilities or services are located within the building? Is there electricity, water, heat? Does the building have a concrete floor or dirt floor, is there a foundation? Is the interior finished?
5. What is the condition of the building and the components contributing to value? If the buildings is a wood granary and the floor is rotten out can the building be used for its intended purpose? How does this effect value?

Approach each structure with the following goals, continued….

6. What is the quality of construction? Having complete and accurate listings of all the property characteristics will the aid the appraiser in determining the quality of construction.
7. Does the appraiser have correct length and width measurements? Did the appraiser collect the average wall height? Grain bins, did the appraiser measure the circumference and height of the grain bin?
8. Has the appraiser properly identified the physical location of the building in relation to the other structures on the subject property? Can the appraiser draw a good Aerial site map of the property based on the data collected?
9. Is the data collected sufficient enough to allow the appraiser determine and support an estimation of deprecation?

Marshall & Swift

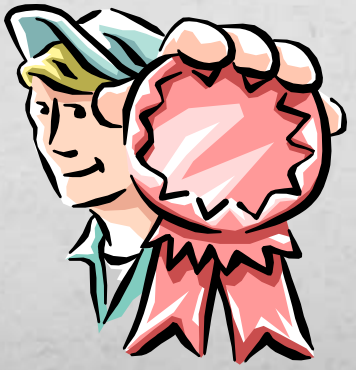
- The Department of Revenue requires Marshall & Swift be used as the information source for the cost approach. In order to properly utilize Marshall & Swift Valuation Service appraisers should be fully educated on how to properly use the manual.

Marshall & Swift, Class

- Class of construction refers to the actual materials used in the framing, support column and beams, walls, floors, roof structure and fireproofing.
- The classes of construction have been grouped into 5 basic categories.
  1. Class A buildings are fireproofed structural steel frames with reinforced concrete or masonry floors and roofs.
  2. Class B buildings are reinforced concrete frames and concrete or masonry floors and roofs.
  3. Class C buildings are masonry or concrete exterior walls with wood or steel framed roof and floor structures. Could have a concrete slab on grade.
  4. Class D and P (Pole) buildings are wood framed floors and roof structures. Could have a concrete slab on grade. Generally this is a combustible building. All pre-engineered pole or post-frame, hoop and arch rib frame buildings will be in this class.
  5. Class S buildings are steel framed roof and walls. Incombustible metal. All pre-engineered metal buildings including slant wall and Quonset's will be in this class.

Marshall & Swift, Occupancy

- Occupancy denotes the actual description of what the building is. For example Tool sheds, Barns, Arenas, and Hog Barns
- Section 17 "Sheds and Farm Buildings" contains all the occupancies that would be present on a farm or ranch
- The occupancy listed has the class of construction and quality or type listed.
- Quality and class selected is based on the exterior walls, interior finish, lighting & plumbing and heat



Marshall & Swift, Quality

- Each class and quality has a base square foot cost which includes all the items listed in the descriptions of the occupancy
- For example a good quality class C tool shed will contain the following;
  - Exterior Walls - Cheap block, windows, hip or gable roof.
  - Interior Finish - Unfinished, good Concrete slab.
  - Lighting & Plumbing - One or two lights and outlets, no plumbing.
  - Heat - None.

CALCULATOR METHOD

BARNS – GENERAL PURPOSE (102)

CLASS	TYPE	EXTERIOR WALLS	INTERIOR FINISH	LIGHTING & PLUMBING	HEAT	COST Sq. M.	COST Cu. Ft.	COST Sq. Ft.
C	Good	Block or structural tile, some windows, good gable roof and trim	Concrete floor, stalls and feed room	Adequate lights and outlets, water service and drains	None	$379.32	$3.52	$35.24
	Average	Brick, concrete block, structural clay tile, few windows, "flat roofed"	Unfinished, some slab or wood floor, stalls	Few electrical outlets and hose bibs	None	289.01	2.69	26.85
	Low cost	Concrete block, light shed or gable roof, asphalt shingles	Unfinished, dirt floor, few cheap stalls	None	None	220.66	2.05	20.50
D	Good	Lap siding, windows, good frame and gable roof structure	Some wainscot, plank or concrete floors, stalls, feed room	Adequate lights and outlets, water service, drains	None	331.96	3.08	30.84
	Average	Wood frame, board and batten or low-cost siding, few windows	Some floor, few partitions and stalls, feed room	Few electrical outlets and hose bibs	None	239.82	2.23	22.28
	Low cost	Light wood frame and shed or gable roof structure, board siding	Unfinished, dirt floor, few cheap stalls	None	None	173.52	1.61	16.12
DPOLE	Good	Pole frame, metal siding, insulated, good gable roof and trim	Concrete or plank floors, stalls, feed room, interior sheathing	Adequate lights and outlets, water service and drains	None	281.91	2.62	26.19
	Average	Pole frame, metal siding, few windows or shutters, "flat roofed"	Some floor, few partitions and stalls, feed room	Few electrical outlets and hose bibs	None	200.75	1.87	18.65
	Low cost	Pole frame, metal siding, light roof	Unfinished, dirt floor, few cheap stalls	None	None	143.27	1.33	13.31
S	Good	Steel panels on steel frame, insulated, good gable roof and trim	Plank or concrete floors, stalls, feed room, interior sheathing	Adequate lights and outlets, water service and drains	None	311.73	2.90	28.96
	Average	Steel siding and frame, few windows or shutters, "flat roofed"	Some floor, few partitions and stalls, feed room	Few electrical outlets and hose bibs	None	225.83	2.10	20.98
	Low cost	Steel siding and frame, light roof	Unfinished, dirt floor, few cheap stalls	None	None	163.83	1.52	15.22

BANK BARNS (TWO-STORY) – GENERAL PURPOSE (100)

C	Good	Block or structural tile, some windows, good gable roof and trim	Concrete, good plank floors, stalls and feed room	Adequate lights and outlets, water service and drains	None	$273.62	$2.54	$25.42
	Average	Brick, concrete block, structural clay tile, few windows, "flat roofed"	Some slab, wood floor, some partitions and stalls, feed room	Minimum electrical and water outlets	None	209.47	1.95	19.46
	Low cost	Concrete block, structural clay tile, light shed or gable roof	Unfinished, dirt floor, upper-level wood floor, few stalls	None	None	160.71	1.49	14.93
D	Good	Lap siding, windows, good frame and gable roof structure	Some wainscot, good plank and concrete floors, stalls, feed room	Adequate lights and outlets, water service and drains	None	246.93	2.29	22.94
	Average	Wood frame, board and batten or low-cost siding, few windows	Some slab, wood floor, some partitions and stalls, feed room	Minimum electrical and water outlets	None	182.45	1.70	16.95
	Low cost	Light wood frame and shed or gable roof structure, board siding	Unfinished, dirt floor, upper-level wood floor, few stalls	None	None	134.98	1.25	12.54
DPOLE	Good	Pole frame, metal siding, insulated, good gable roof and trim	Concrete and plank floors, stalls, feed room, interior sheathing	Adequate lights and outlets, water service and drains	None	218.08	2.03	20.26
	Average	Pole frame, metal siding, few windows or shutters, "flat roofed"	Some slab, wood floor, some partitions and stalls, feed room	Minimum electrical and water outlets	None	160.49	1.49	14.91
	Low cost	Pole frame, metal siding, light roof	Unfinished, dirt, wood floor, few stalls	None	None	118.40	1.10	11.00

HAYLOFTS

CDS	Good	Not included	Heavy timber, good T&G floor	Not included	None	$131.64	—	$12.23
	Average	Not included	Adequate support, plank floor	Not included	None	84.82	—	7.88
	Low cost	Not included	Minimum support, light floor	Not included	None	54.79	—	5.09

NOTE: Hayloft floors are also used with the Horse Barns found on Page 36. Access ramps cost $950 to $1,570. Do not use story height or area/perimeter multipliers with loft costs.

Cost Adjustments and Multipliers

RealWare utilizes cost adjustment and multipliers obtained from Marshall Valuation Service. The multipliers we will be focusing on are:

1. Current Cost Multipliers for bringing M&S costs up to date
2. Local Multipliers that reflect local cost conditions such as weighted labor and local material costs
3. Perimeter Adjustments
4. Wall Height Adjustments.

CURRENT COST MULTIPLIERS

These multipliers bring costs from preceding pages up to date. Also apply Local Multipliers, Section 99, Pages 5 through 10.

CALCULATOR COST SECTIONS

(Effective Date of Cost Pages)		11 (11/12)	12 (8/12)	13 (5/12)	14 (2/12)	15 (11/11)	16 (8/11)	17 (5/13)	18 (2/13)
EASTERN	A	1.04	1.04	1.04	1.03	1.06	1.07	1.03	1.05
	B	1.05	1.06	1.04	1.06	1.05	1.06	1.02	1.05
	C	1.04	1.04	1.06	1.07	1.08	1.08	1.03	1.03
	D	1.04	1.06	1.06	1.06	1.07	1.09	1.01	1.02
	S	1.05	1.04	1.05	1.05	1.06	1.06	1.01	1.05
CENTRAL	A	1.01	1.00	1.01	1.02	1.02	1.03	.99	1.00
	B	1.01	1.02	1.01	1.02	1.04	1.03	.97	.99
	C	1.01	1.02	1.03	1.04	1.04	1.03	.98	1.01
	D	1.02	1.04	1.05	1.06	1.07	1.07	.99	1.01
	S	.99	1.00	.99	1.01	1.02	1.01	1.00	1.00
WESTERN	A	1.00	1.02	1.04	1.05	1.05	1.05	1.00	.99
	B	1.00	1.02	1.04	1.04	1.05	1.06	1.00	.99
	C	1.00	1.03	1.03	1.06	1.05	1.06	.99	1.02
	D	1.04	1.04	1.05	1.07	1.06	1.06	1.03	1.02
	S	.99	.99	1.03	1.03	1.02	1.06	1.01	.99

SEGREGATED COST SECTIONS

(Effective Date of Cost Pages)		41 (12/12)	42 (9/12)	43 (6/12)	44 (3/12)	45 (12/11)	46 (9/11)	47 (6/13)	48 (3/13)
EASTERN	A	1.04	1.04	1.04	1.03	1.06	1.07	1.03	1.05
	B	1.05	1.06	1.04	1.06	1.05	1.06	1.02	1.05
	C	1.04	1.04	1.06	1.07	1.08	1.08	1.03	1.03
	D	1.04	1.06	1.06	1.06	1.07	1.09	1.01	1.02
	S	1.05	1.04	1.05	1.05	1.06	1.06	1.01	1.05
CENTRAL	A	1.01	1.00	1.01	1.02	1.02	1.03	.99	1.00
	B	1.01	1.02	1.01	1.02	1.04	1.03	.97	.99
	C	1.01	1.02	1.03	1.04	1.04	1.03	.98	1.01
	D	1.02	1.04	1.05	1.06	1.07	1.07	.99	1.01
	S	.99	1.00	.99	1.01	1.02	1.01	1.00	1.00
WESTERN	A	1.00	1.02	1.04	1.05	1.05	1.05	1.00	.99
	B	1.00	1.02	1.04	1.04	1.05	1.06	1.00	.99
	C	1.00	1.03	1.03	1.06	1.05	1.06	.99	1.02
	D	1.04	1.04	1.05	1.07	1.06	1.06	1.03	1.02
	S	.99	.99	1.03	1.03	1.02	1.06	1.01	.99

UNIT-IN-PLACE COST SECTIONS (51 – 70)

Sec.	Page	Date		Eastern	Central	Western
51 -	2-3	(3/13)	Concrete Foundations	1.03	1.00	1.01
51 -	4	(3/13)	Pilings	1.03	.99	1.01
51 -	7-8	(3/13)	Steel and Concrete Frame	1.04	1.00	1.01
51 -	3,7	(3/13)	Wood Foundations, Frame	1.01	1.01	1.03
52 -	1-4, 6	(3/13)	Interior Construction	1.02	1.01	1.01
52 -	5	(3/13)	Bank Vaults and Equipment	1.03	.99	1.00
53 -	1-8	(6/13)	Heating, Cooling & Ventilating	1.01	.99	1.01
53 -	9-12	(6/13)	Plumbing, Fire Protection, etc.	1.01	.98	1.01
54 -	1-6	(6/13)	Electrical, Security	1.00	1.02	.99
55 -	3-7	(8/11)	Wall Costs	1.02	1.00	1.03
56 -	1-2	(8/11)	Stained Glass	1.04	1.02	1.04
56 -	3-6	(8/11)	Storefronts	1.04	1.02	1.04
56 -	7	(8/11)	Stonework	1.04	1.03	1.05
56 -	8	(8/11)	Columns, Stone & Concrete	1.04	1.03	1.05
56 -	8	(8/11)	Columns, Wood & Aluminum	1.03	1.02	1.04
57 -	1-6	(9/11)	Roofs	1.05	1.04	1.06
58 -	1	(9/11)	Cold Storage	1.06	1.04	1.07
58 -	2-8	(9/11)	Elevators, Conveying Systems	1.06	1.03	1.05

Sec.	Page	Date		Eastern	Central	Western
61 -	1-8	(12/12)	Tanks	1.02	1.01	1.02
62 -	1	(6/12)	Industrial Pumps & Boilers	1.04	.99	1.05
62 -	2-3, 6	(6/12)	Piping	1.04	.99	1.05
62 -	4	(6/12)	Electrical Motors	1.04	.99	1.05
62 -	5	(6/12)	Steel Stacks, Chutes	1.04	.99	1.05
62 -	5	(6/12)	Masonry & Concrete Chimneys	1.03	1.01	1.06
62 -	6	(6/12)	Compactors, Incinerators	1.04	.99	1.05
63 -	1-4	(9/12)	Trailer and Mfg. Housing Parks	1.01	1.01	1.05
63 -	5-10	(9/12)	Manufactured Housing	1.03	1.03	1.05
64 -	1-6	(3/12)	Service Stations, Car Washes	1.06	1.03	1.03
64 -	7-9	(3/12)	Prefabricated Metal Structures	1.04	1.00	1.04
64 -	7-8	(3/12)	Prefab. Wood & Air Structures	1.05	1.04	1.05
65 -	1-12	(3/12)	Equipment Costs	1.03	1.02	1.01
66 -	1	(12/11)	Subdivision Costs	1.05	1.03	1.06
66 -	2-9	(12/11)	Yard Improvements	1.05	1.03	1.07
66 -	10-11	(12/11)	Demolition & Remediation	1.05	1.04	1.07
67 -	1-2	(12/11)	Golf Courses	1.04	1.04	1.05
67 -	3-7	(12/11)	Recreational Facilities	1.05	1.04	1.07
70 -	1-42	(1/13)	Green Section	1.02	1.02	1.05

This page supersedes the May 2013 Green Supplement.

The data included on this page becomes obsolete after update delivery, scheduled for July 2013.

LOCAL MULTIPLIERS

Apply to costs brought up-to-date from preceding pages. Do not apply to Section 98 or any other indexes.

UNITED STATES

CLASS	A	B	C	D	S
RHODE ISLAND	1.12	1.12	1.15	1.13	1.09
Newport	1.11	1.11	1.14	1.12	1.08
Providence	1.17	1.17	1.20	1.20	1.16
Warwick	1.13	1.13	1.16	1.14	1.11
SOUTH CAROLINA	.89	.89	.88	.90	.89
Anderson	.88	.88	.87	.89	.88
Charleston	.90	.91	.90	.91	.90
Columbia	.89	.89	.89	.91	.89
Florence	.91	.93	.90	.90	.89
Greenville	.89	.89	.88	.89	.88
Myrtle Beach	.89	.90	.89	.90	.87
Rock Hill	.88	.89	.89	.92	.88
Spartanburg	.89	.88	.86	.89	.88
SOUTH DAKOTA	.96	.94	.95	.93	.95
Aberdeen	.96	.94	.95	.93	.95
Brookings	.96	.94	.94	.92	.95
Huron	.97	.95	.95	.92	.95
Mitchell	.97	.95	.95	.92	.95
Pierre	.96	.95	.96	.93	.96
Rapid City	.95	.95	.96	.94	.95
Sioux Falls	.95	.94	.95	.94	.95
Vermillion	.96	.94	.94	.92	.95
Watertown	.96	.94	.94	.92	.95
Yankton	.95	.94	.93	.92	.94
TENNESSEE	.91	.91	.90	.91	.90
Bristol	.91	.91	.88	.91	.88
Chattanooga	.95	.95	.93	.93	.95
Columbia	.91	.91	.89	.88	.87
Jackson	.90	.89	.90	.91	.89
Johnson City	.90	.88	.86	.88	.87
Kingsport	.94	.94	.93	.94	.93
Knoxville	.94	.94	.92	.92	.94
Memphis	.92	.92	.91	.92	.90
Nashville	.93	.94	.92	.93	.92
TEXAS	.86	.86	.87	.88	.86
Abilene	.92	.93	.94	.93	.91
Amarillo	.91	.91	.93	.92	.91
Austin	.86	.87	.86	.87	.85
Baytown	.86	.86	.86	.87	.86
Beaumont	.86	.86	.88	.89	.86
Cameron County	.79	.79	.79	.80	.79
Corpus Christi	.87	.87	.88	.87	.87
Dallas	.89	.90	.91	.91	.88
El Paso	.92	.91	.92	.91	.92
Fort Worth	.89	.90	.91	.91	.88
Galveston	.88	.87	.89	.88	.86
Hidalgo County	.79	.79	.79	.80	.79
Houston	.89	.89	.89	.89	.88
Laredo	.79	.78	.80	.81	.79
TEXAS (Continued)					
Longview	.93	.94	.94	.94	.93
Lubbock	.88	.88	.89	.89	.88
Marshall	.89	.90	.91	.93	.89
Midland	.86	.86	.88	.88	.86
Odessa	.88	.89	.90	.89	.88
Port Arthur	.84	.84	.87	.89	.84
San Angelo	.84	.84	.86	.87	.84
San Antonio	.83	.83	.85	.85	.83
Texas City	.88	.87	.89	.89	.87
Tyler	.87	.88	.88	.89	.86
Victoria	.80	.79	.80	.83	.80
Waco	.85	.85	.85	.87	.85
Wichita Falls	.88	.89	.87	.89	.87
UTAH	.97	.98	.95	.96	.95
Cedar City	.95	.97	.94	.95	.94
Ogden	1.00	1.00	1.00	1.00	.99
Orem	.99	1.00	.98	.98	.98
Provo	.99	.99	.98	.98	.98
Salt Lake City	1.00	1.00	.99	.97	.99
St. George	.95	.97	.94	.95	.94
VERMONT	1.04	1.05	1.08	1.06	1.01
Barre	1.03	1.05	1.08	1.05	1.00
Brattleboro	1.03	1.03	1.03	1.03	1.01
Burlington	1.05	1.06	1.08	1.06	1.02
Montpelier	1.03	1.05	1.08	1.06	1.00
Rutland	1.03	1.05	1.06	1.05	.97
VIRGINIA	.94	.94	.94	.94	.93
Alexandria	1.08	1.10	1.07	1.05	1.06
Arlington	1.09	1.10	1.08	1.05	1.06
Charlottesville	.93	.92	.93	.92	.92
Chesapeake	.95	.96	.94	.95	.92
Danville	.92	.92	.90	.92	.90
Fredericksburg	1.05	1.06	1.05	1.05	1.03
Hampton	.95	.96	.95	.96	.94
Lynchburg	.91	.90	.91	.92	.90
Newport News	.95	.96	.95	.96	.94
Norfolk	.96	.97	.95	.95	.94
Petersburg	.92	.92	.93	.93	.90
Portsmouth	.95	.96	.94	.95	.92
Richmond	.96	.96	.96	.97	.95
Roanoke	.96	.97	.96	.97	.93
Virginia Beach	.96	.97	.95	.96	.94
Winchester	1.03	1.02	1.01	1.01	1.03
WASHINGTON	1.13	1.12	1.12	1.12	1.10
Bellingham	1.14	1.12	1.14	1.13	1.10
Clallam County	1.14	1.13	1.14	1.13	1.11
Everett	1.20	1.19	1.18	1.19	1.17
Island County	1.18	1.17	1.18	1.18	1.16
Kitsap County	1.16	1.15	1.16	1.15	1.12
Longview	1.10	1.09	1.08	1.07	1.10
Olympia	1.18	1.16	1.20	1.20	1.16
Pasco (Tri-cities)	1.10	1.10	1.09	1.10	1.08
Seattle	1.21	1.20	1.21	1.20	1.18
Spokane	1.10	1.09	1.07	1.05	1.09
Tacoma	1.19	1.18	1.19	1.19	1.16
Vancouver	1.08	1.08	1.08	1.08	1.06
Walla Walla	1.09	1.08	1.07	1.09	1.06
Wenatchee	1.09	1.07	1.06	1.06	1.05
Yakima	1.09	1.08	1.08	1.09	1.07
WEST VIRGINIA	1.08	1.06	1.06	1.07	1.07
Beckley	1.08	1.07	1.07	1.09	1.08
Bluefield	1.08	1.07	1.07	1.09	1.08
Charleston	1.09	1.08	1.08	1.10	1.09
Clarksburg	1.08	1.08	1.07	1.08	1.08
Fairmont	1.07	1.07	1.07	1.08	1.06
Huntington	1.09	1.07	1.07	1.09	1.09
Morgantown	1.08	1.07	1.06	1.08	1.08
Parkersburg	1.07	1.06	1.06	1.06	1.07
Wheeling	1.09	1.08	1.09	1.09	1.08
WISCONSIN	1.07	1.06	1.08	1.08	1.06
Appleton	1.07	1.06	1.08	1.08	1.05
Beloit	1.09	1.09	1.10	1.11	1.08
Eau Claire	1.07	1.05	1.06	1.06	1.07
Fond du Lac	1.06	1.05	1.05	1.06	1.03
Green Bay	1.04	1.03	1.04	1.03	1.04
Janesville	1.08	1.09	1.10	1.11	1.08
Kenosha	1.14	1.13	1.14	1.13	1.14
La Crosse	1.09	1.07	1.07	1.09	1.06
Madison	1.10	1.11	1.12	1.13	1.10
Manitowoc	1.09	1.09	1.10	1.13	1.09
Milwaukee	1.12	1.12	1.14	1.14	1.12
Oshkosh	1.07	1.06	1.07	1.08	1.05
Racine	1.10	1.09	1.10	1.09	1.10
Sheboygan	1.10	1.09	1.11	1.11	1.09
Superior	1.08	1.08	1.07	1.06	1.05
Wausau	1.07	1.06	1.07	1.07	1.04
WYOMING	.99	.98	.97	.96	.99
Casper	.99	.98	.98	.96	.99
Cheyenne	.99	.97	.96	.95	.99
Cody	.96	.95	.94	.90	.95
Laramie	1.01	.99	.98	1.01	1.01
Rock Springs	1.03	1.04	1.00	1.01	1.03
Sheridan	.97	.97	.97	.95	.97

CALCULATOR METHOD

SHEDS AND FARM BUILDING REFINEMENTS

PRE-ENGINEERED BUILDINGS

The costs of light pre-engineered or packaged structures will vary widely depending on their end use and ancilliary features. Pages 11 through 25 in most cases reflect typical light commercial or urban applications, while the remainder of the section covers mostly light farm or rural use (typically with lighter frames, cladding and fewer interior finishes). Some of these off-the-shelf structures may be purchased directly from dealers/installers and can, at times, be influenced by inventory discounting, predatory pricing, etc., which is not contemplated here. All Calculator Costs include installation under normal conditions, including typical sitework, architects' fees and interim construction financing.

FARMER-BUILT CONSTRUCTION

All costs in this section are based on professional labor supervised by a contractor or his job foreman. For amateur workmanship or work done by farm, grower or ranch help, costs should be decreased by 15% to 30% to reflect the proper wage rate and lack of supervision relative to the quality of work.

FLOOR AREA/PERIMETER MULTIPLIERS

AVERAGE FLOOR AREA Sq. M.	AVERAGE FLOOR AREA Sq. Ft.	M. FT.	AVERAGE PERIMETER (For all structures except greenhouses. Do not use for open sheds or shelters without walls.) 15	23	30	38	46	61	76	91	107	122	152	183	213	244	274	305	M. FT.	AVERAGE FLOOR AREA Sq. Ft.	AVERAGE FLOOR AREA Sq. M.
			50	75	100	125	150	200	250	300	350	400	500	600	700	800	900	1000			
46	500		1.044	1.178	1.311	1.444	1.577	1.844	2.110	2.377	2.643	2.909	-----	-----	-----	-----	-----	-----		500	46
70	750		.955	1.044	1.133	1.222	1.311	1.489	1.667	1.844	2.023	2.201	-----	-----	-----	-----	-----	-----		750	70
93	1,000		.911	.980	1.044	1.110	1.178	1.311	1.444	1.577	1.711	1.844	-----	-----	-----	-----	-----	-----		1,000	93
139	1,500		.866	.911	.955	1.000	1.044	1.133	1.222	1.311	1.400	1.489	-----	-----	-----	-----	-----	-----		1,500	139
186	2,000		-----	.878	.911	.945	.977	1.044	1.110	1.178	1.245	1.311	-----	-----	-----	-----	-----	-----		2,000	186
232	2,500		-----	.858	.884	.911	.938	.991	1.044	1.097	1.150	1.204	-----	-----	-----	-----	-----	-----		2,500	232
279	3,000		-----	.843	.865	.889	.911	.955	1.000	1.044	1.088	1.133	-----	-----	-----	-----	-----	-----		3,000	279
325	3,500		-----	-----	.854	.872	.892	.931	.967	1.006	1.044	1.080	1.157	-----	-----	-----	-----	-----		3,500	325
372	4,000		-----	-----	-----	.860	.878	.911	.945	.977	1.010	1.044	1.110	1.178	-----	-----	-----	-----		4,000	372
465	5,000		-----	-----	-----	.844	.857	.884	.911	.938	.960	.991	1.044	1.097	1.150	-----	-----	-----		5,000	465
557	6,000		-----	-----	-----	-----	.843	.865	.888	.911	.934	.955	1.000	1.044	1.088	1.133	-----	-----		6,000	557
650	7,000		-----	-----	-----	-----	.835	.854	.873	.892	.911	.931	.967	1.006	1.044	1.080	-----	-----		7,000	650
743	8,000		-----	-----	-----	-----	-----	.844	.860	.877	.894	.911	.945	.977	1.010	1.044	1.076	-----		8,000	743
836	9,000		-----	-----	-----	-----	-----	.836	.852	.867	.881	.896	.926	.955	.985	1.014	1.044	-----		9,000	836
929	10,000		-----	-----	-----	-----	-----	-----	.844	.858	.871	.884	.911	.938	.960	.991	1.018	1.044		10,000	929
1,115	12,000		-----	-----	-----	-----	-----	-----	.833	.843	.855	.867	.888	.911	.934	.955	.977	1.000		12,000	1,115
1,301	14,000		-----	-----	-----	-----	-----	-----	.825	.835	.844	.854	.873	.892	.911	.931	.949	.967		14,000	1,301
1,486	16,000		-----	-----	-----	-----	-----	-----	-----	.827	.836	.844	.861	.877	.894	.911	.928	.945		16,000	1,486
1,672	18,000		-----	-----	-----	-----	-----	-----	-----	.822	.828	.836	.852	.867	.881	.896	.911	.926		18,000	1,672
1,858	20,000		-----	-----	-----	-----	-----	-----	-----	.818	.824	.831	.844	.858	.871	.884	.898	.911		20,000	1,858
2,323	25,000		-----	-----	-----	-----	-----	-----	-----	.810	.815	.820	.831	.841	.852	.863	.873	.884		25,000	2,323

NOTE: For small buildings, enter the table by doubling the average floor area and doubling the average perimeter (see Page 12). For larger buildings, take half the area and half the perimeter.

STORY HEIGHT MULTIPLIERS

For high-pitched roofs, such as gambrel or gothic, on barns, use the height to the eaves plus one-half the height from the eaves to the ridge as the effective height. For quonset shape buildings, use the center arch height in entering the tables. Open shelters without walls should be adjusted for height only.

AVERAGE WALL HEIGHT (M.)	AVERAGE WALL HEIGHT (FT.)	SQUARE FOOT SQUARE METER MULTIPLIER	CUBIC FOOT MULTIPLIER	AVERAGE WALL HEIGHT (M.)	AVERAGE WALL HEIGHT (FT.)	SQUARE FOOT SQUARE METER MULTIPLIER	CUBIC FOOT MULTIPLIER
2.13	7	.943	1.347	4.88	16	1.115	.697
2.44	8	.963	1.204	5.49	18	1.154	.641
2.74	9	.981	1.090	6.10	20	1.192	.596
3.05	10	1.000 (base)	1.000	6.71	22	1.231	.560
3.35	11	1.019	.926	7.31	24	1.269	.529
3.66	12	1.038	.865	8.53	28	1.346	.481
3.96	13	1.058	.814	9.75	32	1.423	.445
4.27	14	1.077	.769	10.97	36	1.500	.417

Depreciation

- A loss in value to the building
- An appraiser is utilizing the cost approach the depreciation he or she is estimating is accrued depreciation
- Accrued depreciation is deducted from the replacement cost new as of the effective date in the appraisal
- There are three forms of deprecation in appraisal
  - physical deterioration
  - functional obsolescence
  - economic or external obsolescence
- All three totaled together will comprise accrued depreciation

Physical Deterioration

A cause of deprecation resulting in a loss of value due to ordinary wear and tear and the effects of the weather on the property. The most common sources of physical deterioration are wear and tear through use, breakage, neglect, infestations, dry rot, moisture, wind, and the elements.

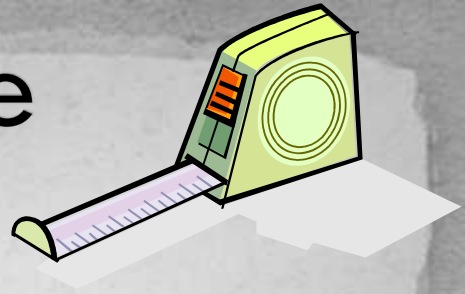
Functional Obsolescence

- Functional utility is the overall usefulness and desirability of the building being appraised. Does the building fully satisfy the needs or wants of the consumer in the market? Functional obsolescence will exist in a property when consumer tastes and styles change. Technological changes may also contribute to functional obsolesce. When a building has poor architecture, out dated equipment, inadequate heating and cooling, wasted space, etc. functional obsolescence will exist. To sum all this up, functional obsolescence is the inability of the building or structure to adequately perform the function it was created to do.

External or Economic Obsolescence

- Loss in value due to a reduction in desirability and utility caused by factors external to the property itself. Causes of external obsolescence could be changes in the highest and best use of a property, market trends, governmental actions, zoning laws, neighborhoods declining, employment rates and economic conditions. External obsolescence can apply to both land and improvements; where as functional obsolescence and physical deterioration is limited to the improvements only.

How do I measure or estimate depreciation?



- All improvements have an estimated economic life or life expectancy.
- Marshall & Swift publishes life expectancy tables for all properties or buildings on which they develop a base square foot cost for.
- These life expectancy tables correspond to their deprecation tables
- These tables are to aid the appraiser in the estimation of deprecation
- The tables published by Marshall & Swift were developed from actual cases studies of sales and market value appraisals.
- All depreciation tables in RealWare, the Wyoming CAMA System, are from Marshall & Swift.

How do I measure or estimate depreciation?

- As appraisers you must determine what the effective age is of the building you are appraising.
- For example;
- A good quality class D, Wood Frame, Arena has an economic life of 30 years.
- What this means is if building was built and no maintenance and upkeep was performed after 30 years the building would be at the end of its useful life
- As appraisers we all know that buildings out live their respective economic lives, due to the owners performing upkeep and general maintenance to protect their investment
- Based on the inspection and collection of data performed, You need to estimate the effective age or adjusted year built of the building. A horse arena built in 1970 for example could have an effective age of 20 years due to the good condition, upkeep and general maintenance the owner has performed over the years.
- Remaining Economic Life of 10 years.

LIFE EXPECTANCY GUIDELINES

TYPICAL BUILDING LIVES

OCCUPANCY CLASS	A	B	C	D	S
SECTIONS 17 & 47, FARM BUILDINGS					
Arenas, excellent	-----	-----	40	35	35
good	-----	-----	35	30	30
average	-----	-----	30	25	25
cheap and low cost	-----	-----	20	15	15
Arena shelters, good	-----	-----	-----	-----	25
average	-----	-----	-----	-----	20
low cost	-----	-----	-----	15	15
Barns, freestall and confinement, good and excellent	-----	-----	-----	30	30
average	-----	-----	-----	25	25
cheap and low cost	-----	-----	-----	15	15
general purpose, good	-----	-----	35	30	30
average	-----	-----	30	25	25
low cost	-----	-----	20	15	15
special purpose, excellent	-----	-----	40	35	-----
good	-----	-----	35	30	-----
low cost and average	-----	-----	30	25	-----
Calving barn shed, good	-----	-----	-----	20	20
low cost and average	-----	-----	-----	15	15
Commodity storage sheds, average	-----	-----	25	20	20
Corncrib bins, good and excellent	-----	-----	-----	15	-----
low cost and average	-----	-----	-----	10	-----
Corncrib buildings, spaced board, average and good	-----	-----	-----	20	-----
wire mesh, good	-----	-----	-----	20	-----
average	-----	-----	-----	15	-----
Dairies/milking parlors, good and excellent	-----	-----	35	30	30
average	-----	-----	30	25	25
low cost	-----	-----	20	15	15
Feed handling and mixing, average	-----	-----	-----	20	20
Feeder barns/loafing sheds, good	-----	-----	-----	20	20
low cost and average	-----	-----	-----	15	15
Fruit-packing barns, average	-----	-----	30	25	25
Hay sheds/shelters, good	-----	-----	-----	20	20
average	-----	-----	-----	15	15
low cost	-----	-----	-----	10	10
Hog barns, breeding, farrowing, good and excellent	-----	-----	35	30	30
average	-----	-----	30	25	25
cheap and low cost	-----	-----	20	15	15
finishing, average	-----	-----	25	20	20
cheap and low cost	-----	-----	20	15	15
nursery, good	-----	-----	35	30	30
average	-----	-----	30	25	25
Hog sheds and modified sheds, average	-----	-----	25	20	20
cheap and low cost	-----	-----	20	15	15
Hunting shelters, good	-----	-----	-----	15	-----
cheap, low cost and average	-----	-----	-----	10	-----

OCCUPANCY CLASS	A	B	C	D	S
SECTIONS 17 & 47, FARM BUILDINGS (Continued)					
Implement, arch-rib buildings, good	-----	-----	-----	30	30
average	-----	-----	-----	25	25
low cost	-----	-----	-----	20	20
implement/equipment buildings, good	-----	-----	30	25	25
low cost and average	-----	-----	25	20	20
implement/equipment sheds, average	-----	-----	25	20	20
low cost	-----	-----	20	15	15
Individual livestock shelters, good and excel.	-----	-----	-----	15	-----
low cost and average	-----	-----	-----	10	-----
Labor dormitories, good	-----	-----	30	25	25
average	-----	-----	25	20	20
low cost	-----	-----	20	15	-----
Lean-tos, equestrian, average	-----	-----	-----	25	25
low cost	-----	-----	-----	15	15
farm utility, good	-----	-----	-----	20	20
low cost and average	-----	-----	-----	15	15
Milkhouses and sheds, good	-----	-----	35	30	-----
average	-----	-----	30	25	-----
Potato storage buildings, good	-----	-----	30	25	25
average	-----	-----	25	20	20
cheap and low cost	-----	-----	20	15	15
Poultry, cage operation, enclosed/screened, good	-----	-----	30	25	25
average	-----	-----	25	20	20
cheap and low cost	-----	-----	20	15	15
floor operation, breeder/broiler, turkey, good	-----	-----	25	20	20
average	-----	-----	20	15	15
cheap, low cost and fair	-----	-----	-----	15	15
Sheep barns, average and good	-----	-----	-----	25	25
sheds, good	-----	-----	-----	25	25
average	-----	-----	-----	20	20
cheap and low cost	-----	-----	-----	15	15
Stables, good	-----	-----	35	30	30
average	-----	-----	30	25	25
low cost	-----	-----	20	15	15
high-value estate stables, excellent	-----	-----	50	45	-----
good	-----	-----	45	40	-----
low-cost and average	-----	-----	40	35	35
Tobacco barns, flue curing, average	-----	-----	25	20	20
air curing, average	-----	-----	-----	25	-----
low cost	-----	-----	-----	20	-----
Toolshed buildings, good	-----	-----	25	20	-----
average	-----	-----	-----	15	-----
low cost	-----	-----	-----	10	-----
Transient labor cabins, average	-----	-----	-----	15	-----
Utility/arch-rib buildings, good	-----	-----	-----	25	25
average	-----	-----	-----	20	20
low cost	-----	-----	-----	15	15
Utility buildings, farm/grain storage, very good	-----	-----	-----	25	-----
good	-----	-----	25	20	20
low cost and average	-----	-----	20	15	15

DEPRECIATION – COMMERCIAL PROPERTIES

EFFECTIVE AGE IN YEARS	TYPICAL LIFE EXPECTANCY IN YEARS								
	70	60	55	50	45	40	35	30	25	20
	DEPRECIATION – PERCENTAGE									
1	0	0	0	0	1	1	1	2	2	3
2	0	1	1	1	1	2	2	3	5	7
3	0	1	1	1	2	3	4	5	7	10
4	1	1	1	2	3	4	5	7	10	14
5	1	1	2	3	4	5	6	9	13	18
6	1	2	2	3	4	6	8	11	16	22
7	1	2	3	4	5	7	10	14	19	26
8	1	2	3	5	6	8	11	16	22	30
9	2	3	4	5	7	10	13	18	25	35
10	2	3	4	6	8	11	15	21	29	40
11	2	4	5	7	9	13	17	24	32	45
12	2	4	6	8	10	14	19	26	36	50
13	2	5	6	9	12	16	22	29	40	55
14	3	5	7	10	13	18	24	32	44	60
15	3	6	8	11	14	20	26	35	48	65
16	3	7	9	12	16	22	28	39	52	69
17	4	7	10	13	18	24	31	42	56	73
18	4	8	11	14	19	26	34	46	60	76
19	4	9	12	16	21	28	36	49	64	78
20	5	9	13	17	23	30	39	53	68	79
21	5	10	14	18	25	32	42	57	71	80
22	6	11	15	20	27	35	45	60	73	
23	6	12	16	21	29	37	48	63	75	
24	7	13	17	23	31	40	52	66	77	
25	7	14	19	25	33	43	55	69	79	
26	8	15	20	27	35	46	58	72	80	
27	9	16	21	28	37	49	61	75		
28	9	17	23	30	40	52	64	77		
29	10	18	24	32	42	54	68	78		
30	11	20	26	34	45	57	72	79		
32	13	22	30	38	50	62	75	80		
34	15	25	34	43	55	68	77			
36	17	28	38	48	61	73	79			
38	19	32	42	53	67	77	80			
40	21	35	46	59	72	79				
42	25	39	51	65	75	80				
44	28	43	56	70	77					
46	31	48	60	74	78					
48	34	53	64	77	79					
50	38	58	68	79	80					
55	48	67	75	80						
60	57	74	78							
65	65	78	80							
70	71	80								
75	75									
80	78									

EFFECTIVE AGE IN YEARS	TYPICAL LIFE EXPECTANCY IN YEARS								
	70	60	55	50	45	40	35	30	25	20
	REMAINING LIFE EXPECTANCY – YEARS									
1	69	59	54	49	44	39	34	29	24	19
2	68	58	53	48	43	38	33	28	23	18
3	67	57	52	47	42	37	32	27	22	17
4	66	56	51	46	41	36	31	26	21	16
5	65	55	50	45	40	35	30	25	20	15
6	64	54	49	44	39	34	29	24	19	14
7	63	53	48	43	38	33	28	23	18	13
8	62	52	47	42	37	32	27	22	17	12
9	61	51	46	41	36	31	26	21	16	11
10	60	50	45	40	35	30	25	20	15	10
11	59	49	44	39	34	29	24	19	14	9
12	58	48	43	38	33	28	23	18	13	8
13	57	47	42	37	32	27	22	17	12	7
14	56	46	41	36	31	26	21	16	11	6
15	55	45	40	35	30	25	20	15	10	5
16	54	44	39	34	29	24	19	14	9	4
17	53	43	38	33	28	23	18	13	8	4
18	52	42	37	32	27	22	17	12	7	3
19	51	41	36	31	26	21	16	11	6	2
20	50	40	35	30	25	20	15	10	5	2
21	49	39	34	29	24	19	14	9	5	2
22	48	38	33	28	23	18	13	8	4	
23	47	37	32	27	22	17	12	7	3	
24	46	36	31	26	21	16	11	6	3	
25	45	35	30	25	20	15	10	6	2	
26	44	34	29	24	19	14	9	5	2	
27	43	33	28	23	18	13	8	4		
28	42	32	27	22	17	12	7	4		
29	41	31	26	21	16	11	7	3		
30	40	30	25	20	15	10	6	3		
32	38	28	23	18	13	8	5	2		
34	36	26	21	16	11	7	4			
36	34	24	19	14	10	6	3			
38	32	22	17	12	8	5	2			
40	30	20	15	10	7	4				
42	28	18	13	9	6	3				
44	26	16	12	8	5					
46	24	14	10	7	4					
48	22	13	9	6	3					
50	20	11	8	5	3					
55	16	8	6	3						
60	12	6	4							
65	9	4	3							
70	7	3								
75	5									
80	4									

PROPERTIES INCLUDED

Section 11 All apartments, hotels, resorts
Section 12 Motels, lodges, large multiples & resorts
Section 13 All
Section 14 All
Section 15 All except libraries
Section 16 All except churches and fraternal bldgs.
Section 17 All commercial and industrial uses
Section 18 None
Section 64 All commercial and industrial uses

For lives less than 20 years, see Page 18.

SHEDS AND FARM BUILDINGS
REFINEMENTS

On this page and the next are means of making major adjustments to the base costs given in this section. The component parts which are not defined, such as the roof or foundation, are considered to be commensurate with the general quality of the building. If further refinements are required or the construction is unusual, either price entirely or partially by the Segregated Cost System, Section 47. Special items which should be added to the total cost may be added from the Unit-in-Place cost sections.

HEATING AND COOLING

These costs are averages of the total installed cost of the entire heating installation including its prorated share of contractors' overhead and profit and architects' fees. If the heating found in the building being appraised is different from that indicated for the base being used, take the difference between the costs of the two and add to or subtract from the base square foot cost. If a cubic foot cost is used, use one-tenth the difference shown to adjust the base cubic foot cost. All of the heating costs included in the base costs are those listed under "Moderate Climate." For specific system costs not found below, see Section 47 or 53.

TYPE	SQUARE METER COSTS			SQUARE FOOT COSTS		
	Mild Climate	Moderate Climate	Extreme Climate	Mild Climate	Moderate Climate	Extreme Climate
Electric, cable or baseboard	$23.47	$32.29	$44.02	$2.18	$3.00	$4.09
Electric wall heaters (inc. FWA)	12.06	15.07	18.73	1.12	1.40	1.74
Forced air, ducted	24.76	34.98	49.51	2.30	3.25	4.60
heaters or furnace vented	7.10	9.69	13.89	.66	.90	1.29
Hot water, baseboard/convector	41.66	60.82	88.16	3.87	5.65	8.19
radiant floor or ceiling	38.00	58.66	90.63	3.53	5.45	8.42
boiler, piping only	23.47	32.29	44.67	2.18	3.00	4.15
Solar heat, active air	24.76	27.99	32.08	2.30	2.60	2.98
Space heaters, w/fan	9.69	15.07	24.22	.90	1.40	2.25
radiant	13.24	19.38	28.42	1.23	1.80	2.64
steam coil (including boiler)	18.19	24.76	33.15	1.69	2.30	3.08
add for fan-jet duct distribution	4.52	6.46	10.01	.42	.60	.93
Steam	40.47	56.51	78.47	3.76	5.25	7.29
Wall or floor furnace	12.70	16.68	22.39	1.18	1.55	2.08
Package heating and cooling	43.49	65.12	97.74	4.04	6.05	9.08
Individual thru-wall heat pumps	22.93	35.52	55.00	2.13	3.30	5.11

Small individual heat pumps cost $1,360 to $1,740 per ton of rated capacity.

Canopies - Apply to horizontal area:

	Low	Avg.	Good	Excellent
Wood frame	$4.77	$6.00	$7.57	$ 9.54
Steel frame	4.94	6.29	8.02	10.20

COOLING ONLY

Cooling and controlled atmosphere costs vary greatly, but in general, the following square foot figures will serve as a guide. For a more specific cost, see Section 53 or 58.

TYPE	SQUARE METER COSTS			SQUARE FOOT COSTS		
	Mild Climate	Moderate Climate	Extreme Climate	Mild Climate	Moderate Climate	Extreme Climate
Central refrigeration with ducts and zone control	$44.67	$60.82	$83.31	$4.15	$5.65	$7.74
Package refrig. (short ductwork)	30.25	44.13	64.05	2.81	4.10	5.95
cooling units only	19.91	31.22	49.51	1.85	2.90	4.60
Central evaporative with ducts	22.39	29.06	38.00	2.08	2.70	3.53
coolers only	15.07	19.38	24.22	1.40	1.80	2.25
Package refrigeration	$1,440 to $1,780 per ton of rated capacity.					
Evaporative cooler	$205 to $285 per thousand CFM of rated capacity.					
Controlled atmosphere, environmental buildings						
livestock, air/air exchanger	$22.93	$27.45	$33.15	$2.13	$2.55	$3.08
earth-tube	47.68	56.51	67.60	4.43	5.25	6.28
for fruits and vegetables and cold storage, see Page 20.						
non-environmental buildings, potato/fruit packing, etc.						
conditioned air	$21.74	$30.68	$ 44.02	$2.02	$2.85	$4.09
cooled air	59.74	82.34	113.56	5.55	7.65	10.55

Automatic vent and/or environmental controls cost $1,020 to $1,980 per unit.

VENTILATION ONLY

Ventilation, blower and ducts or fans; heavy capacity, hens, farrowing, etc.	$7.86	$10.23	$13.89	$.73	$.95	$1.29
fans only, light capacity; pullets, finishing, greenhouses, etc.	3.55	4.31	5.81	.33	.40	.54
Ventilation fans	$130 to $230 per thousand CFM of rated capacity.					
Humidifiers	$815 to $2,050 each.					

UNIT COSTS

SMALL ANIMAL HEATING

Heater, direct-vent, suspension-mounted, each			
40,000 to 75,000 BTU	$905 – $940	120,000 to 225,000 BTU	$1,070 –$1,120
Heater, infrared, each			
3,000 to 6,000 BTU	350 – 360	16,000 BTU	395 – 410
10,000 BTU	385 – 395	19,000 BTU	475 – 490
Heater, infraconic radiant, each			
17,000 BTU	435 – 445	28,300 BTU	560 – 570
22,600 BTU	530 – 560	34,000 BTU	660 – 685

COOLING

Evaporative cooling system, drip, per linear foot	$6.49 –$12.25
Evaporative cooling system, spray, per linear foot	8.29 – 13.80

For wall-mounted system, see Evaporative Cooling Pad Systems on Page 58.

For exhaust fans, see Section 53.
For building sprinkler systems or fly control, see Section 47.
For elevators or handicap lifts, see Section 14.

BUILDING REFINEMENTS

For refinements from the basic building descriptions, make adjustments or modifications from items listed below, or see Section 47 for greater detail. For exterior paving, see Section 66.

Gravel floor	$ .45 – $ .64	Concrete floor, plain	$2.50 – $3.62	Wood plank floor, on ground	$1.02 – $3.03
Asphalt floor	1.70 – 2.76	reinforced	2.87 – 4.89	Feeders, troughs, not automated	.20 – .40

Electrical service, minimum	$.17 – $.84
Water service, minimum	.13 – .38

Sample Appraisal Problems #1

Assume the following; Wood pole & frame construction, metal siding & roof. Concrete floor, electricity, 14' wall height, dimensions 30' x 40'. Water service, Space Heater. Year built 2009.

Occupancy = Equipment Shop (476) Section # 17 Page # 28

Building Class = D Pole Quality or Type = Avg

Total Square Feet = 1200 Perimeter = 140 Avg. Height = 14

Cost Calculation:

M&S Base Cost/sf = $ 12.72 HVAC Adj = +2.25/sf Unadj. Base Cost/sf = $ 14.97

Avg. Height Adj. = 1.077 Perimeter Adj. = 1.044

Current Multiplier = 1.03 Local Multiplier = .95 Adj Base Cost/sf = 16.47

RCN=$ 19,764 Yr Built = 2009 Age = 4 Life Expectancy = 20

Depreciation = 14% Percent Good = 86% RCNLD = $ 16,997

Sample Appraisal Problems #2

Assume the following: Year built 1950. Dimensions 30' x 50', wall height 12'. First floor concrete and wood. Has stalls, grain storage and tack room. Hay loft is wood floor. Concrete foundation wood frame, wood siding and metal roof. Electricity and 1 water hydrant. Estimated Eff Age 20.

Occupancy = Barn General Purpose (102) Section # 17 Page # 30

Building Class = D Quality or Type = Average

Total Square Feet = 1,500 Perimeter = 160 Avg. Height = 12

Cost Calculation:

M&S Base Cost/sf = $ 22.28 Avg. Height Adj. = 1.038 Perimeter Adj. = 1.133

Current Multiplier = 1.03 Local Multiplier = .95 Adj Cost/sf = $ 25.64

RCN=$ 38,460 EFF Age = 20 REL = 5 Life Expectancy = 25

Depreciation = 68% Percent Good = 32% RCNLD = $ 12,307

Hay Loft Cost/sf=$ 7.88 SF= 1,500 Value of Loft=$11,820 Loft Dep Val=$ 2,364

Total Improvement RCNLD = $ 14,671

Sample Appraisal Problems #3

Assume the following: Year built 2000. Dimensions 80' x 50'. Average wall height 10'. 1/4 floor concrete remainder dirt. Electricity and water outlets. Wood frame construction on concrete foundation, wood siding, comp roof. Stalls, feed and tack storage, remainder open. Hay Loft 20 x 80 wood floor. Roof Cover 8 x 80. Estimated Eff Age 5.

Occupancy = Stables (378) Section # 17 Page # 36

Building Class = D Quality or Type = Average

Total Square Feet = 4,000 Perimeter = 260 Avg. Height = 10

Cost Calculation:

M & S Base Cost/sf = $ 25.25 Avg. Height Adj. = 1.00 Perimeter Adj. = .977

Current Multiplier = 1.03 Local Multiplier = .95 Adj Cost/sf = $ 24.14

RCN=$ 96,560 Eff Age = 5 REL = 20 Life Expectancy = 25

Depreciation = 13% Percent Good = 87% RCNLD = $ 84,007

Hay Loft Cost/sf =$ 7.88 SF= 1,600 RCN = 12,608 RCNLD= 7,565

Roof Cover Cost/sf =$ 12.50 SF= 640 RCN = 8,000 RCNLD = 4,800

Total Improvement RCNLD= $ 96,372

Sample Appraisal Problems #4

Assume the following: Year built 2000. Dimensions 12' x 36'. Wood pole construction, wood frame and metal roof and exterior. No water, no electricity dirt floor. Average wall height 10'.

Occupancy = Loafing Shed (113) Section # 17 Page # 33

Building Class = DPole Quality or Type = Low

Total Square Feet = 432 Perimeter = 60 Avg. Height = 10

Cost Calculation:

M & S Base Cost/sf = $ 5.26 Avg. Height Adj. = 1.00 Perimeter Adj. = 1.178

Current Multiplier = 1.03 Local Multiplier = .95 Adj Cost/sf = $ 6.06

RCN=$ 2,619 Age = 13 Life Expectancy = 10

Depreciation = 80% Percent Good = 20% RCNLD = $ 524

Sample Appraisal Problems #5

Assume the following: Concrete floor, metal frame and metal exterior. Electricity, no water. Year built 1970, dimensions 30' x 60'. Average wall height 14'. Estimated Eff Age 10.

Occupancy = Arch Rib Quonset Farm Utility (557) Section # 17 Page # 26

Building Class = S Quality or Type = Average

Total Square Feet = 1800 Perimeter = 180 Avg. Height = 14

Cost Calculation:

M&S Base Cost/sf = $ 13.22 Avg. Height Adj. = 1.077 Perimeter Adj. = 1.044

Current Multiplier = 1.01 Local Multiplier = .99 Adj Cost/sf 14.86

RCN=$ 26,748 Eff Age = 10 REL 10 Life Expectancy = 20

Depreciation = 40% Percent Good = 60% RCNLD = $ 16,049

Sample Appraisal Problems #6

Assume the following: Year built 2006. Dimensions 24D' x 22H'. Average condition.

Occupancy = Grain Bin Section # 17 Page # 54

Quality = N/A

Diameter = 24 Height = 22 Capacity = 9134

RCN=$ 15,500 Yr Built = 2006 Age = 7 Life Expectancy = 25

Depreciation = 19% or $2,945 based on the equipment table RCNLD =$ 12,555

CALCULATOR METHOD

FARM STORAGE

STEEL GRAIN BINS

Costs are averages for utility-type storage bins, usually found on farms and co-ops. For heavy industrial types, see Section 61. The standard bin includes a door and manhole erected on buyers' slab. Cost of drying bin includes floor, auger tube, steel columns and beam supports for plenum assembly, fans and heat. Height is to top of shell. The maximum capacity in bushels includes the volume of the cone.

BIN DIAMETER (feet)	EAVE HEIGHT (feet)	MAXIMUM CAPACITY (bushels)	COST W/ OUT DRYING BIN	COST WITH DRYING BIN	COST SLAB FLOOR
15'	7	1,257	$ 4,475	$ 6,550	$ 615
	11	1,792	5,900	8,650	670
	15	2,329	7,050	10,300	765
	18	2,864	7,950	11,600	885
18'	11	2,647	6,550	9,550	820
	15	3,422	8,100	11,800	855
	18	4,198	9,200	13,400	885
	22	4,973	10,800	——	940
	26	5,748	12,200	——	1,000
	33	7,299	15,100	——	1,050
	40	8,849	17,900	——	1,120
	48	10,400	20,600	——	1,200
21'	11	3,693	7,250	10,500	1,130
	15	4,753	9,200	13,400	1,170
	18	5,813	11,200	16,200	1,220
	22	6,874	13,100	——	1,300
	26	7,934	14,600	——	1,370
	33	10,055	18,200	——	1,470
	40	12,175	20,600	——	1,560
	48	14,296	22,800	——	1,670
24'	11	4,949	8,850	12,900	1,420
	15	6,344	10,800	15,800	1,490
	18	7,739	13,500	19,600	1,560
	22	9,134	15,500	——	1,660
	26	10,528	17,700	——	1,740
	33	13,318	21,100	——	1,830
	40	16,107	23,600	——	1,970
	48	18,897	25,500	——	2,110
27'	11	6,409	10,500	15,300	1,840
	15	8,182	13,000	18,700	1,920
	18	9,955	15,400	22,300	2,000
	22	11,728	17,700	——	2,130
	26	13,500	20,100	——	2,260
	33	17,046	25,100	——	2,360
	40	20,591	27,200	——	2,525
	48	24,137	29,000	——	2,700
30'	15	10,278	$ 15,700	$22,800	$ 2,120
	18	12,473	18,500	27,000	2,240
	22	14,668	21,400	——	2,370
	26	16,863	23,800	——	2,575
	33	21,252	28,500	——	2,775
	40	25,624	31,400	——	3,025
	48	30,031	33,800	——	3,225
36'	15	15,297	22,200	32,200	3,125
	18	18,473	25,200	36,700	3,325
	22	21,648	29,300	——	3,475
	26	24,823	32,900	——	3,675
	33	31,174	37,100	——	3,825
	40	37,524	41,200	——	4,100
	48	43,875	46,900	——	4,375
	59	53,400	55,750	——	4,700
42'	15	21,416	28,300	41,300	4,350
	18	25,738	33,200	48,200	4,600
	22	30,060	37,400	——	4,775
	26	34,382	40,400	——	5,100
	33	43,026	47,700	——	5,350
	40	51,670	56,250	——	5,700
	48	60,314	65,250	——	6,100
	59	73,279	77,500	——	6,550
48'	15	26,749	31,600	48,800	5,700
	18	34,394	40,100	58,500	6,000
	22	40,039	46,100	——	6,200
	26	45,684	52,000	——	6,650
	33	56,974	64,000	——	7,000
	40	68,264	75,750	——	7,350
	48	79,554	87,750	——	8,000
	59	96,488	104,000	——	8,500
60'	18	56,170	63,250	——	8,750
	26	73,810	81,750	——	9,300
	40	109,092	119,000	——	9,700
	48	126,732	137,000	——	10,600
	59	152,870	163,000	——	11,500
	64	165,536	174,000	——	13,200
75'	32	147,000	$161,000	——	$13,700
	40	176,000	191,000	——	15,100
	48	206,000	220,000	——	18,000
	59	246,000	259,000	——	19,500
	64	266,000	276,000	——	20,600
90'	32	221,000	236,000	——	19,800
	40	263,000	278,000	——	21,800
	48	305,000	318,000	——	25,800
	59	358,223	372,000	——	29,800
105'	32	306,180	328,000	——	27,000
	40	363,558	386,000	——	29,800
	48	420,936	442,000	——	35,200
	59	500,000	522,000	——	40,500

ADJUSTMENTS

Auger and drive	$375.00 plus $36.50 to $44.25 per foot of bin diameter	Stirrators	$170.00 to $260.00 per foot of bin diameter
Add for spreaders	$730.00 to $1,100.00 each	Ladders	$63.00 plus $9.01 per linear foot
Aeration systems	Add $.11 to $.17 per bushel	Add for safety cages	$17.55 to $21.75 per foot installed

STEEL HOPPER BOTTOM BINS

DIAMETER (feet)	TOTAL HEIGHT	CAPACITY (bushels)	CAPACITY (tons)	COST	SLAB BASE
15'	33	4,030	100.75	$13,800	$ 750
	41	5,220	130.50	16,200	830
	49	6,400	160.00	19,000	885
	57	7,580	189.50	21,300	940
18'	34	5,980	149.50	19,500	995
	42	7,810	195.25	23,700	1,050
	50	9,530	238.25	26,600	1,140
	58	11,250	281.25	31,100	1,240
	63	12,396	310.00	33,900	1,310
21'	35	8,340	208.50	25,500	1,360
	43	10,640	266.00	31,700	1,510
	51	12,950	323.75	37,700	1,600
	59	15,260	381.50	42,600	1,650
	65	16,800	420.00	44,800	1,740
24'	36	11,170	279.25	31,400	1,780
	44	14,170	354.25	41,100	1,900
	52	17,170	429.25	51,250	2,120
	60	20,170	504.25	57,250	2,370
	66	22,170	554.25	59,500	2,525
30'	39	18,347	458.75	58,750	2,825
	47	23,048	576.25	68,750	3,050
	55	27,749	693.75	77,250	3,175
	63	32,450	811.25	86,750	3,250
	69	35,584	889.50	90,500	3,325

The data included on this page becomes obsolete after update delivery, scheduled for May 2015.

The END of Chapter 6!!

- Yes, you now have the privilege of taking another quiz!!

Review Quiz Chapter 6

1. An agricultural residence should be valued at cost just like the agricultural support buildings.

(FALSE)

Review Quiz Chapter 6 continued

2. Assume the following: 40 x 80 Steel frame equipment shop building with a concrete floor. 16' Wall height. Lights throughout and several hose bibs. Steel siding and roofing. Built in 1998. Tool cabinets and repair area. Estimated effective age of 10.

M&S Base Cost = $20.63

Height Adj = 1.115

Perimeter Adj = .967

Current Multiplier = 1.01

Local Multiplier = .99

Adj Cost = $22.24

RCN = $71,168

TEL = 25

Depreciation = 29%

RCNLD = $50,529

(B) $50,529

Review Quiz Chapter 6 continued

3. Class in Marshall and Swift is referring to:

(C) Type of Construction

Review Quiz Chapter 6 continued

4. The three forms of depreciation are:

(B) Physical, Functional, Economic

(C) Physical, Functional, External

(D) Both C & B

Review Quiz Chapter 6 continued

5. A loss in value due to a reduction in desirability and utility caused by factors external to the property itself is what type of depreciation?

(B) Economic

Review Quiz Chapter 6 continued

6. A building with poor architecture, out dated equipment, inadequate heating and cooling and wasted space is suffering from what type of depreciation?

(B) Functional

Review Quiz Chapter 6 continued

7. Ordinary wear and tear would be classified as what type of depreciation?

(D) None of the above

(Physical)

Review Quiz Chapter 6 continued

8. A barn has an economic life of 30 years, The barn was built in 1950. The property owner has maintained the barn very well and the appraiser estimates the effective age of the barn to be 10. What is the remaining economic life of the barn?

(B) 20 Years

Review Quiz Chapter 6 continued

9. Buildings with wood framed walls and roof structures fall into what class of construction?

(D) Class D

Review Quiz Chapter 6 continued

10. A site map will aid the appraiser for the following reasons:

(A) Identify new construction

(B) Buildings removed

(C) Previous appraisers listing of the buildings

(D) All of the above

Review Quiz Chapter 6 continued

11. The estimated age of an improvement as indicated by its condition would be?

(C) Effective Age

Review Quiz Chapter 6 continued

12. Current Cost Multipliers reflect local cost conditions such as weighted labor and local material costs.

(FALSE)

Chapter 7

Agricultural Personal Property

Chapter Objectives

- Classifying
- Defining
- Discovering
- Reporting
- Valuing Ag Personal Property

Examples of Personal Property that may be found on a ranch or farm are:

- Tractors
- Wagons
- Saddles
- Combines
- Balers
- Generators
- Plows
- Hand Tools
- Computers
- Desks

ALL agricultural lands should have Personal Property to be classified as Agricultural.

The County Assessor has the responsibility of assessing a universe of properties with due respect to the:

- U.S. Constitution
- Wyoming Constitution
- Wyoming Statutes
- Department of Revenue Rules,
- Uniform Standards of Professional Appraisal Practice
- International Association of Assessing Officers

Article 15, Section 11, of the Wyoming Constitution, states:

All property, except as in this constitution otherwise provided, shall be uniformly valued at its full value as defined by the legislature in (3) classes as follows:

- Gross Production of Mineral & Mine Products In Lieu of Taxes on the Land Where Produced;

- Property Used For Industrial Purposes As Defined by Legislature

- All Other Property, Real and Personal

W.S. 39-13-103 (b)(i)(A), states:

All taxable property shall be annually listed, valued and assessed for taxation in the county in which located and in the name of the owner of the property on January 1

W.S. 39-13-103 (b)(ii), states:

All taxable property shall be annually valued at its fair market value.

W.S. 39-13-103 (b)(iii), states:

Beginning January 1, 1989, "taxable value" means a percent of the fair market value of property in a particular class as follows:

(A) Gross product of minerals and mine products, one hundred percent (100%)

(B) Property used for industrial purposes, eleven and one-half percent (11.5%)

(C) All other property, real and personal, nine and one-half percent (9.5%)

EXAMPLE:

New Hay Baler Market Value $100,000

9.5% (Assessment Level)

75.65 (Mill Levy)

$718.68 (Taxes)

Value x Assessment Level x Mill Levy = Taxes

Class Exercise #7-1:
Calculate Taxes

You have just determined the fair market value of an agricultural piece of equipment at $48,500. The assessment level in Wyoming is 9.5% on personal property. The tax district equipment is located in is set at 72.56 mills.

What is the taxes on this piece of equipment?

$48,500 X 0.095 = $4,608 Assessed Value

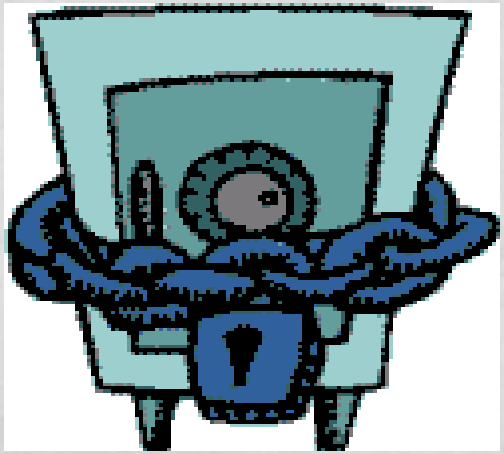
$4,608 X 0.07256 = **$334 Taxes**

W.S. 39-13-103 (b)(v), states:

…annually, commencing on January 1, the County Assessor…shall obtain from each property owner a full, completed and detailed statement of the amount of taxable property…by March 1…

W.S. 39-13-102 (q), states:

(i) All taxpayer returns and return information shall be confidential …



W.S. 39-13-110 (a), states:

All personal property taxes not collected within ten (10) years from the time the taxes were levied shall be cancelled and are thereafter uncollectible.

W.S. 39-11-103 (a)(i) states:

All property within Wyoming is subject to taxation as provided by this act except as prohibited by the United States or Wyoming Constitution or expressly exempted by W.S. 39-11-105.

The following property is exempt from taxation:

- Property of government, schools, orphanages, charitable, fraternal, non-profit and church's
- Property held for personal or family use (Excluding mobile homes)
- Inventories
- Vehicles subject to registration as provided by law
- Snowmobiles
- Fire suppression
- Pollution Control
- Intangible personal property (Intangible real property is taxable)
- In-transit property

Irrigation Equipment

Typically are exempt from Personal Property taxes as it is included in the formula for Irrigated Lands.

Should this pipe be assessed?

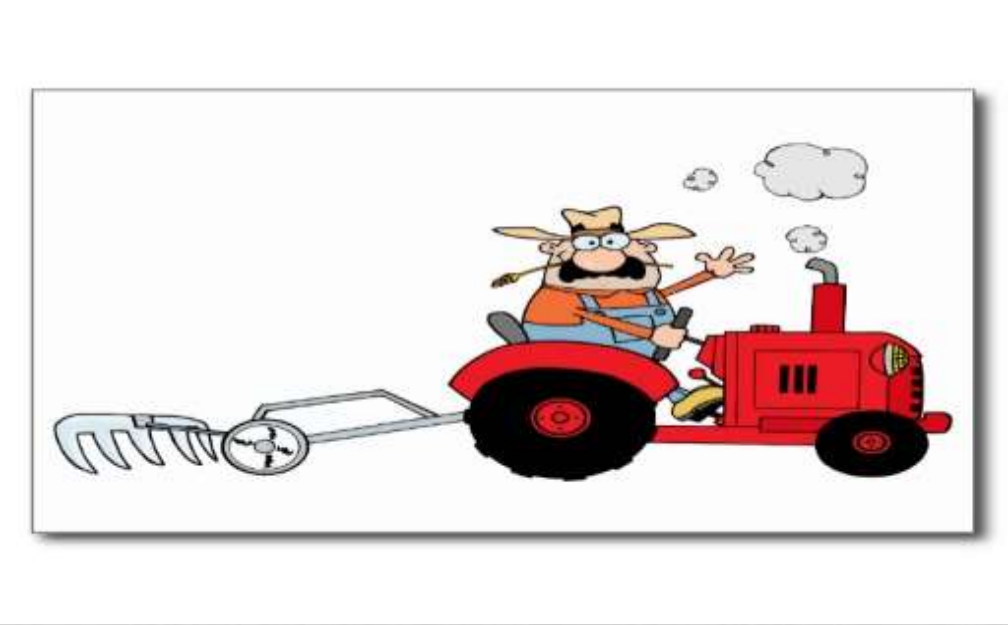
Is this ATV Assessable?

What are these?

Taxable or not?

Personal Property is defined as:

Any property that is not real property; it is all moveable items not permanently affixed to or part of the real estate and may also be known as personalty or chattel



Tangible Personal Property

It is a physical item you can see or touch.

Some examples are:

- Machinery & Equipment
- Furniture
- Computers & Electronic Equipment
- Inventories
- Aircraft
- Motor Vehicles
- Mobile Homes
- Boats
- Leased Equipment
- Tools
- Dies, Jigs, Molds

Intangible Personal Property

It is property that represents evidence of value, or the right to value, under law and/or custom

Some examples are:

- Bonds
- Notes
- Trusts
- Patents
- Annuities
- Mortgages
- Copyrights
- Accounts receivables
- Insurance policies
- Money (cash)
- Shares of stock

All of which <u>are exempt</u> in Wyoming

Types of Personal property

- Inventories
- Fixed Assets
- Leasehold Improvements
- Mobile Machinery
- Mobile Homes
- Livestock
- In Transit Property

Personal Property or Fixture?

Fixture is defined as:

An article that was once personal property, but has since been installed or attached to the land or building in a rather permanent manner so that it is regarded in law as part of the real estate.

Personal Property or Fixture?

Personal Property or Fixture?

Discovery

The process whereby the assessor identifies all taxable property in the jurisdiction and ensures that it is included on the assessment roll.

Methods of Discovery

Self Declaration – Also known as a "Rendition Form or the ATD25 Form"

- It represents the primary discovery tool
- Wyoming requires the annual filling by property owners
- Provided by DOR
- Assessor sends out prior year's listing to all filers

ATD25 Form

Form ATD25 — State of Wyoming. — Page 1 of 2

COMMERCIAL / AGRICULTURAL/ INDUSTRIAL
PERSONAL PROPERTY—OWNED
DECLARATION SCHEDULE FOR 2013

County Number	Parcel #	Act Number	Personal Prop. Type	DO NOT USE - FOR ASSESSORS USE ONLY Date received: _____ By: _____
Name and address of personal property listed here: (please make any corrections here)				Please indicate location of personal property: (please make any changes here)

PERSONAL PROPERTY DETAIL LISTING: Please list all personal property you own and use in your business or operation (Include **all** installed costs)—do not list licensed vehicles (please indicate any changes to the following list by lining out the items that have been removed and filling in the new items purchased) (duplicate form as necessary). Please sign the reporting rendition on the bottom of page 2 and return the completed form by **March 1**.

NAICS CODE: _____

Item	Make	Model	Serial #	Year Acquired	New/Used	Acquired Cost

Please see second page for leased equipment reporting requirements.

ATD25 Form

County Number	Parcel #	Act Number	Personal Prop. Type	DO NOT USE - FOR ASSESSORS USE ONLY Date received: _____ By: _____
Name and address of personal property listed here: (please make any corrections here)				Please indicate location of personal property: (please make any changes here)

PERSONAL PROPERTY YOU LEASE, LOAN, OR RENT LISTING: Please list only those items you are not responsible for here.
(please indicate any changes by lining out the items that have been removed and filling in the new items purchased)

NAICS CODE: _____

Owner and Address of Leased Property	Property Description	Cost of Leased Property	Term (From - To)	Annual Rent

W.S. 39-13-107 (a)(i) I...the owner of (or agent, etc., as the case may be) do solemnly swear or affirm that the above and foregoing listed property is a full, true, correct and complete list of all property owned by me or under my control as agent or otherwise, and that I have not failed or neglected to list for taxation for the year 2012, all property of which I am the owner of or of which I have control as agent, guardian, administrator or otherwise, in the county of_____, State of Wyoming and that I have not connived at any violation or evasion of the requirements of law in relation to the assessment of property for taxation. W.S. 18-3-205(b) Any person who fails to return any taxable property owned by him or under his control is guilty of a misdemeanor and upon conviction shall be fined not exceeding five hundred dollars ($500.00), imprisoned in the county jail not exceeding ninety (90) days, or both.

Type or print your name here: _____

Signature of owner/agent_____ Title _____Date _____

Telephone number _____ Fax Number _____ Email: _____

Annual Canvass

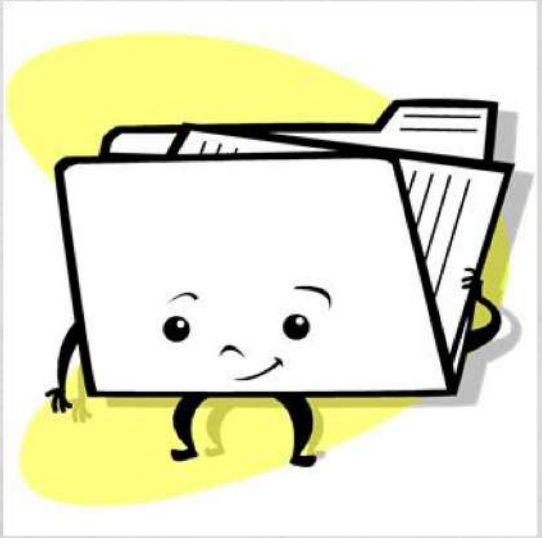
- Solves issues of non-filers
- Tracks movement or situs of property
- Identifies new accounts
- Helps with incomplete filings

Additional Methods

- Real Property Field Appraiser Reports and Records
- Wyoming Business Council
- Corporate Charters (Wyoming Secretary of State)
- Chamber of Commerce Memberships
- Building Permits
- City Directories
- Web Sites
- Classifieds
- List of holders of sales tax license (provided to each county by the DOR)
- Lessee on agricultural leases
- Municipal business Licensing Department

Inventory

- Owner identified
- Record for the taxpayer
- Location
- Description
- Contact information
- Assessment records.



Situs

The appropriate location of property for assessment and taxation purposes

Highest and Best Use

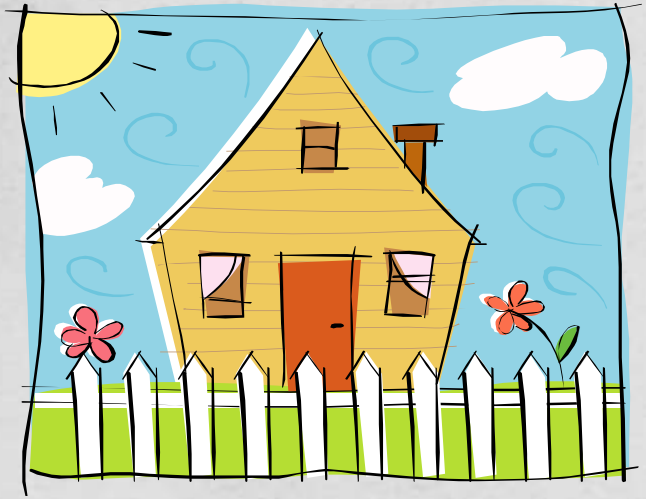
"Highest and Best Use" of personal property determines the most likely future use of property and influences on its current market value. The highest and best use of a property requires it to be appraised as though it were being put to its most profitable use given legal, physical, and financial constraints.

Highest and Best Use?

Market Value

The most probable price expressed in monetary terms that a property would bring if exposed for sale in the open market in an arm's length transaction between a willing seller and willing buyer, both of whom are knowledgeable concerning all the uses to which it is adapted and for which it is capable of being used. It is a hypothetical or estimated sale price.

Appraisal for these two items for taxing purposes should be treated the same (uniformly) using "Fair Market Value."



Value in Use

The value of property for a specific use

- It implies that the equipment is installed and in continual use for generating income or performing its function

Value in Exchange

As applied to personal property, the equipment is a commodity and is not installed and not in use.

Junk pile, or assessable?

Approaches to Value

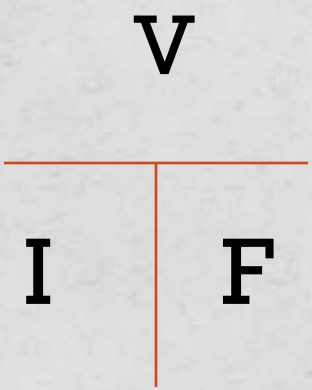
There are three generally accepted value methods used in the assessment of personal property for ad valorem purposes;

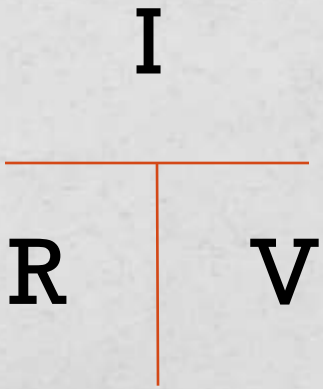
1) Income Approach
2) Sales Comparison Approach and
3) Cost Approach.

Income Approach to Value

Leased equipment may be appropriately valued by estimating the property's ability to generate future income for its owner.

Remember VIF and IRV?





Gross Income Multiplier

Relies on the accurate estimation of gross market income

Example of Gross Income Multiplier

You are appraising a piece of equipment which generates $2,800 per month in gross rent. You have discovered the following information regarding comparables.

Comparables	Sale Price		Gross Annual Rent		Gross Income Multiplier
A	$245,000	/	$33,516	=	$7.31
B	$260,000	/	$35,616	=	$7.30
C	$299,998	/	$41,152	=	$7.29

Estimate of subject value:

Income	x	GIM	=	Value
$2,800 x 12 = $33,600	x	7.3	=	$245,280

Class Exercise #7-2: Gross Income Multiplier

You are appraising a piece of equipment which generates $4,800 per month in gross rent. You have discovered the following information regarding comparables.

Comparables	Sale Price	Monthly Rent	Annual Rent		GIM
Sale #1	$315,750	$4,993 X 12 =	$59,916	(SP/AR) =	5.27
Sale #2	$325,000	$5,178 X 12 =	$62,136	(SP/AR) =	5.23
Sale #3	$301,875	$4,792 X 12 =	$57,504	(SP/AR) =	5.25

Estimate of subject value:

$4,800 X 12 = $57,600 Annual Rent

Annual rent of $57,600 X GIM of 5.25 = $302,400

Capitalization of Net Income

Relies on the accurate estimate of net market income and a capitalization rate made up from the discount rate, the recapture rate, and the effective tax rate.

3 Components to a Capitalization Rate

1- The **discount rate** is the return on the investment and is the investor's compensation for their efforts and risk involved in the investment. The discount rate is made up of an interest rate and an equity yield rate.

3 Components to a Capitalization Rate

2- The **recapture rate** is the return of investment, which is for capital recovery. In order to determine the recapture rate the appraiser must estimate the years of remaining economic life and convert to a decimal.

For example: If a piece of equipment has a 5 year remaining economic life it would be 1/5 = 0.20

3 Components to a Capitalization Rate

3- The **effective tax rate** is the actual tax rate multiplied by the assessment level of the taxing jurisdiction.

For example: 75.63 mills (tax rate) x 9.5% (assessment level) = effective tax rate or 0.07563 x 0.095 = 0.0072

Class Exercise #7-3 Development of a Capitalization Rate

You have determined that an agricultural piece of equipment has a 10 year life and is 4 years old. The tax rate (mill levy) in your jurisdiction is 65.25 per 1000. The assessment level is 9.5%. The return on the investment is 12.3% for this type of equipment.

What is the Discount Rate?

0.1230 Return on investment

Recapture Rate? 10-4=6 REL so 1/6 =

0.1667 Return of investment

Effective Tax Rate? 0.06525 x 0.095 =

0.0062

Overall Cap Rate of this property?

0.2959

Example of Capitalization of Net Income:

A piece of equipment leases for $2,000 per month and has a total economic life of 8 years and is 5 years old. Local information suggests that expenses of 20% are typical. Investment of this nature yields 13% per year, and is located in a jurisdiction indicating 74.59 mills and an assessment level of 9.5%

What is the value of the equipment?

Solution:

1) Calculate the Net Annual Income

$2,000 per month X 12 months =		$24,000 Gross Annual Income
Less 20% of $24,000	=	- 4,800 Less Expenses
		$19,200 Net Annual Income

2) Development of the Capitalization Rate

Discount		0.130
Recapture	8-5=3 REL so 1/3=	0.333
ETR	0.07459 x 0.095=	0.007
		0.470 Capitalization Rate

3) Calculation of Market Value

NAI/Cap. Rate = $19,200/0.47 = $40,851

Class Exercise # 7-4

Income Capitalization #1

You are in the process of valuing a piece of equipment that rents for $5,500 per month and has a total economic life of 12 years and is 5 years old. Investment of this nature yields 8.5% per year. It is located in a jurisdiction indicating 76 mills and an assessment level of 9.5% Local information suggests that annual expenses of 10% are typical.

What are the Annual Expenses? $5,500 x 12 = $66,000

Less 10% or $6,600

What is the Net Annual Income? **$59,400**

Cap Rate?	Return on investment =	0.0850
	Return of investment = 12-5 = 7 REL so 1/7=	0.1429
	Effective tax rate = 0.076 x 0.095=	0.0072
		0.2351

What is the Fair Market Value?

$59,400(NAI) / 0.2351(Cap Rate) = **$252,658**

Class Exercise # 7-5
Income Capitalization #2

You are have been assigned to value a piece of equipment that leases for $3,000 per month. Investment of this nature yields 12.75% per year. Local information suggests that monthly expenses of 8.5% are typical. The equipment was located in your county last year and was valued at $95,000. The taxes last year were $665. The equipment is three years old and has a remaining economic life of 5.

What is the Net Annual Income?

$3,000 x .085 = $255 monthly expenses so ($3,000 – $255) x 12= **$32,940**

What is the Discount Rate?	Return on investment =	**0.1275**
Recapture Rate?	Return of investment = REL = 5 so 1/5=	**0.2000**
Effective Tax Rate? $665 / $95,000 =		**0.0070**
Overall Cap Rate of this property?		**0.3345**

What is the Fair Market Value? $32,940 / 0.3345 = **$98,475**

The Sales Comparison Approach

The Sales Comparison Approach to value estimates a property's value (or some characteristic, such as condition). This approach is based on the concept of value in exchange and compares a subject property with similar properties that have recently sold.

Example of a Paired Sales Analysis

First Sale (3 years ago)	$45,000
Current Sale	$50,000
Increase in value over a 3-year period	$5,000

$5,000/45,000 = 0.01111 or 11.11% increase over 3 years

0.01111/3 = 0.037 or 3.7%

Class Exercise # 7-6
Paired Sales Analysis for Adjustments

A piece of equipment sold 3 years ago for $175,000 and another like property just sold for $200,000.

What is the indicated adjustment for time?

$175,000 First Sale

$200,000 Current Sale

$25,000 Increase in value over a 3-year period

$25,000 / $175,000 = 0.1429 or 14.29% increase for 3 years

0.1429 / 3 years =0.0476 or 4.76% increase per year

Class Exercise # 7-6

Paired Sales Analysis for Adjustments Continued

A piece of equipment sold 2 years ago for $350,000 and another like property just sold for $325,000.

What is the indicated adjustment for time?

$350,000 First Sale

$325,000 Current Sale

$25,000 Decrease in value over a 2-year period

$25,000 / $350,000 = 0.0714 or 7.14% decrease for 2 years

0.0714 / 2 years = 0.0357 or 3.57% decrease per year

Class Exercise # 7-6

Paired Sales Analysis for Adjustments Continued

You are comparing two sale items of personal property. They sold within a few days apart and are exactly alike except the condition. Sale #1 sold for $55,000 and is in average condition. Sale #2 sold for $40,000 and is in fair condition.

What is the percentage adjustment for condition from fair to average?

$55,000 average

$40,000 fair

$15,000 difference from fair to average

$15,000 / $55,000 = 0.2727 or 27%

Example of a Sales Comparison Approach

Assume that we want to value a piece of equipment that is in average condition as of assessment date. The market indicates a 10% negative adjustment for equipment in good condition and a 10% positive adjustment for poor condition. The market also indicates a 1% positive per month adjustment for time on sales that occurred before and a 1% negative per month adjustment for after.

Example of a Sales Comparison Approach Continued

	Date of sale	Condition	Sale price
Sale 1	5 months before	Poor	$225,000
Sale 2	10 months after	Good	$275,000
Sale 3	2 months after	Average	$235,000

	Sale Price	Time Adj	Time Adj SP	Condition Adj	Adj SP
#1	$225,000	5%	$236,250	10%	$259,875
#2	$275,000	-10%	$247,500	-10%	$222,750
#3	$235,000	-2%	$230,300	0%	$230,300

Based on information above the piece of equipment would be appraised at $230,300, putting the most weight on sale #3 because it had the least amount of adjustments.

Class Exercise # 7-7
Sales Comparison Approach

Assume that we want to value a piece of equipment that is in average condition as of assessment date. The market indicates a $25,000 adjustment for equipment in good condition and a $17,000 adjustment for poor condition. Research suggests that equipment that is dated should get a $28,000 adjustment. The market also indicates a 2% positive per month adjustment for time on sales that occurred before and a 1% negative per month adjustment for after.

The market indicates the following sales:

	Date of sale	**Condition**	**Age**	**Sale price**
Sale 1	**2 months after**	**Poor**	**Older**	**$175,000**
Sale 2	**10 months after**	**Good**	**Similar**	**$285,000**
Sale 3	**2 months before**	**Average**	**Similar**	**$215,000**

Based on the Sales Comparison Approach what is the value of the subject property? Why?

Class Exercise # 7-7
Sales Comparison Approach Continued

	Sale Price	TA		TASP	Condition	Age		Adj SP
#1	$175,000	2% or -$3,500	=	$171,500	+$17,000	+$28,000	=	$216,500
#2	$285,000	10% or -$28,500	=	$256,500	-$25,000	0	=	$231,500
#3	$215,000	4% or +$8,600	=	$223,600	0	0	=	$223,600

Subject's market value would be $223,600 putting most weight on sale #3 due to the least amount of adjustments to the sale price.

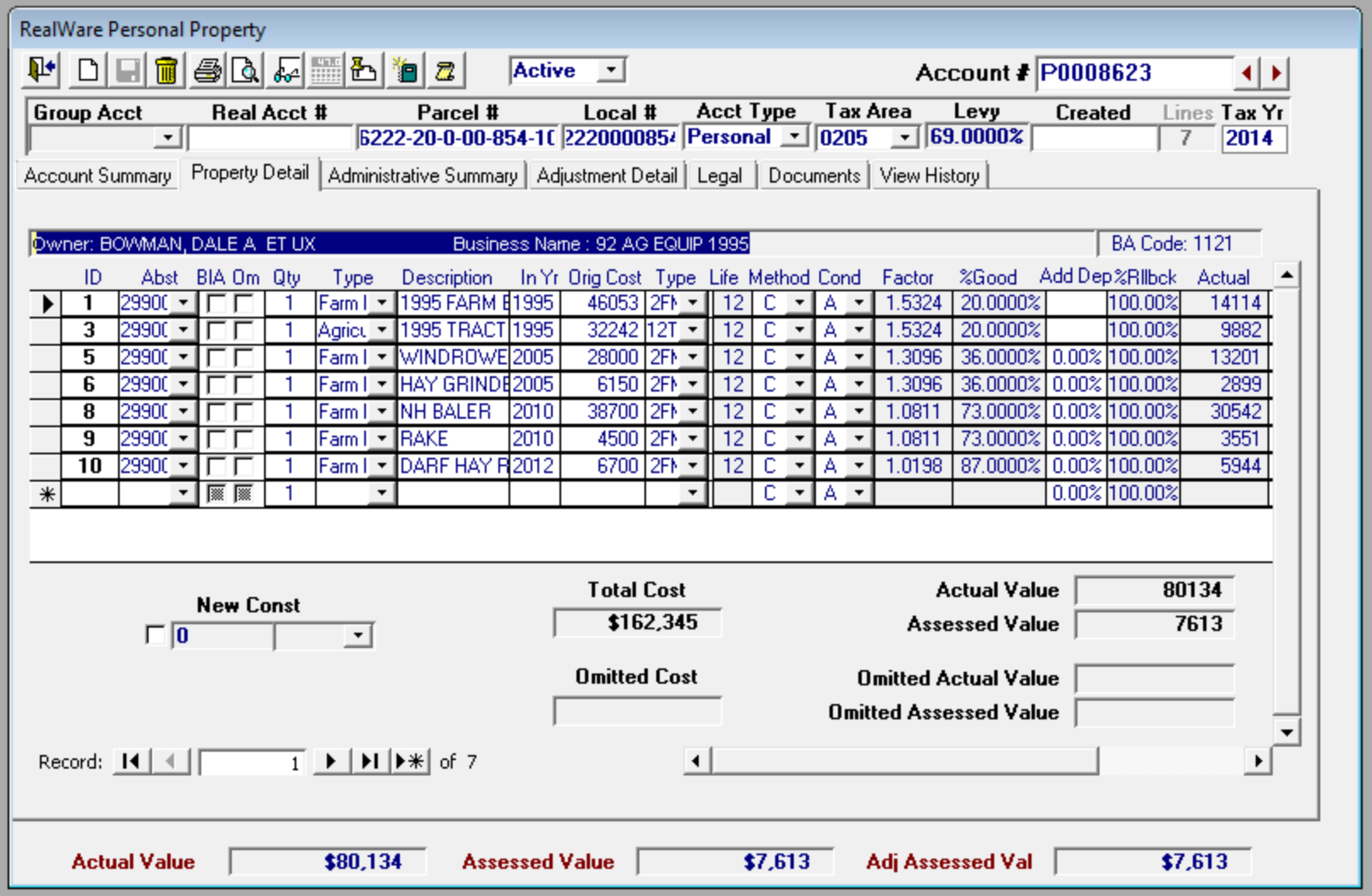
The Cost Approach to Value

The Cost Approach is based on the principal of substitution. It is the most widely used of the three approaches for the appraisal of personal property because it has broad applicability and readily available data. The resulting estimates of value utilizing a cost approach is based on the premise that the replacement cost new of a subject property can be reduced by an amount equivalent to the total loss in value that has occurred through all forms of depreciation.

The Cost Approach to Value

In the State of Wyoming there are two variations of a cost approach to value that can be utilized by the assessor's offices, in conjunction with the prescribed Computer Assisted Mass Appraisal system (CAMA):

A. Replacement Cost New (R)
B. Trended Cost Approach (C)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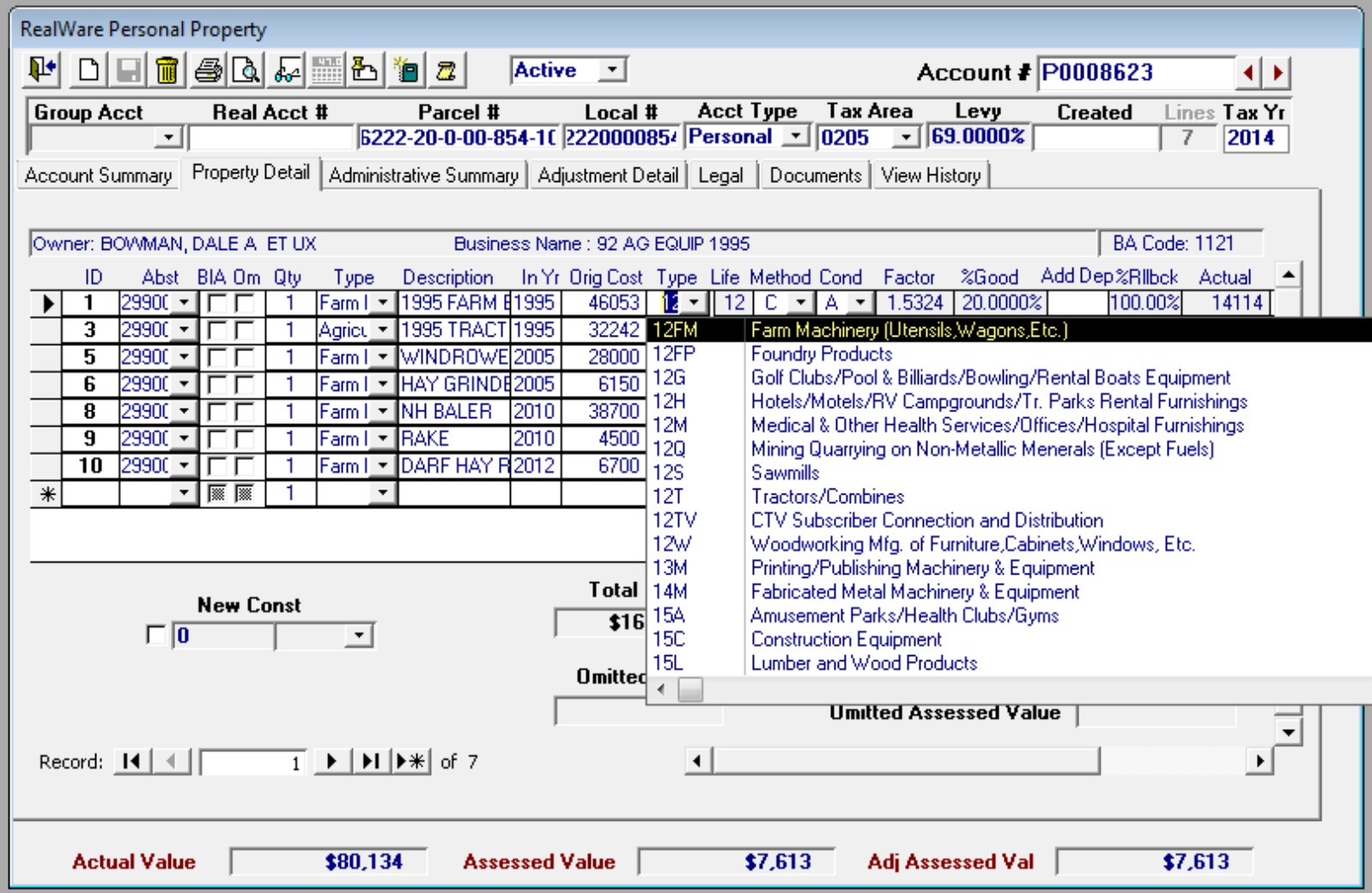
Active
Account # P0008623
Group Acct
Real Acct #
Parcel # 6222-20-0-00-854-1(
Local # 222000085
Acct Type Personal
Tax Area 0205
Levy 69.0000%
Created
Lines 7
Tax Yr 2014
Account Summary
Property Detail
Administrative Summary
Adjustment Detail
Legal
Documents
View History
Owner: BOWMAN, DALE A ET UX
Business Name : 92 AG EQUIP 1995
BA Code: 1121
ID Abst BIA Om Qty Type Description In Yr Orig Cost Type Life Method Cond Factor %Good Add Dep %Rllbck Actual
1 29900 1 Farm I 1995 FARM E 1995 46053 2FM 12 C A 1.5324 20.0000% 100.00% 14114
3 29900 1 Agricu 1995 TRACT 1995 32242 12T 12 C A 1.5324 20.0000% 100.00% 9882
5 29900 1 Farm I WINDROWE 2005 28000 2FM 12 C A 1.3096 36.0000% 0.00% 100.00% 13201
6 29900 1 Farm I HAY GRINDE 2005 6150 2FM 12 C A 1.3096 36.0000% 0.00% 100.00% 2899
8 29900 1 Farm I NH BALER 2010 38700 2FM 12 C A 1.0811 73.0000% 0.00% 100.00% 30542
9 29900 1 Farm I RAKE 2010 4500 2FM 12 C A 1.0811 73.0000% 0.00% 100.00% 3551
10 29900 1 Farm I DARF HAY R 2012 6700 2FM 12 C A 1.0198 87.0000% 0.00% 100.00% 5944
1 C A 0.00% 100.00%
New Const
0
Total Cost
$162,345
Actual Value 80134
Assessed Value 7613
Omitted Cost
Omitted Actual Value
Omitted Assessed Value
Record: 1 of 7
Actual Value $80,134
Assessed Value $7,613
Adj Assessed Val $7,613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Account Summary
Property Detail
Administrative Summary
Adjustment Detail
Legal
Documents
View History
Owner: BOWMAN, DALE A ET UX
Business Name : 92 AG EQUIP 1995
BA Code: 1121
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9 2990(1 Farm I 2010 4500
10 2990(1 Farm I 2012 6700
1995 FARM E
1995 TRACT
WINDROWE
HAY GRINDE
NH BALER
RAKE
DARF HAY R
12FM Farm Machinery (Utensils,Wagons,Etc.)
12FP Foundry Products
12G Golf Clubs/Pool & Billiards/Bowling/Rental Boats Equipment
12H Hotels/Motels/RV Campgrounds/Tr. Parks Rental Furnishings
12M Medical & Other Health Services/Offices/Hospital Furnishings
12Q Mining Quarrying on Non-Metallic Menerals (Except Fuels)
12S Sawmills
12T Tractors/Combines
12TV CTV Subscriber Connection and Distribution
12W Woodworking Mfg. of Furniture,Cabinets,Windows, Etc.
13M Printing/Publishing Machinery & Equipment
14M Fabricated Metal Machinery & Equipment
15A Amusement Parks/Health Clubs/Gyms
15C Construction Equipment
15L Lumber and Wood Products
New Const
0
Total
$16
Omitted
Umitted Assessed Value
Record: 1 of 7
Actual Value
$80,134
Assessed Value
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Adj Assessed Val
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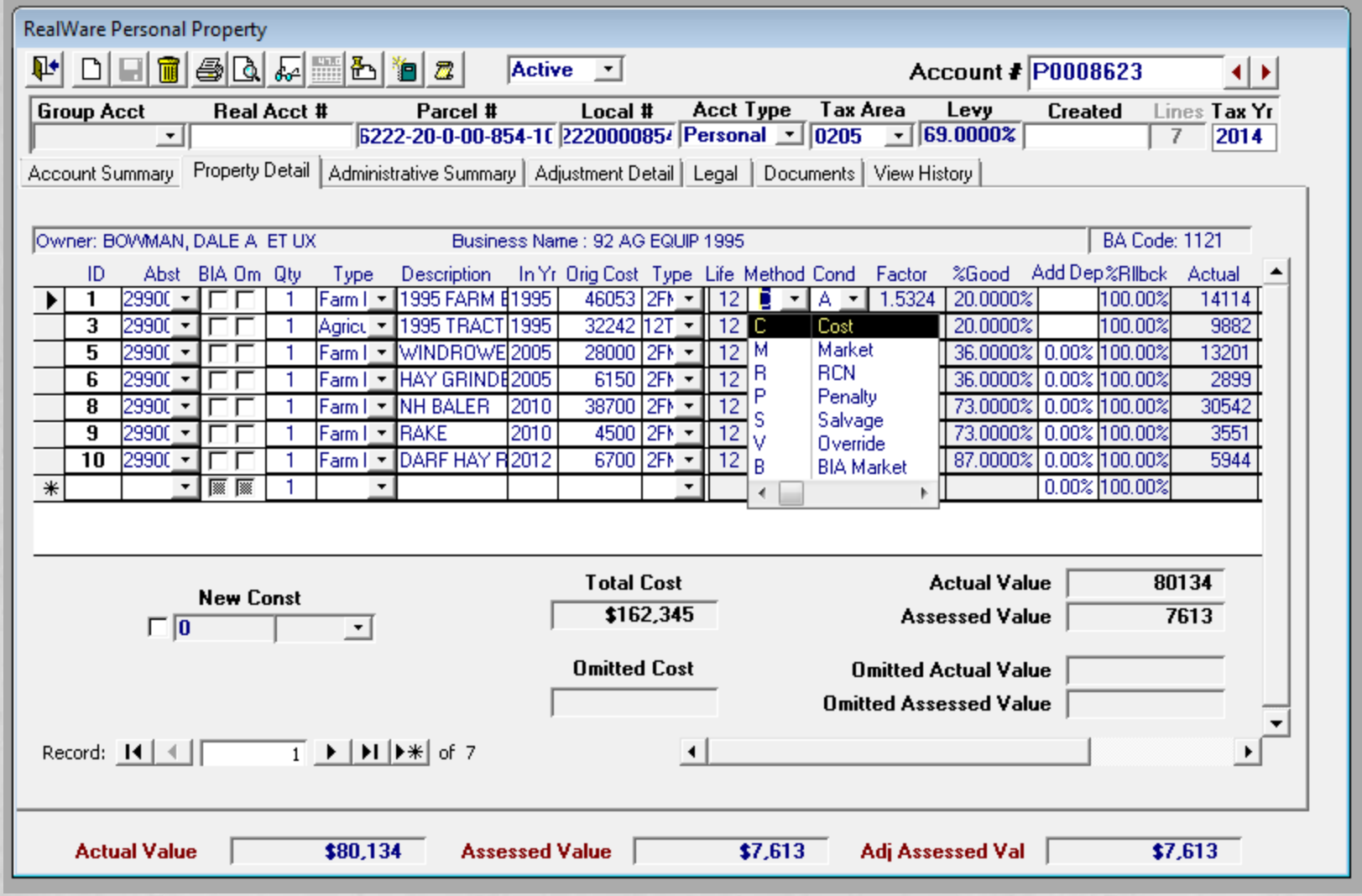
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1 0.00% 100.00%
C Cost
M Market
R RCN
P Penalty
S Salvage
V Override
B BIA Market
New Const
0
Total Cost
$162,345
Omitted Cost
Actual Value 80134
Assessed Value 7613
Omitted Actual Value
Omitted Assessed Value
Record: 1 of 7
Actual Value $80,134
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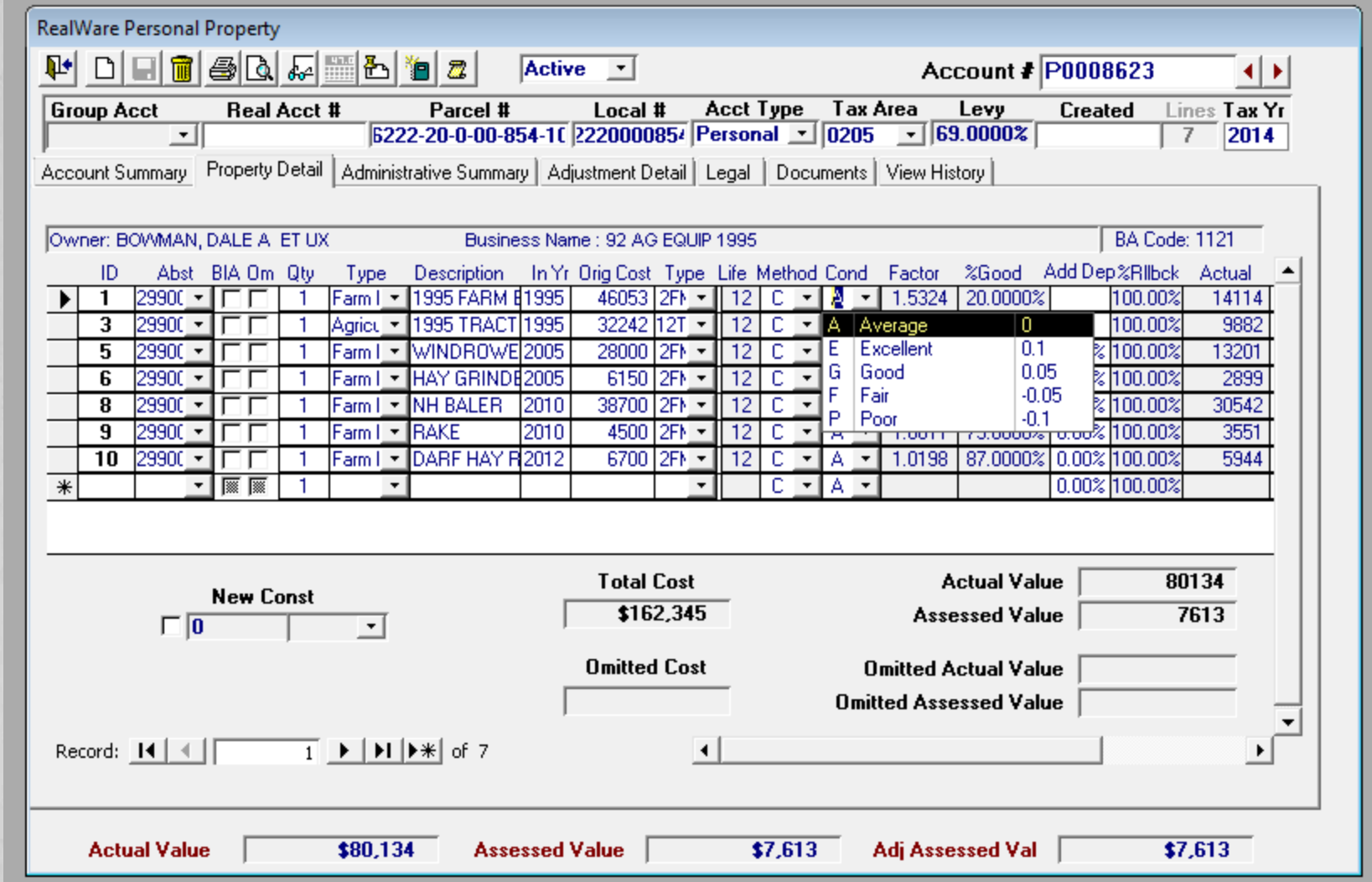
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5 29900 1 Farm I WINDROWE 2005 28000 2FI 12 C E 100.00% 13201
6 29900 1 Farm I HAY GRINDE 2005 6150 2FI 12 C G 100.00% 2899
8 29900 1 Farm I NH BALER 2010 38700 2FI 12 C F 100.00% 30542
9 29900 1 Farm I RAKE 2010 4500 2FI 12 C P 100.00% 3551
10 29900 1 Farm I DARF HAY R 2012 6700 2FI 12 C A 1.0198 87.0000% 0.00% 100.00% 5944
1 C A 0.00% 100.00%
A Average 0
E Excellent 0.1
G Good 0.05
F Fair -0.05
P Poor -0.1
New Const
0
Total Cost
$162,345
Omitted Cost
Actual Value 80134
Assessed Value 7613
Omitted Actual Value
Omitted Assessed Value
Record: 1 of 7
Actual Value $80,134
Assessed Value $7,613
Adj Assessed Val $7,613

Replacement Cost New (R)

This variation begins with an estimated replacement cost new (RCN) of property derived from market data of similar properties. Using a (R) approach to cost valuation, no trending or adjustment for inflation/deflation is applied. From the initial estimate of (RCN), an estimate of the total loss in value is made, which is the result of all forms of depreciation (physical, functional, and economic) on the subject property. The resulting value is determined to be the subject property's market value.

PERSONAL PROPERTY LIFE TABLE REALWARE TYPE

LIFE YEARS	DESCRIPTION
5	PC COMPUTERS/VIDEO EQUIPMENT/CASSETTES & GAMES
6	ELECTRONIC EQUIP/MED/DDS/PHOTO/VETERINARY/RADIO/TV
7	COMPUTERS (MAINFRAMES/SERVERS/COPIERS/FAX/VENDING)
9	HAND TOOLS/WAREHOUSE EQUIPMENT
9	BULLETIN BOARDS/NEON SIGNS
9	TELEPHONE/TELEGRAPH/CTV MICROWAVE ORIGIN & TEST
9	PROFESSIONAL AND SCIENTIFIC INSTRUMENTS
10	TELECOMMUNICATIONS EQUIPMENT
10	LAUNDRY/CLEANERS/CAR WASH EQUIPMENT
10	RESTAURANTS & BARS
10	GARBAGE DUMPSTERS
11	FURNITURE FIXTURES & EQUIPMENT
11	LEASED FURNITURE FIXTURES & EQUIP
11	LEASEHOLD FURNITURE FIXTURES & EQUIPMENT
11	ESTIMATE
11	MISCELLANEOUS MACHINERY & SHOP EQUIPMENT
12	AIRCRAFT
12	CTV SUBSCRIBER CONNECTION & DISTRIBUTION
12	GOLF CLUBS/POOL & BILLIARDS/BOWLING/RENTAL BOATS
12	FOOD PROCESS/BREWERIES/WALK-IN COOLERS/CHILLERS
12	HOTELS/MOTELS/RV CAMPGROUNDS/TR PARKS/RENTAL FURNITURE
12	MED & OTHER HEALTH SERVICES/OFF/HOSPITAL FURNISHINGS
12	CINEMA/THEATER/AUDITORIUMS/PLAYHOUSES EQUIP
12	WOODWORKING MFG – FURNITURE/CABINETS/WINDOWS ETC.
12	MINING/QUARRYING OF NON-METALLIC MINERALS (NOT FUEL)
12	SAWMILLS
12	FOUNDRY PRODUCTS
12	FARM MACHINERY (UTENSILS/WAGONS ETC)
12	TRACTORS/COMBINES
13	PRINTING/PUBLISHING MACHINERY & EQUIPMENT
14	FABRICATED METAL MACHINERY & EQUIPMENT
15	AMUSEMENT PARKS/HEALTH CLUBS/GYMS
15	CABLE TV SYSTEMS HEADEND EQUIPMENT
15	LUMBER & WOOD PRODUCTS
15	MATERIALS & SUPPLIES (NOT RE-SALE)
15	MOVEABLE BUILDINGS
15	SKI LIFTS
15	PRIMARY METAL INDUSTRY MACHINERY & EQUIPMENT
15	PAPER & ALLIED PRODUCTS MACHINERY & EQUIPMENT
15	CONSTRUCTION EQUIPMENT
15	LAW LIBRARIES
15	SADDLES/HARNESSES/OUTFITTERS & RODEO EQUIP
16	PROPANE TANKS
20	BILLBOARD SIGNS
20	TOWER STRUCTURES
20	HEAVY MACHINERY & EQUIPMENT (DRAGLINES/LR CRANES/ETC)
20	CHEMICAL PIPELINES

DEPRECIATION TABLE

FIXTURES & EQUIPMENT/ OIL & GAS

Effective	TYPICAL LIFE EXPECTANCY IN YEARS																
Age in	30	25	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6
Years	Normal Depreciation - Percentage																
1	2	2	3	3	4	4	4	5	5	6	6	7	8	9	10	11	13
2	3	5	7	7	8	9	9	10	11	12	13	14	16	18	21	24	27
3	5	7	10	11	12	13	14	15	16	18	20	22	24	28	33	38	43
4	7	10	14	15	17	18	19	21	23	25	27	30	33	39	46	52	59
5	9	13	18	19	21	23	25	27	29	31	34	38	42	49	57	63	70
6	11	16	22	23	25	27	29	32	35	38	42	46	51	59	67	72	77
7	14	19	26	28	30	32	35	38	42	46	50	55	61	67	74	77	80
8	16	22	30	32	35	38	42	45	49	53	57	63	70	74	78	80	
9	18	25	35	37	40	43	47	51	55	59	64	70	76	78	80		
10	21	29	40	43	46	49	53	57	61	66	71	75	79	80			
11	24	32	45	48	51	54	58	63	67	71	76	78	80				
12	26	36	50	53	56	60	64	69	72	75	78	80					
13	29	40	55	58	61	65	69	74	76	78	80						
14	32	44	60	63	66	69	73	77	78	80							
15	35	48	65	67	69	72	76	79	80								
16	39	52	69	71	73	75	78	80									
17	42	56	73	75	77	79	80										
18	46	61	76	77	78	80											
19	49	66	78	79	80												
20	53	70	79	80													
21	57	72	80														
22	60	74	80														
23	63	76															
24	66	77															
25	69	79															
26	72	79															
27	75																
28	77																
29	78																
30	79																
31	80																

TRENDING FACTORS (2014)

INDUSTRY AVERAGE/ COMMERCIAL F.F. & E

Tax Year	Trending Indicies	Trending Factor	Tax Year	Trending Indicies	Trending Factor	Tax Year	Trending Indicies	Trending Factor
2014	1563.7	1.0000	1982	742.4	2.1063	1950	167.9	9.3133
2013	1551.6	1.0078	1981	709.2	2.2049	1949	161.2	9.7004
2012	1533.3	1.0198	1980	642.8	2.4326	1948	162.8	9.6050
2011	1473.3	1.0614	1979	584.4	2.6757	1947	150.6	10.3831
2010	1446.4	1.0811	1978	534.7	2.9244	1946	123.2	12.6924
2009	1469.5	1.0641	1977	497.1	3.1456	1945	103.4	15.1228
2008	1393	1.1225	1976	472.1	3.3122	1944	102.4	15.2705
2007	1333.4	1.1727	1975	444.3	3.5195	1943	100.5	15.5592
2006	1260.9	1.2401	1974	398.4	3.9249	1942	99.6	15.6998
2005	1194	1.3096	1973	344.1	4.5443	1941	92.6	16.8866
2004	1124.7	1.3903	1972	332.1	4.7085	1940	86.1	18.1614
2003	1108.1	1.4112	1971	321.3	4.8668	1939	85.3	18.3318
2002	1094.3	1.4290	1970	303.2	5.1573	1938	84.4	18.5273
2001	1092	1.4320	1969	285.1	5.4847	1937	83	18.8398
2000	1075.6	1.4538	1968	273.2	5.7236	1936	81.6	19.1630
1999	1065	1.4683	1967	262.9	5.9479	1935	78.1	20.0218
1998	1061.8	1.4727	1966	252.5	6.1929	1934	74.6	20.9611
1997	1052.7	1.4854	1965	244.9	6.3851	1933	70.4	22.2116
1996	1036	1.5094	1964	241.8	6.4669	1932	66.1	23.6566
1995	1020.4	1.5324	1963	239.2	6.5372	1931	76.6	20.4138
1994	985	1.5875	1962	238.5	6.5564	1930	87	17.9736
1993	958	1.6323	1961	237.2	6.5923	1929	91.8	17.0338
1992	939.8	1.6639	1960	237.7	6.5785	1928	96.5	16.2041
1991	928.5	1.6841	1959	234.9	6.6569	1927	98.3	15.9074
1990	910.2	1.7180	1958	231	6.7693	1926	100	15.6370
1989	886.5	1.7639	1957	225.1	6.9467			
1988	841.4	1.8585	1956	208.8	7.4890			
1987	806.9	1.9379	1955	190.8	8.1955			
1986	795.4	1.9659	1954	184.6	8.4707			
1985	787.9	1.9846	1953	182.5	8.5682			
1984	776.4	2.0140	1952	180.5	8.6632			
1983	755.8	2.0689	1951	180.3	8.6728			

Replacement Cost New (R)

Example:

The subject property is a tractor commonly used for agricultural purposes with a replacement cost new of $48,600. The property was purchased 5 years ago, and the estimated life expectancy of this equipment, given normal use, is 12 years.

Depreciation Estimate (Depreciation Tables – Published by the WY. Dept. of Revenue) = 34% or $16,524

Resulting Estimate of Market Value = ($48,600 – $16,524) or $32,076

Class Exercise 7-8
Cost Approach Problem #1

Utilize the Personal Property Life Table and Depreciation Table at the end of Chapter 7 for this exercise.

You have determined that the RCN is $82,500 with an effective age of 7 on a piece of farm machinery.

What is the total depreciation?

50% Depreciation or **$41,250**

What is the estimate of market value?

$82,500 – $41,250 = **$41,250**

Trended Cost Approach (C)

This variation begins with the reported cost of a specific piece of equipment provided by the taxpayer. This cost is then trended from the date of purchase (acquisition date), or in some instances the date of refurbish or rebuilding of an original piece of equipment, to current day dollars in order to derive an estimate of replacement cost new (RCN). Once the reported costs have been trended, and an estimate of (RCN) is derived, an estimate of the total loss in value is made, which is the result of all forms of depreciation (physical, functional, and economic) on the subject property. The resulting value is determined to be the subject property's market value.

Trended Cost Approach (C)

Example:

The subject property is a piece of shop equipment, purchased new in 2008, at a total original cost of $10,000. The effective age of the property is 3 years old with a total estimated life expectancy of 11 years, given normal use.

Original Cost = $10,000

Trending Factor (Tending Tables – Published by the WY. Dept. of Revenue) = (1.1225)

Estimated Replacement Cost New (RCN) = ($10,000 x 1.1225) or $11,225

Depreciation Estimate (Depreciation Tables – Published by the WY. Dept. of Revenue) = 22% or $2,470

Resulting Estimate of Market Value = ($11,225 – $2,470) or $8,755

Class exercise 7-9
Cost Approach Problem #2

Utilize the Personal Property Life Table, Trending and Depreciation Tables at the end of Chapter 7 for this exercise.

The subject property is a piece of shop equipment, purchased new in 2010, at a total original cost of $27,000. The effective age of the property is 4 years old.

What is the trending factor?

1.0811

RCN?

$27,000 x 1.0811 = **$29,190**

Estimate of Depreciation?

30% or **$8,757**

Market Value?

$29,191 - $8,757 = **$20,434**

Residual Value

Wyoming Department of Revenue Rules & Regulation prohibit the depreciation of any personal property still in use past 80% depreciated or 20% good, which is described as the properties "Residual Value".

Rebuilt/Refurbished Property

Personal property is often rebuilt/refurbished (in a manner exceeding normal maintenance) in order to extend its useful life for the purposes for which it was originally acquired. When property has been reconditioned to extend its remaining economic life the property should be treated as new or almost new and valued at a new estimated cost. In these instances the reported cost should include all cost incurred to recondition / rebuild the property (plus) the value of the item at the time of reconditioning.

Class exercise 7-10
Cost Approach Problem #3

Your assignment involves assessing a piece of agricultural equipment purchased 40 years ago for $15,000 with an estimated life expectancy of 12 years. Your jurisdiction has a mill levy of 75.32 and an assessment level of 9.5%. Further research indicates this equipment was refurbished in 2009 for a total of $22,500 and had a residual value of $3,000. You have determined the effective age to be 5 years. The owner of the equipment requested an estimate of taxes.

Class exercise 7-10
Cost Approach Problem #3 Continued

What is the market value?

Refurbished value =		$22,500
Residual value	=	$3,000
Total		$25,500

2009 Trending factor = 1.0641 x $25,500 = $27,135 (RCN)

Eff Age is 5 years and Life Expectancy is 12 years

34% depreciation or $9,226

Market value = $27,135 - $9,226 = **$17,909**

What is the estimate of taxes?

Market Value of $17,909 X assessment level of 0.095 = $1,701 assessed value

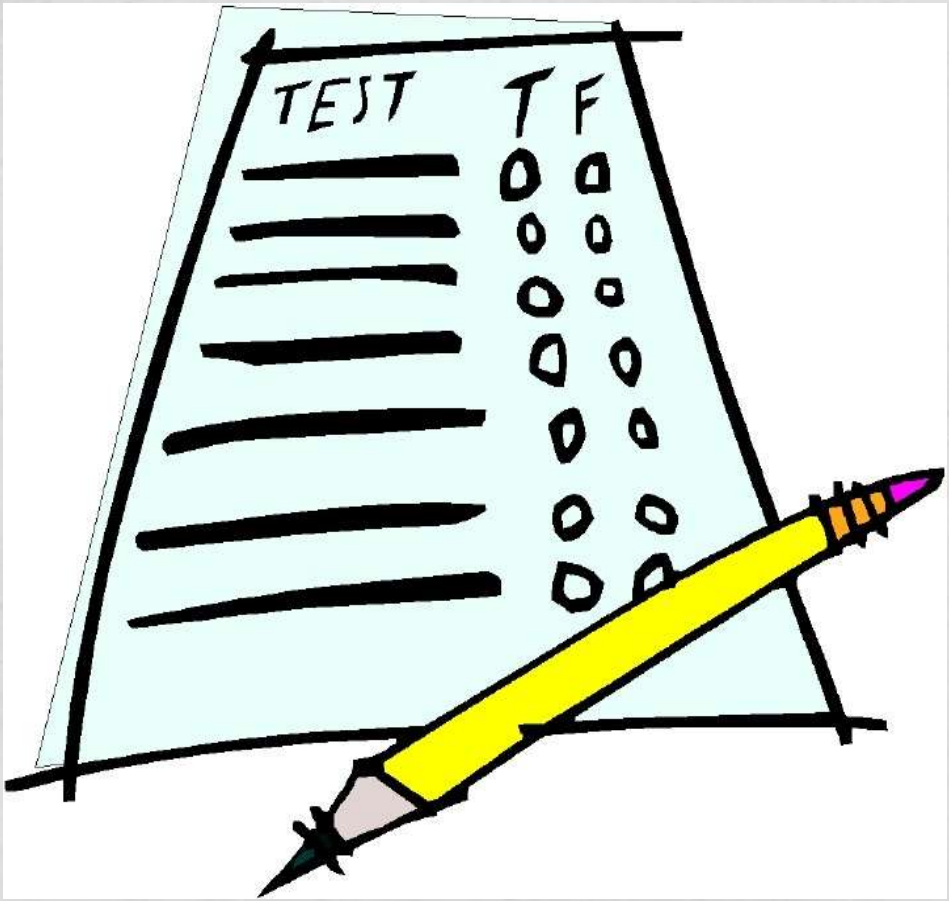
Assessed Value of $1,701 X tax rate (mills) of 0.07532 = **$128 taxes**

RECONCILIATION OF VALUE

The final step in the appraisal process is the reconciliation of the three approaches used in the estimation of market value.

As previously stated an appraiser must consider all three approaches to value during the appraisal process. During the reconciliation process an appraiser will consider the various estimates of value based on the three approaches, weigh the inherent strengths and weaknesses of each approach, and their relevancy to the subject property. A final estimate of value will then be made based on this reconciliation of the three estimates of value. Appraisers should never simply average multiple value indicators but instead make a studied and appropriate determination based on the supportable data and considerations of fact.

Review Quiz Chapter 7



Review Quiz Chapter 7

1. Typically all agricultural lands should have Personal Property to be classified as Agricultural.

(TRUE)

Review Quiz Chapter 7

2. The listing of all Personal Property is due in the Assessors office each year by what date?

(C) March 1 W.S. 39-13-103 (b)(v)

Review Quiz Chapter 7

3. The County Assessor in your county is responsible for the assessment of the Personal Property on all farms and ranches.

(TRUE)

Review Quiz Chapter 7

4. All taxpayers' returns are public information.

(FALSE) W.S. 39-13-102(q)

Review Quiz Chapter 7

5. Personal Property is valued at?

(A) Fair Market Value W.S. 39-13-103 (b)(ii)

Review Quiz Chapter 7

6. The Assessment Level for Agricultural Personal Property is:

(C) 9.5 % W.S. 39-13-103 (b)(iii)

Review Quiz Chapter 7

7. The _____ approach is the most widely used of the three approaches for the appraisal of personal property in Wyoming.

(C) Cost

Review Quiz Chapter 7

8. Methods of discovering Personal Property:

(A) Physical Inspection
(B) Self-declaration (Rendition)
(C) Audit
(D) Income Tax Return comparison
(E) All Above

Review Quiz Chapter 7

Questions 9, 10, 11 apply to the following:

Original cost of Equipment = $46,500

Date purchased =1997 with a trending factor of 1.4739

Effective Age is 10 and Life expectancy of 20 years for a total of 40% depreciation

9. What is the RCN?

(D) $68,536 (original cost of $46,500 x trending factor of 1.4739)

10. What is the amount of depreciation?

(A) $27,414 (RCN of $68,536 x 0.40 depreciation)

11. What is the estimate of market value?

(D) $41,122 (RCN of $68,536 – Depreciation of $27,414)

Review Quiz Chapter 7

12. A parcel of irrigated land is irrigated by a sprinkler system and the County Assessor values the sprinkler system as Personal Property; is this value appropriate?

(NO) It is typically included in the Irrigated Land Value

Review Quiz Chapter 7

13. Forms of depreciation are:

Physical – normal wear and tear

Functional – technological advances or poor design

Economical/External – loss in value from outside

(TRUE)

Review Quiz Chapter 7

14. Which of the following is not considered Agricultural Personal Property?

(D) Television W.S. 39-11-105 states property held for personal or family use is exempt

Review Quiz Chapter 7

15. Given the following information:

Market Value is $75,000

Assessment Level is 9.5%

72.58 Mills

What are the taxes?

(C) $517 (Value of $75,000 x Assessment Level of 0.095 x Mill Levy of 0.07258)

Review Quiz Chapter 7

Questions 16, 17, 18 apply to the following:

A piece of equipment leases for $3,500 per month and has a total economic life of 15 years and is 10 years old. Local information suggests that annual expenses of 15% are typical. Investment of this nature yields 8.5% per year, and is located in a jurisdiction indicating 76 mills and an assessment level of 9.5%

16. What is the net annual income?

(B) $35,700 ($3,500 x 12 months = $42,000 less expenses of 15% or $6,300)

Review Quiz Chapter 7

A piece of equipment leases for $3,500 per month and has a total economic life of 15 years and is 10 years old. Local information suggests that annual expenses of 15% are typical. Investment of this nature yields 8.5% per year, and is located in a jurisdiction indicating 76 mills and an assessment level of 9.5%

17. What is the capitalization rate?

(A) 0.292

Recapture rate is return of investment. REL of 5 converted to a decimal 1/5 = 0.20

Discount rate is return on investment = 0.085

Effective tax rate is 0.076 x 0.095 = 0.007

0.292

Review Quiz Chapter 7

A piece of equipment leases for $3,500 per month and has a total economic life of 15 years and is 10 years old. Local information suggests that annual expenses of 15% are typical. Investment of this nature yields 8.5% per year, and is located in a jurisdiction indicating 76 mills and an assessment level of 9.5%

18. What is the appraised value of the equipment?

(C) $122,260 (NAI of $35,700 / Cap. Rate of 0.292)

Review Quiz Chapter 7

19. A piece of property sold three years ago for $200,000 and another just sold for $220,000. What is the adjustment for time per year to adjust to current?

(D) 3.3%

Difference of $20,000 / first sale of $200,000 = 0.10

0.10 / 3 years = 0.033 or an increase of 3.3%

Review Quiz Chapter 7

20. All personal property taxes not collected within _____ years from the time the taxes were levied shall be cancelled and are thereafter uncollectible.

(B) <u>10</u> W.S. 39-13-110 (a)

Review Quiz Chapter 7

21. Any property that is not real property is considered?

(C) Personal Property

COURSE REVIEW

And Now….

It's Beer-Thirty!!!