ASSESSORS' HANDBOOK
SECTION 521

ASSESSMENT OF AGRICULTURAL AND OPEN-SPACE PROPERTIES

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FOREWORD

Agriculture is California's leading industry, and the promulgation of uniform appraisal practices for agricultural property is a major concern to the assessment community. Assessors' Handbook Section 521, *The Appraisal of Agricultural Properties*, was first published in 1969 to assist assessors in their valuation of these properties.

In 1965 the Legislature enacted the California Land Conservation Act (CLCA) in an effort to preserve agricultural lands for the production of food and fiber and to discourage noncontiguous urban development. The enactment of the CLCA and related legislation created the initial need for Assessors' Handbook Section 521A, *The Valuation of Open-Space Property*. AH 521A was first published in 1975 and updated in 1983 and 1990.

Numerous legislative changes made to open-space statutes and to other statutes affecting agricultural properties necessitated an update of both handbooks. In 1997, the two handbooks were completely revised and the two subject matters of the former AH 521 and AH 521A were combined into one handbook so that it would result in a more inclusive publication for appraisers.

Part I of this handbook contains the appraisal practices, procedures, and statutes for the assessment of agricultural properties. The content is sufficiently comprehensive to help beginning, journey-level, and advanced appraisers in the appraisal of rural properties. Its goal is to assist county assessors in their valuation efforts and to advance assessment uniformity for this major property use-type.

Part II contains the principles of the special assessment procedures accorded enforceably restricted properties under section 8, article XIII of the California Constitution. It is intended as an aid for journey-level appraisers who are fully cognizant of the appraisal procedures for the assessment of agricultural property as outlined in Part I. The goal of Part II is to promote uniformity in the administration of the open-space appraisal program by county assessors.

This section of the Assessors' Handbook was drafted by staff of the Assessment Policy and Standards Division of the Property and Special Taxes Department in conjunction with the staff of the Property Taxes Division of the Legal Department. Board staff met with industry representatives and staff from county assessors' offices to solicit input for this handbook. The Board originally approved this handbook section in September 1997 and this update in October 2003.

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October 2003

PART I

ASSESSMENT OF AGRICULTURAL PROPERTY

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CHAPTER 1: INTRODUCTION

California has a land area of 100.2 million acres and is the third largest state in the United States. As of 2000, it is estimated that 27.8 million acres are devoted to agricultural production; agriculture is by far the largest single industry in California.

California is the number one dairy and farming state in the nation in terms of the variety of livestock raised, crops grown, and the total dollar volume realized, even though the crops are produced on only 2 to 3 percent of the nation's total farming acreage. Beef is one of the state's leading agricultural exports. Some 350 different commodities are grown in the state, and California ranks first in the nation in the production of 41 of these commodities. California produces over 95 percent of the table and wine grapes, raisins, almonds, artichokes, dates, figs, nectarines, olives, pomegranates, prunes, plums, kiwis, pistachios, apricots, avocados, garlic, persimmons, and walnuts grown in this country. In addition to these commodities, California is a major producer of cotton, rice, tomatoes, potatoes, cattle, lettuce, strawberries, asparagus, peaches, melons, onions, milk, nursery products, oranges, chickens, and hay.

California has eight of the top ten agricultural counties in the nation. Several counties experienced sharp declines in agricultural production from 1974 to 2000 because of urban encroachment, thereby reducing California's total agricultural acreage from 35 to 27.8 million acres.[1]

The quality of an appraiser's work depends upon the knowledge and application of the forces that influence agricultural real estate values at the neighborhood, community, regional, and national levels. These forces have been classified into four categories: social forces, economic conditions, governmental controls, and environmental conditions. The interaction of these forces influences the value of real estate in the marketplace.

Population characteristics and demand for land are the driving influences behind social forces. An analysis of the demographic composition of a region's population establishes the need and demand for real estate services, or in this case, land for future expansion. Examples of these social forces are general population trends and changes in the standard of living.

Economic forces are based on the fundamental relationship between present and anticipated supply and demand and the economic ability of a region's population to satisfy its wants, needs, and demands. Examples of economic forces include significant changes in a community's employment base, availability of financing, changes in employment and income patterns, and development levels.

Governmental forces are broadly construed to include political decisions made at all levels of government and decisions made by the judicial system. The supply and demand of land for real estate, and its value, are heavily influenced by governmental actions and controls. Examples of

[1] *California Agricultural Resource Directory*, California Department of Food and Agriculture, Sacramento, 2001.

governmental influences include zoning and building codes, development restrictions, environmental regulations, and restrictions on cultural practices.

Environmental forces are the most noticeable because they can be seen and include climatic conditions, quality and condition of soils, water availability, and transportation systems which provide adequate ingress and egress to specific locations.

An understanding and appreciation of the forces influencing value is essential to the appraisal of agricultural real estate. The four forces were discussed separately, but they work together in their affect on values and an analysis of the forces establishes an appropriate background for the study of agricultural appraisal.

This handbook has three purposes: (1) to define the nature of agricultural real estate; (2) to discuss and explain the factors that influence the value of agricultural real estate; and (3) to explain and describe techniques that may be utilized to measure the market value of agricultural real estate. The appraisal of agricultural properties requires specialized knowledge regarding the fundamentals of real property valuation, as well as specific knowledge concerning agricultural practices. The appraiser must be familiar with the fundamentals of real property valuation as explained in Assessors' Handbook Section 501, *Basic Appraisal*, before undertaking a study of this handbook or attempting an appraisal of agricultural property.

Many of the concepts and techniques contained in Part I of this handbook are equally applicable to the valuation of open-space property. That subject is covered in detail in Part II.

CHAPTER 2: NATURE OF AGRICULTURAL PROPERTY

Land is basic and is the principal source of mineral, animal, and vegetable substances that sustain life. The productivity of agricultural land is measured by its capacity to generate food, fiber, livestock, timber, minerals, and other commodities essential for human existence. The value of agricultural property is a measure of the total effect of all physical, social, economic and governmental forces upon the land and improvements. In the following sections, the attributes of agricultural property are discussed and the systems ordinarily used to classify such characteristics are described.

PHYSICAL FACTORS

SOIL

Soil is the basic component of value in agricultural properties used for the production of agricultural commodities because it is the medium of productive capability. Soil composition in any one place varies according to its origin, location, and the effects of climate and organic matter. Soil has both changeable and unchangeable attributes that collectively form the physical and chemical traits that differentiate the various types.

Significant soil characteristics include texture, structure, consistency, thickness, and soil horizons, or layers. The various characteristics, together with soil and locational attributes such as depth of soil, depth to bedrock or root hindering stratum, water holding capacity, and drainage give an indication of the soil's potential productivity.

Soil layers, often referred to as soil horizons, contain specific characteristics created by the soil forming process. The soil layers run parallel to the surface but fluctuate in depth, thickness, and have irregular boundaries. The top six feet of soil is the most important layer and contains a profile broken down into three different layers known as the surface soil, subsoil, and substratum. The surface soil is generally 6 to 12 inches deep, the subsoil is approximately 4 to 5 feet deep, and the substratum is approximately 6 to 12 inches deep. The surface soil and subsoil comprise the solum, the portion of the soil where soil formation is most dynamic and the majority of the soil's plants and animals reside.

Depth refers to the distance downward from the soil surface to the first plant hindering material within the soil. Normally, soil is considered "deep" if there is no plant hindering material down to a depth of six feet. Depth is a crucial factor and dictates crop types for a particular locale. Shallow rooted crops (grains, legumes, rice) can be raised on fairly shallow soil while deep-rooted crops (trees, alfalfa, safflower) require a deep, well-drained soil. In some instances, restrictive layers that hinder root development may be ripped or shattered to transform a shallow soil into one suitable for deep-rooted crops. The layers that hinder plant growth consist of three fundamental materials: clay, lime cemented hardpans, and iron cemented hardpans. Each of these layers has distinct physical and chemical characteristics and require different treatments to become more productive soils.

Soil profile refers to a vertical cross section of a soil showing its composition to a depth of at least six feet. Soil profiles exhibit two distinct characteristics: texture (described below) and development. Development is the soil-aging process that occurs as different horizons (layers) within the soil profile acquire distinct characteristics. Development can proceed beyond the soil surface as finer particulents and soluble materials are leached from the upper layers to accumulate at lower levels within the root zone. Soil scientists describe soils in terms of the characteristics of the respective horizons.

The nature of a soil's profile is one of the criteria used for identification and classification and can be readily applied by appraisers to establish comparability between properties.

The two **soil types** (primary and secondary) are created by two completely different methods. Primary soils, found in hills and mountains, are created in place through the decomposition and disintegration of rocks through physical and chemical action. Primary soils tend to have lower productivity, although some crops do quite well on this type of soil. Secondary soils are created more dynamically. Gravity, temperature fluctuations, and erosion created by the actions of wind and water continually reduce immense masses of rock into soil particles that are washed out into valleys and plains. The action of moving water is capable of transporting tremendous amounts of material, and as water velocity decreases, the larger particles drop out first and then successively smaller particles are deposited. At lower elevations, water runoff from mountains spreads out and deposits the finest particles of clay and silt.

Particle size largely determines the water-holding capability of any soil. Fine textured soils (clays, silts, and loams) are capable of storing larger quantities of water than coarse textured soils (loamy sands and sands). This factor dictates the type of crops best suited to a specific area, the type of irrigation system, and frequency of irrigation.

Soil structure refers to the arrangement of primary soil particles into aggregates or clusters. These small aggregates (known as peds) fall into four categories that describe the shape of the cluster: platy, prismatic, block-like, and spheroidal. The form or shape of the aggregate plays a significant role in soil productivity. Generally, spheroid-shaped soils have more space between aggregates, have greater water permeability, and are more productive. Soil structure varies from layer to layer and heavily influences the favorability of root growth.

Soil consistency pertains to the strength and nature of the characteristics that allow soil particles to hold together. Terms commonly used to describe soil consistency (from very loose to extremely hard) include: loose, soft, friable, firm, plastic, sticky, hard, and cemented.

Stable Characteristics

The **texture** of a soil refers to the relative proportions of three basic particle sizes: sand, silt, and clay. Texture is determined by the weight of the three particles after all coarse fragments have been removed. Soil textural class names describe the various kinds of soil textures based on combinations of the three particles. There are twelve primary texture classes: clay, silty clay, sandy clay, silty clay loam, clay loam, sandy clay loam, silt, silt loam, sand, sandy loam, loamy

sand, and loam. A soil's texture is its most stable quality over an extended period, although natural and man-made forces can alter this characteristic.

Soil slope refers to its deviation from the horizontal; this is expressed as a percent grade rather than in degree of angle. Thus, a slope designated as 20 percent means that for every 100 feet horizontally the soil surface rises 20 feet. Not all soil slopes rise evenly, and those that rise erratically are referred to as undulating.

Soil color can be a good indicator of productivity because it tends to indicate the presence of beneficial organic matter. Commonly, the darker the soil color the more productive the soil. However, care must be exercised because in several cases the soil color is merely a reflection of the underlying soil material.

Less Stable Characteristics

Drainage pertains to both the visible drainage patterns on land and the speed at which water moves through soils. Drainage is affected by the texture of the soil, its profile, and the soil slope. Practically all drainage problems occur in areas of relatively flat terrain where dense subsoils (known as hardpan) restrict water movement. High water tables can produce drainage problems, even in areas of porous soils, and tiling, drainage ditches, or both are employed to improve poor drainage conditions.

Alkali refers to the three excessive levels of salt concentrations found in soils: saline, saline alkali, and alkaline which may be further delineated into white and black alkali. The critical feature of these designations is the presence and concentration of sodium. If a soil has moderate concentrations of common salt (NaCl), it can be vastly improved by leaching the salt, through the application of large amounts of water, to a level below the root line. If the soil contains moderate to heavy concentrations of salt, classified as saline alkali, soil amendments such as sulfur or gypsum are required and should be applied along with large amounts of water. If the soil contains heavy concentrations of salt, classified as alkaline, extensive quantities of both soil amendments and water may be required to improve the alkaline condition.

An appraiser's interest in the reclamation of alkaline soils is based on determination of the cost to cure the condition and whether anticipated future returns exceed the required investment.

Erosion is the washing or blowing away of soil caused by the action of wind or water. Removal of a uniform thickness of soil, from erosion, for a particular locale results in a condition known as sheet erosion. When extensive crevices or washes are formed, the condition is known as gully erosion. An extraordinary illustration of long term gully erosion was caused by the Colorado River and resulted in the Grand Canyon. Soil is most vulnerable to erosion when it is bare, sloping, or disturbed by cultivation. Water or wind moving across the soil picks up and carries soil particles. When ground cover is present, it protects the particles and tends to hold them in place. Soil erosion may be repaired, but the cost to cure the condition may be extremely expensive and long-term benefits may not outweigh the necessary investment.

Soil fertility relies on the quantity of organic matter and plant nutrients naturally available in a form that plants can readily absorb. The elements most often deficient in soils include nitrogen, phosphorus, and potassium. Numerous additional elements are required in lesser quantities for optimal growth, and soils are occasionally found to be deficient in calcium, boron, copper, zinc, and manganese. Fertility can be improved through soil amendments or through management practices that restore and retain sufficient levels of nitrogen, phosphorus, potash, and other plant nutrients.

The **pH factor** of soils plays a dominant role in crop selection. Soil with a high alkaline content severely restricts the types of plantable crops and can make land a virtual sterile wasteland. Similarly, land with a high acid level tends to secure and hold onto soil nutrients, making them unavailable for plant use. Many plants are sensitive to either of the two conditions, and plants cannot be successfully grown unless the soil is modified through soil amendments. Fortunately, in practically all cases, soil alkalinity and acidity can be corrected through the application of sulfur and lime, respectively.

Micro-relief refers to the topography of the soil in miniature and includes these descriptive terms: smooth, hogwallows (humps and depressions), dunes, hummocks (small mounds), and channels. Land-leveling operations can generally eliminate any undesirable micro-relief features.

Macro-relief refers to the general slope of the land and includes these descriptive terms: level, gently undulating, gently sloping, undulating, moderately sloping, rolling, strongly sloping, hilly, steep, and very steep.

Classification and Rating

Soil classification consists of grouping soils in an orderly arrangement. There are many ways to do this, and several systems of classification are used. The simplest systems are those based upon individual soil characteristics such as reaction, color, or parent material. More comprehensive classifications include additional soil properties.

Soil Surveys

The vast majority of land in California has been officially surveyed (inventoried and classified) by the University of California (UC) and the United States Department of Agriculture, National Resources Conservation Service (NRCS). Aerial maps were taken, based on township and range, and soil types indicated on the respective maps.

The soil classification system used by UC and the NRCS is called the series system. Each individual soil series is assigned a name, often based upon an association with the area where the series was first identified. To date, over 500 individual soil series have been recognized in California. Among the more common soils are the Hesperia, Columbia, Panoche, Yolo, Dinuba, and Stockton series. The soil type refers to the texture of the soil (for example, Hesperia Sandy Loam), and there are currently over 2,000 identified series type soil combinations in California.

The soil classifications contain variations, or phases, and phase identifications are based on the less stable components of soil: alkali, drainage, nutrient level, erosion, and micro-relief. Where unfavorable conditions exist, due to one or more of these factors, the soil is identified as such; for example, Dinuba Sand, moderate alkali, poorly drained phase.

Classification By Natural Land Class

The Natural Land Classification identifies soils by physiographic groups based on general topographic characteristics, or slope position. Five topographic groups are identified in this system:

- Class A: alluvial fan, or flood plain land, generally situated in valleys. Commonly, the land is nearly level to gently sloping, although some alluvial soils may be found with more pronounced slopes.
- Class B: basin land usually situated at the lowest valley floor levels. The land is typically flat, or nearly so.
- Lower terrace land: usually associated with the perimeter of valley floors and, typically, gently sloping.
- Higher terrace land: gently sloping to rolling and occupies higher terrain around the perimeter of valley floors.
- Upland: land which is mountainous in character and consists of steep slopes.

Storie Soil Rating Index

The Storie Soil Rating Index system is based on the physical characteristics of soil and its potential productivity. Additional factors including water, climate, and economic conditions do not affect the ratings. Any specific rating should be considered as a soil rating only, not as an indicator of land value.

The system is named for its inventor, Professor R. Earl Storie. The system consists of rating each of the soil's components: characteristics of the soil profile, texture of the surface, the primary slope of the land, and other less permanent modifiable factors, then combining the individual ratings for an overall evaluation of the soil.

It should be noted in this rating system that any one factor can be controlling. For instance, a moderately affected alkali condition may lower an otherwise good soil to as low as 30 percent overall. If the particular condition was modified or cured after the survey was made, the indicated rating would be erroneous. In another instance, a combination of minor deficiencies of a soil will compound and result in a rather low overall rating.

Whenever soil ratings are examined and used as an aid in estimating the productive capabilities of land, an appraiser must look beyond just the overall rating and examine all relevant factors for any specific parcel of property. Soil surveys contain additional relevant information, including crop adaptability, which can be of considerable importance to an appraiser.

Natural Resources Conservation Service Land Capability

The Land Capability Classification from the Natural Resources Conservation Service (NRCS) rates land according to its inherent productive capability and the cultural practices required to maintain optimum production levels. The NRCS established eight different land capability classes with characteristics as follows:

- Class I soils have few restrictions on their adaptability and use.
- Class II soils have moderate restrictions that limit crop adaptability or that require moderate conservation practices.
- Class III soils have severe restrictions that limit crop adaptability or that require stringent conservation practices.
- Class IV soils have extremely severe restrictions that further limit crop adaptability or that require stringent conservation practices.
- Class V through Class VIII soils have severe restrictions that make these soil types generally unsuitable for cultivation. Restrictions may include extreme erosion, lack of water, high water tables, inadequate drainage, severe alkalinity, shallow soils, climate, and land forms that preclude their use for agricultural production.
- Classes II through VIII include four subclasses signifying particular kinds of soil restrictions that include the following: (1) subclass "e" indicates that the primary restriction is the threat from erosion; (2) subclass "w" indicates the primary restriction is due to a specific water problem; (3) subclass "s" indicates the primary restriction is due to a specific soil problem; and (4) subclass "c" indicates the primary restriction is due to climatic conditions.

The NRCS land capability system is a subjective rating that takes into consideration not only the physical factors of soil, but also considers the availability of water and climatic effects. The system was initially designed for soil management and conservation practices; however, each land capability description contains specific recommendations for farming practices.

CLIMATE

Climate, which includes the elements of temperature, wind, rainfall, and humidity, exerts a tremendous influence on the productivity and, consequently, value of agricultural property.

Wide variations in mean temperature levels have a significant impact on the length of growing seasons—those intervals between spring and killing frosts in the fall. Crops such as cotton require an extended growing season to reach maturity. Climate, along with soils, is one of the crucial factors in determining where any crop may be successfully grown.

Summer rainfall is notably absent in most parts of California, and many areas do not receive sufficient rainfall during the winter and spring rainy seasons to sustain crop growth during the summer months. Consequently, the San Joaquin and Sacramento valleys, as well as the desert

valleys of Imperial and Coachella, must rely on supplemental irrigation to satisfy crop requirements.

Wind is like the proverbial two-edged sword and can be either beneficial or detrimental depending on whether it has a cooling effect or a harmful effect which causes premature fruit drop. Depending on the particular type of crop and time of year, humidity may also be either beneficial or detrimental.

WATER

California has the world's most sophisticated water delivery system that includes a series of reservoirs and waterways that deliver water to millions of acres of agricultural land each year. Without this additional source of water to supplement natural rainfall, along with pumps and wells, much of California's most productive agricultural land would become nearly worthless.

The important characteristics of water include quantity, quality, source of supply, and availability when needed. These factors are likely to vary significantly from year to year throughout any specific region. Water conditions are accorded such importance that many agricultural lenders will decline otherwise qualified customers if a water source is suspect or unstable.

Water Quality

Rain provides the highest quality water for agricultural purposes. However, due to the uncertainty of rainfall at any given time, additional sources of water are required for productive agriculture. Irrigation water is generally of lesser quality due to the accumulation of soluble minerals, fertilizers, pesticides, and other undesirable elements from runoff and other farming operations for a particular area. Depending on the region, water quality from wells can range from poor to excellent. Three classes of water quality are identified.

- Class 1 water is excellent to good and suitable for most plants under typical conditions.
- Class 2 water is good to injurious; it may be harmful to sensitive, nontolerant crops.
- Class 3 water is injurious to unsatisfactory, probably harmful to the majority of crops and unsatisfactory for all crops but the most tolerant. If water falls into the class 3 category for any reason (conductance, salt content, percentage of sodium, boron, lead content), it should be considered unsuitable under nearly all conditions.

Water Quantity

The amount, availability, dependability, quality, and cost of a water supply determine the relative benefits to be derived from irrigation and directly affect the value of irrigated property. These factors depend on the source of water and the water rights that affect their usage.

Equally important as water quality is sufficient water quantity, when needed, to support growing crops. Economic production levels can be achieved in some regions by utilizing annual precipitation. However, for most areas in California economic levels of production can only be

obtained through the application of sufficient quantities of irrigation water at appropriate times. There are some regions in California with productive soils where no crops are grown since there is neither adequate precipitation nor available surface water, and pumped water is either too expensive or contains undesirable elements.

Water Sources and Rights

A dependable source of good quality irrigation water is a crucial element in achieving an economic level of crop production. Ideally, a property has access to sufficient class 1 water, as needed, at a reasonable cost. Fortunately, the majority of California areas capable of productive agriculture have irrigation water available from federal, state, public/private water projects, water districts, or individual wells. The vast majority of surface water provided for agricultural use emanates from Northern California, is carried south through a series of waterways, with the cost in direct proportion to the distance traveled before use.

Surface irrigation water is generally stored and delivered to customers by public and private irrigation entities through a network distribution of lateral ditches and canals. Typically, the improvements required to divert the water from the laterals or canals into a farm's irrigation system is owned by the water company or water district. From the point of diversion, the water flows into either lined or unlined ditches, buried underground pipelines, or portable aboveground pipelines.

When available, or permitted, a large percentage of farmlands supplement their surface water supply with water pumped from individual wells located on or adjacent to the property. While pumped water quality is generally class 1 and class 2, pumping is not economic in many regions of California due to the cost of energy and/or restrictions on pumping levels. Because of increasing demands on the available subsurface water supply caused by population growth and industry expansion, water levels are expected to continue to recede and the cost to pump water is expected to continue to escalate.

Water rights to streams, rivers, and tributaries constitute the right to a definite or conditional flow of water at stated times and in specified quantities for irrigation purposes. A legal right to use water is important to the value of any property and is a factor to be considered in association with surface or pumped water. Three kinds of water rights exist: riparian, appropriative, and prescriptive.

A **riparian** right (doctrine) is based on English common law, giving the owner of land bordering on a lake, stream, or natural water source the right to use the water on the contiguous land. A riparian right is created exclusively because the land is situated next to a natural water source, and the right to the use of the surface water rests solely in the ownership of the land. A riparian right is not created by water usage, nor lost through nonusage, but can be lost through condemnation, changes in course of the water source, selling the land adjacent to the water source, and adverse water usage by owners of adjacent lands. Riparian owners, regardless of the location of the water source or date of acquisition, are equally entitled to reasonable beneficial use without significantly diminishing the water quality or quantity. A riparian right is superior

to nonprescriptive appropriative rights. Although riparian rights are created because land and water is adjacent, riparian rights can be transferred from an original property to another property.

An **appropriative** right is based on state ownership of the water and constitutes a legal right to water flowing in public waterways, if taken for reasonable and beneficial uses in accordance with specific local requirements.[2] An appropriative right entitles the user to a specific amount of water and frequently to a specific point of diversion, time, place of use, and method of diversion. Older water rights have priority over more recently acquired water rights (first in time is first in right), and holders of older appropriative rights are entitled to a full quantity of water before any water is given to more recent users. An appropriative right can be lost by nonuse, condemnation, abandonment, or by prescription. An appropriative right is considered a real property right, separable from the land, and can be transferred separately. When appropriative rights are established, it is important to determine their dates of priority and the resultant effects on water availability to each user for any one year.

A **prescriptive** right is obtained through the open and adverse diversion of water to which others have prior rights. If the open diversion of water is continued without interruption for the consecutive number of years established by state law, a prescriptive right is granted. A prescriptive right may be lost in the same manner as acquired.[3]

Irrigation Methods and Systems

Ideally, the appropriate irrigation practice would be to provide the correct amount of water required by crops at any particular growth stage, considering all climatic factors and environmental constraints. However, irrigation systems lack optimal efficiency, and a portion of water applied to the soil is lost through evaporation, drainage, runoff, and deep percolation.

A proper rate of water application is essential to successful irrigation, and three major factors need to be considered:

- Water requirements of the crop
- Water availability
- Capability of the soil to retain moisture

An efficient irrigation system should have the capability to deliver the necessary water to meet plant growing requirements and to compensate for the lost water volume.

Various irrigation methods are in general use throughout California. The following paragraphs include a brief description of each type.

[2] Hutchins, W. A., *Irrigation Water Rights in California*, Circular 452 (Revised) California Agriculture Experiment Station Extension Service, University of California, Davis, 1967.
[3] Hutchins, W. A., page 298 et seq.

Wild Flooding

Water is applied to land and allowed to flow without any earthwork to direct the flow or restrict the water's path. This method is generally only used to irrigate pasture land in mountain areas. Wild flooding requires a minimal initial investment and little land leveling or land preparation. This method makes it difficult to regulate the water flow, can result in erosion, and substantial amounts of water are lost through evaporation, runoff, and percolation. Water costs can make this type of irrigation expensive.

Border Flooding

Small parallel ridges are formed approximately 30 to 50 feet apart and streams of water flow slowly between the ridges, soaking into the ground as the water advances. This method is suitable for fairly level strips of land between ridges and requires a uniform gradient. Border flooding is particularly suitable for medium soils planted to grains, hay, and alfalfa. This method makes efficient use of large quantities of water, but the advantages are often offset by the initial cost of land preparation and water costs.

Basin Flooding

Square basins are formed by making borders at 90° angles, approximately 30 to 50 feet apart, which are quickly flooded to an appropriate level to achieve deep water penetration. This method is suitable for deep-rooted crops such as orchards and vineyards and for use on heavy or slowly permeable soils. Basin flooding is adaptable to different needs based on the required shape, height, and irrigation configuration. This method applies water quickly and uniformly, and generally results in fairly low operating costs. These advantages may be offset by the initial cost of land preparation and water costs.

Furrow

Water flows down uniformly spaced furrows, wetting a portion of the surface. This method is suitable for the majority of soil types and is especially suited for row crops. Furrow irrigation is adaptable to different soils and crops by varying the length, width, height, spacing, and size of the furrows. This method generally results in less water evaporation, uniform watering, and reduced operating costs; and the land can be cultivated immediately after irrigation. The advantages are offset by the initial cost of land preparation and planting, potential soil erosion, and water costs.

Sprinkler Irrigation Systems

Sprinkler systems are in general use throughout California for irrigation, germination, fertilization, soil softening, and cooling or frost protection. The following paragraphs include a brief description of each type.

- Permanent (solid set): water is applied through permanently installed buried pipelines with sprinkler attachments. This method is suitable for most soils and crops and furnishes light, frequent irrigation. Permanent sets provide uniformity of application, minimal soil erosion, efficient use of water, frost protection, efficient application of fertilizers, and

reduced labor costs after installation of the system. The advantages are offset by water loss in hot or windy conditions, initial cost of installation, and high water pressure requisite to properly operate the system. The pipelines, risers, valves, and sprinkler heads are assessable as improvements.

- Portable (movable pipe): water is applied by means of a portable pipe system consisting of main lines, laterals, and sprinklers. This method is suitable for most soils and crops, similar to permanent sets, and also furnishes light, frequent irrigation. A portable system has the same advantages and disadvantages as a permanent set but provides greater flexibility in irrigation practices. The portion of the system that is portable, including portable pumps, is assessable as personal property.
- Center pivot (circular): water is applied by means of a pipe system where the line is fixed at one point and a motor propelled pipeline pivots around the fixed point. This method has similar adaptability, advantages, and disadvantages compared to permanent and portable systems. Because of the circular irrigation pattern, however, corners will be missed unless the system is equipped with a corner irrigation attachment. The portable part of the system is assessable as personal property.
- Wheel Line: water is applied by means of an irrigation system that moves through a field, from one set position to another, under its own power. The wheel line system is composed of a lateral wheel line, power mover, and mainline. The lateral wheel is typically composed of thick-wall irrigation pipe with large wheels attached so that it may be rolled through the field automatically (up to ½ mile). The pipe serves as the axle for the entire system. The power mover is a gasoline powered engine which rotates the lateral wheel line so that the entire system can be moved across a field by a single person. The mainline is connected to the lateral wheel line by flexible pipe or hose, transports the water, and is perpendicular to the lateral wheel line. Like portable systems, wheel line has the same advantages and disadvantages as a permanent set but provides greater flexibility in irrigation practices. The portion of the system that is portable, including portable pumps, is assessable as personal property.

Drip Irrigation

Drip or trickle irrigation is a system where small quantities of water are usually applied through polyvinyl chloride pipe (PVC) to perforated tubes and emitters located near the root zone of plants. This method requires soil with adequate downward and lateral movement for proper water absorption and is typically used in areas with limited water availability, excessive water costs, and for intensive cropping patterns. Drip irrigation provides uniformity of application, no soil erosion, efficient use of water due to minimal evaporation, less water due to placement of emitters near the root zone, and a low pressure water system. These advantages are offset by a high initial cost and a system that is highly automated and therefore requires extensive maintenance.

ECONOMIC AND SOCIAL FACTORS

MARKETING CONDITIONS

Several important economic factors that affect real property use and consequently value are classified under the broad headings of markets, transportation, commodity prices, support services, and financial availability.

Income from any agricultural operation depends on a ready market for the commodity produced. The closer a property is located to its immediate marketing or shipping point, the greater the potential return for the commodity produced. The location of markets has considerable significance on the value of both large and small operations. For tree fruit operations in the San Joaquin Valley, citrus operations in the Coachella Valley, row crop operations in the Imperial Valley, or cattle producers in the Sacramento Valley, the proximity to local distribution and transportation centers is a significant consideration.

A central concern for agricultural operations is the cost for transportation to markets and distribution centers. For example, some timber in Northern California cannot be economically harvested due to the cost involved in getting the commodity to sawmills. Cattle operations cannot support bringing feeder cattle from long distances because this increased cost must be passed on in the price of the animal.

The perishability of a commodity is directly related to market distance, and the costs associated with preservation are either borne by the producer directly as an added expense, or indirectly through receipt of a lower commodity price. Market distance affects not only net income but also the selection of agricultural commodities that can be grown economically. A location adjacent to highways, railroads, or water transportation is important for all agricultural operations. Facilities for transporting the agricultural commodity from production, through processing, through marketing, to its final destination quickly and efficiently is a universal concern of agricultural producers.

Commodity prices are affected by external forces that have a positive or negative effect on agricultural producers and the consumers of agricultural products. Such external forces originate from all levels: international, national, regional, statewide, and county. Such external forces may include:

- Fluctuations in international currency that affect the ultimate net return to agricultural producers.
- International trading policies that open or close foreign markets.
- Interest rates or changes in the degree of competition for available credit that directly affect the cost of operations.
- Agricultural surpluses or shortages in foreign nations that affect commodity prices.
- The weather, which ultimately determines commodity yields, quality, and prices.

The presence of agricultural support services enhances the value of real estate. Agricultural suppliers of machinery, equipment, seed, chemicals, fertilizer, and irrigation supplies are essential for the prosperity of areas with productive agriculture. In addition, labor, agricultural processors, storage and drying facilities, canneries, meat-packing facilities, and cold-storage facilities must be available in sufficient numbers to serve the needs of agriculture. Characteristically, agricultural suppliers congregate in areas where commodities are produced, and the degree to which these support services are available may provide a good indicator of land value.

USE PATTERNS

Conformity with prevailing use patterns generally contributes to property values in agricultural communities. When a land use differs from the normal land use pattern, the per acre value may vary from the norm depending on the difficulty of converting the land to prevailing use patterns.

Land use has an important effect on the income earning potential for any property. By virtue of this, agricultural production and price statistics are vital to the valuation of agricultural properties. A large volume of statistical data regarding agricultural production is available for review and analysis. The United States Department of Agriculture (USDA) annual publication, *Agricultural Statistics*, provides data on crop yields and commodity prices for all regions of the United States. County extension offices usually have recent, relevant crop data, and the Agricultural Statistics Branch of the State Department of Food and Agriculture publishes an annual report on crop yields and commodity prices on all regions throughout California. The Natural Resources Conservation Service (NRCS) and the Agricultural Stabilization and Conservation Service (ASCS) also provide data on yields and prices throughout the state. The University of California at Davis and California State University, Fresno, both conduct research and provide extension services regarding cultural practices and statistical data on agricultural production in California.

When analyzing land use patterns, attention must be focused on whether the majority of land is operated by owners or by tenants. Information regarding typical landlord-tenant lease/rental agreements for a particular area should be gathered, including whether cash rents or share crop arrangements are common. The typical percentage arrangement charged for property management services should also be determined. Information regarding these arrangements are ordinarily available from the Farm Credit System branch offices, local commercial bankers, ASCS offices, county extension offices, and colleges or universities.

The type and frequency of property transfers help to determine future land value trends for a particular area. Identification of the parties to each transaction is essential and establishes whether land purchasers are operators in expansion modes, new operators relocating to the area, or individuals adapting the land to alternate uses.

CULTURAL, OPERATIONAL, AND MANAGEMENT FACTORS

Cultural and operational factors furnish a general view of current agricultural production for an area. This information is beneficial in developing income estimates and for comparing a

property's yields with those prevalent for a particular area. If a property's yields or the prices obtained for its commodities are substantially different from the typical reported, an analysis should be made to determine the reasons for the variance. The variance may be caused by the property's present management.

The effect of property management (method of operation) on both land use and the property operation is an important aspect of any appraisal. An analysis regarding the competency of a particular owner-operator may be part of the specific data compiled for an agricultural appraisal. Management ability varies by individual or company, and where poor management techniques are evident, property productivity or net income may be lower. It may be necessary to adjust yield expectations to reflect likely property management.

LAND USE RESTRICTIONS

Agricultural farmland actually has two values. One value is predicated on its current use as a producer of agricultural products, and the second value is predicated upon its worth as land for potential commercial, industrial, or residential development. A federal study commissioned in 1980 determined that agricultural farmland was disappearing (removed from production) at a rate of approximately three million acres per year. While this figure has been challenged, it is firmly established that productive farmland is disappearing in California by virtue of continued development and urban growth.

Economic forces are inclined to progress toward the highest and best use, that use which renders the most profitable return from the land. To slow this trend, however, state and local government programs have been established to preserve agricultural land as farmland, similar to regulations for urban land designed to achieve local public goals of residential, commercial, and industrial development. These programs include the California Land Conservation Act (Williamson Act), Farmland Security Zones (Super Williamson Act), agricultural zoning, general land use plans, and legally enforceable restrictions. The majority of the restrictions are concerned with the preservation and use of land for specific agricultural purposes, not with distinctions between permitted uses.

In 1965, the Legislature enacted the California Land Conservation Act (CLCA) in an effort to preserve agricultural lands for the exclusive production of food and fiber, and to discourage noncontiguous development. The legislation was an attempt to halt or at least to hinder the alarming increase in real property taxes on farmland by providing methods for restricting land use to agricultural purposes. To further these efforts, the Legislature enacted provisions allowing the creation of Farmland Security Zones in 1998.

Section 402.1 of the Revenue and Taxation Code[4] deals with land use restrictions and, in particular, zoning, recorded contracts with governmental agencies, permits issued by governmental agencies, conservation easements, and environmental constraints. This section explains that there is a rebuttable presumption that restrictions will not be removed or

[4] All statutory section references are to the Revenue and Taxation Code unless otherwise designated.

substantially modified in the predictable future and that the enforceable restrictions will substantially equate the value of the land to the value attributable to the legally permissible use or uses. For a comprehensive analysis and explanation of the California Land Conservation Act, please refer to Part II of this handbook.

Zoning is the principal example of state and county police powers that affect land use. Essentially, zoning refers to the division of land into distinct areas with different use and density regulations. Agricultural zoning essentially sets aside specific areas for broadly defined agricultural purposes that include conventional growing crops, timber, grazing, and recreation. Zoning is a legally binding designation of permitted uses for a respective area based on governmental interpretation of the public's health, safety, and welfare.

Agricultural zoning varies with each local county and city government and the types of agriculture conducted in each area. Zoning ordinances normally include the following elements:

- A statement of purpose (e.g., preservation of agricultural lands)
- Permitted uses
- Conditional or special uses requiring prior approval
- Standards governing the permitted and conditional uses
- A zoning map or other distinct form of identification

Agricultural zoning ordinances differ significantly, but the main point is the extent to which they limit the encroachment of nonagricultural uses into productive agricultural areas.

Closely related to preserving the land for agricultural use is the preservation of the environment. One legal tool for environmental preservation is the conveyance of a conservation easement, the purpose of which is to retain land predominantly in its natural, scenic, historical, agricultural, forested, or open-space condition.[5] By law, a conservation easement is an interest in real property voluntarily created and freely transferable in whole or in part.[6] The particular characteristics of a conservation easement are those granted or specified in the instrument creating or transferring the easement.[7]

Despite a conservation easement's legal status as an interest in real property, the conveyance of such an interest does not generally constitute a change in ownership of the property subject to the easement, where the primary purpose of the easement is the mere right to enforce *restrictions* (i.e., negative covenants) against the grantor. This is because, in such a case, with respect to the property subject to the easement, the conveyance would constitute neither a transfer of the beneficial use nor a transfer of an interest with a value substantially equivalent to that of the fee. Revenue and Taxation Code section 60 requires that a conveyance satisfy both conditions in order for a change in ownership to occur.

[5] Civil Code section 815.1.
[6] Civil Code section 815.2.
[7] Civil Code section 815.2.

While an easement created pursuant to Civil Code section 815.1 may not give rise to a change in ownership, the restrictions on use are considered enforceable restrictions for purposes of section 402.1, which provides that the assessor must consider the effect upon value of such restrictions.[8] As a practical matter, the majority of conservation easements will be treated for assessment purposes in accordance with section 402.1.

Under section 402.1, the creation of a conservation easement does not result in an automatic reduction in the assessed value of the property subject to the easement. Instead, the assessor must enroll the lower of (1) the existing factored base year value or (2) the current market value considering the restrictions on use imposed by the easement. Only upon a subsequent change in ownership would the assessor establish a new base year value that accounts for the restrictions under the easement.

That treatment differs from properties subject to *agricultural conservation easements* under section 421.5 and Government Code section 51256. Properties encumbered by agricultural conservation easements are subject to assessment pursuant to section 423, which mandates that enforceably restricted open-space lands are to be valued by a prescribed capitalization of income method, rather than by reference to data on sales of otherwise comparable lands.[9]

Apart from conservation easements, federal and state environmental laws have a tremendous effect on agriculture because numerous activities on farms produce wastes or emissions that are potentially detrimental to the environment. Environmental regulations have altered numerous traditional cultural practices and forced agricultural producers to adopt new and, in some cases, extremely expensive practices. Two legislative acts, the Clean Air Act of 1970 and the Clean Water Act of 1972, identified specific environmental concerns and focused public attention on agricultural practices. Agricultural producers are no longer permitted to allow unrestricted water runoff from chemically treated fields, and burning of farm residues or use of smudge pots for frost protection are now subject to regulation by the Environmental Protection Agency (EPA). Potentially toxic discharges of chemically contaminated water runoff from farming operations are now subject to close scrutiny, and chemical fertilizers and pesticides essential for many farming operations can now only be applied in strict accordance with EPA regulations. In addition, the federal Endangered Species Act of 1973 and the California Endangered Species Act are environmental regulations that affect California agriculture. These acts impact the ability of agricultural producers to carry out many long-standing, routine agricultural practices or to maximize the productive capability of the land due to land use restrictions designed to protect threatened and endangered wildlife species.

[8] Civil Code section 815.10.

[9] Effective January 1, 2003, Revenue and Taxation Code section 421.5 was amended to clarify that, for purposes of valuing open-space land subject to an enforceable restriction, the term "agricultural conservation easement" has the same meaning as defined in section 10211 of the Public Resources Code (Statutes of 2002, Chapter 616, Senate Bill 1864).

SUMMARY

Physical, economic, and social forces are not separate but must be viewed as interacting in ways that affect agricultural land values. These forces include soil, climate, and water characteristics, land use characteristics, area support services, marketing conditions, land use and ownership patterns, national and international economic trends, governmental forces, and land use and environmental restrictions.

Soil and climate are two dominant physical characteristics that affect agricultural property values. Conforming land use patterns for an area create value formation by considering the possibilities and limitations afforded by climate and soil. Governmental forces at every level affect the value of real property through zoning, land restrictions, and commodity programs. Area services affect land values through the interaction of markets, transportation systems, support businesses, and financial institutions.

The best indication of current market value for agricultural properties is still obtained from recent real estate market transactions—the review and analysis of open-market, confirmed sales of similar agricultural properties.

CHAPTER 3: APPRAISAL PROCESS

DEFINITION

Although the appraisal of property for tax purposes includes aspects that are different from private fee appraisal, the same basic methods and techniques apply to both.

An appraisal is an opinion of value. In order to accurately and systematically arrive at such an opinion, a logical method of collecting, analyzing, and processing data must be developed in order to make a sound judgment of the value of a specific agricultural property.

STEPS IN THE APPRAISAL PROCESS

There are seven steps in the appraisal process:

1. Definition of the appraisal problem
2. Preliminary analysis and data collection
3. Highest and best use analysis
4. Land value estimate
5. Application of the approaches to value
6. Reconciliation of value indicators and the final value estimate
7. Reporting the final value estimate

DEFINITION OF THE PROBLEM

The definition of the appraisal problem contains five steps:

- Identification of the property being appraised
- Identification of the property rights involved in the appraisal
- Determination of the purpose of the appraisal
- Establishing the effective date of the appraisal
- Obtaining the definition of value for the appraisal

It is necessary to establish the kind of value that is being sought (e.g., market value, investment value, insurable value, estate value, Williamson Act value), identify the appraisal unit typically transferred in the marketplace, determine the rights being appraised (fee simple absolute, leasehold, leased fee, except for taxable possessory interests), and ascertain the effective date of the appraisal (for tax purposes it is the date of change in ownership or new construction if after March 1, 1975, or the lien date for appraisals where reductions in value apply).

PRELIMINARY ANALYSIS AND DATA COLLECTION

The preliminary analysis phase develops a logistical plan for the appraisal. This step includes a preliminary inspection of the agricultural property and its surroundings; a list of the data, time, and resources needed; a preliminary estimate of the property's highest and best use; and a selection of the primary approaches to value that will be utilized.

A competent appraisal is supported by information from the marketplace. This information is referred to as market data, and all relevant data about the property should be considered, including primary data collected in the field and data from secondary sources. Market data may be divided into general, specific, and comparative categories.

General data pertain to information about trends in the environmental, social, economic, and governmental forces that affect property values. Trends occur at the national, regional, community, and neighborhood levels. Specific data pertain to the subject property itself. For example, both the parcel and its improvements are examined to gather information regarding their utility, as well as financial and operating information. Comparative data pertain to the physical, financial, and operating characteristics of comparable properties that will be used in the appraisal process.

HIGHEST AND BEST USE ANALYSIS

After determining the data requirements and collecting the data, an analysis of the property's highest and best use in light of market forces is completed. The value estimate is predicated on the assumption that the highest and best use has been identified. Under competitive market conditions there is a strong tendency for property to be used in the most productive manner. The determination of highest and best use is also necessary in order to select the comparable sales utilized in the appraisal process.

LAND VALUE ESTIMATE

A separate estimation of land value is needed for at least two reasons. Both the cost approach and the building residual technique in the income approach require separate land value estimates. When land value is subtracted from the total property value, the contributory value of the improvements can be estimated. Another reason for a separate estimate of land value is that the Revenue and Taxation Code requires an allocation of the total property value between land and improvements.

APPLICATION OF THE APPROACHES TO VALUE

The three approaches to value are the cost approach, the comparative sales approach, and the income approach. An important step in the appraisal process is the determination of the appropriate method or methods by which the value will be estimated. Typically, the appraiser considers three primary approaches to value. Each approach simulates the thought processes of the typical buyer in a competitive market.

For a comprehensive discussion of the three approaches to value, please refer to Assessors' Handbook Section 501, *Basic Appraisal*.

RECONCILIATION OF VALUE INDICATORS AND THE FINAL VALUE ESTIMATE

The final value estimate is the next step in the appraisal process. While the value estimate represents an opinion of value, it should be a reasoned opinion based on verified market data.

The appraiser must estimate the present worth of anticipated future net benefits through one or more of the three methods of processing data into value indicators—the comparative sales approach, the capitalized income approach, and the cost approach.

Theoretically, the approaches to value should produce a fairly tight range of value indicators. In practice, however, this rarely occurs. Significant differences frequently occur among the value indicators, so to arrive at a final estimate of value a reconciliation of the value estimates from the approaches must be completed. Estimates should be reconciled using the criteria of:

- The appropriateness of the approach given the purpose of the appraisal
- The adequacy and reliability of the data available to perform the appraisal

The final estimate of value is not simply the arithmetic average of the value estimates produced by the approaches utilized. Rather, the final value estimate must reconcile all available indicators plus relevant market considerations. Reconciliation is the process of critically evaluating how well each indicator reflects the factors influencing the value of the subject property. The appraiser should weigh most heavily that indicator which best measures the type of benefits the subject property yields. Data should be independently processed for each approach to value. No method of appraisal should be forced to agree with any other method. An important consideration is that each approach be objectively developed.

REPORTING THE FINAL VALUE ESTIMATE

This is the final step in the appraisal process where the appraiser presents a reasoned opinion supported by factual data that can be independently evaluated by an observer. The narrative portion centers around those facets of the appraisal process that are of particular relevance in agricultural appraising.

PROPERTY USE

Highest and best use is not an absolute fact, but reflects an opinion of the best and most profitable use of the property based on an analysis of prevailing market conditions. Highest and best use is defined as:[10]

[10] *The Appraisal of Real Estate*, 11th Edition, Appraisal Institute (Chicago, 1996), p. 50.

> The reasonably probable and legal use of vacant land or improved property, which is physically possible, appropriately supported, financially feasible, and that results in the highest value.

The use of land can be restricted by existing crops or improvements. The highest and best use for land is usually determined as though the land is vacant and ready to be put to its highest and best use. If the property is improved (e.g., with structures, a permanent irrigation system, or living improvements), analysis of the highest and best use as improved is also important. Analysis of current and potential uses resolves whether the property is currently being used for its highest and best use or whether the current use should be changed. Among all reasonable or alternative uses, the use that provides for the greatest return to the land is generally considered to be the highest and best use of the land as though vacant.

A highest and best use analysis is necessary for the proper selection of appropriate agricultural comparable sales for use in the three major approaches to value. Comparable sales must have the same highest and best use as the subject property.

Highest and best use of the property as improved pertains to the optimal use that could be made of a property including the existing crops or improvements. The inference is that the existing crops or improvements should be retained in their current form as long as they contribute some market value, or until the return from new potential uses or improvements is greater than the cost of removing the existing improvements and constructing new ones.

The establishment of a land's optimal use demands prudent analysis of all reasonable alternative uses. Three significant points should be noted in estimating a property's highest and best use:

- Surrounding land uses may not be indicative of optimal use
- The existing use of the subject property may not be optimal
- Current zoning and other governmental regulations may restrict a property's highest and best use

When appraising agricultural properties, consideration must be given to whether the use of the property is long term or interim. If not long term, then thought should be given regarding the type of operation that will provide the greatest return to the land, such as conversion from row crop land to vineyards or orchards.

An existing agricultural use may not be the highest and best use for the entire property, especially in areas of swift transition to residential or commercial uses. The present use, called an interim use, usually continues until transition to an alternate use is economically feasible. Agricultural properties in transition from an interim to an alternate use illustrate the principle of consistent use which asserts that land cannot be valued on the basis of one use and improvements valued on the basis of another use. A corollary to the principle of consistent use involves appraising agricultural property to determine market value. By virtue of the fact that market

value represents the most probable selling price, the final estimate of value should reflect the most probable utilization of the property.

Current zoning ordinances may not be compatible with a property's theoretical highest and best use. If the probability of a zoning change exists, the potential effect on the subject property's market value should be considered (but see section 402.1, which establishes a rebuttable presumption that current restrictions such as zoning will not be removed or modified in the predictable future). Changes to zoning ordinances often trail behind current market activity and, consequently, may conflict with the highest and best use for a particular agricultural property.

UNIT TO BE APPRAISED

Appraisal and market value concepts inherently involve a determination of the unit being appraised. Section 51(d) defines the appraisal unit for real property as it relates to adjustments to base year value. It states:

> For purposes of this section, "real property" means that appraisal unit that persons in the marketplace commonly buy and sell as a unit, or that is normally valued separately.

This is the statutory basis for any determination of the appraisal unit. When a parcel of real property changes ownership and requires a reappraisal for property tax purposes, the appraiser must determine the unit commonly bought and sold in the marketplace. If an individual parcel is purchased, then this comprises the appraisal unit. If active market participants typically buy and sell multiple parcels (which form an economic unit), then this comprises the appraisal unit. Market value for the multiple parcels is determined and allocated among the respective parcels.

The appraisal unit must be determined in order to know the appropriate level of research and market data to be obtained. For example, what is the unit if a dairy and a home on a lot next to it are sold? Is the unit the dairy and the house, or are the dairy and house two separate units? An analysis of market transactions would determine what is typically bought and sold.

When the unit to be appraised is not clearly defined, the appraiser must make an informed judgment based on the market data available in determining the proper unit. Decisions should be the result of a factual consideration of probable ownership, use, and location. The appraiser's decision should reflect the unit most likely to be sold if the property were exposed to the open market. In a vineyard operation, the most probable unit is the vineyard as a whole except when one parcel is used for an entirely different purpose; for example, a cold-storage facility. The vineyard as a whole is often referred to as the unit concept and county assessors often use the unit concept when appraising multi-parcel agricultural operations.

The preceding paragraphs have dealt with the problem of appraising agricultural property as a unit, but property tax law requires a separate assessment of each parcel of property and, within each parcel, separate assessments of land, improvements, and personal property. However,

statutes do not require separate appraisals of these different segments of a unit property. The separate figures are, in the majority of cases, only an allocation of the total property value. (It is important to make reasonable allocations because (1) some taxes and fees are levied on land only or land and improvements only, and (2) correct base year values are critical in the case of removal of an improvement or change in ownership of part of the original unit.)

The following examples are taken from actual appraisal situations encountered by county assessors throughout California.

EXAMPLE - 1[11]

A father and son own a total of nine individual parcels (containing a total of 980 acres with the smallest parcel 40 acres and the largest parcel 320 acres) planted to row crops and almonds. The parcels have distinct legal descriptions, separate assessor's parcel numbers, and are located contiguously. The father and son operate as a partnership and share equipment, improvements, water, and labor costs.

Unit To Be Appraised

In this instance, the smallest individual parcel (40 acres) is considered by the marketplace to be an economic unit, and each individual parcel constitutes a separate appraisal unit and should be valued accordingly. It would be inappropriate to combine the market value for the various parcels, separated by ownership, and allocate the total market value over the total acreage owned by each individual because of different cropping patterns, no unity of ownership, and divergent values between row crop land and almonds.

EXAMPLE - 2

A grower owns three contiguous parcels; one parcel contains 216 acres of peaches, one parcel contains approximately 100 acres of prunes, and the third parcel contains 10 acres improved with a 40,000 square foot cold-storage and packing facility. The storage facility serves the grower and two other farmers. Larger parcels of agricultural farmland that are adaptable to agricultural improvements or homesites sell for considerably less than smaller parcels.

Unit To Be Appraised

In this instance, there is an absolute unity of ownership and location. However, the cold-storage facility constitutes a different use comprising an economic unit by itself so it should be valued separately from the orchard operation. It would be logical to conclude that growers in the area might seek additional orchard acreage for expansion but would not necessarily be in the market for a cold-storage facility.

[11] All examples throughout this handbook are for demonstrative purposes only and are not meant to reflect conditions in any part of the state.

EXAMPLE - 3

A cattle rancher owns 26 separate parcels (mostly grazing lands on rolling land and foothills) containing approximately 12,800 acres. Numerous parcels are not contiguous and in most cases the parcels are bordered or enclosed by public lands administered by the United States Forest Service and Bureau of Land Management. The rancher has contracts with the two governmental agencies for limited grazing permits on adjacent noncontiguous federal land. Ranch sales might include the transfer of the grazing permits.

Unit To Be Appraised

Cattle and other livestock operations of this type could utilize public lands to make up an economic unit. Depending on the policies of a federal administration, grazing permits may or may not be issued and have no guarantee of transferability. The possessory interest created by a grazing permit should be valued separately, not with the fee simple land, and solely on the basis of the actual grazing that the government permits on an annual basis.

TOOLS AND DATA SOURCES

Numerous general data sources are available to assist in the appraisal of agricultural property. Some of the more readily available and useful data sources are discussed below.

U. S. GEOLOGICAL TOPOGRAPHIC SURVEY MAPS

United States Geological Survey (USGS) maps (commonly called "topo maps") are beneficial in determining topography, location, and access for all areas throughout California. The maps are 7.5 and 15 minute quadrangles. The scale on a 7.5 minute quad is 2.64 inches per mile; the 15 minute quad has a scale of 1 inch per mile. The maps show the location of roads and waterways, and are shaded by color to show forest areas and vegetation. The maps are available at the USGS western regional office in Menlo Park, California.

AERIAL PHOTOGRAPHS

The Agricultural Stabilization and Conservation Service (ASCS) provides aerial photographs for all farmable land in California. The maps are based on a scale of 1" equals 660 feet, show ownership lines, and in some cases provide field acreage. The maps assist in the location of property lines, placement of improvements, tree counts, and identification of problem soil areas. Land measurement utilizing aerial photographs requires caution because:

- Errors may exist for any single photograph
- Variations in scale
- Camera tilt
- Terrain slope

A variation in scale is caused by the distance between ground level and aerial camera height. Differences in aerial photo elevations will result in discrepancies in the photo scales and this in

turn would result in incorrect land measurements. Camera tilt results in inaccuracies along the aerial photo edges. Terrain slope results in smaller than actual readings when the ground slopes away from the camera, and larger than actual readings when ground slopes toward the camera.

The most accurate area of an aerial photo is the center portion, so all measurements should be verified against that section. The maps are available through ASCS field offices.

CROPPING INFORMATION

The California Department of Food and Agriculture and the United States Department of Agriculture periodically release crop yield reports for the State of California and all counties. An analysis of cropping patterns can assist in estimating and projecting future crop yields.

Both crop rotation and crop varieties have a noticeable effect on yields. The constant introduction of new and more popular varieties frequently results in significant increases in yields. Crop rotations affect long-term productivity, and periodically land needs to be removed from production to lie fallow. A crop rotation which takes this fact into consideration ultimately plays an important role in obtaining optimal production yields. Soil capability, weather variations, and the effects of technological changes directly influence yields and rotations. Knowledge of crop yields, commodity prices, cultural costs, and cultural practices is indispensable in agricultural appraising. Appendix 2 lists numerous sources of information.

County Extension offices publish manuals, bulletins, and leaflets regarding crop rotations, crop yields, and costs for various cultural practices. These publications provide an excellent starting point for gathering income and expense data on a wide range of crops.

County agricultural commissioners are required to annually publish an agricultural crop and livestock report for their county. The report presents statistical data pertaining to acreage, yields, commodity and livestock prices, and the gross value of agricultural production in the county.

VALUE APPROACHES

Value equals the present worth of anticipated future net benefits. In order to measure the value of future net benefits, three major appraisal methods for processing data into value indicators are utilized. These include the cost approach, the comparative sales approach, and the income approach. The applicability of each approach depends upon the nature of the market. If there were always an abundance of market sales and comparable sale properties were close substitutes, the comparative sales approach would be the only technique needed.

In the absence of sales of comparable properties, the other two approaches to value assume greater importance. If the subject property is owned for the purpose of obtaining income through agricultural production and there is an active market for agricultural properties, the income approach usually becomes more reliable. If there are limited sales and insufficient rental data for comparable properties, the cost approach assumes greater significance.

It is not always possible to utilize all three approaches to value in each individual appraisal. The nature of the property, the nature of the market, and the availability of data will normally dictate which approach(es) are most applicable. As single-family residential properties are infrequently owned solely for their rental income, the cost and comparative sales approaches to value are most appropriate. Agricultural and commercial properties may be appraised by utilizing all three methods, but limited sales of similar comparable properties may make the cost and income approaches the more reliable indicators of value.

The appraiser, therefore, must analyze all data available on a property and utilize the most applicable approach(es) in the appraisal. This procedure is supported by California Code of Regulations, Property Tax Rule 3, which states:

> In estimating value as defined in section 2, the assessor shall consider one or more of the following [approaches to value], *as may be appropriate for the property being appraised*…. (Emphasis added.)

Independent processing of available data will lead to separate indicators of value. The next step is to reconcile the several indicators into a final estimate of value. In the reconciliation process, each indicator is reviewed and each critical estimate is re-analyzed. Consideration should be given to any factors influencing value that are either not reflected or only partially reflected in the indicators. The greatest weight should be afforded that approach which best measures the subject property.

COST APPROACH

Sometimes referred to as the summation approach, the cost approach is the sum of the estimated land value and the estimated cost new of the improvements less depreciation. The cost approach to value is the most universally applied approach in the appraisal of property for tax purposes. The replacement cost approach is the one approach that can be applied to all improved properties (and personal property). Many properties are infrequently sold and/or do not yield calculable money incomes, but costs have been incurred for all improved properties. In addition, it is generally desirable to make a cost estimate in addition to using other applicable approaches in the appraisal process.

California Code of Regulations, Property Tax Rule 6(a) directs when to use the cost approach:

> The reproduction or replacement cost approach to value is used in conjunction with other value approaches and is preferred when neither reliable sales data (including sales of fractional interests) nor reliable income data are available and when the income from the property is not so regulated as to make such cost irrelevant. It is particularly appropriate for construction work in progress and for other property that has experienced relatively little physical deterioration, is not misplaced, is neither over- nor underimproved, and is not affected by other forms of depreciation or obsolescence.

Reproduction cost is the outlay required as of a certain date to replace an existing structure with an exact replica. This variant of the cost approach is of limited usefulness because it is frequently not possible nor desirable to replace an existing structure with an exact replica due to the lack of certain materials or trade skills, or because of the functional obsolescence of the older structure.

Replacement cost is the cost required as of a certain date to replace an existing structure with one possessing equivalent utility. This concept is widely accepted in appraisal practice. The appraiser must estimate not only replacement cost new, but also the accrued depreciation in the structure, which is the most difficult aspect of applying the replacement or reproduction cost approaches.

For property tax appraisal purposes, depreciation is defined as the loss in value from any cause, and it is the measure of the loss in value experienced by a property compared to a hypothetical and similar property that has suffered no depreciation. Depreciation in the appraisal sense is the difference between the present market value of improvements and their replacement cost new. To estimate depreciation appraisers commonly refer to published "percent good tables" which relate age to remaining value. Table depreciation includes normal amounts of physical deterioration and functional obsolescence. The depreciation allowance must be modified if the property exhibits above average or below average amounts of physical deterioration, functional and/or external obsolescence.

Functional obsolescence is a loss in value of a structure or item of equipment due to a decline in capacity to perform the function for which it was intended. Functional obsolescence may be due to poor initial design, changing market tastes, or changes in construction techniques.

Adverse factors that are external to the property being appraised cause external obsolescence and a loss in value. These external factors usually affect more than one property in the area and cannot be controlled by an individual property owner. External obsolescence may be caused by environmental factors, illustrated by industrial encroachment on a residential neighborhood, or by the shifting of the basic means of employment away from a community. Losses in value attributable to external obsolescence are usually beyond the power of any one individual to influence and cannot be cured by making changes to the subject improvement. This type of depreciation affects both land and building values.

The concept of replacement cost has particular relevance for agricultural improvements because of technological advances. Generally, older structures (Dakota style barns) are replaced by newer, different style improvements with equivalent or superior utility.

Cost New Factors

Reliable cost data sources for agricultural appraising include the following publications which are updated periodically to reflect changes in local and statewide costs:

- Assessors' Handbook Section 534, *Rural Building Costs*, published by the State Board of Equalization

- Marshall and Swift Commercial Cost Handbook
- Independent Contractor Data

COMPARATIVE SALES APPROACH

The comparative sales approach may be defined as any approach that uses direct evidence of the market's opinion regarding the value of a specific property. Ideally, this approach involves an opinion of value backed by the outlay of money—in other words, actual purchases of comparable properties. In addition to actual transfers, the approach may consider listings, offers, options, and the opinions of owners, real estate agents, and appraisers as to the selling prices properties could command.

The comparative sales approach is based upon the principle of substitution. It is presumed that the sale price of a property will approximate the sale prices, and to a lesser degree, the listings, offers, and appraisals of competitive substitutes. In a competitive market, all properties that are close substitutes have approximately the same value. With a perfect degree of substitution and strongly competitive market conditions, properties would have exactly the same value. Actually, no two properties or commodities are ever identical—all differ at least in location. However, they may be reasonable substitutes if all relevant economic characteristics are similar.

Bargaining is characteristic of the real estate market and most sales, even perfect economic substitutes, frequently sell for different amounts. This is the nature of the real estate market. Market values of real estate are more realistically described as a range of values rather than a specific point. An appraisal establishes an expected range of value for a specific property and hopefully, when the property transfers, the sale price will fall within the anticipated range of values. For a comprehensive discussion of the comparative sales approach, please refer to Assessors' Handbook Section 501.

In contrast to the cost and income approaches, the comparative sales approach offers direct rather than indirect evidence of market value. It is the preferred method when there are sufficient sales available to invite comparison with the subject property and the ability to adjust the selling prices of the sold properties to make them truly comparable.

California Code of Regulations, Property Tax Rule 4, prescribes the manner in which appraisers must apply the comparative sales approach. Several conditions must be met:

- Noncash consideration (e.g., personal property) included in the transaction must be converted to its cash equivalent
- Seller-paid loan points charged by a lender must be deducted from the nominal sale price
- Assumed loans, promissory notes, or other paper consideration must be converted to their cash equivalents
- The positive or negative value of a lease encumbering the property at the time of sale must be added to or subtracted from the selling price

- The sale prices of comparable properties must be adjusted for any change in the price level of this type of property between the time the sale price was negotiated and the date of valuation of the subject property
- Appropriate allowances for differences between the comparable properties at the time of sale and the subject property on the valuation date, as to physical attributes, location, enforceable restrictions upon use, anticipated income, and amenities must be made

Market Units of Comparison

It is helpful to express the adjusted selling prices of comparable sales in terms of a unit selling price that can readily be applied to the subject property. The most common unit of comparison in agricultural appraising is price per acre, although comparisons may also be made on the basis of price per animal unit, price per ton, and price per cwt. (100 pounds). When analyzing available data, it may be helpful to utilize more than one unit of comparison. These comparisons may be used to determine whether there are consistent relationships between value per acre and value per unit of production. After a price per unit of comparison has been established for all the comparable sales, the indicated unit value is applied to the subject property to arrive at an estimate of value.

Unit sale prices that have not been adjusted should not be applied directly to the subject property. Once a unit price range based on a consistent unit of comparison has been ascertained for all the comparable sales, a basis has been firmly established for calculating an appropriate unit value for the subject property.

For instance, agricultural land sales can be expressed in terms of selling price per acre. Single-family residential sales lend themselves to selling price per square foot of gross living area; commercial property sales are commonly expressed as selling price per square foot of net rentable area; and sales of income-producing multi-family residential properties are commonly reduced to price per unit, price per room, or price per square foot. Comparable sales must be judiciously selected and adjusted before converting them into appropriate units of comparison.

Sale of Subject Property

When valuing property as the result of a change in ownership, section 110(b) and Rule 2(b) provide a rebuttable presumption that the amount of monetary consideration or its equivalent paid for real property sold is its "full cash value." If the assessor chooses to rebut the presumption, it must be done by a "preponderance of the evidence" establishing that the consideration paid is not market value. This rebuttable presumption does not apply to transfers of taxable possessory interests, changes in control of legal entities through stock acquisition, transfers of partnership interests, or any unreported transfers for which no change in ownership statement was timely filed. Rule 2 also requires that for transfers of more than one parcel, the purchase price must be allocated among the sold parcels in proportion to the relative fair market value of each.

Application of the comparative sales approach includes identifying differences between the comparable properties and the subject, quantifying the value impact of the differences, and applying an appropriate adjustment technique. Significant differences between the comparable properties and subject property are adjusted by increasing or decreasing the respective elements of comparison.

A determination of the significant differences between the subject property and the comparable properties is basic for any appraisal analysis. These differences are the core issues that must be addressed in the data analysis. Identifying the truly significant differences between the subject property and comparable properties provides the means to accurately measure the dollar value for any difference to arrive at a final value estimate.

The number of possible differences for any one appraisal is endless. All characteristics of the subject and comparable properties are considered during the appraisal process, but the appraisal's main purpose is to identify and measure the differences that have the greatest effect on value as recognized by the marketplace. Among the elements of comparison are:

- Financing terms
- Conditions of sale
- Market conditions
- Location
- Physical characteristics
- Income characteristics

Financing Terms

The sale price of a specific property may vary from that of an identical property because financing terms differ between the two properties. Potential buyers of a property may be willing to pay more than market value to assume an existing mortgage with favorable below-market financing terms.

Agricultural properties are frequently sold on contracts of sale with minimal down payments and seller financing for the balance of the sale price. An analysis of such a transaction must be conducted to determine whether the financial arrangements are, in fact, a reasonable representation of the marketplace and that the sale constitutes a bona fide transaction. The best method for such an analysis is to compare cash sales with seller-financed sales of comparable properties to determine whether an adjustment to a seller-financed sale is necessary. If there is no apparent difference between cash sales and seller-financed sales, no adjustment is necessary for those seller-financed sales that are comparable to the typical cash sales. An alternative method is to compare the terms of a seller-financed sale to the terms required by a commercial lending institution. No adjustment is necessary for modest differences between commercial and seller-financed terms, but adjustments must be made in accordance with Rule 4 if the differences are significant.

Conditions of Sale

When sale conditions are atypical, the result may be a higher or lower selling price than would occur in a normal market transaction. For example, a family member may sell agricultural property to another family member (typical in farming families) at a reduced price. Estate and income tax situations may also cause the price to vary from that price paid by other active market participants.

When atypical market conditions are detected in a comparable sales transaction, the sale should be carefully correlated to the subject property. Since market-derived adjustments are more difficult to make, the sale should not be used if possible. Frequently, a limited supply of recent, relevant sales dictates that the transaction be used as part of the appraisal analysis. However, any adjustments made should only be done after careful research into terms of the sale, buyer and seller motivations, and possible effects on the price paid.

Market Conditions

Market conditions, or time, actually refer to changes in market conditions over the time period between the date of sale and date of valuation. Market price levels may have remained static, decreased, or increased. If changes in market conditions are evident, the reasons for this and the amount of change need to be determined.

When sufficient appraisal data exist for a specific time period, trends can be identified and measured by analysis of sales. Changes in other price level indicators over the specified time period provides support for the available appraisal data and assist in refining conclusions drawn from the data. Changes in price levels are usually expressed in percentage changes over time periods which include monthly, quarterly, semi-annually, or annually.

By identifying and measuring changes in market conditions over time, comparable sales can be adjusted to reflect the changes between the comparable sale dates and the date of the subject valuation. Through this adjustment, the subject property and comparable sales are brought together at a specific point in time, usually the date of the subject valuation, by establishing current price equivalents for all comparable sales.

Location

When agricultural properties are situated within the same general region, location does not usually have a major effect on value. However, location related factors may vary among properties and cause location to have a significant effect on value.

A location adjacent to urban markets or transportation facilities may be locational features that greatly increase marketability. Exceptionally good accessibility to markets or nearby transportation facilities may enhance a property's adaptability and provide it with a competitive marketing edge.

Likewise, location may be a factor in highest and best use. A favorable location for an agricultural property may afford potential for either agricultural or residential/commercial uses.

In addition, the location of a specific property may be preferred over other locations as a desirable place to live.

The availability of property for agricultural uses due to zoning ordinances or restrictions must be considered. By virtue of different zoning regulations, a property may possess a greater or lesser capacity for productive uses or investment purposes compared to otherwise similar properties. When analyzing properties with different zoning ordinances, the possibilities of conditional uses or variances, as well as the possibility of zoning changes in the general plan, must be considered.

Physical Characteristics

Physical characteristics account for the most extensive comparisons among agricultural properties and produce the greatest number of differences to consider. There are two kinds of physical characteristics, the first being land improvements which include:

- Size
- Shape
- Soil
- Water
- Topography

In the appraisal of an agricultural property, land improvements may be more significant than building improvements, but all improvement differences between comparable sales and the subject property should be considered and analyzed.

Building improvements usually require separate valuation and adjustments if their contribution is significant to the value of the property. While adjustments for these improvements are made in the comparative sales approach, the figures used may be derived by application of cost approach techniques.

Agricultural properties generate income and comparisons and adjustments should be made on the basis of their income characteristics. Anticipated potential gross income, anticipated operating expenses, and anticipated potential net income (usually expressed in terms of dollars per acre) are used for these adjustments. An analysis of these income characteristics affords indications of anticipated net returns, which may provide a basis for comparison and adjustment in the comparative sales approach.

There are several acceptable procedures that correlate comparable sales to the subject property and provide adjustments for the differences either on a percentage or a lump sum basis. Differences between specific physical characteristics of the subject property and comparable sales may be expressed by using comparative analysis phrases such as "superior," "equal," or "inferior."

Regardless of the method used to report the differences, percentage or dollar adjustments need to be made for each difference considered significant to the value relationship between the

properties. In applying the comparative sales approach, the starting point is the price paid for each comparable sale property. Each similarity and dissimilarity between the comparable sales and the subject property under appraisal is estimated regarding how much difference the factor makes as direct evidence of the market value of the subject property.

Once all the significant differences between the subject property and comparable properties have been determined, any variations influencing property value need to be measured. The validity of the comparative sales approach depends on an adequate number of comparable sales that are representative of the market and of their comparability to the subject property. In addition, it is extremely important to be able to quantify the influence of any differences.

When measuring the effect of a variable, all other factors remain constant. Ideally, two sales with only one difference between them could be located. The best example of this technique is the use of a sale and resale of a specific property. Assuming no change in the character of the property between sales, the only difference is the time period between sales. The difference in price, over time, of the two sales should provide an indication of market trends.

Lacking re-sales (typical when appraising agricultural properties), a search must be conducted for similar properties that sold at different times. With time as the only difference, a series of comparisons can identify price trends over the time period represented by the comparable sales. Once a conclusion has been reached regarding market trends, other significant differences between the comparable sales and subject can then be isolated and measured.

This technique of sales analysis is applied to a 640 acre row crop operation with Class I soils. Nine comparable sales have been identified and summarized below:

Sale	Date of Sale	Price	Acres	Price Per Acre	Soil Class
1	6 months	$1,600,000	400	$4,000	Class I
2	6 months	$2,252,250	585	$3,850	Class II
3	4 months	$2,310,875	665	$3,475	Class III
4	3 months	$2,516,250	610	$4,125	Class I
5	2 months	$1,567,500	475	$3,300	Class III
6	5 months	$2,315,400	680	$3,405	Class III
7	4 months	$1,831,200	480	$3,815	Class II
8	4 months	$1,937,000	520	$3,725	Class II
9	2 months	$2,106,000	540	$3,900	Class I

Organizing the data in a spreadsheet or tabular form summarizes the differences that need to be addressed. In this specific case, three possible variables are evident—time, size, and soil classification.

SALE NUMBER	SALE DATE	UNIT PRICE	SOIL CLASS
1	6 months	$4,000	Class I
4	3 months	$4,125	Class I
9	2 months	$3,900	Class I
2	6 months	$3,850	Class II
7	4 months	$3,815	Class II
8	4 months	$3,725	Class II
3	4 months	$3,475	Class III
5	2 months	$3,300	Class III
6	5 months	$3,405	Class III

Any influence of time is considered first, and an analysis of the above comparable sales does not reveal any paired sales. In addition, all sale dates are sufficiently recent as not to require consideration of any time adjustment.

The next step would be to observe the results for differences that might be a function of size. However, in the above example, there does not appear to be any discernible pattern regarding the size and sale price of the comparable sales.

The last significant variable to be considered in the above example is the soil classification ratings which account for all the differing physical characteristics of the subject and comparable sales. In this particular instance, the groupings reveal a fairly narrow range of values based on differences in soil classification. Although the above is just an example, it affirms the recognized fact that market participants will generally pay more for better quality soils with greater adaptability.

The subject property's Class I soil is the basis against which the sales are compared to measure the influence of the variation on value. Based on the above, it would appear that the subject falls within the value range from $3,900 - $4,125 per acre for Class I soils.

The final step in the comparative sales approach is to derive a single value indicator for the subject property. Although no complicated reconciliation is required in this example, this step always involves some reconciliation of single or multiple value indicators, if appropriate.

In the above example, the subject property and all comparable sales consist completely of row crop land. Frequently, properties will consist of land parcels with different soil ratings and capabilities, each of which contributes to the overall value of the property. As a result,

comparable sales of similar properties may be scarce and the subject's individual land segments may have to be valued separately. If the above 640 acre property had 75 percent Class I soils (480 acres) and 25 percent Class III soils (160 acres), the sales used for comparison will have different unit values. It would be appropriate to apply the indicated unit values (on a percentage basis) for Class I and Class III soils if the comparable sales had a similar composition or ratio of soil classification. When the differences in soil composition vary significantly, a separate value contribution must be determined for each component.

For example, a 640 acre economic unit with 160 acres of Class I soil, 240 acres of Class II soil, and 240 acres of Class III soil may be valued by comparing the different land parcels to similar comparable sale properties with equivalent soil capability. The summation of the parcels furnishes a value indicator for the unit as follows:

Comparative Sales Value Indicator on a Per Acre Basis	
Class I Soil 160 Acres @ $4,000	$640,000
Class II Soil 240 Acres @ $3,800	912,000
Class III Soil 240 Acres @ $3,400	816,000
Total Land Value	$2,368,000

The value indication in the above example is a summation of the estimated value contributions of separate parcels. This summation technique may not reflect the way multi-parcel properties are viewed by active market participants. A determination needs to be made whether the sum of the individually valued parcels reflects a reasonable value for the economic unit from the market's standpoint. The value indicator should generally be reliable if the highest and best use of the parcels is consistent with their contribution to the economic unit; if not, another approach to value should be considered.

Another approach is illustrated below.

A row crop parcel of 320 acres contains 200 acres of Class I soil, 50 acres of Class II soil, 50 acres of Class III soil, and 20 acres of Class IV soil. A search of the marketplace presents five comparable sales for analysis.

1. Comparable Sale 1: 180 acres of Class I soil, 130 acres of Class II soil, 10 acres of Class III soil, and 60 acres Class IV. Estimated building value $125,000. Sale price - $1,380,000.

2. Comparable Sale 2: 180 acres of Class II soil. Sale price - $540,000

3. Comparable Sale 3: 40 acres of Class I soil and 40 acres of Class III soil. Estimated building value, $45,000. Sale price - $305,000.

4. Comparable Sale 4: 80 acres of Class I soil and 80 acres of Class II soil. Estimated building value, $150,000. Sale price - $710,000.

5. Comparable Sale 5: 70 acres of Class II soil, 30 acres of Class III soil, and 60 acres of Class IV soil. Estimated building value, $55,000. Sale price, $460,000.

The data could be arrayed in the following manner to indicate an overall subject value:

SALE	SOIL CLASS I	SOIL CLASS II	SOIL CLASS III	SOIL CLASS IV
1	$4,000	$3,000	$2,500	$2,000
2	---	$3,000	---	---
3	$4,000	---	$2,500	---
4	$4,000	$3,000	---	---
5	---	$3,000	$2,500	$2,000
Subject Property	$4,000	$3,000	$2,500	$2,000

Based upon values indicated by an analysis of the comparable sales, the value of the subject is concluded to be:

200 Acres of Class I Soil @ $4,000/Acre	$800,000
50 Acres of Class II Soil @ $3,000/Acre	150,000
50 Acres of Class III Soil @ $2,500/Acre	125,000
20 Acres of Class IV Soil @ $2,000/Acre	40,000
Total Value	$1,115,000

INCOME APPROACH

The income approach to value is any method of converting an income stream into a value estimate. It may be simple (rent or income multipliers, direct capitalization) or refined (residual techniques, discounted cash flow analysis). All of these methods can be referred to as "capitalization techniques" because they convert a future income stream into a capital sum (present worth).

The income approach to value is a sensitive appraisal tool that requires careful application because small variations in its several elements (rates, length of income stream, risk factor) will be mathematically "levered" into wide ranges in capitalized earning ability.

The use of the income approach depends upon the validity of the following conditions:

- Value is a function of income and the property is purchased for the income it produces

- Value depends upon the quality and quantity of the income stream and the investor demands a return of and on the investment
- Future income is less valuable than present income, and the value of the property is the sum of the present worth of its anticipated future net benefits

If any of these assumptions do not correspond to the reality of the property, the income approach to value should not be given great weight as an indicator of the property's current market value.

Value is a Function of Income

For the income approach to be appropriate, an agricultural property must be of a type that is commonly bought and sold on the basis of its income stream, and the benefits that flow from the property must be expressed in terms of money.

Whenever possible, all amenities (nonincome-producing aspects of ownership) should be converted into an income equivalent. In addition, a capitalization rate derived from market data and based solely on the money income produced by the property must be developed.

Care must be taken to impute income only to the real property elements of a property being appraised. For instance, one would not value an agricultural roadside store and land by considering the gross income from operating the retail store business itself. Business earnings must be segregated from property earnings.

Value Depends Upon the Quality and Quantity of the Income Stream

The prudent agricultural investor estimates the size, shape, duration, and quality of a property's income stream before purchasing it. Land (other than mineral rights) theoretically generates income forever, but improvements gradually wear out and cease to generate economic amounts of income. It is essential to project both the length and the shape of the anticipated future income stream generated by an income-producing property.

The "quality" of an income stream refers to its certainty, how likely the investor will receive income in the future. The greater the uncertainty of the income, the higher the rate at which the income stream should be mathematically converted into a lump sum.

Investors demand both a return of their investment and a return on it. These expectations are accounted for as "amortization" or "recapture" and "yield." The cash portion of an income stream identified as "yield" contains elements for time (waiting to receive the income), liquidity (converting real property to cash), management, and risk (the probability of receiving the income forecast).

Future Income is Less Valuable Than Present Income

The concept of value under the income approach is that the value of a property is the sum of the present worth of its anticipated future net benefits. The sum of the present worth of the benefits is always less than the undiscounted sum of these future net benefits. Capitalization is the process of discounting these future benefits to find present worth. In other words, the value of

the property today equals the investment required, when compounded periodically at a given rate, to generate the same cash flow as the property.

The process of discounting future income to make it equivalent to the present value has three components:

- The amount of income
- The discount rate
- The time over which the income is to be realized

If the value of the property being appraised is "V," its income is "I," and the capitalization rate is "R," their relationship can be expressed as:

$$V = \frac{I}{R}$$

If the capitalization rate including recapture is derived from a table of annuity factors, and the factor "F" is a ratio between value and annual net income, the formula would be modified to:

$$V = I \times F$$

The precise method of capitalization should be determined by the shape of the income stream. The income stream must be analyzed before proceeding to the mechanics of capitalization.

Applying the Income Approach for Property Tax Purposes - Rule 8

California Code of Regulations, Property Tax Rule 8, prescribes the conditions under which the income approach to value may be applied. Subdivision (a) specifies that:

> The income approach to value is used in conjunction with other approaches when the property under appraisal is typically purchased in anticipation of a money income and either has an established income stream or can be attributed a real or hypothetical income stream by comparison with other properties. It is the preferred approach for the appraisal of land when reliable sales data for comparable properties are not available. It is the preferred approach for the appraisal of improved real properties and personal properties when reliable sales data are not available and the cost approaches are unreliable because the reproducible property has suffered considerable physical depreciation, functional obsolescence or economic obsolescence, is a substantial over- or underimprovement, is misplaced, or is subject to legal restrictions on income that are unrelated to cost.

Subdivision (b) states that in using the income approach, "an appraiser values an income property by computing the present worth of a future income stream." A complete description and practical application of such computation is set forth in the rule.

Subdivision (c) establishes that the amount to be capitalized is the net return which a reasonably well informed owner and reasonably well informed buyer may anticipate on the valuation date that the taxable property existing on that date will yield, considering prudent management and subject to any legally enforceable restrictions as such persons may foresee as of that date. As stated therein:

> … Net return, in this context, is the difference between gross return and gross outgo. Gross return means any money or money's worth which the property will yield over and above vacancy and collection losses, including ordinary income, return of capital, and the total proceeds from sales of all or part of the property. Gross outgo means any outlay of money or money's worth, including current expenses and capital expenditures (or annual allowances therefor) required to develop and maintain the estimated income. Gross outgo does not include amortization, depreciation, or depletion charges, debt retirement, interest on funds invested in the property, or rents and royalties payable by the assessee for use of the property. Property taxes, corporation net income taxes, and corporation franchise taxes measured by net income are also excluded from gross outgo.

Based upon the foregoing, while severance and other production taxes and/or permit fees are deductible, property taxes and income taxes are not legitimate deductions from gross income, nor are rents and royalties payable by the assessee for the use of the property.

Subdivision (d) states that:

> In valuing property encumbered by a lease, the net income to be capitalized is the amount the property would yield were it not so encumbered, whether this amount exceeds or falls short of the contract rent and whether the lessor or the lessee has agreed to pay the property tax.

Thus, the estimate of economic rent for income-producing property must be made without regard to actual lease arrangements that may exist, including rent levels and property tax considerations, since the objective is market value of the "unencumbered and unrestricted fee simple interest."

Subdivision (e) recommends using income from property rental rather than business operation, since income derived from operations is more likely to be influenced by managerial skills and may arise in part from nontaxable property or other sources. If operating income must be considered, sufficient income must be excluded to provide a return on working capital and other nontaxable operating assets and to compensate unpaid or underpaid management.

Subdivision (f) requires the inclusion of a property tax component, equal to the estimated future tax rate for the area times the assessment ratio, in the capitalization rate for all property tax appraisals.

Subdivision (g) provides two means of developing a capitalization rate for property tax appraisals:

- By comparing the net incomes that could reasonably have been anticipated from recently sold comparable properties with their sales prices, adjusted if necessary to cash equivalents (the market-derived rate)
- By deriving a weighted average of the capitalization rates for debt and for equity capital appropriate to the California money markets (the band-of-investment method) and adding increments for expenses that are excluded from outgo because they are based on the value that is being sought or the income that is being capitalized

In the former, the ratio of net income to adjusted selling prices of comparable sales is determined and a range of yields or overall rates developed. Subdivision (g)(1) states that this method is preferred when sales prices and incomes are available. In the latter, a weighted average of current rates for debt and equity capital is developed (subject to the inclusion of a property tax component).

Finally, subdivision (h) provides that income may be capitalized by the use of gross income, gross rent, or gross production multipliers (derived by comparing sales prices of closely comparable properties with their gross income, gross rent, or gross production). Subdivision (i) excludes open-space lands and taxable possessory interests from certain provisions of Rule 8.

In properties used for agricultural production, the income approach is significant in the estimation of value and primary attention is focused on earnings from the land and the annual cash flow from agricultural production.

The basic steps in the income approach are as follows:

- Estimation of typical rental data, crop rotations, yields, and average commodity prices
- Estimation of potential gross income for the subject property based on either owner-operator income or rental or lease basis
- Estimation of expenses and deduction from potential gross income to obtain net operating income (net income before recapture and taxes)
- Selection of the appropriate capitalization method
- Development of the appropriate capitalization rate or factor
- Estimation of the subject property value and reconciliation of value indicators

The appraisal of agricultural properties presents two mechanisms for developing an income and expense statement: owner-operator and landlord/tenant financial information. In addition, landlord/tenant information falls within two separate categories: cash-rental lease agreements and share-crop agreements.

ESTIMATION OF POTENTIAL GROSS INCOME

CASH OR RENTAL LEASE AGREEMENTS

A cash or rental lease agreement specifies the terms and conditions under which a landlord will grant the use of the property to a tenant. The most important considerations for such an agreement are the cash rent paid to the owner and payment terms, but additional factors are also important. Additional factors include restrictions on property uses, duration of the rental lease agreement, cancellation or escape clauses, required cultural practices, landlord payments for specified production expenses, escalation clauses (percentage leases) when production exceeds specified levels, adjustments if normal water supplies are not available, and designation of individuals responsible for specific expenses associated with the property. Cash rents vary annually and provide a barometer of the agricultural economy. Rents or leases which have a specific contract rent are typically negotiated for a one-year period. Although a specific parcel of land may be rented or leased for a number of years, annual renegotiation of the agreement is typical.

SHARE CROP AGREEMENTS

Orchards, vineyards, and certain crops such as barley and wheat are usually leased under share-crop agreements. Under the terms and conditions of such an agreement, the landlord receives a specific share of the crops produced on an annual basis. The landlord's share varies by region and type of commodity. Additional factors for consideration, which pertain to rental or lease agreements, also pertain to share-crop agreements.

The landlord's participation in a share-crop agreement exposes the landlord to more potential benefits—and potential risks—than cash rental or lease agreements. This point needs to be considered when estimating economic rent and extracting yield or overall capitalization rates from market transactions. If income estimates are based on share-crop agreements, the yield component for the capitalization rate applied to that income estimate should be derived from share-crop agreements. Conversely, income projections based on cash rental or lease agreements should be capitalized with a yield component derived from rental or lease agreements.

OWNER-OPERATOR INCOME

Owner-operator income refers to the total gross income earned by a farm or ranch operated by the owner. Owner-operator income may include amounts attributable to superior management that must be deducted, or it may be missing amounts attributable to noncash amenities that must be added. Such additions and deletions are difficult to measure. Moreover, every expenditure must be analyzed to make certain that long-term capital improvement costs are not deducted with ordinary operating expenses.

When refining owner-operator income into net income, many expenses must be considered. Expenses may include costs for tillage, seed, fertilizer, herbicides, pesticides, utilities, fuels, water, salaries (including amount withheld for taxes, insurance, social security, etc.), and a return on and of investment, property taxes, and/or license fees, etc., on such personal property as

trucks, tractors, and farm machinery. These expenses are in addition to normal expenses that include management, maintenance, and insurance.

While the majority of owner-operators is a potential source for understanding the economics of the operation, the use of an owner-operator income and expense statement is the most difficult method for deriving net income. Owners and operators are encouraged to meet with the county assessor periodically to present and discuss information relative to income, expenses, risks, and other relevant information.

The better method, when such information is available, is to use rental information taken from current, typical leasing agreements for similar properties.

ANNUAL INCOME ESTIMATES

An appraiser should not consider the income from a single year's operation as being typical for all years. Instead, the appraiser should study the cropping patterns, yields realized, commodity price levels, and make the income projections based on actual cash or share rental rates in effect during the past three to five years.[12] The appraiser should be familiar with trends expected in the future and base the estimate of economic annual income on what the typical owner can reasonably anticipate.

The preferred method for estimating annual economic income is through the analysis of cash rentals or leases if they are available in sufficient numbers. A second method, applicable for areas where share-crop arrangements are prevalent, is to utilize the owner's share of the tenant's crop production multiplied by the projected commodity price. Care should be taken to recognize that prices generally move inversely with production and therefore estimates as to projected commodity price should not be made separately from estimates as to the owner's share of the tenant's production. Generally, the most weight or reliance should be placed on recent data. Additional discussion on share rental analysis is provided in Part II, Chapter 2, Share Rental Analysis.

ESTIMATION OF EXPENSES

To obtain the net income for an agricultural property, all expenses necessary to produce and maintain the income stream and provide for management are deducted from the potential gross income. Care must be exercised in the analysis of the expense statement to verify that all charges included are directly related to the operation and management of the agricultural property and do not include any improper expenses.

The expenses deducted from potential gross income should be compatible with the type of income stream such as cash rentals, share-crop rentals, or owner-operator expenses. As stated

[12] For alternate bearing crops, such as pistachios and olives, a four or six year commodity price analysis should be considered; prices normally fluctuate greatly between light and heavy production years. This will give equal consideration to high and low prices.

earlier, a landlord/tenant agreement is favored as the basis for the income and expense statement in agricultural appraising.

The major expense items which should be part of any expense analysis include:

- Cultural and growing costs
- Equipment expenses
- Maintenance expenses
- Labor expenses
- Water and irrigation costs
- Management fees
- Insurance

Items which are not allowed and should not be included as part of an expense analysis include:

- Depreciation
- Mortgage expenses including amortization
- Capitalized expenditures
- Extraordinary expenses on a nonrecurring basis
- Interest expense on production loans
- Additional principle repaid
- Income taxes either personal or corporate
- Property taxes (except when extracting a capitalization rate)

CULTURAL AND GROWING COSTS

Growing costs vary tremendously depending on the crop and cultural practices employed. Actual expense histories provide excellent information for estimating these costs, and additional information can be obtained from agricultural extension services that publish articles relating to the growing costs of almost any commodity.

MANAGEMENT FEES

Management fees pertain to those expenses typically incurred by owners for the management of their property and include the monetary outlay for supervising the agricultural operation and providing periodic inspections of the property; accounting, banking, and legal fees; and the cost of negotiating and preparing the leases. Management fees are generally charged as a percentage of the gross income (2 to 5 percent) and can be reflected on a percentage basis.

WATER AND IRRIGATION COSTS

Water and irrigation costs are incurred to cover the annual operation, maintenance charges, and debt repayment obligations for an irrigation district or water company. The charges can be based on per-acre foot of water delivered, flat per-acre cost, or on a per-agricultural unit basis. Utility pumping costs for well water must be considered and, in some cases, are prohibitive due to the excessive energy costs to pump from deep wells.

MAINTENANCE

Maintenance expenses will include repair and replacement of all property improvements that contribute to the income including buildings, crop storage facilities, equipment storage facilities, irrigation and drainage system equipment including pumps and sprinkler pipe, bridges, fences, trellises, and corrals. It must be determined during the course of the appraisal if maintenance levels are sufficient to adequately maintain all the improvements and, if not, additional charges for repair and replacement items should be incorporated into the expense statement.

LABOR EXPENSES

This expense category is difficult to calculate due to the seasonal nature of productive agriculture. If adequate information is not available, an alternative is to obtain custom farm rates for the various cultural practices including equipment, machinery, materials, and labor costs.

INSURANCE EXPENSE

Insurance expense pertains to any insurance category required to develop and sustain the income stream for an agricultural property. It may include prepaid crop insurance (two to three years in advance), vehicle and equipment insurance, and all insurance designed to cover personal injury. In those instances where insurance is prepaid, the expense should be prorated on an annual basis.

PROPERTY TAXES

Property taxes are not appropriately deducted as an expense since this would presume that the value being sought is already known. Property taxes expense are appropriately handled by the inclusion of a tax component in the overall capitalization rate. However, property taxes should be deducted from gross income estimates when determining net income for the purpose of deriving capitalization rates.

MISCELLANEOUS EXPENSES

Extraordinary expenses (such as land improvement) are not considered deductible from the expense statement unless they are incurred on a periodic and systematic basis. Typically, permanent land improvement costs of this type contribute to increased land value and are expensed as capital investments or improvements. Special charges (water district special assessments) are generally considered appropriate expenses. However, special assessments based on a percentage of market value should not be considered as deductible expenses and should be included as part of the property tax component in the capitalization rate.

CAPITALIZATION RATES

Before the capitalization process can be completed, a determination must be made regarding the appropriate capitalization rate. Capitalization rates may include components for yield, recapture, and property taxes. Overall rates may be extracted from market sales by dividing the net operating incomes from sold properties by the total sales prices or by weighting debt and equity capital (band-of-investment method).

Generally, rates for agricultural properties are lower than rates for commercial/industrial properties due to noncash amenities and deferred income from property appreciation. While potential noncash income/amenities may cause selling prices to increase, measurable net income may remain comparatively stable, resulting in lower rates of return than expected for properties purchased for their current income-producing capability.

Any capitalization rate must be applied on the same basis from which it was extracted. To illustrate, a rate derived from a sale with a constant level income stream should be applied in the capitalization of a similar income stream. Similarly, a capitalization rate extracted from a sale with a straight-line declining income stream should be applied in a like manner.

The following examples demonstrate methods and techniques used to extract capitalization rates from sales with constant level perpetual incomes, straight-line declining terminal incomes, and level terminal incomes.

EXAMPLE I

This example illustrates the extraction of an overall rate from irrigated crop land sales. The income stream is expected to remain level and perpetual.

	SALE 1	**SALE 2**	**SALE 3**	**SALE 4**
	100 Acres	**80 Acres**	**160 Acres**	**140 Acres**
Price	$350,000	$240,000	$448,000	$434,000
Sales Price Per Acre	$3,500	$3,000	$2,800	$3,100
Gross Rent Per Acre	$210	$200	$175	$205
Anticipated Expenses (Including Replacement and Property Taxes)	$65	$62	$58	$65
Net Income	$145	$138	$117	$140
Overall Rate (Net Income ÷ Sales Price Per Acre)	0.041	0.046	0.042	0.045

Property taxes should not be directly deducted as an expense item when valuing property since they result from the property value being sought. The tax expense is properly handled by adding

a tax component to the capitalization rate. Taxes should be deducted, however, from gross income when finding net income for the purpose of deriving a capitalization rate.

EXAMPLE II

An 80 acre orchard improved with walnut trees with a 20 year remaining economic life recently sold for $640,000. Vacant land sales indicate that $240,000 is a reasonable land value for the subject. Potential gross income is $110,000 per year; anticipated annual expenses including cultural practices, management, maintenance, insurance, harvesting, and property taxes are $46,000; and net annual income before recapture is $64,000.

A rate can be developed for a straight-line declining income premise for trees as follows:

Net Income Before Tree Recapture	$64,000
Tree Recapture	
$400,000 Residual Tree Value ÷ 20 Years	20,000
Net Income	$44,000
Indicated Yield Rate	
$44,000 Net Income ÷ $640,000 Sale Price	0.0687

Using the same example, assume that a constant terminal income stream is more appropriate for recapture of the trees. Under these assumptions, a yield rate can be extracted through the use of a financial calculator or through application of a trial and error method as follows:

	TRIAL YIELD RATES		
	Say .085	**Say .090**	**Say .095**
Net Income Before Tree Recapture	$64,000	$64,000	$64,000
Land Charge ($240,000 x Trial Rates)	$20,400	$21,600	$22,800
Tree Income	$43,600	$42,400	$41,200
PW I/P Factor (20 Years @ Trial Rates)	9.463	9.128	8.812
Indicated Tree Value	$412,586	$387,027	$363,054
Indicated Total (Trees and Land)	$652,586	$627,027	$603,054

The sales price of $640,000 falls between the rates of .085 and .090. An indicated yield rate of 0.0875 might be appropriate under the circumstances.

The above examples demonstrate that two different methods will result in substantially different rates. This variation occurs because of the different shapes of the projected income streams. These examples demonstrate the need to accurately project potential net income and the necessity to apply yield rates with the premise from which they were derived.

CAPITALIZATION TECHNIQUES

The components of capitalization include the income to be capitalized, the capitalization rate or factor at which it is to be discounted, and the time period(s) over which the income is to be realized. The result is the present value of the expected income. The capitalization rate or factor must provide for both the return of the portion of the investment that declines in value (the recapture) and for the return on the investment (the yield). The means of investment recapture selected should reflect the expectations of buyers and sellers of agricultural properties. In addition to providing for the return on and return of the investment, the capitalization rate includes a component for property tax purposes.

DIRECT CAPITALIZATION

Direct capitalization is a method which converts a single year's income estimate into a value indication in one step, either by dividing the income estimate by a capitalization rate or multiplying it by an income factor. In direct capitalization no allocation is made between the return on and the return of the investment. This method does not explicitly specify investor assumptions regarding the return of and the return on the investment, the duration or income pattern, or changes in the value of the investment. Rather, these assumptions are implicit in the rates or income factors being used in direct capitalization. Income multiplier analysis is a variation of direct capitalization. Direct capitalization has wide applicability to agricultural properties when land rental data are available.

Direct capitalization of the total property net income has limitations. Since the overall rate does not specify a return of the investment, the subject and comparable sales properties must be very similar in many respects: ratio of land to improvements, remaining economic life, and physical characteristics.

YIELD CAPITALIZATION

Yield capitalization is a method which converts a series of future benefits into an estimate of present value by discounting each future benefit at a selected yield rate. In yield capitalization, the appraiser (1) estimates a holding period for the investment; (2) forecasts the expected future income during the holding period; (3) estimates the reversionary value; (4) selects a yield or discount rate; and (5) converts future benefits into an estimate of present value by discounting each periodic income over the holding period. The periodic income streams may be discounted to present value using financial or annuity tables that contain annuity factors.

Discounted cash flow (DCF) analysis is a widely used form of yield capitalization. DCF analysis is defined as the analysis of cash flow projections for each period of time that the

property produces income in order to compute its present value assuming a certain rate of return, or to compute the internal rate of return indicated by periodic cash flows.

A series of payments made at equal intervals is known as an **annuity**. The present value of an annuity is the sum of the several separate periodic incomes, discounted to their respective present worth.

The proper capitalization formula to use is a function of the shape of the income stream, which is based on the perceptions of active market participants. The income stream must be analyzed before proceeding to the mechanics of capitalization. While the methods of capitalization may differ because of variations in the nature of the income stream, or variations in the composition of the capitalization rate, the basic principles of capitalization remain constant.

RESIDUAL TECHNIQUES

Residual techniques of income capitalization allow an appraiser to capitalize the income allocated to an investment component of unknown value once all investment components of known value have been satisfied. Residual techniques can be applied to the physical components of a property (land and improvements) or to the financial components (debt and equity).

When using residual techniques, the appraiser (1) applies an appropriate capitalization rate ("appropriate" in terms of the risk and return expectations of active market participants) to the value of the known component to determine the amount of income needed to support the investment in that component; (2) deducts this amount from the total estimated market, or economic, net income before recapture and property taxes (NIBR&T) of the subject property to derive the residual income available to the unknown component; (3) capitalizes the residual income into an estimate of value of the unknown component using an appropriate capitalization rate for that component; and (4) obtains a value indication for the total property by summing the value of the known component with the estimated value of the unknown component.

BUILDING RESIDUAL TECHNIQUE

The building residual technique is used when the value of the land is known but the value of improvements is unknown. After processing the estimated economic income of the subject property to the level of NIBR&T, the income imputable to the land (the land value multiplied by the land capitalization rate) is deducted. The residual income is attributable to the building (or agricultural) and may be converted to an estimate of improvement value by capitalizing it using a building capitalization rate.

The capitalization rate for the land, which assumes a constant perpetual income stream, is a combination of a yield rate and an effective tax rate. The capitalization rate for the building is a combination of a yield rate, a recapture rate for the return of the investment in the wasting improvement, and the effective property tax rate.

The building residual technique can be used with agricultural properties because land values are easier to determine than improvement values. The technique is best suited for valuing orchards and vineyards.

LAND RESIDUAL TECHNIQUE

The land residual technique is used when the value of the building (or agricultural improvements) is known but the value of the land is unknown. The income attributable to the buildings (the building value multiplied by the building capitalization rate) is deducted from the estimated economic NIBR&T of the subject property. The residual income is attributable to the land and may be converted into an estimate of land value using a land capitalization rate.

The land residual technique allows the appraiser to estimate land values when comparable sales data are not available. The technique can also be used to estimate the highest and best use of both vacant and improved sites by presuming potential highest and best uses and comparing the resulting estimates of land value. The land residual technique processes income to a net figure imputable to land and is not readily adaptable to agricultural properties. Generally, with agricultural properties the ratio of improvement to land value is relatively minor, and it is difficult to estimate the income and improvement value.

PROPERTY REVERSION

The property reversion technique consists of capitalizing the total net economic income for the expected life of the income stream and combining that with the present worth of any reversionary land value. This technique has little application for agricultural properties since it does not provide a land value allocation adequate for the total property valuation.

INCOME MULTIPLIERS

Another method of comparison is to develop income multipliers. Income-producing properties may be compared on the basis of multiples of their gross or net incomes. Income multipliers, whether calculated at the level of gross or net operating income, are properly considered part of the income approach. Income multipliers are factors rather than rates. The basic formula for a gross income multiplier (GIM) is:

$$\mathbf{GIM} = \frac{\mathbf{V}}{\mathbf{I}}$$

Where:

V = Cash equivalent selling price of a comparable property

I = Anticipated maximum earning capacity of sold property
(Note: This may differ from its actual income)

When appraising agricultural properties, appraisers commonly speak of production multipliers such as price per ton, box, bale, sack, or cwt. To apply this useful tool to a property, the appraiser determines the multipliers from sold properties that are similar to the subject, selects a multiplier, and applies it to the economic income of the subject property. For example, if a comparable property contained 200 acres of row crop land, sold for $800,000, and its potential gross income was $150,000 at the time of sale, the gross income multiplier would be $800,000 ÷ $150,000, or 5.33. This factor could then be applied to the potential gross income of the subject property to produce an indicator of market value.

Using the same sales data, the relationship of sales price to net income could be determined. For example, the 200 acres of row crop land sold for $4,000 per acre and its net income was $375 per acre at the time of the sale. By dividing the price per acre by the net income per acre, $4,000 ÷ $375, a net income multiplier of 10.66 is developed.

Income multipliers must be derived from sales of very similar properties. "Similar" is defined as being alike in terms of use, physical characteristics, and other relevant characteristics. If a net income multiplier is sought, properties (subject and comparable sales) with similar gross to net income and operating expense ratios must be used in the analysis. The unit of comparison selected must be consistently applied to the subject and all comparable sale properties in each analysis.

RECONCILIATION AND THE FINAL VALUE ESTIMATE

Independent processing of available data will lead to separate indicators of value and, therefore, the next step is to reconcile the several indicators into a final estimate of value. In the reconciliation process, consideration should be given to any factors influencing value that are either not reflected or only partially reflected in the indicators. The greatest weight should be given to that approach or combination of approaches that best measures the type of benefits the subject property yields.

For example, if improvements are old, a cost estimate should be reviewed for the appropriateness of the depreciation estimate. If the sales comparison approach is used, a check should be made to determine whether the indicator relies heavily upon one sale or whether numerous subjective adjustments ("superior" or "inferior") were necessary to make the properties "comparable." In reviewing the income approach, the appraiser should re-examine the estimates of economic rent, economic life, expenses, and the capitalization rate. Alternative estimates should be considered, and the appraiser should consider whether estimates are consistently optimistic or pessimistic.

The final value estimate is the final step in the appraisal process. Although containing an element of judgment, the conclusion must be based upon indicators derived from objective data, plus general overall value influences. Greatest reliance should be placed on that indicator which best measures the type of benefits the subject property yields. For agricultural properties, these benefits may be in the form of amenities, services, or income.

CHAPTER 4: VALUATION OF NONLIVING IMPROVEMENTS

Agricultural properties are ordinarily sold and purchased as operating units that include both land and improvements. The unit concept is followed when agricultural properties are valued for property tax purposes and once the total unit value is calculated, an allocation must be made between land and improvement values for the property tax roll. The ensuing discussion briefly describes agricultural improvements and appropriate appraisal methods for their valuation.

For agricultural properties with building improvements which contribute to production but do not have identifiable income streams, a unit cost method for determining building improvement values is normally used. The unit cost method is a relatively simple approach to cost estimation and is widely used for agricultural purposes. Building costs are estimated based on gross building dimensions and compared to established cost factors for similar buildings. The cost factors are expressed as a unit of comparison, typically cost per square foot, and include such considerations as: size, shape, quality, height, finish, and other amenities. Assessors' Handbook Section 531, *Residential Building Costs*, and Assessors' Handbook Section 534, *Rural Building Costs*, contain cost data on improvements.

Many agricultural properties reserve one to five acres of land (referred to as a farmstead) for a residence and additional improvements used in the farming operation. Normally, due to insufficient comparable sales data for the comparative sales approach and the inapplicability of the income approach, these improvements are valued by the cost approach. The cost approach is appropriate in estimating the market value of agricultural properties on which structural improvements constitute a major portion of value.

Replacement cost new less depreciation (RCNLD) generally provides a reliable indicator of improvement value if the effects of accrued depreciation have been accurately measured. Agricultural properties are frequently improved with numerous structures, and in many situations the structures are no longer used or represent an overimprovement for the subject property. To illustrate, one or possibly two general purpose barns might be appropriate for a moderate sized row crop or vineyard operation; whereas, four or five structures would probably constitute an overimprovement. In addition, many structures suffer from functional obsolescence due to changes in design and/or technology and can no longer perform the functions for which they were designed. The aggregate effects of accrued depreciation and obsolescence must be considered and accounted for in a total property analysis.

RESIDENCES AND RURAL HOMESITES

Values are determined for the residential portion of an agricultural property unit by application of the cost or summation approach. The basic cost approach steps are as follows:

- Estimation of the land value as though vacant and available for its highest and best use

- Estimation of the replacement or reproduction cost of the residential structure as of the appraisal date
- Estimation of the total accrued depreciation from physical deterioration, functional obsolescence, and external obsolescence
- Deduction of total accrued depreciation from the replacement or reproduction cost of the structure to determine its value contribution
- Addition of the land and improvement values to obtain an indication of the total value for the subject

If possible, the value indicator from the cost approach should be reviewed against other homesite sales to confirm that it is consistent with the marketplace.

Measuring the value contribution of the homesite can be subjective; however, specific guidelines provide reasonable value ranges. Generally, the homesite should fall between the price per-acre of adjacent agricultural land and the value of comparable sized parcels for residential development. If local zoning ordinances prohibit the agricultural land from being parceled into sites as small as the subject homesite, then smaller parcel sales may not provide valid indicators. Regardless, the appraisal objective goal is to assign a site value equal to the homesite contribution to the entire unit.

The above described valuation method does not apply to homesites located on agricultural land subject to the California Land Conservation Act (CLCA). See Part II of this handbook for CLCA homesite valuation procedures.

FARM BUILDINGS AND MISCELLANEOUS IMPROVEMENTS

Barns of many different types and materials (general purpose, hay storage, feed, livestock, dairy) will be encountered. They fall into three categories:

- Class 1—structures of fair quality
- Class 2—structures of average quality
- Class 3—structures of good quality

Barns are frequently dissimilar in size, shape, design, and quality but provide two essential services—storage and shelter. Many barns are old, suffer from extensive accrued depreciation, and no longer perform the function for which they were built. Their contribution to the total agricultural unit must be determined during the appraisal process.

If the use of a barn is essential for the production of crops or livestock, the barn contributes directly to the income earned by the farm unit, and its value may be reflected in the capitalized earning ability. However, barns used for nonfarm purposes do not contribute directly to the unit income and should be valued by the cost or comparative sales approach.

Shops are similar to barns but are generally employed for the maintenance and storage of farm equipment; shops usually offer more amenities. Construction costs tend to run approximately 10 to 25 percent higher than barns. Shops are also grouped as Class 1, Class 2, or Class 3, depending on the quality.

Sheds are usually smaller than barns and shops, have a simple basic design, possess inferior utility, and are constructed from all types of materials. Sheds are also grouped into Class 1, Class 2, and Class 3 categories with basic construction costs approximately 50 percent lower than barns and shops. Generally, sheds are not as well maintained as barns and may suffer from significant amounts of physical deterioration. A replacement cost approach may be the only reasonable method of appraisal.

Corrals do not generally add a great deal of value to an agricultural operation except in the case of larger livestock operations, dairies, or horse ranches. The appropriate market contribution of corrals must be determined during the appraisal process. If it can be established through the comparative sales approach, or income approach, that corrals contribute to value, that amount should be included in the total property valuation. However, in many cases, the cost approach is the only viable option for the valuation of corrals.

Fences are similar to corrals and present the same appraisal problems. Would a potential purchaser of a livestock or dairy operation attribute value to the fences and, if so, what would be the appropriate amount? The market contribution may be significant in some cases and nonexistent in others. The preferred method of valuation would be the comparative sales or income approaches; however, the cost approach may be the only viable alternative in many situations.

Liquefied Petroleum Gas Tanks are classified as improvements pursuant to Rule 124. Rule 153, regulating the assessment and valuation of liquefied petroleum gas tanks, was adopted to promote assessment uniformity of liquefied petroleum gas tanks (commonly referred to as *propane tanks*). Rule 153 defines *liquefied petroleum gas tanks* (*LPG tanks),* includes guidelines to determine if the property is leased or rented, identifies the ultimate consumer of the tanks, and describes valuation procedures.

Farm machinery and equipment designed to function either as permanent fixtures[13] or as portable personal property may be encountered. Specific guidelines concerning appraisal responsibility (appraisers or auditor appraisers) as well as pertinent valuation techniques for these types of property are outlined in other sections of the Assessors' Handbook.

Standardized tables which reflect the typical depreciation for agricultural improvements and show the "percent good" must be used judiciously during the appraisal process. Percent good tables based on age and typical depreciation are frequently of little use because the percent good

[13] Property Tax Rule 122.5 defines fixtures and was amended October 24,2001, effective February 6, 2002, to specify that permanently affixed wind machines leased for agricultural frost protection are properly classified as fixtures.

for agricultural improvements is less dependent upon age and more dependent upon maintenance levels. Each structure will need to be individually examined to determine the appropriate percent good.

The following example demonstrates valuation methods for improvements partially or completely used for purposes other than their original design.

EXAMPLE - Cost Approach

The subject property is improved with the following structures:

BUILDINGS	DIMENSIONS	ESTIMATED REPRODUCTION COST NEW AREA UNIT COST	ESTIMATED PHYSICAL PERCENT GOOD
Equipment Shed	20 x 50	1,000 sq. ft. @ $10 = $10,000	70%
Shop	40 x 60	2,400 sq. ft. @ $18 = $43,200	70%
Hay Storage Barn	50 x 60	3,000 sq. ft. @ $16 = $48,000	40%
Milk House	10 x 15	150 sq. ft. @ $35 = $5,250	40%

The preliminary survey for the subject property revealed the following information:

- A change in the county's general plan and relocation of distribution centers has caused livestock and dairy operations to no longer be economical.
- Row crop operations represent the highest and best use of agricultural land.
- All farming operations are mechanized.
- Old hay barns are used as storage facilities for farm equipment but, due to functional limitations in their designs, not all of their gross area is useable. Usable storage area for the 50 x 60 barn is only 30 x 50. Typical replacement costs for storage buildings are $16 per square foot.
- Obsolete milk houses are utilized for supply storage and typical replacement costs for this type of storage are $35 per square foot.

Based on the above information, the replacement costs are estimated as follows:

Buildings	Replacement Size (Square Foot)	Replacement Unit Cost	Replacement Cost New	Estimated Physical Percent Good	Depreciated Cost
Equipment Shed	1,000	$10	$10,000	70%	$7,000
Shop	2,400	$18	$43,200	70%	$30,240
Barn	1,500	$16	$24,000	40%	$9,600
Milk House	150	$35	$5,250	40%	$2,100
			Indicated Depreciated Cost of Improvements:		$48,940

IRRIGATION IMPROVEMENTS

CLASSIFICATION

Irrigation and drainage systems represent significant monetary investments. For assessment purposes, the individual system components must be appropriately identified and classified as land, improvements, or personal property. Proper classification is essential since special assessments may apply against land only or land and improvements only; the classification of an individual component may affect the application of a particular appraisal technique; and future assessed values will be affected by classification when removals or replacements occur due to differing base year value rules for the various classifications of property.

Property Tax Rules 121 through 124 contain the criteria for classification and provides a partial list of items in the different categories. For example, under these rules wells (hole, casing, gravel pack) are classified as land; pumps, motors, underground distribution systems, and concrete lined ditches are classified as improvements; ditches, canals, and earth-filled reservoirs, unless concrete lined, are classified as land. In porous soils, reservoirs and canals are frequently lined with special clays or other earthen substances and are classified as land.

Materials added solely for land drainage to make land arable, such as underground drainage pipe (concrete, plastic, tile, etc.), sand traps, and observation wells, are classified as land. Equipment and structures such as pumps, motors, and platforms are classified as improvements.

Some components of irrigation systems are borderline cases and not easily classifiable. Real property and personal property appraisals should be coordinated to ensure that all components are appropriately identified and valued, but not double assessed.

VALUATION PROBLEMS

An irrigation system's value should reflect the market contribution to the agricultural unit under appraisal. However, because irrigation systems and practices vary so extensively, an analysis must be conducted to determine how the local market typically values each type of land improvement. An irrigation system may represent an over- or underimprovement, and a

determination must be made whether the system has sufficient capacity to adequately serve the agricultural operation. Water demand and correct water application is determined by three major factors: (1) water needs of the crops, (2) water availability, and (3) ground water storage capacity. Generally, an adequate irrigation system should be capable of delivering between six to eight gallons per minute for each productive acre. To illustrate, a 640 acre farm requires an irrigation system capable of providing 3,840 to 5,120 gallons per minute. However, under certain conditions, a greater supply of water may be required.

Care must be exercised not to value irrigation improvements twice. Typically, in areas where irrigation is necessary for agricultural operations, all comparable sales will have similar irrigation systems and no adjustments to the sales are required unless they have improvements that are superior or inferior to those on the subject. Similarly, economic rents for irrigated land typically include income generated by irrigation improvements. If this income is capitalized into value without making charges against the income for the improvements, the capitalized earning ability will include the value contribution of the irrigation system. If the appraiser desires to work with an economic rent that excludes irrigation improvements, a charge must be deducted that provides a return on and a return of the irrigation improvements. A reasonable charge can be estimated by multiplying the irrigation improvement's value (RCNLD) by the appropriate periodic repayment factor that includes both a return "on" and "of" the investment.

There is some hesitation to accept the classification of wells as land since wells have certain improvement characteristics that include depreciation and maintenance expense. These characteristics create no problem with the comparative sales approach since the market directly measures the effects of depreciation. However, with the income approach, maintenance and recapture charges need to be deducted from potential gross income. The following example illustrates the appropriate procedure for processing income generated by an agricultural property with an irrigation well and pumping system improvements.

EXAMPLE

Subject is a 160 acre farm with an 8 year old pumping plant that lifts water 200 feet through a 12 inch gravel packed well with typical perforated casing.

Income: Cash rent, 160 acres @ $120		$19,200
Owner's Expenses:		
Insurance	$200	
Management	$800	
Pumping Plant Maintenance		
$10,000 RCN x 1%	$100	
Well Maintenance	$100	
Total Expenses		$1,200
Net Property Income		$18,000
Income Imputed to Pumping Plant (Return "on" and "of" pump)		
RCNLD $6,800 x .083046		
6%: (5% Y + 1% ETR)		$565
Periodic Repayment* (6%; 22 yrs; Annual)		
8 Year Old Pumping Plant with Remaining Productive Life of 22 Years		
*Periodic Repayment Includes Both a Return "on" and "of" the Investment		
Income Imputed to Land and Well		$17,435
Recapture Charge (Return "of" well)		
Estimated Productive Life of Well is 40 Years		
Replacement Cost New is $2,400		
$2,400 x .008278		$20
Sinking Fund Factor (5%; 40 yrs; Annual)		
Net Income Earned by Land and Well		$17,415
Capitalized Value of Land Including Well		
$17,415 ÷ 6%: (5% + 1%) =		$290,250
Value of Pumping Plant Improvements		
Pumping Plant RCN $10,000 x 68% Good		$6,800
Total Property Value		$297,050
		Rounded $297,000

In this illustration, the well's cost per acre is $15 ($2,400 ÷ 160 acres) and the charge for depreciation ($20 ÷ 160 acres) is minimal. However, this amount could vary considerably depending on the age and cost of the well involved. Even though it may be practical to overlook depreciation for relatively inexpensive wells, it is good appraisal practice to apply an income analysis to determine the full amount of depreciation and whether it represents a significant consideration.

In many instances, private wells and irrigation systems have become inoperative or suffered obsolescence after irrigation districts were created. Under these circumstances, the private water system may be valuable for standby use only, and an analysis should be conducted to determine the private water system's contribution to the total property value.

CHAPTER 5: APPRAISAL OF CROP LAND

GENERAL

Cultivation of land, when economically feasible, allows agricultural operators to bring the land to its highest and best use and to produce food, feed, and fiber for human and animal consumption. The term "crop land" refers to cultivated (generally irrigated) land as opposed to noncultivated land types including rangeland, forest land, or nonirrigated pasture land.

The intensity of modern cultivation varies from simple agricultural operations (irrigated pasture) to complex agricultural operations that produce vegetables, nursery products, orchards, and vineyards. In terms of agronomic theory, soil, water, and climatic conditions are least essential for field crops; more important for row crops; and most indispensable for orchard, vineyard, and specialty crops. In actuality, any one of these crop types may be found in agricultural production on Class I, Class II, or Class III soil.

VALUE OF CROP LAND

The term "crop land" generally refers to land planted to seasonal commodities such as cotton, potatoes, tomatoes, rice, vegetables, melons, and truck crops. There are certain exceptions, the most notable being alfalfa which is a perennial. Crop land does not include orchards, vineyards, or pasture. "Row crop production" generally refers to a specific method of planting, cultivation, and harvesting.

The value of crop land is directly related to its capacity to produce agricultural commodities for domestic or foreign consumption and is only as valuable as the present worth of its income earning ability. Land value cannot be directly related to a specific soil type because soil is but one of many factors that contribute to value.

The value of crop land cannot be directly associated with a specific crop type, although land adaptable for a variety of crops, or potentially high-return commodities, is generally more valuable than land with inferior adaptability or lower-return commodities. The selection of comparable sales requires the consideration of comparable cropping patterns, not just the comparability of soil types.

CROP ROTATION

Crop rotation is perhaps the most overlooked aspect of agricultural production and refers to the practice of planting different crops in a systematic order over a specific period of years. This practice is important for three reasons:

1. It employs the land to its highest and best use providing for the greatest economic return.
2. It provides good cultural practices that retains the soil's natural fertility.

3. It allows for fairly accurate future income forecasts.

This historical base is needed to refine future income estimates for property and predict the direction of future production.

Here is an example of a hypothetical rotation.

CROPS GROWN	YEARS PLANTED
Alfalfa	3
Sugar Beets	2
Tomatoes	2
Milo	1
Total Years in Rotation	8

Tomatoes yield a higher net income than grains or alfalfa; however, continued plantings of tomatoes begin to result in lower annual commodity yields because repeated use for one crop type encourages diseases and pests hosted by that plant and depletes the inherent fertility of the soil. While agricultural producers may have a specific crop rotation planned, it may not be followed from year to year. Favorable market conditions and unexpected contingencies may dictate what crops are planted by agricultural producers during any one year. However, over an extended period of time, cropping patterns may result in fairly accurate predictions regarding future income.

To ensure adequate crop rotation, landlords may deliberately lease acreage to a series of diversified tenants specializing in different crops. This routine ensures that appropriate cultural practices are observed and results in the highest possible return to the landlord. The high cost of specialized agricultural equipment precludes many agricultural producers from raising multiple crops, so the above technique can result in maximum productivity.

When crop rotations are followed, there may be wide variations between gross and net incomes between various years. Inaccurate value conclusions may result if a single year's income is used as the basis for future income projections. Agricultural properties are purchased on the basis of potential future income, and this income tends to follow the average income resulting from a long-term rotation cycle. Wide fluctuations in annual incomes or rents should be carefully analyzed over at least a three-year period. The following example illustrates the analysis of crop rotations to calculate future income.

EXAMPLE

A 320 acre field is annually planted to these rotation crops. Thus, in every year, each crop occupies an acreage which is proportional to its percentage of the total rotation cycle.

Method 1

CROPS GROWN	YEARS PLANTED
Alfalfa	3
Sugar Beets	2
Tomatoes	2
Milo	1
Total Years in Rotation	8

If the 320 acre field is divided by the 8-year crop rotation cycle, the result will be 40 acres for each individual crop for each cycle year.

CROP	YEARS		ACRES		AVERAGE ANNUAL ACRES
Alfalfa	3	x	40	=	120 acres
Sugar Beets	2	x	40	=	80 acres
Tomatoes	2	x	40	=	80 acres
Milo	1	x	40	=	40 acres

The acreage of each crop, the yield, and the price per unit are multiplied, and the result is the portion of total annual income earned by each crop. The gross earning ability for the 320 acres is calculated by combining all of the crop earnings. This procedure is illustrated as follows.

CROP	AVERAGE ANNUAL ACREAGE		TONS[14] PRODUCED PER ACRE		PRICE PER TON	GROSS INCOME
Alfalfa	120	x	8	x	$115	$110,400
Sugar Beets	80	x	30	x	$38	$91,200
Tomatoes	80	x	35	x	$56	$156,800
Milo	40	x	4	x	$125	$20,000
Total	320					$378,400

$378,400 ÷ 320 Acres = $1,182.50 Average Annual Gross Income Per Acre

The following illustrates an alternative way to analyze and calculate a rotation cycle. In this instance, the particular size of a property is irrelevant. The income and production is computed on a gross income per acre basis, and then a total income for the crop rotation cycle is calculated.

Method 2

CROP	TONS PRODUCED PER ACRE	PRICE PER TON	GROSS INCOME PER ACRE	YEARS GROWN	8-YEAR GROSS INCOME PER ACRE
Alfalfa	8[15]	$115	$920	3	$2,760
Sugar Beets	30	$38	$1,140	2	$2,280
Tomatoes	35	$56	$1,960	2	$3,920
Milo	4	$125	$500	1	$500
Total					$9,460

$9,460 ÷ 8 years = $1,182.50 Average Annual Gross Income

How income and expense figures are received from an agricultural producer may determine which of the two methods to employ. However, the latter method is generally easier to apply to different property types and utilizes smaller values which are more easily manipulated.

Crop rotation information similar to the foregoing may be utilized in several ways. If a property is owner-operated, the gross income figures are used to calculate the average annual net income per acre. If property is leased on a share-crop basis, typical operating percentages are applied to the gross income to determine the average annual gross income paid to the owner. In either case,

[14] Production and price figures should be forecasted based on an analysis of past history and future expectations as discussed in Chapter 3, Annual Income Estimates.
[15] Alfalfa tonnage will vary from year one to year three. The eight ton per acre yield is the average of the three-year life.

owner-operated or tenant-operated, knowledge of crop rotation patterns is an essential part of the appraisal process.

INCOME CAPITALIZATION

The income approach is commonly used in the valuation of crop land and if the subject has no improvements and significant changes in income are not anticipated, direct capitalization into perpetuity is appropriate. When the subject has improvements, provisions for their recapture must be included.

Another technique for valuation of income-producing properties is the gross rent multiplier (GRM). This technique is based on an overall relationship between rental/lease income and total value. It provides an estimate of total property value in a direct manner that reflects the thinking of active market participants. GRM is a beneficial tool and is readily adaptable for the appraisal of row crop lands. The advantage of GRM's is the ease of application and utilization with either cash or share rents (if both cash and share rents are utilized, the rents must be converted to whichever basis that will be used on the application of the GRM). The following example illustrates the derivation of a GRM.

A 240 acre row crop parcel, leased on a share crop basis, sells for $600,000. The owner's share of annual income is $100 per acre per year, or $24,000 before taxes and other expenses. In this specific example, the GRM is 25 ($600,000 ÷ $24,000) and this multiplier can be used as part of the appraisal process to estimate the value of comparable properties with gross income determined by share-rental analysis.

COMPARATIVE SALES APPROACH

In the comparative sales approach, the prices of recently sold properties with similar physical characteristics are directly related to the subject property to determine the subject's value. The validity of this approach is in direct proportion to the degree of comparability existing between the comparable sales and the subject property. Such comparability is ascertained by the physical and economic attributes discussed in Part I, Chapter 3.

In regions where irrigation is essential for agricultural production and where the subject and all comparable sales have similar irrigation systems, the most common unit of comparison for row crop land is the price per irrigated acre. In regions where irrigation is supplemental or where agricultural properties have different irrigation systems, the unit of comparison is normally price per acre of bare land.

The comparative sales approach is based on the principle of substitution and assumes that the value of a property will approximate the selling prices of competitive market substitutes. This technique is simple in application and offers direct market evidence of land values. Furthermore, Rule 4 provides that the comparative sales approach is the preferred method of valuation when reliable market data are available.

CROPS CLASSIFIED AS LAND

Several crops are classified as land even though they display the characteristics of short-lived improvements (see Property Tax Rule 124).

Asparagus is a perennial plant with an economic life of approximately 10 years, and it is typically not grown beyond one 10 year period in the same location. While the value of asparagus must appear on the tax roll as land, its separate value must be identified when using the cost or income approaches so that proper consideration is given for recapture of the plant investment. The comparative sales approach is the preferred method for valuation of asparagus.

Artichokes are perennial plants with an economic life of approximately five to seven years. However, due to the climatic requirements of the plant, suitable land available for growing artichokes is used almost continually for production. As with asparagus, the comparative sales approach is the preferred method of valuation. If the cost or income approaches are utilized, proper consideration must be given for recapture of the plant investment.

Date palms are exempt until four years after the season in which they were planted pursuant to article XIII, section 3(i) of the California Constitution. Section 105 requires date palms under the age of eight years to be enrolled as land.

Strawberry plants are classified as land, and the courts have held that a strawberry plant is not a vine for purposes of section 105, and does not fall within the definition of improvements. For the required separate assessments of land and improvements, strawberry plants may not be assessed separately from land.[16]

CROP ALLOTMENTS/PRODUCTION CONTRACTS

Under current (1977) federal regulations, allotments are virtually nonexistent in California. However, the United States Department of Agriculture (USDA) through a suborganization known as the Commodity Credit Corporation (CCC) does execute a limited number of contracts for a landowner to produce certain crops.

If the property is subject to a Production Flexibility Contract with the USDA, the revenue received by the landowner should be considered in determining the income to be capitalized. Such contracts do not fulfill the requirements of an enforceable restriction within the meaning of section 402.1 since they are terminable at the will of either party, the government agency or the landowner, at any time. Consequently, there is no assurance that the contract terms and/or restrictions will be in place in the predictable future.

[16] *County of Monterey* v. *Madolora* (1959) 171 Cal.App. 2d 840.

Chapter 6: APPRAISAL OF GRAZING LAND

GENERAL

More land in California is used for livestock grazing than for any other agricultural purpose, and millions of acres of nonarable lands produce the natural grasses, shrubs, clovers, and herbaceous forage plants that constitute the primary source of livestock feed. Feed production differs widely depending upon location, climate, season, elevation, vegetation type, amount, plant quality, soil quality, and annual rainfall. Diversity in annual rainfall, 80+ inches in areas of Northern California to 1+ inch in the Southern California desert areas, is the principal reason for differences in carrying capacity throughout the State of California.

The appraisal process applies to grazing land just as other agricultural properties. The income and comparative sales approaches provide the most valid indicators of rangeland values. The cost approach is seldom applicable in the valuation of native pasture and grazing land and has limited application in the appraisal of improved pastures.

DATA FOR THE APPRAISAL OF GRAZING LANDS

The logical and systematic steps required for any appraisal problem are applied to the special features of ranching. Data for grazing lands should include, but are not limited to:

- Recent sales data
- Recent lease or rental data
- Transportation systems to markets
- Market facilities
- Climatic conditions
- Topography
- Type of operation
- Type of operation best suited to the area
- Ranch resources
- Available forage
- Estimated carrying capacity
- Grazing practices in the area
- Water availability
- Special considerations for the subject property

ANIMAL UNIT SYSTEM

GRAZING LAND TERMINOLOGY

Listed below are terms and definitions widely accepted and used in the livestock industry.

Animal Unit (AU)

An animal unit (AU) refers to a specific unit of measurement defined as a two-year old range cow or steer weighing 1,000 or more pounds. This unit of measurement provides a benchmark against which other sizes of cattle or sheep can be correlated and measured. A 1,000 pound range cow or steer equals 100 percent of one AU, a 500 pound steer equals 50 percent, and each one hundred pounds of animal weight is equivalent to 0.1 AU. (Five mature sheep equals one AU.)

Animal Unit Month (AUM)

An Animal Unit Month is the basic unit of measurement used to express the feed requirements to maintain one animal unit for a one month period, or, alternately, the acreage necessary to produce the feed requirements to maintain one animal unit for a one month period.

AUM is a basic formula A x U x M = AUM in which:

- A = Number of head of livestock
- U = Size of the animal unit by decimal equivalent
- M = Number of months

An illustration of this formula is as follows. One hundred stockers grazing for six months and average 600 pounds each (go on at 500 pounds, come off at 700 pounds): 100 x 0.6 x 6 months = 360 AUM's.

Animal Unit Year (AUY)

Sometimes referred to as a "cow-year-long" (CYL), an animal unit year is defined as the number of head of mature stock that could be maintained for a full year on a specific parcel of land without substantially harming plant growth, vegetative cover, or soil conditions, while maintaining satisfactory levels of livestock grazing. An AUY is typically stated in terms of the number of acres required to maintain, not fatten, one adult cow or steer.

Carrying Capacity

Carrying capacity is defined as the number of animal units (stated in animal units, AU's, or animal unit months, AUM's) a specific property will support without excessive harm to plants and soils. Alternately, carrying capacity is defined as the number of livestock a specific property will support without substantially harming plant growth, vegetative cover, and soil conditions while maintaining satisfactory levels of livestock grazing.

Carrying capacity varies with the seasons because most range forage is seasonal and perishable. Ideally, forage is most beneficial if consumed when high in nutrients. Unless eaten while still tender, forage can be unpalatable. The carrying capacity differs among the various types of livestock and, depending upon the individual region, may be more adaptable to cattle or sheep. Cattle tend to make better use of some regions while sheep do better in other locales.

Carrying capacities vary from five to seven acres per animal unit on high yield coastal rangelands to 200 or more acres in the arid regions of the state. The extreme variations in the quality and quantity of forage cause large variations in land values.

Carrying capacity can be expressed in any one of three ways:

- The number of AU's that a specific property can sustain for one year. For instance, a 1,300 acre ranch might have a carrying capacity of 65 AU.
- The number of acres required to maintain one AU for one year. In the above example, 20 acres are required per AU (1,300 acres ÷ 65).
- The AUM's of feed produced by one acre. In the above example, the AUM is 0.60 (12 months ÷ 20 acres).

ANIMAL UNIT EQUIVALENTS

Rangeland carrying capacity is expressed in terms of AUM's per acre for a full year with annual yields varying from less than 0.1 AUM per acre for arid land to 2.0 AUM per acre for the high-quality coastal ranges. On the lower end of the carrying capacity spectrum, 20 acres may be required to support one AU for one month, and on the upper end of the spectrum, one-half acre might carry one AU for one month. The estimated annual average carrying capacity for all California rangeland is 23 acres per AU, which equates to 0.52 AUM per acre (12 ÷ 23).

Total Digestible Nutrients (TDN)

TDN is a unit of measurement that reflects the portion of consumed feed that is digested and utilized by an animal for growth and maintenance and not passed as waste. TDN, expressed in total pounds, varies with the type of feed and includes digestible proteins, carbohydrates, and fats. A conversion table for various common feeds into total pounds of TDN appears later in the text.

Calories

A calorie is the unit of measurement used to express the nutritional quality of feed.

Supplemental Feed

Supplemental feed is defined as sufficient available seasonal feed to support livestock operations throughout the year. Supplemental feed may consist of the following:

- Hay, alfalfa, oats, Sudan grass, and barley are cut, dried, baled, and stored to supplement natural feed supplies when grazing is sparse or nonexistent.

- Crop residues include grain stubble, sugar beet tops, corn, or other crops left in agricultural fields during late summer to early winter that can be consumed by livestock. Typically, land of this type is rented on a per acre or per head basis.
- Green feed, or green chop, refers to forage crops that are cut and immediately fed to livestock rather than stored. This type of feed program increases labor and equipment costs but reduces grazing damage to crops.
- Silage refers to green crops (alfalfa, corn) cut and stored in silos and used for winter feeding of cattle or stockers.
- Concentrates include a variety of grains, seeds, oil meals, or other by-products with high energy and nutrient content. Although livestock can be raised on forage crops exclusively, the production results are sometimes uneconomical and concentrates are given to finish livestock for market or to supplement low quality forage.

In addition to mature bovine animals, forage is consumed by other animals including calves, yearlings, horses, sheep, and swine. The following table shows the comparable feed requirements of different animals.

Animal Units Per Head Conversion Factor to Standard AU

Beef cow	2 Years and Over, Average	1.00
Calf	4 to 8 Months, Average	0.30
Weaner Calf	8 to 9 Months, 350-400 Pounds	0.45
Yearling (Steer or Heifer)	600-700 Pounds	0.75
Beef Stocker	Per 100 Pounds of Weight	0.10
Bull, Heifer, Steer	Two Years Old	1.00
Horse	Light Work Horse	1.00
Horse	Heavy Work Horse	1.50
Ewe, Ram, Wether	Over One Year	0.20
Lamb	Weaning to One Year	0.15

When a supplemental livestock feed program is necessary and the feed is obtained from outside sources, the animal unit equivalent of the feed must be deducted from the indicated carrying capacity of the property. An animal unit in terms of feed requirements is equivalent to 4,800 pounds of total digestible nutrients (TDN) per year, while one AUM is equivalent to 400 pounds of TDN.

The TDN listed in the following chart represents averages for the specific feed type. TDN content is superior in dry feed because excess water content has been removed from the original

green chop. Various agricultural publications provide complete listings of feeds along with their nutritional content. It is essential that supplemental livestock feeding programs be considered during the appraisal process and that their nutritional contribution not be erroneously attributed to rangeland.

TDN Content by Weight of Some Common California Feeds

	GREEN	DRY
Mixed Range Grass	15% to 18%	50%
Bromes	20%	49%
Burr Clover	15%	55%
Alfilaria	9%	48%
Fescues	22%	52%
Wild Oats	24%	50%
Rye	18%	52%
Vetch	15%	55%
Hay (All Varieties)	Average	50%
Alfalfa (Pasture or Chopped)	15%	
Sudan	15%	
Stubble (Barley and Wheat)		42%
Barley Pasture	13%	52%
Wheat Pasture	13%	48%
Beet Tops and Fresh Mill Pulp	11%	
Silages	12% to 18%	
Concentrates		75% to 90%

GRAZING OPERATIONS

There are three basic types of grazing operations: cow-calf, stocker, and feeder.

COW-CALF OPERATIONS

This type of operation is concerned with producing as many calves as possible from the breeding herd and have them gain all the weight possible at the lowest cost. For this operation to be profitable, the ranch must be capable of producing inexpensive forage to sustain the herd on a year-round basis. This type of operation is typically found on rangeland suitable for year-round

grazing, rather than on seasonal grazing ranges. The calves graze with adult cattle on the rangeland during the summer months while forage is plentiful and are sold in the fall. In this category there are two different subtypes of operation: replacement heifers taken from calf crop and replacement heifers purchased each year.

Replacement Heifers Taken From Calf Crop

A rancher maintains a cow herd year-round to produce calves, carries the calves to weaning, sells off the calf harvest, and retains only the heifers necessary to maintain the herd on a rotational basis. The principal products are 300 to 500 pound calves and cull cattle. For this type of operation, the AU equivalent is approximately 1.4 to 1.5 AU per cow.

Assume 100 cows with an 85 percent calf crop (after accounting for death loss).

100 Cows (80 Old and 20 Third Year Heifers)	1 Year x 1.0 AU	100 AU
5 Bulls	1 Year x 1.0 AU	5 AU
20 Two Year Old Replacement Heifers	1 Year x 1.0 AU	20 AU
85 Calves (To Sale Time)	0.33 Year x .3 AU	8.5 AU
20 One Year Old Replacement Heifer Calves	0.50 Year x .6 AU	6 AU
	Total	139.5 AU
	Rounded	140 AU

140 AU Divided by 100 Cows = 1.4 AU Per Cow

Some ranchers observe this marketing plan but some, instead of selling weaner calves, keep the weaners for a few extra months and sell yearlings. The principal products for this alternative marketing plan are 700 pound heifers, 800 pound steers, and cull cattle. For this type of operation, the AU equivalent is approximately 1.7 AU per cow. The calculations would be similar to the above example, with more carrying time allotted to the calves and correspondingly higher AU equivalents.

Replacement Heifers Purchased Each Year

A rancher maintains a cattle herd year-round to produce a maximum calf crop, carries the calves to weaning, sells the entire calf harvest, and purchases replacement heifers. Again, the principal products are 300 to 500 pound calves and cull cattle but, for this type of operation, the AU equivalent is approximately 1.1 to 1.2 AU per cow.

Assume 100 cows with an 85 percent calf crop (after taking account of death loss).

100 cows	1 Year x 1.0 AU	100 AU
5 bulls	1 Year x 1.0 AU	5 AU
85 calves	0.33 Year x .3 AU	8.5 AU
	Total	113.5 AU

113.5 AU Divided by 100 Cows = ± 1.14 AU Per Cow

Generally, cow-calf operations have year-round feed sources along with stable feed requirements and, during good weather years, will produce feed in excess of their usual needs. In such instances, the rancher may purchase additional feeder cattle or lease a portion of the rangeland to other ranchers.

STOCKER/FEEDER OPERATIONS

Stocker operations are concerned with adding weight and size to young and small cattle by utilizing seasonal pasture or rangeland. Ranchers start with weaner (stocker) calves and sell yearling feeders. When the forage has been depleted, the cattle are either moved to new pasture or sold. This marketing plan allows more money to be invested in cattle than land because frequently sufficient seasonal pasture is available to avoid significant capital investments in land.

Feeder operations are also concerned with adding weight to animals. They attempt to increase the value of that additional weight by improving the quality or grade. Feeder cattle are typically confined and fed high-energy feed concentrates (50 percent grains and 50 percent hay). Feeder cattle do not forage and, consequently, there are larger investments required for care, labor, and equipment. Feeders that have been properly fattened command higher prices because they will grade out higher and yield more usable meat. Historically, operators who purchase feeders and fatten them for market resale are located in areas with an abundance of feed grains. Profits are realized when selling prices, after fattening and other operating expenses, are greater than the initial purchase prices and when the value of the increased weight gain exceeds feed costs and other operating expenses.

The following illustration demonstrates how to accurately convert animals to units for a stocker operation.

EXAMPLE

All animals are the same age and graze for the same number of months. The conversion formula is: (Number of head) x (AU equivalent) x (Percent of feed from grazing) x (Number of months) = AUM. AUM divided by 12 equals AU carrying capacity.

400 yearling steers receive 90 percent of their feed, for 150 days, from three sections of rangeland totaling 1,920 acres. The carrying capacity would be calculated as follows:

400 Head x 0.75 AU Per Head x 0.90% of Feed x 5 Months (150 ÷ 30) =

400 x 0.75 x 0.90 x 5 = 1,350 AUM

1,350 AUM ÷ 12 Months = 112.5 AU for the Rangeland

1,920 Acres ÷ 112.5 AU = 17.07 Acres Per AU

12 Months ÷ 17.07 Acres Per AU = 0.70 AUM Per Acre, or

1,350 AUM ÷ 1,920 Acres = 0.70 AUM Per Acre

The above example indicates the rangeland has a carrying capacity of 112.5 AU, each AU will require 17.07 acres per year, the carrying capacity is 0.70 AUM per acre, and enough feed will be produced on one acre to sustain one mature cow for 21.4 days.

AU METHOD AND THE COMPARATIVE SALES APPROACH

The animal unit provides a simple and accurate method for comparing grazing lands, similar to direct comparison for commercial and residential properties in the comparative sales approach.

EXAMPLE

Two cattle ranches recently sold, are equal in size, and appear comparable in soils, topography, and water.

Ranch "A" - 1,500 acres sells for $300,000

Ranch "B" - 1,500 acres sells for $200,000

In both cases, the terms include 29 percent down, balance due in 15 annual payments, and 7.5 percent interest rate on the unpaid balance. Initially, the sales do not appear comparable. Ranch "A" sold for $200 per acre and Ranch "B" sold for $133 per acre. However, an analysis reveals that Ranch "A" has a carrying capacity of 187 AU, but Ranch "B," due to extensive brush and wasteland, will carry only 125 AU. Dividing the sales price by the AU capacity indicates:

Ranch "A": $300,000 ÷ 187 = $1,604

Ranch "B": $200,000 ÷ 125 = $1,600

Despite the differences in the price per acre, both properties sold for $1,600 per AU. When measured in this manner, the sales are comparable.

This method is equally suitable for analyzing and comparing per acre rents. Ideally, the comparative sales approach is supported by a number of recent, relevant sales in the area with similar physical characteristics. The data could be analyzed in the following manner:

Sales Data

	SALES PRICE	DATE	SIZE (ACRES)	PRICE PER ACRE	CAPACITY
Subject			4,500		285 Cow-Calf for 6 Months
Sale A	$948,000	9/01	4,000	$237	2,500 Sheep for 5 Months
Sale B	$705,000	8/01	3,000	$235	600 Feeders, 400-700 Pounds for 5 Months
Sale C	$542,500	7/01	3,500	$155	140 Cow-Calf for 7 Months

Converted to AU

Subject	285 Cows x 1.4 AU Equivalent x 6 Months = 2,394 AUM ÷ 12 Months	200 AU
Sale A	2,500 x 0.2 x 5 = 2,500 AUM ÷ 12	208 AU
Sale B	600 x 0.6 x 5 = 1,800 AUM ÷ 12	150 AU
Sale C	140 x 1.4 x 7 = 1,372 AUM ÷ 12	114 AU

Quality Comparison

Subject	4,500 Acres ÷ 200 AU = 22.50 Acres/AU
Sale A	4,000 Acres ÷ 208 AU = 19.23 Acres/AU
Sale B	3,000 Acres ÷ 150 AU = 20.00 Acres/AU
Sale C	3,500 Acres ÷ 114 AU = 30.70 Acres/AU

Sales Comparison

Sale A	$948,000 ÷ 208 AU	$4,558/AU
or	$237/Acres x 19.23 Acres/AU	$4,558/AU
Sale B	$705,000 ÷ 150 AU	$4,700/AU
or	$235/Acres x 20.00 Acres/AU	$4,700/AU
Sale C	$542,500 ÷ 114 AU	$4,759/AU
or	$155/Acres x 30.70 Acres/AU	$4,759/AU

If the appraiser gives less weight to the sheep grazing land sale than to the cattle grazing land sales, the appraiser may decide that $4,700 per AU is the fair market value. This would indicate a value of $940,000 for the property, or an overall average of $208.88 per acre.

Sales may be listed for comparison as illustrated below:

	PRICE	SALE DATA	SIZE (ACRES)	PRICE PER ACRE	AU	PRICE PER AU
Sale D	$875,000	Current	1,500	$583	187	$4,679
Sale E	$576,000	Current	1,580	$365	120	$4,800
Sale F	$260,000	6 Years Ago	800	$325	50	$5,200
Sale G	$2,000,000	4 Years Ago	4,500	$444	470	$4,255

These sales do not suggest any commonalities regarding time, size, and carrying capacity. Lacking a discernible pattern among the sales, somewhat subjective adjustments must be made to obtain an adequate measure of comparability.

In a mass-appraisal system, required adjustments to all comparable sales to correlate them to the subject would not be feasible due to time constraints. Instead, only those sales that are most comparable to the subject property should be considered and related on a per animal unit or per acre basis.

In the appraisal of grazing lands, minimal adjustments should be necessary for size or location, assuming sales of properties that are relatively comparable in size. Grazing lands are less affected by location than other agricultural properties because ranchers need not live there, and products are easily transported to markets.

The difficulty of adjusting comparable sales illustrates the value of using a common denominator such as the AU, particularly since information regarding carrying capacity is commonly available. In contrast, separate valuation of the individual components for grazing operations could be extremely difficult.

All grazing land sales for a specific region should be analyzed to indicate the typical AU value. In addition, an analysis of market sales data assists in determining what adjustments are necessary for time, location, size, and other physical characteristics. Grazing land sales are not always plentiful, and numerous sales may not closely conform in terms of various factors. Occasionally, comparable sales may contain nonagricultural amenities such as lake or river frontage, wildlife hunting, adjacent recreational lands, or additional factors that influence value.

INCOME APPROACH

Information necessary to support the income capitalization approach is generally difficult to obtain for agricultural properties. Ranch rental figures are scarce, and estimating owner-operator income and expenses to determine a net income figure attributable to the real property requires a number of subjective assumptions about the contribution of livestock, equipment, capital, and management to the entire operation. These assumptions are essential to produce a reliable estimate of income attributable to the real property. In the income capitalization approach, rental incomes rather than owner-operator incomes are preferable when capitalizing a net income. Even when actual expenses can be obtained, they may be atypical and a misconstrued net income may result. The following example illustrates the use of rental data in the income approach.

EXAMPLE

The subject property is unimproved grazing land containing 960 acres with a historical carrying capacity of 65 cow-calf units—which is equivalent to 78 animal units (65 x 1.2)—and indicates that 12.3 acres are required to maintain one animal unit.

SALE	ACRES	TOTAL PRICE	PRICE PER ACRE	CARRYING CAPACITY AU'S	ACRES PER AU	PRICE PER AU
A	1,000	$200,000	$200	100	10	$2,000
B	840	$151,200	$180	70	12	$2,160
C	900	$135,000	$150	60	15	$2,250

SALE	RENT PER ACRE	TOTAL GROSS RENT	RENT PER AU	TOTAL NET RENT	YIELD RATE
A	$8.50	$8,500	$85.00	$5,000	0.025
B	$6.85	$5,754	$82.20	$3,200	0.021
C	$5.65	$5,085	$84.75	$2,800	0.021

The above example yields the following conclusions regarding the subject property:

- Economic rent per acre is $6.80
- Economic rent per AU is $82.00
- Yield rate excluding property tax is 0.021

With these conclusions, the income approach can be completed as follows:

Gross Income 960 Acres @ $6.80		$6,528
Expenses		
Insurance	$50	
Management	$400	
Total Expenses		$450
Net Income (Before Taxes)		$6,078
Capitalization:		
$6,078 ÷ (.021 Yield + .01 Taxes)		$196,065
	Rounded	$196,000

The price per acre, based upon the estimated value from the income approach is ($196,000 ÷ 960) or $204±. When compared to sales A, B, and C in the market data chart, this amount appears reasonable on a per acre basis. This example illustrates the relative simplicity of using rental income for calculating net income, capitalization rates, and market value.

The following example illustrates the difficulties of calculating necessary expenses for use with owner-operator income. It points out the expenses that must be estimated and areas where errors may occur.

A property contains 5,000 acres and is capable of sustaining a 300 cow-calf unit operation. All the weaner calves are sold annually and replacement heifers/bulls are purchased. The subject recently sold for $503,000, including improvements valued at $22,000. The new owners brought their own stock to the ranch for a cow-calf operation.

GROSS INCOME

Calves	270 x 500 @ $0.37	$49,950
Hunting Rights	5,000 Acres @ $0.50	$2,500
	Total	$52,450

OPERATING EXPENSE

Cash Expenses

Labor	One Hired Employee with Furnished Residence	$6,950
Management	Owner-Operator and Spouse as Bookkeeper	$10,000
Maintenance and Utilities	Hired Employee's Residence	$700
Insurance	Workmen's Compensation and Social Security	$1,800
Veterinarian	Five-Year Average	$600
Supplemental Feed and Minerals		$1,450
Miscellaneous		$1,160
Equipment, Maintenance and Repair		$2,200
	Total Cash Expenses	$24,860

Noncash Expenses

Residence Amortization	30-Year Life	$735
Equipment Amortization	10-Year Life	$1,160
Bull Amortization	5-Year Life RCN @ $7,500 Salvage @ $2,700	$960
Cow Amortization	7-Year Life RCN @ $74,100 Salvage @ $60,000	$2,014
	Total Noncash Expenses	$4,869

Return on Investment in Personalty

RCN:	300 Heifers @ 950 Pounds @ $0.26	$74,100
	15 Bulls @ $500 Each	7,500
		$81,600
Salvage:	300 Culls @ 1,000 Pounds @ $0.20	$60,000
	15 Bulls @ $180	2,700
		$62,700

Average Investment: $81,600 + $62,700 ÷ 2 = $72,150 @ 4.2%	$3,030
Total Noncash Expenses ($4,869 + $3,030)	$7,899
Total Expenses	$32,759
Net Income $52,450 - $32,759	$19,691
Capitalization Rate $19,691 ÷ $503,000	3.91%

If we assume a tax component of 1 percent, the yield rate equals 3.91 percent minus 1.0 percent, or 2.91 percent.

The net income is greatly affected by expenses, so care must be taken to ensure the expenses used in the analysis are reflective of typical owner-operator ranching operations. In this particular instance, use of the owner-operator income and estimated expenses produced a fairly accurate capitalization rate. However, rental incomes are preferable and more reliable for deriving an indicated yield rate or net income.

PARCEL VALUE ALLOCATION

The various areas of a ranch may be identified separately as arable, pasture, rangeland, open grazing, timber grazing, brush, or waste. A ranch with several thousand acres might have an average carrying capacity of 25 acres per AU; yet individual locales within the ranch could differ in carrying capacity from seven acres per AU to 100 acres or more per AU. A separate listing or identification by locale enables comparisons, making it possible to accurately allocate value to the areas. However, the total ranching operation forms the basis for comparing the property.

When estimating carrying capacity, it must be determined whether the operator is conducting a typical ranching operation, overstating carrying capacity by not compensating for supplement feeding, or understating the carrying capacity for other reasons.

Values per acre should be allocated according to the various quality levels of grazing land. The subject property in this example contains open graze, scattered timber graze, and brush browse. A field inspection and data analysis established that 12 acres of open graze, 30 acres of scattered timber graze, or 120 acres of brush browse are required to produce the amount of feed necessary to sustain one AU. Assume that comparable sales and income studies support a value of $1,800 for one AU. Values for the various quality levels of grazing are as follows:

Open Graze	$1,800 Per AU ÷ 12 Acres Per AU	$150 Per Acre
Timber Graze	$1,800 Per AU ÷ 30 Acres Per AU	$60 Per Acre
Browse	$1,800 Per AU ÷ 120 Acres Per AU	$15 Per Acre

SUMMARY

The appraisal of grazing land and ranches requires an awareness of the relationship between the land and the particular type of livestock raised on that land. The number of livestock that can be raised and sold is in direct proportion to the amount and quality of forage vegetation. The unique features affecting ranch values include the type of operations (cow-calf, feeder, stocker), grazing capacity, and the use of owned and/or leased land.

Grazing capacity is measured in different ways, and the appraiser needs to use correctly defined terms precisely and consistently. Grazing capacity can be stated in terms of animal units, animal unit months, cow-year long carrying capacity, and total digestible nutrients. A ranch is considered balanced if it has sufficient seasonal feed to maintain livestock on a year-round basis. Many ranching operations are seasonal in nature and only raise livestock when forage is plentiful and then sell the livestock at the end of the season.

Because livestock can be relocated for forage, ranchers lease grazing lands in addition to those owned in fee simple. The use of leased land improves the livestock carrying capacity, the ranch's earning capacity, and ultimately the market value of the fee-owned lands.

In the appraisal of ranch properties, the comparative sales approach is the most reliable and most frequently employed method. Comparable sales must be selected with the same type of ranch operation, similar carrying capacities, and reliance on owned or leased lands. As a unit of comparison, either the carrying capacity (stated in AU, AUM, or CYL) or valuation of the individual acreages by land quality may be used.

The information contained in this section is intended to illustrate procedures and concepts beneficial in the appraisal of grazing lands. Grazing lands vary widely in size, location, topography, access, climate, and improvements, so the procedures presented here may require some modifications in order to be useful. The appraisal of grazing land is a complex subject and knowledge of the livestock industry is required in addition to appraisal principles and procedures.

CHAPTER 7: APPRAISAL OF ORCHARDS AND VINEYARDS

GENERAL

Fruit- and nut-bearing trees and vineyards are exempt from taxation during a portion of their immature life. Section 211 states:

> The exemption of fruit- and nut-bearing trees until four years *after* the *season* in which they were planted in orchard form and grapevines until three years *after* the *season* in which they were planted in vineyard form is specified in subdivision (i) of Section 3 of Article XIII of the Constitution…. (Emphasis added.)

The key word in this section is "season." Season refers to the "planting season" regardless of its relationship to the lien date, calendar year, or fiscal year. The example below illustrates the exempt period enjoyed by orchards and shows the appropriate enrollment date:

1996	Year 0	Season of Planting
1997	Year 1	Exempt
1998	Year 2	Exempt
1999	Year 3	Exempt
2000	Year 4	Exempt
2001	Year 5	Enrolled on the Lien Date

The above example shows the trees have four exempt growing seasons after the season in which they were planted. The same arrangement may be used to determine the enrollment date for young vines, except only three years of exemptions are allowed.

In 1999, section 211 was amended[17] to include a new three year exemption period for grapevines or four year exemption period for any fruit- or nut-bearing tree severely damaged during the exemption period by the December 1998 freeze so as to require pruning to the trunk or bud union to establish a new shoot as a replacement for the damaged grapevine or tree. This extension, however, self-eliminates its applicability after 2001 for grapevines and after 2002 for fruit- and nut-bearing trees.

Section 53 makes available property tax relief for grapevines planted to replace grapevines removed because of phylloxera and/or Pierce's Disease provided a county board of supervisors has adopted an ordinance making the provisions of section 53 applicable for its county. The statute provides that the initial base year value of replacement grapevines for grapevines affected

[17] Statutes of 1999, Chapter 291 (SB 1014).

by the phylloxera infection or Pierce's Disease, as certified by the county agricultural commissioner, shall be the factored base year value of the removed vines.[18]

The factored base year value of the removed grapevines under article XIII A limitations is generally less than the current market value of the newly planted grapevines; thus, permitting the replacement grapevines to assume the previous base year value of the removed grapevines generally provides tax relief. The removed grapevines must be less than 15 years of age and the replacement grapevines must be planted on the same parcel as the removed grapevines. The value of the replacement grapevines shall be the base year value of the removed grapevines factored to the lien date of the first taxable year (the fourth year after replanting) of the replacement vines.

Since existing law provides that all newly planted grapevines are exempt for the first three years after the season in which they are first planted, the base year value transfer would not take place until three years later. The assignment of base year replacement value, however, shall be limited to that portion of the replacement grapevines that are substantially equivalent to the vines that were replaced, if the replacement vines are planted at a greater density.[19] That portion in excess of a substantially equivalent amount receives a base year value based on current market value.

There is one exception to the vine exemption. The kiwi plant is classified botanically as a deciduous vine and cannot be considered either as a grapevine or a fruit- or nut-bearing tree within the meaning of article XIII, section 3(i) of the California Constitution and, therefore, is assessable on the first lien date following planting.

Trees and vines are not considered growing crops within the meaning of article XIII, section 3(h) of the Constitution. Instead, they are classified as improvements in section 105(b) of the Revenue and Taxation Code. However, the fruits, nuts, or grapes produced by the trees or vines are exempt as growing crops until they are harvested.

In many instances, living improvements include a composite of several different groups or blocks of trees or vines of varying ages, production levels, or varieties. When this occurs, the task of comparing the attributes of a property with the attributes of recently sold similar properties, or of estimating the various levels and lives of income streams, becomes quite difficult.

FACTORS TO CONSIDER IN ORCHARD AND VINEYARD APPRAISAL

Appraisers whose assignments include the valuation of orchards and vineyards (permanent plantings) must have a thorough knowledge of agricultural properties in general and special knowledge concerning the factors that contribute to the value of orchards and vineyards.

[18] Statutes of 1997, Chapter 607 (Assembly Bill 122).
[19] Section 53, Statutes of 2000, Chapter 272 (Assembly Bill 1790).

DEVELOPMENT TIME AND PRODUCTIVE LIFE

Like other agricultural properties, orchards and vineyards are purchased or developed for their income potential. However, orchards and vineyards present distinct appraisal valuation problems because of their productive economic life and changing consumer tastes. In addition to the typical costs of land preparation, planting, and related cultural practices, an investment in an orchard or vineyard is a long-term venture with a period of several years before any cash flow is realized. Both types of crops require several years to reach maturity, and the land is committed to that specific use with little flexibility to other uses. Trees and vines can become obsolete for the same reasons as conventional improvements and, occasionally, the production of a particular variety is superseded by newer, more popular varieties; as a result, the trees and vines must be removed and the land replanted. Changing consumer tastes, competition from foreign and domestic producers, fluctuating cost levels, and urban encroachment are all factors that affect the economic life of an orchard or vineyard.

Orchards and vineyards go through three stages of their life cycle:

- Development (exempt from taxation)
- Maturity (economic life)
- Decline

After development, the economic life varies in length with different crops and within different varieties of the same crop. Permanent plantings have typical economic lives which can be lengthened by care, maintenance, and good cultural practices. The life span for trees and vines can be shortened considerably through disease, neglect, and improper cultural practices. Some trees and vines die during each growing season and require ongoing replacement as part of good cultural practices.

This ongoing replacement of trees and vines enables mature plantings to continue their mature economic life with stable production. For example, a zinfandel grape vineyard may have initially been planted in Napa or Sonoma Counties 80 to 100 years ago. Ongoing replacement of vines may keep the age of the vineyard consistent for 40 to 50 years, a level well within the economic life of the vines.

For orchards and vineyards with relatively short-lived economic lives, an advanced age may dictate that all permanent plantings will need to be removed and replanted. Permanent plantings are wasting, or depreciating, assets; therefore, age, condition, and remaining economic life play important roles in their valuation. Trees and vines, like buildings, may continue to be productive after their projected economic life has terminated. From an appraisal standpoint, the valuation of trees and vines is extremely difficult and requires in-depth knowledge of horticultural practices and market conditions.

ROOTSTOCK AND BUDS

The variety of fruit and combination of bud and rootstock have tremendous long-lasting effects on value. Any particular orchard may be a mixture of several varieties of trees and rootstocks.

Generally, orchards are developed by planting a specific rootstock selected for soil conditions, climate, disease and insect resistance, size, condition, and other qualities. In some instances, a bud or cutting from another tree type is grafted onto the permanent rootstock. The anticipated result is a new tree system which incorporates desirable qualities from both varieties and results in maximum production of marketable fruit. The same procedures are applicable to vineyards grafted over to a different grape varietal.

CLIMATE

Climate not only limits the types of crops that can be raised in a specific region but also determines the quality of the crop and potential success of an agricultural operation. If the climate is ideal for particular varieties (peaches, plums, nectarines in the Central Valley), the fruit can be grown more economically, with greater confidence, and with less compensation for climatic problems.

Temperature-sensitive trees and vines have a complex set of growing requirements. Winter temperatures must be cold enough to fulfill their dormancy requirements, but not cold enough to kill or damage the trees and vines. If these requirements are not met, the result is delayed foliation which reduces crop production for that year. Temperature and light requirements must also be met to adequately mature the crop during the growing season.

The physical condition of trees and vines is dependent upon having proper nutrition, good soil, proper irrigation, good cultural practices, and protection from disease and pest infestations.

The appraiser should be aware of plant diseases and predominant pest problems in the appraisal areas and should be able to recognize such problems in the field. These problems vary from nematodes (minute worms) in the soil to viral diseases of the trees or vines. A reliable source for this type of information is the local farm advisor.

SOIL

The productivity of trees and vines is heavily influenced by both soil conditions and cultural practices. In some instances, soil deficiencies can be surmounted by prudent management or the addition of soil amendments and fertilizers if these expenditures are economically feasible. However, the inherent fertility of the basic soil is the most important factor in estimating future productivity for any property. Both topsoil and subsoil must be appropriate for the crop and variety selected, although topsoil can be amended by the addition of nutrients. The depth of the ground water table should be determined because if the water table is shallow (perched), water may soak the soil and any excess acid or alkali may damage the trees. Trees and vines do not like standing water, so an adequate drainage system is essential to remove excess moisture, thus avoiding root rot. Trees and vines may literally drown when air is completely flooded out of their root zone.

Trees and vines usually develop best on soils that are naturally deep (six feet or more), sandy or silty loams with adequate drainage. Most varieties of trees and vines grow better in well-aerated soil, but exact soil requirements vary considerably among varieties. Generally, most trees and

vines grow best in slightly acid soil (5.5 to 6.5 pH factor), but there are exceptions to this and the other preceding guidelines.

IRRIGATION

Because most orchards and vineyards involve major investments of time and money, they must have irrigation systems to ensure adequate water at crucial times during the growing season. Insufficient water delivery will result in undersized fruit that may not be marketable to commercial packers and shippers. Orchards and vineyards have relatively large water requirements and these specific water concerns must be addressed as part of the appraisal process: adequacy, quality, source, dependability, and cost.

FROST PROTECTION

The majority of orchards and vineyards are planted in areas that experience some degree of frost. Trees and vines are unique in that they are among the few crops for which frost protection systems have been devised. The two basic systems utilized are wind machines and irrigation systems. Wind machines typically consist of elevated engines with single or multiple aircraft propellers that recirculate the airflow over, around, and through the orchard. An irrigation frost protection system (either by flooding or solid-set sprinklers) delivers water that is warmer than the outside ambient air temperature, protecting the trees or vines.

PRODUCTION AND MARKETING

Fruits can be produced for either the fresh or processing (canning) market, and the demands of each market are different. The fresh market is concerned with the size of the fruit and, generally, the larger the size of the fruit, the better market acceptance it receives. What constitutes a desirable size is affected by individual fruit characteristics and consumer preferences. Agricultural producers concentrating on the fresh fruit market employ cultural practices that tend to thin out the fruit to encourage a larger size for the remaining crop. Fresh fruit producers must be quality-conscious and, typically, they will incur higher cultural costs than producers growing fruit for the processor market. Some producers conduct a combination operation and grow fruit for both the fresh and processing markets. For example, producers in Lake and Mendocino Counties may raise Bartlett pears for the processing market and Bosc or D'Anjou pears for the fresh market; fresh fruit that does not meet grading requirements for fresh fruit may be sold to the processing market.

As part of the appraisal process, an analysis should be made of the orchard and vineyard production history for a sufficient time period (usually three to seven years), the type of production, and the method of marketing. The best source of information about grower production is usually the grower; information is also obtainable from packers and shippers who maintain records that indicate the variety, size, price, quantity, and quality of fruit packed and shipped. In addition, the warehouse records indicate the volume of culled fruit and reveal variations in production trends.

Some fruits are presold with prices negotiated prior to or during the harvest season with price modifications for differences in quality and size. Producers may be subject to considerable price fluctuations during the harvest season.

COMPETITION

Increasingly, California agriculture is competing for a market share in the global economy. During the past two decades, competition has broadened from agricultural regions within the United States only to worldwide competition. Major commodities including fresh fruits, table grapes, cotton, almonds, rice, strawberries, lettuce, beef production, fresh vegetables, and the wine industry have experienced strong foreign competition and widely fluctuating profits. Competitive market forces cause continual shifts in the levels of commodities available, affect the levels of demand for those commodities, and, ultimately, influence commodity prices. By recognizing changes in the competitive market environment and making the same market projections as buyers and sellers of agricultural property, the appraiser can avoid capitalizing unrealistic income estimates into unrealistic market value conclusions.

TREE AND VINE SPACING

Tree spacing has changed during the past decade; closer plantings are now typical for certain varieties. However, most plantings are still based upon established tree patterns that consist of square, double, and triangle plantings. Occasionally, trees are interplanted (quadruple plantings) between two rows of a standard pattern. However, the interplants must be removed before the orchard becomes crowded and causes trees to suffer from stunted growth. The example below illustrates the general pattern for planting and subsequent removal of trees.

DOUBLE PLANT	QUADRUPLE PLANT
X - Standard Trees	X - Standard Trees
O - Additional Trees (Removed Later)	O - 1st Removal
	T - 2nd Removal

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X  X  X  X        X O X O X O X
 O  O  O          O T O T O T O
X  X  X  X        X O X O X O X
 O  O  O          O T O T O T O
X  X  X  X        X O X O X O X
```

Frequently, plantings consist of different tree varieties to obtain superior pollination which results in increased production. For example, Carmel and Mission almonds are planted together with one variety acting as a pollinator for the other. Different varieties should not be planted together unless they have compatible cultural practices.

APPROACHES TO VALUE

The three approaches to value may be used in the appraisal of orchards and vineyards; however, the most appropriate approach depends on the stage of plant development and the sufficiency of data (sales, incomes, expenses, rents) available. If the orchard or vineyard is still in the immature or exempt stage, the cost approach may be beneficial because adequate cost data should be readily available and could be related to the property. If trees and vines are producing a crop that covers their cultural and harvesting costs (break-even point), sufficient data should be available for the application of the income or comparative sales approaches. If orchards and vineyards are in decline, the comparative sales approach can be used to establish the land value and then adjusted for the cost to remove the old trees and vines. Lack of sales data, cost, or income and expense information may restrict reliability of any of the approaches to value

COMPARATIVE SALES APPROACH

In the appraisal of orchards and vineyards, the comparative sales approach is the most widely used method. The comparable sales selected must be similar in physical characteristics (soil class, commodity type, size, age, condition, irrigation, rootstock, frost protection) to the subject property. Due to the numerous possible differences among properties, a careful analysis must be made of all similarities and dissimilarities to establish comparability. Frequently, the property may be planted in combinations of varieties dissimilar from the plantings of the comparable sales. A possible solution to this problem may be found by individually appraising the various commodities and summing their collective value. To establish the value of the separate commodity types, available market sales data could be arrayed according to the age, acreage, production level, and cash equivalent selling price for each commodity. The price should reflect the portion of the sale price attributable to the trees or vines on a per acre basis. The following illustration demonstrates how sales information after deducting land and nonliving improvements may be arrayed:

Crop	Age	Acres	Cash Price	Per Acre Production (Tons)	Price Per Acre	Price Per Unit (Tons)
Peaches, Cling	5	10	$80,000	11	$8,000	$727
	6	15	$120,000	12	$8,000	$666
	7	20	$150,000	14	$7,500	$535
	10	20	$180,000	18	$9,000	$500
	15	15	$120,000	18	$8,000	$445
Almonds	5	10	$60,000	0.3	$6,000	$20,000
	10	20	$114,000	0.4	$5,700	$14,250
	20	20	$114,000	0.5	$5,700	$11,400
	15	40	$240,000	0.5	$6,000	$12,000
Walnuts	10	15	$112,500	1.4	$7,500	$5,357
	20	15	$112,500	1.8	$7,500	$4,167
	40	20	$134,000	2.0	$6,700	$3,350
	40	20	$140,000	2.0	$7,000	$3,500

Using information from the above chart, the value of the trees and vines for a given subject property can be estimated as follows:

Subunit	Variety	Age	Per Acre Value/ Production	Per Acre Value/ Comparison	Subject Acres	Per Acre Value	Total Living Improve-ments
1	Peaches	9	$7,600	$7,800	15	$7,800	$117,000
2	Almonds	12	$5,500	$5,700	20	$5,600	$112,000
3	Walnuts	20	$7,500	$7,500	16	$7,500	$120,000

The value of land may be established by comparison with comparable parcels that have recently sold. The value of trees and vines can usually be accurately estimated by the cost approach.

Value estimates based on comparison of total property units (land and improvements) are preferable to the technique illustrated above, but in the event sufficient sales data are not available, the above technique may be employed.

COST APPROACH

The cost approach is particularly useful in the appraisal of developing orchards and vineyards where the value of the trees and vines, along with other improvements (land preparation costs, cultural costs, irrigation systems), is added to the land value. The land value is established by comparison with recent sales of similar vacant land acreages.

The cost approach has limited application in the appraisal of mature orchards and vineyards because development costs do not always accurately reflect the market value of a property. A vineyard developed on poor Class IV soils would reflect an erroneously high value when compared to another recently developed vineyard on Class I soils. The development costs for both vineyards may be quite similar, but the actual market value of the two vineyards may be substantially different. Furthermore, the cost approach does not differentiate between market values for different varieties of the same commodity. For example, the cost to develop a vineyard to white Riesling grapes may be very similar to the cost to develop a vineyard to Chardonnay grapes, but the commodity prices received for the grapes will reflect considerably different values. From a practical standpoint, the cost approach should only be undertaken for the valuation of young orchards or vineyards which are no longer exempt but that have not reached maturity.

INCOME APPROACH

The income approach may be effectively used in the appraisal of mature orchards and vineyards, but its application will be somewhat more complex than typical agricultural properties because permanent plantings (trees and vines) are considered to be depreciating or wasting assets. While the above statement is correct from a physical standpoint, active market participants may not consider permanent plantings as depreciating in value or as wasting assets. Typically, income, expense, and yield rate levels can be found. A discussion of how these components relate to orchards and vineyards follows.

Income Analysis

Owner-Operator Income and Expenses

It is difficult to properly analyze the income and expense information for an owner-operated orchard or vineyard, especially if the subject is planted to several commodities with differing ages. The preferred method would be to base income estimates on current rental, lease, or share-crop agreements.

When dealing with tree and vine production, caution should be exercised regarding the relationship between average production, average price levels, and average gross income. Assume a property has a seven-year average production of 8.79 tons per acre and a seven-year average price of $144 per ton. By combining these two figures, an overall average return of $1,265 per acre is indicated. However, this figure is not a reliable indicator of the present or future income potential of the property because it is derived from a seven-year production history with increasing production and decreasing commodity prices.

A more appropriate way to analyze gross income would be to ascertain the average gross income for the last three to four years, or, alternatively, determine the average tonnage for the last three to four years, then multiply this value by the average commodity price. However, an average income estimate derived from past production and commodity prices is only one indicator of potential future income; all factors with a pronounced effect upon the future income stream must be considered.

Once the gross income is estimated, expenses must be deducted to establish the net income attributable to the orchard or vineyard. Numerous expenses are incurred during the growing season for trees and vines including land preparation, pruning, spraying, disking, fertilizing, brush removal, irrigation, and harvesting. Expenses may vary annually, so the level of anticipated expenses must be estimated based upon typical operations for the area, just as the potential future income stream is estimated.

In most orchards and vineyards, the majority of expenses occur before harvest, and a large percentage of fixed and cultural expenses are incurred regardless of whether there is a harvestable crop. While some expenses remain fixed, other expenses (harvesting, hauling, processing, packing, shipping) vary in direct proportion to production levels.

Occasionally, an orchard or vineyard may appear to produce modest amounts of income in relation to the total improvements. This situation is most likely to occur with an immature orchard or vineyard equipped with an expensive irrigation and frost control system. In this instance, the cost or comparative sale approaches should be utilized, and if the income approach is undertaken, the capitalization rate used should recognize and reflect this condition.

Rental Income

Rental information must be carefully analyzed because many leases are not created on clear cash rental payments. Frequently, leases are "hybrids" and incorporate terms and conditions from both cash and share-crop type agreements. A landlord may receive a portion of the agreement in cash and a percentage of the crop while contributing to the cultural, harvesting, and marketing costs.

An analysis must be made of the relationships between production levels, commodity prices, and annual gross income. A weighted average technique to project future income may result in distorted estimates if a recent commodity price received is not typical but is heavily weighted. In such an instance, a short-term trend may create an unrealistic indicator of a future price. This point is particularly important for properties that are price-sensitive to production and marketing conditions.

Economic Life

The economic life for orchards and vineyards is that period of time during which the net income provides an economic yield on the full value of the land and improvements. Advances in cultural practices have extended the remaining economic life (REL) for many orchards and

vineyards. The best source of information regarding the REL can be obtained from the producer, packers, shippers, and agricultural extension offices.

The yield rate derived from sales of comparable land can be used in estimating the REL of the improvements. The example below illustrates a straight-line declining income premise.

An orchard sells for $4,600 per acre and comparable bare land sales are $4,000 per acre. An analysis of the sales indicates a 6 percent yield rate with net income to the orchard after property taxes of $365 per acre.

Sale Price	$4,600 per acre
Land Price	$4,000 per acre
Tree Price	$600 per acre
Net Income to Orchard	$365 per acre
Less Land Charge	
($4,000 x .06)	$240 per acre
Income Imputable to Trees	$125 per acre

The $125 per acre income to trees represents the income imputable to a yield on the tree investment (return) and the amount sufficient for recapture of the investment. When the income is divided by the tree price, the result is 20.8 percent, which is the yield and recapture for the trees. With a yield rate of 6 percent, the derived recapture rate is (20.8 percent - 6 percent) or 14.8 percent. This suggests that potential purchasers anticipate a REL for the trees of approximately seven years (1 ÷ 14.8 percent = 7). This REL figure may be used for the appraisal of similar properties; however, the life estimate should be used in conjunction with the premise from which it was derived. The REL of the improvements can also be estimated by using the constant income premise: $600 divided by $125 = 4.8; then finding this number in the PW1/P table at 6 percent, we find the term is six years, one year less than the straight-line declining premise.

Because the yield rate used in this calculation of REL is derived from bare land sales and bare land incomes, this technique can only be used when the production of annual crops and orchard crops are equal and alternative uses for the land. This condition must be met before the bare land rate is applicable to orchard properties.

Return "On" Improvements

A property owner is entitled to a "fair" return on the value of nonliving improvements. A "fair" rate of return is a market-derived yield rate.

One method of finding a market yield rate for nonliving improvements is to extract the rate from sales of similar agricultural properties. This method presumes that the yield rate for improvements is identical to the yield rate for the entire property. If the appraiser determines

that this total property rate method is not appropriate for the nonliving improvements, some other method consistent with generally accepted principles of appraisal may be employed.

The second element needed to determine the return *on* nonliving improvements is the current market value of the improvements. This value is most commonly determined by the cost approach (replacement cost new less depreciation (RCNLD)) but may be derived through market analysis where applicable data are available. Once these two components (yield rate and current market value) are known, the return *on* improvements is computed by multiplying value by the yield rate.

Return "Of" Improvements

In addition to a fair return *on* an investment, the property owner must earn a sufficient amount to provide a return *of* the current market value of wasting assets. There are at least four potential methods of applying this technique.

- Provide for straight-line recovery of value by using replacement cost new (RCN) of the improvement and its estimated economic life when new.
- Provide for straight-line recovery of value by using the estimated current value of the improvement (hereafter referred to as RCNLD, although any market-based method may be used) and its estimated remaining economic life (REL).
- Use a sinking fund technique based on RCN and economic life when new (the rate of return is the same rate used for return on the investment).
- Use a sinking fund technique based on RCNLD and REL (the rate of return is the same rate used for return on the investment).

Advantages of using a straight-line method (either RCN or RCNLD) include: (1) it is simple to use, and (2) no adjustment is required when the yield rate changes. Some disadvantages are: (1) it overstates true capital recovery allowances because it presumes that the owner will set aside cash for replacement of the asset in a noninterest-bearing fund, and (2) the straight-line method results in different residual income to the land depending on the current market value of the improvements.

The primary advantages of using a sinking fund technique to recapture an investment for nonliving agricultural improvements are that it is consistent with the principles of discounted cash flow (see Assessors' Handbook Section 501) and, when used properly, it avoids the problem of income to land changing due to differing estimates of improvement values. Accordingly, the appraiser should use a sinking fund technique to account for return of nonliving improvements.

The RCN and RCNLD methods should yield the same result if applied properly, so either method is acceptable.

A potential advantage of the RCN method is that the same percentage of RCN for any given estimated economic life can be applied to all properties with the same life and yield rate (the rate

used for return *on* the property). For example, if the yield rate is 4 percent, the tax rate is 1 percent, and the economic life is 20 years, the annual amount is calculated by multiplying the RCN by .0802 (.0302 sinking fund factor and .05 yield and taxes).[20] The same percent can be applied to all nonliving improvements that have a 20 year total life and a 5 percent yield and tax rate. A second advantage is that there is usually (but not always) less controversy or uncertainty over the probable economic life of a new improvement as compared to the remaining economic life of an aged improvement. These advantages are minor in many cases, so the appraiser should select either the RCN or RCNLD depending on the reliability of the available data.

Deriving Yield Rates

Yield rates are most reliable if derived from market transactions, and each orchard or vineyard sale should be analyzed to extract a rate. The method of extraction should be appropriate for the shape and duration of the projected income stream.

Income Stream Shape

The income stream shape for an orchard or vineyard will vary during its economic life according to the stage of plant development. The plant life cycle can be divided into three stages: immaturity, maturity, and declining. The income stream associated with immaturity is generally increasing, income during maturity should be level or curvilinear, and income will decrease annually during decline.

During periods of increasing production, an analysis of comparable orchards and vineyards in the area should be conducted to determine typical production and expense levels for the various ages of trees and vines. Production and expense levels should always be compared against comparable orchards and vineyards at the same stage of their economic life. Part II of this handbook gives details and examples of processing this type of income stream.

Capitalized Earning Ability of Immature Orchards and Vineyards

If an orchard or vineyard represents the highest and best use of a property, the value of the immature orchard or vineyard is determined by the present worth of all future net income. However, to handle the income properly, different income capitalization premises must be utilized during each of the three stages. The following steps will indicate the value of an immature orchard or vineyard:

1. Estimate the net income annually during the inclining income-producing stage, then discount each year's income back to the current lien date using the present worth of one factors. The discounted income totals indicate the inclining income stream value.

2. Estimate the net income earned during the first year of the level income-producing stage. Capitalize this amount using a present worth of one per period for the anticipated number of years in the level income-producing stage. This amount is then discounted using a

[20] Factor .0802 is the same as the installment to amortize factor at 5 percent.

present worth of one factor for the number of years separating the beginning of the level income stage from the lien date.

3. Estimate the net income earned during the declining income stream using the declining income premise. Discount this amount back to the lien date using the present worth of one factor. The declining income stream will terminate when the trees or vines become uneconomical and are pulled.

4. Sum the values from the first three steps to determine the total property value.

All four steps may not be required for every appraisal. The declining income premise might be appropriate for the mature period of short-lived trees. In that instance, step two would be unnecessary. Conversely, the level income stream might be exceptionally long for some varieties, and, in this situation, there is less need to make a highly detailed analysis of the declining portion of the income stream because the value contribution is negligible.

Capitalized Earning Ability of Mature Orchards and Vineyards

The comparative sales approach is the preferred method of appraising a mature orchard or vineyard. However, the income approach may provide a check for the sales comparison approach and, in situations with limited market or cost data, may be the only reliable approach available. The same valuation approach is employed with mature orchards and vineyards, except that step one (as described above) is not required because there is no inclining income stage.

Numerous trees and vines have relatively short economic lives and do not have a prominent level income stream stage. The following example illustrates how an income stream may be capitalized using a tree or vine residual method:

COMPUTATION:

Economic Rent @ 30% Share		
40 Acres x 2,000 Pounds x 30% x $0.65 Per Pound		$15,600
Expenses		
Management @ 5%		
Maintenance @ 1%		
Insurance @ 1%		
7% x $15,600		1,092
Net Income Before Property Taxes and Recapture		$14,508
Charge to Land and Nonliving Improvements		
Land 40 Acres @ $1,600 x (6%Y + 1%T)	$4,480	
Irrigation System $12,000 x .080586*	967	
(*installment to amortize 7% @ 30 yrs)		
Shed $4,000 x .075009*	300	
(*installment to amortize 7% @ 40 yrs)		
		5,747
Net to Trees Before Recapture and Property Tax		$8,761

CAPITALIZED TREE VALUE (12 Year REL)

$8,761 x 7.942686*	$69,586
(*PW of $1/period 7% @ 12 yrs)	

SUMMARY

Tree Value	$69,586	
Land and Well Value	64,700	
Shed	4,000	
Irrigation System	12,000	
Total Property	$150,286	

PER ACRE VALUE - LAND AND TREES ONLY

Land	$64,000	(Excluding Well)	
Trees	69,586		
$133,586 ÷ 40 Acres			$3,340

NOTE: Yield rate taken from sales of similar properties.

RECONCILIATION OF THE APPROACHES

The choice of approach depends upon the development stage for the orchards and vineyards and the market data available. The comparative sales approach is most frequently used, especially when sufficient recent relevant sales are available for analysis. The cost approach is used primarily for developing orchards and vineyards. It indicates the value of the trees and vines, along with other improvements, and adds these totals to the indicated land value obtained through a comparison of vacant land sales similar to the property. The income approach is relevant but more complex in its application because permanent plantings are generally considered depreciating or wasting assets, and a provision for their recapture must be considered. The application of all three approaches is not always practical, or even desirable, in every orchard or vineyard appraisal.

CHAPTER 8: APPRAISAL OF DAIRY PROPERTY

Special considerations in the appraisal of dairy farms include the soils, improvements which affect the type of dairy operation, feed balance, and marketing of dairy products. As with other areas of productive agriculture, the soils provide an indication of the property's potential and contribute significantly to the total unit value. Dairy improvements present unique valuation problems because of their specialized nature and high improvement to land value ratios. Moreover, the type of operation and selection of feeding program are heavily influenced by the improvements and the amount of automation contained in the structures. Additionally, governmental restrictions now play a role in planning, design, and construction. A dairy operation cannot raise more animals than the facilities can reasonably support, but most dairies do raise more animals than economically feasible by purchasing outside feed to supplement dairy raised crops. The last major factor affecting the value of any dairy operation is a reliable market for the milk products.

In order to understand the market forces that affect the value of dairy properties, a knowledge of the milk market and marketing orders is required. Milk products are marketed through dairy cooperatives which receive the milk and attempt to sell as much of the product as possible for Grade A or Class 1 use. Milk products are broken down into Class 1, Class 2, Class 3, Class 4A, and Class 4B. The prices (and profits) received by the dairy cooperatives decrease as milk is sold in the lower categories. All receipts from milk sales are placed into a pool and distributed to the dairy producers based on their production and quotas. Obviously, the more milk sold as Class I for bottling and human consumption, the greater the profits to the dairy producers.

Quota is important to dairy operators because they receive more for milk with quota than for nonquota milk. Over the course of a fiscal year, this can equate to significant additional earnings. Quota has separate value and can be bought and sold on the open market by dairy producers. However, due to problems encountered in the 1980's with the sale of quota, certain restrictions are now applied. Once a dairy producer buys or sells quota, the producer is restricted from additional purchases or sales for a two-year period. Quota value is not included in the appraisal of the taxable real property.

A basic starting point for any dairy appraisal is a thorough physical inspection of the property noting all improvements and their locations, soil types, and field boundaries. Care must be exercised in the classification of equipment as real or personal property, and valuation efforts with auditor appraisers should be coordinated to prevent the possibility of double assessments or escapes on equipment items. When a total property appraisal is made involving both real and personal property, the possibility of double assessment is remote. However, escapes, double assessments, and assessments of equipment that no longer exists may occur in future years due to misunderstandings and errors in the annual property statement process. Thus, it is important that both the dairy owner and the assessor's staff have a clear understanding as to which equipment is included in the real property appraisal versus the equipment that is appraised annually by the audit appraisal staff.

APPROACHES TO VALUE

COST APPROACH

When used in conjunction with the comparative sales approach, the cost approach may be used for making detailed analyses of dairy improvements and estimating accrued depreciation from physical deterioration and functional or external obsolescence. This helps in allocating value for the various dairy farm improvements for the total appraisal. Dairy farm development costs may be estimated by the cost approach; this involves estimating the cost of constructing the improvements to known land values.

In estimating the replacement cost new of buildings, fences, water systems, etc., local construction cost information should be used. When estimating accrued depreciation, the appraiser must be careful to consider all forms of depreciation—functional and external obsolescence as well as physical deterioration. Many older dairy improvements have functional obsolescence. For example, a walk-thru milk barn is less efficient than a modern herringbone or sawtooth style improvement. External obsolescence is the result of outside forces, and dairies near growing metropolitan areas are particularly susceptible to this type of depreciation. In addition, environmental regulations have impacted on many cultural practices forcing producers to change long-standing methods, which in turn creates obsolescence in existing improvements.

In the event the cost approach is used for the appraisal of dairy properties, all forms of accrued depreciation (physical deterioration, functional and external obsolescence) should be carefully considered. To illustrate, a walk-through milk barn is less efficient than a herringbone style milking facility even though they may be quite similar in initial cost.

INCOME APPROACH

The income approach should be considered in the appraisal of dairy farms and is especially useful when sufficient rental or lease information provides reliable data for the application of this technique. An income approach based on rental or lease data usually provide the most reliable value indication because this information relates directly to the property, while owner-operator income and expense information is influenced by management levels and is more difficult to process to a net income figure. The income to be capitalized, of course, is the net income attributable to the real property. Capitalization rates developed from rental or lease data should not be used to capitalize income from owner-operators.

Although a land residual technique can be used in the valuation of most agricultural properties, the building residual technique is more appropriate for the valuation of dairy properties because the improvement value constitutes a large percentage of the total property value. In instances where the dairy has a limited economic life because of reasonably foreseeable land use changes, a property reversion technique would be an appropriate form of capitalization.

The capitalization rate used in the income approach should be derived from the sales of comparable dairy properties. If such sales data are not available, a capitalization rate can be developed by the band-of-investment technique.

The gross income estimate should represent the income generated from all sources, not limited to the income generated by milk sales. Typical sources of income from dairy operations includes:

- Milk
- Sale of cull cows or calves
- Sale of surplus crops
- Excess land rental
- Fertilizer sales
- Breeding fees

Deductible expenses are those expenses necessary to maintain the income stream. Typical expenses include:

- Feed
- Maintenance and insurance
- Supplies
- Salaries
- Management
- Utilities
- Breeding fees
- Veterinary expenses
- Livestock replacement
- Marketing and transportation

COMPARATIVE SALES APPROACH

When reliable market data are available, the comparative sales approach is the preferred valuation technique for dairy properties. However, in many areas sales of dairy properties are rare. If the comparative sales approach is to be used, all comparables must be of the same approximate size and type of operation. To illustrate, a large, automated dairy operation that purchases the majority of its feed should not be compared against a small family operation that raises most of its feed. The property and all comparable sales should be producing for the same milk market (for example, Class I liquid for human consumption), otherwise the quality of its milking facilities, its levels of production, and its levels of profitability may be considerably different.

The sales data should be analyzed and several units of comparison developed if possible. Typical units of comparison in the appraisal of dairy properties include overall sale price per acre including buildings, equipment, and stock sales; price per milking head capacity; sale price per unit of milk production; and gross or net rent multipliers.

CHAPTER 9: AGRICULTURAL LAND IN TRANSITION

GENERAL

Transitional properties are those undergoing change to a different highest and best use. They commonly consist of two types:

1. From one agricultural use (row crop) to a more profitable highest and best use (orchards and vineyards)
2. From agricultural to commercial, industrial, residential, or recreational uses

The appraisal of agricultural properties in transition to a different highest and best use as commercial or residential properties involves several special considerations including the property history, projected development time, interim use, and consistent future development costs.

A changing land use is generally driven by local or regional zoning, and the potential for a zoning change for the property is an essential consideration in determining a future highest and best use. The possible extension of infrastructure services to the property is also a major consideration. A knowledge of the area to correctly interpret future land trends as they relate to use and value is crucial.

Consideration must be given to a property's interim use during the development period because the interim use may provide some cash flow to offset costs until the highest and best use is achieved. Estimating the highest and best use of a transitional property is crucial in the valuation process, and all factors that may affect the eventual use should be considered. The development period must be calculated as accurately as possible because of the influence on interim value. To illustrate, agricultural land developed to citrus may have a value of $10,000 per acre with no development potential; however, citrus land with development potential may be selling for $100,000 per acre. The interim value of the transitional property should fall within this value range, and its final value would depend upon the length of time before it could be adapted to a different highest and best use.

A thorough analysis of projected development costs will determine the most appropriate development plan and will identify the development options that are expected to provide the greatest return to the land. Consistency of development must be applied as part of this process. Estimates of $50,000 per finished lot for what was formerly agricultural land in an area where finished lots are selling for $25,000 is not reasonable or supportable.

In some instances, value is created by a variation of an existing use rather than a complete change. To illustrate, an irrigation system is installed on a previously dry-farmed almond orchard. In this case, the present use is continued but enhanced through higher production, and a

higher land value is imputed to the property if the increase in income exceeds the amount necessary to pay for the irrigation.

The initial problem in valuing transitional land is the determination that transitional pressures do exist and are realistic. Some market forces are subtle and difficult to detect because they are unaccompanied by signs of activity. Expectation of a future change influences property owners. This occurs when urban encroachment migrates toward the location of agricultural land. Existing cash flow may not change, but the land value, due to anticipated future benefits, may change drastically. However, without recorded market activity the existence of transition and potential value changes can only be inferred.

If the transition to a new use requires a change in zoning or other existing restriction, section 402.1 provides a rebuttable presumption that the restrictions will not be removed or substantially modified in the foreseeable future. Subdivision (c) of section 402.1 provides a nonexclusive list of grounds that may be used to rebut the presumption. Thus, the appraiser may not assume that zoning or other restrictions will be changed unless there is reasonable evidence that such changes are likely to be made.

VALUATION

COMPARATIVE SALES APPROACH

In general, the comparative sales approach is the most reliable approach to value transitional properties. Two important factors must be considered in the selection of appropriate comparable sales: size and time. Parcel size has a significant impact on potential value because of market demand. To illustrate, a 25 acre parcel may have immediate development potential and, consequently, would tend to command a higher unit value than a larger parcel that might have to be developed in phases over a number of years. Time also has a significant impact on value because a parcel with immediate development potential will command a higher value (present dollars versus future dollars) than a parcel where development will have to be postponed.

When appraising an area in transition, an analysis of the degree to which recent sales have affected land values should be completed. To illustrate, assume an area with rolling dry farmland had sporadic sales five years ago with an indicated value of $600 per acre. Four years ago, a section of land sold for $1,000 per acre and the buyer developed a deep well irrigation system, at considerable expense, and planted orange trees. Since that time additional sales of sections and half sections for citrus development have taken place at $1,250 an acre. A total of 12 sales covering 4,000 acres have occurred in the area. Suitable land available for development is approximately 40,000 acres. Obviously, the land value has increased beyond the original value of $600 per acre five years ago.

Buyer motivation and actions indicate the area has been thoroughly analyzed regarding soil, climate, and water conditions, and has been determined to be a prime area for citrus growing. However, is there an appropriate size for an economic unit and a limit to the initial investment

buyers are willing to pay? Would typical purchasers pay $1,250 per acre for two sections of land or would they consider the purchase of sections or half sections at higher unit prices? These smaller parcels may have a lower acquisition cost but may not constitute economic units that allow for development of the required irrigation systems. A separate market for the smaller parcels may develop that is restricted to the owners of adjacent parcels with existing irrigation systems that could be expanded to include additional land.

Agricultural lands in transition are usually associated with radical changes in selling prices and recent market trends. A reliance on the comparative sales approach to provide reliable estimates of transitional land value is recommended because this method provides direct evidence of the current value of anticipated future net benefits, regardless of how distant such benefits may occur.

COST APPROACH

The cost approach has little validity or applicability in the valuation of transitional properties because most transitional properties suffer from economic and functional obsolescence. These items of accrued depreciation are best measured by the comparative sales approach.

INCOME APPROACH

The income approach is frequently used to estimate the value of transitional land through application of a discounted cash flow analysis (DCF) or subdivision analysis. This technique is based on the assumption that present income is more desirable than future income and that market participants prefer immediate cash returns over future income flows. DCF analyzes cash flow projections for each period of time that the property is expected to produce income in order to compute the present value of property assuming a certain rate of return. A DCF analysis requires a number of assumptions regarding such factors as absorption rates, sales prices, development costs, density, and appropriate discount rates. Absent sufficient comparable sales, a DCF analysis may be completed, although it must be approached with caution. The final valuation is no better than the data used; judgment errors regarding assumptions have a major impact on the final estimate of value. For a more complete discussion of discounted cash flow analysis, refer to Assessors' Handbook Section 501.

The following approach could be employed in instances where there is extensive knowledge of impending special benefits but where no sales have yet occurred.[21] Such a situation occurred in areas of the Southern San Joaquin Valley where it was anticipated that irrigation water from the California Aqueduct would soon be available for agricultural purposes. Well water contained traces of boron which were harmful to most crops and precluded the development of available land with good quality soils. In such instances the proper appraisal technique would be to determine the sum of the capitalized value for all future net benefits under the existing use for the remaining term of that use and the present worth of the capitalized value of all future net benefits under the anticipated future use of the transitional land. However, the present worth of

[21] "Special benefits" refers to an increase in value of a parcel due to features of current or expected construction.

all expenditures required to prepare the land for its future highest and best use must be deducted Such costs might include land leveling, irrigation systems, and soil amendments. Questions regarding the levels of net income and yield rates to be utilized can only be determined by analyzing current market data since predictions of future trends are based on past and current trends. The following example illustrates how to apply this approach.

EXAMPLE

Present Use (Dry Land Grain; Remaining Term is 5 Years)	
Net Income = $30 Per Acre Per Year	
Present Worth of $30 for 5 Years Discounted @ 7%	
(6%Y + 1% T) = $30 x 4.100	$123
Future Use (Irrigated Crop Land, Perpetuity)	
Net Income = $100 Per Acre Per Year	
Capitalized Value = $100 ÷ 7% = $1,428	
Present Value of $1,428 Discounted @ 7% for 5 Years =	
$1,428 x 0.7130	1,018
	$1,141
Minus the Present Worth of the Expenditure Needed to Develop the Land to its Future Highest and Best Use:	
Land Leveling @ $200 Per Acre x 0.7130	- 142
Irrigation @ $100 Per Acre x 0.7130	- 71
Total Transitional Value	$928

SUMMARY

Transitional properties may include those parcels that are declining in value and use as well as those parcels that are increasing in value and use. The concept of transitional properties is generally associated with an increase in highest and best use along with property development; however, transition is related to changes in the utility of property. In other words, transition occurs because modern, different, superior, or inferior net benefits are anticipated through modification of existing property uses.

Anticipated future net benefits may take the form of greater (or declining) annual revenues, anticipated future lump sum payments (reversions), or anticipated flow of future amenities. These benefits exist in the minds of active market participants who comprise the market for affected properties.

Frequently, a change in property use or purpose of ownership is not readily apparent. Therefore, it is exceedingly important to investigate buyer motivation. Frequently, this analysis discovers a mixture of motives and an imbalance of market knowledge between buyers and sellers.

Since sales are frequently the first and only suggestion of the early stages of transition, the sales comparison approach provides the most useful indicator of value in most instances.

PART II

ASSESSMENT OF OPEN-SPACE PROPERTY

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CHAPTER 1: INTRODUCTION

In 1965 the Legislature enacted the California Land Conservation Act (Williamson Act) in an effort to preserve agricultural lands for the production of food and fiber and to discourage noncontiguous urban development. The law was an attempt to stop or at least to slow down the increase in real property taxes on farmland by providing methods for restricting land use to agricultural purposes. This attempt was reinforced in 1966 by legislation that established a rebuttable presumption stating that certain enforceable government restrictions on land use are presumed to continue in the predictable future and are presumed to affect value.[1]

The original California Land Conservation Act of 1965 could not assure limitations on the assessed value of land restricted to agricultural use because the Constitution required that assessments be based upon market value. In the 1966 general election, the electorate approved a constitutional amendment (now article XIII, section 8, of the Constitution) that enabled the Legislature to prescribe assessment procedures not based upon market value for certain open-space lands. The following year, the Legislature added sections 421, 422, and 423 to the Revenue and Taxation Code to define open-space enforceable restrictions, to prohibit the use of sales in the appraisal of land subject to these restrictions, and to require that open-space lands be appraised on the basis of income. These sections were then amended (repealed and new versions enacted) in 1969 to prescribe the method for determining the applicable capitalization rate, to clarify procedures for the valuation of residential sites, and to specify that trees and vines be valued in the same manner as land.

In 1973, further amendments to sections 421 and 422[2] added to the list of enforceable restrictions certain wildlife habitat contracts, and added section 423.7 procedures for the valuation of lands subject to such restrictions. Under section 423.7, lands subject to these wildlife habitat contracts are not to be valued by the capitalization of income approach, but by a restricted comparative sales method.

The Open-Space Easement Act of 1974 revised the procedures for the creation of open-space easements and defined certain scenic restrictions as enforceable restrictions for assessment purposes. Legislation in 1982[3] modified section 421 to include as an enforceable restriction an open-space easement granted to a regional park district, regional park and open-space district, or regional open-space district.

There have been numerous legislative changes since 1978 in the assessment procedures applicable to enforceably restricted properties. In January 1979, section 51283.1 was added to the Government Code to provide for a determination of any additional deferred taxes due upon cancellation of an open-space contract. However, section 51283.1 was repealed in August 1986. In 1981, legislation added Government Code section 51282.1 which provided special one-time

[1] Revenue and Taxation Code section 402.1.
[2] All statutory section references are to the Revenue and Taxation Code unless otherwise designated.
[3] Statutes of 1982, Chapter 71 (Assembly Bill 597).

cancellation procedures for open-space contracts,[4] and set forth certain conditions for approval of a petition for cancellation. Although this section was automatically repealed January 1, 1983, Government Code section 51282, which was amended by this legislation, set forth stringent conditions for the cancellation of open-space contracts. Sections 51231 and 51238 of the Government Code were also amended in 1981[5] to include agricultural laborer housing as a compatible use for enforceably restricted lands. As a result of this and further legislation in 1985, agricultural labor housing is now treated the same as other residences located on open-space lands (section 428).

Section 423, which prescribes factors to be considered in valuing restricted property, has also been periodically modified. Subdivision (a)(1) now requires reference to actual rents for similar properties when determining cash rents for restricted properties, and subdivision (a)(3) has eliminated the six-year maximum period for crop rotation. Subdivision (d) was amended in 1987 to provide that, unless either party to the open-space contract prohibits it, the restricted value determined by the capitalization of income method will not exceed the lesser of either the current fair market value or the factored base year value of the property. It also authorizes the assessor to charge up to $20 per parcel for determining the 1975 base year value of a restricted property. Subdivision (e) provides that, if the contract between the landowner and the city or county so states, nonliving improvements which contribute to land income shall be valued in the same manner as the enforceably restricted land. Also in 1981, technical revisions were made to section 423 to accommodate the mandated change to a 100 percent assessment ratio.[6]

When article XIII A was first implemented, its base year concept was applied to open-space properties. However, in July 1979, section 52(a) was added returning enforceably restricted properties to the valuation procedures in effect prior to the passage of article XIII A. Article XIII A is now applied only when the factored base year value is the lowest of several values.

Effective January 1, 1981, section 423.3 was added[7] allowing cities or counties to assess certain categories of enforceably restricted lands at the lower of their current restricted value or a percentage of their value determined pursuant to section 110.1 adjusted annually to a maximum of 2 percent for inflation. The application of section 423.3 has been affected by the 1987 changes to section 423 which now provides for a three-part value comparison.

Substantial changes have been made to the provisions pertaining to the valuation of properties subject to terminating restrictions, i.e., the contract subjecting the land to restriction will not be renewed. Section 426, dealing with assessment of properties whose owners have filed notices of nonrenewal, was revised in 1982 and 1984 to clarify valuation procedures during the period of contract termination. In addition, the cancellation value of land subject to a Williamson Act

[4] Statutes of 1981, Chapter 1095 (Assembly Bill 2074).
[5] Statutes of 1980, Chapter 1219 (Senate Bill 1747).
[6] Statutes of 1981, Chapter 261 (Assembly Bill 241).
[7] Statutes of 1980, Chapter 1273 (Assembly Bill 2298).

contract was defined as the property's fair market value as though it were free of contractual restrictions.[8]

The original Williamson Act provided simply that annexing cities would succeed to all rights and duties of contracts executed by surrounding counties.[9] However, in 1968 the Act was amended to allow cities to protest the execution of contracts within one mile of their borders. Such protests would then entitle the city to opt not to succeed to the contract in the event of an annexation.[10]

These procedures were revisited by the Legislature in 1990.[11] This legislation prospectively repealed the protest provisions, due to the general feeling that the one mile rule unfairly exempted some landowners from the rigors of the cancellation process. Protests validly filed before January 1, 1991 continue to afford a basis for contract termination by annexing cities. This legislation also added two evidentiary presumptions which apply to evaluating protests filed before January 1, 1991 which are intended to invalidate "late" and "blanket" protests.[12] This section provides that a protest must have identified a specific contract and that it is presumed that nearby cities received notice of impending contracts.

In 1994, legislation provided statewide standards for determining "compatible uses" allowed on land subject to the Williamson Act.[13] To summarize the compatible use principles, a compatible use may generally not (1) harm soil fertility, (2) obstruct or displace potential agricultural operations, or (3) induce nonagricultural development of surrounding enrolled lands. These principles reinforce the original purpose of Williamson Act contracts to "preserve the maximum amount of the limited supply of agricultural land." This legislation also provided alternative standards for non-prime lands, mineral extraction, and grandfathering provisions for uses in place, expressly guaranteed in individual contracts, or subject to pending applications prior to 1994.

Senate Bill 1534 of 1994 tightened restrictions regarding condemnation or public acquisition of enrolled lands.[14] The changes (1) clarify that contract termination through public acquisition is appropriate only for publicly owned facilities and interests;[15] (2) provide that the pre-existing standards in Government Code section 51292 regarding prime land alternatives and inadequacy of a purely cost based selection of agricultural preserve lands now require affirmation findings; (3) require that lands resold by public entities be re-enrolled in the Act or an equivalent; and

[8] Statutes of 1987, Chapter 1308.
[9] See historical notes to Government Code section 51243.
[10] See 68 Ops Att'y Gen 204 (1985).
[11] Statutes of 1990, Chapter 841 (Assembly Bill 2764).
[12] Government Code section 51243.5.
[13] Statutes of 1994, Chapter 1251 (Assembly Bill 2663). See Government Code section 51238.1.
[14] Statutes of 1994, Chapter 1158 (Senate Bill 1534).
[15] Government Code section 51290.5.

(4) provide detailed notice to enable the monitoring of these provisions. A further related change enacted in 1996 forbids the placement of enforceably restricted land in a redevelopment area.[16]

In 1995 sections 421.5 and 422.5 were added to make section 423 applicable to agricultural conservation easements created pursuant to Civil Code section 815.1. Section 421 was again amended in 1996 to add land restricted by a political subdivision or a government entity for the benefit of wildlife, endangered species, or their habitats to the meaning of "open-space land."[17]

Section 423.8 was added in 1996[18] to provide that land restricted as a wildlife or endangered species habitat by a local, state, or federal government entity shall, upon the request of the owner, be enrolled in a wildlife habitat contract. In providing for such enrollment, this measure (1) made these lands immune to the general requirement that at least 150 acres be under contract, and (2) required that lands enrolled in a wildlife habitat contract be valued in accordance with section 402.1. Additionally, the legislation provided that any land eligible for existing open-space valuation procedures, which had also been enrolled in a contract pursuant to the bill's provisions, shall be assessed at the lower of the value determined under section 402.1 or the value determined under the open-space valuation procedures.

Section 423.4[19] was added in 1998 and has subsequently been referred to as the "Super Williamson Act." The intent of this law is to provide greater protection for California's agricultural lands by allowing greater tax benefits for farmland owners by authorizing the conversion of the voluntary rolling 10-year Williamson Act contracts to rolling 20-year Farmland Security Zone (FSZ) contracts at the request of the landowner and approval of the county. In 2002, Revenue and Taxation Code section 421.5 was amended to clarify that, for purposes of valuing open-space land subject to an enforceable restriction, the term "agricultural conservation easement" has the same meaning as defined in section 10211 of the Public Resources Code.[20]

Although there have been many significant revisions to open-space statutes since the initial legislation, the foregoing is only a brief outline of these changes. The focus of this handbook is on the application of current (mid-2003) law in the appraisal process.

Further, while the manner in which the income method is applied to the valuation of restricted properties other than wildlife habitats is described in sections 423 and 423.5, the law is neither specific enough in its directives nor broad enough in scope to cover all aspects of the complex appraisal problems involved. Elements of the capitalization process have been subject to various interpretations, and the result has been wide variation in valuation procedures. This handbook attempts to standardize valuation procedures for open-space land and to offer solutions to

[16] Statutes of 1996, Chapter 617 (Senate Bill 1566); Health and Safety Code section 33321.5.
[17] Statutes of 1996, Chapter 997 (Senate Bill 1804).
[18] Statutes of 1996, Chapter 997 (Senate Bill 1804).
[19] Statutes of 1998, Chapter 353 (Senate Bill 1182). Section 423.4 references Government Code 51296, which was repealed in 2001 to reformat its single section with 15 subdivisions into 15 separate sections (51296 - 51297.4) without changing the statute's substance.
[20] Statutes of 2002, Chapter 616 (Senate Bill 1864).

problems in the appraisal of property subject to these restrictions. The solutions are based upon analysis of current legislation and the application of appraisal principles.

This handbook does not consider the valuation of restricted timberland, nor does it deal with the appraisal of land subject to certain other types of restrictions, such as those imposed by the California Coastal Zone Conservation Act. Its purpose is limited to the appraisal of properties subject to enforceable restrictions created by the California Land Conservation Act and related legislation as defined in sections 422 and 422.5.

CHAPTER 2: VALUATION OF LAND

Except for land under wildlife habitat and timberland contracts, the basic appraisal method applicable to the valuation of open-space land subject to an enforceable restriction is the income approach to value. Section 423 states the factors to be considered in the valuation and provides for an optional method of placing a ceiling upon the value to be enrolled. Under the limitations of subdivision (d), unless a party to the contract expressly prohibits such a valuation, the current taxable value cannot exceed the lowest of: (1) the current restricted value (determined via the income method for open-space properties); (2) the current fair market value calculated pursuant to section 110; or (3) the factored base year value, as if unrestricted, calculated pursuant to section 110.1.

Section 423.3 provides for additional options for limiting the values of restricted properties. This section provides that land may be valued no higher than a given percentage of its factored base year value. Any city or county may decide at any time whether to implement section 423.3.

The specific application of procedures of sections 423(d) and 423.3 are described in more detail in Part II, Chapter 7, Assessment Limitations.

CAPITALIZATION PROCESS

The income approach to value is explained in Assessors' Handbook Section 501, *Basic Appraisal*. The capitalization of income process may be represented in its simplest form by the mathematical formula V = I/R, or value equals income divided by capitalization rate. (The capitalization rate is any rate used to convert income into value.) This formula is generally applicable to the valuation of open-space lands because the net income attributable to the land tends to be level and perpetual. To compute an estimate of land value (V) by the capitalization of income method, the appraiser must estimate the net income attributable to the land (I) and determine the appropriate capitalization rate (R).

There are instances where the shape of the income stream attributable to a particular parcel of land, while level, is terminal and perhaps deferred. In these cases, present worth factors must be used in the computation of value and V = I x F (value equals income multiplied by factor). These situations are rare; they are discussed in Part II, Chapter 2, Valuation of Transitional Land.

INCOME ANALYSIS

Section 423(a) sets the fundamental criteria for the determination of the income to be capitalized:

> (1) Where sufficient rental information is available the income shall be fair rent … based upon rent actually received … and upon typical rentals received in the area for similar land in similar use, where the owner pays the property tax. Any cash rent … considered … shall be the amount for which comparable lands have been rented, determined by average rents paid to owners as evidenced by typical

> land leases in the area, giving recognition to the terms and conditions of the leases and the uses permitted within the leases and within the enforceable restrictions imposed.
>
> (2) Where sufficient rental information is not available, the income shall be that which the land being valued reasonably can be expected to yield under prudent management and subject to applicable provisions under which the land is enforceably restricted….
>
> (3) … if the parties to an instrument which enforceably restricts the land stipulate therein an amount which constitutes the minimum annual income per acre to be capitalized, then the income to be capitalized shall not be less than the amount so stipulated.
>
> For the purposes of this section, income shall be … the difference between revenue and expenditures. Revenue shall be the amount of money … which the land can be expected to yield to an owner-operator annually on the average from any use of the land permitted under the terms by which the land is enforceably restricted … during a typical rotation period …
>
> … Those expenditures to be charged against revenue shall be only those which are ordinary and necessary in the production and maintenance of the revenue for that period. . . When the income used is from operating the land being valued or from operating comparable land, amounts shall be excluded from the income to provide a fair return on capital investment in operating assets other than the land, to amortize depreciable property, and to fairly compensate the owner-operator for his operating and managing services.

This provision makes it clear that the income to be capitalized is the economic net income attributable to the land determined, whenever possible, by the analysis of rents received in the area for similar lands in similar use. The "net" income is income received before deducting property taxes as an expense. To determine net income, the appraiser must estimate the future gross income the land can be expected to produce and subtract the allowable expenses (except property taxes) necessary to maintain this income. The "gross" income is primarily from agricultural production, but it should also include income from any compatible uses actually occurring, such as lease payments for oil or gas exploration rights, communication facility sites, and recreational uses such as hunting or fishing. There are no limits placed upon the income to be capitalized unless the contract contains a provision establishing a minimum annual income per acre.

HIGHEST AND BEST USE

Property must be appraised on the basis of its use or uses. The fundamental legal principle to be followed when making market value appraisals is that all property is appraised at its highest and best use, based on market perceptions of its potential uses. Highest and best use is that use,

among the alternative uses that are physically practical, legally permissible, market supportable, and most economically feasible, that produces the highest residual land value. *The Appraisal of Real Estate* defines highest and best use as follows:

> The reasonably probable and legal use of vacant land or improved property, which is physically possible, appropriately supported, financially feasible, and that results in the highest value.[21]

Assessors' Handbook Section 501, Chapter 4, provides a discussion on highest and best use. In that discussion, descriptions of the concepts and terms related to highest and best use, such as legally permissible, financially feasible or probable, and most productive, are set forth, along with the basic criteria for dealing with certain government restrictions on use.

In the determination of an open-space property's restricted value, section 430 provides a special statutory scheme for the application of the highest and best use concept. This section states:

> There shall be a rebuttable presumption that the present use of open-space land which is enforceably restricted and devoted to agricultural use is its highest and best agricultural use.

Based on this presumption, the present use of the land and the income generated by this use must be considered appropriate for purposes of determining the property's restricted value, unless the appraiser can demonstrate otherwise. To rebut the presumption the appraiser must establish by substantial evidence that a prudent owner would utilize the land for some other use, even though the present owner has not done so. The appraiser must also demonstrate that the alternative use is physically practical, legally permissible, economically feasible, and market supportable.

In calculating the economic feasibility of an alternative use, the analysis should include new and/or additional costs. Examples of the types of costs that need to be included in such an analysis include, but are not limited to:

- The cost of changing the commodity produced.
- The cost of new infrastructure requirements to produce the new commodity.
- New or additional production costs.
- Income loss during the conversion period. (This is especially important with conversion to perennial crops.)
- The cost and availability of new labor/expertise needs.

In evaluating the market supportability of an alternative use, the analysis should include the long-term economic trends of both the existing commodity and the proposed alternative.

[21] *The Appraisal of Real Estate*, 11th Edition, Appraisal Institute, (Chicago, 1996), p. 50.

Under what circumstances should the appraiser attempt to rebut the presumption that a property's present use is its highest and best use (i.e., attempt to prove that prudent management would devote the property to some use other than the present use)? Each case must be judged on its own facts, but at a minimum, the following basic conditions must be present:

- The other use must be compatible with the agricultural uses permitted under the terms of the contract.
- The use must be common or general for comparable properties.
- The use must increase the total economic return of the property.

Generally, the appraiser should analyze the production capability of the land in light of its present stage of development. It is not advisable to consider a use that is experimental in nature or one that would require extensive property development unless it is reasonably certain that a permanent change in use will take place. Where land is scheduled for development, or a future change in its highest and best use is anticipated, it can be valued as transitional land (see Part II, Chapter 2, Valuation of Transitional Land).

The appraiser must bear in mind that oftentimes a property may have special limitations that make it incapable of typical use. For instance, a condition of dense soil, alkali, or high water table could relegate a property to a lesser use in an otherwise uniform area of row cropping. The converse might also be true. An individual water supply could make a higher use available to one property in an area of dry grain farming. The appraiser should carefully consider each property's characteristics and its effects on potential use before imputing an alternative use to a property.

IMPUTING INCOME

When appraising unrestricted income-producing properties, an appraiser can estimate an economic rent for a property not currently producing an income if it has income-producing capabilities. Use of an imputed income in the capitalization process is an acceptable method for estimating a property's value even though the income projection involves a degree of speculation and risk, providing that accurate income and expense projections reflecting the owner or operator expectations can be obtained or produced.

When appraising restricted properties by the capitalization of income method in accordance with section 423, the same procedure should be applied. That is, the appraiser can estimate economic rent for land not currently producing an income but having income-producing capabilities based on the highest and best use available under the terms of the enforceable restriction. Even though not presently capable of producing an income from uses to which it is restricted, land has value if there is the reasonable possibility and future expectation of generating an income from such uses in the future. Land with deferred future income potential may be classified as transitional land, and the method of valuing such land is discussed in the section Valuation of Transitional Land.

However, an appraiser cannot arbitrarily impute a "reasonable" amount as income to a property merely because there is insufficient rental information to estimate an economic income. The

appraiser must locate adequate and verifiable data upon which to base an estimate. The amount of income imputed would also be subject to any contractual provision that stipulated a minimum annual income to be capitalized.

ESTIMATING AGRICULTURAL INCOME

There are three basic methods for determining the economic income of a parcel to be valued under the provisions of section 423: cash rental analysis, share rental analysis, and owner-operator return analysis. Regardless of which method is used, the appraiser is attempting to determine the most probable economic income for the subject property. Therefore, the appraiser must be careful to restrict consideration to leases and analyses of properties that are comparable to the subject property. In determining a property's comparability to the subject, the appraiser should consider factors that tenants and landowners in the marketplace contemplate when negotiating leases. Such factors would include, but are not limited to, soil quality, topography, distance from markets, size, access, climatic conditions, production levels, water availability, water cost, and water quantity. In analyzing leases, attention should be given to factors such as, but not limited to, contract rent, rent concessions, length of lease, lessor/lessee division of expenses, renewal options, escalation clauses, and permitted use of the property. Owners and operators are encouraged to meet with the county assessor periodically to present and discuss information relative to income, expenses, risks, and other relevant information.

Cash Rental Analysis

Where sufficient rental data are available, cash rental analysis is generally the simplest and most accurate method for determining a property's economic rent. If the subject property and/or similar properties are leased for cash, and these leases are recent and reflect an agricultural income commensurate with the highest and best agricultural use of the property, then these cash rents are the best indicators of the economic rent for the property. Cash rents usually require the fewest adjustments when determining the net income attributable to the land, and they have the additional advantage of being easily understood and explained.

Although cash rental agreements are typically straightforward and easily understood, the appraiser should look beyond the cash rental amount and make certain that the terms and all information that could affect the rent received by the property owner have been considered. For example, many cash leases involve the guarantee of a water supply. Unlike cash leases without these provisions, such guarantees have the effect of transferring a considerable part of the short-term risk regarding water availability from the tenant to the property owner. Factors such as this are a consideration in determining who bears risk, the tenant or the property owner, and hence in deciding the appropriate risk component to be used in computing the restricted value.

Finally, events in recent years have made it evident that the appraiser needs to consider the possibility of water shortages when determining a property's economic income. In areas that are heavily dependent on surface water supplies, including imported water, agricultural land often stands vacant during years in which water supplies are curtailed or reduced due to the effects of drought or environmental demands. Under strict water allotments, it may be necessary to keep

row crop land fallow in order to provide an adequate water supply to trees and vines. Similar consideration may apply in an area heavily dependent on ground water supplied during a drought or overdraft condition. Where an adequate water supply is a concern, the appraiser must account for the uncertainty either in the projected income stream or in the risk component added to the capitalization rate. If the appraiser determines that the shortage is both regular and cyclical, then an allowance can be made in the income stream projection. Otherwise, the risk of curtailed production or income due to water shortages should be accounted for in the risk component. This allowance should be made regardless of whether cash rental analysis, share rental analysis, or owner-operator return analysis is used for estimating a property's economic income.

Share Rental Analysis

In many rural areas, cash rents are uncommon and share rental agreements predominate. In a share rental agreement, the property owner receives a share of the production of each crop grown during the term of the lease. The amount of the percentage share may vary according to the crop, the area where it is grown, the land's capability, the cost and scarcity of water, and whether or not the owner pays a portion of the expenses of producing the crop. The appraiser should determine the percentage share applicable to the subject property based on market data derived from the examination of comparable properties leased on a share rental basis.

In determining the gross income under a share rental agreement, the appraiser must estimate the average production, the proper percentage share, the projected price for each crop grown, and, where applicable, the owner's projected expenses. In determining what price should be used in computing the gross return to the landowner, the local county agricultural commissioner's annual tabulation of commodity prices is generally a good source of historical prices. However, these prices usually reflect prices received at the packing house, and as such include picking, packing, and hauling costs. Many share rental agreements are structured so that the landowner's share is based on a price that is net of these costs. Therefore, the appraiser should be careful to examine and, if necessary, adjust the historical price to ensure that the price used in calculating the landowner's rental share is actually reflective of the lease terms.

If a variety of crops are grown on the same land over a period of years, a situation typical of irrigated crop land farming, the appraiser must determine the gross return to the landowner for each crop grown during a normal rotation program and average these returns to estimate the economic rent of the property. To arrive at the landowner's net economic income for the subject property, the appraiser must deduct the economic expenses incurred by the landowner to produce and maintain the average annual gross return. The topic of expenses is discussed in Part II, Chapter 2, Charges Against Real Property Gross Income.

The normal procedure for determining the landowner's average annual gross return is to compute an estimated return per acre based on the gross farmable acreage in the property. The gross farmable acreage is the total acreage less homesites and other unrestricted improvement sites, road and ditch rights-of-way, etc. Internal access roads, head ditches, etc., are not deducted from the farmable acreage because they are necessary to the growing of the crop. However, frequently growers will report production net of internal access roads, head ditches, etc. It is

important for the appraiser to be aware of how production figures are reported to ensure the data are properly analyzed.

The following is an example of the determination of economic rent for a parcel of irrigated Class I cropland utilizing share rental analysis:

YEAR	CROP	PRODUCTION (TONS)	SHARE	AVERAGE COMMODITY PRICE (PER TON)	GROSS RETURN PER ACRE
1	Alfalfa	6	25%	$115	$172.50
2	Alfalfa	7	25%	$113	197.75
3	Alfalfa	6.5	25%	$115	186.88
4	Sugar Beets	24	25%	$39	234.00
5	Corn	2	331/3%	$118	78.66
6	Tomatoes	23	15%	$52	179.40
				Total	$1,049.19

$$\frac{\text{Total Gross Annual Return Per Acre}}{\text{Number of Years}} = \frac{\$1{,}050}{6} \text{ (rounded)} = \$175 \text{ per acre}$$

The anticipated average gross agricultural return to the landlord under this rotation program is $175 per acre.[22]

Commodity prices and production are variable elements in the determination of income by share rental analysis. Since the income to be capitalized is the anticipated net income for the subject property, the data used to establish this income theoretically should be anticipated or projected prices and production appropriate for the area in which the property is located. It can be extremely difficult to project commodity prices, especially during periods of rapid economic change, and the circumstances surrounding an open-space property appraisal increase this difficulty. Open-space property appraisals are generally completed before data needed to make a reasonable projection of prices for the coming crop year are available. Under these circumstances, historical commodity prices are generally the best indicator of future prices available to the appraiser. In projecting historical prices, the appraiser should recognize the following principles which establish that:

- Recent prices are generally better indicators of future prices than prices received in prior years

[22] All examples throughout this handbook are for demonstrative purposes only and are not meant to reflect conditions in any part of the state.

- Commodity prices tend to be cyclical in the longer term but are subject to extreme short-term variations caused by sudden changes in supply and demand
- Prices generally move inversely with production
- Land income does not necessarily fluctuate in direct proportion to sudden increases or decreases in commodity prices

Because commodity prices can be extremely sensitive to fluctuations in production, it is not advisable to make estimates as to projected commodity price separately from estimates of production. For example, if the appraiser uses average production as a guide in determining the yield, then the appraiser should use an average taken over the same number of years as the commodity price.

As noted in Part I, Chapter 3, Annual Income Estimates, a single year's data should not be considered as being typical for all years. Instead, the appraiser should consider commodity prices in conjunction with production figures for the previous three to five years. Generally, the most reliance should be placed on recent data. However, the use of historical commodity data should be viewed as only a means of assisting the appraiser in accomplishing the task of forecasting a reasonably anticipated gross income for the property. The use of historical data should be tempered by the exercise of sound appraisal judgment, with the appraiser considering all factors that may have a pronounced effect upon future prices and production.

Owner-Operator Return Analysis

The analysis of owner-operator income and expenses is the third method for determining an economic rent for open-space property. The method involves estimating the economic gross return from a farm and subtracting all expenses to determine net income.

A basic problem with this approach is that the income generated by a farm is attributable to two businesses: the farming enterprise and the real property ownership. When applying the owner-operator return analysis method, the appraiser must deduct all income attributable solely to the farming operation because the income to be capitalized is only that attributable to the portion of land restricted by contract. The difficulty of finding data upon which to base this allocation of income is the reason that the cash or share rental analysis are the preferable methods to use in capitalization.

Additional problems arise in this method of analysis when the farm is a living unit as well as a production unit. For example, some expenses such as power and labor may be partially attributable to the maintenance of the owner's residence, and these portions would not be legitimate deductions from farm income. As previously noted, all costs of production must be economic costs, and expenses from a particular property should be compared with norms established from the analysis of similar farming operations, or benchmark or university extension studies, etc. A more detailed discussion of the determination of economic costs of production for specific types of rural properties is contained in Part I of this handbook.

Because the owner-operator method of income analysis is time-consuming and subject to error, it should generally be used only in the appraisal of some orchards and some specialty crop lands for which rental data are not available. When a number of properties of this type must be appraised, economic expenses should be determined through the analysis of several owner-operator statements representative of the entire group, and these expenses should be deducted from the gross income of comparable properties. This is preferable to making a complete owner-operator analysis of each property. However, the appraiser must be careful to restrict consideration to properties comparable to the subject property. The appraiser should not overlook significant differences in gross income or costs between various areas within the county, and should make appropriate adjustments to reflect the local economic conditions in determining the owner-operator return for the subject property.

When this method is used, rental information from properties of similar use and capability may be obtained from other counties to confirm the derived income estimate, providing that there is a good degree of comparability between properties and area economic influences.

Summary

The three methods of estimating agricultural income vary considerably in degree of difficulty and reliability. The degree of difficulty depends upon the availability of data to be collected and analyzed; reliability depends upon the number of estimates and projections that must be made and proficiency in analyzing data. In consideration of these factors, when sufficient cash rental data are available, cash rents should be used to determine the economic income. When sufficient cash rental data are not available, the appraiser should estimate economic income from a share rental analysis or use owner-operator income.

INCOME FROM COMPATIBLE USES

Although most of the income generated by open-space properties is from agricultural enterprises, there are many properties for which a return from compatible uses increases the income to be capitalized.

Section 51231 of the Government Code states in part:

> … the [county] board or [city] council, by resolution, shall adopt rules governing the administration of agricultural preserves…. In adopting rules … the board or council may enumerate those uses, including agricultural laborer housing which are to be considered to be compatible uses on contracted lands…. (Bracketed words added for clarity.)

In defining the income to be capitalized when valuing open-space properties subject to enforceable restrictions, section 423(a)(3) states in part:

> … Revenue shall be the amount of money … which the land can be expected to yield to an owner-operator annually on the average from any use of the land permitted under the terms by which the land is enforceably restricted,…

Under these provisions, and in accordance with Government Code sections 51238.1, 51238.2, and 51238.3, the assessor must assume that any use allowed by a contract approved by the county/city administration is a compatible use. When income generated by this use is attributable to the land, it must be capitalized in the manner specified for restricted properties. Since county governments vary in the administration of open-space contracts, it is impossible to enumerate all possible compatible uses. Therefore, the consideration of compatible uses will be limited to several major use categories, but the principles and techniques discussed will usually be applicable to other more specific uses.

Legislation enacted in 1994 and codified in Government Code section 51238.1 sets forth the guidelines for determining compatibility of uses on lands enrolled in the Williamson Act.[23] The following discussion of some categories of uses is not an authorization for deeming any particular use compatible, but is simply a guide for tax assessment. Questions regarding the legality or compatibility of particular uses should be referred to the local planning department. The California Department of Conservation may also assist in interpreting the code provisions of the Williamson Act.

Recreation Income

Many rural properties have actual or potential recreational uses, but few of these uses have value. The inclusion of income from a recreational use in the income stream to be capitalized is limited by the provisions in section 423(a)(2) which states in part:

> … There shall be a *rebuttable presumption* that "prudent management" does not include use of the land for a recreational use, as defined in subdivision (n) of Section 51201 of the Government Code, *unless the land is actually devoted to that use.* (Emphasis added.)

Under this provision, only income generated by an actual recreational use that has value should be included in a property's income stream. Further, an economic rent for an existing recreational use must be included only where the land is actually devoted to that use.

However, the section prohibits the inclusion of recreational use income when the land is not actually devoted to such use, unless the appraiser can produce substantial evidence that prudent management would include such use. Substantial evidence that a prudent owner would develop or use land for recreational uses, even though the present owner does not do so, is necessary to rebut the presumption created by this section.

Under what circumstances should the appraiser attempt to rebut the presumption that prudent management would not include recreational use? Each case must be judged on its own specific facts, but there are certain basic requirements that must be considered. They are:

- The use must be common or general for comparable properties.
- The use must have value and be compatible with the agricultural use.

[23] See Government Code sections 51238.1 et seq.

- The use must increase the total economic return of the property (some recreational uses may reduce a property's agricultural potential).

Only if there is substantial evidence that all of these requirements are met should an estimate of the potential recreational return be included in the income to be capitalized on the basis that "prudent management" would include the use of the land for recreational purposes.

Income From Foreign Improvement Sites

In many rural areas it is common for portions of restricted properties to be leased for a term of years as sites for foreign improvements such as radio towers, television repeaters, etc. Income generated by land devoted to such compatible uses must be capitalized when determining the restricted value of the property. Because such compatible uses produce income that lasts for a limited period of time, rather than into perpetuity, the areas devoted to such uses should be valued separately by means of income capitalization. The capitalized value of these sites should be added to the land value established for the balance of the parcel. The area of the site and its access, if not available for agricultural use, must be deducted from the farmable acreage of the parcel.

The recommended technique for valuing these compatible use sites is to estimate the probable duration of the use and to capitalize the economic rent (generally the contract rent) as a level annuity. The present worth of the reversionary value of the land based on its restricted use must be added to the present worth of the annuity.

For example, assume that a one acre radio tower site is leased for 10 years at $300 per year. Both the term and the rent are considered proper. The restricted value of the land for agricultural purposes is $100 per acre. The open-space capitalization rate is 9 percent (interest, taxes, and risk).

$300 x 6.418 (present worth of 1 per period for 10 yrs. @ 9%)	$1,925
$100 x .422 (present worth of 1 deferred 10 yrs. @ 9%)	42
Total restricted value of the site	$1,967

If the use is considered perpetual, the income is capitalized into perpetuity using the open-space capitalization rate.

Income From Commercial Enterprises

Occasionally, a portion of a restricted property is used by the owner for a commercial enterprise other than agriculture; for example, a produce-packing shed or a fertilizer company owned by the landowner but doing business with many individuals. If the commercial use is a permitted compatible use, the assessor must value the commercial enterprise site according to the terms of the open-space restriction, i.e., the capitalization of an economic site rent using the open-space capitalization rate. Normally, the commercial use will be perpetual. If the commercial use is

permitted only for a limited term, a procedure similar to that described for the valuation of foreign improvement sites can be applied.

Estimating the economic rent for the commercial enterprise site is the most difficult part of the valuation procedure. The estimate can be made either by using actual rents of comparable commercial sites or by multiplying the market value of comparable commercial land by a market-derived capitalization rate. The method used should depend upon the quantity and quality of data available.

Income From Sale of Water

A property may have multiple sources of water and/or rights to more water than is required for the operation. For example, a property or portion of a property may be "set-aside" (removed from production to lie fallow) which results in the property having an allocation of water that may go unused. However, there may still be a "district" charge for the unused allocation of water. Thus, in some cases a property will have more water than is needed for the operation and prudent management of the land calls for selling the excess water.

If the sale of water is allowed by the water district and is a permitted compatible use, the assessor must value the land according to the open-space restriction, i.e., consider the revenue resulting from the sale of water in determining the income to be capitalized. Section 423(a)(3) expressly provides that the income to be capitalized must be based upon the income actually received and upon typical income received in the area for land under similar use. Accordingly, the revenue resulting from the sale of excess water of a restricted property or a portion of that property should be considered in establishing the income to be capitalized if it is a permitted compatible use.

Income From Mineral Exploration/Extraction Leases

Subject to Government Code sections 51238.1 and 51238.2, mineral exploration/extraction may be deemed a compatible use on land subject to open-space restrictions. Thus, these lands may generate income from mineral exploration/extraction leases. Such a lease results in a change of ownership for property tax purposes under section 61(a), which in turn requires a supplemental assessment under section 75.10. This income should not be confused with the income from known mineral resources such as oil fields or quarries, which are discussed in Part II, Chapter 6.

Exploration/extraction leases, generally confined to oil, gas, and geothermal exploration, are essentially options to drill and extract. The typical lease involves a four- to five-year term with bonus or rental payments varying considerably among areas or individual properties. The income is in the form of a level annuity, and should be separately capitalized at a mineral market or band-of-investment derived exploration/extraction capitalization rate for the estimated remaining term of the lease. The exploration/extraction lease value should be added to the other land value components of the property being appraised, (i.e., open-space restricted value, nonrestricted homesite value, etc.) to arrive at a total land value. It should be noted that for the following lien date the lease may have a decline in value pursuant to section 51.

There are, however, problems that can complicate the capitalization process. For example:

- Many lease contracts are not recorded and accurate data may be hard to gather.
- The rights may be quitclaimed after exploration or the lease may be renewed for future exploration/extraction; therefore, the contract term is not always a good indicator of the actual term.
- Economic rent may be difficult to determine because actual rents tend to vary with the bargaining power of the landowner.

Because rents for exploration/extraction leases tend to be low and lease terms short, the amount of appraised value generated by these leases is usually small. For example, an annual payment of $5 per acre, a four-year term, and 10 percent market or band-of-investment derived exploration/extraction capitalization rate generates $16 (rounded) in appraised value the first year (3.169 (PW 1/P) x $5). However, a longer term and/or higher payment will generate a more significant value. The value of these rights, as determined by the above described capitalization process, should then be added to the appraisal of open-space lands.

Production Contracts

The U.S. Department of Agriculture, through a suborganization known as the Commodity Credit Corporation, executes a limited number of contracts for landowners to produce certain crops under Production Flexibility Contracts. These differ from the government-imposed planting limitations in that Production Flexibility Contracts are voluntary production arrangements between the farmer and the federal government. Most commonly, the grower receives some form of subsidy such as a guaranteed premium price in return for growing a specific crop or restricting the acreage upon which the crop is grown. The questions are, should the revenue attributable to the land be based on the unrestricted market price of the crop; should the revenue be based on the full amount received including subsidies or above-market guaranteed prices; or should the revenue be based on the crops and income that are typical without such a contract?

Under standard valuation principles, the estimate of economic rent for income-producing property must be made without regard to actual contract or lease arrangements that may exist. Thus, in valuing a property encumbered by a contract (or lease), the net income to be capitalized is the amount the property would yield were it not so encumbered, whether or not this amount exceeds or falls short of the contract rent. However, the capitalization of income method for the valuation of restricted properties set forth by the Legislature is an exception to this principle. Section 423(a)(3) expressly provides that the income to be capitalized must be based upon the rent actually received and upon typical rents received in the area for land under similar use. Section 423(a)(3) states in part:

> … Revenue shall be the amount of money … which the land can be expected to yield to an owner-operator annually on the average from any use of the land permitted under the terms by which the land is enforceably restricted….

Accordingly, the revenue resulting from participation of a restricted property or a portion of that property in a Production Flexibility Contract with the Commodity Credit Corporation, whereby the producer agrees to produce a specific type of crop (wheat, corn, etc.) in return for a certain level of payments for a term of years, should be considered in establishing the income to be capitalized.

Section 430 provides that there is a rebuttable presumption that the present use of open-space land enforceably restricted and devoted to agricultural use is its highest and best use. Although a Production Flexibility Contract with the Commodity Credit Corporation is not an enforceable restriction within the meaning of section 430, the present use of the land (e.g., growing wheat instead of alfalfa) is presumed to be the highest and best use. As is the case with other rebuttable presumptions, the presumption may be overcome where there is substantial evidence that a different use is the highest and best use. Accordingly, rents and incomes of comparable properties should be considered and compared to the rent or income earned by the property subject to a Production Flexibility Contract. If typical revenues are clearly higher or lower than the revenue generated by the contract, revenue based on typical use of the land should be estimated and the appraisal report must contain the specific reasons for rejecting the actual use.

Planting limitations can also be imposed by the purchasers of a commodity. For example, a tomato processor may contract to purchase the crop from a limited acreage. Leases involving such grower contracts (planting limits) should be analyzed to determine the effect of the contract upon the terms of the lease.

CHARGES AGAINST REAL PROPERTY GROSS INCOME

Since the income to be capitalized in the valuation of open-space properties is the net income attributable to the land, the expenses necessary to maintain this income and the portion of the income attributable to improvements must be subtracted from the expected gross income prior to capitalization. The type of expenses deducted, and to some extent the amount of the deductions, will depend upon the composition of the gross income. For example, a gross economic income derived from cash rents will generally require fewer adjustments than a gross income derived from share rents, and, while a management charge is generally applicable to both income streams, this charge will normally be less in cash rental analysis. In addition to the expenses that are incurred for the creation and maintenance of the income, the property owner is entitled to a fair return *on* the value of the improvements that are necessary to produce the income and the return *of* (recapture) the value of such improvements.

Further, since the income being processed is a gross economic rent for the subject property, the deductible expenses must also be economic expenses. When substantial differences exist between estimated economic and actual expenses, the appraiser should review the analysis to be sure the estimated expenses are in fact proper for the property in question.

The following sections discuss the major categories of expenses and their application in open-space income analysis.

Crop Production Expenses

In many share rental agreements, the landowner is required to pay a specified portion of certain expenses of production, such as the cost of fertilizer or water. In this type of arrangement, the landowner's share of the crop is generally higher than it would be in a "clean" share agreement where the owner does not pay any production costs. These production expenses are a legitimate charge against the gross income generated by such leases. However, the use of "clean" share rents to estimate economic rent is preferable when such data are available because the consideration of shared expenses adds another variable to the process of determining economic rent by share rental analysis. Since the income to be capitalized is the expected future income, any expense consideration must be based on the same "share rental" premise.

Vacancy and Collection

A charge or expense for vacancy and collection is generally not applicable to the income generated by agricultural properties. Agricultural properties are seldom vacant when economic conditions are favorable since many are owner-operated, and the others are readily leased at a fair rent. A landowner may not be able to negotiate a cash lease, but share rents allow a tenant farmer to operate with no investment in land. There are usually many tenant farmers willing to grow crops on this basis.

Collection losses may be applicable to leased agricultural properties of all kinds. Most cash rentals involve at least partial payment to the landowner after the crop has been harvested and sold. The landowner typically subordinates the landowner's cash rent or share rent to the security interest of the tenant's crop lender. Thus, the landowner may not be paid unless sufficient proceeds remain from the sale of the crop after payment of production costs and interest. The appraiser need not make an additional deduction for collection losses when processing the income to be capitalized, but should take collection losses into account. If evidence derived from comparable properties establishes that collection losses are taken into account by the parties in their agreement as to the size of the cash rent or percentage share rent, as the case may be, the appraiser may account for collection losses in that manner; otherwise, if a cash rental or share rental analysis is employed, collection loss is a risk borne by the landowner which should be properly reflected in the risk component of the capitalization rate.

Management and Insurance

A charge for property management is a legitimate deduction from gross income; however, it is important to distinguish between property management and enterprise management. The expenses that can properly be deducted from the gross income attributable to the real property are those incurred by the owner in managing the investment in the real property. Theoretically, a component for investment management is included in the yield rate for long-term government bonds and is therefore already included in the open-space capitalization rate. But, agricultural properties generally require more management than an investment in government bonds. It is also important to recognize that a charge for property management does not compensate for risk. The landowner's risk requires a separate and independent analysis and is reflected in the capitalization rate.

Management expenses vary with the type of lease in effect. For example, an owner's management expenses are minor when a property is leased for a cash rent. The owner incurs some expense when initially leasing the property (legal fees, etc.) and some during the term of the agreement, as necessary to assure compliance with the lease provisions. Considerably more owner management is required when a property is encumbered with a share lease. In the case of a share lease, the owner is also concerned with the crops grown, cultivation practices, and share accounting.

Property management costs are usually measured as a percent of gross income. This measurement is complicated in agricultural properties because actual management expenses do not vary proportionally with the size of the property even though total gross income may. For example, an 80 acre row crop parcel does not necessarily need twice the management required for a 40 acre parcel of similar use and capability. In addition, actual management costs may vary with the degree of trust that exists between the property owner and the farm operator, the owner's agricultural expertise, and other factors.

Insurance is another deductible expense incurred by the property owner. The prudent owner will carry liability insurance and insurance on improvements that are necessary to maintain the income. The owner may also pay a portion of crop insurance costs in share rental agreements. These insurance costs are relatively small, so it is not necessary to itemize them as separate deductions; however, they should be included in the overall management charge.

Because of the many variables involved, it is extremely difficult to estimate an economic management expense for agricultural property, and judgment is essential in the final determination of this factor. However, for purposes of open-space valuation, a degree of uniformity in appraisal procedure is desirable. The following schedule of suggested management charges is recommended only as a guide; charges should be determined for each type on an individual basis.

TYPE LEASE	MANAGEMENT CHARGE	COMMENTS
Cash Rent	2 to 3 percent of the gross rental income attributable to the real property.	Minimum management required. Percentage will depend upon the size of the property.
Share Rent	3 to 5 percent of the gross rental income attributable to the real property.	Percentage will depend upon the size of the property and the crops grown.

In owner-operator income analysis, a single management charge that includes both enterprise and property management is generally deducted from the gross farm income as an expense; therefore, no other management charge need be deducted in such cases.

Special District Charges

Special district assessments other than ad valorem assessments levied on agricultural land and paid by the landowner are legitimate charges against real property income. Irrigation and drainage district charges are the most common type of special district assessments. Both of these charges are expenditures for the maintenance of systems necessary for the generation of the property's income. All ad valorem assessments, i.e., assessments based on a uniform percentage of market value, should be accounted for in the tax component of the capitalization rate and should not be deducted as separate expenses.

Improvement Charges

Because the income to be capitalized in open-space valuation is the net income attributable to land (unless the contract includes improvements), a return *on* the investments in nonliving improvements and an allowance for recapture *of* such investments must be deducted from the gross income. This return *on* and *of* the improvements is applicable only to those nonliving improvements necessary for the maintenance of the property's income stream. Living improvements (trees and vines) are treated for appraisal purposes as land (section 429), and their valuation is discussed in Part II, Chapter 3, Valuation of Trees, Vines, and Other Living Improvements.

As a rule, improvement charges are deducted from the income of the parcel on which the improvements are located; however, complications may arise when two or more parcels are serviced by a single improvement. For example, several parcels may be irrigated by a single pump, and this irrigation system would be considered an overimprovement for the site parcel. When all of the parcels serviced are in the same ownership and form a farming unit, it is preferable to prorate the improvement charges over the economic area serviced. This proration results in more realistic land values and better equalization between parcels. The entire improvement value, however, should be included in the appraisal of the site parcel even though the charges are prorated.

Return "On" Improvements

A property owner is entitled to a "fair" return on the value of nonliving improvements. A "fair" rate of return is a market-derived yield rate. The yield rate is market-derived because the legislated open-space rate is applicable only when capitalizing the income attributable to the restricted portions of the property to determine restricted values.

One method of finding a market yield rate for nonliving improvements is to extract the rate from sales of similar agricultural properties. This method presumes that the yield rate for improvements is identical to the yield rate for the entire property. If the appraiser determines that this total property rate method is not appropriate for the nonliving improvements, some other method consistent with generally accepted principles of appraisal may be employed.

The second element needed to determine the return *on* nonliving improvements is the current market value of the improvements. This value is most commonly determined by the cost

approach (replacement cost new less depreciation [RCNLD]) but may be derived through market analysis where applicable data are available. Once these two components (yield rate and current market value) are known, the return *on* improvements is computed by multiplying value by the yield rate.

Return "Of" Improvements

In addition to a fair return *on* an investment, the property owner must earn a sufficient amount to provide a return *of* the current market value of wasting assets. There are at least four potential methods of applying this technique.

- Provide for straight-line recovery of value by using replacement cost new (RCN) of the improvement and its estimated economic life when new.
- Provide for straight-line recovery of value by using the estimated current value of the improvement (hereafter referred to as RCNLD, although any market-based method may be used) and its estimated remaining economic life (REL).
- Use a sinking fund technique based on RCN and economic life when new (the rate of return is the same rate used for return on the investment).
- Use a sinking fund technique based on RCNLD and REL (the rate of return is the same rate used for return on the investment).

Advantages of using a straight-line method (either RCN or RCNLD) include: (1) it is simple to use, and (2) no adjustment is required when the yield rate changes. Some disadvantages are: (1) it overstates true capital recovery allowances because it presumes that the owner will set aside cash for replacement of the asset in a noninterest-bearing fund, and (2) the straight-line method results in different residual income to the land depending on the current market value of the improvements.

The primary advantages of using a sinking fund technique to recapture an investment for nonliving agricultural improvements are that it is consistent with the principles of discounted cash flow (see Assessors' Handbook Section 501) and, when used properly, it avoids the problem of income to land changing due to differing estimates of improvement values. Accordingly, the appraiser should use a sinking fund technique to account for return of nonliving improvements.

The RCN and RCNLD methods should yield the same result if applied properly, so either method is acceptable.

A potential advantage of the RCN method is that the same percentage of RCN for any given estimated economic life can be applied to all properties with the same life and yield rate (the rate used for return *on* the property). For example, if the yield rate is 4 percent, the tax rate is 1 percent, and the economic life is 20 years, the annual amount is calculated by multiplying the RCN by .0802 (.0302 sinking fund factor and .05 yield and taxes).[24] The same percent can be applied to all nonliving improvements that have a 20 year total life and a 5 percent yield and tax

[24] Factor .0802 is the same as the installment to amortize factor at 5 percent.

rate. A second advantage is that there is usually (but not always) less controversy or uncertainty over the probable economic life of a new improvement as compared to the remaining economic life of an aged improvement. These advantages are minor in many cases, so the appraiser should select either the RCN or RCNLD depending on the reliability of the available data.

Maintenance

A property owner may incur certain expenses in the maintenance of improvements necessary to preserve the property's income stream. For example, irrigation pumps may require periodic overhaul and fences must be repaired. Under the provisions of many agricultural leases, the lessor is required to maintain these improvements, while in other agreements the lessee is responsible. Maintenance expenses are a legitimate deduction from the income generated by the real property when they are incurred by the property owner. When determining whether or not to deduct such expenses in estimating the net income for the property, the appraiser must consider who bears the burden of the maintenance expenses. For example, if an economic income for a property has been developed from cash rents of similar properties whose owners were not responsible for any improvement maintenance, then such a deduction should not be made.

Irrigation Wells

Irrigation wells, which consist of the hole, casing, gravel pack, and affixed pipe, present a special problem in the appraisal of rural properties subject to open-space restrictions primarily because they are classified as land for appraisal purposes,[25] even though they have some characteristics of improvements. For example, a well may have a comparatively long life, but it is a wasting asset and suffers from depreciation. A well often requires maintenance to continually produce the volume of water necessary to grow the irrigated crops that maximize income.

Because wells are classified as land and land values under open-space restrictions are established by capitalizing income, the following procedure is recommended for treating irrigation well charges:

- Deduct a charge for the return *of* the well value from the income attributable to the real property. This charge can be accurately determined by multiplying the replacement cost new of the well by the appropriate sinking fund factor.
- Deduct a charge for well maintenance when such an expense is applicable.
- Do not deduct a charge for return *on* the investment in a well. Instead, allow this income to remain as income attributable to land to be capitalized at the prescribed open-space rate.

When this procedure is followed, no additional value for the well would be added to the restricted land value.

[25] California Code of Regulations, Property Tax Rule 124.

CAPITALIZATION RATE DEVELOPMENT

Section 423(b) is very specific concerning the composition of the capitalization rate to be used in determining restricted land values. It states in part:

> The capitalization rate to be used in valuing land pursuant to this article shall not be derived from sales data and shall be the sum of the following components:
>
> (1) An interest component to be determined by the board and announced no later than September 1 of the year preceding the assessment year which is the arithmetic mean, rounded to the nearest 1/4 percent, of the yield rate for long-term United States government bonds, as most recently published by the Federal Reserve Board, and the corresponding yield rates for those bonds, as most recently published by the Federal Reserve Board as of each September 1 immediately prior to each of the four immediately preceding assessment years….
>
> (2) A risk component which shall be a percentage determined on the basis of the location and characteristics of the land, the crops to be grown thereon and the provisions of any lease or rental agreement to which the land is subject.
>
> (3) A component for property taxes which shall be a percentage equal to the estimated total tax rate applicable to the land for the assessment year times the assessment ratio….
>
> (4) A component for amortization of any investment in perennials over their estimated economic life when the total income from land and perennials other than timber exceeds the yield from other typical crops grown in the area.

INTEREST COMPONENT

The determination of the interest component to be used in the capitalization rate in the appraisal of open-space land has been greatly simplified because the method of measurement is specified and the component is published annually by the State Board of Equalization. The components published in the years 1969 through 2004 were as follows:

1969	6.00		1981	11.00		1993	7.25
1970	6.25		1982	14.50		1994	6.75
1971	6.75		1983	12.50		1995	7.00
1972	5.75		1984	12.00		1996	7.00
1973	5.50		1985	12.50		1997	7.00
1974	6.75		1986	10.50		1998	6.75
1975	7.25		1987	7.25		1999	6.75
1976	7.25		1988	9.00		2000	6.25
1977	6.75		1989	9.50		2001	6.00
1978	7.00		1990	8.25		2002	5.75
1979	8.50		1991	9.00		2003	5.25
1980	9.00		1992	8.00		2004	5.25

RISK COMPONENT

The determination of an appropriate risk component, however, is extremely subjective since neither the component nor the calculation to derive it are specified. Section 423(b)(2) lists the elements that must be considered when determining this component but does not expressly state a method of measurement. In actuality, a risk component can only be measured by analyzing thoroughly a very large quantity of sales, and section 423 specifically forbids consideration of sales data for purposes of determining a restricted value. Therefore, the appraiser must rely on sound judgment when estimating this component.

In exercising this judgment it is important to keep in mind exactly what will be measured and accounted for in the risk component. *The Dictionary of Real Estate Appraisal*[26] defines risk as "the probability that foreseen events will not occur." For purposes of this discussion, risk may be viewed as the uncertainty involved with the income projection for the subject property. The size of the risk component will vary according to what risks have already been considered in the development of the income to be capitalized.

There are many elements of risk in any farming or ranching enterprise, but these risks can generally be divided into two categories: those normally incurred in the production and sale of crops or livestock ("production risk") and those related to permanent or long-term reduction in productivity of the property ("productivity risk"). Additionally, when a property is leased, there is also a risk that the lessee will not comply with the lease terms.

[26] *The Dictionary of Real Estate Appraisal*, Third Edition (Chicago, Appraisal Institute, 1993), 312.

Production risk results from variations in commodity prices from year to year, coupled with the variability of yields for a property for any future year. Price movements reflecting seasonal, cyclical, and trend characteristics are predictable to some extent, but the inability of farmers and ranchers to predict these prices accurately represents a source of price risk. Additionally, many governmental actions such as trade agreements, embargoes, and fiscal and monetary policy, affect the uncertainty of price. Likewise, while typical yield figures can be determined for a property, these figures can vary greatly year to year due to factors beyond the farmer's or rancher's control—weather, water availability, pests, noxious weeds, disease, changes in regulations on use of pesticides, etc.

Productivity risk, or the risk of permanent or long-term reduction in productivity of a property, can result from numerous sources. Productivity risk typically results from sporadic disturbances (floods, earthquakes) or events that are cumulative in effect (salt incursion, declining water table). The following is a list of some items that can cause decreased productivity. The list is intended for example purposes only and is not intended to be an all-inclusive enumeration of factors that decrease land productivity.

- Flood damage
- Loss of water
- Soil erosion
- Declining water table
- Increasing concentrations of salts and other injurious substances in the soil resulting from irrigation and perched water tables
- Governmental regulations
- Decreased ground water quality and increased ground water extraction costs resulting from ground water overdraft
- Salt incursion problems that may detrimentally affect future production potential
- Nonphysical or legal restrictions on land use, productivity, or markets

Some events may have the effect of both productivity risk and production risk. For example, floods can wash out crops thereby affecting crop yield for a single season, and at the same time cause severe erosion that has long-term productivity ramifications. This example is particularly relevant for permanent crops. Floods and freezes often not only affect the current year's crop but also yields in succeeding years.

As noted above, the size of the risk component will vary according to what risks are considered in the development of the income to be capitalized. The use of economic cash rents in the valuation process may eliminate the necessity of considering short-term production risk. If the rent attributed to a property is a "fair" or "economic" cash rent derived from market data for comparable property, the elements of short-term production risk have already been considered because the tenant has assumed this risk. However, short-term rentals do not normally reflect

productivity risk, and this possibility should be accounted for in the risk component unless it has been reflected in the projected income stream to be capitalized. Additionally, the tenant has only assumed the production risk for the term of the lease. If events were to occur to cause a decline in the price of the commodity produced on the property, it is reasonable to assume that the short-term rents for the property would also decline when the lease is renewed. This possibility, which might be called long-term production risk, should also be accounted for in the risk component to the extent that it is not reflected in the projected income stream.

As with cash rents, when economic rent for a restricted property is based on share rental analysis, the landowner bears both productivity risk and long-term production risk. Additionally, in a share rental agreement the landowner assumes some of the short-term production risk. However, the effect this has on the selection of a proper risk component depends on how the income stream to be capitalized is developed.

As noted earlier, commodity prices tend to be cyclical in the longer term but are subject to extreme short-term variations caused by sudden changes in supply and demand. With share rents the landowner's average annual returns can vary considerably depending on which segment of a given commodity's price and production history is analyzed. However, if the projected net income to be capitalized is determined by analyzing price and production figures taken over a long enough time period as to include cyclical variations, then the income estimate should closely approximate the average amount the landowner will receive over the next several years. Under this scenario, the appropriate risk component may closely approximate that used for cash rents.

On the other hand, if the projected net income is based on an analysis of prices for years that only comprise a portion of the "cycle," then the price, and hence the net income to be capitalized, can vary significantly from the average amount that will be received in the future. Whether the net income overstates or understates the expected future income will determine the riskiness of actually receiving the projected income, and, therefore, the selection of an appropriate risk component for inclusion in the capitalization rate.

When owner-operator returns are used to estimate economic rent for a property, the risk component will usually be larger than that used in share rental analysis. This is because the use of owner-operator returns requires the appraiser to employ more variables in arriving at net income to be capitalized, which tends to make it more difficult to accurately estimate this figure.

Although approximate comparisons of the degrees or levels of risk among agricultural properties can be made, it is not possible to establish a precise method for measuring the risk component in every case, apart from other factors that affect the value and productivity of a property. Given this impreciseness in methodology and the wide variations in properties, a basic risk component of 1 percent is recommended as a standard guideline for purposes of developing the capitalization rate used in the valuation of open-space properties.

For purposes of determining when a risk component in excess of 1 percent might be appropriate, the appraiser must use judgment in determining facts that would have a significant impact on the

property's projected net income stream, but which are not already reflected in it. Consideration should be given to, but not limited to, the following circumstances:

- Price stability—is the price history for the commodity(ies) grown on the property relatively stable and predictable?
- Production costs—are the production costs for the subject property and comparable properties stable and predictable?
- Loss of water supply, water shortages, and uncertainty and reliability of future water deliveries
- Decreased ground water quality and increased ground water extraction costs resulting from ground water overdrafts
- Soil erosion
- Wind damage
- Flood damage
- Increasing concentrations of salts and other injurious substances in soil resulting from irrigation and perched water conditions
- Environmental regulations of agricultural and open lands, including endangered species regulations and restrictions on pesticide use
- Governmental regulations
- Reduction or withdrawal of tariffs and price supports
- Availability of farm labor
- Nonphysical or legal restrictions on land use, productivity, or markets

In addition to the consideration of the above circumstances that might increase the risk component, the following list suggests unique situations where a risk component of less than 1 percent might be appropriate:

- The income capitalized is an amount stipulated to by the parties in the restrictive agreement as provided in section 423(a)(3).
- The net income to be capitalized is determined by analyses of cash rental agreements, for either the subject property or highly comparable properties, and the net income for the properties has been steady or increased upon negotiation of new leases.
- The net income capitalized is based on a guaranteed level of payments to the owner due to participation in a government program. However, if the remaining term of participation in the program is less than five years, then the use of a risk component of less than 1 percent is not appropriate, unless other criteria are met.
- Presence of a long-term lease.

- Presence of a long-term contract for the sale of commodity(ies)—remaining term exceeding seven years.

The risk component for trees, vines, and other living improvements requires the appraiser to give consideration to circumstances that are not reflected in the valuation of land. These additional circumstances, that may lead to a higher risk component, are discussed in Part II, Chapter 3, Risk Component.

TAX COMPONENT

Section 423(b)(3) provides that the tax component for property taxes shall be based on the estimated tax rates applicable for the assessment year. The tax rate shall be the same rate used to compute the state's reimbursement of local governments for revenues lost because of homeowners' property tax exemptions in the tax-rate area in which enforceably restricted land is situated. In other words, the assessor must determine the rate at which the state subvened this lost revenue and use this same rate as the open-space tax component.

Since the implementation of article XIII A, tax rate changes have been minimal and usually do not materially affect the tax component to be included in the capitalization rate. Most of the tax rates throughout the state vary from 1 percent to 1.15 percent of assessed value.

The tax rate from the prior assessment year should be used to determine the tax component in the capitalization rate unless it is known that a substantial change in the tax rate will occur. This component should be rounded to the nearest 1/100 of 1 percent.

VALUATION OF TRANSITIONAL LAND

There are circumstances in which the present highest and best use of land subject to open-space restrictions is not a permanent agricultural use. This is the case when a new higher and better use, permitted by the terms of the enforceable restriction, will be established at some fairly definite time in the future. For example, a parcel of land currently being dry-farmed may be scheduled for conversion to irrigated crop production upon the completion of a water project. Under these circumstances, a change in the income stream generated by the property is predictable, and of course the capitalization process must fit the shape of the projected income stream. In the example given, the income stream would be characterized by a split-level income stream—a lower-level stream from the dry-land farming that will terminate, and a higher-level stream from irrigated farming that is deferred but perpetual.

The correct method of capitalizing this variable income stream is to determine the value of each segment of net income and add the present worth of the deferred portion to the value of the terminating portion. For an example of this procedure, assume that the subject property will be dry-farmed for five years prior to irrigation, the annual economic net rent from dry-land farming is $20 per acre, and that the economic annual net rent from irrigated farming will be $100 per acre. The specified capitalization rate (interest, risk, and taxes) is 9 percent. The restricted value would be determined as follows:

Value of dry-land portion of income stream
Present worth of 1 per period for 5 yrs. @ 9% = 3.89
3.89 x $20 = $78 per acre

Value of irrigated land portion of income stream
$100 ÷ .09 = $1,111.11 or $1,111 per acre
Present worth of 1 due in 5 yrs. @ 9% = .65
.65 x $1,111 = $722 per acre

Restricted value of subject property
$722 + $78 = $800 per acre

This example assumes that no significant capital investment is needed to generate the higher income stream. If an investment is required before additional income can be generated, the future income must be reduced by the amount of the future capital investment required to generate the higher income stream.

There are several alternative methods of mathematically computing this restricted land value, but the valuation principle remains the same: the value is the present worth of the various segments of the income stream.

This valuation procedure should be used only when the change in authorized use is clearly predictable and probable. The appraiser should not anticipate development that is not scheduled unless the anticipated change is supported by substantial evidence that it will occur.

VALUATION OF LAND SUBJECT TO SCENIC RESTRICTIONS OR OPEN-SPACE EASEMENTS

Scenic restrictions are enforceable restrictions if they were granted prior to January 1, 1975 under sections 6950-6954 of the Government Code and if they meet conditions specified in section 421 of the Revenue and Taxation Code. Open-space easements granted prior to January 1, 1975 under Government Code sections 51050-51065 or under sections 51070-51087 after January 1, 1975, are another form of enforceable restriction. The third form of qualifying open-space easement is one granted to a regional park district, regional park and open-space district, or regional open-space district under sections 5500 et seq. of the Public Resources Code.

When any of these restrictions are in effect, the land must be valued by the capitalization of income method specified in section 423, previously described in regard to farmlands under open-space contracts. The values derived are also subject to the same limitations as farmlands in that the capitalized income value cannot exceed the lesser of the current market value or the unrestricted factored base year value of the property.

The primary problem in valuing these lands is the determination of the income to be capitalized. Since many properties subject to these forms of enforceable restriction do not actually produce any income, the appraiser must estimate an economic rent based on the highest permitted open-

space use for which the land can reasonably be used. For the most part, such lands are at least suitable for livestock grazing, and economic rents can be estimated from nearby lands actually used for this purpose.

CHAPTER 3: VALUATION OF TREES, VINES, AND OTHER LIVING IMPROVEMENTS

Section 105(b) classifies all fruit, nut bearing, or ornamental trees and vines, not of natural growth, and not exempt from taxation (except date palms under eight years of age) as "improvements." Rule 122 further provides that "improvements" include "planted fruit and nut trees and vines that are taxable … and planted ornamental trees and vines." The term "living improvements" applies to taxable trees and vines and is used throughout this chapter to distinguish between nonliving improvements (irrigation systems, etc.) and perennial crops on land subject to open-space restrictions.

Newly planted fruit and nut trees and grapevines are exempt from taxation for four years and three years respectively after the season in which they were planted. Upon becoming subject to taxation, perennials planted in land enforceably restricted are valued annually pursuant to the provisions of sections 421 through 430.5.

Section 429 states:

> Notwithstanding the provisions of section 105(b) of this code, in valuing land enforceably restricted pursuant to this article, fruit-bearing or nut-bearing trees and vines on the land and not exempt from taxation shall be valued as land. Any income shall include that which can be expected to be derived from such trees and vines and no other value shall be given such trees and vines for the purpose of assessment.

In other words, the value of trees and vines on land subject to open-space restrictions shall be established by capitalizing the net income attributable to them. Since trees and vines are wasting assets, the income generated by them is not perpetual, and an allowance must be made in the capitalization process for the amortization of the value.

When the restricted property consists of land and living improvements, the net income attributable to trees and vines is estimated by calculating the net income (prior to recapture of the trees or vines) for both land and living improvements and deducting the net income attributable to the land. The residual income can then be capitalized into the value for the trees or vines.

When the restricted property is composed of land, living improvements, and nonliving improvements, the net income to trees and vines is estimated by calculating the net income (prior to recapture) for the total restricted property including land, living improvements, and nonliving improvements, and deducting the net income attributable to the land and the net income (prior to recapture) attributable to the restricted nonliving improvements. The residual income can then be capitalized into a tree or vine value.

ECONOMIC LIFE

Perennial crops such as trees and vines have an extended life span. The physical life of these living improvements varies greatly depending on many factors including the type of plant, its variety, the soil and climate where grown, and its susceptibility to various pests and diseases. However, for purposes of appraisal, economic rather than physical life span of the crop must be considered. The economic life of an orchard or vineyard is the period of time during which the net income provides an economic yield on the full value of the land and improvements.

The economic life of perennials is typically shorter than their physical life. In addition to the items listed above, the economic life of trees and vines is affected by their level of production, consumer demand for the products, the commodities' quality, as well as many other factors. Since economic life greatly affects the earning capacity of an orchard or vineyard, the determination of the proper life is extremely important when using the income approach to value. Assessors should consult with their county's University of California Cooperative Extension Farm Advisor, appropriate trade associations, growers, and other experts when attempting to determine the economic life expectancies of trees and vines. Observing historical trends in the marketplace regarding ages of removed orchards and vineyards is yet another important means of estimating proper economic life for living improvements.

DETERMINATION OF THE INCOME TO BE CAPITALIZED

WHEN THE RESTRICTED PROPERTY CONSISTS OF LAND AND LIVING IMPROVEMENTS

To determine the net tree or vine income to be capitalized, the appraiser must first determine the gross income attributable to the total property (land plus living improvements). The same general methods of income analysis applied in the determination of annual crop income (cash rental, share rental, and owner-operator return analysis) are applicable to orchard and vineyard properties, but data sources are generally more limited. A smaller percentage of orchard properties are leased, and very few are leased for cash. Existing share leases are normally for relatively short terms, and the shares or percentages only consider the variation in expected yield during the individual lease period.

Share rents derived from the analysis of short-term leases can only be applied to orchards or vineyards in the same relative stage of production. For example, a share rent that is economic for an almond orchard in peak production would not be economic for an almond orchard that was either immature or past its prime and producing at a lower level. The various stages of production of perennials and the methods of capitalizing the income generated in these stages are discussed in Part II, Chapter 3, Methods of Capitalization.

Despite its shortcomings, share rental analysis is the preferred method of estimating income attributable to orchard or vineyard properties when sufficient data are available. As in the analysis of annual crop income, commodity prices and production estimates should be based on the consideration of past performance and future potential.

Once the economic gross income for the total real property has been estimated, the expenses necessary to sustain this income must be deducted to obtain the net income from land and living improvements. Expenses incurred by the property owner are generally similar to those previously discussed in Part II, Chapter 2, Valuation of Land, but there may be additional improvements to consider. For example, perennials may require frost protection equipment, trellises, etc. Although such improvements are not necessarily needed to generate the income attributable to the land, and the charges *on* and *of* such improvements are theoretically chargeable against the income attributable to the perennials, it is not necessary to separate the expenses applicable to each agent of production. All expenses necessary to maintain the total property's income stream should be deducted prior to the allocation of the income between land and living improvements.

A special problem arises in the valuation of orchard or vineyard properties when a portion of the trees or vines are exempt from taxation and an improvement, such as a frost protection system, services the entire property. In this circumstance, the tree or vine income to be capitalized is generated only by the nonexempt portion of the living improvements, and this portion of the property should not bear the charges of the entire frost protection system. The return *on* and *of* such improvements should be prorated over the entire serviced acreage, and only the portion of these charges attributable to the taxable tree or vine acreage should be deducted from the income stream. The portion of the property containing the exempt perennials should be valued as bare land without consideration for the expenses generated by the frost protection system. For example:

A 40-Acre Orange Grove With:
30 Acres of Mature Trees
10 Acres of Immature Trees Exempt from Property Tax

Special Equipment (Frost Protection System)
Value: $12,000 with 20-Year Remaining Economic Life
Market Rate of Return on Equipment is 3 Percent

Property Taxes
1 Percent of Value

Solution:
Return *On*/*Of* $12,000 x .073582* ÷ 40 Acres $22/Acre
(*installment to amortize 4% @ 20 yrs.)

This per acre charge would be deducted from the gross income generated by the mature trees in the valuation of the 30-acre portion, but it would not be deducted from the economic land rent to be capitalized in determining the land value of the 10 acres. The value of the 10-acre portion would be computed by capitalizing the same net income that was attributable to the land in the nonexempt portion of the grove. Of course, the lesser of the factored base year value or the current market value of the nonliving improvements must be added to the restricted land value in

the appraisal of the entire property unless such nonliving improvements are also restricted by the contract.[27]

Although rental analysis is the preferable method of determining orchard or vineyard income, lack of data may preclude its use. Thus, the owner-operator income analysis may be the only applicable method of income determination. The same general procedure and cautions applicable to the analysis of owner-operator return on open-land parcels are relevant to the analysis of orchard and vineyard properties. Both income and expenses used in the analysis must be economic. Production should be estimated from historical production, the stage of development of the living improvements, and their potential. Commodity prices are generally estimated by using a straight or weighted average, and the expenses are estimated by an analysis of the subject's and similar properties' actual expenses and data developed by the Agricultural Extension Service, other governmental agencies, and the agricultural industry.

The complete owner-operator analysis of every orchard or vineyard property being appraised is generally impractical in a mass appraisal program. When many similar properties are being appraised, several representative properties should be analyzed to estimate economic share rents. The typical share rent can then be applied in the appraisal of other similar properties.

Once the net income attributable to the land and living improvements has been estimated, this income must be allocated between them because amortization must be provided for in the capitalization of the income attributable to the living improvements. This allocation is accomplished by estimating the net income attributable to the land and subtracting it from the total net income. The residual is the net income attributable to the living improvements.

There are three acceptable methods of estimating the income attributable to the land:[28]

- Estimate the amount of net income the land would yield if planted to typical annual crops grown in the area.
- Estimate the amount of net income required under current market conditions to justify an investment equal to the replacement cost of the perennials with a life equal to the estimated total economic life of the perennials, and subtract this amount of net income from the estimate of the total net income from the land and perennials.
- Estimate the market value of the land by the comparative sales approach, and multiply this estimate by a market-derived rate of return. Sales used for comparative purposes shall not include those materially influenced by the possibility of nonagricultural uses.

The applicability of each method will depend upon the attributes of the subject property and the type of data available.

[27] See Revenue and Taxation Code section 423(e).
[28] California Code of Regulations, Property Tax Rule 52.

The first method is most commonly used because it is the easiest to apply, although not always the most accurate. It is correctly applied only where the production of annual and perennial crops are alternative and equal uses for the land, i.e., where the value from either use is similar.

There may be circumstances where lands used for annual crop production appear to be comparable to orchard or vineyard lands but actually are not. Local climatic conditions, depth of soil, depth of water table, and other factors that are not readily apparent can make the land unsuitable for orchard or vineyard use. When the lands are not truly comparable, income generated by land used for annual crops will not be a realistic indication of the economic rent attributable to orchard or vineyard land even though the properties have similar potential for annual production.

The second and least desirable method of estimating the income attributable to land is a land residual method which assumes that the replacement cost of the living improvements is equal to their value. This is a time-consuming method subject to error and should only be used when comparable bare land sales are not available or comparable land is seldom planted to annuals.

The third method is preferable where sales data for comparable lands suitable for orchards or vineyards are available and where a yield rate for orchard or vineyard properties can be derived from market data. In many instances, land income estimated in this manner will be higher than the income from similar open land used for annual crop production. This difference in income indicates that orchard and vineyard use is a higher and better use for the land than annual crop production. As the income is derived from actual orchard use, it is a better indicator of economic land rent. This method should be used when sufficient market data are available. It is important to note that this method can only be used to allocate income to the land because the law specifically prohibits the use of current sales to determine the land value.

A special problem arises when the economic income generated by the total property is too small to produce a residual income attributable to the living improvements. If this occurs in a mature orchard or vineyard, the living improvements have no value because none of the present income is attributable to them, and there is no potential for increased future income. However, the income attributable to the land will not be reduced below the level that could be expected were the land planted to annual crops even though the net income from the orchard or vineyard is below this potential annual crop income.[29]

If current orchard or vineyard income is low because the living improvements are immature, these improvements will still have value if they have any future potential because their present value is based on the potential income from the orchard or vineyard over its entire remaining economic life. Of course, fruit and nut trees are exempt from property taxation until four years after the season in which they were planted in orchard form, and grapevines are exempt until three years after the season in which they were planted in vineyard form.[30]

[29] See Revenue and Taxation Code section 423.
[30] Article XIII, section 3(i) of the California Constitution.

WHEN THE RESTRICTED PROPERTY CONSISTS OF LAND, LIVING IMPROVEMENTS, AND NONLIVING IMPROVEMENTS

To determine the net tree or vine income to be capitalized, the appraiser must first determine the gross income attributable to the property and deduct the expenses necessary to sustain this income. The procedure is similar to that discussed above except that the expenses deducted from the gross income will not include nonliving improvement charges because the income attributable to these improvements must remain in the income to be capitalized at the open-space rate.

Once the net income attributable to land, living, and nonliving improvements has been estimated, this income must be allocated among the three elements because amortization must be provided for in the capitalization of the income attributable to the living and nonliving improvements. This allocation is accomplished by the following steps:

1. Estimating the net income attributable to the land in the manner described in "When the Restricted Property Consists of Land and Living Improvements" above, and subtracting the amount from the total net income; and

2. Estimating the net income (prior to consideration of recapture) attributable to the restricted nonliving improvements, and subtracting this amount from the amount determined in step 1. The residual is the net income attributable to the living improvements.

While it is theoretically possible to deduct the income attributable to the trees or vines in step 2 and make the residual income attributable to the nonliving improvements, the prescribed procedure normally results in a more equitable allocation because the charges to the nonliving improvements can be more easily and accurately determined than charges to the trees or vines. The method for determining the income attributable to the nonliving restricted improvements and their valuation is contained in Part II, Chapter 4, Valuation of Nonliving Improvements.

CAPITALIZATION PROCESS

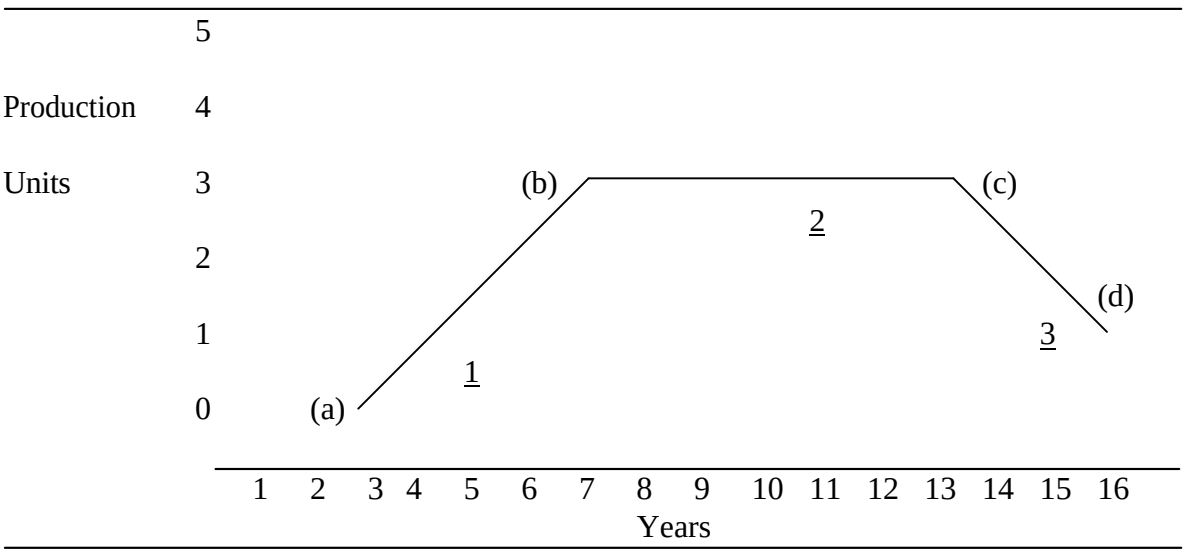
To capitalize the residual income attributable to living improvements into a restricted value, the appraiser must determine the proper method of capitalization and the appropriate capitalization rate. Since living improvements are depreciating assets, some method of recapture must be included in the capitalization process.

METHODS OF CAPITALIZATION

The appropriate method of capitalization will depend primarily on the shape of the anticipated income stream. The estimation of this shape and the choice of the method of capitalization are particularly important steps in the appraisal of open-space properties because the capitalization rate is not market-derived. When the capitalization rate is built up from given components, as in open-space rate development, it becomes extremely important to apply this rate in a

capitalization method that is appropriate for the actual income stream. Naturally, the income stream varies with the stage of production or life cycle of the crop.

All living improvements have a similar life cycle. This cycle is composed of three periods or stages of production: (1) a period of development when production (income stream) initiates and rises; (2) a period of maturity when production remains relatively stable; and (3) a period of decline when production drops as the improvements near the end of their economic lives. This concept can be demonstrated graphically as follows:



This diagram is an oversimplification. In actuality, the line will be an irregular curve and all three periods will vary according to the type of perennial and its environment; but it does demonstrate the problems inherent in the valuation of living improvements. As previously stated, the valuation of trees and vines must take into consideration the expected income of the orchard or vineyard during its entire remaining economic life. The result is a four-fold valuation problem:

- Estimating the shape, size, and duration of the income stream to be generated by the living improvements;
- Capitalizing the various segments of the income stream by the appropriate capitalization method;
- Determining the present worth of any deferred values; and
- Summing the present worth of each segment of the income stream to determine the total value of the living improvements.

It follows that the computations required in the valuation of specific trees or vines will vary according to their stage of production and remaining economic life.

Because the probable future income stream is irregular, the most accurate method of valuing living improvements is to estimate the present worth of each future year of (irregular) income (i.e., the discounted cash flow method). Prior to the availability of computer spreadsheets, this method was very time-consuming and was not recommended except for the period of development. Today, discounting an irregular income stream is mechanically a relatively simple process. Therefore, the decision to estimate future incomes on a year-by-year basis or to use traditional methods such as level annuities and straight-line decline is based on the reliability of the income and expense data, especially for years far in the future. Although level annuity and straight-line decline premises may not be technically as accurate as annual discounted cash flow calculations, the traditional methods generally avoid the problem of making numerous assumptions about production and prices many years in the future.

Valuation of Mature Trees and Vines

When capitalizing the income attributable to perennials, the appraiser must estimate the shape and duration of the remaining income and capitalize it accordingly. The preferred method is to sum the present worth of the anticipated net income for each year remaining in the perennial's economic life. This is done by multiplying each year's net income figure by the factor for the present worth of 1 (PW 1) for the proper period and the open-space capitalization rate (interest, risk, and taxes). This procedure can best be illustrated by an example.

Assume an orchard is to be valued at the beginning of its sixth year. The orchard's production is expected to increase through the ninth year, remain constant for the next 15 years, and then begin to decline. The per acre net income from the trees can be developed as follows:

Tree Age	Per Acre Production (Tons)	Price Per Ton	Share Amount	Gross Income	Expenses and Improve-ment Charges	Net Income to Land and Trees	Net Income to Land	Net Income to Trees
6	6	$325	0.25	$488	$84	$404	$120	$284
7	7.5	$325	0.25	$609	$92	$517	$120	$397
8	9	$325	0.25	$731	$99	$632	$120	$512
9	10	$325	0.25	$813	$104	$709	$120	$589
10	10	$325	0.25	$813	$104	$709	$120	$589
11	10	$325	0.25	$813	$104	$709	$120	$589
12	10	$325	0.25	$813	$104	$709	$120	$589
13	10	$325	0.25	$813	$104	$709	$120	$589
14	10	$325	0.25	$813	$104	$709	$120	$589
15	10	$325	0.25	$813	$104	$709	$120	$589
16	10	$325	0.25	$813	$104	$709	$120	$589
17	10	$325	0.25	$813	$104	$709	$120	$589
18	10	$325	0.25	$813	$104	$709	$120	$589
19	10	$325	0.25	$813	$104	$709	$120	$589
20	10	$325	0.25	$813	$104	$709	$120	$589
21	10	$325	0.25	$813	$104	$709	$120	$589
22	10	$325	0.25	$813	$104	$709	$120	$589
23	10	$325	0.25	$813	$104	$709	$120	$589
24	9	$325	0.25	$731	$99	$632	$120	$512
25	8	$325	0.25	$650	$94	$556	$120	$436
26	7	$325	0.25	$569	$89	$480	$120	$360
27	6	$325	0.25	$488	$84	$404	$120	$284
28	5	$325	0.25	$406	$79	$327	$120	$207
29	4	$325	0.25	$325	$75	$250	$120	$130
30	3	$325	0.25	$244	$70	$174	$120	$54

If, for example, the open-space capitalization rate is 9 percent (7 percent interest, 1 percent taxes, 1 percent risk), then the per acre present value of the orchard can be computed as follows:

Tree Age	Net Income to Trees	Years Deferred	PW 1 @ 9% (Rounded)	Present Value (Rounded)
6	$284	1	.92	$261
7	$397	2	.84	$333
8	$512	3	.77	$394
9	$589	4	.71	$418
10	$589	5	.65	$383
11	$589	6	.60	$353
12	$589	7	.55	$324
13	$589	8	.50	$294
14	$589	9	.46	$271
15	$589	10	.42	$247
16	$589	11	.39	$230
17	$589	12	.36	$212
18	$589	13	.33	$194
19	$589	14	.30	$177
20	$589	15	.27	$159
21	$589	16	.25	$147
22	$589	17	.23	$135
23	$589	18	.21	$124
24	$512	19	.19	$97
25	$436	20	.17	$74
26	$360	21	.16	$58
27	$284	22	.15	$43
28	$207	23	.14	$29
29	$130	24	.13	$17
30	$54	25	.12	$6
		Total Per Acre Value of Orchard		$4,980

The income generated for orchards and vineyards can be valued using the following method as well. The annual income expected during the incline period is capitalized by multiplying the net annual income attributable to the trees or vines by the factor for the present worth of 1 (PW 1) for each year of incline at the open-space capitalization rate (including components for interest, taxes, and risk).

The annual income expected during the stable period is capitalized by multiplying the net annual income attributable to the trees or vines by the factor for the present worth of 1 per period (PW 1/P) for the proper term at the open-space capitalization rate (including components for interest, taxes, and risk). The income generated during the period of declining income is capitalized in the same fashion as the incline period. The annual income is multiplied by the

present worth of 1 (PW 1) for each year of decline at the open-space capitalization rate (including components for interest, taxes, and risk).

For the example above, the value of the trees could be valued as follows:

Tree Age	Net Income to Trees	Years Deferred	PW 1 @ 9%	Present Value (Rounded)
6	$284	1	.92	$261
7	$397	2	.84	$333
8	$512	3	.77	$394
9-23	$589	$589 x 6.2243 =		$3,666
		8.755625 - 2.531295 = 6.2243*		
		*(PW of $1/period 18 yrs. @ 9% - PW of $1/period 3 yrs. @ 9%)		
24	$512	19	.19	$97
25	$436	20	.17	$74
26	$360	21	.16	$58
27	$284	22	.15	$43
28	$207	23	.14	$29
29	$130	24	.13	$17
30	$54	25	.12	$6
	TOTAL PER ACRE VALUE OF ORCHARD			$4,978

Finally, although section 423 contemplated that all capitalization will be done by use of the formula V = I/R, the use of present worth factors is a legitimate method of open-space capitalization. A factor is the reciprocal of a rate, and segments of the tree or vine income could be capitalized by dividing the income by the reciprocal of the appropriate factor.

Valuation of Perennials Classified as Land

Certain relatively short-lived perennials such as asparagus and artichokes are classified as land for assessment purposes.[31] When such perennials produce a net income above that attributable to the bare land, they should be valued in the same manner as trees and vines, and their capitalized value should be added to the restricted land value. However, unlike trees and vines, these plants have no statutory exemption period.

Because of the short economic lives of these perennials, their various stages of production will be condensed. For example, asparagus will normally be in peak production by the third year, and production will remain level through the tenth year. The total economic life of this crop does not normally exceed ten years.

[31] California Code of Regulations, Property Tax Rule 124.

CAPITALIZATION RATE

The capitalization rate applicable to the valuation of living improvements, aside from the amortization component, is composed of the same three elements that are included in the rate developed for the valuation of open land: interest, risk, and taxes. The components for yield and taxes are exactly the same as they would be in a capitalization rate developed for the valuation of similar land devoted to the production of annual crops. The risk component, however, may differ for orchard or vineyard properties.

RISK COMPONENT

Production risks may be higher in some areas for orchard or vineyard crops than for annual crops, primarily because the plants are perennial. Damage caused by cultural or climatic stress can result in lower production for a period of years and, because of the comparatively slow growth of perennials and the high costs of removal, alternate crops cannot be easily substituted when prices or production are expected to be low.

The same basic problem exists in the development of the risk rate for trees or vines that exists in the development of a rate for land devoted to the production of annual crops. However, certain assumptions can be made about the relative degree of risk for trees and vines in various circumstances:

- The risk of loss of productivity is the same on land used for orchards and vineyards as it would be on similar open land.
- The amount of production risk assumed by the property owner will depend upon the extent of involvement in the production aspects of the farming enterprise. There is little or no short-term production risk assumed by the landowner in a cash lease, while the landowner assumes all risks as an owner-operator.
- Production risks will be higher and more variable in the production of orchard and vineyard crops than in the production of annual crops.

Once the risk component to be included in the capitalization rate for living improvements has been estimated, one basic question involving risk still remains: what risk rate should be included in the capitalization rate used to value the land portion of the total property? The issue is whether it should be the same as that included in the tree and vine capitalization rate, or should it be the lower rate applicable to the valuation of open land?

Determining the risk component will depend upon the method used to derive the income attributable to land in the allocation process. Where land income is derived by estimating the amount of net income the land would yield if planted to typical annual crops grown in the area, the risk component applicable to the land should be the same as the component appropriate to the valuation of similar land devoted to the production of annual crops. Since the income being capitalized is annual crop income, the value of this land should be consistent with the values of similar lands, and this consistency can be achieved only by using the same risk component in the capitalization rate. Although this procedure requires the use of a "split" rate (a method usually

unacceptable in the market value appraisal), it is permissible to use it in the valuation of open-space land. The reason is that since the goal of the appraisal is not market value but statutory compliance, the capitalization rate is not market-derived, and the income being capitalized is not related to the income generated by the living improvements.

However, if the income attributable to the land is derived by multiplying the market value of the land by a market-derived capitalization rate or by a land residual analysis, the risk component should be the same as that included in the capitalization rate applicable to the living improvements. In both methods, the income attributable to the land is derived from its highest and best use as an orchard or vineyard site. It is not necessary to equalize land values with those of lands in annual crop production.

CHAPTER 4: VALUATION OF NONLIVING IMPROVEMENTS

All property not specifically restricted by open-space contract must be valued for tax purposes in accordance with article XIII A. Since most nonliving improvements on open-space properties are not included in the enforceable restriction, they are valued in this manner. However, an exception applies under the provisions of section 423(e), to nonliving improvements which contribute to the income of the land, and therefore can be restricted and valued by the capitalization of income method contained in section 423 if the open-space contract specifically contains a provision allowing this. The improvements that contribute to the land income include, but are not limited to, wells, pumps, pipelines, fences, and structures that are necessary or convenient to the enforceable restricted uses of the land.

Therefore, there are two separate categories of nonliving improvements: those that are subject to open-space valuation procedures and those that are not. In order for the assessor to value enforceably restricted properties that include nonliving improvements, it is necessary to determine the appraisal units involved. For purposes of dealing with restricted properties, the appraisal unit can be defined as that which is restricted becomes an appraisal unit, and that which is unrestricted becomes a separate appraisal unit within the definition of section 51(d).

The restricted nonliving improvements are to be valued under section 423 (subdivisions (d) and (e)) at the lowest of their restricted value, factored base year value, or current market value. Of course, these improvements along with the other restricted portions of the property are considered an appraisal unit for purposes of determining the lowest of these values. However, the statute is silent as to the valuation of unrestricted nonliving improvements on the restricted portions of the property. Sections 423(d) and (e) do not address unrestricted nonliving improvements since the valuation methodology therein is for only the restricted part of the property. Whatever portions of the property that are not enforceably restricted fall outside the parameters of the statute and are subject to the provisions of law applicable to all other properties. Section 52(a) states that "property which is enforceably restricted pursuant to Section 8 of Article XIII of the California Constitution shall be valued for property tax purposes pursuant to Article 1.5…."

By application, this means that the unrestricted nonliving improvements are not to be valued under that methodology and must be "carved out" of the restricted portions of the property. Under the authority of section 51(d), the assessor must accomplish this by valuing the unrestricted improvements as a separate appraisal unit. Thus, even though it might be highly unlikely or impossible for the unrestricted improvements to actually be bought and sold in the marketplace, the unrestricted improvements must be valued as though they were a separate appraisal unit and traded in that manner. The result is that under section 51(a), the "appraisal unit" consisting of the unrestricted nonliving improvements must be enrolled at the lesser of the factored base year value or the fair market value.

The appropriate method of determining the income attributable to restricted nonliving improvements will depend upon the composition of the total property. If the improvements are a

relatively small part of the total property value, i.e., a parcel of row crop land with irrigation improvements, the improvement income to be capitalized should be calculated in the same manner as unrestricted improvement charges are calculated when determining the net income attributable to land. That is, the current market value of the improvement is multiplied by a capitalization rate that includes a market-derived yield rate, a tax component, and a component for recapture, i.e., a return *on* and *of* the improvement value. It is essential that the yield rate be market-derived. As a market yield rate already reflects the degree of risk considered by the market, an additional risk component need not be added.

The following example illustrates the proper method for determining the restricted value of both land and nonliving improvements by means of capitalization when the improvements are a relatively small part of the total property value.

The restricted property is a 300-acre farm consisting of irrigated row crop land. The improvements specifically restricted by the contract include an underground concrete pipeline and an irrigation lift pump. There are no unrestricted improvements. The irrigation pump and pipeline have a replacement cost new less depreciation (RCNLD) of $30,000. RCNLD seems to be the most reliable indicator of the current market value of these restricted improvements. The estimated remaining economic life of the improvements is 20 years. A fair economic rent of $150 per acre has been derived by a share rental analysis of typical cropping patterns in the area. Typical landlord expenses are $20 per acre for irrigation district assessment and a management charge of 3 percent of gross share income. Research has identified a market-derived yield rate applicable to farm properties of 4 percent. The current legislated open-space interest rate is 7 percent; a risk rate component of 1 percent for share rental operations is selected, and the current local tax rate is 1 percent.

Gross Potential Income:	300 Acres x $150		$45,000
Less Deductible Expenses:			
Management and Insurance	3% x $45,000	$1,350	
Irrigation District Levy	300 Acres x $20	$6,000	-7,350
Net Income to Land and Improvements:			$37,650
Less Income Attributable to Improvements: Improvement Charges 4% Yield, 1% Taxes, 20 Year REL (Installment to Amortize—5% @ 20 yrs. $30,000 x .080243)			-$2,407
Net Income to Land			$35,243

Restricted Rate for Land:
7% Interest + 1% Risk + 1% Taxes = 9%

Restricted Value of Land:
$35,243 ÷ .09 $391,589

Restricted Rate for Improvements:
7% Interest + 1% Risk + 1% Taxes
+ .0195 Amortization = .1095

Restricted Improvement Value:
$2,407 ÷ .1095 $21,981

When the nonliving improvement value is a large portion of the total property value, for example a dairy or poultry ranch, an improvement residual technique may be used. In this method, the income attributable to the land is deducted from the economic rent for the entire property; the remainder is the income attributable to the improvements. An example of this procedure follows.

The property is a grade A dairy consisting of five acres of land and modern improvements with a current market value of $200,000 and a 25-year remaining economic life. Nonliving improvements are restricted by the terms of the contract. The current market value of the land is approximately $20,000. The fair rent for the property is $24,000 a year after owner expenses are deducted. Capitalization rate components are:

Taxes	1%	
Market-Derived Yield	4%	
Open-Space Interest	7%	
Open-Space Risk	1%	
Total Net Income		$24,000
Income Attributable to Land		
$20,000 x .05 (.04 Yield + .01 Taxes)		-1,000
Income Attributable to Improvements		$23,000
Restricted Rate for Improvements		
7% Interest + 1% Risk + 1% Taxes		
+ .0118 Amortization = .1018		
Restricted Value of Improvements		
$23,000 ÷ .1018		$225,933
Restricted Rate for Land		
7% Interest + 1% Risk + 1% Taxes = 9%		
Restricted Value of Land		
$1,000 ÷ .09		$ 11,111
Total Restricted Value		$237,044

CHAPTER 5: VALUATION OF RESIDENTIAL SITES

The Legislature has expressly stated that residences and residential sites are not restricted. Section 428 provides:

> The provisions of this article shall not apply to any residence, including any agricultural laborer housing facility as provided for in Sections 51220, 51231, 51238, and 51282.3 of the Government Code, on the land being valued or to an area of reasonable size used as a site for such a residence.

Even though section 51231 of the Government Code specifically recognizes farm laborer housing as a compatible use for property restricted by a California Land Conservation Act contract, section 428 precludes the valuation of the facility or its site as restricted property. Therefore, any residential site located on a restricted property is to be valued according to the factored base year value or current market value concept of article XIII A.

When a restricted property contains residential improvements, the appropriate steps for resolving the valuation problem are as follows:

- Determine if the improvement qualifies as a residence
- Estimate a reasonable site size for any qualifying residences
- Determine the base year value of each qualifying site

To qualify as a residence, the structure should be built for purposes of and be capable of being used as a permanent home either by someone with an ownership interest in the property, a renter, or a person employed as an agricultural laborer.

Once it is determined that section 428 applies, the appraiser must estimate the size of the site. Section 428 states only that the size of the residential site should be "reasonable." Thus, the appraiser must exercise sound appraisal judgment in estimating the "reasonable" size for any specific residence. Generally, the area should be large enough to encompass the dwelling, related improvements such as garages and sheds, landscaped areas, utility sources such as domestic wells and septic systems, and driveways when they service only the residential improvements. Normally at least one-half acre is required to contain a smaller residence and related improvements, while one acre could be considered the typical size of a site. On the other hand, there is no general rule regarding maximum sizes. Several acres may be included in an estate development with extensive grounds.

It is not always necessary to assign a separate site to every residence located on a subject property. Where several owner-occupied residence are closely grouped, it is sometimes reasonable to assume they are located on one large site rather than on separate sites. The advisability of using this unit concept will depend upon the physical proximity of the improvements, their access, and their sources of utilities.

Since the residence and its site are not restricted, they must be valued as a separate appraisal unit as previously noted. Even though it might be highly unlikely (or impossible where local zoning regulations forbid the separate parcelization and/or sale of a homesite on an agricultural property) for the homesite to actually be bought and sold in the marketplace, the homesite must be valued as though it were a separate appraisal unit and traded in that manner. The result is that under section 51(a), the homesite will be enrolled at the lesser of its factored base year value or its fair market value[32]. Additional discussion on this concept is provided in Part II, Chapter 4, Valuation of Nonliving Improvements.

In determining the value of the residence and homesite, the comparative sales approach is generally the only practical method of valuation available to the appraiser; however, when comparable sales data are not available, property tax appraisal rules do not preclude their valuation based on the income or cost approaches. In estimating site value by the comparative sales method, the appraiser should consider all of the attributes of the subject site just as in the appraisal of a separate parcel.

A special base year problem is created when a new homesite is developed on a restricted property, thereby changing a portion of the property's use from agricultural to residential. The question then becomes, what base year should be assigned to the portion of land developed into the residential site? There has been no change in ownership that would warrant a reappraisal of the site, yet new construction such as grading has been performed that has brought about a change in use.

The California Code of Regulations, Property Tax Rule 463, subdivision (b)(2), defines "newly constructed" or "new construction" to mean and include:

> Any substantial physical alteration of land which constitutes a major rehabilitation of the land or results in a change in the way the property is used… In any instance in which an alteration is substantial enough to require reappraisal, *only* the value of the alteration shall be added to the base year value of the preexisting land or improvements. Increases in land value caused by appreciation or a zoning change rather than new construction shall not be enrolled,… (Emphasis added.)

Therefore, while the value added by the physical alteration is assessable, the value attributable to the change in use is not assessable. Any physical changes such as driveway, grading, domestic well, etc., associated with the newly created site should be assessed as new construction and assigned a base year as of the date of completion. However, the underlying land cannot be reassessed, and should retain the same base year as the larger parcel on which the site is located. The base year value allocation has to be made as of the last actual change in ownership.

[32] Since a homesite located on land under a CLCA contract is not subject to the valuation restrictions applied to the land and is treated as a separate appraisal unit, an owner may appeal the homesite value just as one can appeal the value of any other appraisal unit for purposes of a decline in value (i.e., Proposition 8).

Example

Assume that a 160-acre parcel with no improvements transferred in September 1991. In July 2001 construction is completed on a new residence and the appraiser determines that the appropriate size for the site is one acre.

In this situation, the base year value of the newly created site should be established based on the value of comparable one-acre homesites in 1991. If it is determined that the proper 1991 value is $50,000, this becomes the base year value for the homesite. The value of any new construction for items such as driveway, grading, domestic well, etc., should be added to the $50,000 (plus appropriate factoring) site value.

CHAPTER 6: VALUATION OF MINERAL DEPOSITS

Section 427 of the Revenue and Taxation Code provides an exception to the general rule regarding assessment of land subject to an enforceable open-space restriction. The section provides that the open-space valuation methods shall not prevent an assessor from considering the existence of mines, minerals, and quarries on the land being valued.

The proper method of valuing open-space land that contains valuable mineral deposits (including oil, natural gas, sand and gravel, ores of various types, and geothermal energy) is to determine the open-space value of the surface use of the land by the capitalization of income method as prescribed in section 423, and add to it the taxable value of any valuable mineral rights. When the development of mineral resources would disrupt the surface use, an appropriate adjustment should be made to the income attributed to the surface rights prior to capitalization. It is important to recognize that taxable mineral rights must be valued as unrestricted property.

The procedures for appraising and assessing mineral rights are very unique compared to most other property types. For this reason, there are separate statutes and rules which govern the valuation of the major categories of minerals. In addition, because minerals constitute subsurface interests in property, the mere discovery of the physical existence of minerals does not create a taxable event, even though the market may believe that value exists. Rather, the market value of a mineral property interest is determined by estimating the value of the "proved reserves" of the specific mineral or geothermal energy involved. On the other hand, mineral companies execute leases with landowners for exploration of mineral deposits; such a lease is a change in ownership and the assessor should assess the "right to explore" created by the lease.

Assessors' Handbook Section 566, *Assessment of Petroleum Properties*, provides guidance for the appraisal and assessment of oil and gas properties (California Code of Regulations, Property Tax Rule 468). Assessors' Handbook Section 560, *Assessment of Mining Properties*, covers mining properties including sand and gravel (California Code of Regulations, Property Tax Rule 469).

Rule 473 governs the assessment of geothermal rights. Although there is no handbook section for geothermal properties, since geothermal energy is similar to petroleum in that it is fluid, but it is similar to mining properties in that there is usually a very lengthy development period prior to production, AH 566 and AH 560 in combination provide guidance on many of the appraisal and assessment issues associated with geothermal properties.

CHAPTER 7: TOTAL PROPERTY VALUE

The total appraised value of a rural property subject to open-space restrictions is the sum of the restricted value of the land and any restricted living or nonliving improvements, and the lesser of base year value or current market value of any unrestricted nonliving improvements, minerals, and residential sites. Although the basic components of the total property value are well established, some aspects of the total property appraisal procedure require further clarification.

ALLOCATION OF VALUE

When a restricted rural property is composed of more than one parcel and the various parcels have different income-producing potentials, it is essential for appraisal accuracy to appraise each parcel of land according to its capability rather than valuing each parcel on the basis of the average income generated by the total property. Similarly, areas of significantly different capability within a parcel should be defined, and each area's income should be separately estimated and recorded to support the parcel's total land value.

By the same logic, the base year value of improvements located on a specific parcel should be included in the appraisal of that parcel even if the return *on* and *of* these improvements has been subtracted from the gross income of a larger service area.

Proper allocation of all base year values is extremely critical in the event a parcel is sold or an improvement is removed or destroyed. If the base year value allocated to a specific parcel is incorrect and the parcel is sold, the base year values for the remaining parcels will be incorrect and may result in incorrect taxable values.

VALUATION OF NONRESTRICTED PORTIONS OF AGRICULTURAL UNITS

Any portion of a rural property not subject to an enforceable restriction that qualifies as open-space land under sections 421 through 422.5 must be valued according to the factored base year or current market value concept of article XIII A. The primary appraisal problem in valuing a nonrestricted portion of a larger parcel which is restricted, is the determination of the unit to be appraised. The question is whether the unrestricted portion should be valued as a separate unit or as a part of the larger property. For example, if 960 acres of a 1,000 acre farm are under a California Land Conservation Act contract, the appraiser must determine whether the remaining 40 acres should be appraised at a value that is consistent with other 40 acre nonrestricted parcels, or appraised as a portion of a 1,000 acre farm.

The property owner may have various motives for not restricting part of the property. For example, if the unrestricted land is producing a high income, the owner may not receive any material benefit from the open-space program. Alternatively, if a portion of the property has a potential use higher and better than agriculture, the owner could not realize the benefits of

conversion to this higher use were the property's use restricted. In some cases, the use of both portions may be the same and the division is the personal preference of the owner.

In actuality, the owner's reasons for not restricting a portion of the property are immaterial. The unrestricted portion should always be valued as a separate unit. The contractual separation by implication creates a different potential use between the restricted and unrestricted portions and a different potential market value for each portion of the property. The contract has, in effect, created a separate unit for appraisal purposes. The value that the unrestricted portion adds to the total property value is, in all probability, its value as a separate parcel because it has retained its full property rights and the owner can sell it separately. In many counties, open-space regulations require such unrestricted property to be separately parceled, but this appraisal procedure is applicable even where separate parcels are not required.

ASSESSMENT LIMITATIONS

Sections 423(d) and 423.3 contain provisions for limiting the assessed values of open-space properties. Section 423(d) provides that, unless a party to the contract expressly prohibits such a valuation, the current taxable value of the property cannot exceed the lower of the current restricted value, the current market value, or the factored base year value of the property as if unrestricted. This limitation applies to all restricted portions of the property, i.e., land, perennials, and nonliving improvements if they are restricted via the terms of the contract. However, the comparison is made on the basis of the total restricted value of the appraisal unit and not on the basis of the restricted value of individual parcels (unless the individual parcels are separate units) or on the basis of the value of each restricted component, such as land or trees.

For example, if a ranch is composed of three 80 acre parcels, two of which are planted to fruit trees, the appraiser would compare the combined restricted values of 240 acres of land and 160 acres of trees to the factored base year value and current market value of the same unit.

Section 423.3 allows a city or county by agreement to limit assessments of land restricted by the Williamson Act to a value no higher than a given percentage of the property's factored base year value as if unrestricted. This limitation is applicable to restricted improvements (both living and nonliving) as well as restricted land. Restricted improvements are subject to the same limiting percentage as the land on which they are located. As in the case of the limitation contained in section 423(d), the value to be enrolled is determined by comparing the total restricted value of the appraisal unit to the factored base year value of the same unit modified by the appropriate percentage, and the current market value of the unit as if unrestricted.

CHAPTER 8: VALUATION OF LAND SUBJECT TO TERMINATING RESTRICTIONS

The appropriate governmental agency, or the owner of land subject to a contract, agreement, or open-space easement may serve notice of nonrenewal as provided in sections 51091, 51245, or 51296.9[33] of the Government Code. During contract nonrenewal, the land remains fully subject to the contractual restrictions and generally only qualifies for Open Space Subvention Entitlements when the land is assessed pursuant to section 423. For nonrenewal of land subject to a Farmland Security Zone contract, however, Government Code section 16142.1(b)[34] provides that subventions shall "be paid for 10 years from the date that the land was first assessed pursuant to Section 426 of the Revenue and Taxation Code, if it was previously assessed under Section 423.4 of that code."[35] Section 426 (a) specifies:

- If the owner of the land serves the notice of nonrenewal, or the county or city serves the notice and the owner fails to protest as provided in sections 51091 or 51245, the specified valuation procedure prescribed in section 426 will apply immediately. Upon notice of nonrenewal, the assessor is to continue valuing the land under section 423 until the following lien date.[36]
- If, however, the county or city serves notice and the landowner does protest, the specified valuation procedure applies when less than six years remain until the expiration of the enforceable restriction. When six or more years remain, the assessor is to continue valuing the land under section 423 until less than six years remain.

Section 426 contains specific directives concerning the valuation procedure applicable to land subject to a terminating restriction. Such land shall be valued annually by:

1. Determining the full cash value of the land according to section 110.1 (factored base year value), or, if the land will not be subject to article XIII A upon the expiration of the contract, according to section 110 or other special restricted assessment provided for in the law;

2. Determining the restricted value of the land by the capitalization of income method specified for open-space land as provided in section 423;

3. Subtracting the restricted value from the value determined in 1 above;

4. Discounting the difference between the restricted value and the value determined in 1 for the number of years remaining until the termination of the enforceable restriction at the

[33] Statutes of 2000, Chapter 506 (Senate Bill 1350).
[34] Statutes of 1999, Chapter 1019 (Senate Bill 649).
[35] The appropriation authorized by this subdivision shall not exceed $100,000 per year until 2005.
[36] Sections 423 and 439.2 provide for calculation of values on an annual basis only. There is no provision for calculation of a restricted value at a time other than the lien date. Thus, unlike statutes implementing article XIII A, which provide for supplemental assessments for changes in ownership and new construction, there is no immediate reassessment for a restricted property either when it becomes subject to a contract or when a notice of nonrenewal is given during the year.

interest rate announced by the State Board of Equalization by September 1 pursuant to subdivision (b)(1) of section 423; and

5. Adding this discounted value to the open-space value determined in 2 above.

Note that the discount rate is only the interest rate announced by the State Board of Equalization and does not contain the risk and tax components that are included in the open-space capitalization rate. The discounting period is the number of years remaining until the termination of the enforceable restriction. Therefore, the first computation after a notice of nonrenewal will be for a term of nine years (unless a governmental notice is protested by the property owner), and this term will decrease for each succeeding computation.

As an example of this procedure, assume that the factored base year value of a parcel of land that will be subject to article XIII A following termination after nonrenewal is $5,000 per acre. The restricted value of this land is $1,000 per acre, the remaining term of the restriction is nine years, and the open-space interest rate last announced by the State Board of Equalization is 7 percent. The computation of the restricted land value for the first year of nonrenewal would be:

Per Acre Factored Base Year Value	$5,000
Per Acre Restricted Value	$1,000
PW 1 Deferred 9 Years @ 7%	0.543934
0.543934 ($5,000 - $1,000) + $1,000	$3,175 Per Acre

If the factored base year value and the restricted value of the land are the same, no discounting is necessary.

Under certain circumstances it is possible for the value calculated pursuant to section 426 to exceed the factored base year value or the current market value. Since article XIII A sets the upper limit on the taxable value of real property at the lesser of its factored base year value or its current market value, in the above described situation the appraiser should enroll the lower of the factored base year value or current market value. Example I below illustrates this point.

EXAMPLE I

A farm is restricted by a California Land Conservation Act contract and the property owner has filed a notice of nonrenewal. The current market value of the land is $3,000 per acre, the factored base year land value is $4,100 per acre, and the current value by the capitalization of income method is $2,100 per acre. The computation of the restricted land value for the first year of nonrenewal would be:

Per Acre Factored Base Year Value	$4,100
Per Acre Restricted Value	$2,100
PW 1 Deferred 9 Years @ 7%	0.543934
0.543934 ($4,100 - $2,100) + $2,100	$3,187

Since the value resulting from the section 426 calculation exceeds the current market value, the proper taxable value for the restricted property is the current market value of $3,000 per acre.

Finally, the appraiser is faced with a unique valuation problem when the city or county has implemented the provisions of section 423.3 requiring a comparison of the current restricted value to a percentage of the factored base year value and enrolling the lower. Since section 426 does not specifically refer to section 423.3, the value determined under section 423.3 does not enter into the nonrenewal valuation process. Even if section 423.3 is applicable, the value to enroll during the nonrenewal period is the lower of the section 426 value, current market value, or factored base year value. The comparison must be made annually during the period of nonrenewal. Example II below demonstrates the proper procedure.

EXAMPLE II

Assume that a parcel of land subject to a California Land Conservation Act contract is under nonrenewal and has a current market value of $3,000 per acre, a factored base year value of $2,500 per acre, and a capitalization of income method value of $1,900 per acre. In addition, the county has adopted the provisions in section 423.3, and the taxable value for this property without consideration of the nonrenewal process would be 70 percent of the factored base year value, or $1,750 per acre. The computation of the restricted land value for the first year of nonrenewal would be:

Per Acre Factored Base Year Value	$2,500
Per Acre Restricted Value	$1,900
PW 1 Deferred 9 Years @ 7%	0.543934
0.543934 ($2,500 - $1,900) + $1,900	$2,226

Since the provisions of section 423.3 do not pertain to property subject to nonrenewal, the taxable value of the property is $2,226 per acre, and not $1,750 per acre.

When trees, vines, or nonliving improvements are subject to terminating restrictions, the interim values are determined in the manner specified for land.

CHAPTER 9: CANCELLATION PROCEDURES

Sections 51280 through 51287 of the Government Code (known collectively as article 5 of chapter 7 of the Government Code) govern the cancellation of open-space contracts. Government Code section 51297 applies to a petition for cancellation of a Farmland Security Zone (FSZ) contract.

Government Code section 51283 requires the county assessor to determine a "cancellation value" of the land for the purpose of determining a cancellation fee. The cancellation value is the current fair market value of the land as if unrestricted. The county assessor must certify this cancellation value to the board or council so that the cancellation fee can be determined. The cancellation fee will be an amount equal to 12 1/2 percent of the cancellation value for open space contracts and 25 percent of the cancellation value for FSZ contracts. Government Code section 51240 allows cities and counties to include in their open-space contracts restrictions, terms, and conditions, including payments and fees, that are more restrictive than those set forth in governing statutes.

Under the conditions set forth in Government Code section 51283, the board or council has authority to waive payment of the cancellation fee, subject to the approval of the Secretary of the Resources Agency. This provision, however, does not apply to land subject to a FSZ contract pursuant to Government Code section 51297(a)(3). In other words, the board or council has no authority to waive payment of the cancellation fee for land subject to a FSZ contract.

CHAPTER 10: VALUATION OF WILDLIFE HABITATS

In 1973 the Legislature added "wildlife habitat contracts" to the list of open-space enforceable restrictions set forth in section 422. Generally, lands subject to wildlife habitats are valued under section 423.7. Legislation enacted in 1996, in essence, created a second valuation procedure, under section 423.8, for certain land subject to wildlife habitat contracts.

Wildlife habitats are defined in subsection (f) of section 421 (as amended in 1996) which provides as follows:

> "Wildlife habitat contract" means any contract or amended contract or convenant involving, except as provided in Section 423.8, 150 acres or more of land entered into by a landowner with any agency or political subdivision of the federal or state government limiting the use of lands for a period of 10 or more years by the landowner to habitat for native or migratory wildlife and native pasture. These lands shall, by contract, be eligible to receive water for waterfowl or waterfowl management purposes from the federal government.

The second valuation method for wildlife habitats under section 423.8, upon the request of the owner, makes wildlife habitats immune to the requirement that at least 150 acres be involved in the contract. Further, these habitats are to be valued in accordance with section 402.1.

VALUATION PROCEDURES UNDER SECTION 423.7

The primary method of valuing lands subject to wildlife habitat contracts in section 423.7 is not the capitalization of income method used in valuing other restricted land, but a limited comparative sales approach. These lands are valued by "… using the average current per-acre value based on recent sales including the sale of an undivided interest therein, of lands subject to a wildlife habitat contract within the same county." See section 423.7(a).

Under section 423.7(b), sales of less than 150 acres cannot be used unless the sale is of an undivided interest of land subject to a wildlife habitat contract. Where ownership of open-space lands is held by a corporation and the principal asset of the corporation is the land, bona fide sales of stock or memberships shall be treated as sales of open-space lands. The assessor must determine the average per-acre sale price in the county each year. This price is multiplied by the number of acres held under each single ownership of property qualifying for this treatment to determine the current total restricted value of each property.

The average per-acre value for all lands under wildlife habitat contract is determined by dividing the total sale price of all recently sold lands subject to these contracts by the total number of acres in the sold properties. Since improvements are not subject to restricted valuation procedures, the current market value of any improvements located on a sold property must be subtracted from the sale price prior to computing the average per-acre land value. The lesser of factored base year value or current market value of any improvement is added to the restricted land value in the total property appraisal. Similarly, if the land is subject to indebtedness, the

amount of the indebtedness should be added to the nominal sale price of the land prior to computing the average per-acre land value.

It is important to recognize that any qualifying property automatically receives this treatment without the approval of the county or city. However, a qualifying property is automatically disqualified from preferential assessment if the owner of the property fails to provide the county assessor each year with a schedule of sales of the property, including individual interests, that have occurred during the previous four years.[37]

Although the hunting clubs that utilize the wildlife habitats may require membership fees and various annual charges, such fees cannot be capitalized into additional real property value. The operation of the clubs is separate from the real property ownership.

The method of valuing land subject to a terminating wildlife habitat contract differs from the procedure prescribed for lands under other types of open-space restrictions. Where less than ten years remain until the expiration of a wildlife habitat contract and where the factored base year value of the land is greater than the restricted value determined by the prescribed method, a pro rata share of the amount of the difference shall be added to the restricted value in equal annual installments. In other words, the difference between the factored base year value and the current unadjusted restricted value is calculated, divided by 10, and the quotient multiplied by the number of years that have elapsed in the ten-year termination period. This amount is added to the restricted value each year over the remaining term of the contract.

Section 423.7(k) places a limitation on the taxable value of properties enforceably restricted as wildlife habitats. Specifically, unless a party to an instrument which created the enforceable restriction expressly prohibits the valuation, the value resulting from the method described in this section shall not exceed the factored base year value of the property as if it were not restricted.

VALUATION PROCEDURES UNDER SECTION 423.8

Under section 423.8, the method of valuing lands of less than 150 acres subject to wildlife habitat contracts is that prescribed in section 402.1. As with other open-space properties, the assessor must consider the effect upon value of any enforceable restrictions to which the use of the land may be subjected. Section 402.1(b) states:

> There is a rebuttable presumption that restrictions will not be removed or substantially modified in the predictable future and that they will substantially equate the value of the land to the value attributable to the legally permissible use or uses.

The assessor cannot consider sales of comparable land not similarly restricted to the subject property unless there is convincing evidence that the restriction will be removed or substantially modified in the predictable future.

[37] Section 423.7(i), Revenue and Taxation Code.

CHAPTER 11: WETLANDS MITIGATION BANKING

BACKGROUND

Wetlands are defined by the U.S. Environmental Protection Agency (USEPA) regulations as "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions."[38] Formal protection of wetlands and mitigation of the adverse impacts on them began in 1991, when President Bush issued an Executive Order stating that the government's objective was "no net loss" of any wetlands. The subsequent enactment of regulations by USEPA led to the following requirements on all property owners seeking to obtain the necessary permits from governmental agencies to develop their lands: (1) avoid and/or reduce to de minimis any impacts to comply with the "no net loss" objective; or (2) mitigate any impacts that are unavoidable, by either purchasing existing wetlands nearby and preserving them into perpetuity, or by creating nonexistent wetlands nearby and similarly preserving them.

Pursuant to section 404 of the Clean Water Act, which amended the Federal Water Pollution Control Act of 1977, any development of real property that adversely affects wetlands must be authorized in advance through a "Section 404" permit. Permit applicants must establish, in sequence, that: (1) steps were taken to avoid wetland impacts where practicable (i.e., impacts to aquatic resources cannot be avoided); (2) efforts were made to minimize potential impacts to wetlands (e.g., through modification of construction plans and designs); and (3) compensation for unavoidable impacts have been made (e.g., through activities to restore or create wetlands). If impacts are unavoidable, compensation is usually required to mitigate the loss of wetland functions.

The most common method of compensation involves obtaining permits for proposed wetland impacts through relevant federal, state, and local authorities and then constructing compensatory wetlands on or adjacent to the development project site. Another method of compensating for lost wetlands is the purchase of credits from wetlands mitigation banks. "Wetlands mitigation banking" was developed under the Clean Water Act[39] to fulfill the requirement of mitigating any unavoidable impacts. Wetlands mitigation banking is a land management tool, which provides turnkey compensatory mitigation activities as an alternative to other lawful methods of mitigating project impacts for unavoidable wetland losses caused by development. With wetlands mitigation banking, an off-site alternative for mitigation is available with pre-approved mitigation design criteria. The uncertainty of time and costs associated with finding a wetlands mitigation site, obtaining design approval, and complying with five to ten years of post construction monitoring is eliminated by purchasing credits from an approved wetlands mitigation bank.

[38] 40 C.F.R. sec. 230.41
[39] 33 U.S.C. sections 1344 et seq.

Wetlands mitigation banks are large tracts of land on which efforts are undertaken to create, restore, enhance and/or preserve fully functioning ecosystems in advance of permitted impacts to sensitive habitats. The purpose of wetlands mitigation banking is to authorize (through permitting by the Army Corps of Engineers) government agencies and/or private entrepreneurs to place an approved amount of acreage or tracts of wetlands in "banks." Based upon the type, size, and function of the improvements, banks are authorized to sell a certain number of "credits." Banks are authorized to sell these credits to landowners, developers, or governmental agencies to offset impacts on sensitive habitats affected by development.[40] As landowners buy blocks of wetlands (credits), the credits are drawn down against the mitigation bank. Once the amount of credits reaches a zero balance, the wetlands bank is dedicated to a government resource agency (i.e., a park agency) or to a non-profit conservation association.

Recognizing that the purchase of existing wetlands was a practical impossibility in most cases, the Legislature adopted the Sacramento-San Joaquin Valley Wetlands Mitigation Bank Act of 1993, codified in Fish and Game Code sections 1775, et seq., in order to provide an additional alternative of creating new offsite mitigation banks. Its stated purpose was to achieve the "no net loss" objective in the Sacramento-San Joaquin Valley region. Consistent with federal law, Fish and Game Code section 1777.2 provides that the "bank site" or "mitigation bank site" shall be a publicly or privately owned and operated site on which wetlands have been or will be created and per Fish and Game Code section 1779, be not more than 40 miles from a qualifying urban area. Funding to cover the costs of the site is provided through the sale of credits to land owners, which are required to mitigate wetlands loss from their development. Fish and Game Code section 1777.5 defines the credits assigned to any such site as "a numerical value that represents the wetland acreage and habitat values of a mitigation site."

Any person desiring to establish or create a wetlands mitigation bank site must apply to the Department of Fish and Game for a determination that both the bank site and the operator qualify under numerous criteria found in all applicable statutes and regulations. Before any bank site may be created, the Department of Fish and Game must coordinate and execute a memorandum of understanding with the operator (as well as other state, federal, and local agencies), which includes the following:

1. Describes the site boundaries,
2. Identifies the wetland acreage that qualifies to be credited against the development of any wetlands within 40 miles (i.e., identifying the number of credits),
3. States the maintenance requirements,
4. Establishes a trust fund or bond in favor of the Department to provide funds for maintaining the bank site in perpetuity, and

[40] There are two types of wetlands mitigation banks in this context. A dedicated wetlands mitigation bank is a tract of wetlands approved as a mitigation bank for one specific user, such as Cal-Trans, which is constructing a large amount of new improvements in a particular area. A commercial wetlands mitigation bank is a tract of wetlands approved as a mitigation bank for the purpose of selling its available credits to anyone.

5. Sets forth the causes for breach of the agreement.

The Act provides no property tax exclusions or exemptions for the creation or maintenance of the bank sites. In fact, annual taxes are required to be included in the cost of any wetland credit even if the bank site owner is a government entity. Pursuant to Fish and Game Code section 1787, where the bank site owner is a public entity, it shall pay annually to the county where the property is located, an amount in lieu of the property taxes (including special assessments) levied on the property at the time the bank site is transferred to the entity.

Upon successful completion of at least 20 acres of qualifying new wetlands, the operator may apply to the Department for its determination of the amount of credits available for sale.[41] The Department makes such determination based on established biological criteria listed in Fish and Game Code section 1791, and may set a minimum price for credits sufficient to insure the financial integrity of the bank site, although the operator may charge a higher price.[42] No credit shall be provided for wetland acreage that was already in existence prior to establishment of the bank.[43]

Under Fish and Game Code section 1792, the following factors must be used by the Department in verifying that the minimum value of the credit equals "the average cost for each wetland acre created:"

1. Land costs (including interest)
2. Wetland creation costs
3. Wetland administration, maintenance, protection costs
4. Annual taxes, including the in-lieu payments for property taxes under section 1787, if applicable
5. Costs incurred by the Department in establishing and monitoring the bank site
6. Any other costs for preserving the wetlands in perpetuity

While the forgoing factors constitute the minimum value of a credit, as indicated, Fish and Game Code section 1792 also specifically provides that the operator may charge a higher price. The operator executes a separate agreement for the sale of wetland credits to a particular "permittee" (the public or private developer seeking a permit to remove or fill wetlands). Standard conditions of such agreements provide that the credits sold are non-transferable and non-assignable and do not transfer to the permittee any real property rights, i.e., rights to possess, own, use, or hold a security interest in the actual bank site, to which the credits relate. Thus, once the "permittee" makes full payment for the purchase of credits in the bank site, there is no

[41] Fish and Game Code section 1790.
[42] Fish and Game Code section 1792.
[43] Fish and Game Code section 1790.

further obligation to the operator of the bank site, unless the permittee has contracted for an equity involvement in the bank.[44]

Pursuant to Fish and Game Code sections 1779 and 1779.5, the Sacramento-San Joaquin Valley Wetlands Mitigation Bank Act of 1993 only applies to wetlands mitigation banks in the "central valley region," as defined in subdivision (g) of section 13200 of the Water Code. No other legislation has been passed or regulations adopted that have addressed the specific requirements of wetlands mitigation banks in other regions of the state. In general, wetlands mitigation banks can be created throughout the state with details negotiated on a case by case basis between the appropriate public agencies and the bank sponsor. For more information on wetlands mitigation banks (e.g., Sacramento-San Joaquin Valley Wetlands Mitigation Bank Act of 1993, Supplemental Policy Regarding Conservation Banks, State of California's Official Policy on Conservation Banks, and the California Wetlands Conservation Policy) see the California Department of Fish and Game Web site at www.dfg.ca.gov or call the Department's Habitat Conservation Planning Branch at (916) 653-4875.

ASSESSMENT ISSUES

Change in ownership. Wetlands credits do not constitute taxable fee interests in real property, the conveyance of which results in change in ownership and reappraisal. The issue is whether the purchase of a credit constitutes "a transfer of a present interest in the real property, including the beneficial use thereof, the value of which is substantially equal to the value of the fee interest," per section 60. This is a fact-driven determination requiring an analysis of the particular "right" being transferred and whether it is part of the "bundle of rights" meeting the test of section 60.

Wetlands credits do not transfer any part of the bundle of rights arising from the ownership of a wetlands mitigation bank site to a permittee. Nothing in the wetlands mitigation statutes indicates that the conveyance of wetlands credits to a permittee constitutes a transfer of rights that would meet the change in ownership test of section 60. Furthermore, as an expressed standard condition in an agreement to sell wetlands credits, the credits sold are non-transferable and non-assignable and do not transfer any real property rights to a permittee.

A purchaser of wetlands credits must purchase these credits as a prerequisite for development, but the seller ("bank") continues to own the wetlands. The seller of wetlands credits, a wetlands mitigation bank, does not lose an unused "right" as the result of selling wetlands credits. In fact, a wetlands mitigation bank benefits from the sale of wetlands credits, as the sales proceeds cover the costs of the mitigation bank site. Additionally, wetlands are not identifiable to a specific purchaser's property but to the "bank" and the development of wetlands are therefore assessable "new construction" on the seller's bank site. As such, the transfer of wetlands credits should not be treated as an appraisable event, since the wetlands remain assessable to the seller ("bank").

[44] Fish and Game Code section 1796.

In summary, the transfer of wetlands credits does not represent the transfer of a present interest in real property, but is comparable to offsite improvements adding value to the land. Thus, the transfer of credits should not be treated as an appraisable event.

New Construction. Section 70(a) defines "new construction" as either (1) any addition to real property, whether land or improvement (including fixtures), since the last lien date; or (2) any alteration of land or of any improvement (including fixtures) since the last lien date which constitutes a major rehabilitation thereof or which converts the property to a different use. Rule 463(b)(2) further provides that new construction means and includes "any substantial physical alteration of land which constitutes a major rehabilitation of the land or results in a change in the way the property is used."

Examples of alterations to land to be considered "new construction" are land fill, retaining walls, site development for use under another purpose, altering rolling, dry grazing land to level irrigated cropland, etc. (See also examples in Assessors' Handbook Section 502, *Advanced Appraisal*, Chapter 6, Table 6-2: Common Types of New Construction.) Subparagraph (A) of Rule 463(b)(2), states that in any instance where the alteration is substantial enough to require reappraisal, only the value of the alteration shall be added to the base year value of the pre-existing land. Increases in value caused by appreciation (or a zoning change) rather than the new construction shall not be enrolled.[45]

By definition, the creation of a wetlands mitigation bank site falls within the foregoing statute and rule as "substantial physical alteration of land which constitutes a major rehabilitation of the land." The express purpose of the Sacramento-San Joaquin Valley Wetlands Mitigation Bank Act in Fish and Game Code section 1781 is to increase the total wetlands acreage and values within this region. As noted, Fish and Game Code sections 1778 through 1787 establish the approval process and criteria for obtaining a permit to create a bank site. Fish and Game Code section 1792 lists cost items involved in the creation, construction, and maintenance of a bank. Moreover, Fish and Game Code section 1790 states that no credit shall be provided for wetlands acreage that was *already in existence*.

Thus, wetlands acreage created under the Act is "new construction," in that it was not a pre-existing wetlands site, but was used for some other purpose (presumably undeveloped, agricultural, or open space). The creation of wetlands acreage from such agricultural or open space acreage would also represent a change in use, per Rule 463(b)(2). Fish and Game Code section 1784 prescribes the type and extent of the "new construction" to be completed in order to preserve the site for use as wetlands acreage in perpetuity. Examples of items that require new construction include the following: a reliable water supply, proper grades and soil preparation for vegetation and specified wildlife, ponds, foliage, and permanent conversion into a naturally occurring wetland system. Based on these parameters, the wetlands acreage created is assessable under section 70(a)(2) and Rule 463(b)(2).

[45] Revenue and Taxation Code section 71.

In contrast, a bank site that was previously classified and protected by the Department of Fish and Game, by the United States Environmental Protection Agency, or by the Army Corp of Engineers as wetlands would not be considered newly constructed property, assuming there is no substantial alteration to the land or change in use. Based on the provisions in Fish and Game Code sections 1775 through 1796, facts demonstrating that a specific bank site is newly constructed would be shown on the permit and the memorandum of agreement executed by the Department.

Valuation. On any lien date, the taxable value of a wetlands mitigation bank should be the lower of (1) its adjusted base year value, including any value added for new construction completed in the process of forming the wetlands area, or (2) its current market value, taking into account the restrictions on use and the eventual depletion of revenues from the sale of credits. It should be noted here that the sale price of the "wetlands credits" may be one of the indicators of value with respect to the full economic costs necessary to construct the wetlands and ready it for its intended use. Thus, some or all of the sale price of the wetlands credits may reflect portions of the direct costs, the indirect costs, or the entrepreneurial profit of the project, as discussed in Assessors' Handbook Section 502, *Advanced Appraisal*, Chapter 2, under the heading of "Valid Components of Cost."

Since the Bank is subject to permanent enforceable governmental restrictions in exchange for approval to create the wetlands and to obtain wetlands credits for the wetlands acreage in the bank, the provisions of section 402.1 are applicable, and some adjustments to value necessary. These environmental restrictions are enforceable in perpetuity and the bank site is legally, physically, and financially bound by such restrictions, regardless of any change in operators. In the event of any breach or default by an operator, Fish and Game Code section 1786 provides that the Department shall replace the operator, and/or that title to the property shall pass from the owner/operator to the Department. Therefore, the assessment of any bank site must take into account the effect of these restrictions, which effectively transfer to the Department the owner's right to develop the site or to convert it to another use. Presumably, the mitigation bank owner establishes the bank site under the burden of these restrictions based upon the knowledge that he will obtain a return of and on his investment through the number and the value of the wetlands credits the government allows for sale. Since the bank itself can only be conveyed subject to the wetlands restrictions, the value of the wetlands acreage declines as the available credits are sold and justifies a reduction in the estimation of fair market value when assessed.

CHAPTER 12: OPEN-SPACE APPRAISAL PROGRAM

Although an annual valuation of all open-space properties is not specifically mandated by current statutes, it is essential that all open-space property appraisals be reviewed each year, if the full compliance with all the requirements of open-space law is to be achieved. Not only must restricted values be adjusted to reflect changes in rates and incomes, but a comparison must be made between the property's restricted value, market value, and factored base year value to determine the proper value to enroll. Although this comparison is made in most counties on the basis of a sampling program, the assessor should work toward establishing and maintaining unrestricted base year and current market value appraisals of all restricted properties. These values are also needed when restrictions are terminated.

Any value change to open-space properties should be the result of a reappraisal and not merely a recomputation. If a new capitalization rate is applied to the previous year's estimate of economic rent, the result may not be a realistic estimate of current restricted value. Economic rents and depreciation schedules for living and restricted nonliving improvements should be reviewed in the course of the reappraisal. In addition, should any element of the property not subject to open-space valuation procedures experience a change in ownership, or if qualifying new construction has occurred, that element of the property affected must be reappraised to determine its new base year value.

The maintenance of a comprehensive appraisal program for open-space properties in predominantly rural counties is a large portion of the annual assessment workload. Production can be maximized by using benchmark appraisals of land and improvements, and by utilizing computer assistance to the greatest degree possible.

The maintenance of open-space property values is a program ideally suited to computer processing. Restricted values can be quickly and easily updated when changes in capitalization rates or incomes occur. In addition, the computer can be programmed to produce the subvention report required by section 16144 of the Government Code, an extremely time-consuming task when done manually, and to make the required comparison between restricted market and factored base year values. Any assessor with a substantial open-space workload should use a computer-assisted appraisal program for the valuation of open-space properties.

APPENDICES

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APPENDIX 1: SUMMARY OF RELATED COURT CASES AND ATTORNEY GENERAL'S OPINIONS

COURT CASES

Bank of America* v. *County of Fresno (1981) 127 Cal.App.3d 295. Farmer contesting income stream assessment under the Williamson Act must present evidence to local assessment appeals board regarding future income and expenses, notwithstanding recent losses.

Borel* v. *County of Contra Costa (1990) 220 Cal.App.3d 521. Notwithstanding local parcel size restriction on Williamson Act enrollment, land within a scenic highway corridor is entitled to enrollment. See Government Code section 51205.1. Landowner who was improperly denied enrollment recovered difference in taxes.

County of Marin* v. *Assessment Appeals Board (1976) 64 Cal.App.3d 319. A county may not unilaterally deny Williamson Act tax benefits to an enrolled landowner who refused to modify a contract to suit revised county standards.

County of Orange* v. *Kenneth Cory (1979) 97 Cal.App.3d 760. Amendment to the Williamson Act in 1971 requiring payment of contract cancellation penalties to the state rather than local taxing agencies applied to an agreement executed prior to the amendment.

Delucchi* v. *Santa Cruz (1986) 179 Cal.App.3d 814. Williamson Act contract does not bind county to refrain from amending agricultural zoning in a manner that prohibits certain compatible uses originally contemplated by the contract.

Department of Conservation* v. *Triplett (August 12, 1996) 48 Cal.App.4th 233 (cert denied November 13, 1996). The 180 day statute of limitations regarding the decisions to cancel contracts does not apply to an action by the Resources Agency seeking enforcement of standards for calculation of cancellation penalties. The Resources Agency has standing to maintain such an action, and need not seek to exhaust administrative remedies reserved in the Williamson Act to landowners and local government.

DeVita* v. *County of Napa (March 6, 1995) 9 Cal.4th 763. Upheld initiative requiring general plan amendments for development of agricultural lands be submitted to voters. The Supreme Court referred to provisions of the Williamson Act which indicate the State Legislature's recognition of the importance of preserving agricultural lands. (At page 791.)

Dorcich* v. *Johnson (1980) 110 Cal.App.3d 487. The Secretary for Resources retains independent discretion to determine whether a waiver or reductions of cancellation penalties meets statutory prerequisites.

Honey Springs Homeowners Assn.* v. *Board of Supervisors (1984) 157 Cal.App.3d 1122. Low density rural development was "urban" and therefore contract cancellation is subject to the prohibition on discontiguous urban development.

Kelsey* v. *Colwell (1973) 30 Cal.App.3d 590. Local participation in the Williamson Act by a city or county is permissive rather than mandatory. [But see *Borel*, infra.]

Lewis* v. *Hayward (1986) 177 Cal.App.3d 103. Window provision allowing contract cancellation under relaxed standards violated article 13, section 8, of the California Constitution.

Shellenberger* v. *Board of Equalization (1983) 147 Cal.App.3d 510. When determining the base year value under article XIII A of land that had been in the Williamson Act at the time of its base year, but had since come out, an unrestricted value rather than the market value of land in the Williamson Act must be used.

Sierra Club* v. *Hayward (1981) 28 Cal.3d 840. Contract cancellations reserved for extraordinary circumstances which could not be anticipated through contract nonrenewal. City council lacked substantial evidence to support a contract cancellation.

Stanislaus Audubon Society, Inc.* v. *County of Stanislaus (February 28, 1995) 33 Cal.App. 4th 144. Invalidated negative declaration for country club development on Williamson Act land. The fact the surrounding lands were also enrolled under Williamson Act contract was inadequate to support the county's conclusion that the proposed project would not induce further development in the area. (At page 157.) Court declined to rule on whether the proposed project was incompatible with the Williamson Act.

ATTORNEY GENERAL'S OPINIONS

75 Ops Att'y Gen 278 (1992) When approving subdivision of land subject to a Williamson Act contract, a county may require either by contract or subdivision ordinance that a previously filed nonrenewal be waived and a new contract entered.

69 Ops Att'y Gen 70 (1986) The term "full cash value" as used in the Williamson Act as a basis for contract cancellation penalties was not affected by the change in the definition of that term for general tax purposes under Proposition 13. [Note, 1987 legislation codified this opinion and changed the term "full cash value" to be "current fair market value" for contract cancellation purposes under Government Code sections 51203 and 51283.]

68 Ops Att'y Gen 204 (1985) The failure of a Local Agency Formation Commission to hold a hearing to consider a city contract protest until after the execution of the contract does not invalidate the protest. [Note 1991 changes to Government Code sections 51243 and 51243.5.]

67 Ops Att'y Gen 247 (1984) A contract cancellation granted under the "window" provision must be consistent with the general plan.

62 Ops Att'y Gen 233 (1979) The division of 1,308 acres of land under a Williamson Act contract into 29 lots would violate the contract unless the proposed use of each of the lots is incidental to commercial agriculture. The potential contract violation is not a basis for denying the tentative map. However, the facts showing the contract violation may also provide a basis

for denial under the Map Act. Furthermore, the contract could be enforced by denial of a "public report" by the Real Estate Commissioner thereby precluding development of the resulting lots during the term of the contract.

60 Ops Att'y Gen 118 (1977) The policy of the Williamson Act to preserve open space must be considered by a Local Agency Formation Commission when designating spheres of influence.

58 Ops Att'y Gen 729 (1975) Nuclear power plan may be cited within agricultural preserve only if there is no other land on which it is reasonable feasible.

56 Ops Att'y Gen 160 (1973) A county may enact eligibility limitations more restrictive than those in the Williamson Act, including requiring minimum capital outlay and agricultural production.

56 Ops Att'y Gen 8 (1973) A county may amend Williamson Act contracts to decrease the minimum term from 25 to 10 years.

54 Ops Att'y Gen 90 (1971) Division of a 1,200 acre farm enrolled in the Williamson Act into 20 acre ranchettes would violate the Williamson Act notwithstanding 20 acre zoning.

51 Ops Att'y Gen 80 (1968) A beneficiary's assent is not required before entering into a Williamson Act contract. However, a beneficiary who has not given assent is not subject to the contract during foreclosure if the contract came after the beneficiary's interest.

47 Ops Att'y Gen 171 (1966) An assessor may continue to take into account the market value of land enrolled in the Williamson Act where the assessor determines the development restrictions are likely to be terminated in the near future. [Note, this opinion preceded enactment of article 13, section 10, of the California Constitution, authorizing preferential taxation of enforceably restricted lands.]

APPENDIX 2: SOURCES OF AGRICULTURAL INFORMATION

Ag Foundation
2300 River Plaza Drive
Sacramento, CA 95833www.cfaito.org

Agricultural Council of California
1225 H Street
Sacramento, CA 95814
e-mail: agricncl@aol.com

Agricultural Education Foundation
P. O. Box 6058
Atascadero, CA 93423-6058
www.agleaders.org

Agriservices Foundation
648 West Sierra
Clovis, CA 93612

AgTac-California Edison
4175 South Laspina St.
Tulare, CA 93274
www.scebiz.com

Alfalfa Seed Production Reseach Board
531-D North Alta Avenue
Dinuba, CA 93618
e-mail: monfortms@aol.com

Alliance for Food and Fiber
10866 Wilshire Boulevard, Suite 550
Los Angeles, CA 90024
www.alliance-food-fiber.org

Alliance of Western Milk Producers
1225 H Street, Suite 102
Sacramento, CA 95814e-mail:
milkjet@aol.com

Allied Grape Growers
3475 West Shaw Avenue, Suite 103
Fresno, CA 93711

Almond Growers Council
Almond Hullers' Processing Association
2350 Lecco Way
Merced, CA 95340
www.ahpa.net

American Crop Protection Association
1156 15th Street, NW, Suite 400
Washington, D.C. 20005
www.acpa.org

American Farm Bureau Federation
600 Maryland Avenue, SW, Suite 800
Washington, D.C. 20024
www.fb.com

American Farmland Trust
California Field Office
260 Russell Avenue, Suite D
Davis, CA 95616
www.farmland.org

American Farmland Trust
Visalia Field Office
1324 West Center Street
Visalia, CA 93291

American Frozen Food Institute
1838 El Camino Real, Suite 202
Burlingame, CA 94010

American Vineyard Foundation
P. O. Box 5779
Napa, CA 94581
www.avf.org

Apricot Producers of California
2125 Wylie Drive, Suite 2-A
Modesto, CA 95355

Associated Independent Dairies of America
502 Mace Boulevard, Suite 12
Davis, CA 95616

Blue Diamond Growers
P. O. Box 1768
1802 C Street
Sacramento, CA 95812

California Apple Commission
4974 East Clinton Way, Suite 125
Fresno, CA 93727
www.calapple.com

California Apricot Advisory Board
1220 N Street, Suite A-247
Sacramento, CA 95814

California Artichoke Advisory Board
10719 Merritt Street
Castroville, CA 95012
www.artichokes.org

California Asparagus Commission
4565 Quail Lakes Drive, Suite A-1
Stockton, CA 95207

California Association of Limegrowers
823 Ridge Drive
Fallbrook, CA 92028

California Association of Nurserymen
3947 Lennane Drive, Suite 150
Sacramento, CA 95834
www.can-online.org

California Association of Wheat Growers
P. O. Box 255545
Sacramento, CA 95865-5545
e-mail: chadco@compuserve.com

California Association of Winegrape Growers
555 University Avenue, Suite 250
Sacramento, CA 95825
www.cawg.org

California Avocado Commission
1251 East Dyer Road, Suite 210
Santa Ana, CA 92705-6505
www.avocado.org

California Bean Growers Association
27431 Highway 33
Newman, CA 95360

California Beef Council
5726 Sonoma Drive, Suite A
Pleasanton, CA 94566-7751

California Beet Growers Association, Ltd.
2 West Swain Road
Stockton, CA 95207-4395

California Canning Peach Association
2300 River Plaza Drive, Suite 110
Sacramento, CA 95833
www.calpeach.com

California Cantaloupe Advisory Board
531-D North Alta Avenue
Dinuba, CA 93618
e-mail: monfortms@psnw.com

California Cattlemen's Association
1221 H Street
Sacramento, CA 95814

California Celery Research Advisory Board
531-D North Alta Avenue
Dinuba, CA 93618
e-mail: monfortms@psnw.com

California Chamber of Commerce Agricultural Committee
1201 K Street, 14th Floor
Sacramento, CA 95814
www.calchamber.com

California Cherry Advisory Board
California Cherry Export Association
P.O. Box 877
33 East Oak Street
Lodi, CA 95841
www.calcherry.com

California Citrus Mutual
512 North Kaweah Avenue
Exeter, CA 93221-1200
www.cacitrusmutual.com

California Citrus Quality Council
210 Magnolia Avenue, Suite 3
Auburn, CA 95603
e-mail: jpeltier@cwo.com

California Citrus Research Board
P.O. Box 230
Visalia, CA 93279
e-mail: citrus@aol.com

California Cling Peach Advisory Board
1220 N Street, Suite A-247
Sacramento, CA 95814

California Cling Peach Growers MarketingBoard
531-D North Alta Avenue
Dinuba, CA 93618
e-mail: monfortms@psnw.com

California Cooperative Creamery
P. O. Box 871
Petaluma, CA 94953-0871

California Corn Growers
P. O. Box 726
Chowchilla, CA 93610

California Creamery Operators Association
1730 Portola Street
San Luis Obispo, CA 93405

California Crop Improvement Association
Parsons Seed Certification Center
One Shields Avenue
University of California, Davis
Davis, CA 95616-8541
www.ccla.ucdavis.edu

California Cut Flower Commission
73 Hangar Way
Watsonville, CA 95076
www.ccfc.org

California Dairy Herd Improvement Association
150 Clovis Avenue, Suite 102
Clovis, CA. 93612www.cdhia.org

California Dairy Research Foundation
502 Mace Boulevard, Suite 12Davis, CA 95616
www.cdrf.org

California Department of Food and Agriculture
Agricultural Statistics Branch
1220 N Street
Sacramento, CA 95814
www.cdfa.ca.gov

California Dried Plum Board
3841 North Freeway Blvd. Suite 120
Sacramento, CA 95834
www.prunes.org

California Dry Bean Advisory Board
531-D North Alta Avenue
Dinuba, CA 93618
e-mail: monfortms@psnw.com

California Egg Commission
2131 South Grove Avenue
Ontario, CA 91761
www.eggcom.com

California Farm Bureau Federation
2300 River Plaza Drive
Sacramento, Ca 95833
www.cfbf.com

California Fertilizer Association
1801 I Street, Suite 200
Sacramento, CA 95814
www.calfertilizer.org

California Fig Advisory Board
California Fig Institute
3425 North First, Suite 109
Fresno, CA 93726
www.californiafigs.com

California Fluid Milk Processor Advisory Board
1801A Fourth Street
Berkeley, CA 94710

California Forest Products Commission
853 Lincoln Way, Suite 208
Auburn, CA 95603
www.calforests.org

California Foresty Association
300 Capital Mall, Suite 350
Sacramento, CA 95814

California Freestone Peach Association
1704 Herndon Road
Ceres, CA 95307
www.calpeach.com

California Fresh Carrot Advisory Board
531-D North Alta Avenue
Dinuba, CA 93618
www.carrots.org

California Fresh Fruit Growers, Inc.
5108 East Clinton Way, Suite 115
Fresno, CA 93727

California Grain & Feed Association
1521 I Street
Sacramento, CA 95814
www. cgfa.org

California Grape & Tree Fruit League
1540 East Shaw Avenue, Suite 120
Fresno, CA 93710-8000
www.cgtfl.com

California Grape Rootstock Improvement Commission
1521 I Street
Sacramento, CA 95814

California Institute of Rural Studies
P. O. Box 2143
Davis, CA 95617
e-mail: cirsmail@cirsinc.org

California Kiwifruit Commission
9845 Horn Road, Suite 160
Sacramento, CA 95827
www.kiwifruit.org

California League of Food Processors
980 9th Street, Suite 230
Sacramento, CA 95814
www.clfp.com

California Macadamia Society
P. O. Box 1298
Fallbrook, CA 92088-1298

California Manufacturing Milk Advisory Board
3800 Cornucopia Way, Suite D
Modesto, CA 95358

California Melon Research Advisory Board
531-D North Alta Avenue
Dinuba, CA 93618
E-mail: monfortms@psnw.com

California Milk Producers
11709 East Artesia Boulevard
Artesia, CA 90701

California Milk Producers Advisory Board
400 Oyster Point Boulevard, Suite 214
South San Francisco, CA 94080
www.realcaliforniacheese.com

California Olive Association
c/o California League of Food Processors
980 9th Street, Suite 230
Sacramento, CA 95814
www.clfp.com

California Olive Committee
1903 North Fine, #102
Fresno, CA 93727
www.calolive.org

California Pear Advisory Board
1521 I Street
Sacramento, CA 95814
www.calpear.com

California Pear Growers
1220 Melody Lane, Suite 160
Roseville, CA 95678-5181
www.calpear.com

California Pepper Commission
531-D North Alta Avenue
Dinuba, CA 93618
e-mail: monfortms@aol.com

California Pistachio Commission
1318 East Shaw Avenue, Suite 420
Fresno, CA 93710
www.pistachios.org

California Planting Cotton Seed Distributors
561 North American Street
Shafter, CA. 93263
e-mail: cpcsd@cpcsd.com

California Plum Marketing Program
P.O. Box 968
Reedley, CA 93654-0968

California Potato Research Advisory Board
531-D North Alta Avenue
Dinuba, CA 93618
e-mail: monfortms@psnw.com

California Rice Handlers' Advisory Board
335 Teegarden Street
Yuba City, CA 95992

California Rice Industry Association
701 University Avenue, Suite 205
Sacramento, CA 95825-6757
www.calrice.org

California Salmon Council
P. O. Box 2255
Folsom, CA 95763-2255
www.calkingsalmon.org

California Seafood Council
P.O. Box 91540
Santa Barbara, CA 93190
e-mail: info@ca-seafood.org

California Strawberry Commission
P. O. Box 269
Watsonville, CA 95077-0269
www.calstrawberry.com

California Sweet Potato Growers Association
P. O. Box 534
Livingston, CA 95334

California Table Grape Commission
392 West Fallbrook, Suite 101
Fresno, CA 93711-6150
www.tablegrape.com

California Tomato Commission
1625 East Shaw, Suite 106
Fresno, CA 93710
www.tomato.org

California Tree Fruit Agreement
P. O. Box 968
975 I Street
Reedley, CA 93654-0968
www.caltreefruit.com

California Walnut Commission
1540 River Park Drive, Suite 203
Sacramento, CA 95815
www.walnut.org

California Wheat Commission
P.O. Box 2267
Woodland, CA 95776
e-mail: cawheat1@aol.com

California Wild Rice Board
335 Teegarden Street
Yuba City, CA 95991

California-Arizona Citrus League
25060 Avenue Stanford, Suite 200
Valencia, CA 91355-3446

Central California Almond Growers Association
10910 East McKinley
Sanger, CA 93657

Central Valley Almond Association
P. O. Box 428
McFarland, CA 93250

Dairy Council of California
1101 National Drive, Suite B
Sacramento, CA 95834-1274
www.dairycouncilofca.org

Dairy Institute of California
1127 - 11th Street, Suite 718
Sacramento, CA 95814
www. dairyinstitute.org

Dairyman's Cooperative Creamery Association
400 South M Street
Tulare, CA 93274

Dried Fruit Association of California
California Dried Fruit Export Association
710 Striker Avenue
Sacramento, CA 95834
www.dfaofca.com

Farmers' Rice Cooperative
2525 Natomas Park Drive, Suite 300
Sacramento, CA 95833
www.farmersrice.com

Grape Improvement Association
P. O. Box 3070
Modesto, CA 95353

Iceberg Lettuce Advisory Board
512 Pajaro Street
Salinas, CA 93901

Mushroom Council
2200 B Douglas Boulevard, Suite 220
Roseville, CA 95661

National Farmers Organization
2853 Geer Road, Suite C
Turlock, CA. 95382
www.info.org

National Meat Association
1970 Broadway, #825
Oakland, CA 94612
www.nmaonline.org

Olive Growers Council
121 East Main Street, Suite 6
Visalia, CA 93291

Pacific Egg and Poultry Association
1521 I Street
Sacramento, CA 95814

Pistachio Marketing Agreement
1318 East Shaw Avenue, Suite 420
Fresno, CA 93710

Pistachio Producers of California
20282 Road 21
Madera, CA 93637-0739

Processing Strawberry Advisory Board
P. O. Box 929
Watsonville, CA 95077-0929

Processing Tomato Advisory Board
P.O. Box 980067
West Sacramento, CA 95798-0067

Raisin Administrative Committee
3445 North First Street, Suite 101
Fresno, CA 93726
www.raisins.org

Red Top Rice Growers
P. O. Box 477
Briggs, CA 95917

Rice Growers Association of California
1550 Harbor Boulevard, Suite 200
West Sacramento, CA 95691

Rice Research Advisory Board
P.O. Box 507
Yuba City, CA 95992
www.syix.com\rrb

Sequoia Walnut Growers Association
P. O. Box 327
Visalia, CA 93279

Sun-Diamond Growers of California
P. O. Box 9024
Pleasanton, CA 94566

Sun-Maid Growers of California
13525 South Bethel Avenue
Kingsburg, CA 93631
www.sunmaid.com

The Agricultural Network
P. O. Box 19897
Sacramento, CA 95819-0897

Valley Fig Growers
P. O. Box 1987
Fresno, CA 93718
www.valleyfig.com

Walnut Bargaining Association
542 5th Street
Lincoln, CA 95648
e-mail: icardi@pacbell.net

Western Agricultural Society of North America
2110 X Street
Sacramento, CA 95818

Western Crop Protection Association
3835 North Freeway Boulevard, Suite 140
Sacramento, CA 95834
www.wcpa.org

Western Growers Association
17620 Fitch Street
Irvine, CA 92714-6032
www.wga.com

Western Pistachio Association
517 C Street NE
Washington DC 20002

Western United Dairymen
1315 K Street
Modesto, CA 95354-0917
www.westernuniteddairymen.com

Wine Institute
425 Market Street, Suite 1000
San Francisco, CA 94105
www.wineinstitute.org

APPENDIX 3: SAMPLE QUESTIONNAIRES

To assist them during the appraisal process, assessors may send a questionnaire to agricultural property owners to obtain information on current rents, expenses, and compatible uses on their property. This may be done on an annual or biannual basis. Following are several samples of questionnaires that assessors may use or may find useful in developing his or her own form:

EXAMPLE A
RURAL PROPERTY INCOME AND PRODUCTION QUESTIONNAIRE
CROP YEAR

Date_____ This questionnaire is for the parcel(s) listed below

Please return this form **WITHIN 20 DAYS** in the enclosed envelope.
If assistance is required, phone

TENANT

If you lease or rent all or any portion of this property (either cash or shares):

Tenant's name_____
Address_____
Phone_____

CASH RENT

Do you lease or rent all or any portion of this property for CASH RENT:

☐ Yes Length of lease: From_____To_____
Rent per acre $_____Acres_____
Rent per AUM $_____Carrying capacity_____AUM

☐ No My 2002 estimate of cash rent would be $_____per acre.

SHARE RENT FOR TREES, VINES, ASPARAGUS, AND OTHER CROPS

If leased or rented on a SHARE basis:

Parcel No.	Crops Grown	Acres	Owner's Share %	Owner Gross Share $ Per Acre

TREE, VINE, ASPARAGUS, AND OTHER CROP PRODUCTION

List the actual gross total production per acre for trees, vines, asparagus, and other crops for most recent year by crop and variety and date of planting. Report almond in meat lbs. per acre (do not report by variety). Report tons of peaches as cling or freestone. Report cherries for market by number of 18# (net wt.) lugs/acre and brine type by tons. Report walnuts by ton per variety. Report asparagus by lbs. Report apples by ton, by variety.

Parcel No.	Crop	Variety	Vines On Trellis		Year Planted	Acres	2002	
			Yes	No			Production Per Acre	Price Per LB/Ton/Lug

PRODUCTION COMMENT

If production is more or less than what would be considered "typical" for the area, please explain:

_____
_____
_____

OWNER/LANDLORD EXPENSES

(List any costs to the landlord) District

Irrigation Water	No	Yes	$_____Per Acre Per Year_____
Reclamation Dist. Expense	No	Yes	$_____Per Acre Per Year_____
Pump/Pipeline Expense	No	Yes	$_____Per Acre Per Year_____
Fence/Structure Expense	No	Yes	$
Property Taxes	No	Yes	

Any other Landlord Expense (Describe)_____

BUILDING AND STRUCTURES RENTAL INCOME

If farm rent includes any Building or Structures:

Residence(s)	No	Yes	$_____Annual Rent Allocated
Dairy	No	Yes	$_____Annual Rent Allocated
Other	No	Yes	$_____Annual Rent Allocated

NON-FARM INCOME

	ACRES	S/ACRE/YEAR
Hunting Rights	_____	___
Gas Exploration Lease	_____	_____
Sand and Gravel	_____	_____
Conservation Reserve Program	_____	_____
_____		

IRRIGATION (PRESENT USE)

Dirt Ditch_____	Concrete Ditch_____
Concrete Pipeline	Permanent Sprinklers
Pull Hose	PVC Pipeline
Drip/Micro Sprinklers	Other (Explain)

CHANGES

(A) If structures or additions have been added or removed in the last year indicate:

Parcel # Item Description Add/Remove Date Complete Dimensions Cost

_____

(B) If miscellaneous improvements (i.e., sprinklers, trellis, pump, well, etc.) have been added/removed in the last year:

Parcel # Item Description # Acres Add/Remove Date Complete Pump size/Well Depth Cost

_____

(C) If trees, vines or asparagus were removed in the last year indicate:

Parcel # Variety Date Planted # Acres Date Removed

_____ _____

If trees or vines were grafted or budded in the last year indicate:

Parcel # # Acres Old Variety Date Planted Date Grafted New Variety

_____

If trees, vines, or asparagus were planted in the last year indicate:

Parcel # Type/Variety # Acres Date Planted Spacing Trellis(Yes/No) Irrigation Type

_____

(D) Explain any changes in land use (i.e., dry land now irrigated, land leveled, deep ripped, etc.).

_____

YOUR COMMENTS

Please include any additional information you feel may help us make a fair assessment of your property:

_____

_____

THANK YOU FOR YOUR COOPERATION

I certify under penalty of perjury under the laws of the State of California that the foregoing and all information hereon, including any accompanying statements or documents, is true, correct, and complete to the best of my knowledge and belief.

_____	_____	_____
Signature of Owner, Partner, Officer or Authorized Agent	Date	Telephone Number

Name and telephone number of whom you prefer we contact if clarification or more detail is needed:

Same as above or:_____ _____

Name Telephone Number

EXAMPLE B

AGRICULTURAL GRAZING & LEASE QUESTIONNAIRE

ASSESSORS PARCEL NO.

OFFICIAL REQUEST
This request is made in accordance with Section 441, Revenue and Taxation Code. This statement must be completed according to the instructions and filed with the Assessor on or before

Failure to file this statement will authorize the Assessor to estimate the value of your property based on information in his possession pursuant to Section 501, Revenue and Taxation Code.

This statement is not a public document. The information contained herein will be held secret by the Assessor (Section 451, Revenue and Taxation Code); it can be disclosed only to the district attorney, grand jury, and other agencies specified in Section 408 of the Revenue and Taxation Code. Attached Schedules are considered to be part of the statement.

IMPORTANT
If there have been any changes or additions to the land, buildings, other improvements, or tree and vine plantings **BETWEEN JAN. 1 2001 AND DEC. 31, 2001**, please complete the reverse side of this form.

Dear Property Owner:
In order to evaluate grazing properties in the Williamson Act Agricultural Preserve, the County Assessor is required to estimate the livestock carrying capacity of each parcel. It is necessary from time to time to ask the property owner to provide information to help in this process. **Please provide the information requested below.** Attachments are considered part of this form.

Please answer all questions fully.

1. Indicate the type of grazing operation:
   Cow – Calf Stocker – Feeder Dairy Cattle Sheep Other_____
   The actual length of this grazing season: Calendar month_____ through calendar month_____
   The actual number of head grazed this season:_____
   The average historical length of the grazing season:_____ The average historical number of head grazed:_____

2. Is this property leased or rented to others? Yes No If no, what would you consider as fair annual cash rent per acre?_____
   If yes, please enter:
   a) The name of the tenant_____ The number of acres_____
   b) The date the most current rent was negotiated_____The length of term_____
   c) Total GROSS annual rent_____For the year ending_____
   d) The type of lease: Cash rent per acre Cash rent per head Cash rent based on weight gain
   Other_____
   e) Does the rent include structural improvements? Yes No If yes, please describe:
   Buildings Fencing Pumps Other_____
   f) The property owner pays the following expenses: Property Taxes Irrigation District Taxes
   Maintenance of structural improvements Other_____

3. Is there any additional income, such as hunting or recreational rights, radio or cell phone towers, etc? Yes No
   If yes, please indicate the number of acres, annual gross income and itemize expenses (use reverse).

4. Is all or any portion of this property "Certified Organic?" Yes No

5. Are you renting grazing land in this county owned by others? Yes No
   If yes, please identify the property APN or legal description, owner, number of acres, and amount of rent in the space below:
   _____
   _____
   _____

6. Please provide any additional information which you feel may help the Assessor to make a fair evaluation of you property (use below).

7. Signed Local phone number Date

BUILDINGS OR OTHER STRUCTURES:
Indicate structures, pumps, wells, pipelines, wind machines, stakes, wire, drip irrigation, etc. added or removed.

Description:	ACTUAL COST	COMPLETE (MONTH/YEAR)

EXAMPLE C

AGRICULTURAL CROP & LEASE QUESTIONNAIRE

ASSESSORS PARCEL NO.

OFFICIAL REQUEST
This request is made in accordance with Section 441, Revenue and Taxation Code. This statement must be completed according to the instructions and filed with the Assessor on or before

Failure to file this statement will authorize the Assessor to estimate the value of your property based on information in his possession pursuant to Section 501, Revenue and Taxation Code.

This statement is not a public document. The information contained herein will be held secret by the Assessor (Section 451, Revenue and Taxation Code); it can be disclosed only to the district attorney, grand jury, and other agencies specified in Section 408 of the Revenue and Taxation Code. Attached Schedules are considered to be part of the statement.

IMPORTANT
If there have been any changes or additions to the land, buildings, other improvements, or tree and vine plantings **BETWEEN JAN. 1 2001 AND DEC. 31, 2001**, please complete the reverse side of this form.

Please answer all questions fully.

1. List all planting areas and their ACTUAL total production for the past crop year only.

Crop	Variety	Date Planted	Acres	Total Production (Indicate lbs., tons, bins, etc.)

If the property is used for grazing purposes, please indicate the type of operation:

Cow-Calf Stocker-Feeder Dairy Cattle Sheep Other_____

2. Is this property leased or rented to others? Yes No
   If yes, please enter:
   a) The name of the tenant_____ The number of acres_____
   b) The date the most current rent was negotiated_____The length of term_____
   c) Is the rent based upon Crop-Share? Yes No If yes,_____% to owner_____% to tenant
   or Cash Per Acre?___ Yes No If yes, the total gross rent $_____for the year ending_____
   d) Does the rent include structural improvements? Yes No If yes, please describe:
   Pump Pipeline House Shed_____ Other _____
   e) The property owner pays the following expenses:
   Property Taxes Irrigation District Taxes Drainage District Taxes Pump/Pipeline Maintenance
   Other_____

3. Is there any additional income, such as hunting or recreational rights, radio or cell phone towers, etc? Yes No
   If yes, please indicate the number of acres, annual gross income and itemize expenses (use reverse).

4. Is all or any portion of this property "Certified Organic?" Yes No

5. If owner operated, GROSS INCOME $_____for the year ending_____

6. Are you renting land in this county owned by others? Yes No
   If yes, please identify the property APN or legal description, owner, number of acres, and amount of rent in the space below:
   _____
   _____
   _____

7. Signed Local phone number Date

Please indicate on the plot plan below the dimensions and location of the parcel of any changes to the following:

			ACTUAL COST	COMPLETED (MONTH/YEAR)
LAND:	Leveling	acres	$	/
	Ripping	acres	$	/
	Drainage Work	acres	$	/

BUILDINGS OR OTHER STRUCTURES:	Indicate structures, pumps, wells, pipelines, wind machines, stakes, wire, drip irrigation, etc. added or removed		
	Description:	$	/
		$	/
		$	/
		$	/
		$	/

TREES AND VINES:	Indicate acres, spacings, species of trees or vines added or removed		
	Description:	$	/
		$	/
		$	/
		$	/
		$	/
		$	/

GLOSSARY OF TERMS

TERM	DEFINITION
Agricultural Use	Use of land for the purpose of producing an agricultural commodity for commercial purposes.
Animal Unit Month	The quantity of feed that a mature l,000 pound cow or five mature sheep need for one month to sustain life and maintain good health.
Annual Crop	Plants having a life cycle of one year that produce crops for only one year or season.
Appraisal Unit	The unit that people in the market typically buy and sell.
Arable Land	Land that is suitable for plowing and for producing crops.
Base Year Value	In accordance with section 110.1, a property's base year value is its fair market value as of either the 1975 lien date or the date the property was last purchased, newly constructed, or underwent a change in ownership after the 1975 lien date.
California Land Conservation Act	Enacted by the California Legislature in 1965 in an effort to preserve agricultural lands for the production of food and fiber and to discourage noncontiguous urban development; aka Williamson Act.
Capitalization	Any method of converting expected future benefits into an indicator of present value; the discounting of projected income to a present value.
Capitalization Rate	Any rate used to convert income into an indicator of value; a ratio that expresses a relationship between income and value.
Cash Rent	The amount of rent paid in money; a fixed, negotiated money rent for a farm, usually in dollars per acre per year.
Comparative Sales Approach	An approach to value by reference to sale prices of the subject property or comparable properties; under Rule 4, the preferred approach when reliable market data is available.
Compatible Use	In accordance with Government Code sections 51238.1, 51238.2, and 51238.3, any use determined by the county or city administering this act to be compatible with the agricultural, recreational, or open-space use of land within the preserve and subject to contract. Compatible use includes agricultural use, recreational use, or open-space use unless the board or council finds that such use is not compatible with the agricultural, recreational, or open-space use to which the land is restricted by contract.

Contract Rent The actual amount of rent a property is earning as specified in a lease; the existing rent on property as distinguished from rent that could be expected if the property were available for rent on the open market.

Cost Approach A value approach using the following procedures to derive a value indicator: (1) estimate the current cost to reproduce or replace an existing structure without untimely delays; (2) deduct for all accrued depreciation; and (3) add the estimated land value and an amount to compensate for entrepreneurial profit (if present).

Crop All products of the soil grown, harvested, and held primarily for sale, including seeds held for sale or seeds to be used in the production of a crop; includes fruit grown on trees and grass used for pasturage.

Direct Capitalization A capitalization method used to convert a single year's income expectancy into an indicator of value, either by dividing the income estimate by an appropriate rate or by multiplying the income estimate by an appropriate factor.

Endangered Species Any species, as defined in the California Endangered Species Act, that has been classified and protected as an endangered, threatened, rare, or candidate species by any entity of the state or federal government.

Enforceable Restriction Open-space land is enforceably restricted if it is subject to (a) a contract, (b) an agreement, (c) a scenic restriction entered into prior to January 1, 1975, (d) an open-space easement, or (e) a wildlife habitat contract.

Farmland Land devoted to agricultural production; usually refers to the land comprising a farm, including tillable areas, untillable areas, and woodlots.

Farmland Security Zone Land contracted for a rolling 20-year term under the California Land Conservation Act; aka "Super Williamson Act."

Highest and Best Use The most profitable use of a property at the time of the appraisal; that available use and program of future utilization that produces the highest present land value; must be legal, physically possible, financially feasible, and maximally profitable.

Income Approach Any method of converting an income stream or a series of future income payments into an indicator of present value.

Lien Date All taxable property (both state and locally assessed) is assessed annually for property tax purposes as of 12:01 a.m. on January 1, which is called the lien date. It is referred to as the lien date because on this date the taxes become a lien against all real property assessed on the secured roll.

Level Annuity An income stream in which the amount of each payment is the same; a level, unchanging flow of income over time.

Market Rent The amount of rental income that could be expected from a property if available for rent on the open market, indicated by the prevailing rental rates for comparable properties under similar terms and conditions; distinguished from contract rent, which is the actual rental for the subject property as specified in a lease; also referred to as economic rent.

Open-Space Land Land designated for nonbuilding uses; typically of three ownership types: private open space adjacent to dwellings owned by individual residents, public open space owned by government, and common open space owned by a community association and set aside for the use of residents.

Open-Space Use The use or maintenance of land in such a manner as to preserve its natural characteristics, beauty, or openness for the benefit and enjoyment of the public, to provide essential habitat for wildlife, or for the solar evaporation of sea water in the course of salt production for commercial purposes.

Owner-Operator Income Gross income earned by a farm or ranch operated by the owner.

Perennials Plants, vines, and trees having a life cycle of more than two years that produce crops from the same root structure year after year.

Production Process or act of producing. Fruit of labor, as the production of the earth, comprehending all vegetables and fruits.

Property Property includes all matters and things—real, personal, and mixed—that are capable of private ownership.

Prime Agricultural Land All land (1) which qualifies for rating as class I or class II in the Soil Conservation Service land use capability classifications; (2) which qualifies for rating 80 through 100 in the Storie Index Rating; (3) which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one AU per acre; (4) which is planted with fruit- or nut-bearing trees, vines, bushes or crops which have a nonbearing period of less than five years and which will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than $200 per acre; and (5) which has returned from the production of unprocessed agricultural plant products an annual gross value of not less than $200 per acre for three of the previous five years.

Prudent Management Practically wise, judicious, careful, discreet, circumspect, and sensible in the act of managing, by direction or administration, an enterprise.

Real Property The possession of, claim to, ownership of, or right to the possession of land; all mines, minerals, and quarries in the land; all standing timber whether or not belonging to the owner of the land, and all rights and privileges appertaining thereto; and improvements; in California property tax law, the term is synonymous with "real estate."

Recapture The return of invested capital; in real estate investments, capital may be returned gradually as part of the annual income, it may be recaptured all or in part through resale of the property, or through a combination of both. The variety of the methods of recapture requires the various capitalization techniques.

Recreational Use The use of land by the public for walking, hiking, picnicking, camping, swimming, boating, fishing, hunting, or other outdoor games or sports for which facilities are provided for public participation. Any fee charged for the recreational use of land shall be in a reasonable amount and shall not have the effect of unduly limiting its use by the public.

Remaining Economic Life The estimated period during which the improvements will continue to contribute to a property's value.

Residual Techniques Capitalization techniques (within the income approach) in which an income amount is allocated to a property component of unknown value after subtracting the income return required by the property component of known value. This income amount is then capitalized into an estimate of value of the unknown component.

Risk Component A component added to the capitalization rate pursuant to Revenue and Taxation Code section 423(b) which shall be a percentage determined on the basis of the location and characteristics of the land, the crops to be grown thereon, and the provisions of any lease or rental agreement to which the land is subject.

Risk Rate The annual rate of return on capital that is commensurate with the risk or uncertainty assumed by the investor; the rate of return or yield required to attract capital to the level of risk or uncertainty of that investment.

Share Rent A prenegotiated agreement whereby the owner of farmland receives a share of the crops produced in lieu of cash rent.

Value The power of one commodity to command other commodities in exchange; a ratio of exchange; present worth of future net benefits.

Weighted Average An average that is calculated by weighting each component by a factor that represents its relative importance to the whole; multiplying each component by its assigned weight, and adding the products; used in the band of investments method.

Wildlife Habitat A land or water area designated by a board or council, after consulting with and considering the recommendation of the Department of Fish and Game, as an area of great importance for the protection or enhancement of the wildlife resources of the state.

Williamson Act Land contracted for a rolling 10-year term under the California Land Conservation Act.

Yield The return on investment.

Yield Capitalization A capitalization method used to convert future benefits to present value by discounting each future benefit at an appropriate yield rate or by developing an overall rate that reflects the investment's income pattern, value change, and yield rate.

Yield Rate A measure of investment return (usually annualized) that is applied to a series of incomes to obtain the present value of each; examples are the interest rate, the discount rate, the internal rate of return, and the equity yield rate.