Division of Property Valuation

GRAIN ELEVATOR APPRAISAL GUIDE FOR THE STATE OF KANSAS 2023

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PART I - INTRODUCTION

SUMMARY OF IMPORTANT FACTS

In order to appraise grain elevators, it is important to understand that there are many different variables that can differentiate a grain elevator's value. Items such as grain production, location, type and physical/operational characteristics are just a few of the things to be considered. Kaufman summed it up best when stating:

> *"...grain is a commodity with a frequently changing price, and the one thing that is certain is that for shippers and railroads the grain trade is marked by uncertainty. It is produced by thousands of independent growers who sell through local and regional elevator operators who in turn market to thousands of domestic and export customers.*
>
> *Grain prices are affected by myriad factors: weather, foreign exchange rates, international market conditions, revolutions, and government export programs. When prices are relatively high, elevator operators will offer premium prices to growers to obtain the grain they need to satisfy market demand. When that happens, demand for transportation increases exponentially as Sellers rush to fulfill contracts.*
>
> *When demand sags, the premium from elevator operators disappears, and growers frequently opt to store grain on their farms until price improves. Then, the demand for transportation can evaporate almost overnight."*

In 2016 the legislature of the state of Kansas recognized in amending K.S.A. 79-1456 that the valuation of specific types of properties including commercial grain elevators should be done following guides prepared by the Division of Property Valuation. This guide has been prepared by the staff of the Division of Property Valuation for that purpose.

BASIC GRAIN ELEVATOR OPERATIONS

Elevators were designed to serve as assembly points to load grain for shipment. Grain merchandising strategies for elevators require considerations of scheduling grain receipts, advanced purchasing arrangements, prior storage, and pricing methods among other things. The basic product flow for the elevators may be described briefly as: receiving; cleaning and distribution; drying, if required; storage; and shipping. In addition, necessary maintenance and office functions are included.

The description of some elevator sites consists of more than grain storage, processing and handling. Other forms of business operations must be appraised separately from the elevator operations. An example would be the fertilizer shops and convenience stores. Large office structures that accommodate other business ventures must be appraised outside the elevator operation appraisal.

The intent of this guide is to assist in the valuation of commercial grain storage and handling facilities. Some commercial elevators are sold to individuals who no longer utilize them for commercial purposes. The application of this guide is intended for the valuation of commercial facilities. Commercial grain storage facilities must be licensed by either the USDA or the Kansas Department of Agriculture.

Assigning the proper assessment classification and Land Based Classification Standard (LBCS) Function Coding will assist in identifying grain operations, combined with other property use. Sales of elevator facilities should be identified on the record as elevator sales, including the sale of structures on leased ground. Tracking all sales in the future will assist in maintaining the accuracy of the guide.

Some old (former) commercial grain storage facilities are still listed under the LBCS for Grain Storage (Elevator) 9231. The non-operating facilities should be reclassified to a more appropriate LBCS classification based on the current use.

Receiving

Elevators receive grain by truck. Upon arrival, trucks are weighed on a platform scale, and the loads are sampled with a mechanical probe sampler. The sample is evaluated while the truck proceeds to the truck dump pit. Grain is conveyed from the receiving pit to a bucket elevator leg which is installed within the elevator or is a free standing structure.

Cleaning and Distribution

From the head of the bucket elevator the grain flows over a gravity cleaner to remove pieces of stalk, stones, and other foreign material. The grain then may move by gravity or conveyor to bin distribution, drying, or directly to load-out.

Storage

Storage bins accumulate grain for load-out. Aeration, fumigation, and temperature monitoring systems are incorporated for grain quality maintenance.

Shipping

Grain exits from bin bottoms and moves by gravity or conveyor to the shipping leg(s) (bucket elevator(s)). The grain then flows from the elevator head(s) to a surge bin ahead of the shipping scale. After weighing, the grain is sampled with a diverter mechanical sampler before entering the truck, rail car, barge or ship. Elevators which handle corn and/or soybeans are equipped with a scalper that precedes the scaling surge bin. The scalper removes stalk or cob material that is disallowed in some markets to control certain insects. The shipping system may include a pit and receiving conveyor in the rail load-out system so that grain may be unloaded. This system is intended to be used as a rail receiving unit.

PART II - OBJECTIVE OF THE APPRAISAL GUIDE

STATEMENT OF PURPOSE

The purpose of this guide is to promote uniformity by providing appraisal education and support to Kansas County Appraiser's for the mass appraisals of licensed grain elevator properties in Kansas. This appraisal guide has been produced in response to K.S.A. 79-1456 requiring the Kansas County Appraisers to use the guide prescribed by the State of Kansas, Property Valuation Division in the appraisal of commercial grain handling facilities licensed either by the KDA or the USDA in all 105 counties. In 2017 there were approximately one thousand eight hundred four (1,804) parcels described as grain elevator properties (LBCS Function Code 9231) in Kansas. These facilities range from small local facilities to the major grain terminals in Salina, Wichita, and Hutchinson, Kansas. Additional information about Kansas state-licensed grain warehouses by Kansas Department of Agriculture may be obtained at this website: https://agriculture.ks.gov/divisions-programs/grain-warehouse The Kansas Department of Agriculture may also be contacted through their website: www.agriculture.ks.gov. The list of facilities licensed by US Department of Agriculture may be obtained at this website: https://internet-dotnet.fsa.usda.gov/approved_whses/ugrsa/report_UGRSA.asp?StateAbbr=KS&StateName=KANSAS&StateCode=20

RIGHTS TO BE APPRAISED

Kansas County Appraisers are required to value grain elevators based upon the fair market value of the real property using the guide provided by the Division. K.S.A. 79-503a defines fair market value for property tax purposes, K.S.A. 79-102 defines real property for property tax purposes, and K.S.A. 79-1456 which is further clarified in the Directive 17-048 compels the use of the guide prescribed by the State of Kansas Division of Property Valuation (All documents found in the Appendix A of this guide). Tangible personal property is valued and taxed based upon an acquisition cost formula set forth in the Kansas Constitution and is therefore beyond the scope of this guide. With certain exceptions that are not directly applicable in this guide, intangible personal property is not subject to taxation in Kansas and is likewise beyond the scope of this guide. Thus, the guide should define the property it intends to value, and that property cannot include tangible or intangible personal property.

PART III - PRESENTATION OF DATA

AREA ANALYSIS

The Dictionary of Real Estate Appraisal defines a neighborhood as: *"A group of complimentary land uses"*. It may be best described as that part of a geographical area or community which comprises the immediate surroundings and primary environment for the appraised property. Normally, neighborhoods (market areas) can be characterized by physical similarities, locale, and a homogeneous blending of property uses. Within any neighborhood, governmental, social, economic, and environmental forces influence supply and demand for real estate. Consequently, location is always a major factor in determining value; and in most neighborhoods, the inhabitants have a relationship based on a commonality of interests.

The neighborhood for the purpose of this appraisal guide consists of the entire state of Kansas. Because of the divergence in agricultural operations and the availability of market data in the state of Kansas, there was sufficient data to subdivide certain segments of the market data into three geographical regions, i.e. East, and West.

However, it is important to note that there were certain limitations in the quantity of market data to abstract accurate analysis to certain market segments in the sub market neighborhoods.

It is also important from a consensus standpoint to provide certain background information for the overall state of Kansas. The following are tables depicting important factors for the state of Kansas. The first table shows harvested grain volumes for the state of Kansas, and the second table shows grain storage capacity for the state of Kansas.

Kansas Annual Total Harvested Grain Volumes - (1,000 bu.)[1]

Year	Wheat	Corn	Oats	Barley	Sorghum	Soybeans
2020	281,250	766,480	832	306	238,000	194750
2019	348,400	800,660	1,152	132	204,000	186,335
2018	277,400	642,420	882	186	233,200	201,670
2017	333,600	686,400	1,350	N/D	200,900	191,625
2016	467,400	698,640	1,710	N/D	268,450	192,480
2015	321,900	580,160	2,600	312	281,600	148,610
2014	246,400	566,200	840	350	199,800	140,580
2013	319,200	520,000	840	517	187,000	123,900
2012	378,000	379,200	990	413	81,900	85,725
Average production	335,273	591,148	1,311	316	196,568	151,925

[1] http://quickstats.nass.usda.gov

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Number of Off Farm Facilities	700	700	715	715	715	726	715	715	725	725
Off Farm Capacity in 1,000 BU.	1,200,000	1,175,000	1,150,000	1,100,000	1,075,000	1,050,000	1,025,000	1,000,000	980,000	940,000
On Farm Capacity in 1,000 BU.	380,000	380,000	380,000	380,000	380,000	380,000	380,000	380,000	380,000	380,000
Average Off Farm Capacity per Facility	1,714,288	1,678,571	1,608,392	1,538,462	1,503,497	1,446,281	1,433,566	1,398,601	1,351,724	1,296,552

Above chart produced from statistics at http://quickstats.nass.usda.gov.

Most of the grain elevators, about 70%, are owned by cooperatives and about 56% have some sort of railroad access.[2]

In the past, the size and location of a grain elevator was largely affected by its mode of transportation. For many decades, country elevators were usually 10-15 miles apart. This allowed farmers to deliver their grain to the closest grain elevator. The country elevator then exported the grain to the end user (milling operation, bio-diesel plant, or ethanol plant) or a terminal.

In 2016 the USDA estimated that Kansas would have a 320-million-bushel shortage of grain storage. This was based on the 2015 December storage capacity (off- plus on-farm storage) and the sum of production (new crop corn, soybeans and sorghum and the stocks (old crop corn, old crop soybeans, wheat, old crop sorghum, barley and oats).[3]

The U.S. grain industry is in the process of a transition to shipments by shuttle trains as the prevailing rail methodology. In Kansas at least 17 elevators have shuttle train access. [4]This transition encompasses both

[2]http://ageconsearch.umn.edu/record/235964/files/AAEA%202016%20Paper_The%20Changing%20Competitive%20Structure%20of%20Kansas%20Grain%20Handling%20and%20Transportation%20Industry%20_O_Brien%20Briggeman_%20May%2025_%202016.pdf

[3] https://www.ams.usda.gov/sites/default/files/media/GTR%20-%2010-06-16.pdf

[4]http://ageconsearch.umn.edu/record/235964/files/AAEA%202016%20Paper_The%20Changing%20Competitive%20Structure%20of%20Kansas%20Grain%20Handling%20and%20Transportation%20Industry%20_O_Brien%20Briggeman_%20May%2025_%202016.pdf

domestic shippers and domestic receivers, which to this time generally have not employed shuttle train technology. Inland export shippers and export elevators have been using shuttle trains since the 1990's. Those who cannot or are unwilling to adapt to shuttle-train load-out and receipt will be bypassed by the emerging grain marketing-transportation system.

The industry does not view long-term storage as a viable means of sustaining the operation of facilities that will be built or retrofitted to serve a restructured U.S. grain marketing-transportation system. The capital burden of the railroads, which dictates limited time to load shuttle trains, also dictates high-speed load-out. High-speed load-out equipment is capital intensive and can be justified only by moving large volumes of grain. A relatively low valued commodity such as grain simply cannot support a capital-intensive technology, such as shuttle train load-out, unless the volumes handled are large. Thus, static storage as a means of cost recovery is not feasible, unless special conditions exist. Further impetus is given to the movement toward shuttle-train load-out facilities because the majority of U.S. grain is now stored on farms. Consequently, facilities built for long-term storage in the past can no longer generate sufficient revenues from grain storage to sustain a viable organization.

The larger terminal elevators built in the 1950's, particularly in the Plains States, will not be replicated, except under special conditions. Neither will the grain marketing system be able to support a large population of shuttle train terminals. Simple production density can be used to estimate a maximum number of such facilities. Corn growing areas will be able to support more such facilities than wheat growing areas. Producers in wheat areas delivering to such facilities will incur greater delivery costs than producers in corn growing areas because, to be economically viable, the facilities will be farther apart in wheat country than in corn country.

Below are tables of shuttle train elevators in Kansas served by Burlington Northern Santa Fe (BNSF) and Union Pacific (UP). Notice there is some overlap between the two lists with some elevators being served by both of the railroads. The first listing is from the following BNSF web site:
https://www.bnsf.com/ship-with-bnsf/ways-of-shipping/dedicated-train-service.html#subtabs-2

The Shuttle Train Elevators (Kansas), effective 2021, on the BNSF:

CITY	**COMPANY NAME**
Abilene	Gavilon Grain LLC
Concordia	AgMark LLC
Coolidge	The Scoular Company
Dodge City	ADM Grain
Ensign	Dodge City Coop Exchange
Garden City	WindRiver Grain, L.L.C.
Hugoton	United Prairie Ag LLC
Hutchinson	ADM Grain Co. (Elev I)
Hutchinson	ADM Grain Co. (Elev J)

Salina	Cargill, Inc.
Salina	The Scoular Company
Wellington	The Scoular Company
Wichita	Bartlett Grain Co., L.P.
Wichita	DeBruce Grain, Inc.
Wichita	Right Coop Assn.

The shuttle train elevators served by UP below is from the UP website.

Shuttle Train Elevators (Kansas), effective January 1, 2017, on the Union Pacific:

CITY	COMPANY NAME
ABILENE	GAVILON GRAIN INC.
ATCHISON	AGP GRAIN COOPERATIVE
ATCHISON	BARTLETT GRAIN
COLBY	CORNERSTONE AG LLC
DOWNS	SCOULAR GRAIN
HANOVER	FARMERS COOP ASSN
HAVILAND	FARMERS COOP ASSN
HUTCHINSON	ADM FARMLAND ELE J
KANSAS CITY	BARTLETT RIVER RAIL
OGALLAH	CASTLE ROCK MARKING LLC
PRATT	SCOULAR GRAIN
SALINA	CARGILL
SALINA	SCOULAR GRAIN
SALINA (NEW CAMBRIA)	ADM COLLINGWOOD GRAIN TERM A
TOPEKA	CARGILL WEST GRAIN ELEVATOR
WAKEENEY	CASTLE ROCK MARKING LLC
WICHITA	BARTLETT GRAIN
WICHITA	GAVILON GRAIN INC

INDUSTRY BACKGROUND

As the capacity of grain elevators expands, their numbers continue to shrink. This is due to a variety of factors, some of which include the Conservation Reserve Program, growth of farms, the family farming change, bigger farms, and also the smaller number of farms. Local farm supply and grain marketing cooperatives are squeezed from three different directions. First, farmer-customer relationship is more important than ever before due to farms becoming larger as well as fewer in number. Secondly, the competition is also consolidating, creating a "survival of the fittest" marketplace. A third way that farm and grain cooperatives are feeling pressure is that their suppliers and grain marketing firms are also fewer and larger, thus limiting choice and bargaining power for local cooperatives. Just as mergers and joint ventures are occurring with other areas of the workforce, it is also happening in all phases of the agricultural business as well.

Changes in Transportation

Kansas ranks third in the US in the total road mileage which allows for easy grain transport with trucks. However, as time has evolved, so has the method used to transport grain. Several decades ago, trucks were the mainstay for transporting grain. Today, the railroad is the main transport of grain due to its ability to haul several thousands of bushels at once. In amount of railroad mileage Kansas ranks in the top ten states in the US with over 2,400

miles of Class I track and 1,900 miles of Class III (short line) track. The notion that size makes a difference is part of the grain shuttle program established in the late 1990's by the Burlington Northern Santa Fe (BNSF) railroad, one of the four major rail carriers in Kansas. Using shuttle trains, consisting of 100-110 cars, grain haulers get rate reductions. Shippers also need to commit to fixed numbers of trips over given periods of time, while both port elevators and country elevators must be able to load or unload the 110-car shuttle train in no more than 15 hours. Extensive trackage is also a requirement at the origins and destinations, i.e. one train of 112 ton covered hopper cars is 6,700 feet long (about 1.3 miles) and requires an open track of about 7,300 feet. Therefore, 25 car terminals are no longer competitive. The railways say they may not find short trains as profitable and rail rates are driving this type of expansion.

Shuttle Train Facility Requirements

BNSF has a number of requirements for shuttle train-loading locations:

- The facility must have sufficient trackage to allow the entire 110-car train plus three locomotives to arrive and depart without decoupling any railcars, whether on a straight siding parallel to the main line or a loop track. To do this on a straight track requires a siding nearly a mile and a half long, connecting to the main line on both ends, and a parallel 55-car track to move loaded cars past empty cars. A facility like this is not possible in every location. A loop track takes up at least 100 acres of land.
- The facility must be able to load or unload the train in a maximum of 15 hours. For most upgrades, this usually means increasing leg and conveyor capacity to load at a minimum of 40,000 to 50,000 bushels per hour (bph).
- The facility must be able to generate origin weights and grades. Most facility managers opt for a bulk weigh loadout scale to accomplish origin weights, often with an automated software package that can automatically load to individual railcar capacities. In many cases, managers will contract with the Federal Grain Inspection Service (FGIS) or one of its official inspection agencies to generate origin grades during train loading.
- The facility must have a minimum of 440,000 bushels of upright storage in order to fill a BNSF shuttle train. In practice, more storage capacity is needed, since loading one train would completely empty a 440,000-bushel elevator. However, it doesn't take a lot more than that. Often, terminal builders will opt for a minimal amount of storage to start with, and as the initial investment is paid down, will add more storage capacity later.
- BNSF has no financial requirements for its shuttle-loading partners. Since the rail carrier does not maintain ownership interest in shuttle-loading facilities, this remains a matter for shippers and their financial institutions.
- In general, BNSF prefers loop tracks wherever possible. This allows for continuous loading of a single string of railcars, without backing up or decoupling. Loop tracks also provide some safety advantages, again by eliminating coupling and decoupling of railcars. In addition, while the train is at the facility, much of it is far away enough from the loading point to discourage workers from climbing over railcar couplings to get from one part of the facility to another.

Among the BNSF's main requirements for loop track design:

- A minimum of 7,300 feet of track length
- Maximum track curvature of 7 degrees 30 minutes
- Maximum grade of 0.5%

Given the length and weight of a shuttle train, the rail carrier looks for as level a site as possible to minimize power required and potential for accident. BNSF offers more information for shuttle-loading facilities and trackage by request at: http://www.bnsf.com/ship-with-bnsf/agricultural-products/index.page

Size of US Farms

The size of a farm in the United States can impact grain elevators. Usually, the big farms that generate large amounts of grain often choose to own and operate their own tractor-trailer trucks. This enables the farmers to haul their own grain greater distances. This is a factor when appraising grain elevators due to the fact that local farmers may or may not deliver grain to a localized area as they did several decades ago. With the capacity of owning their own tractor trailers, the farmers could choose to haul their grain to a terminal farther away in order to achieve a better price.

Ethanol Plants

"Ethanol – which is distilled from corn essentially the way moonshine is – is blended into gasoline, both stretching the fuel's supply and making it burn cleaner."[5]

"The year 2016 will undoubtedly be remembered as one of the best ever in the history of the U. S. ethanol industry. Driven by unprecedented domestic use and robust export demand, ethanol production reached record heights. And after a lengthy battle, the Renewable Fuel Standard (RFS) was finally put 'back on track' when the Environmental Protection Agency announced blending requirements would be returned to statutory levels in 2017. Meanwhile, farmers harvested a record corn crop, ensuring ample feedstock supplies and ending the outlandish 'food vs. fuel' myth once and for all." [6]

Kansas Ethanol Plants

Name	Location	Millions of Gallons
Arkalon Energy	Hayne/Liberal	110
Bonanza Bioenergy	Garden City	55
Butamax Advanced Biofuels LLC	Scandia	12

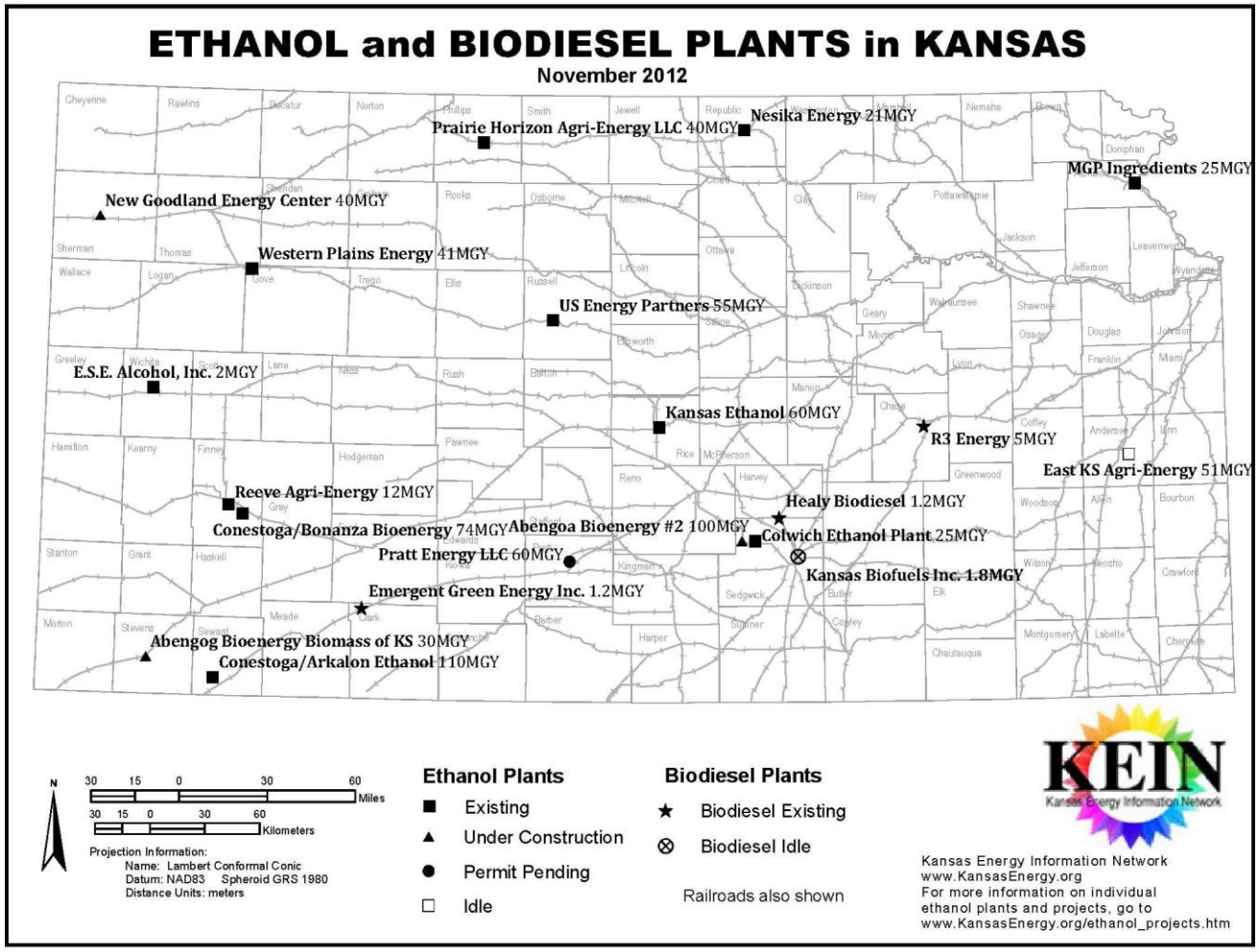
[5] In Midwest Investment Boom, Corn-to-Fuel Plants Multiply, The Wall Street Journal - Online - March 9, 2005

[6] http://www.ethanolrfa.org/wp-content/uploads/2017/02/Ethanol-Industry-Outlook-2017.pdf

East Kansas Agri-Energy	Garnett	45
Element LLC	Colwich	70
ESE Alcohol	Leoti	2
Kansas Ethanol LLC	Lyons	80
MGPI Processing Inc	Atchison	3
Pratt Energy	Pratt	55
PureField Ingredients LLC	Russell	55
Reeve Agri-Energy	Garden City	13
Seaboard Energy Kansas	Hugoton	25
Summit Agricultural Group	Phillipsburg	40
Western Plains Energy, LCC	Campus	50
TOTAL	Kansas	615

"Ethanol is a top use for Kansas Corn. The state's 12 [other sources indicate that there are currently 13] *ethanol plants produce nearly half a billion gallons of renewable, clean burning ethanol fuel and distillers grains, a highly nutrient livestock feed. Distillers' grains are sold wet as WDGS to nearby livestock feeders, or they are dried to make DDGS that can be sold nearby or exported to other states or other countries. Our plants produce a high performance, renewable and environmentally friendly fuel that's also friendly to your wallet."*[7]

[7] http://kscorn.com/ethanol/



This 2012 map is the most recent at the KEIN website. It and other related maps are located at: http://www.kansasenergy.org/ethanol_projects.htm

Biodiesel Plants

"Biodiesel is a clean burning alternative fuel produced from any fat or vegetable oil, such as soybean oil. It contains no petroleum, but it can be mixed with petroleum diesel to create a biodiesel blend, and used in compression ignition (diesel) engines with few or no modifications. Biodiesel is simple to use, is biodegradable, nontoxic, and essentially free of sulfur and aromatics."[8]

"*The biodiesel industry has steadily grown over the past decade, with commercial production facilities from coast to coast. The industry reached a key milestone in 2011 when it crossed the one-billion-gallon production mark for the first time. By 2015 the biodiesel and renewable diesel market had doubled to more than two billion gallons. In 2016 the market was a record high 2.8 billion*

[8] http://www.biodiesel.org/what-is-biodiesel/biodiesel-fact-sheets

gallons, according to EPA figures. The industry's total production continues to significantly exceed the biodiesel requirement under the Federal Renewable Fuel Standard and has been enough to fill the majority of the Advanced Biofuel requirement.

The total Biomass-Based Diesel volume is primarily biodiesel but also includes renewable diesel, a similar diesel alternative made with the same feedstocks but using a different technology." [9]

What are Prairie Skyscrapers?

"Prairie Skyscrapers are Kansas grain elevators. In most areas of Kansas, you can see at least one elevator off in the distance. Every town has at least one and, in some cases, the elevator is still standing (and may even still be used) even if the town has been abandoned.

Grain elevators were built when very few Kansas farmers could build enough storage at their farms to store their entire wheat crop. In the early days of Kansas, each farmer hauled his wheat to town with a horse and wagon. Most Kansas towns, and grain elevators, were not very far apart.

Grain elevators were built alongside railroad tracks, as were most Kansas towns. The wheat from area farms was collected at the grain elevator and then shipped by rail car to flour mills.

In recent years, more and more Kansas wheat has been shipped by semi-trucks from the local grain elevators to larger elevators, flour mills, or to ports. Two-thirds of the wheat grown in Kansas is exported to other countries. Kansas ranks 1st among the 50 states in flour-milling capacity, so much of the remaining one-third of the Kansas wheat crop is milled into flour in the state of Kansas."

What happens when wheat is loaded into a grain elevator?

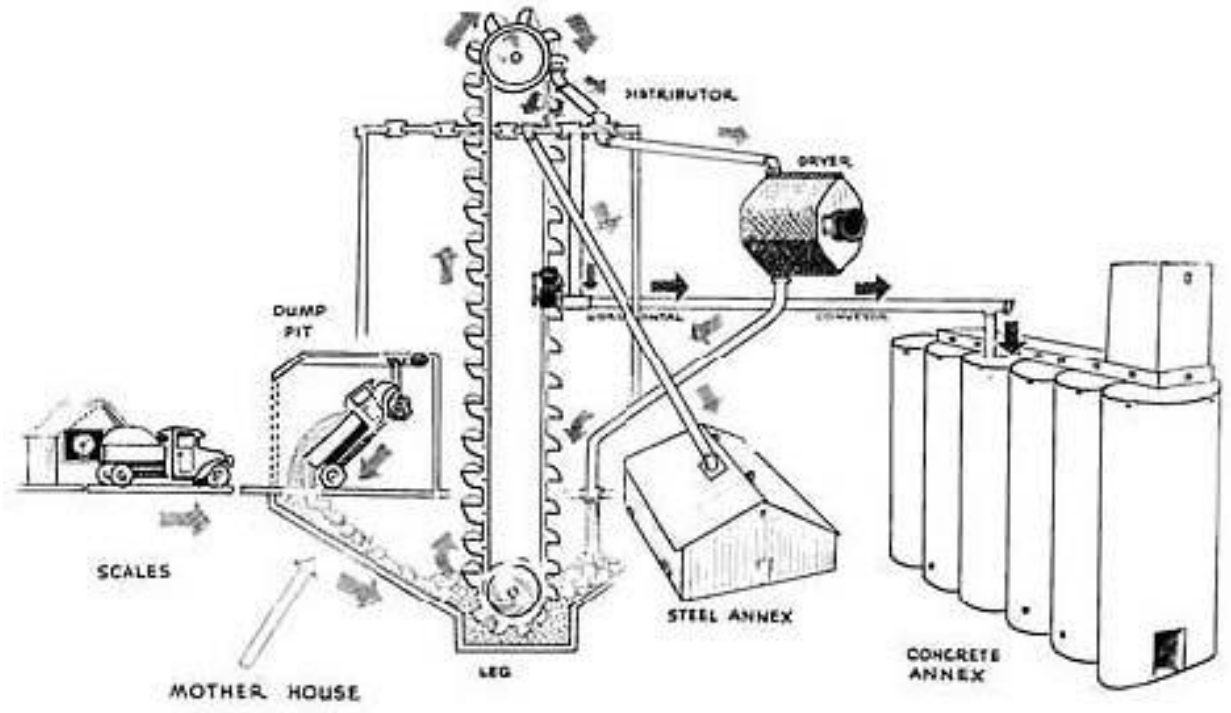
Scales, legs, cups, boots, and belts - those are just a few of the things you'll find at a Kansas grain elevator!

After a combine cuts and cleans the wheat, the combine dumps the wheat kernels into a truck which heads to a grain elevator. At the elevator, there's a huge scale - big enough to weigh a semi-truck. One at a time, each full wheat truck drives onto the scale and is weighed. Once the truck is weighed, it drives off the scales and into a drive-thru opening in the grain elevator. The truck drives onto a huge grate. With the help of the elevator's workers, the truck driver lines up the back of the truck so that the wheat will fall out of the truck, thru the grate, and into a big pit under the grate. The workers open sliding panels in the back of the truck's grain box. The truck raises the grain box up higher and higher until all the wheat slides to the back of the truck and falls out and thru the grate.

Some trucks, especially old trucks, can't raise the grain box. Instead, the front wheels of the truck drive onto a lift, which picks up the front of the truck and raises it up so that the wheat will fall out the back of the grain box. Many of the larger, newer trucks have hoppers underneath the grain box.

[9] http://biodiesel.org/production/production-statistics

Look inside a grain elevator



These are like funnels which are centered over the grate and opened. The wheat falls out without having to raise the truck or the grain box.

Once the truck is empty, the empty truck drives out of the grain elevator drive-thru and back to the scales, where it is weighed again. The grain elevator subtracts the empty weight from the full weight to know how much wheat the truck brought to the elevator.

While the wheat truck heads back to the wheat field for another load of wheat, the wheat is already moving inside the grain elevator. The wheat that was dumped thru the grate is sliding down a sloped concrete path into a lower pit called the boot pit. The boot is at the bottom of the leg, which is the part of the grain elevator that picks up the grain and moves it to the top - just like a regular elevator picks up people and moves them up inside a skyscraper!

Inside the leg is a big belt that goes up and down - from the boot to the top of the leg. All up and down the belt are steel cups. Each cup is about the size of a shoe box. As the belt goes thru the boot, each cup scoops up wheat kernels to carry to the top of the leg. As the belt goes over the top and turns to go back down, the cup turns upside down and dumps the wheat. The wheat is moved into different storage areas in the grain elevator by funnels and conveyer belts (belts like those that move your food thru the check-out stand at the grocery store or supermarket).

TYPES OF GRAIN ELEVATORS

Type of Operation

There are various types of grain elevators. Two basic types are country and terminal. Terminal grain elevators are sub-divided into four more types or distinctions that include: railroad, storage, river, and port.

Country elevators are the most well-known type of grain elevator due to historic preference, and therefore, the most abundant. As a consequence, these grain elevators are often located in rural areas and small towns so that they can be close to the farms that produce the grain. They often receive the grain by truck. Country elevators often have a head house with several storage bins. Storage bins often are up-right steel bins, slip-form concrete silos, wooden crib, flat storage buildings, or a combination of several types.

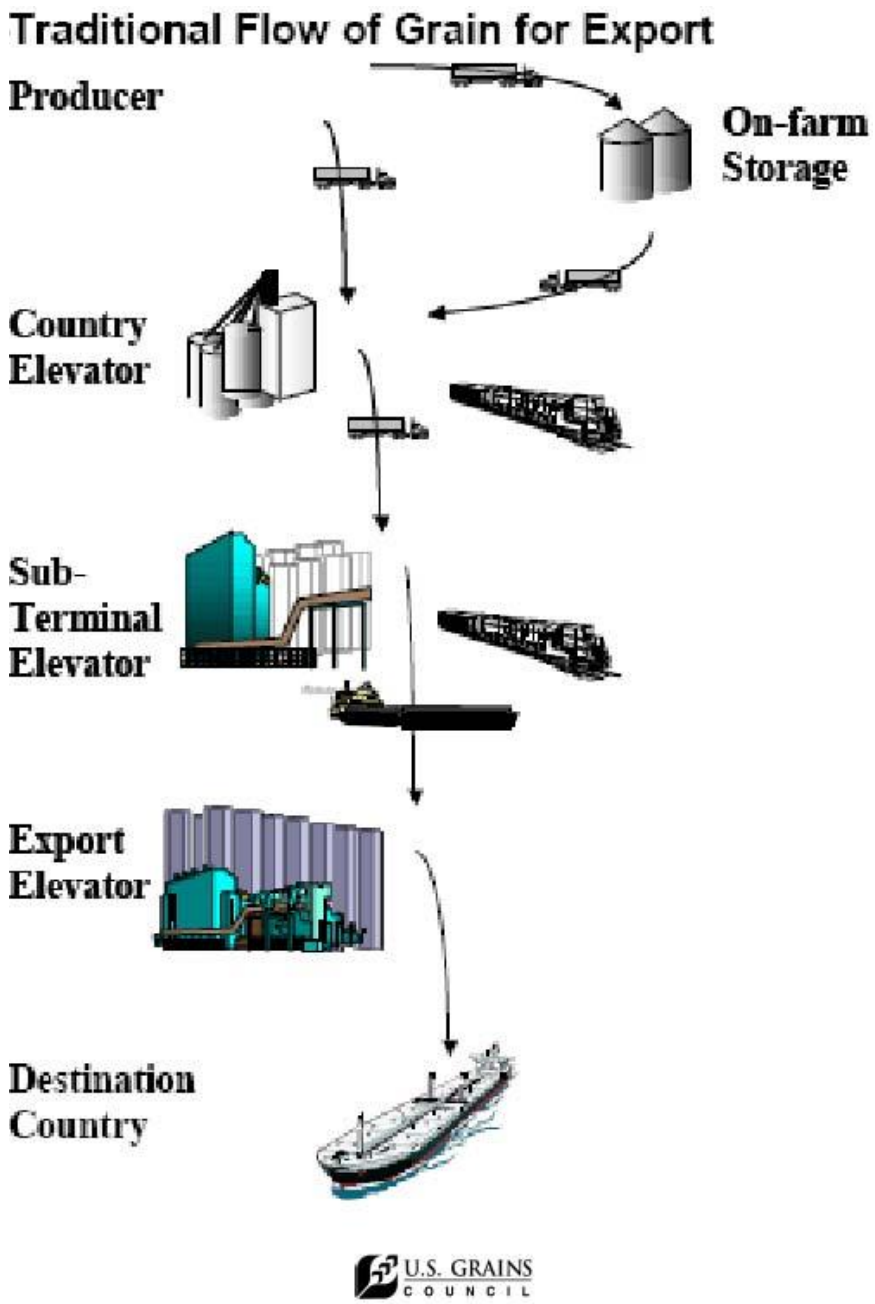
Terminal elevators are a broad category that includes railroad, storage, barge and port. Most terminal elevators receive their grain from other elevators and export by truck, rail, barge or ship. How a grain terminal elevator ships the majority of its grain explains the specific type of grain terminal elevator.

Rail terminals receive most of the grain by truck and export the grain by rail. Older rail terminals handled 50 to 56 car unit trains, while modern rail (shuttle) terminals handle 100 to 110 cars at a time. Most recently built shuttle train terminals do not have a large volume of storage capacity in comparison to their thruput. These elevators are built to ship more grain due to higher handling speeds. Rail terminals are increasingly becoming the leader of grain shipments.

Storage terminals are also known as inland terminals. These terminals have older mechanical systems that require extra manpower to operate. This is an economic disadvantage to this type of grain terminal elevator due to competition from newer or remodeled terminals. Most storage terminals are upright concrete and may have secondary storage in upright steel bins or flat storage. Some of these facilities are located in cities or communities which inhibit their ability to stage 100-110 car shuttle trains.

Barge terminals receive most of their grain from truck or rail, but often export the grain by river barge. The majority of the grain shipped from barge/river terminals is destined for port elevators, or domestic processing plants. Barge/river terminals can vary in size and capacity. Due to barge/river terminals being able to ship a large quantity of grain at one time, they have the advantage of being the most economical mode of transportation among the different types of grain elevators. However, there are disadvantages to this type of terminal. One is the long shipping time it takes to get grain from one location to another. The second is the lack of consistency (flood, drought, etc.) of the river.

Port terminals are located along the coast of the United States. They receive their grain from truck, rail, or river barge, and export it by ocean-going vessels. As a result of their shipping capacity, port elevators often have several million bushels of storage capacity. Port elevators may be negatively impacted by storms or other natural disasters.


Traditional Flow of Grain for Export
Producer
On-farm Storage
Country Elevator
Sub-Terminal Elevator
Export Elevator
Destination Country
U.S. GRAINS COUNCIL

TYPES OF GRAIN STORAGE (ELEVATOR) CONSTRUCTION

Crib elevators are a North American invention which first originated about 100 years ago. Cribbed wood elevators are still common in the grain producing areas on the plains of Canada and the United States. Grain elevators have evolved and have been modified through the years, but the basic function of grain elevators remains the same – to receive, collect, blend and store grain between the time of harvest on the farm and when grain is marketed, shipped, processed or fed. Left are wood crib elevators with corrugated siding.

Steel bins were first introduced over fifty years ago as an alternative to wood crib elevators. The first steel bins had plate metal bolted or riveted together (photo to the right). These bins have been replaced by galvanized corrugated steel bins (photo to the left). Typically, these bins do not have a built-in elevator leg. Grain is loaded into these type bins by an external (free standing) elevator leg or is transferred from an adjoining elevator. Left are a group of corrugated steel bins and right is a bolted steel elevator.

Concrete elevators were constructed as a safe alternative to the wood crib elevators that were subject to fire and/or explosion. Concrete elevators are the most expensive to construct but have the longest physical life. Concrete elevators come in many designs and configurations. Older concrete elevators consist of a head house, galley, tunnel, numerous bins, interstices, work areas, elevator shafts, etc. Newer concrete bins are being designed as free-standing structures with external elevator legs. Left is a concrete elevator with corrugated metal bins as annex storage and right is a concrete annex adjacent to concrete elevator.

Flat storage grain warehouses were widely developed in the 1970's as an affordable means for storing government warehouse grain. These structures were typically wood or steel framed buildings with heavy gauge galvanized corrugated iron siding and roof covering. Most served as additional storage to existing elevators. Grain was loaded into them by means of a conveyor belt or screw conveyor located at the apex of the roof. Load-out was by either an in-ground screw conveyor or a portable load-out conveyor. These structures were some of the most affordable types of grain storage to construct. However, they are the most expensive to operate, due to the manpower requirements at load-out. With the phase out of the Commodity Credit Corporation (CCC) program in the late 1980's, much of the flat storage facilities became obsolete and were converted into other uses. Left is a flat storage warehouse with external elevator leg and right is a Quonset style flat storage warehouse.

This guide is designed for the appraisal of commercial grain storage facilities. This includes those licensed by Kansas Department of Agriculture or the USDA. The Kansas Department of Agriculture list may be obtained at this website: The Kansas Department of Agriculture can also be contacted through their website: www.agriculture.ks.gov. The facilities licensed by US Department of Agriculture are listed on the following website:
https://internet-dotnet.fsa.usda.gov/approved_whses/ugrsa/report_UGRSA.asp?StateAbbr=KS&StateName=KANSAS&StateCode=20

GRAIN ELEVATOR - IMPROVEMENT ANALYSIS

Construction Features

A complete property description includes information about the details and condition of the building's exterior, interior, and mechanical systems. Although there is no prescribed method for describing all the buildings, the following outline may be used to establish a format for building descriptions.

A careful, detailed, and accurate identification and analysis of all pertinent physical attributes is necessary in every appraisal. This section requires two studies:

1. Description of all construction features to provide the data for the replacement cost new estimate, physical, market, and income comparisons.

2. Analysis of the construction to identify any item exhibiting deterioration or obsolescence. This study provides background data for depreciation in the cost analysis and for items of appropriate consideration in the direct sales comparison and/or income capitalization approach sections of the report.

The following improvements description is based on personal inspection(s) of the subject property, data in the public records, and the building plans.

Comments and/or Suggestions: Your checklist should include a discussion of the size, age, use, quality, and specifications used in the description of the use. Remodeling, date of completion, etc. should be covered.

During the inspection it is important to note any areas of accelerated physical deterioration and/or functional obsolescence. These items may indicate a greater amount of depreciation in the Cost Approach. Accelerated physical deterioration and/or functional obsolescence may also limit the utility of some of the grain storage capacity within the grain elevator, which could influence the analysis in the Sales Comparison (Market) Approach. Accelerated physical deterioration may indicate inadequate maintenance. This may be reflected in a below market operating expense in the Income Capitalization Approach.

The schedule of construction details of the improvements follows.

INSTRUCTIONS FOR THE GRAIN ELEVATOR WORKSHEET

The following inspection/cost analysis worksheet is based upon information abstracted from the Marshall & Swift Valuation Service® (MS). The form following these instructions is available as an MS Excel spreadsheet from the Division of Property Valuation.

Template User's Note: Several cells in the template have comments attached. These cells have a red triangle in the upper right-hand corner. Place your cursor on the cell and the comment should become visible.

SECTION 1- STORAGE

(1) Concrete Elevator and/or Annex (*MS Section 17 Page 50)*

Elevators include a complete headhouse (working house), tunnel, conveyor, gallery and storage tanks or bins; it is priced on a per bushel basis.

Annexes are vertical storage facilities. They are used for storage when there is an exposed elevator leg system and no headhouse or for additional detached storage which utilizes the headhouse of the original elevator.

Use this section only for:

a. Complete working elevator having a headhouse.
b. Additions to original structure, whenever a second headhouse is included in the new addition.
c. Annexes having no headhouse.

Concrete elevators and annexes are constructed in two different types. Slip forms and jump forms are the terms given to self-climbing form work systems. In slip forms, the climbing is usually carried out continuously during the concrete pour. With jump forms, the climbing is done in steps, following the concrete pour. In jump form construction three courses of forms are used. The silo is constructed by successively jumping and resetting the lower course of forms on the top course of forms.

MS indicates that Jump Formed elevator costs should be adjusted. See the MS Cost Valuation book for information.

(2) Frame (Crib) Elevators (*MS Section 17 Page 50)*

Crib elevators may include both wood frame and steel frame construction. List frame elevator storage under this section.

(3) Upright Steel Storage Bins (Tanks) (*MS Section 17 Page 51 & MS Section 17 Page 54)*

List all upright steel grain storage tanks in this section. Identify the number of tanks in the left column. It is important to segregate the tanks into general size categories according to the storage capacity of each tank. A collection of several tanks with similar storage capacities is appropriate; however, it is necessary to consider the per unit cost factor based upon the individual size of the tanks.

An example would be three tanks, which range in size from 18,000 to 23,000 bushels of storage capacity. These three tanks might have a combined storage capacity of 60,000 bushels; however, the appropriate

per unit cost factor would be based upon a 20,000-bushel storage tank, times the total storage capacity of 60,000 bushels. Note in the left-hand column the number of tanks/bins in each category.

There are two types of upright steel storage bins (tanks). These include the older style bolted or riveted plate steel bins (tanks) and the newer, more common, corrugated galvanized steel bins (tanksMS provides cost information for both the older bolted or riveted plate steel bins (tanks) and corrugated galvanized steel bins.

(4) Flat Grain Storage Buildings (*MS Section 17 Page 51)*
There are many of these type buildings located throughout Kansas. However, only those flat grain storage buildings which are licensed for commercial grain storage purposes should be valued as grain storage structures. All other former flat grain storage buildings should be valued as some type of storage or warehouse structure. It is important to determine during the inspection process whether the flat storage portion of a particular grain storage facility is licensed on a regular basis in order to determine the appropriate per unit cost factors to apply to said structure.

Flat Grain Storage Buildings include both steel frame and wood frame structures. Separate cost figures are included for both types of structures in the MS. It is important in the valuation of flat grain storage buildings to determine what additional features are included in each structure. Additional features may include loading and unloading systems, aeration systems, and heat detection systems.

Costs are for horizontal or flat storage without loading and/or unloading systems. Design loads vary and costs may vary by plus or minus 20%. For attached loading and/or unloading systems within the structure, add 5% to 10% per bushel capacity.

(5) Other Storage (*MS Section 17 Page 53)*
Other storage facilities may include older concrete stave silos, temporary ground pile storage (sometimes called 'bunker storage'), etc. Only that portion of other storage that is licensed should be valued for grain storage purposes. The original purpose for construction is of less importance than current utilization.

SECTION 2 - EQUIPMENT

(6) Aeration Systems (*MS Section 17 Page 54)*
A per unit cost should be applied to all areas within the subject grain storage (elevator) which have aeration service. It is important to note that the cost of aeration varies between the types of construction. Recommended costs per bushel unit are $0.14 for slip form concrete storage and $0.12 for steel and all other storage.

(7) Miscellaneous Equipment
It is important in the description and valuation of miscellaneous equipment components to exclude those components which are considered non-grain assets, i.e. fertilizer facilities, grain milling equipment, etc. The miscellaneous equipment may include any of the following items.

7a. Consolidated Grain Handling Systems *(MS Section 17 Page 51)*

The cost for machinery and equipment is very flexible, depending on the exact job the elevator performs. Grain handling equipment can be itemized to account for each individual component ***OR*** the appraiser can use the per bushel rate in the ***Machinery and Equipment Section*** of the guide for the entire grain handling system. PVD believes grouping the components together is the simplest approach and is suitable for use in the Kansas mass appraisal process.

The lower end of the cost per bushel range represents storage only while the higher end range includes processing equipment. When describing/pricing new equipment having a greater flow capacity, a higher cost rank should be used than when pricing older elevators utilizing original equipment. All costs should be applied to total licensed capacity of both the elevator and annexes it serves.

Grain handling systems typically apply to upright steel storage bins (tanks) and flat storage buildings, but may also be applicable to other types of grain storage facilities.

7b. Pollution Control (Dust Collection) Systems

Dust collection systems are typically associated with the movement of grain within a grain storage (elevator) facility. Dust collection systems may be incorporated into some or all of the receiving dump pits, the headhouse distribution systems, the galley receiving conveyor systems, the tunnel reclaim conveyor systems, etc. Dust collection (pollution control) systems are typically measured on Cubic Feet per Minute (CFM). The per unit cost analysis is also based upon the CFM.

There are two primary types of dust collector (cyclone and bag house) systems. A typical cyclone system will cost about $32,000 to $40,000 per unit, while a bag house system to service the same elevator may cost as much as $65,000.

7c. Additional Loading and Unloading System *(MS Section 17 Page 52)*

These will include the external (free standing) drag conveyors, conveyor belts, and/or augers outside of the grain elevator buildings. The description of these various components includes two items. One is their length, and the second is their handling speed (bushels per hour [BPH]). It is important to note when describing loading (filling) or reclaiming (unloading) conveyor systems the presence of or lack of electronic/mechanical gates. The more automated a grain elevator's operation is, the less it costs to operate. Lower expenses typically contribute to higher profits and potentially higher values.

7d. Grain Dryer (*MS Section 17 Page 52)*

Grain dryers include two different operating systems: batch or continuous flow. Grain dryers are rated at a BPH.

7e. Outside Elevator Legs (*MS Section 17 Page 52)*

These will include the external (free standing) elevator legs outside of the grain elevator building. The description of these various components includes two items. One is their height, and the second is their handling speed (bushels per hour [BPH]).

For Shuttle Train Grain Terminals, the railroad loading speed is a critical factor. Most Shuttle Train Grain Terminals are designated as shipping terminals. Some of the Shuttle Train Grain Terminals located in southwestern Kansas are designated as grain receiving terminals which are utilized to receive corn and other feedstocks for the concentrated livestock feed yards in this region. A few of the Shuttle Train Grain Terminals are designated as receiving and shipping terminals.

7f. Heat Detection *(No MS Reference)*
Heat detection may be included in all, part or none of the grain storage. Heat detection/heat monitoring systems include a computerized control unit and a system of detection cables. The computer control unit typically cost about $2,000. The cables are located within all of the monitored bins. Typical arrangement may include 8 cables per bin, depending upon the diameter of the bin. Cost including the computer monitoring system is about $500 per cable.

7g. Cleaner *(No MS Reference)*
Cleaners are rated on bushels per hour (BPH). Typical grain cleaners are mostly utilized in corn handling elevators. Corn kernels can be fractured during the grain drying process and the cleaner separates the "fines" (small fractured corn kernels) from the larger full corn kernels. A 10,000 BPH grain cleaner typically costs about $18,000.

Other Related Grain Elevator Structures are those buildings necessary in the operation of a grain storage facility. ***It is important to exclude all non-grain assets (fertilizer facilities, feed mills, service stations, large corporate office buildings, etc.) when using the elevator worksheet.*** In describing related elevator structures, it is important to designate the construction type, year built, and utilization. Buildings typically associated with the operation of a grain storage facility include an office/scale house and service related warehouse/shop buildings. All related elevator structures should be inventoried and valued through the Orion CAMA system and considered in the final valuation of the elevator facility.

An accurate inspection of the subject property (Grain Storage [Elevator/Terminal]) is the key to an accurate valuation of the property. One must know the details of each property in order to properly apply the data from this Grain Elevator Appraisal Guide.

SECTION 3 – COST RECONCILIATION

(8) Total Cost Section 1
This is the total RCN of the storage component of the elevator. The total from line 42 will be transferred here

(9) Total Cost Section 2
This is the total RCN of the miscellaneous equipment. The total from line 76 will be transferred here.

(10) Total Cost for Section 1 and 2
This is the total RCN of Section 1 and Section 2. This is the total unadjusted RCN of facility.

(11) Current Cost Multiplier (Section 99, Page 3)

The Current Cost Multiplier brings costs up to date. Use the Central Region and select the calculator cost section rate that comprises the highest percentage of the storage construction. Enter the multiplier as is appears in the table.

(12) Local Multiplier (Section 99, Page 7)
The Local Multiplier is used to bring the RCN up to date from the previous calculation. Use the multiplier for the appropriate class of the city nearest the facility. Enter the multiplier as is appears in the table.

(13) Total Replacement Cost New
This is the total RCN after all MS multipliers have been applied.

(14) Depreciation - Physical & Functional (%)
This is the total amount of depreciation from all causes expressed as a percentage. The number comes from the analysis the user performs in the depreciation section of this guide. This number will be applied toward the Total Replacement Cost New to arrive at the indicated RCNLD.

(15)Economic Obsolescence (%)

This number comes from the analysis the user performs in the depreciation analysis tab on the worksheet. This number will be applied toward the Total Replacement Cost New to arrive at the indicated RCNLD.

(16) This line adds line 14 and 15 and cannot be more than 90%

(17) Total Replacement Cost New Less Depreciation (RCNLD)
This is the total indicated RCNLD for all licensed grain storage on the facility. Users should add this value to the Miscellaneous Improvement Value section on the Orion record. It will add any Orion generated values on the Computer Assisted Mass Appraisal (CAMA) record.

(18) Estimated Market Value
This is the total indicated RCNLD minus depreciation and obsolescence in 15 above rounded to the nearest hundred dollars.

PART IV - ANALYSIS OF DATA AND CONCLUSIONS

HIGHEST AND BEST USE ANALYSIS

A crucial determinant of value in the market is highest and best use. The market values of a parcel of land as though it were vacant, and of a property as it is improved are both estimated on the assumption that potential purchasers will pay prices that reflect the most profitable use of the land and of the improved property.

The highest and best uses of land and improved properties are selected from various alternative uses. An appraiser's conclusions about the highest and best use of a subject property provide the basis for market value analysis, and the remainder of the valuation process is conducted in relation to these conclusions.[10]

Highest and best use may be defined as:

The reasonably probable and legal use of vacant land or an improved property, which is physically possible, appropriately supported, financially feasible, and that results in the highest value.[11]

When determining the highest and best use of a grain elevator, there are many different factors to consider.

- First, which type of grain elevator is it? (Country, rail, barge, storage, port, etc.)
- Second, what is the elevator's primary type of construction? (steel, concrete, flat, crib, or a mixture)
- Third, what is the future demand for the services provided by the elevator? Determine if competitors (shuttle train terminals, ethanol plants, biodiesel plants, etc.) will be influencing the market, which can affect a grain elevator's highest and best use.

Understanding the Type of Grain Elevator Being Appraised

There are two factors to consider when analyzing the type of grain elevator being appraised. First, determine what type of structure. The structures are: concrete, steel bin, flat warehouse, and wood cribs. Second, determine how the elevator is operated. This could be country, rail terminal, storage terminal, barge terminal, or port terminal.

Identifying Subject Market Area

In order to identify a subject's market area, the appraiser needs to determine where an elevator receives its grain, also known as its "drawing" area. Typically, terminal elevators receive grain from the large area via semi-truck. A country elevator's market area is smaller and will likely receive its grain from a 20-mile radius or less.

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[10] Understanding the Appraisal, Appraisal Institute, 1992.

[11] The Appraisal of Real Estate, Appraisal Institute, Eleventh Edition, 1996

The Subject's Mean Thru-Put

Past historical volume statements can provide good estimates make it possible to estimate thru-put, although it's good to keep in mind that crops will vary from year to year. It is recommended that a 5 to 10 year study period be reviewed. This is not always feasible and with the sales database it was not possible to obtain the thru-put for most of the sales.

Historical Income Statements

Past financial statements can provide good estimates on income potential, although it's good to keep in mind that crops and incomes will vary from year to year. It is recommended that a 5 to 10-year study period be reviewed. <u>It is important to note that there are no financial reporting standards.</u> The arrangement of incomes and expenses will vary from elevator to elevator. Financial records were not available for most of the sales database and most of the time will be difficult to obtain.

APPROACHES TO VALUE

Participants in the real estate market commonly think of value in three ways:

- *The value indicated by recent sales of comparable properties in the market*
- *The current cost of reproducing or replacing a building, minus an estimate for depreciation, plus the value of the land*
- *The value that the property's net earning power will support*

These are important considerations in the valuation of real property. They form the basis of the approaches that appraisers use to value property --- the Sales Comparison, Income Capitalization, and Cost Approaches. One or more of these approaches may not be applicable to a given assignment or may be less significant because of the nature of the property, the decision, or the available data.

In applying and interpreting these approaches, appraisers are constantly aware of the basic appraisal principles that support and guide value considerations in the marketplace.[12]

In the appraisal of specific properties, the state of Kansas has required the Division of Property Valuation to develop and adopt certain methodologies for the county appraisers to follow. The director of the Division of Property Valuation published Directive #19-048 to specify the guides of specific types of properties the Division provides. Licensed grain elevator properties are specified in this directive which can be found in Appendix A of this guide.

Kansas County Appraisers are required to value grain elevators based upon the fair market value of the real property and utilizing the guide provided by the Division of Property Valuation. K.S.A. 79- 1456 defines the duties of the county appraiser and compels the use of guides provided by the Division of Property Valuation. K.S.A. 79-503a defines fair market value for property tax purposes. K.S.A. 79-102 defines real property for property tax purposes. These statutes can also be found in Appendix A of this guide.

With certain exceptions that are not directly applicable in this guide, intangible personal property is not subject to taxation in Kansas. This guide will define the property it purports to value, and that property will typically not include tangible or intangible personal property.

[12] Understanding the Appraisal, the Appraisal Institute, 1992.

Intangible Value is defined as:

> *A value that cannot be imputed to any part of the physical property, e.g., the excess value attributable to a favorable lease or mortgage, the value attributable to goodwill.* [13]

Intangible Personal Property is defined as:

> *Property that has no physical existence beyond merely representational, nor any extrinsic value; includes rights over tangible real and personal property, but not rights of use and possession. Its value lies chiefly in what it represents. Examples include corporate stock, bonds, money on deposit, goodwill, restrictions on activities (for example, patents and trademarks), and franchises.* ***Note:*** *Thus, in taxation, the rights evidenced by outstanding corporation stocks and bonds constitute intangible property of the security holders because they are claims against the assets owned and income received by the corporation rather than by the stockholders and bondholders; interests in partnerships, deeds, and the like are not ordinarily considered intangible property for tax purposes because they are owned by the same persons who own the assets and receive the income to which they attach. (IAAO)* [14]

Intangible Property is defined as:

> *Nonphysical assets, including but not limited to franchises, trademarks, patents, copyrights, goodwill, equities, mineral rights, securities, and contracts, as distinguished from physical assets such as facilities and equipment. (USPAP, 2005 ed.) See also total intangible assets.*

Tangible Personal Property is defined as:

> *Personal property that has a substantial physical presence beyond merely representational. It differs from real property in its capacity to be relocated. Common examples of tangible personal property are automobiles, boats, and jewelry. (IAAO)* [15]

When considering the approaches to value, one must attempt to exclude the contribution of business and personal property (tangible & intangible) from the value conclusions. Therefore, deductions are needed when determining the applicable value indications from the Income Capitalization and Sales Comparison Approaches.

COST APPROACH

> *"In applying the Cost Approach, an appraiser obtains a value indication for a property by adding the land value to an estimate of the depreciated replacement cost of the building and other improvements. Although cost and value are different concepts, the Cost Approach explores possible relations between them. For a new property, developed to its highest and best use, the market generally presumes that estimated replacement cost plus current land value should approximate market value, assuming no loss of value due to time. This concept recognizes that physical,*

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[13] Appraisal Institute Dictionary of Real Estate Appraisal, (2d ed. 1989)

[14] IAAO Glossary for Property Appraisal and Assessment (1997)

[15] IAAO Glossary for Property Appraisal and Assessment (1997)

functional, and external disadvantages will be recognized by the market and will result in lower selling prices. The Cost Approach provides specific measures for these disadvantages, and anything that diminishes value is termed depreciation. The Cost Approach consists of eleven steps.

1. *Estimate the value of the land as though it were vacant and available to be developed to its highest and best use.*
2. *Estimate the replacement cost of the improvements on the effective appraisal date.*
3. *Estimate other costs incurred after construction to bring the new, vacant building up to market condition and occupancy levels.*
4. *Estimate entrepreneurial profit from market analysis. Many grain elevators are developed for owner operators and are not developed for immediate re-sale. Consequently, entrepreneurial profit is a non-factor in the development of a grain handling facility.*
5. *Add estimated replacement costs, other costs, and entrepreneurial profit to arrive at the total cost of the main structure.*
6. *Estimate the amount of accrued depreciation in the structure due to physical deterioration and functional and external obsolescence.*
7. *Deduct the appropriate estimated depreciation from the total replacement cost of the building to derive an estimate of the structure's depreciated replacement cost.*
8. *Estimate replacement cost and depreciation for any accessory buildings and for site improvements and then deduct estimated depreciation from the replacement cost of these improvements.*
9. *Add the depreciated replacement cost of the structure, accessory buildings, and site improvements together to obtain an estimated total depreciated replacement cost of all improvements.*
10. *Add the land value to the estimated total depreciated replacement cost of all improvements to arrive at an indicated value of the fee simple interest in the property.*
11. *Adjust the indicated fee simple value to the interest appraised to arrive at an indicated value for the interest in the subject property being appraised."*[16]

The cost approach consists of an analysis of three components. The first is an estimate of the replacement cost new of the subject improvements. The next is the determination of and measurement of depreciation. The third component is the estimation of land value.

[16] Understanding the Appraisal, the Appraisal Institute, 1992.

The Cost Approach is based upon three independent analyses. The estimated replacement cost new must be analyzed based upon the data collected during the property inspection and described on the form included earlier in this guide. The total replacement cost new (RCN) must then be reduced by depreciation. Market abstracted depreciation as an annual factor is discussed in detail later in this section. After the deduction for depreciation, the land value is then added to arrive at a property value indication.

Estimating the Subject's Land Value

In valuation it is necessary to establish an independent land value. It will be useful in comparing the value indications from the three approaches and in adjusting the value estimated within the Sales Comparison Approach. For the purpose of this guide, the land value abstracted from the sales was not exclusively based upon the county appraiser's estimated land value. The appraiser found that some of the land values were too low and not realistic. He elevated the estimated contribution value of the sites for some of the sales. It is important to remember that large tracts of land may be valued on an agricultural use basis, which may not be representative of market value.

Cost Analysis

In the appraisal of a grain elevator, it is necessary to have an accurate description of the subject property. With this information as a basis, it is then necessary to apply the appropriate replacement cost for the various buildings and components of the subject grain storage (elevator). The data collected during the property inspection and described on the form included earlier in this guide will provide a basis for the cost analysis. The MSwas used as the basis for the replacement costs in the cost approach in the Grain Elevator Guide. Excerpts of some of the pages from this publication are included in the addendum of this guide. The Grain Elevator Worksheet previously discussed in the property description portion of this guide is set up in an Excel spreadsheet format which will allow the insertion of the appropriate per unit cost for the various buildings and components of the subject grain elevator.

MS requires two adjustments to the cost, stated within the manual. The current cost multipliers are the multipliers for bringing cost published in the manual pages up to date. The multipliers are republished monthly and are based primarily on the Building Cost Indexes. The local multipliers reflect local cost conditions and are designed to adjust the basic cost to each locality. They are based on weighted labor and material costs, including local sales tax, but do not include any new construction rebate where applicable. Local multipliers apply to all cost in the manual, but not to any cost indexes or replacement cost multipliers. The local multipliers, when applied to the total replacement cost, will adjust for variations in component costs as a whole for a particular geographic area. But they may not adequately adjust when applied to specific components or Unit in Place cost.

The local multipliers for Kansas include 15 different towns and cities as well as a general classification for the state as a whole. It is important to apply the correct local multiplier when adjusting the total replacement cost new to a specific property. PVD recommends the utilization of the closest geographic area to the subject property in the selection of a local multiplier.

In the preparation of this valuation guide, cost data on grain elevator construction projects within the market was collected. This information was analyzed and compared with the data abstracted from the MS. While adequate information was not available for each property to derive a direct comparison, a number of construction projects were analyzed to determine the accuracy and appropriateness of the local multipliers. After reviewing these actual construction cost projects in comparison with the data from MS, it would appear that the local multipliers for Kansas would range from 0.84 to 1.07. The Current Cost multipliers range from .99 to 1.00

Depreciation Analysis

Traditional approaches for depreciating grain elevators used an estimated age-life of up to 100 years. For purposes of this guide the Property Valuation Division has implemented economic lives of 60 years for all types of storage. In addition, the division has established a depreciation floor of 10% good for all types of storage. This only applies to structures that are licensed and currently being used for grain storage. Consideration is given to these numbers when analyzing the market abstracted data in order to arrive at the depreciated replacement cost new (DRCN) for this Grain Elevator Appraisal Guide.

Age is a very interesting term. In real estate there are several different types of age:

Chronological (actual) age is defined as:

> *The number of years elapsed since an original structure was built; also called actual age; or historical age. (IAAO)*.[17]

Effective age is defined as:

> *The age of property that is based on the amount of observed deterioration and obsolescence it has sustained, which may be different from its chronological age. (USPAP, 2002 ed.)*

Effective age analysis should begin with the actual age of an improvement, then adjustments are made based upon maintenance and repair of said improvement. For an improvement that has been upgraded and/or is in above average condition for its age, its effective age may be less that its actual age. Conversely, for improvements that have been poorly maintained and are in below average condition for their age, their effective age may be greater than their actual age.

The purpose of this portion of the Grain Elevator Appraisal Guide is to abstract the indicated accrued depreciation from all causes to arrive at an annual depreciation factor for the various types of grain storage (elevator) facilities in Kansas.

Grain handling and storage facilities are generally considered to be single use, special-purpose type properties and usually suffer from functional and economic obsolescence to a much greater degree than many other types of industrial or commercial property. Measuring the proper amount of physical deterioration and/or

[17] IAAO Glossary for Property Appraisal and Assessment (1997)

obsolescence is the difficult part of the Cost Approach. It is accepted that a market analysis will generally provide the best estimate of total accrued depreciation.

The MS was utilized in the analysis of the sales in this guide to determine market abstracted depreciation rates. A similar cost analysis to that described previously was applied to each sale to derive an estimated replacement cost new. The adjusted sales price (sales price minus land value, non-grain asset value, personal property value, and intangible property value) was then subtracted from the new RCN to derive an estimate of total accrued depreciation ($) for each sale. This amount was then divided by the replacement cost new to calculate depreciation as a percentage of the replacement cost new. The percentage of replacement cost new was further refined by dividing the total accrued depreciation percentage by the effective age of the sale to determine an annual depreciation factor. The market abstracted depreciation factors for the various types of facilities and locales within Kansas will be discussed later in this depreciation analysis.

The database utilized in this Grain Elevator Appraisal Guide included 35 local Kansas sales that sold between 2010 and 2020. The individual write-ups of each transaction are included in the addendum of this guide.

Total accrued depreciation abstracted from the database ranged from 19.28% to 90.50% with a mean of 67.18% and median of 73.60%. The annual depreciation factor ranged from 1.17% to 11.69% with a mean of 2.09% and a median of 1.75%.

The sales were segregated according to principal storage type (concrete, steel, or mixed). Principal storage type for this guide is interpreted to mean that type of storage which represents 50% or more of the total storage capacity of the elevator. Annual depreciation rates were analyzed according to type of storage.

Annual Depreciation Rate

Type of Storage	Number of Properties	Low	Mean	Median	High
Concrete	12	1.17%	1.59%	1.57%	1.86%
Steel	17	1.67%	2.52%	1.81%	11.69%
Mixed	6	1.50%	1.88%	1.77%	2.58%

The sales were segregated according to geographical location (east and west). Annual depreciation rates were analyzed according to geographical area.

Annual Depreciation Rate

Location	Number of Properties	Low	Mean	Median	High
East	13	1.50%	1.90%	1.79%	2.93%
West	22	1.17%	2.20%	1.75%	11.69%
Statewide	35	1.17%	2.09%	1.75%	11.69%

The sales were segregated according to size (499,999 bu. & under, 500,000 bu. & over). Annual depreciation rates were analyzed according to storage capacity.

Annual Depreciation Rate

Size	Number of Properties	Low	Mean	Median	High
499,999 bu. & Under	11	1.17%	1.83%	1.75%	2.58%
500,000 bu. & Over	24	1.42%	2.21%	1.75%	11.69%

The sales were segregated according to age (39 years & under, and 40 years & over). Annual depreciation rates were analyzed according to age.

Annual Depreciation Rate

Age	Number of Properties	Low	Mean	Median	High
39 Years & Under	20	1.65%	2.47%	1.89%	11.69%
40 Years & Over	15	1.17%	1.59%	1.60%	1.88%

Regional Market Analysis

Kansas has been separated into two markets (East and West). These regional sub-markets may provide greater local support for market analysis; however, it is important to consider the limitations created by sub-dividing the data. In some instances, there may be very few transactions upon which to base a market analysis. Please remember that supporting market data is the best defense/support for an opinion of depreciation.

Each of the regions will be analyzed in a similar manner to the summarized analysis of the total database described in the previous section.

East Region Analysis

The data base utilized in this Grain Elevator Appraisal Guide included 13 sales in the East Region. Total accrued depreciation abstracted from the database ranged from 19.52% to 82.92% with a mean of 59.76% and a median of 62.64%. The annual depreciation factor ranged from 1.50% to 2.93% with a mean of 1.90% and a median of 1.79%.

The sales in the database were analyzed under several scenarios. The sales were segregated according to principal storage type (concrete, steel, or mixed). Annual depreciation rates were analyzed according to type of storage. The reliance upon only two transactions to support an opinion is considered to be less than adequate support on the mixed storage type although the transactions are included in the table.

Annual Depreciation Rate

Type of Storage	Number of Properties	Low	Mean	Median	High
Concrete	3	1.53%	1.69%	1.67%	1.86%
Steel	9	1.71%	2.02%	1.91%	2.93%
Mixed	1	1.50%	1.50%	1.50%	1.50%

The sales were segregated according to size (499,999 bu. & under, 500,000 bu. & over). Annual depreciation rates were analyzed according to storage capacity.

Annual Depreciation Rate

Size	Number of Properties	Low	Mean	Median	High
499,999 bu. & Under	7	1.67%	1.89%	1.79%	2.34%
500,000 bu. & Over	6	1.50%	1.91%	1.80%	2.93%

The sales were segregated according to age (39 years & under, and 40 years & over).

Annual Depreciation Rate

Age	Number of Properties	Low	Mean	Median	High
39 Years & Under	7	1.73%	2.11%	1.97%	2.93%
40 Years & Over	6	1.50%	1.66%	1.69%	1.79%

West Region Analysis

The database utilized in this Grain Elevator Appraisal Guide included 22 sales in the West Region. Total accrued depreciation abstracted from the database ranged from 19.28% to 90.50% with a mean of 71.56% and a median of 73.81%. The annual depreciation factor ranged from 1.17% to 11.69%with a mean of 2.20% and a median of 1.75%.

The sales in the database were analyzed under several scenarios. The sales were segregated according to principal storage type (concrete, steel, or mixed). Annual depreciation rates were analyzed according to type of storage.

Annual Depreciation Rate

Type of Storage	Number of Properties	Low	Mean	Median	High
Concrete	9	1.17%	1.56%	1.54%	1.86%
Steel	8	1.67%	3.08%	1.78%	11.69%
Mixed	5	1.61%	1.95%	1.88%	2.58%

The sales were segregated according to size (499,999 bu. & under, and 500,000 bu. & over). Annual depreciation rates were analyzed according to storage capacity.

Annual Depreciation Rate

Size	Number of Properties	Low	Mean	Median	High
499,999 bu. & Under	4	1.17%	1.71%	1.55%	2.58%
500,000 bu. & Over	18	1.42%	2.31%	1.75%	11.69%

The sales were segregated according to age (39 years & under, and 40 years & over). Annual depreciation rates were analyzed according to age.

Annual Depreciation Rate

Age	Number of Properties	Low	Mean	Median	High
39 Years & Under	13	1.65%	2.66%	1.83%	11.69%
40 Years & Over	9	1.17%	1.54%	1.54%	1.88%

Reconciliation of Depreciation

Reconciliation Criteria is defined as:

> *The criteria that enable an appraiser to form a meaningful, defensible conclusion about the final value opinion. Value indications are tested for the appropriateness of the approaches and adjustments applied, the accuracy of the data, and the quantity of evidence analyzed.*[18]

It is recommended that several different annual depreciation factors be considered for each property. Consideration should be given to the factors that are the most important in analyzing the subject grain storage (elevator) facility.

All the previous annual depreciation factors are based upon a quantity of data. It is also important for the appraiser to review individual sales and select those which are most like the subject. The annual depreciation rates from these sales should be considered along with the database annual depreciation rate indications.

As explained in the definition of reconciliation, the conclusion should be based upon the appropriateness, accuracy, and quantity of evidence. If location is the most important characteristic, then the depreciation factor from the geographical table should be given the most weight in analysis; however, there may be several characteristics which are relevant to the conclusion of the annual depreciation factor.

Once an annual depreciation factor is selected, then it must be applied to the effective age of the subject property to arrive at a total depreciation (all causes). It must then be subtracted from the Replacement Cost New (RCN) of the subject property to arrive at the depreciated cost new (RCNLD).

[18] The Dictionary of Real Estate Appraisal, Fourth Editions, Appraisal Institute, 2002, Page 236

SALES COMPARISON APPROACH

"The Sales Comparison Approach is a method of estimating market value in which a subject property is compared with comparable properties that have been sold recently. Preferably, all properties are in the same geographic area. One premise of the Sales Comparison Approach is that the market will establish a price for the subject property in the same manner that the prices of comparable, competitive properties are established.

The sale prices of the properties deemed most comparable to the subject property tend to set the range in which the value of the subject property will fall. Further consideration of the comparative data allows the appraiser to derive a figure representing the value of the appraised property, in keeping with the definition of value sought, as of the date of the appraisal.

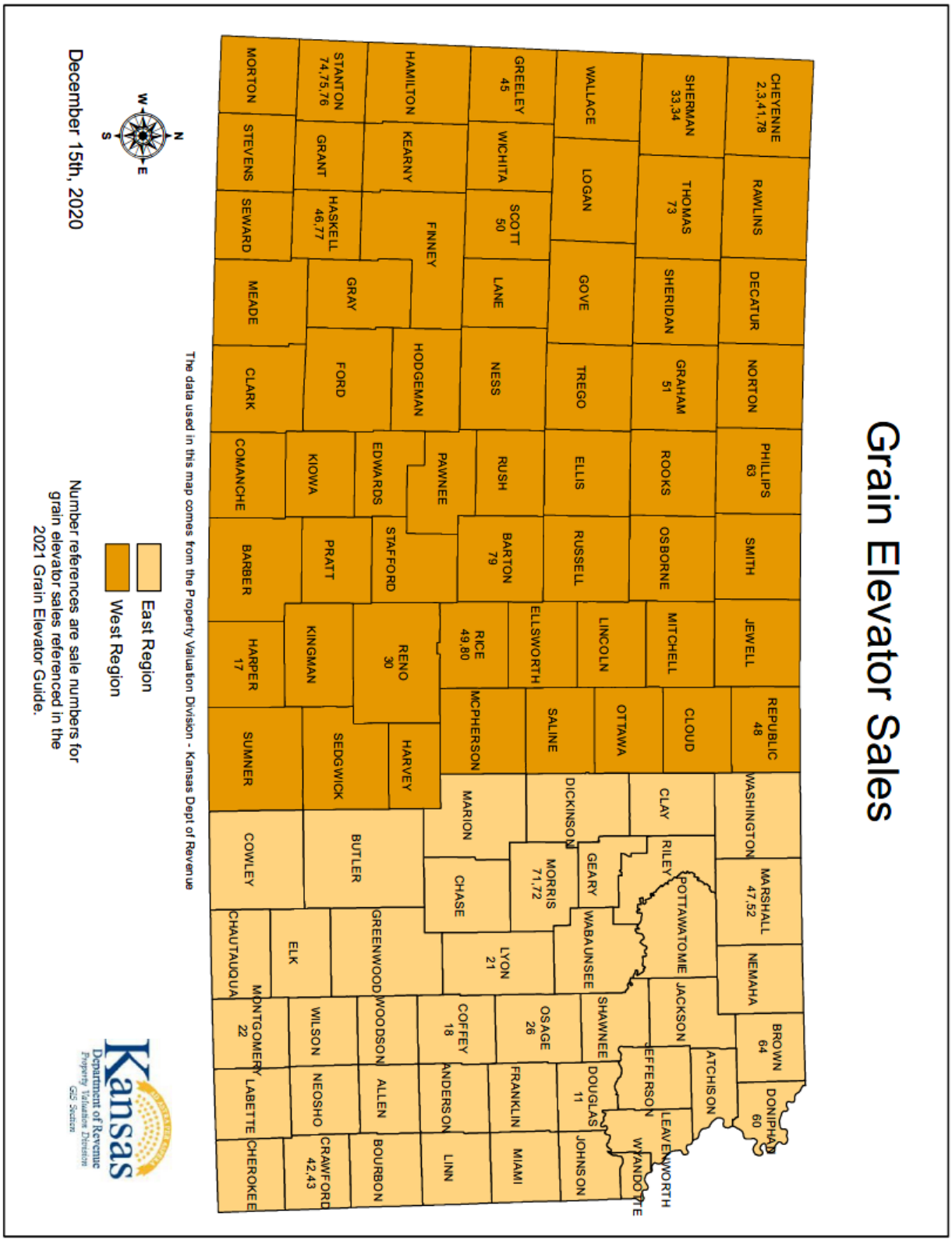
Essentially, the Sales Comparison Approach is a systematic procedure for comparison. In applying the Sales Comparison Approach, an appraiser:

- *Researches the market to obtain information about transactions, listings, and other offerings of properties similar to the subject property.*
- *Verifies the information through a knowledgeable source, preferably one of the participants in the transaction, by considering whether the data obtained are factually accurate and the transactions reflect arm's-length market considerations.*
- *Determines relevant units of comparison -- for example, acre, square foot, multiplier--and develops a comparative analysis for each unit.*
- *Compares the subject property and comparable sales and adjusts the sale price of each comparable appropriately or eliminates the property as a comparable.*
- *Reconciles the several value indications derived from the comparable into a single value indication.*

Estimating the degree of comparability between two properties necessitates a judgment about their similarity. This judgment is based on consideration of elements of comparison -- i.e., the characteristics of properties and transactions that cause prices to vary. The elements of comparison are (1) real property rights conveyed, (2) financing terms, (3) conditions of sale, (4) market conditions (time), (4) location, (6) physical characteristics, (7) economic characteristics (for income-producing properties), (8) use (zoning), and (9) non-realty components of value. Adjustments for these elements are made to the price of each comparable property as appropriate."[19]

[19] Understanding the Appraisal, the Appraisal Institute, 1992.

Map of Grain Elevator Sales Used in Analysis



Analysis of Improved Sales

The database utilized in this Grain Elevator Appraisal Guide included 35 sales. In the preparation of the guide the staff investigated 28 grain elevator sales. The time frame for these sales ranged from March 2010 through April 2020. The sales represented all types and sizes of facilities. The smallest sale had a storage capacity of 65,000 bushels. The largest sale had a licensed capacity of 5,735,722 bushels. The individual write-ups of each transaction are included in the addendum of this guide. All sales were in Kansas.

Kansas County Appraisers are required to value grain elevators based upon the fair market value of the real property. K.S.A. 79-503a defines fair market value for property tax purposes, and K.S.A. 79-102 defines real property for property tax purposes. With certain exceptions that are not directly applicable in this guide, intangible personal property is not subject to taxation in Kansas and is likewise beyond the scope of this guide. Thus, this guide will define the property it purports to value, and that property cannot include tangible or intangible personal property.

The sales prices of the transactions in the database were adjusted to comply with K.S.A. 79-503a and K.S.A. 79-102. The adjusted sales price excluded land value, non-grain asset value, personal property value, and intangible property value.

The sales in the database were analyzed under several scenarios. Attempts were made to apply several different scenarios at the same time; however, this type of multiple regression reduced the data set to a point that the results were not considered adequately supported.

Statewide Database Analyses

Price per Bushel of Storage Capacity

The simplest form of analysis is based upon a price per bushel of storage capacity. The overall net price database ranged from $0.12 per bu. to $3.30 per bu. with a mean of $1.13 per bu. and a median of $0.90 per bu.

The sales were segregated according to storage type (concrete, steel, flat, or metal clad). Per bushel unit prices were analyzed according to type of storage for each sale. Several sales included per bushel of a secondary type of storage at zero per bushel. These zero values were not included in any of the analysis. Also, the reliance upon only two transactions to support an opinion is considered to be less than adequate support on the metal clad storage type although the data is included in the table.

Type of Storage	Number of Properties	Low	Mean	Median	High
Concrete	19	$0.64	$1.23	$0.89	$4.23
Steel	28	$0.26	$1.40	$1.41	$2.83
Flat	11	$0.23	$0.88	$0.57	$2.81
Metal Clad	6	$0.39	$2.81	$1.00	$11.24

The sales were segregated according to geographical location (east and west). Per bushel unit prices were analyzed according to geographical area. The statewide is included for comparison.

Location	Number of Properties	Low	Mean	Median	High
East	13	$0.12	$1.23	$0.88	$3.30
West	22	$0.21	$1.05	$0.84	$2.58
Statewide	35	$0.12	$1.11	$0.88	$3.30

The sales were segregated according to size (499,999 bu. & under, 500,000 bu. & over). Per bushel unit prices were analyzed according to storage capacity.

Size	Number of Properties	Low	Mean	Median	High
499,999 bu. & Under	11	$0.21	$0.82	$0.64	$2.11
500,000 bu. & Over	24	$0.12	$1.25	$1.08	$3.30

The sales were segregated according to age (39 years & under, and 40 years & over). Per bushel unit prices were analyzed according to age.

Age	Number of Properties	Low	Mean	Median	High
39 Years & Under	20	$0.33	$1.20	$0.89	$3.30
40 Years & Over	15	$0.12	$1.00	$0.64	$2.11

East Region Analysis

The data base utilized in this Grain Elevator Appraisal Guide included 13 sales in the East Region. The overall net price per bushel abstracted from the database ranged from $0.12 to $3.30 per bu. with a mean of $1.27 per bu. and a median of $1.08 per bu.

The sales in the database were analyzed under several scenarios. The sales were segregated according to storage type (concrete, steel, or flat). Per bushel per unit prices were analyzed according to type of storage. Three sales included metal clad storage and the storage was valued at zero per bushel, so these have not been included here. One sale included concrete storage that resulted in zero per bushel in the valuation. This sale was not included in the concrete storage calculations. Also, the reliance upon small numbers of transactions to support an opinion is considered to be less than adequate in the flat (with only two transactions, one at $.58 and one at zero) storage.

Type of Storage	Number of Properties	Low	Mean	Median	High
Concrete	3	$0.79	$1.46	$1.60	$2.00
Steel	9	$0.33	$1.28	$0.88	$3.30
Mix	1	$0.12	$0.12	$0.12	$0.12

The sales were segregated according to size (499,999 bu. & under, 500,000 bu. & over). Per bushel per unit prices were analyzed according to storage capacity.

Size	Number of Properties	Low	Mean	Median	High
499,999 bu. & Under	7	$0.33	$1.05	$0.88	$2.11
500,000 bu. & Over	6	$0.12	$1.44	$1.27	$3.30

The sales were segregated according to age (39 years & under, and 40 years & over). Per bushel per unit prices were analyzed according to age.

Age	Number of Properties	Low	Mean	Median	High
39 Years & Under	7	$0.70	$1.33	$0.88	$3.30
40 Years & Over	6	$0.12	$1.12	$1.08	$2.11

West Region Analysis

The database utilized in this Grain Elevator Appraisal Guide included 22 sales in the West Region. The price per bushel abstracted from the database ranged from $0.21 per bu. to $2.58 per bu. with a mean of $1.05 per bu. and a median of $0.84 per bu.

The sales in the database were analyzed under several scenarios. The sales were segregated according to principal storage type (concrete, steel, flat, or metal clad). Per bushel per unit prices were analyzed according to type of storage. One sale included flat storage that resulted in zero per bushel in the valuation. One sale included concrete storage that resulted in zero per bushel in the valuation. Two sales included steel storage that resulted in zero per bushel in the valuation. These zero values were not included in the calculations based on storage type. The reliance upon small numbers of transactions to support an opinion is considered to be less than adequate support on the metal clad (with only two transactions) storage although the data is included in the table.

Type of Storage	Number of Properties	Low	Mean	Median	High
Concrete	9	$0.21	$0.94	$0.57	$2.58
Steel	8	$0.57	$1.18	$1.02	$2.19
Mix	5	$0.40	$1.02	$1.02	$1.81

The sales were segregated according to size (499,999 bu. & under, and 500,000 bu. & over). Per bushel per unit prices were analyzed according to storage capacity.

Size	Number of Properties	Low	Mean	Median	High
499,999 bu. & Under	4	$0.21	$0.43	$0.43	$0.64
500,000 bu. & Over	18	$0.33	$1.18	$1.08	$2.58

The sales were segregated according to age (39 years & under, and 40 years & over). Per bushel per unit prices were analyzed according to age. The least effective age was 5.68 years.

Age	**Number of Properties**	**Low**	**Mean**	**Median**	**High**
39 Years & Under	13	$0.33	$1.13	$0.90	$2.58
40 Years & Over	9	$0.21	$0.92	$0.64	$1.91

Reconciliation of the Sales Comparison Approach

Reconciliation Criteria is defined as:

> *the criteria that enable an appraiser to form a meaningful, defensible conclusion about the final value opinion. Value indications tested for the appropriateness of the approaches and adjustments applied, the accuracy of the data, and the quantity of evidence analyzed.*[20]

It is recommended that several units of comparison be considered for each property. Consideration should be given to the factors that are the most important in analyzing the subject grain storage (elevator) facility. If the principal type of construction is the most important characteristic, then the per unit price from the principal storage type table for per bushel of storage should be given the greatest weight in analysis.

All of the previous per unit prices are based upon a quantity of data. It is also important for the appraiser to review individual sales and select those which are most like the subject. The per unit price from these sales should be considered along with the database per unit price indications. Consider all physical and economic factors in the selection of individual sales for comparison.

As explained in the definition of reconciliation, the conclusion should be based upon the appropriateness, accuracy, and quantity of evidence. If location is the most important characteristic then the price per bushel factor from the geographical table should be given the most weight in analysis; however, there may be several characteristics which are relevant to the conclusion of the price per bushel factor. The characteristics/factors considered to be most relevant should remain consistent in both the Sales Comparison Approach and Cost Approach methods of analysis.

Reconciliation of the Sales Comparison Approach is defined as:

> *In the sales comparison approach, reconciliation may involve two levels of analysis: 1) derivation of a value indication from the adjusted prices of two or more comparable sales expressed in the same unit of comparison and 2) derivation of a value indication from the adjusted prices of two or more comparables expressed in different units of comparison. See also point estimate, range of value.* [21]

It is important to consider all of the factors/characteristics influencing the various value indications of the Sales Comparison Approach and reconcile them into a final value indication. The two value indications (per bushel of storage and per bushel of allocated storage) are based upon the storage capacity of the subject property.

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[20] The Dictionary of Real Estate Appraisal, Fourth Edition, Appraisal Institute, 2002, page 236.

[21] The Dictionary of Real Estate Appraisal, Fourth Editions, Appraisal Institute, 2002 Page 236

INCOME CAPITALIZATION APPROACH

"The Income Capitalization Approach to value is applicable to income-producing property and is appropriate in the appraisal of properties for which a rental market or a rental value can be identified. The approach consists of a set of procedures in which an appraiser derives a value indication for income-producing property by converting anticipated benefits into property value. This conversion is accomplished either by (1) capitalizing a single year's income expectancy or an annual average of several years' income expectancies at a market-derived capitalization rate or a capitalization rate that reflects a specified income pattern, return on investment, and change in the value of the investment; or (2) discounting the annual cash flows for the holding period and the reversion at a specified yield rate. The various capitalization methods, techniques, and procedures are based on various inherent assumptions concerning the quality, durability, and pattern of the income projection. The appraiser selects the capitalization method and procedure that best conforms to the future income pattern of the subject property and the available data.

Capitalization is the conversion of earnings into an indication of value. Capitalization rates express the relationship between income and value. They may be applied to the total net operating income of real property or to various possible divisions of that income, such as the land, building, mortgage, equity, leased fee estate, or leasehold estate. Capitalization begins with an estimate of net operating income. This estimate is basic to the income capitalization approach, and the value indication derived is no more reliable than the income projection.

Seven basic steps are followed to convert the income stream projection into a value indication.

1. *Estimate potential gross real estate income.*
2. *Estimate and deduct a vacancy and collection loss allowance to derive effective gross income.*
3. *Estimate and deduct expenses of operation to derive net operating income.*
4. *Analyze the pattern and duration of the projected income stream.*
5. *Estimate the anticipated value of the resale or reversionary benefit.*
6. *Develop the appropriate capitalization rate(s) or discounting factor(s).*
7. *Complete the capitalization process and estimate the property's value.*

To derive a market value estimate by the Income Capitalization Approach, an appraiser must research market attitudes and perceptions and make critical judgments. Decisions must be made concerning projected income patterns and amounts, capitalization methods and procedures, the selection of appropriate rates, and the capital structure of the value estimate - for example, land and building components, mortgage and equity interests, or leased fee and leasehold estates."[22]

[22] Understanding the Appraisal, the Appraisal Institute, 1992

Income Analysis

There are substantial inherent problems with attempting to conduct a standard Income Capitalization Approach to value a grain elevator. The standard Income Capitalization Approach assumes that renting or leasing is common, and that valid sales of rented or leased properties are available. The sales of rented or leased properties provide overall capitalization rates. The grain storage/elevator industry is similar to other specialized industrial facilities in that these properties are most always owner-occupied, and they rarely sell. Thus, there are few rents available, and even fewer market derived overall capitalization rates.

In estimating the income for a grain elevator, consideration must be given to the fact that this is a special use property. An investigation of the market indicated there were a few leases of grain elevators or terminals.

The information for the income approach was not available for the sales included in this guide.

RECONCILIATION OF VALUE INDICATIONS AND FINAL VALUE ESTIMATE

Reconciliation is part of the valuation process in which an appraiser analyzes alternative conclusions and selects a final value estimate from among two or more indications of value. A thorough review of the entire valuation process may precede reconciliation.

In reconciliation, an appraiser draws upon his or her experience, expertise, and professional judgment to resolve differences among the value indications derived from the application of the approaches.

The appraiser weighs the relative significance, applicability, and defensibility of each value indication and relies most heavily on the one most appropriate to the purpose of the appraisal. The conclusion drawn is based on the appropriateness, the accuracy, and the quality of all the evidence in the appraisal.

With the final estimate of market value, the immediate objective of the valuation process has been accomplished. However, an appraisal assignment is not completed until this conclusion has been stated in a formal report for presentation to the client.[23]

Reconciliation as described above is the process of reconciling the various independent value indications into a single value estimate. Each value indication should include its own inherent strengths and/or weaknesses.

This is the reconciliation of the Grain Elevator Appraisal Guide. This reconciliation is based upon the data, analyses and conclusions included in the guide. The concepts of reconciliation are applied as they would be in an appraisal; however, they will be applied to the information contained in this guide and may not be directly transferable to an individual appraisal assignment.

Historically in the ad valorem valuation process, significant consideration has been placed upon the Cost Approach to value. However, in real life the buyers and sellers of grain elevators place limited reliance upon this method of valuation. Most commercial and industrial market participants rely upon the Income Capitalization Approach in formulating their purchasing and selling decisions. Reliance upon the Sales Comparison Approach may be weakened by the lack of comparable data and the uniqueness of each facility.

The Cost Approach to value is considered a reasonable method of valuation for new or nearly new properties. This approach relies upon numerous mathematical calculations and some judgment. The area of judgment deals with the quantification of accrued depreciation as applied to the reproduction cost new of the improvements. The third component of the cost approach is land valuation. It is typically supported by local market data. The major weakness of this approach is the fact that most grain elevators are not new or nearly new. Secondly, for older facilities, the determination of the appropriate amount of accrued depreciation is subjective.

In this guide the cost estimate is based upon a national cost service (MS). The measurement of accrued depreciation is based upon the abstraction of depreciation from a large database of grain elevator transactions. The land value is based upon a locally supported land valuation. The major weakness in the Cost Approach is

[23] Understanding the Appraisal, the Appraisal Institute, 1992.

typically the poorly supported estimate of accrued depreciation; however, in this guide, accrued depreciation is one of the best supported units of comparative analysis.

The Sales Comparison Approach is based upon the comparison of market data (sales) to the subject property. The selection of comparable (most similar) sales is the most difficult part of this approach. In most cases, the availability of sales data is limited, and their direct comparability is questionable. The main weakness in this approach is determining the comparability of the sales to the subject property. The strength of this approach is based upon the concept of substitution, i.e. a buyer would not pay more for a given asset than the price of an equally similar asset.

In final reconciliation it is necessary to consider the value indications by each of the two approaches and determine their individual appropriateness, accuracy and quantity of supporting evidence. Variances in the indicated values may provide insight into the reasoning for higher or lower value indications. In conclusion, it is the appraiser's responsibility to rightly interpret the two value indications and to reconcile a single value indication for the subject property.

The two approaches were each analyzed based upon their appropriateness, accuracy, and quantity of supporting evidence. The Cost and Sales Comparison Approaches are considered to be equally strong in all three categories.

Exposure of Time Analysis

Exposure Time is defined as:

1. *The time a property remains on the market.*
2. *The estimated length of time the property interest being appraised would have been offered on the market prior to the hypothetical consummation of a sale at market value on the effective date of the appraisal; a retrospective estimate based on an analysis of past events assuming a competitive and open market. Exposure time is always presumed to occur prior to the effective date of the appraisal. The overall concept of reasonable exposure encompasses not only adequate, sufficient and reasonable time but also adequate, sufficient and reasonable effort. Exposure time is different for various types of real estate and value ranges and under various market conditions.* (Appraisal Standards Board of The Appraisal Foundation, Statement on Appraisal Standards No. 6, "Reasonable Exposure Time in Real Property and Personal Property Market Value Opinions")

Market value estimates imply that an adequate marketing effort and reasonable time for exposure occurred prior to the effective date of the appraisal. In the case of disposition value, the time frame allowed for marketing the property rights is somewhat limited, but the marketing effort is orderly and adequate. With liquidation value, the time frame for marketing the property rights is so severely limited that an adequate marketing program cannot be implemented.

ADDENDUM

GLOSSARY

Fair Market Value

The amount in terms of money that a well-informed buyer is justified in paying and a well-informed seller is justified in accepting for property in an open and competitive market, assuming that the parties are acting without undue compulsion. (K.S.A. 79-503a).

K.S.A. 79-503a also requires a county appraiser to consider several factors when determining the fair market value of property for property tax purposes. Among the factors required to be considered and applied are the three generally accepted approaches to value: (1) sales; (2) cost; and (3) income.

K.S.A. 79-102

The terms "real property," "real estate," and "land," when used in this act, except as otherwise specifically provided, shall include not only the land itself, but all buildings, fixtures, improvements, mines, minerals, quarries, mineral springs and wells, rights and privileges appertaining thereto.

The term "personal property" shall include every tangible thing which is the subject of ownership, not forming part or parcel of real property.

The words "personal property," when used in this act in their general sense, shall include all taxable property other than real property, as hereinbefore defined.

Annex

Grain elevator annexes are buildings used to hold farm field crops purchased by them for resale. A grain elevator annex may be constructed from concrete, metal or wood. An annex differs from an elevator in that it does not include an elevator leg within the structure. Typically, grain is transferred to and from an annex by a conveyor system attached to an adjoining grain elevator. Grain annexes may include a galley for loading grain into the bins and a tunnel for removing grain from the bins.

Blending

Once the grain is graded, it can be segregated accordingly. Then, when the elevator ships and sells grain, it can blend grains with excess damage and/or moisture content with grain of a superior grade. The goal is to achieve an overall blend that just meets the higher-grade standard and, thus, receives the higher price. For example, say an elevator pays a lower price for grain with excess damage. This grain is then "blended-off" with grain that has very little damage. The final blend just meets the specified allowable damage level, and all of the grain is sold at the higher price.[24]

[24] Dodd, Clay M. "Grain Elevators." Appraising Industrial Properties (2005): 281-309.

Bulk Loader/Scale

Structure/equipment which contains scale, and storage garners. It is computer controlled for regulation how much grain is to be loaded.

Bushel

A unit of measure containing 2,150.42 cubic inches, 56 pounds or corn, or 60 pounds of wheat or soybeans.

Car Size

Hopper cars of 268,000 pounds to 286,000 pounds.

Commercial Grain Handling Facility

This facility must have a warehouse license/certificate in order to receive, store and merchandise grain. A USDA Federal license or a Department of Agriculture license from the state does represent a commercial grain handling license.

Drying Points

A percentage point: refers to the degree of moisture removed from a commodity.

Ethanol Plant

This is a facility that processes corn and other grains into Ethanol. Ethanol is a renewable resource-based petroleum fuel additive or substitute.

Gallery

A covered walkway above the elevator bins which generally house conveying equipment.

Grading

When grain is delivered to an elevator, it is normally graded based on a variety of factors such as moisture content, damaged kernels, and the presence of foreign materials. Small grains, particularly wheat and barley, may also be graded for protein content. The price paid for the grain will vary depending on the results of the grading. A lower price is normally paid for grain with damage and/or moisture content above specified levels.[25]

Grain Elevators

Grain elevators are buildings used by grain elevator companies to hold farm field crops purchased by them for resale. A grain elevator may be constructed from concrete, metal or wood and includes the office, unloading areas and annexes. These buildings, grain handling equipment and M&E systems installed or attached to the buildings are regarded to be real property.

Handling Speed

This refers to the number of bushels per hour handled by elevator legs, transfer belts and drag conveyors.

[25] Dodd, Clay M. "Grain Elevators." Appraising Industrial Properties (2005): 281-309.

Headhouse

A structure that normally encloses elevator legs, load-out scales, and any cleaning and grading that may be present. The head house may or may not have storage bins. The headhouse is usually higher than the top of the adjoining storage silos to allow for gravity flow from the distributors into the load-in conveyors.[26]

Interstice

The space formed between physically connected circular concrete silos. The interstices themselves become storage bins.[27]

Jump Form Construction

A type of concrete construction completed in stages rather than a continuous pouring process. Also known as jack form construction. Obvious five-foot breaks and a rougher exterior than slip form.

Leg

Shorthand for elevator leg, the vertical conveying mechanism that elevates grain.[28]

Licensed Capacity

Capacity of commercial grain storage may be licensed by either the Kansas Department of Agriculture or the US Department of Agriculture. Additional information about Kansas state-licensed grain warehouses by Kansas Department of Agriculture may be obtained at this website: https://agriculture.ks.gov/divisions-programs/grain-warehouse The Kansas Department of Agriculture may also be contacted through their website: www.agriculture.ks.gov. The list of facilities licensed by US Department of Agriculture may be obtained at this website:
https://internet-dotnet.fsa.usda.gov/approved_whses/ugrsa/report_UGRSA.asp?StateAbbr=KS&StateName=KANSAS&StateCode=20

Load-in

The process of receiving grain into the elevator.[29]

Load-out

The process of discharging grain from the elevator into a truck, rail car, or other vessel.[30]

Loading Capacity

Maximum handling speed at which an elevator can out-load grain. It is expressed as Bu/Hr (bushels per hour)

Mean

A measure of central tendency. The sum of the values of divide a set d by the number of values.

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[26] Dodd, Clay M. "Grain Elevators." Appraising Industrial Properties (2005): 281-309.

[27] Dodd, Clay M. "Grain Elevators." Appraising Industrial Properties (2005): 281-309.

[28] Dodd, Clay M. "Grain Elevators." Appraising Industrial Properties (2005): 281-309.

[29] Dodd, Clay M. "Grain Elevators." Appraising Industrial Properties (2005): 281-309.

[30] Dodd, Clay M. "Grain Elevators." Appraising Industrial Properties (2005): 281-309.

Median

The value of the middle item in an uneven number of items arranged or arrayed according to size, or the arithmetic average of the two central items in an even number of items similarly arranged. A positional average that is not affected by the size of extreme values.

Origination

The point or area from which grain originates.[31]

Receiving Capacity

Maximum handling speed at which elevator can in-load grain. It is expressed as Bu/Hr (bushels per hour).

Receiving Pit

Normally is an in-ground hopper-like structure where grain is initially received. Incoming grain is unloaded from trucks or rail cars into the receiving pit, where it is then conveyed to a leg and transferred into the elevator. Receiving pits may be designated for truck receiving, rail receiving, or both. In may also be referred to as a receiving dump, pit, dump/pit, truck dump, or rail pit.3 Most receiving pits are rated in bu. (bushels of capacity). Some new elevators are utilizing high speed conveyor-based dump stations which do not have a designated pit capacity, but are controlled by the capacity of the receiving belt.

Shuttle Train Terminal

Predominant mode of transportation is by rail. Receive grain typically by truck so they have high speed receiving capabilities. Shuttle trains consist of 100 to 110 cars. Shuttle Train Terminals may be shipping or receiving and sometimes both types of facilities. These facilities must have the railroad siding capacity to stage 100 to 110 cars and necessary locomotives (power). Handling (load-out) speeds may range from 25,000 to 50,000 + bushels per hour. Most Class I railroad companies require that Shuttle Trains be loaded or unloaded in a structured time frame (14 to 24 hours).

Slip Form Construction

A type of concrete construction that is a continuous pouring process in which the forms are supported by the concrete poured previously.

Stem Wall

Foundation under a grain bin which is elevated 5 to 8 feet which allows for a tunnel for horizontal handling of grain.

Storage Capacity

The number of bushels an elevator is physically capable of holding. In addition, most commercial grain elevators will have a storage capacity associated with a state or federal grain license, referred to as licensed storage capacity or licensed capacity. The licensed capacity and physical capacity of a given elevator can vary but are often similar.[32]

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[31] Dodd, Clay M. "Grain Elevators." Appraising Industrial Properties (2005): 281-309.

[32] Dodd, Clay M. "Grain Elevators." Appraising Industrial Properties (2005): 281-309.

Thru-put

((bushels received + bushels shipped) ÷ 2) Often referenced on an annual basis, i.e., annual thru put. It is also referred to as put-thru.[33]

Truck Elevator/Terminal

A Grain Elevator facility which has no out-loading of rail car trains. May have rail siding but is not being used. Usually serves as a collection point to feed shuttle train elevator/terminals. Often times these elevators are the older smaller elevators and sometimes larger elevator that have lost their rail service.

Turning Ratio

(Annual thru put ÷ storage capacity) A measure for analyzing the volume of grain handled by an elevator relative to its storage capacity. It is often referred to as turns-of-the-house or turns.[34]

Unit Train Terminal

Predominant mode of transportation is by rail. Receive grain typically by truck so they have high speed receiving capabilities. Grain elevator facility which has the capability of out-loading and/or receiving 50-56 rail car trains. Handling (load-out and/or receiving) speeds may range from 15,000 to 25,000 bushels per hour.

Wood Cribbed

A type of construction where dimensional lumber typically 2 x 10's, 2 x 6's, or 2 x 4's, are horizontally stacked. Usually metal clad to protect the wood from the elements.

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[33] Dodd, Clay M. "Grain Elevators." Appraising Industrial Properties (2005): 281-309.

[34] Dodd, Clay M. "Grain Elevators." Appraising Industrial Properties (2005): 281-309.

APPENDIX A: DIRECTIVES AND STATUTES

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Mark Burghart, Acting Secretary

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DIRECTIVE #19-048

TO: **County Appraisers**

SUBJECT: **Procedures and Guidelines for Valuing Property**
(This Directive Supersedes Directive #17-048)

This directive is adopted pursuant to the provisions of K.S.A. 79-505, and shall take effect and be in force from and after the Director's approval date for the 2020 valuation year and all subsequent valuation years.

The county appraiser shall follow the policies, procedures and guidelines set forth in the Division of Property Valuation's specifications, manuals, guides, schedules, memoranda, regulations, directives and other instructions, as promulgated by the Director. *See* K.S.A. 79-1456; *In re Appeal of the Director of Property Valuation*, 14 Kan.App.2d 348, 791 P.2d 1338 (1989), *rev. denied* 246 Kan. 767 (1990).

If the director of property valuation has developed and adopted methodologies to value specific types of property, the county appraiser is required to follow such methodologies. K.S.A. 2018 Supp. 79-1456(a). The following guides set forth methodologies to value specific types of property:

1) Personal Property Guide
2) Oil and Gas Appraisal Guide
3) Grain Elevator Appraisal Guide
4) Commercial Feedlot Appraisal Guide
5) Affordable Housing Appraisal Guide

Some guides are revised annually and may set forth the valuation year (tax year) to which they apply. If a guide is not revised annually, then the county appraiser shall utilize the most current version of the guide which precedes the valuation date. The division of property valuation will notify county appraisers of proposed changes in guides and of the adoption of new or revised guides.

In valuing personal property required to be valued at fair market value, the county appraiser may deviate from the values shown in such guides on an individual piece of personal property for just cause shown and in a manner consistent with achieving fair market value. K.S.A. 2018 Supp. 79-1456(b).

In valuing real and personal property, the county appraiser shall interpret appraisal and valuation guides in a manner consistent with statutes. "To be valid, rules or regulations of an administrative agency must be within the agency's statutory authority. Rules or regulations that go beyond that authority, violate the statute, or are inconsistent with the agency's statutory powers are void. Further, administrative rules and regulations must be appropriate, reasonable, and consistent with the law." *In re Tax Appeal of City of Wichita*, 277 Kan. 487, 495, 86 P.3d 513 (2004); *Wagner v. State of Kansas, et al.*, 46 Kan.App.2d 858, 862, 265 P.3d 577 (2011), *rev. denied* 294 Kan. 948 (2012).

The Orion computer assisted mass appraisal system is a tool for mass appraisal intended to facilitate performance of the three generally accepted appraisal methodologies of the sales comparison approach, the cost approach, and the income approach when data to perform each approach is readily available. When using the Orion computer assisted mass appraisal system for property required to be valued at fair market value, it is the responsibility of the county appraiser or appraiser's designee to consider all applicable valuation methodologies and any other appropriate factors and then to select the best indication of fair market value based on appraisal judgment. *See* K.S.A. 2018 Supp. 79-503a; Uniform Standards of Professional Appraisal Practice (USPAP). The county appraiser is expected to follow professionally recognized methods and techniques in order to maintain a high level of public trust in the appraisal practice.

Approved: March 24, 2019

David N. Harper
Director of Property Valuation

Chapter 79 – TAXATION

Article 14 – PROPERTY VALUATION, EQUALIZING ASSESSMENTS, APPRAISERS AND ASSESSMENT OF PROPERTY

79-1456. Duty of county appraiser to follow guidelines, procedures and methodologies of director of property valuation; deviation from appraisal guides, when; rules and regulations. (a) The county appraiser shall follow the policies, procedures and guidelines of the director of property valuation in the performance of the duties of the office of county appraiser. If the director has developed and adopted methodologies to value specific types of property, the county appraiser shall be required to follow such methodologies. Prior to January 1, 2017, the secretary of revenue shall adopt rules and regulations necessary to administer the provisions of this section.

(b) The county appraiser in establishing values for various types of personal property, shall conform to the values for such property as shown in the personal property appraisal guides prescribed or furnished by the director of property valuation. The county appraiser may deviate from the values shown in such guides on an individual piece of personal property for just cause shown and in a manner consistent with achieving fair market value.

History: L. 1982, ch. 391, § 3; L. 2016, ch. 112, § 14; July 1.

Article 5 – RULES FOR VALUING PROPERTY

79-503a. Fair market value defined; allowable variance; factors to be considered in determining fair market value; generally accepted appraisal procedures to be utilized. "Fair market value" means the amount in terms of money that a well-informed buyer is justified in paying and a well-informed seller is justified in accepting for property in an open and competitive market, assuming that the parties are acting without undue compulsion. In the determination of fair market value of any real property which is subject to any special assessment, such value shall not be determined by adding the present value of the special assessment to the sales price. For the purposes of this definition it will be assumed that consummation of a sale occurs as of January 1.

Sales in and of themselves shall not be the sole criteria of fair market value but shall be used in connection with cost, income and other factors including but not by way of exclusion:

(a) The proper classification of lands and improvements.
(b) the size thereof.
(c) the effect of location on value.
(d) depreciation, including physical deterioration or functional, economic or social obsolescence.
(e) cost of reproduction of improvements.
(f) productivity taking into account all restrictions imposed by the state or federal government and local governing bodies, including, but not limited to, restrictions on property rented or leased to low income individuals and families as authorized by section 42 of the federal internal revenue code of 1986, as amended;
(g) earning capacity as indicated by lease price, by capitalization of net income or by absorption
or sell-out period.
(h) rental or reasonable rental values or rental values restricted by the state or federal government or local governing bodies, including, but not limited to, restrictions on

property rented or leased to low income individuals and families as authorized by section 42 of the federal internal revenue code of 1986, as amended;

(i) sale value on open market with due allowance to abnormal inflationary factors influencing such values.

(j) restrictions imposed upon the use of real estate by local governing bodies, including zoning and planning boards or commissions, and including, but not limited to, restrictions on property rented or leased to low income individuals and families as authorized by section 42 of the federal internal revenue code of 1986, as amended; and

(k) comparison with values of other property of known or recognized value. The assessment-sales ratio study shall not be used as an appraisal for appraisal purposes.

The appraisal process utilized in the valuation of all real and tangible personal property for ad valorem tax purposes shall conform to generally accepted appraisal procedures which are adaptable to mass appraisal and consistent with the definition of fair market value unless otherwise specified by law.

History: L. 1982, ch. 391, § 2; L. 1990, ch. 346, § 3; L. 1995, ch. 254, § 5; L. 1997, ch. 126, § 42; L. 2003, ch. 156, § 4; L. 2009, ch.97, § 3; July 1.

Article 1 – PROPERTY SUBJECT TO TAXATION

79-102. Words and phrases. That the terms "real property," "real estate," and "land," when used in this act, except as otherwise specifically provided, shall include not only the land itself, but all buildings, fixtures, improvements, mines, minerals, quarries, mineral springs and wells, rights and privileges appertaining thereto.

The term "personal property" shall include every tangible thing which is the subject of ownership, not forming part or parcel of real property; also the capital stock, undivided profits and all other assets of every company, incorporated or unincorporated, and every share or interest in such stock, profit, or assets, by whatever name the same may be designated, provided the same is not included in other personal property subject to taxation or listed as the property of individuals; and also every share or interest in any vessel or boat used in navigating any of the waters within or bordering on this state, whether such vessel or boat shall be within the jurisdiction of the state or elsewhere; and also all "property" owned, leased, used, occupied or employed by any railway or telegraph company or corporation within this state, situate on the right-of-way of any railway.

That the term "property," when used alone in this act, shall mean and include every kind of property subject to ownership.

The term "money" or "moneys" shall mean and include gold and silver coin, United States treasury notes, and bank notes.

The words "personal property," when used in this act in their general sense, shall include all taxable property other than real property, as hereinbefore defined.

The words "town" or "village," when used in this act, shall include every place laid out in lots and blocks other than incorporated cities.

The word "cities" shall include only such places as are incorporated cities.

The words "he," "his," or "him," when so used as to refer to a female, shall be held to mean "she," "her," or "hers"; and when so used as to refer to more than one person, "they," "their," or "them," as the sense may require.

History: L. 1907, ch. 408, § 1; July 1; R.S. 1923, 79-102.

CALCULATOR METHOD

GRAIN ELEVATORS

Grain elevators are for the processing and storage of grain. Most facilities may consist of a combination of structures as listed below or from other categories in this section. Any separate offices, warehouses, or other non-farm structures should be priced from other sections of this manual.

Costs are based on total licensed bushel capacity of the elevator and/or annex facility except for steel tanks and bins which are priced on a cost-per-tank basis. Special foundation work such as pilings or extremely large concrete pads are not included and must be added separately.

ELEVATOR costs will include the complete headhouse (working house), tunnel, conveyor gallery and storage tanks or bins commensurate with the type and size of facilities listed.

ANNEX costs are for vertical storage facilities. They are to be used for elevators when there is an exposed leg system and no headhouse or for additional detached storage which utilizes the headhouse of the original elevator as well as its basic machinery. If the annex has a headhouse, it should be priced from the elevator cost tables, using the total capacity of both the elevator and the annex.

1. Metal-clad elevator with bolted steel annex tanks.

2. Metal-clad elevator with metal-clad annex.

3. Concrete elevator and annex.

4. Concrete annex.

TOTAL BUSHEL CAPACITY	COST PER BUSHEL: WOOD CRIB/METAL CLAD ELEVATOR	WOOD CRIB/METAL CLAD ANNEX	CONCRETE (Slip Form Construction) ELEVATOR	CONCRETE (Slip Form Construction) ANNEX
8,000	21.90	-----	-----	-----
10,000	20.05	-----	-----	13.30
15,000	17.05	-----	-----	12.00
20,000	15.30	9.27	17.25	11.20
25,000	13.90	8.42	16.35	10.60
30,000	12.95	7.79	15.65	10.10
40,000	11.60	6.92	14.55	9.42
50,000	10.65	6.28	13.75	8.89
75,000	9.07	5.26	12.45	8.05
100,000	8.11	4.64	11.60	7.48
150,000	6.94	3.90	10.50	6.78
200,000	6.17	3.44	9.76	6.30
250,000	5.67	3.13	9.23	5.96
300,000	5.27	2.88	8.81	5.70
400,000	4.71	2.56	8.22	5.30
500,000	4.27	2.33	7.75	5.02
750,000	-----	-----	6.99	4.54
1,000,000	-----	-----	6.54	4.21
2,000,000	-----	-----	5.49	3.54
over 2,000,000	-----	-----	4.96	3.21

NOTES: For attached covered elevator driveway, add 47.00 to 104.00 per square foot. For detached annex silos without tunnel and conveyor gallery, deduct 505.00 to 550.00 per running foot of silo.
Deduct 0.62 to 0.80 per bushel for lack of intersticing.
Deduct 0.49 to 0.71 per bushel for concrete jump form construction.
For single concrete silos, use annex costs and add 5%. For concrete staves, deduct 30%. For commercial installations, like a terminal grain elevator, which are used to dry, clean, blend, and store grain, add an additional 10%. For industrial bulk applications, like cement, coal, fiber glass, fly ash, ore and sand, add an additional 5%.

SUMMARY OF ILLUSTRATIONS

1. The cost of the metal-clad elevator should be priced from the Wood Crib/Metal-Clad Elevator table and based on a per bushel capacity of the elevator storage only. The annex should be priced from the Bolted Steel Tank costs on the following page based on capacity per tank and adjusting for any conveyor tunnel and gallery.

2. Both the elevator and the annex are metal clad. Because the annex has a headhouse, they should both be priced from the Metal-Clad Elevator table entering the table with their combined total bushel capacity.

3. This combination of concrete elevator and concrete annex should be priced from both the Concrete Elevator and Concrete Annex tables since the annex does not have a headhouse. The tables should be entered at each of their respective total bushel capacities. The additional outside leg on the elevator structure, the covered driveway and small office are not included in the table costs.

4. This concrete annex should be priced from the Concrete Annex table.

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GRAIN ELEVATORS

STEEL TANKS

BUSHEL CAPACITY (Per tank)	HEAVY BOLTED STEEL (Cost per bushel)
15,000	3.35
20,000	3.20
25,000	3.09
30,000	2.98
35,000	2.92
40,000	2.86
50,000	2.75
60,000	2.67
80,000	2.54
100,000	2.46
125,000	2.36
150,000	2.29
175,000	2.25
200,000	2.18

NOTES: For used oil tanks, refer to Section 61.

For heavy corrugated utility bins, see Page 54.

Add 315.00 – 334.00 per running foot for the tunnel and 184.00 – 215.00 for the conveyor gallery.

Add 0.13 – 0.23 per bushel for aeration systems.

HORIZONTAL STORAGE

The following costs are for horizontal or flat storage without loading and/or unloading systems. Design loads vary and costs may vary by plus or minus 20%. For attached loading and/or unloading systems within the structure, add 5% of per bushel capacity.

For greater detail, see storage buildings on Pages 24 and 27.

TOTAL BUSHEL CAPACITY	COST PER BUSHEL		
	WOOD	STEEL	CONCRETE
50,000	2.19	2.40	2.94
75,000	2.06	2.29	2.77
100,000	1.94	2.19	2.66
150,000	1.84	2.08	2.51
200,000	1.74	1.97	2.40
250,000	1.70	1.94	2.34
300,000	1.63	1.87	2.29
400,000	1.56	1.83	2.19
500,000	1.51	1.75	2.15
750,000	1.42	1.65	2.03
1,000,000	1.34	1.61	1.93
2,000,000 and over	1.22	1.45	1.75

MACHINERY AND EQUIPMENT

The cost for machinery and equipment is very flexible, depending on the exact job the elevator performs. The lower end of the range represents storage only, and the higher end of the range includes processing equipment. There is an overlap in the cost of the types of equipment.

When pricing new equipment having a greater flow capacity, a higher cost rank should be used than when pricing older elevators utilizing original equipment. The higher rank costs include newer computerized terminal facilities.

All costs should be applied to total licensed capacity of both the elevator and the annexes it serves.

TOTAL BUSHEL CAPACITY	COST PER BUSHEL			
	LOW	AVERAGE	GOOD	EXCELLENT
8,000	2.66	3.22	3.91	4.73
10,000	2.56	3.12	3.76	4.57
15,000	2.37	2.88	3.48	4.26
20,000	2.26	2.71	3.32	4.05
25,000	2.16	2.62	3.21	3.91
30,000	2.09	2.54	3.12	3.79
40,000	1.99	2.39	2.95	3.61
50,000	1.90	2.33	2.84	3.47
75,000	1.75	2.16	2.64	3.27
100,000	1.69	2.06	2.53	3.12
150,000	1.55	1.91	2.35	2.89
200,000	1.46	1.83	2.25	2.78
250,000	1.40	1.74	2.16	2.68
300,000	1.36	1.69	2.09	2.58
400,000	1.27	1.61	1.99	2.49
500,000	1.24	1.53	1.91	2.38
750,000	1.12	1.44	1.76	2.25
1,000,000	1.09	1.34	1.70	2.15
2,000,000	0.95	1.20	1.51	1.90
over 2,000,000	0.92	1.12	1.45	1.84

NOTE: For railroad spurs, see Section 66.

LOCAL MULTIPLIERS

While published Local Multipliers in Section 99 may effectively be applied in many locations in which elevators are built, considerations of regional economic influences should be made for elevators in remote rural areas.

DEPRECIATION

As with determining Local Multiplier adjustments for grain elevators, depreciation, too, is sensitive to local economic conditions. While functional obsolescence and physical deterioration may be estimated by comparing the elevator structure to other like structures of size and year built, fluctuations in the grain market, accessibility to railroad services and other influences of economic obsolescence can have a significant impact on depreciation.

The data included on this page becomes obsolete after update delivery, scheduled for May 2023.

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CALCULATOR METHOD

BUCKET ELEVATORS

(Costs in bushels per hour)

The costs apply to bucket elevators with the following characteristics: Painted construction; alloyed head shaft; double drum head and boot pully; Holz lagging; 3-ply 330 rubber belt; head explosion vents; jack bolts under the head bearings; SCM/SC series bearings; throat wiper; access doors at the head, boot, inspections section and lagging access.

CAPACITY (Bu/Hr)	DISCHARGE HEIGHT (feet)													
	20	30	40	50	60	70	80	90	100	110	120	130	140	150
500	45.25	51.00	57.00	62.00	66.50	73.00	-----	-----	-----	-----	-----	-----	-----	-----
750	32.50	36.25	40.50	44.00	48.50	52.50	-----	-----	-----	-----	-----	-----	-----	-----
1,000	25.50	28.75	31.75	35.00	37.75	41.00	44.00	47.50	51.00	53.50	57.00	59.00	62.50	65.50
1,500	18.30	20.50	22.70	24.85	27.00	29.25	31.50	33.25	36.00	37.75	40.25	42.25	44.00	47.00
2,000	14.50	16.15	17.90	19.55	21.20	22.95	24.60	26.25	26.25	29.75	31.50	33.00	35.00	36.50
3,000	10.45	11.60	12.80	13.90	15.10	16.35	17.60	18.75	19.90	21.05	22.30	23.40	24.60	25.75
3,500	9.19	10.25	11.25	12.30	13.30	14.40	15.40	16.45	17.55	18.50	19.55	20.55	21.60	22.65
4,000	8.25	9.18	10.10	11.00	11.95	12.85	13.75	14.70	15.65	16.60	17.40	18.30	19.25	20.20
5,000	6.87	7.62	8.39	9.16	9.90	10.65	11.40	12.20	12.90	13.65	14.45	15.15	15.95	16.75
6,000	5.92	6.58	7.21	7.85	8.49	9.17	9.82	10.45	11.10	11.70	12.35	12.95	13.65	14.40
7,000	5.23	5.81	6.36	6.94	7.48	8.05	8.60	9.18	9.76	10.30	10.90	11.45	12.00	12.55
8,000	4.68	5.20	5.70	6.19	6.72	7.19	7.69	8.22	8.70	9.20	9.71	10.25	10.75	11.20
10,000	-----	-----	-----	5.16	5.55	5.97	6.39	6.81	7.21	7.62	8.03	8.45	8.87	9.27

NOTES: Add for discharge transition, each: 6" round, 447.00; 8" round, 485.00; 10" round, 550.00; 12" round, 600.00; 14" round, 640.00; 16" round, 700.00.
For spouting, add per linear foot: 6", 30.25 – 68.00; 8", 35.75 – 79.50; 10", 62.00 – 113.0012", 97.50 – 151.00; 14", 108.00 – 170.00; 16", 113.00 – 184.00
For receiving pit, add 2.56 – 4.47 per bushel.

HORIZONTAL DRAG (U-TROUGH) CONVEYORS

(Standard bottom discharge)

	DRIVE AND TAIL SECTION		U-TROUGH COMPLETE W/ CHAIN AND PADDLES	BYPASS INLET	
DIA.	LENGTH	COST	COST/LINEAR FOOT	LENGTH	COST
6"	28"	3875.00	290.00	13"	925.00
9"	32"	4575.00	315.00	18"	1060.00
12"	40"	6600.00	403.00	21"	1510.00
14"	46"	7000.00	454.00	24"	1620.00
16"	52"	10300.00	635.00	27"	2675.00
18"	58"	11800.00	765.00	30"	2875.00
20"	64"	13400.00	845.00	------	-----
24"	75"	16300.00	955.00	37"	3825.00

COST EXPLANATION

When calculating the cost of a drag conveyor, first determine the overall length. Then take the overall length minus drive and tail length (of the selected drag) and bypass inlet if needed. This number represents the length of the trough needed. Next, multiply that number by the cost per foot for the trough. (Costs do not include the drive.) Cost are for example purposes only.

EXAMPLE: 9" drag conveyor, 60' length
Drive and tail, 32" long
Bypass inlet, 18" long
60' (720") – 32" (head and tail section) – 18" (bypass inlet)= 670" = 55' 10"

Drive and tail section	$ 3,600
Bypass inlet	835
U-trough (55.83' x $265)	14,795
Total Cost	**$19,230**

DRYERS

(dry/cool, 25% to 15%)

CONTINUOUS-FLOW				BATCH TYPE	
BUSHELS PER HOUR GRAIN (RICE)				BUSHELS PER HOUR GRAIN (RICE)	
CAPACITY	COST	CAPACITY	COST	CAPACITY	COST
300 (575)	80750.00	1,875 (3,550)	331000.00	150 (285)	46000.00
400 (750)	101000.00	2,000 (3,800)	347000.00	200 (380)	53750.00
500 (950)	120000.00	2,250 (4,300)	379000.00	270 (515)	64000.00
600 (1,150)	139000.00	2,500 (4,750)	411000.00	390 (740)	82250.00
700 (1,350)	155000.00	2,750 (5,250)	442000.00		
800 (1,500)	171000.00	3,250 (6,200)	504000.00		
900 (1,700)	189000.00	3,500 (6,650)	532000.00		
1,000 (1,900)	206000.00	4,000 (7,600)	591000.00		
1,200 (2,300)	234000.00	4,250 (8,100)	618000.00		
1,500 (2,800)	278000.00	4,500 (8,550)	648000.00		

NOTE: For heat recovery systems, add 10%.

LOADING – UNLOADING SYSTEMS

AUGER-TYPE CONVEYORS		BELT-TYPE CONVEYORS	
DIAM.	COST/LIN. FT.	WIDTH	COST/LIN. FT.
6"	81.00	12"	139.00
8"	110.00	18"	215.00
10"	145.00	24"	252.00
12"	196.00	30"	290.00
14"	228.00	36"	309.00
16"	284.00	48"	397.00

MAN LIFTS

Uncoded, electrically operated personnel lifts..... 9200.00 – 12400.00
add cost per stop 5250.00

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CALCULATOR METHOD

FARM STORAGE

STEEL GRAIN BINS

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

BIN DIAMETER (feet)	EAVE HEIGHT (feet)	MAXIMUM CAPACITY (bushels)	COST W/OUT DRYING BIN	COST WITH DRYING BIN	SLAB FLOOR
15'	7	1,257	5550.00	8050.00	775.00
	11	1,792	7250.00	10700.00	845.00
	15	2,329	8650.00	12700.00	970.00
	18	2,864	9850.00	14200.00	1120.00
18'	11	2,647	8050.00	11700.00	1040.00
	15	3,422	10000.00	14500.00	1080.00
	18	4,189	11400.00	16500.00	1120.00
	22	4,973	13300.00	-----	1180.00
	26	5,748	15000.00	-----	1260.00
	33	7,299	18700.00	-----	1320.00
	40	8.849	22200.00	-----	1410.00
	48	10,400	25400.00	-----	1510.00
21'	11	3,693	8900.00	12900.00	1430.00
	15	4,753	11400.00	16500.00	1470.00
	18	5,813	13800.00	20100.00	1530.00
	22	6,874	16100.00	-----	1640.00
	26	7,934	18000.00	-----	1720.00
	33	10,055	22500.00	-----	1870.00
	40	12,175	25400.00	-----	1970.00
	48	14,296	28000.00	-----	2120.00
24'	11	4,949	10900.00	15900.00	1810.00
	15	6,344	13300.00	19600.00	1890.00
	18	7,739	16600.00	24100.00	1970.00
	22	9,134	19200.00	-----	2100.00
	26	10,528	21800.00	-----	2200.00
	33	13,318	26000.00	-----	2320.00
	40	16,107	29100.00	-----	2490.00
	48	18,897	31300.00	-----	2675.00
27'	11	6,409	12900.00	19000.00	2320.00
	15	8,182	16000.00	23100.00	2430.00
	18	9,955	19100.00	27400.00	2525.00
	22	11,728	21800.00	-----	2675.00
	26	13,500	24700.00	-----	2850.00
	33	17,046	30900.00	-----	2950.00
	40	20,591	33500.00	-----	3175.00
	48	24,137	35700.00	-----	3400.00

BIN DIAMETER (feet)	EAVE HEIGHT (feet)	MAXIMUM CAPACITY (bushels)	COST W/OUT DRYING BIN	COST WITH DRYING BIN	SLAB FLOOR
30'	15	10,278	19500.00	28000.00	2675.00
	18	12,473	22900.00	33200.00	2825.00
	22	14,668	26300.00	-----	2950.00
	26	16,863	29300.00	-----	3250.00
	33	21,252	35000.00	-----	3500.00
	40	25,624	38700.00	-----	3800.00
	48	30,031	41500.00	-----	4075.00
36'	15	15,297	27300.00	39600.00	3950.00
	18	18,473	31000.00	45100.00	4200.00
	22	21,648	36100.00	-----	4375.00
	26	24,823	40500.00	-----	4675.00
	33	31,174	45700.00	-----	4850.00
	40	37,524	50750.00	-----	5200.00
	48	43,875	57750.00	-----	5550.00
	59	53,400	68500.00	-----	5900.00
42'	15	21,416	34800.00	50750.00	5500.00
	18	25,738	40800.00	59250.00	5800.00
	22	30,060	46000.00	-----	6000.00
	26	34,382	49700.00	-----	6400.00
	33	43,026	58750.00	-----	6700.00
	40	51,670	69000.00	-----	7200.00
	48	60,314	80500.00	-----	7650.00
	59	73,279	95250.00	-----	8250.00
42'	15	26,749	38900.00	60000.00	7200.00
	18	34,394	49400.00	72000.00	7550.00
	22	40,039	56750.00	-----	7800.00
	26	45,684	64000.00	-----	8400.00
	33	56,974	78500.00	-----	8800.00
	40	68,264	93250.00	-----	9350.00
	48	79,554	108000.00	-----	10200.00
	59	96,488	128000.00	-----	10800.00
60'	15	56,170	77750.00	-----	11100.00
	26	73,810	101000.00	-----	11700.00
	40	109,092	146000.00	-----	12200.00
	48	126,732	169000.00	-----	13300.00
	59	152,870	202000.00	-----	14500.00
	64	165,563	215000.00	-----	16600.00

BIN DIAMETER (feet)	EAVE HEIGHT (feet)	MAXIMUM CAPACITY (bushels)	COST W/OUT DRYING BIN	COST WITH DRYING BIN	SLAB FLOOR
75'	32	147,000	199000.00	-----	17200.00
	40	176,000	235000.00	-----	19100.00
	48	206,000	271000.00	-----	22800.00
	59	246,000	319000.00	-----	24600.00
	64	266,000	339000.00	-----	25900.00
90'	32	221,000	291000.00	-----	25000.00
	40	263,000	342000.00	-----	27500.00
	48	305,000	392000.00	-----	32500.00
	59	358,223	458000.00	-----	37600.00
105'	32	306,180	403000.00	-----	34000.00
	40	363,558	475000.00	-----	37600.00
	48	420,936	545000.00	-----	44400.00
	59	500,000	643000.00	-----	51000.00

DIAMETER (feet)	TOTAL HEIGHT	CAPACITY (bushels)	CAPACITY (tons)	COST	SLAB BASE
15'	33	4,030	100.75	17000.00	950.00
	41	5,220	130.50	20100.00	1050.00
	49	6,400	160.00	23400.00	1120.00
	57	7,580	189.50	26200.00	1180.00
18'	34	5,980	149.50	24000.00	1250.00
	42	7,810	195.25	29200.00	1320.00
	50	9,530	238.25	32800.00	1440.00
	58	11,250	281.25	38200.00	1560.00
	63	12,396	310.00	41700.00	1650.00
21'	35	8,340	208.50	31300.00	1710.00
	43	10,640	266.00	39000.00	1910.00
	51	12,950	323.25	46400.00	2030.00
	59	15,260	381.50	52500.00	2090.00
	65	16,800	420.00	55250.00	2200.00
24'	36	11,170	279.25	38700.00	2260.00
	44	14,170	354.25	50500.00	2390.00
	52	17,170	429.25	63250.00	2675.00
	60	20,170	504.25	70250.00	2950.00
	66	22,170	554.25	73250.00	3175.00
30'	39	18,347	458.75	72500.00	3575.00
	47	23,048	576.25	84500.00	3825.00
	55	27,749	693.75	95000.00	4025.00
	63	32,450	811.25	107000.00	4100.00
	69	35,584	889.50	111000.00	4200.00

ADJUSTMENTS

Auger and drive 462.00
plus 45.00 to 54.50 per foot of bin diameter
Add for spreaders..... 900.00 to 1350.00 each
Aeration systems..... Add 0.13 to 0.21 per bushel

Stirrators..... 210.00 to 320.00 per foot of bin diameter
Ladders..... 77.50 plus 11.10 per linear foot
Add for safety cages ..... 21.60 to 26.75 per foot installed

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CURRENT COST MULTIPLIERS

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

CALCULATOR COST SECTIONS

(Effective Date of Cost Pages)		11 (11/20)	12 (8/20)	13 (5/20)	14 (2/20)	15 (11/19)	16 (8/19)	17 (5/21)	18 (2/21)
EASTERN	A	1.06	1.06	1.06	1.05	1.06	1.07	1.03	1.06
	B	1.09	1.09	1.07	1.09	1.07	1.09	1.04	1.07
	C	1.08	1.08	1.10	1.09	1.11	1.12	1.04	1.04
	D	1.08	1.09	1.10	1.09	1.10	1.11	1.02	1.04
	S	1.12	1.11	1.11	1.10	1.12	1.10	1.01	1.07
CENTRAL	A	1.02	1.01	1.01	1.02	1.02	1.03	0.98	0.99
	B	1.02	1.03	1.02	1.03	1.06	1.04	0.97	0.99
	C	1.04	1.05	1.06	1.05	1.06	1.05	0.98	1.00
	D	1.04	1.06	1.07	1.07	1.10	1.09	0.97	1.01
	S	1.01	1.04	1.02	1.05	1.05	1.04	0.99	0.99
WESTERN	A	1.03	1.06	1.07	1.08	1.07	1.06	1.01	1.00
	B	1.03	1.05	1.09	1.08	1.09	1.10	1.03	1.01
	C	1.06	1.09	1.08	1.11	1.10	1.11	1.01	1.05
	D	1.09	1.09	1.10	1.12	1.10	1.09	1.05	1.05
	S	1.05	1.06	1.10	1.10	1.09	1.12	1.03	1.01

SEGREGATED COST SECTIONS

(Effective Date of Cost Pages)		41 (12/20)	42 (9/20)	43 (6/20)	44 (3/20)	45 (12/19)	46 (9/19)	47 (6/19)	48 (3/21)
EASTERN	A	1.06	1.06	1.06	1.05	1.06	1.07	1.08	1.06
	B	1.09	1.09	1.07	1.09	1.07	1.09	1.11	1.07
	C	1.08	1.08	1.10	1.09	1.11	1.12	1.12	1.04
	D	1.08	1.09	1.10	1.09	1.10	1.11	1.10	1.04
	S	1.12	1.11	1.11	1.10	1.12	1.10	1.09	1.07
CENTRAL	A	1.02	1.01	1.01	1.02	1.02	1.03	1.02	0.99
	B	1.02	1.03	1.02	1.03	1.06	1.04	1.04	0.99
	C	1.04	1.05	1.06	1.05	1.06	1.05	1.05	1.00
	D	1.04	1.06	1.07	1.07	1.10	1.09	1.06	1.01
	S	1.01	1.04	1.02	1.05	1.05	1.04	1.06	0.99
WESTERN	A	1.03	1.06	1.07	1.08	1.07	1.06	1.06	1.00
	B	1.03	1.05	1.09	1.08	1.09	1.10	1.10	1.01
	C	1.06	1.09	1.08	1.11	1.10	1.11	1.09	1.05
	D	1.09	1.09	1.10	1.12	1.10	1.09	1.13	1.05
	S	1.05	1.06	1.10	1.10	1.09	1.12	1.10	1.01

UNIT-IN-PLACE COST SECTIONS (51 – 70)

Sec.	Page	Date		Eastern	Central	Western
51 -	2-3	(3/21)	Concrete Foundations	1.03	0.98	1.03
51 -	4	(3/21)	Pilings	1.03	0.99	1.03
51 -	7-8	(3/21)	Steel and Concrete Frame	1.04	0.98	1.03
51 -	3,7	(3/21)	Wood Foundations, Frame	1.01	1.00	1.04
52 -	1-4, 6	(3/21)	Interior Construction	1.02	1.01	1.03
52 -	5	(3/21)	Bank Vaults and Equipment	1.04	0.99	1.02
53 -	1-8	(6/19)	Heating, Cooling & Ventilating	1.09	1.05	1.10
53 -	9-12	(6/19)	Plumbing, Fire Protection, etc.	1.09	1.05	1.11
54 -	1-6	(6/19)	Electrical, Security	1.04	1.06	1.05
55 -	3-7	(8/19)	Wall Costs	1.09	1.05	1.11
56 -	1-2	(8/19)	Stained Glass	1.09	1.06	1.11
56 -	3-6	(8/19)	Storefronts	1.09	1.06	1.11
56 -	7	(8/19)	Stonework	1.08	1.07	1.12
56 -	8	(8/19)	Columns, Stone & Concrete	1.08	1.07	1.12
56 -	8	(8/19)	Columns, Wood & Aluminum	1.09	1.07	1.12
57 -	1-6	(9/19)	Roofs	1.08	1.07	1.09
58 -	1	(9/19)	Cold Storage	1.08	1.05	1.11
58 -	2-8	(9/19)	Elevators, Conveying Systems	1.06	1.03	1.06

Sec.	Page	Date		Eastern	Central	Western
61 -	1-8	(12/20)	Tanks	1.05	1.04	1.07
62 -	1	(6/20)	Industrial Pumps & Boilers	1.09	1.01	1.12
62 -	2-3, 6	(6/20)	Piping	1.09	1.01	1.12
62 -	4	(6/20)	Electrical Motors	1.09	1.01	1.12
62 -	5	(6/20)	Steel Stacks, Chutes	1.09	1.01	1.12
62 -	5	(6/20)	Masonry & Concrete Chimneys	1.07	1.02	1.10
62 -	6	(6/20)	Compactors, Incinerators	1.09	1.01	1.12
63 -	1-4	(9/20)	Trailer and Mfg. Housing Parks	1.05	1.04	1.10
63 -	5-10	(9/20)	Manufactured Housing	1.07	1.06	1.10
64 -	1-6	(3/20)	Service Stations, Car Washes	1.11	1.06	1.08
64 -	7-9	(3/20)	Prefabricated Metal Structures	1.09	1.04	1.11
64 -	7-8	(3/20)	Prefab. Wood & Air Structures	1.09	1.06	1.11
65 -	1-12	(3/20)	Equipment Costs	1.08	1.07	1.07
66 -	1	(12/19)	Subdivision Costs	1.08	1.05	1.11
66 -	2-9	(12/19)	Yard Improvements	1.10	1.06	1.13
66 -	10-11	(12/19)	Demolition & Remediation	1.07	1.06	1.11
67 -	1-2	(12/19)	Golf Courses	1.07	1.07	1.09
67 -	3-7	(12/19)	Recreational Facilities	1.07	1.06	1.11
70 -	1-32	(1/21)	Green Section	1.02	1.02	1.07

This page supersedes the April 2021 Green Supplement.

The data included on this page becomes obsolete after update delivery, scheduled for June 2021.

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LOCAL MULTIPLIERS

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

UNITED STATES

CLASS	A	B	C	D	S
COLORADO	1.03	1.02	1.03	1.02	1.02
Aspen	1.13	1.12	1.11	1.11	1.12
Boulder	0.99	0.99	0.99	0.99	0.99
Colorado Springs	1.00	1.00	0.98	1.00	1.00
Costilla County	0.88	0.88	0.88	0.88	0.89
Denver	1.02	1.00	1.02	1.02	1.03
Durango	0.93	0.90	0.90	0.88	0.92
Eagle Co. (x/resort areas)	0.97	0.95	0.95	0.96	0.97
Fort Collins	0.99	1.00	1.03	1.01	1.01
Grand Junction	1.00	0.97	0.97	0.98	1.00
Greeley	1.00	0.99	1.02	1.01	1.00
Gunnison County	0.97	0.98	0.97	0.97	0.98
Kit Carson County	0.90	0.89	0.91	0.91	0.91
Logan County	0.91	0.91	0.92	0.91	0.92
Longmont	0.99	0.98	1.01	1.00	1.00
Loveland	0.97	0.98	1.03	1.01	0.99
Moffat County	0.92	0.93	0.91	0.92	0.92
Montrose County	0.93	0.91	0.92	0.88	0.91
Prowers County	0.91	0.91	0.91	0.92	0.92
Pueblo	0.97	0.95	0.96	0.96	0.96
Steamboat Springs	1.19	1.17	1.17	1.16	1.15
Vail	1.16	1.15	1.15	1.14	1.15
CONNECTICUT	1.17	1.18	1.16	1.16	1.17
Bridgeport	1.19	1.19	1.19	1.18	1.20
Bristol	1.15	1.16	1.16	1.13	1.15
Danbury	1.18	1.20	1.19	1.20	1.20
Fairfield	1.16	1.16	1.18	1.17	1.17
Greenwich	1.32	1.30	1.25	1.27	1.33
Hartford	1.17	1.20	1.20	1.19	1.18
Meriden	1.13	1.16	1.15	1.14	1.14
Middletown	1.13	1.16	1.17	1.15	1.13
Milford	1.12	1.11	1.09	1.09	1.12
New Britain	1.15	1.17	1.16	1.15	1.13
New Haven	1.16	1.16	1.15	1.12	1.15
New London	1.09	1.12	1.10	1.15	1.09
Norwich	1.10	1.12	1.11	1.14	1.10
Stamford	1.30	1.30	1.24	1.27	1.32
Waterbury	1.15	1.14	1.11	1.10	1.13
Windsor Locks	1.15	1.18	1.16	1.15	1.16
DELAWARE	1.13	1.11	1.10	1.11	1.11
Dover	1.11	1.09	1.08	1.08	1.09
Wilmington	1.14	1.12	1.11	1.13	1.12
DIST. OF COLUMBIA	1.09	1.10	1.07	1.07	1.07
FLORIDA	0.94	0.94	0.94	0.93	0.95
Bradenton	0.95	0.96	0.93	0.94	0.96
Brevard County	0.95	0.94	0.91	0.91	0.93
Broward County	0.93	0.94	0.94	0.94	0.96
Dade County	0.91	0.93	0.94	0.94	0.96
Daytona Beach	0.92	0.92	0.91	0.90	0.92
Fort Myers	0.91	0.91	0.92	0.92	0.94
Fort Pierce	0.94	0.92	0.91	0.90	0.94
Gainesville	0.92	0.93	0.93	0.91	0.93
Jacksonville	0.94	0.95	0.94	0.94	0.95
Key West	1.09	1.10	1.11	1.09	1.09
Lakeland	0.93	0.95	0.95	0.94	0.94
Marathon	1.04	1.04	1.06	1.03	1.07

CLASS	A	B	C	D	S
FLORIDA (Continued)					
Miami	0.91	0.93	0.94	0.94	0.96
Naples	0.91	0.93	0.92	0.92	0.94
Ocala	0.92	0.92	0.93	0.91	0.93
Orlando	0.96	0.96	0.95	0.94	0.94
Palm Beach	0.96	0.95	0.94	0.95	0.98
Panama City	0.81	0.82	0.81	0.83	0.82
Pensacola	0.84	0.85	0.85	0.87	0.87
Pinellas County	0.97	0.98	0.96	0.96	0.97
Sarasota	0.95	0.97	0.93	0.96	0.96
Tallahassee	0.94	0.94	0.93	0.93	0.96
Tampa	0.97	0.98	0.96	0.96	0.96
Vero Beach	0.94	0.94	0.91	0.88	0.93
GEORGIA	0.90	0.91	0.87	0.86	0.88
Albany	0.89	0.89	0.84	0.84	0.86
Athens	0.93	0.94	0.89	0.86	0.90
Atlanta	0.97	0.98	0.94	0.94	0.95
Augusta	0.90	0.90	0.84	0.83	0.86
Columbus	0.90	0.90	0.85	0.83	0.85
Macon	0.91	0.91	0.89	0.87	0.89
Rome	0.92	0.93	0.89	0.87	0.89
Savannah	0.86	0.89	0.90	0.90	0.90
Valdosta	0.84	0.84	0.82	0.83	0.83
HAWAII	1.57	1.65	1.60	1.62	1.59
Hilo	1.61	1.69	1.64	1.67	1.65
Kauai	1.72	1.80	1.76	1.78	1.75
Maui	1.49	1.56	1.53	1.53	1.50
Oahu	1.45	1.53	1.47	1.48	1.46
IDAHO	1.03	1.03	1.02	1.01	1.04
Boise	1.05	1.01	1.04	1.02	1.04
Caldwell	1.03	0.99	1.03	1.01	1.02
Coeur d' Alene	1.04	1.06	1.04	1.02	1.07
Idaho Falls	1.03	1.04	1.04	1.02	1.05
Lewiston	1.03	1.04	1.00	0.98	1.04
Moscow	1.04	1.05	1.00	0.99	1.05
Pocatello	1.00	1.02	0.99	0.98	1.02
Twin Falls	1.02	1.03	1.03	1.03	1.04
ILLINOIS	1.14	1.15	1.15	1.15	1.14
Alton	1.03	1.05	1.08	1.08	1.04
Aurora	1.23	1.25	1.26	1.25	1.23
Belleville	1.09	1.11	1.13	1.11	1.07
Bloomington	1.09	1.13	1.12	1.14	1.13
Carbondale	1.10	1.10	1.10	1.09	1.08
Centralia	1.09	1.08	1.11	1.10	1.09
Champaign	1.09	1.10	1.10	1.10	1.10
Chicago	1.28	1.28	1.28	1.28	1.27
Danville	1.09	1.10	1.09	1.10	1.10
De Kalb	1.22	1.24	1.24	1.23	1.22
Decatur	1.05	1.06	1.05	1.06	1.05
East St. Louis	1.07	1.09	1.11	1.11	1.08
Elgin	1.23	1.25	1.24	1.24	1.23
Evanston	1.25	1.26	1.26	1.25	1.24
Galesburg	1.10	1.10	1.07	1.08	1.09
Joliet	1.23	1.25	1.25	1.25	1.23
Kankakee	1.25	1.28	1.27	1.29	1.27
Marion	1.10	1.10	1.10	1.09	1.09
Moline	1.07	1.04	1.03	1.01	1.03

CLASS	A	B	C	D	S
ILLINOIS (Continued)					
Normal	1.10	1.13	1.13	1.15	1.14
Peoria	1.08	1.12	1.10	1.11	1.10
Quincy	1.08	1.13	1.13	1.12	1.11
Rock Island	1.08	1.06	1.05	1.06	1.05
Rockford	1.14	1.19	1.16	1.17	1.15
Skokie	1.26	1.27	1.28	1.29	1.26
Springfield	1.05	1.08	1.09	1.09	1.07
Urbana	1.09	1.10	1.10	1.10	1.10
Waukegan	1.24	1.25	1.25	1.23	1.24
INDIANA	1.02	1.03	1.03	1.03	1.04
Anderson	0.97	0.96	0.97	0.98	0.99
Bloomington	0.99	0.99	0.98	0.99	1.02
Columbus	0.98	0.99	0.97	0.97	0.97
Elkhart	1.04	1.04	1.04	1.05	1.06
Evansville	0.97	1.03	1.03	1.03	1.03
Fort Wayne	0.98	1.02	1.01	1.00	1.00
Gary	1.24	1.24	1.25	1.25	1.24
Hammond	1.24	1.24	1.25	1.25	1.24
Indianapolis	0.98	0.99	1.00	1.02	1.02
Kokomo	0.99	0.99	0.97	0.99	0.99
Lafayette	0.98	1.00	0.98	0.98	1.01
Logansport	0.95	0.95	0.93	0.94	0.97
Marion	0.95	0.97	0.94	0.94	0.98
Michigan City	1.24	1.23	1.24	1.24	1.23
Muncie	0.95	0.96	0.98	0.99	0.98
Richmond	0.95	0.96	0.95	0.96	0.97
South Bend	1.02	1.02	1.04	1.04	1.04
Terre Haute	0.99	1.00	0.98	0.99	1.00
IOWA	0.99	1.01	1.00	1.01	1.01
Burlington	1.00	0.99	0.97	0.97	0.99
Cedar Rapids	0.99	1.00	1.00	1.02	1.01
Council Bluffs	0.93	0.97	0.94	0.92	0.94
Davenport	1.08	1.06	1.05	1.05	1.05
Des Moines	0.97	0.98	1.00	0.99	1.00
Dubuque	1.05	1.05	1.02	1.05	1.03
Fort Dodge	0.97	1.00	1.00	1.00	1.01
Iowa City	1.00	1.01	1.01	1.04	1.02
Mason City	1.01	1.05	1.04	1.07	1.05
Sioux City	0.91	0.95	0.93	0.94	0.94
Waterloo	1.00	1.02	1.02	1.03	1.03
KANSAS	0.94	0.95	0.95	0.95	0.95
Dodge City	0.93	0.92	0.95	0.94	0.93
Fort Scott	0.91	0.93	0.92	0.93	0.92
Garden City	0.88	0.87	0.89	0.89	0.88
Goodland	0.91	0.89	0.91	0.91	0.90
Hays	0.88	0.87	0.86	0.84	0.88
Kansas City	1.05	1.07	1.07	1.07	1.06
Lawrence	1.01	1.02	1.04	1.05	1.03
Liberal	0.86	0.86	0.87	0.85	0.87
Manhattan	0.92	0.94	0.95	0.96	0.94
Olathe	1.05	1.07	1.08	1.07	1.06
Overland Park	1.05	1.07	1.07	1.07	1.06
Pittsburg	0.89	0.90	0.89	0.88	0.89
Salina	0.92	0.93	0.91	0.91	0.93
Topeka	0.97	1.00	0.98	0.95	1.02
Wichita	0.94	0.91	0.91	0.90	0.94

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The data included on this page becomes obsolete after update delivery, scheduled for July 2021.

LOCAL MULTIPLIERS

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

UNITED STATES

CLASS	A	B	C	D	S
KENTUCKY	0.96	0.96	0.96	0.97	0.97
Ashland	1.04	1.04	1.03	1.05	1.05
Bowling Green	0.93	0.94	0.94	0.95	0.97
Covington	0.96	0.98	0.98	0.99	0.98
Frankfort	0.93	0.93	0.94	0.96	0.93
Lexington	0.94	0.94	0.94	0.96	0.94
Louisville	0.96	0.93	0.93	0.95	0.94
Newport	0.96	0.98	0.98	0.99	0.98
Owensboro	0.95	0.99	0.98	0.96	1.01
Paducah	0.96	0.95	0.95	0.95	0.95
LOUISIANA	0.87	0.88	0.89	0.88	0.87
Alexandria	0.84	0.88	0.91	0.89	0.89
Baton Rouge	0.86	0.85	0.86	0.87	0.86
Lafayette	0.85	0.88	0.89	0.90	0.85
Lake Charles	0.87	0.90	0.88	0.85	0.88
Monroe	0.87	0.88	0.87	0.87	0.87
New Orleans	0.89	0.87	0.87	0.87	0.85
Shreveport	0.90	0.91	0.93	0.91	0.91
MAINE	1.03	1.02	1.04	1.04	1.04
Auburn	1.07	1.06	1.08	1.07	1.06
Augusta	1.09	1.06	1.09	1.07	1.10
Bangor	0.98	0.97	1.02	1.00	1.00
Biddeford	1.08	1.07	1.11	1.11	1.07
Caribou	0.96	0.95	0.96	0.96	0.97
Lewiston	1.07	1.06	1.08	1.07	1.06
Portland	1.07	1.05	1.09	1.09	1.09
Presque Isle	0.96	0.95	0.96	0.96	0.97
Waterville	1.00	0.99	1.00	0.99	1.01
MARYLAND	1.03	1.05	1.03	1.02	1.03
Anne Arundel County	1.04	1.05	1.00	1.00	1.04
Baltimore	1.00	1.02	1.00	1.00	1.01
Bethesda	1.07	1.09	1.06	1.04	1.05
Cumberland	1.02	1.04	1.05	1.04	1.04
Eastern Shore Area	0.97	0.97	0.95	0.95	0.98
Hagerstown	1.00	1.00	1.00	0.99	0.99
Silver Spring	1.06	1.09	1.05	1.03	1.06
MASSACHUSETTS	1.17	1.18	1.19	1.19	1.17
Boston	1.29	1.29	1.31	1.31	1.29
Cape Cod	1.18	1.19	1.19	1.20	1.17
Fall River	1.16	1.16	1.18	1.17	1.15
Holyoke	1.10	1.15	1.16	1.15	1.13
Lawrence	1.18	1.19	1.19	1.20	1.15
Lowell	1.18	1.19	1.19	1.19	1.16
Lynn	1.23	1.23	1.23	1.22	1.21
Methuen	1.18	1.17	1.19	1.21	1.16
Natick	1.21	1.21	1.21	1.23	1.19
New Bedford	1.17	1.18	1.18	1.18	1.16
Pittsfield	1.06	1.09	1.09	1.10	1.08
Springfield	1.14	1.20	1.20	1.18	1.18
Worcester	1.11	1.12	1.13	1.14	1.14

CLASS	A	B	C	D	S
MICHIGAN	1.04	1.05	1.04	1.04	1.05
Adrian	1.03	1.05	1.05	1.05	1.06
Alpena	1.00	1.01	0.98	0.97	1.00
Ann Arbor	1.08	1.10	1.10	1.10	1.12
Battle Creek	1.00	1.02	1.01	0.99	1.00
Bay City	1.08	1.05	1.05	1.05	1.08
Detroit	1.09	1.10	1.11	1.13	1.12
Escanaba	0.96	0.98	0.98	0.97	0.98
Flint	1.07	1.07	1.04	1.04	1.07
Grand Rapids	1.02	1.00	1.02	1.01	1.00
Ishpeming	0.98	1.00	1.00	0.99	0.99
Jackson	1.03	1.04	1.04	1.03	1.05
Kalamazoo	1.05	1.05	1.05	1.04	1.05
Lansing	0.99	1.02	1.00	0.98	0.99
Marquette	0.98	1.00	1.00	0.99	0.99
Monroe	1.05	1.07	1.07	1.07	1.08
Muskegon	1.02	1.03	1.03	1.02	1.03
Niles	1.08	1.07	1.10	1.09	1.10
Pontiac	1.09	1.10	1.10	1.10	1.11
Port Huron	1.05	1.07	1.06	1.08	1.08
Saginaw	1.05	1.03	1.03	1.03	1.04
Sault Ste. Marie	0.99	1.01	0.99	0.99	1.00
Traverse City	1.00	1.03	1.04	1.02	1.04
Ypsilanti	1.08	1.10	1.10	1.10	1.12
MINNESOTA	1.12	1.13	1.12	1.10	1.13
Austin	1.08	1.12	1.10	1.09	1.12
Brainerd	1.10	1.09	1.08	1.07	1.08
Duluth	1.13	1.12	1.11	1.08	1.12
Hibbing	1.11	1.10	1.08	1.04	1.09
Mankato	1.07	1.11	1.09	1.07	1.11
Minneapolis	1.19	1.19	1.16	1.16	1.18
Moorhead	1.13	1.11	1.12	1.09	1.15
Rochester	1.10	1.14	1.13	1.11	1.16
St. Cloud	1.07	1.13	1.12	1.10	1.12
St. Paul	1.18	1.19	1.16	1.17	1.18
MISSISSIPPI	0.86	0.89	0.88	0.89	0.88
Biloxi	0.86	0.92	0.90	0.92	0.90
Columbus	0.86	0.87	0.87	0.88	0.86
Greenville	0.88	0.89	0.89	0.90	0.88
Gulfport	0.85	0.90	0.90	0.92	0.91
Hattiesburg	0.87	0.89	0.88	0.88	0.88
Jackson	0.87	0.90	0.88	0.89	0.87
Laurel	0.89	0.93	0.88	0.89	0.89
Meridian	0.86	0.91	0.89	0.90	0.88
Natchez	0.85	0.86	0.86	0.86	0.86
Tupelo	0.85	0.89	0.88	0.88	0.86
Vicksburg	0.86	0.87	0.87	0.88	0.86

CLASS	A	B	C	D	S
MISSOURI	0.99	1.00	1.01	1.00	1.00
Cape Girardeau	0.94	0.93	0.95	0.93	0.92
Columbia	1.02	1.04	1.02	1.01	1.05
Independence	1.04	1.06	1.07	1.07	1.05
Jefferson City	0.97	0.98	0.98	1.00	0.98
Joplin	0.90	0.89	0.91	0.90	0.91
Kansas City	1.06	1.07	1.06	1.07	1.06
Rolla	0.88	0.90	0.91	0.90	0.87
Springfield	1.02	1.00	1.02	1.02	1.03
St. Joseph	1.00	1.03	1.03	1.03	1.01
St. Louis	1.07	1.09	1.11	1.11	1.08
MONTANA	0.93	0.95	0.97	0.94	0.97
Billings	0.95	0.97	1.00	0.97	1.00
Bozeman	0.94	0.96	0.96	0.94	0.99
Butte	0.92	0.96	0.96	0.91	0.95
Great Falls	0.94	0.95	0.95	0.91	0.97
Helena	0.90	0.92	0.95	0.93	0.94
Lewistown	0.91	0.93	0.94	0.92	0.93
Missoula	0.97	0.98	1.01	0.98	1.02
NEBRASKA	0.94	0.94	0.94	0.93	0.95
Grand Island	0.94	0.92	0.92	0.93	0.93
Lincoln	0.95	0.94	0.91	0.90	0.95
Norfolk	0.95	0.96	0.97	0.96	0.97
North Platte	0.94	0.94	0.96	0.95	0.94
Omaha	0.92	0.95	0.94	0.93	0.95
NEVADA	1.13	1.12	1.11	1.09	1.14
Carson City	1.12	1.10	1.10	1.09	1.14
Elko	1.13	1.15	1.12	1.11	1.16
Fallon	1.04	1.01	1.01	0.99	1.03
Las Vegas	1.14	1.14	1.14	1.16	1.15
Lincoln County	1.03	1.04	1.06	1.07	1.05
Nye County	0.97	0.94	0.92	0.89	0.96
Reno	1.12	1.09	1.05	1.03	1.10
Sparks	1.12	1.09	1.06	1.03	1.10
Tahoe Area	1.25	1.23	1.26	1.25	1.27
NEW HAMPSHIRE	1.04	1.07	1.05	1.04	1.04
Concord	0.98	1.03	0.99	0.98	0.99
Dover	1.09	1.11	1.09	1.09	1.08
Keene	0.99	1.02	0.99	0.99	0.99
Laconia	0.97	1.00	0.98	0.97	0.97
Littleton	0.97	0.97	0.96	0.95	0.98
Manchester	1.03	1.08	1.06	1.04	1.04
Nashua	1.17	1.20	1.17	1.15	1.15
Portsmouth	1.06	1.07	1.06	1.06	1.05
Rochester	1.07	1.11	1.08	1.07	1.08
Salem	1.10	1.14	1.12	1.09	1.11

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APPENDIX C: GRAIN ELEVATOR SALES

Sales through July 2020

Index			**Page**
Miscellaneous Information			72
Grain Elevator Sales Summary			76
Sale #	**County**	**Dominant Type**	**Page**
2	Cheyenne	Steel	79
3	Cheyenne	Steel	81
11	Douglas	Concrete	83
17	Harper	Concrete	85
18	Coffey	Steel	87
21	Lyon	Steel	89
22	Montgomery	Concrete	91
26	Osage	Steel	93
30	Reno	Steel	95
33	Sherman	Concrete	97
34	Sherman	Concrete	99
41	Stevens	Steel	101
42	Crawford	Steel	103
43	Crawford	Steel	105
45	Greeley	Steel	107
46	Haskell	Steel	110

47	Marshall	Steel	112
48	Republic	Mix	114
49	Rice	Concrete	117
50	Logan-Scott	Mix	119
51	Sheridan	Steel	122
52	Marshall	Steel	124
60	Doniphan	Mix	126
63	Phillips	Steel	128
64	Brown	Steel	130
71	Morris	Concrete	132
72	Morris	Concrete	134
73	Thomas	Concrete	136
74	Stanton	Concrete	138
75	Stanton	Steel	140
76	Stanton	Concrete	142
77	Haskell	Concrete	144
78	Cheyenne	Steel	146
79	Barton	Steel	148
80	Rice	Concrete	150

MISCELLANEOUS INFORMATION

Abstractions and Negative Value

When applying the abstraction formula in estimating the contributing value of the grain storage structure assets, some of the sale components have little or no contributing value with a few structures reflecting negative values. These structures are mostly comprised of older components that are near the end of the usable physical life. Some of the operators stated that flat storage structures, although licensed, are not being used or are the last place management selected to store grain. This is usually due to the inefficient manual unloading methods required to empty the facility. Management of some of the sale properties indicated they are retaining older non-used licensed storage for emergency overflow while others state future demolition of the older storage may occur to accommodate the site area for new construction. When buyers demolish licensed storage after a sale transaction closes, the capacity of those structures is not included in the contributing value abstractions of the sale assets. If after a sale the new ownership converts licensed storage to other non-grain storage uses such as bagged feed, seed, and fertilizer storage, those structures are included in the assets contributing value abstractions but not considered as a grain storage asset in the analysis.

The abstractions show that older flat storage and some of the older upright steel bins and tanks appear to have little or no measurable contributing value in some areas. However, if the grain storage assets of a sale property are only comprised of older structures that are being used, some measurable contributing value does exist. Properties having a higher percentage of newer storage construction in most instances cause the limited or non-use of the older flat storage and marginal upright steel resulting in a reduction of management's utility of the asset and a lower contributing value of the structure to the overall value of the property. Flat storage that is not licensed and is being implemented for storage of other non-grain items should be valued through the Orion CAMA system.

When completing the abstraction process, there are cases when the execution of the abstraction formula results in a $0 contributing value for a structure. There are also cases when the formula results in a negative contributing value for that structure. If the value of a non-grain asset is allowed to fall below $0, additional value is transferred to the grain storage assets by default. Therefore, when negative values such as these are encountered, the values are defaulted to $0 so as not to attribute additional value to the grain assets.

Premium Value

Sometimes the strength of the sale price reflects a premium paid for the property assets. Some analysts may attribute the premium or overage paid to "blue sky," "good will" or "going concern" to control the grain storage assets in an aggressive or competitive market. In some cases, these outlying sales indicate the need for additional investigation to ensure all of the sale component assets are included in the abstraction analysis and that the price reported on transaction documents is an accurate declaration of all of the consideration paid for a property. As a result of a follow-up review, it would not be uncommon for an adjustment to be made for these intangible assets. If a firm number can be documented from a contract document, by visiting with a facility manager or a source familiar with the sale, the number is generally considered. When the data indicates there may be some intangible assets but the amount of the assets cannot not be verified, an amount of up to 20% of the total sale amount may be allocated for this adjustment.

Depreciation Floor

Traditional approaches for depreciating grain elevators used an estimated age-life of up to 60 years. For purposes of this guide the Property Valuation Division has implemented the following economic lives in the table below when abstracting data to arrive at the depreciated replacement cost new (DRCN). These economic lives apply to structures that are licensed and currently being used for grain storage.

The appraiser will encounter active licensed grain storage structures indicating 100% or greater depreciation, thus indicating a cost value of $0 or a negative amount. While the structure may be at the end of its economic life, PVD believes such structures still have some contributory value to the property. Therefore, PVD has established a depreciation floor for the indicated percent good assignment in the abstraction process. This would seem to support sound appraisal judgment by not allowing an active licensed structure to be allocated at $0 or a negative value. The maximum depreciation for all types of storage is 90% and economic life is 60 years.

Storage Type	Economic Life	Depreciation Maximum	Minimum Pct Good
Upright Concrete	60 years	90%	10%
Bolted Steel	60 years	90%	10%
Steel	60 years	90%	10%
Wood Crib Metal Clad	60 years	90%	10%
Concrete Stave	60 years	90%	10%
Flat Storage	60 years	90%	10%

Pack and Even Example

WA-310	U.S. DEPARTMENT OF AGRICULTURE Farm Service Agency BIN CHART BY SECTION	LICENSE / CODE NO. :
Name : COMARK GRAIN MARKETING ELEVATORS Location : CHENEY KS		3-9839

Section Number : 14V Container Number	Capacity	Effective Depth	Air Space	Grain Depth	BU Per Foot	Test Wt. Per Bushel	Base Pack	Grain PkFactor	Kind Grade	Kind Grade
001	44,399	26.2			1,547.0		10.0			
002	44,399	26.2			1,547.0		10.0			
003	197,942	48.2			3,792.0		10.0			

	28,674	Add	10.0000 %	586	to even.	Section Code: 8-4108	
316,000		Total Capacity of Section		14V		Location :	LENORA, KS, NORTON

<u>Section Number 14V</u>

316,000 bushels = **Total licensed capacity** of the 3 corrugated steel bins – Section 14V

286,740 bushels = **Total volume bushel capacity** before pack & even addition (44,399 + 44,399 + 197,942)

- 28,674 bushels = **Pack** addition specified from bin chart above (286,740 bu. x 10%)

<u>- 586 bushels</u> = **Even** addition - Total licensed capacity 316,000 minus (286,740 + pack addition of 28,674)

286,740 bushels reported + 28674 pack + 586 even = Total licensed capacity of 316,000 bushels

Licensed Capacity 316,000 bushels/286,740 before Pack & Even bushels = 1.1020436 factor

#	Structure	Cap before P&E		P&E Factor		Adjusted Total
001	Corrugated Steel Bin	44,399	x	1.1020436	=	48,930 bu.
002	Corrugated Steel Bin	44,399	x	1.1020436	=	48,930 bu.
003	Corrugated Steel Bin	197,942	x	1.1020436	=	218,140 bu.
				Total	**=**	**316,000 bu.**

Interpolation Calculation

It may be necessary to interpolate between unit values if the capacity (or other unit) is not listed in the MS table. Assume a flat steel storage facility has a 220,000 bushel capacity and you are using the following table.

HORIZONTAL STORAGE

The following costs are for horizontal or flat storage without loading and/or unloading systems. Design loads vary and costs may vary by plus or minus 20%. For attached loading and/or unloading systems within the structure, add 5% of per bushel capacity.

For greater detail, see storage buildings on Pages 24 and 27.

TOTAL BUSHEL CAPACITY	COST PER BUSHEL		
	WOOD	STEEL	CONCRETE
50,000	$1.73	$1.91	$2.33
75,000	1.62	1.81	2.20
100,000	1.53	1.73	2.11
150,000	1.45	1.64	1.99
200,000	1.38	1.56	1.91
250,000	1.35	1.53	1.86
300,000	1.29	1.47	1.81
400,000	1.24	1.44	1.73
500,000	1.20	1.39	1.70
750,000	1.12	1.31	1.60
1,000,000	1.07	1.27	1.52
2,000,000 and over	.97	1.15	1.39

- The 220,000 capacity falls between 200,000 and 250,000 on the table.
- Determine the difference in the unit costs AND the bushel capacity from the table. The number being sought is 220,000 bushels so you would look directly above and below this number to determine the differences to calculate. In this case you would use the following information.
- The costs are $1.56 for 200,000 and $1.53 for 250,000. The calculation is as follows:

  Rate for steel 200,000 bu. $1.56

  Rate for steel 250,000 bu. -1.53

  = **.03 cost difference**
- Calculate the difference in cost $0.03 / difference in bushel capacity 50,000 bu. = $0.0000006
- Multiply the factor of $0.0000006 x 20,000 bu. difference between the actual and 200,000 bu. low benchmark = $0.012

  $1.56 - $0.012 = $1.548

  OR
- Multiply the factor of $0.0000006 x 30,000 bu. difference between the actual and 250,000 bu. high benchmark = $0.018

  $1.53 + $0.018 = $1.548

  Either method results in the same **$1.55 per bushel rounded**

Note: Many times the cost difference will be much larger making the interpolation process much more significant.

GRAIN ELEVATOR SALE SUMMARY

Region Sale #	Dominant Type County	Sale Month Sale Year	Avg Effective Age Annual Depreciation	Grain Storage Bu Total Depreciation %	Sale Price Net Sale Price	Gross Storage per Bu Net Storage per Bu
East 11	Concrete Douglas	9 2011	51 1.67%	412,000 85%	$1,300,000 $660,341	$3.16 $1.60
East 18	Steel Coffey	5 2012	43.85 1.79%	65,000 78%	$150,000 $35,920	$2.31 $0.55
East 21	Steel Lyon	6 2010	27.3 1.97%	222,000 54%	$300,000 $240,077	1.35 1.08
East 22	Concrete Montgomery	4 2010	39.55 1.86%	873,000 74%	$885,000 $691,124	$1.01 $0.79
East 26	Mix Osage	7 2012	31 2.02%	415,308 63%	$860,000 $331,374	$2.07 $0.80
East 42	Steel Crawford	4 2015	47.25 1.75%	223,000 83%	$150,000 $73,126	$0.67 $0.33
East 43	Steel Crawford	4 2015	11.15 1.73%	555,000 19%	$4,199,500 $1,830,735	$7.57 $3.30
East 47	Steel Marshall	9 2014	32.48 1.91%	933,000 62%	$1,660,000 $653,172	$1.78 $0.70
East 52	Steel Marshall	8 2016	13.32 2.93%	1,652,000 39%	$3,932,465 $2,872,494	$2.38 $1.74
East 60	Mix Doniphan	9 2016	55.04 1.50%	1,146,253 83%	$178,800 $132,801	$0.16 $0.12
East 64	Steel Brown	9 2016	26.56 2.34%	445,368 62%	$432,000 $391,648	$0.97 $0.88
East 71	Concrete Morris	6 2017	59 1.53%	558,226 90%	$1,500,000 $1,118,404	$2.69 $2.00
East 72	Steel Morris	6 2017	52 1.71%	204,057 89%	$500,000 $430,902	$2.45 $2.11
West 2	Steel Cheyenne	12 2010	46.64 1.75%	167,000 82%	$125,000 $107,470	$0.75 $0.64
West 3	Steel Cheyenne	3 2010	15.67 2.34%	1,097,736 37%	$1,250,000 $857,390	$1.14 $0.78
West 17	Concrete Harper	12 2012	64.71 1.35%	276,415 87%	$165,000 $126,035	$0.60 $0.46

Region Sale #	Dominant Type County	Sale Month Sale Year	Avg Effective Age Annual Depreciation	Grain Storage Bu Total Depreciation %	Sale Price Net Sale Price	Gross Storage per Bu Net Storage per Bu
West	Mix	4	28.62	347,111	$195,000	$0.56
30	Reno	2010	2.58%	74%	$138,374	$0.40
West	Concrete	4	63.55	2,677,049	$1,382,063	$0.52
33	Sherman	2010	1.42%	90%	$871,008	$0.43
West	Concrete	4	39.29	2,109,078	$2,300,000	$1.09
34	Sherman	2011	1.83%	72%	$1,541,637	$0.73
West	Mix	10	40.55	786,000	$1,425,000	$1.81
41	Cheyenne	2015	1.88%	76%	$804,833	$1.02
West	Steel	7	26.59	1,996,714	$5,020,000	$2.51
45	Greeley	2013	1.69%	45%	$3,325,461	$1.67
West	Steel	6	13.57	1,804,000	$3,725,652	$2.07
46	Haskell	2014	1.74%	24%	$2,770,820	$1.54
West	Mix	3	50.56	5,735,722	$13,700,000	$2.39
48	Republic	2014	1.61%	81%	$10,396,554	$1.81
West	Concrete	9	22.98	951,294	$3,100,000	$3.26
49	Rice	2014	1.86%	43%	$2,458,700	$2.58
West	Mix	9	37.04	2,633,920	$4,500,000	$1.71
50	Logan-Scott	2014	1.65%	61%	$3,652,004	$1.39
West	Steel	8	5.68	1,441,782	$950,000	$0.66
51	Sheridan	2015	11.69%	66%	$820,056	$0.57
West	Steel	6	39.29	869,231	$1,500,000	$1.73
63	Phillips	2016	1.67%	66%	$786,451	$0.90
West	Concrete	5	57.71	597,583	$1,720,000	$2.88
73	Thomas	2018	1.52%	88%	$1,143,867	$1.91
West	Concrete	3	54.32	1,025,000	$972,000	$0.95
74	Stanton	2019	1.60%	87%	$583,766	$0.57
West	Mix	3	34.84	3,034,720	$2,957,418	$0.97
75	Stanton	2019	2.03%	71%	$1,781,858	$0.59
West	Concrete	3	51.03	1,052,000	$2,140,170	$2.03
76	Stanton	2019	1.54%	79%	$1,300,576	$1.24

Region Sale #	Dominant Type County	Sale Month Sale Year	Avg Effective Age Annual Depreciation	Grain Storage Bu Total Depreciation %	Sale Price Net Sale Price	Gross Storage per Bu Net Storage per Bu
West 77	Concrete Haskell	8 2019	39.43 1.76%	1,847,232 69%	$950,000 $610,030	$0.51 $0.33
West 78	Steel Cheyenne	7 2019	9.91 1.97%	714,000 20%	$2,050,000 $1,564,050	$2.87 $2.19
West 79	Steel Barton	2 2020	34.42 1.81%	2,173,937 62%	$2,600,000 $2,484,062	$1.20 $1.14
West 80	Concrete Rice	4 2020	77.39 1.17%	250,445 91%	$100,000 $52,817	$0.40 $0.21

GRAIN ELEVATOR SALE REPORTS

Sale Number: 2

Guide Year: 2020

Region	County	Sale Month/Year:
West	Cheyenne	12 / 2010

Total Sale Price:	$125,000	**Avg Effective Age:**	46.64
Land Size:		**Total Depreciation %:**	0.8183
Land Value:		**Annual Depreciation:**	1.75%
Amt PP/BV:	$0	**Total Accrued Depreciation:**	$663,262
Non-Grain Structures RCNLD:	$18,106	**Net Sale Price:**	$107,470
Seller:	Douglas-Sager Grain Co.	**Grain Storage:**	167,000
Buyer:	Jonathan Waters	**Net Storage per Bu:**	$0.64
Situs Address:	Wheeler, KS	**Avg Conc:**	
		Avg Steel:	$0.85
		Avg Flat:	
		Avg Metal Clad:	$1.00

Railroad Service

Location	Number of Cars
Wheeler	8

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Wheeler	Bolted Steel Tanks	1960	50	27,188	$111,199	83%	$17,944
Wheeler	Steel Bin	1976	34	60,095	$158,050	57%	$66,310
Wheeler	Bolted Steel Tanks	1960	50	43,270	$164,426	83%	$26,533
Wheeler	Metal Clad	1949	61	36,447	$376,862	90%	$36,488

Notes: Seller sold Bird City (sale 3) assets to Frontier Ag and later sold Wheeler assets to local farmer/landowner. Sale price of Bird City sale was mistakenly posted to this parcel by county appraiser staff. Facility has rail siding with 8 car capacity and is on leased land so only structures sold.

Sale Number: 2

Guide Year: 2020

Wheeler, Cheyenne County

Wheeler, Cheyenne County

Wheeler, Cheyenne County

Wheeler, Cheyenne County

Sale Number: 3

Guide Year: 2020

Region	County	Sale Month/Year:
West	Cheyenne	3 / 2010

Total Sale Price:	$1,250,000	**Avg Effective Age:**	15.67
Land Size:	7	**Total Depreciation %:**	0.3671
Land Value:	$17,150	**Annual Depreciation:**	2.34%
Amt PP/BV:	$318,342	**Total Accrued Depreciation:**	$940,645
Non-Grain Structures RCNLD:	$65,585	**Net Sale Price:**	$857,390
Seller:	Douglas-Sager Grain Co.	**Grain Storage:**	1,097,736
Buyer:	Frontier Ag Inc.	**Net Storage per Bu:**	$0.78
Situs Address:	2874 US Hwy 36, Bird City, KS 67731	**Avg Conc:**	
		Avg Steel:	$1.52
		Avg Flat:	$1.37
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
Bird City	20

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Bird City	Steel Bins 2 @ 10,991 bu.	1977	33	21,982	$89,687	55%	$35,149
Bird City	Steel Bins 2 @ 11,041 bu.	1975	35	22,082	$89,653	58%	$32,532
Bird City	Steel Bin	1977	33	11,237	$45,510	55%	$17,836
Bird City	Steel Bin	1980	30	33,172	$72,315	50%	$31,490
Bird City	Steel Bins 2 @ 52,923 bu.	1995	15	105,846	$224,394	25%	$146,569
Bird City	Steel Bin	1996	14	115,276	$244,385	23%	$163,174
Bird City	Steel Bin	1999	11	480,000	$1,084,800	18%	$771,548
Bird City	Flat Storage	1991	19	308,141	$711,806	32%	$423,607

Notes: A movable ground storage containment system was located on sale property that is considered personal property as the bunker panels can be repositioned or moved from site to site. Business value was also allowed which reduced the net sale amount.

Sale Number: 3

Guide Year: 2020

Bird City, Cheyenne County

Bird City, Cheyenne County

Bird City, Cheyenne, County

Bird City, Cheyenne County

Sale Number: 11

Guide Year: 2020

Region	County	Sale Month/Year:
East	Douglas	9 / 2011

Total Sale Price:	$1,300,000	**Avg Effective Age:**	51
Land Size:	9	**Total Depreciation %:**	0.85
Land Value:	$182,770	**Annual Depreciation:**	1.67%
Amt PP/BV:	$260,000	**Total Accrued Depreciation:**	$2,469,179
Non-Grain Structures RCNLD:	$196,888	**Net Sale Price:**	$660,341
Seller:	Acorn East, LLC	**Grain Storage:**	412,000
Buyer:	Ottawa Coopersative Asso	**Net Storage per Bu:**	$1.60
Situs Address:	2001 Moodie Road, Lawrence, KS 66044	**Avg Conc:**	$1.09
		Avg Steel:	$0.61
		Avg Flat:	
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
Lawrence	
no service	

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Lawrence	Concrete - Slip Form Eleva	1960	51	153,756	$1,411,480	85%	$211,722
Lawrence	Concrete - Slip Form Anne	1960	51	232,026	$1,387,515	85%	$208,127
Lawrence	Bolted Steel Tanks 2 @ 13	1960	51	26,218	$105,921	85%	$15,888

Notes: Business value adjustment of $260,000 because of leased buildings on site.

Sale Number: 11

Guide Year: 2020

Lawrence, Douglas County

Lawrence, Douglas County

Lawrence, Douglas County

Lawrence, Douglas County

Sale Number: 17

Guide Year: 2020

Region	County	Sale Month/Year:
West	Harper	12 / 2012

Total Sale Price:	$165,000	**Avg Effective Age:**	64.71
Land Size:	5	**Total Depreciation %:**	0.8723
Land Value:	$12,825	**Annual Depreciation:**	1.35%
Amt PP/BV:	$0	**Total Accrued Depreciation:**	$1,703,007
Non-Grain Structures RCNLD:	$26,139	**Net Sale Price:**	$126,035
Seller:	Danville Cooperativer Asso	**Grain Storage:**	276,415
Buyer:	Schmidt Family Land & Cat	**Net Storage per Bu:**	$0.46
Situs Address:	Freeport, KS	**Avg Conc:**	$0.90
		Avg Steel:	
		Avg Flat:	
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
Freeport	
no service	

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Freeport	Concrete - Slip Form Elev	1941	71	42,415	$542,064	90%	$54,207
Freeport	Concrete - Slip Form Eleva	1941	71	174,000	$1,139,700	90%	$113,970
Freeport	Concrete - Stave Concrete	1970	42	60,000	$270,600	70%	$81,180

Notes: The seller was a local cooperative who had constructed a new 530,000 bushel facility on a tract situated a few miles to the south. The buyer is local farmer/rancher and acquired the property for personal grain storage so the facility which was federally licensed prior to sale is no longer licensed. Prior to the sale, only the 174,000 bushel annex was licensed. The sellers reportedly offered the property by word of mouth for a price of $250,000 and a fee appraisal was reportedly performed prior to sale.
Non grain storage building improvement consisted of a 720 SF older single wide mobile home converted to an office that had a canopy constructed over the structure to prevent roof leakage and a 312 SF shed. Another older tin and frame shed was considered of no practical value due to the condition.

Sale Number: 17

Guide Year: 2020

Freeport, Harper County

Freeport, Harper County

Freeport, Harper County

Freeport, Harper County

Sale Number: 18

Guide Year: 2020

Region	County	Sale Month/Year:
East	Coffey	5 / 2012

Total Sale Price:	$150,000	**Avg Effective Age:**	43.85
Land Size:	1	**Total Depreciation %:**	0.7836
Land Value:	$10,360	**Annual Depreciation:**	1.79%
Amt PP/BV:	$70,000	**Total Accrued Depreciation:**	$262,700
Non-Grain Structures RCNLD:	$39,283	**Net Sale Price:**	$35,920
Seller:	Lebo Grain Company	**Grain Storage:**	65,000
Buyer:	Lohmeyer & Lohmeyer Co	**Net Storage per Bu:**	$0.55
Situs Address:	North Elm & Broadway, Lebo, KS	**Avg Conc:**	
		Avg Steel:	$1.12
		Avg Flat:	
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
Lebo	
no service	

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Lebo	Steel - Elevator	1960	52	3,000	$75,630	87%	$8,656
Lebo	Steel - Hopper bins	1980	32	2,000	$15,220	53%	$6,097
Lebo	Steel - Corrugated	1967	45	40,000	$137,600	75%	$29,529
Lebo	Steel Hopper Bin	1969	43	10,000	$53,400	72%	$12,988
Lebo	Steel Hopper Bin	1972	40	10,000	$53,400	67%	$15,280

Notes: Buyer implementing storage for themselves and they also operate a trucking company. An office building owned by the buyer is located on a parcel adjacent to the south of grain storage that was not included in the sale. Inventory items valued at $70,000 are reported to be included with sale which could not be verified during site review. SVQ stated no personal property included in sale. One parcel includes a Quonset and shop with warehouse that are connected by an enclosed walkway. Some of the area is being used for parking of fertilizer tanks and trucks. The building on another parcel is an older structure which covers the entire site.

Sale Number: 18

Guide Year: 2020

Lebo, Coffey County

Lebo, Coffey County

Lebo, Coffey County

Lebo, Coffey County

Sale Number: 21

Guide Year: 2020

Region	County	Sale Month/Year:
East	Lyon	6 / 2010

Total Sale Price:	$300,000	**Avg Effective Age:**	27.3
Land Size:	1	**Total Depreciation %:**	0.5388
Land Value:	$8,330	**Annual Depreciation:**	1.97%
Amt PP/BV:	$0	**Total Accrued Depreciation:**	$388,341
Non-Grain Structures RCNLD:	$61,043	**Net Sale Price:**	$240,077
Seller:	Hartford Elevator Inc.	**Grain Storage:**	222,000
Buyer:	Miller Elevator	**Net Storage per Bu:**	$1.08
Situs Address:	Hartford, KS	**Avg Conc:**	
		Avg Steel:	$1.50
		Avg Flat:	
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
Hartford	
no service	

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Hartford	Steel Bins	1986	24	75,000	$234,750	40%	$119,046
Hartford	Steel Bins	1980	30	70,000	$219,100	50%	$92,592
Hartford	Steel Bins	1980	30	50,000	$158,500	50%	$66,982
Hartford	Overhead Bins	1980	30	2,000	$14,340	50%	$6,060
Hartford	Steel Bins	1986	24	25,000	$94,000	40%	$47,669

Notes: Price was adjusted for $25,000 in fertilizer business and $50,000 in personal property.

Sale Number: 21

Guide Year: 2020

Hartford, Lyon County

Hartford, Lyon County

Hartford, Lyon County

Hartford, Lyon County

Sale Number: 22

Guide Year: 2020

Region	County	Sale Month/Year:
East	Montgomery	4 / 2010

Total Sale Price:	$885,000	**Avg Effective Age:**	39.55
Land Size:	18	**Total Depreciation %:**	0.736
Land Value:	$40,570	**Annual Depreciation:**	1.86%
Amt PP/BV:	$0	**Total Accrued Depreciation:**	$3,883,424
Non-Grain Structures RCNLD:	$188,524	**Net Sale Price:**	$691,124
Seller:	SEK Grain Inc	**Grain Storage:**	873,000
Buyer:	Midwest Fertilizer Inc	**Net Storage per Bu:**	$0.79
Situs Address:	Coffeyville, KS; Liberty, KS and rural area, Montgomery County, KS	**Avg Conc:**	$1.63
		Avg Steel:	$1.44
		Avg Flat:	
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
Coffeyville	
number of cars unknown	
Liberty	
number of cars unknown	
Other rural location	
no grain storage	

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Coffeyville	Concrete - Slip Form Eleva	1954	56	508,000	$3,489,960	90%	$283,804
Liberty	Concrete - Jump Form An	2006	4	205,750	$1,158,373	7%	$879,190
Liberty	Steel Hopper Bin	1977	33	2,914	$14,570	55%	$5,331
Liberty	Steel Bin	1977	33	8,469	$25,407	55%	$9,297
Liberty	Steel Bin	1977	33	5,557	$20,839	55%	$7,626
Liberty	Steel Bin with 250 bu. BP	1977	33	20,567	$106,537	55%	$38,986
Liberty	Steel Bin with leg and han	1977	33	73,776	$241,985	55%	$88,552
Liberty	Steel Bins 2 @ 14,760 bu.	1977	33	29,520	$141,696	55%	$51,852
Liberty	Steel Hopper Bins 2 @ 88	1977	33	1,776	$11,952	55%	$4,373
Liberty	Bolted Steel Tanks 3 @ 5,	1977	33	16,671	$64,846	55%	$23,730

Notes: No notes.

Sale Number: 22

Guide Year: 2020

Coffeyville, Montgomery County

Liberty, Montgomery County

Liberty, Montgomery County

SW of Independence, Montgomery County

Sale Number: 26

Guide Year: 2020

Region	County	Sale Month/Year:
East	Osage	7 / 2012

Total Sale Price:	$860,000	**Avg Effective Age:**	31
Land Size:	4	**Total Depreciation %:**	0.6264
Land Value:	$62,400	**Annual Depreciation:**	2.02%
Amt PP/BV:	$176,000	**Total Accrued Depreciation:**	$864,287
Non-Grain Structures RCNLD:	$356,717	**Net Sale Price:**	$331,374
Seller:	Dayoff Elevators	**Grain Storage:**	415,308
Buyer:	MFA Enterprises	**Net Storage per Bu:**	$0.80
Situs Address:	N 3rd Street, Osage City, KS 66523	**Avg Conc:**	$0.67
		Avg Steel:	$1.21
		Avg Flat:	$1.33
		Avg Metal Clad:	$0.39

Railroad Service

Location	Number of Cars
Osage City	
no service	

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Osage City	Concrete Stave next to M	1950	62	10,368	$85,018	90%	$6,917
Osage City	Wood Crib / Metal Clad El	1950	62	9,948	$47,651	90%	$3,877
Osage City	Steel Bins 2 @ 71,810 bu	1981	31	143,620	$461,020	52%	$181,291
Osage City	Steel Bins 2 bins @ 11,56	1968	44	23,134	$106,416	73%	$23,088
Osage City	Steel Bin	1968	44	11,667	$53,668	73%	$11,643
Osage City	Flat Storage	1986	26	216,571	$625,890	43%	$288,560

Notes: SVQ did not indicate personal property but in interview with county appraiser it was indicated that inventory, some personal property and vehicles were included. Fertilizer tanks that would be considered personal property were located on the property.

Sale Number: 26

Guide Year: 2020

Osage City, Osage County

Osage City, Osage County

Osage City, Osage County

Osage City, Osage County

Sale Number: 30

Guide Year: 2020

Region	County	Sale Month/Year:
West	Reno	4 / 2010

Total Sale Price:	$195,000	**Avg Effective Age:**	28.62
Land Size:	1	**Total Depreciation %:**	0.7378
Land Value:	$12,458	**Annual Depreciation:**	2.58%
Amt PP/BV:	$0	**Total Accrued Depreciation:**	$1,075,626
Non-Grain Structures RCNLD:	$75,463	**Net Sale Price:**	$138,374
Seller:	C.B. Showalten	**Grain Storage:**	347,111
Buyer:	Mark Nissley	**Net Storage per Bu:**	$0.40
Situs Address:	3419 E Lawrence, Yoder, KS	**Avg Conc:**	$0.81
		Avg Steel:	$1.12
		Avg Flat:	
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
Yoder	
no service	

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Yoder	Concrete	1951	59	25,830	$358,779	90%	$20,999
Yoder	Steel Bins	1983	27	71,192	$232,086	45%	$74,712
Yoder	Steel Bins	1985	25	240,188	$826,247	42%	$282,102
Yoder	Steel Bins	1961	49	9,901	$40,693	82%	$4,366

Notes: Buyer was working in Indiana and his brother-in-law who lives in Reno County told him the property was for sale. Seller was buying the property on contract and the buyer reportedly paid the seller $95,000 and paid off the balance of the contract, $100,000 to C. B. Showalten. Seller bought and sold corn, wheat, soybeans and some milo. Feed mill is still functional and operating. Buyer is using property also to buy and sell grain. Buyer said 4 existing 24,000 bushel bins had been condemned at the time of the sale were demolished after the sale and replaced with 3 23,095 bushel bins. Flat storage was not used or licensed and is now used for other purposes. Scale at time of sale was 10' by 45' and was replaced with a 11' by 70' 50 ton unit.

Sale Number: 30

Guide Year: 2020

Yoder, Reno County

Yoder, Reno County

Yoder, Reno County

Yoder, Reno County

Sale Number: 33

Guide Year: 2020

Region	County	Sale Month/Year:
West	Sherman	4 / 2010

Total Sale Price:	$1,382,063	**Avg Effective Age:**	63.55
Land Size:	3	**Total Depreciation %:**	0.9
Land Value:	$53,920	**Annual Depreciation:**	1.42%
Amt PP/BV:	$296,413	**Total Accrued Depreciation:**	$8,496,529
Non-Grain Structures RCNLD:	$160,723	**Net Sale Price:**	$871,008
Seller:	Mueller Enterprises	**Grain Storage:**	2,677,049
Buyer:	Scoular Company	**Net Storage per Bu:**	$0.43
Situs Address:	17th & Main, Goodland, KS	**Avg Conc:**	$0.77
		Avg Steel:	
		Avg Flat:	
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
Goodland	

28 loaded , 36 empty per management

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Goodland	Concrete - Slip Form Eleva	1948	62	268,186	$2,056,987	90%	$205,699
Goodland	Concrete - Slip Form Anne	1954	56	498,538	$2,378,026	90%	$237,802
Goodland	Concrete - Slip Form Anne	1956	54	1,264,034	$5,005,575	90%	$500,558
Goodland	Flat Storage	1964	46	646,291	$814,327	90%	$0

Notes: No notes.

Sale Number: 33

Guide Year: 2020

Goodland, Sherman County

Goodland, Sherman County

Goodland, Sherman County

Goodland, Sherman County

Sale Number: 34

Guide Year: 2020

Region	County	Sale Month/Year:
West	Sherman	4 / 2011

Total Sale Price:	$2,300,000	**Avg Effective Age:**	39.29
Land Size:	31	**Total Depreciation %:**	0.721
Land Value:	$62,193	**Annual Depreciation:**	1.83%
Amt PP/BV:	$500,081	**Total Accrued Depreciation:**	$8,740,467
Non-Grain Structures RCNLD:	$244,106	**Net Sale Price:**	$1,541,637
Seller:	Kanarado COOP Assoc	**Grain Storage:**	2,109,078
Buyer:	Frontier Ag Inc.	**Net Storage per Bu:**	$0.73
Situs Address:	Kanorado, KS	**Avg Conc:**	$1.69
		Avg Steel:	$0.26
		Avg Flat:	
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
Kanorado	33

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Kanorado	Concrete - Slip Form Eleva	1945	66	168,000	$1,429,680	90%	$114,846
Kanorado	Concrete - Slip Form Eleva	1955	56	200,142	$1,637,162	90%	$131,514
Kanorado	Concrete - Slip Form Eleva	1960	51	220,000	$1,764,400	85%	$212,601
Kanorado	Concrete - Slip Form Anne	1961	50	259,156	$1,381,301	83%	$184,933
Kanorado	Concrete - Slip Form Anne	1967	44	311,780	$1,602,549	73%	$343,287
Kanorado	Concrete - Slip Form Anne	1977	34	220,000	$1,214,400	57%	$422,729
Kanorado	Concrete - Jump Form An	1993	18	300,000	$1,419,000	30%	$797,918
Kanorado	Concrete - Jump Form An	2000	11	300,000	$1,419,000	18%	$930,904
Kanorado	Steel Bins 20 @ 6,500 bu	1961	50	130,000	$254,800	83%	$34,114

Notes: No notes.

Sale Number: 34

Guide Year: 2020

Kanorado, Sherman County

Kanorado, Sherman County

Kanorado, Sherman County

Kanorado, Sherman County

Sale Number: 41

Guide Year: 2020

Region	County	Sale Month/Year:
West	Cheyenne	10 / 2015

Total Sale Price:	$1,425,000	**Avg Effective Age:**	40.55
Land Size:	10	**Total Depreciation %:**	0.7604
Land Value:	$63,612	**Annual Depreciation:**	1.88%
Amt PP/BV:	$501,228	**Total Accrued Depreciation:**	$2,880,639
Non-Grain Structures RCNLD:	$60,864	**Net Sale Price:**	$804,833
Seller:	Bartlett Grain Company	**Grain Storage:**	786,000
Buyer:	St Francis Mercantile Equit	**Net Storage per Bu:**	$1.02
Situs Address:	Saint Francis, KS	**Avg Conc:**	$0.69
		Avg Steel:	$1.52
		Avg Flat:	
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
St. Francis	
no service	

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
St. Francis	Concrete Elevator with M	1950	65	349,289	$2,661,582	90%	$241,938
St. Francis	Steel Bin - 1 bin @ 436,71	1994	21	436,711	$1,126,714	35%	$665,719

Notes: Some business value was included in sale price and accounted for in net sale price.

Sale Number: 41

Guide Year: 2020

St. Francis, Cheyenne County, Kansas

St. Francis, Cheyenne County, Kansas

St. Francis, Cheyenne County, Kansas

St. Francis, Cheyenne County, Kansas

Sale Number: 42

Guide Year: 2020

Region	County	Sale Month/Year:
East	Crawford	4 / 2015

Total Sale Price:	$150,000	**Avg Effective Age:**	47.25
Land Size:	2	**Total Depreciation %:**	0.8292
Land Value:	$11,480	**Annual Depreciation:**	1.75%
Amt PP/BV:	$0	**Total Accrued Depreciation:**	$644,407
Non-Grain Structures RCNLD:	$39,844	**Net Sale Price:**	$73,126
Seller:	Beachner Grain	**Grain Storage:**	223,000
Buyer:	Producers COOP Assoc of	**Net Storage per Bu:**	$0.33
Situs Address:	Girard, KS	**Avg Conc:**	
		Avg Steel:	$0.60
		Avg Flat:	
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
Girard	
no service	

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Girard	Steel Bins - 6 bins @ 22,0	1960	55	132,522	$524,787	90%	$46,617
Girard	Steel Bin - 1 bin @ 86,386	1980	35	86,386	$226,331	58%	$83,770
Girard	Steel Hopper - 2 tanks @	1960	55	4,092	$25,987	90%	$2,308

Notes: Some business value was taken into account in calculating net sale value.

Sale Number: 42

Guide Year: 2020

Girard, Crawford County, Kansas

Girard, Crawford County, Kansas

Girard, Crawford County, Kansas

Girard, Crawford County, Kansas

Sale Number: 43

Guide Year: 2020

Region	County	Sale Month/Year:
East	Crawford	4 / 2015

Total Sale Price:	$4,199,500	**Avg Effective Age:**	11.15
Land Size:	52	**Total Depreciation %:**	0.1928
Land Value:	$135,464	**Annual Depreciation:**	1.73%
Amt PP/BV:	$2,038,700	**Total Accrued Depreciation:**	$374,765
Non-Grain Structures RCNLD:	$177,397	**Net Sale Price:**	$1,830,735
Seller:	KAMO Grain, Inc.	**Grain Storage:**	555,000
Buyer:	Scoular Company	**Net Storage per Bu:**	$3.30
Situs Address:	Pittsburg, KS	**Avg Conc:**	
		Avg Steel:	$2.83
		Avg Flat:	
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
Pittsburg	
number of cars unknown	

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Pittsburg	Steel Bins 2 bins @ 41,11	1990	25	88,226	$316,731	42%	$184,760
Pittsburg	Steel Bins 2 bins @ 30,69	1990	25	61,398	$228,401	42%	$133,234
Pittsburg	Steel Hopper 3 tanks @ 1,	1990	25	5,553	$41,092	42%	$23,970
Pittsburg	Steel Hopper 1 tank @ 1,	1990	25	1,012	$7,489	42%	$4,369
Pittsburg	Steel Hopper 1 tank @ 2,3	2008	7	2,381	$14,953	12%	$13,209
Pittsburg	Steel Hopper 2 tanks@2,0	2008	7	4,146	$27,405	12%	$24,208
Pittsburg	Steel Bins 2 bins @ 67,07	2008	7	134,140	$421,200	12%	$372,060
Pittsburg	Steel Bins 2 bins @ 44,29	2008	7	88,586	$284,361	12%	$251,186
Pittsburg	Steel Bin 1 bin @ 169,558	2011	4	169,558	$601,931	7%	$561,802

Notes: Some business value was taken into account in calculating the net sale value.

Sale Number: 43

Guide Year: 2020

Pittsburg, Crawford County, Kansas

Pittsburg, Crawford County, Kansas

Pittsburg, Crawford County, Kansas

Pittsburg, Crawford County, Kansas

Sale Number: 45

Guide Year: 2020

Region	County	Sale Month/Year:
West	Greeley	7 / 2013

Total Sale Price:	$5,020,000	**Avg Effective Age:**	26.59
Land Size:	42	**Total Depreciation %:**	0.4486
Land Value:	$120,470	**Annual Depreciation:**	1.69%
Amt PP/BV:	$1,254,000	**Total Accrued Depreciation:**	$3,331,648
Non-Grain Structures RCNLD:	$320,069	**Net Sale Price:**	$3,325,461
Seller:	Tribune Grain LLC.	**Grain Storage:**	1,996,714
Buyer:	Scoular Company	**Net Storage per Bu:**	$1.67
Situs Address:	Tribune, NW Tribune & Inland Station, KS	**Avg Conc:**	
		Avg Steel:	$2.45
		Avg Flat:	$0.43
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
Inland Station	
number of cars unknown	
NW Tribune	
number of cars unknown	
Tribune	
number of cars unknown	

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Tribune	Wood Crib Metal Clad	1949	65	27,985	$336,939	90%	$33,694
Tribune	Steel Bins 1 bin @ 173,05	2007	6	173,055	$562,429	10%	$506,186
Tribune	Steel Hopper 1 tank @ 2,5	2007	6	2,583	$15,808	10%	$14,227
Tribune	Steel Bin 1 bin @ 247,192	2009	4	247,192	$786,071	7%	$733,666
Tribune	Steel Bin 1 bin @ 67,106	2013	0	67,105	$220,775	2%	$217,095
Tribune	Bolted Steel 4 bins @ 15,	1949	50	62,616	$293,669	90%	$29,367
Tribune	Steel Bins 3 bins @ 59,72	1975	38	179,181	$643,260	63%	$235,862
Tribune	Steel Bin 1 bin @ 1,710 b	1975	38	1,710	$12,432	63%	$4,559
Tribune	Steel Bin 1 bin @ 12,591	1975	38	12,591	$52,379	63%	$19,206
Tribune	Steel Bin 1 bin @ 123,770	1985	28	123,770	$431,957	47%	$230,377
Tribune	Steel Bin 1 bin @ 127,331	1985	28	127,331	$443,112	47%	$236,326
Tribune	Steel Bin 1 bin @ 59,727	2010	3	59,727	$214,420	5%	$203,699
Tribune	Steel Hopper 1 tank @ 2,6	2010	3	2,690	$16,920	5%	$16,074
Tribune	Steel Hopper Bins 4 @ 7,4	1970	43	29,688	$160,612	72%	$45,507
Tribune	Steel Bin 1 bin @ 155,241	1996	17	155,241	$563,525	28%	$403,860

Sale Number: 45

Guide Year: 2020

Tribune	Steel Bin 1 bin @ 72,699	1996	17	72,699	$194,106	28%	$192,052
Tribune	Steel Bin 1 bin @ 261,086	2003	10	261,086	$684,045	17%	$756,612
Tribune	Flat Storage - Butler	1948	45	196,627	$513,196	90%	$191,294
Tribune	Flat Storage - Behlen	1961	40	193,837	$505,915	80%	$239,171

Notes: The county value of the sites for the 6 owned parcels in Tribune was $42,290 or $0.34 per SF for the 123,005 SF of the combined site which is reasonable. The value of the site for the one parcel comprising the Inland Station location was $1,530 for 2.76 acres which calculates to $554 per acre which is below market. The value of the sites for the two parcels comprising the NW Tribune location was $14,230 for 36.33 acres which calculates to $392 per acre which is also below market. The appraiser has increased the acre rate of the sites of the NW Tribune & Inland Station parcels to reflect dryland cultivated rates of approximately $2,000 per ac. ** There was not an amount listed on the KRESVQ for personal property contributing to the sale price, however the box was checked yes. The PVD Documentation Record interview with the seller states personal property was included in the purchase price but the amount was not disclosed. There would have been some mobile equipment considered personal property included in the sale price and the appraiser has estimated $250,000 for that amount. The box on KRESVQ was checked yes for the question "Did the sale price include an existing business."

Sale Number: 45

Guide Year: 2020

Tribune, Greeley County, Kansas

Tribune, Greeley County, Kansas

Tribune, Greeley County, Kansas

Tribune, Greeley County, Kansas

Sale Number: 46

Guide Year: 2020

Region	County	Sale Month/Year:
West	Haskell	6 / 2014

Total Sale Price:	$3,725,652	**Avg Effective Age:**	13.57
Land Size:	57	**Total Depreciation %:**	0.2359
Land Value:	$185,395	**Annual Depreciation:**	1.74%
Amt PP/BV:	$525,000	**Total Accrued Depreciation:**	$1,007,414
Non-Grain Structures RCNLD:	$247,606	**Net Sale Price:**	$2,770,820
Seller:	Providence Grain LLC	**Grain Storage:**	1,804,000
Buyer:	Hansen-Mueller Co	**Net Storage per Bu:**	$1.54
Situs Address:	Sublette, KS	**Avg Conc:**	
		Avg Steel:	$1.81
		Avg Flat:	
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
Sublette	
no service	

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Sublette	Steel Bins 4 bins @ 121,4	1999	15	485,756	$956,939	25%	$704,986
Sublette	Steel Bins 2 bins @ 459,6	2000	14	919,208	$1,856,800	23%	$1,398,868
Sublette	Steel Hopper 2 tanks @ 3,	2000	14	6,862	$26,899	23%	$20,265
Sublette	Steel Bins 2 bins @ 73,66	2002	12	147,322	$309,376	20%	$243,389
Sublette	Steel Hopper 1 tanks @ 8	2002	12	878	$4,803	20%	$3,778
Sublette	Steel Hopper 1 tanks @ 1,	2002	12	1,096	$5,085	20%	$4,001
Sublette	Steel Bins 2 bins @ 121,4	2004	10	242,878	$478,470	17%	$392,365

Notes: The county value of the 1 owned parcel was not implemented to estimate the contributing value of the owned site. The per acre rate for the 57.2 acre site calculates to only $1,017 per acre, which is well below the market. The buyer on an exhibit to the deed initially listed $3,500 per acres for the land allocation which is more realistic and has been implemented. The seller paid $72,000 for the agricultural land comprising the current site in May of 1998. ** There was no amount listed on the KRESVQ for personal property contributing to the sale price. However on an exhibit to the deed the following items were listed as contributing $3,538,513 to the sale price: Upright steel, Licensed Bunker, Portable Grain Moving Equipment, General Equipment, Rolling Stock. The Upright Steel would be considered a real property improvement with most of the other items being personal property except the General Equipment which could be either. There is a 1,720,000 bu. & 810,000 bu. ground storage bunker which would be comprised of mostly personal property equipment. The appraiser has estimated $525,000 for the value of personal property contributing to the sale price. The box on KRESVQ was not checked for the question "Did the sale price include an existing business," which would be correct as the buyer was operating the property at the time of sale. ***It should be noted that the warehouse and concrete were not listed by the CA Office, thus building and paving areas are estimated.

Sale Number: 46

Guide Year: 2020

Sublette, Haskell County, Kansas

Sublette, Haskell County, Kansas

Sublette, Haskell County, Kansas

Sale Number: 47

Guide Year: 2020

Region	County	Sale Month/Year:
East	Marshall	9 / 2014

Total Sale Price:	$1,660,000	**Avg Effective Age:**	32.48
Land Size:	7	**Total Depreciation %:**	0.6218
Land Value:	$35,730	**Annual Depreciation:**	1.91%
Amt PP/BV:	$870,000	**Total Accrued Depreciation:**	$1,997,649
Non-Grain Structures RCNLD:	$119,697	**Net Sale Price:**	$653,172
Seller:		**Grain Storage:**	933,000
Buyer:		**Net Storage per Bu:**	$0.70
Situs Address:	Home, KS	**Avg Conc:**	
		Avg Steel:	$1.31
		Avg Flat:	
		Avg Metal Clad:	$0.99

Railroad Service

Location	Number of Cars
Home	
On RR but service unknown	
Pence	

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Home	Wood Crib / Metal Clad El	1915	65	27,000	$316,980	90%	$26,772
Home	Steel Bins 2 bins @ 171,1	1983	31	342,236	$1,023,286	52%	$417,729
Home	Steel Bins 2 bins @ 190,3	1987	27	380,764	$1,134,677	45%	$527,091
Home	Steel Bins 2 bins @ 54,28	1981	33	108,570	$411,480	55%	$156,391
Home	Steel Bin	1981	33	22,783	$90,221	55%	$34,291
Home	Steel Bin	1981	33	29,021	$110,860	55%	$42,135
Home	Bolted Steel 2 bins @11,3	1950	64	22,626	$125,122	90%	$10,568

Notes: The county values of the 10 owned parcels were implemented to estimate the contributing value of the sites. The sites ranged in area from 4.8 acres @ $4,500 per acre to 1,496 SF @ $0.90 SF for a total area of 7.24 acres for an average price of $4,935 per acre or $0.11 SF. ** The amount listed KRESVQ for the value of the rolling stock and equipment included in the sale price was $538,000. The appraiser observed many ammonia pup tanks and fiberglass chemical tanks on trailers for field application located on the various sites which would account for much of the declared value of the rolling stock included in the transaction price. The amount of $83,000 was listed as being paid for a non-compete agreement that also was included in the sale price. Total of rolling stock, equipment and non compete agreement was $621,000.

Sale Number: 47

Guide Year: 2020

Home, Marshall County, Kansas

Home, Marshall County, Kansas

Home, Marshall County, Kansas

Home, Marshall County, Kansas

Sale Number: 48

Guide Year: 2020

Region	County	Sale Month/Year:
West	Republic	3 / 2014

Total Sale Price:	$13,700,000	**Avg Effective Age:**	50.56
Land Size:	55	**Total Depreciation %:**	0.8144
Land Value:	$128,650	**Annual Depreciation:**	1.61%
Amt PP/BV:	$2,647,500	**Total Accrued Depreciation:**	$21,590,483
Non-Grain Structures RCNLD:	$527,298	**Net Sale Price:**	$10,396,554
Seller:	Hansen-Mueller Co	**Grain Storage:**	5,735,722
Buyer:	Farmway COOP	**Net Storage per Bu:**	$1.81
Situs Address:	Belleville, Courtland & Scandia, KS	**Avg Conc:**	$0.98
		Avg Steel:	$2.40
		Avg Flat:	$0.30
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
Belleville	
Belleville E has 60 car capability	
Courtland	
Scandia	

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Republic	Steel Hopper 1 tank @ 2,1	1999	15	1,941	$14,596	25%	$14,147
Republic	Steel Hopper 3 tanks @ 5,	1986	28	16,113	$87,332	47%	$65,723
Republic	Steel Hopper 1 tank @ 2,1	1986	28	2,005	$14,396	47%	$10,834
Republic	Steel Bins 1 bin @ 113,8	1999	15	113,789	$399,399	25%	$387,110
Republic	Steel Bins 1 bin @ 136,6	1999	15	136,601	$476,737	25%	$462,068
Republic	Steel Hopper 2 tanks @ 2,	1986	28	4,520	$30,013	47%	$22,587
Republic	Steel Hopper 2 tanks @ 2,	1986	28	4,518	$29,367	47%	$22,101
Republic	Steel Bins 2 bins @ 296,9	1986	28	593,996	$1,467,170	47%	$1,104,138
Republic	Slip Form Elevator	1951	63	157,366	$1,398,984	79%	$603,983
Republic	Slip Form Annex	1953	61	307,958	$1,613,700	76%	$737,025
Republic	Slip Form Annex	1957	57	304,676	$1,602,596	71%	$812,083
Republic	Slip Form Elevator	1958	56	212,756	$1,761,620	70%	$914,685
Republic	Slip Form Annex	1959	55	329,572	$1,499,553	69%	$797,357
Republic	Slip Form Elevator	1959	55	266,584	$2,175,325	69%	$1,156,685
Republic	Slip Form Annex	1972	42	414,416	$2,154,963	53%	$1,496,040

Sale Number: 48

Guide Year: 2020

Republic	Flat Storage -207,147 bu.	1958	45	1,376,880	$2,698,685	90%	$861,501
Republic	Flat Storage -204,200 bu.	1958	45	1,492,031	$2,909,460	90%	$928,786

Notes: Some business value was taken into account in calculating the net sale value.

Sale Number: 48

Guide Year: 2020

Courtland (West), Republic County, Kansas

Courtland (East), Republic County, Kansas

Belleville (North), Republic County, Kansas

Belleville (East), Republic County, Kansas

Sale Number: 49

Guide Year: 2020

Region	County	Sale Month/Year:
West	Rice	9 / 2014

Total Sale Price:	$3,100,000	Avg Effective Age:	22.98
Land Size:	30	Total Depreciation %:	0.4275
Land Value:	$199,600	Annual Depreciation:	1.86%
Amt PP/BV:	$363,300	Total Accrued Depreciation:	$2,536,438
Non-Grain Structures RCNLD:	$86,726	Net Sale Price:	$2,458,700
Seller:	Silica Grain LLC	Grain Storage:	951,294
Buyer:	Gavilon Grain LLC	Net Storage per Bu:	$2.58
Situs Address:	Silica, KS	Avg Conc:	$4.23
		Avg Steel:	$1.47
		Avg Flat:	
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
Silica	60

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Silica	Steel Bins 1 bin @ 111,88	1980	34	111,884	$419,565	57%	$164,357
Silica	Steel Bins 1 bin @ 115,70	1980	34	115,702	$435,040	57%	$170,420
Silica	Jump Form 2 silos @256,9	2011	3	513,992	$3,387,207	5%	$2,908,934
Silica	Conc. Stave Silos 3 @ 29,7	1954	60	89,109	$711,090	90%	$64,283
Silica	Conc. Stave Silo 1 @ 29,1	1954	60	29,196	$233,568	90%	$21,115
Silica	Conc. Stave Silos 2 @ 29,4	1954	60	58,946	$470,979	90%	$42,577
Silica	Conc. Stave Silo 1 @ 29,7	1954	60	29,796	$237,474	90%	$21,467
Silica	Conc. Stave Silo 1 @ 2,66	1954	60	2,669	$38,113	90%	$3,445

Notes: The county value of the 3 owned parcels comprising the property was $38,920 when implementing the market value for a 24.8 tract that is classified as agricultural use. The total acreage of the three parcels is 29.9 acres which calculates to $1,302 per acre, which is not realistic. Dryland cultivation averaged $2,659 per acre and pasture $1,603 per acre in Rice County in a 2014 study conducted by KSU. The appraiser has implemented $2,000 per acre when estimating the contributing value of the site. ** There was $57,100 listed on the KRESVQ for personal property contributing to the sale price. The items listed were "equip & vehicle." However there are also fuel, LP and chemical tanks located on the parcels which would be considered personal property. As such the appraiser deducted an additional $106,000 for the contribution of personal property to the sale price. The box on KRESVQ was checked yes for the question "Did the sale price include an operating business." The estimated value declared was $1.00. The person signing the KRESVQ was identified as the agent, Cissy M. Jennings, who is a commercial escrow officer with First American Title Insurance Company of Omaha, Nebraska, the same city in which the buyer's headquarters are located.

Sale Number: 49

Guide Year: 2020

Silica, Rice County, Kansas

Silica, Rice County, Kansas

Silica, Rice County, Kansas

Silica, Rice County, Kansas

Sale Number: 50

Guide Year: 2020

Region	County	Sale Month/Year:
West	Scott	9 / 2014

Total Sale Price:	$4,500,000	**Avg Effective Age:**	37.04
Land Size:	5	**Total Depreciation %:**	0.6102
Land Value:	$20,240	**Annual Depreciation:**	1.65%
Amt PP/BV:	$500,000	**Total Accrued Depreciation:**	$7,563,306
Non-Grain Structures RCNLD:	$327,756	**Net Sale Price:**	$3,652,004
Seller:	Winona Feed & Grain	**Grain Storage:**	2,633,920
Buyer:	Scoular Company	**Net Storage per Bu:**	$1.39
Situs Address:	Winona & Pence, KS	**Avg Conc:**	$2.51
		Avg Steel:	$1.59
		Avg Flat:	$0.40
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
Winona	

Winona has rail service, number of cars unknown

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Pence	Steel Bins 2 bins @ 52,79	1966	48	105,946	$393,060	80%	$77,213
Pence	Steel Bins 1 bin @ 181,80	1966	48	181,807	$669,050	80%	$131,428
Pence	Steel Bins 1 bin @ 30,176	1973	41	30,176	$112,255	68%	$34,915
Pence	Steel Bins 1 bin @ 52,97	1977	37	52,973	$196,530	62%	$73,996
Pence	Steel Hopper 1 tanks @ 2,	1985	29	2,190	$12,965	48%	$6,580
Pence	Steel Hopper 1 tanks @ 1,	1985	29	1,233	$9,383	48%	$4,762
Pence	Steel Bins 1 bin @ 210,27	2009	5	210,272	$773,801	8%	$696,692
Pence	Steel Bins 1 bin @ 212,4	2010	4	212,403	$781,643	7%	$716,547
Winona	Steel Bins 1 bin @ 151,56	1977	37	151,566	$466,823	62%	$175,764
Winona	Steel Bins 1 bin @ 151,72	1977	37	151,724	$467,310	62%	$175,947
Winona	Bolted Steel 1 bin @ 358,	1965	49	358,120	$1,235,514	82%	$222,479
Winona	Slip Form Elevator	1946	68	95,498	$1,025,649	90%	$100,739
Winona	Slip Form Annex	1951	63	179,506	$1,220,641	90%	$119,891
Winona	Slip Form Annex	1957	57	315,129	$1,938,043	90%	$190,354
Winona	Jump Form Annex-2@189	2006	8	378,230	$2,375,284	13%	$2,021,936
Winona	East Flat Storage -207,147	1961	40	207,147	$716,729	88%	$82,131

Notes: The county value of the 1 owned parcel in Pence was $2,380 or $0.074 SF for the 32,000 site with the other two parcels being located on leased land. The value of the one owned parcel located in Pence was $17,860 for the 5.3 acre site or $3,370 per acre. Both county site values are reasonable considering the location of the communities

Sale Number: 50

Guide Year: 2020

acre site or $3,370 per acre. Both county site values are reasonable considering the location of the communities and thus will be implemented. ** There was $500,000 listed on the KRESVQ for personal property contributing to the sale price. The items listed were "Grain storage equipment, materials, leasehold interest and business operations, improvements on leasehold property with the Equipment, General Equipment, Rolling Stock. The Upright Steel would be considered a real property improvement with most of the (leasehold improvements and leasehold est. value - $1,500,000). The leasehold improvements would be considered real property, but materials would be considered a non real property asset and business operations would also be a non real property asset. The box on KRESVQ was checked yes for the question "Did the sale price include an existing business." The appraiser has deducted $500,000 for materials, personal property and business value contribution to the sale price.

Sale Number: 50

Guide Year: 2020

Pence, Scott County, Kansas

Pence, Scott County, Kansas

Winona, Logan County, Kansas

Winona, Logan County, Kansas

Sale Number: 51

Guide Year: 2020

Region	County	Sale Month/Year:
West	Sheridan County	8 / 2015

Total Sale Price:	$950,000	**Avg Effective Age:**	5.68
Land Size:	9	**Total Depreciation %:**	0.6636
Land Value:	$20,860	**Annual Depreciation:**	11.69%
Amt PP/BV:	$78,185	**Total Accrued Depreciation:**	$3,146,417
Non-Grain Structures RCNLD:	$83,353	**Net Sale Price:**	$820,056
Seller:	Bainter Construction Comp	**Grain Storage:**	1,441,782
Buyer:	Hoxie Feedyard Inc	**Net Storage per Bu:**	$0.57
Situs Address:	Hoxie, KS	**Avg Conc:**	
		Avg Steel:	$1.11
		Avg Flat:	
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
Hoxie	
no service	

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Hoxie	Steel Bins 4 bins @ 20,00	2007	8	80,000	$223,200	13%	$71,708
Hoxie	Steel Bins 8 bins @ 30,00	2008	7	240,000	$640,800	12%	$209,831
Hoxie	Steel Bins 5 bins @ 50,00	2009	6	250,000	$635,000	10%	$211,855
Hoxie	Steel Bins 15 bins @ 58,0	2010	5	870,000	$3,227,700	8%	$1,096,799
Hoxie	Steel Hopper 3 tanks @ 5	2006	9	1,782	$14,470	15%	$4,560

Notes: The county values of the 1 owned parcel was implemented to estimate the contributing value of the owned site. The per acre rate for the 8.93 acre site calculates to $2,336 per acre which may be conservative. ** The amount listed KRESVQ for personal property contributing to the sale price was $78,185. The items listed were 2 Kubota tractors. The PVD representative contacted seller and confirmed some older office furniture of no measurable value was also included in the sale price. The broker stated that 4 portable load out augers and 3 - portable 90' unloading augers were also included in the sale price. Broker also stated property was originally offered at $1.50 a bushel or $2,160,000. The box was checked no for the question "Did the sale price include an operating business." *** CA Office has scale listed as only 30 ton however the real estate broker stated it would handle semi trucks and measured 12' x 80' which indicates at least a 60 ton scale. CA Office also does not have listed cone or hopper bottoms on 15 of the bins.

Sale Number: 51

Guide Year: 2020

Hoxie, Sheridan County, Kansas

Hoxie, Sheridan County, Kansas

Hoxie, Sheridan County, Kansas

Sale Number: 52

Guide Year: 2020

Region	County	Sale Month/Year:
East	Marshall	8 / 2016

Total Sale Price:	$3,932,465	**Avg Effective Age:**	13.32
Land Size:	2	**Total Depreciation %:**	0.3901
Land Value:	$21,530	**Annual Depreciation:**	2.93%
Amt PP/BV:	$573,995	**Total Accrued Depreciation:**	$1,769,362
Non-Grain Structures RCNLD:	$263,592	**Net Sale Price:**	$2,872,494
Seller:	Axtell Grain Company	**Grain Storage:**	1,652,000
Buyer:	Nemaha County COOP	**Net Storage per Bu:**	$1.74
Situs Address:	Axtell, KS	**Avg Conc:**	
		Avg Steel:	$1.67
		Avg Flat:	
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
Axtell	

Leased parcels have 25 car siding served by Union Pacific

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Axtell	Steel Bins 2 bins @ 130,2	2000	16	260,400	$622,356	27%	$327,246
Axtell	Steel Bin 1 bin @ 136,156	2000	16	136,156	$325,413	27%	$171,108
Axtell	Steel Bins 2 bins @ 79,24	1982	34	158,494	$389,895	57%	$88,045
Axtell	Steel Bin 1 bin @ 163,679	1986	30	163,679	$401,014	50%	$117,290
Axtell	Steel Bin 1 bin @ 114,291	1986	30	114,291	$282,299	50%	$82,568
Axtell	Steel Bins 2 bins @ 4,953	1985	31	9,906	$35,067	52%	$9,672
Axtell	Steel Bins 2 bins @ 404,5	2014	2	809,074	$1,901,324	3%	$1,443,393

Notes: Some business value was taken into account in calculating the net sale value.

Sale Number: 52

Guide Year: 2020

Axtell, Marshall County, Kansas

Axtell, Marshall County, Kansas

Axtell, Marshall County, Kansas

Axtell, Marshall County, Kansas

Sale Number: 60

Guide Year: 2020

Region	County	Sale Month/Year:
East	Doniphan	9 / 2016

Total Sale Price:	$178,800	**Avg Effective Age:**	55.04
Land Size:		**Total Depreciation %:**	0.8257
Land Value:	$19,020	**Annual Depreciation:**	1.50%
Amt PP/BV:	$0	**Total Accrued Depreciation:**	$4,881,566
Non-Grain Structures RCNLD:	$28,693	**Net Sale Price:**	$132,801
Seller:	Fairview Grain LLC	**Grain Storage:**	1,146,253
Buyer:	Ag Partners COOP	**Net Storage per Bu:**	$0.12
Situs Address:	105 Hwy 7, Market Street & S First Street, White Cloud, KS	**Avg Conc:**	$0.75
		Avg Steel:	$1.02
		Avg Flat:	
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
White Cloud	
no service	

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
White Cloud	Slip Form Headhouse	1940	76	319,965	$2,809,293	90%	$264,158
White Cloud	Slip Form Annex	1940	76	197,007	$1,321,917	90%	$124,300
White Cloud	Bolted Steel Bins 2 @ 153,	1980	36	306,288	$989,310	61%	$356,595
White Cloud	Steel Bin/Farm Storage ty	1990	26	322,993	$791,333	61%	$285,234

Notes: Grain handling machinery and equipment, as well as aeration equipment, were included in overall calculations but not individual structure rates.

Sale Number: 60

Guide Year: 2020

White Cloud, Doniphan County

White Cloud, Doniphan County

White Cloud, Doniphan County

White Cloud, Doniphan County

Sale Number: 63

Guide Year: 2020

Region	County	Sale Month/Year:
West	Phillps	6 / 2016

Total Sale Price:	$1,500,000	**Avg Effective Age:**	39.29
Land Size:		**Total Depreciation %:**	0.6567
Land Value:	$25,590	**Annual Depreciation:**	1.67%
Amt PP/BV:	$600,000	**Total Accrued Depreciation:**	$2,270,191
Non-Grain Structures RCNLD:	$88,152	**Net Sale Price:**	$786,451
Seller:	N Terry Nelson	**Grain Storage:**	869,231
Buyer:	Rangeland COOP	**Net Storage per Bu:**	$0.90
Situs Address:	206 S Douglas & East Walnut, Logan, KS	**Avg Conc:**	
		Avg Steel:	$1.37
		Avg Flat:	$1.32
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
Winona	
On RR but service unknown	

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Logan	Steel Bin	1975	42	135,597	$160,004	70%	$53,590
Logan	2 Steel Bins	1975	42	177,810	$208,038	70%	$69,678
Logan	Steel Bin	1975	42	19,137	$31,002	70%	$10,383
Logan	2 Steel Bins	1975	42	50,436	$79,689	70%	$26,690
Logan	3 Steel Bins	1982	35	336,774	$417,600	58%	$188,586
Logan	Flat Storage	1975	42	149,477	$273,543	84%	$53,321

Notes: Grain handling machinery and equipment, as well as aeration equipment, were included in overall calculations but not individual structure rates.

Sale Number: 63

Guide Year: 2020

Logan, Phillips County

Logan, Phillips County

Logan, Phillips County

Logan, Phillips County

Sale Number: 64

Guide Year: 2020

Region	County	Sale Month/Year:
East	Brown	9 / 2016

Total Sale Price:	$432,000	**Avg Effective Age:**	26.56
Land Size:		**Total Depreciation %:**	0.6228
Land Value:	$19,020	**Annual Depreciation:**	2.34%
Amt PP/BV:	$0	**Total Accrued Depreciation:**	$1,095,799
Non-Grain Structures RCNLD:	$28,693	**Net Sale Price:**	$391,648
Seller:	Fairview Grain LLC	**Grain Storage:**	445,368
Buyer:	Ag Partners COOP	**Net Storage per Bu:**	$0.88
Situs Address:	913 Oregon Street and 110 S 10th Street, Hiawatha, KS	**Avg Conc:**	
		Avg Steel:	$2.01
		Avg Flat:	$0.25
		Avg Metal Clad:	$0.85

Railroad Service

Location	Number of Cars
Hiawatha	

On RR but service unknown

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Hiawatha	Metal Headhouse/Metal	1960	56	31,995	$366,983	90%	$27,286
Hiawatha	Flat Storage	1960	76	110,481	$370,111	90%	$27,515
Hiawatha	Steel Farm Bins 2 @ 26,28	1980	36	52,560	$159,257	60%	$47,363
Hiawatha	Steel Farm Bins 2 @ 23,40	1990	26	46,800	$141,804	43%	$59,745
Hiawatha	Steel Commercial Storage	2005	11	54,001	$206,824	18%	$125,582
Hiawatha	Steel Commercial Storage	2015	1	149,531	$514,387	2%	$376,073

Notes: Grain handling machinery and equipment, as well as aeration equipment, were included in overall calculations but not individual structure rates.

Sale Number: 64

Guide Year: 2020

Hiawatha, Brown County

Hiawatha, Brown County

Hiawatha, Brown County

Hiawatha, Brown County

Sale Number: 71

Guide Year: 2020

Region	County	Sale Month/Year:
East	Morris	6 / 2017

Total Sale Price:	$1,500,000	**Avg Effective Age:**	59
Land Size:		**Total Depreciation %:**	0.9032
Land Value:	$21,570	**Annual Depreciation:**	1.53%
Amt PP/BV:	$350,000	**Total Accrued Depreciation:**	$4,200,133
Non-Grain Structures RCNLD:		**Net Sale Price:**	$1,118,404
Seller:	Western Investments Inc.	**Grain Storage:**	558,226
Buyer:	Agri Trails COOP	**Net Storage per Bu:**	$2.00
Situs Address:	501 N Commercial St. White City, KS	**Avg Conc:**	$0.81
		Avg Steel:	
		Avg Flat:	
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
White City	
no service	

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
White City	Slip Form Concrete Headh	1959	59	558,226	$4,650,023	90%	$449,890

Notes: Per the Buyer, the White City location and the Council Grove location sold together for $2,000,000. The White City location was allocated $1,500,000 of the sales price and $500,000 was allocated to Council Grove.

Sale Number: 71

Guide Year: 2020

Sale Number: 72

Guide Year: 2020

Region	County	Sale Month/Year:
East	Morris	6 / 2017

Total Sale Price:	$500,000	**Avg Effective Age:**	52
Land Size:		**Total Depreciation %:**	0.8899
Land Value:	$8,910	**Annual Depreciation:**	1.71%
Amt PP/BV:	$30,000	**Total Accrued Depreciation:**	$718,920
Non-Grain Structures RCNLD:		**Net Sale Price:**	$430,902
Seller:	Western Investments Inc.	**Grain Storage:**	204,057
Buyer:	Agri Trails COOP	**Net Storage per Bu:**	$2.11
Situs Address:	1216 Old Hwy 56, Council Grove, KS	**Avg Conc:**	
		Avg Steel:	$0.33
		Avg Flat:	
		Avg Metal Clad:	$2.37

Railroad Service

Location	Number of Cars
Council Grove	
no service	

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Council Grove	Metal Clad Feed Mill	1966	52	7,624	$164,145	87%	$18,065
Council Grove	4 Steel bins @ 5463 bu ea	1966	52	21,852	$93,964	87%	$10,341
Council Grove	two steel hopper bins @ 1	1966	52	2,158	$16,379	87%	$1,803
Council Grove	steel bin	1966	52	10,909	$44,072	87%	$4,850
Council Grove	2 steel bins @ 63,493	1966	52	126,986	$382,228	87%	$42,066
Council Grove	steel bin	1966	52	34,528	$107,037	87%	$11,780

Notes: Per the Buyer, the White City location and the Council Grove location sold together for $2,000,000. The White City location was allocated $1,500,000 of the sales price and $500,000 was allocated to Council Grove. A 328,000-bushel concrete bin was built at the Council Grove location in 2018 after the date of the sale.

Sale Number: 73

Guide Year: 2020

Region	County	Sale Month/Year:
West	Thomas	5 / 2018

Total Sale Price:	$1,720,000	**Avg Effective Age:**	57.71
Land Size:		**Total Depreciation %:**	0.8767
Land Value:	$9,750	**Annual Depreciation:**	1.52%
Amt PP/BV:	$300,000	**Total Accrued Depreciation:**	$3,405,891
Non-Grain Structures RCNLD:		**Net Sale Price:**	$1,143,867
Seller:	Bartlett Grain Company	**Grain Storage:**	597,583
Buyer:	Scoular Company	**Net Storage per Bu:**	$1.91
Situs Address:	407 Bartlett Drive, Levant, KS	**Avg Conc:**	$0.86
		Avg Steel:	$0.72
		Avg Flat:	
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
Levant	
On RR but service unknown	

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Levant	Slip Form Concrete Headh	1950	68	351,583	$3,220,500	90%	$302,212
Levant	2 steel bins @ 123,000	1975	43	246,000	$664,200	72%	$176,597

Notes: This is a multi-parcel sale in Levant that included $300,000 in personal property

Sale Number: 73

Guide Year: 2020

Sale Number: 74

Guide Year: 2020

Region	County	Sale Month/Year:
West	Stanton	3 / 2019

Total Sale Price:	$972,000	**Avg Effective Age:**	54.32
Land Size:		**Total Depreciation %:**	0.8691
Land Value:	$5,200	**Annual Depreciation:**	1.60%
Amt PP/BV:	$367,200	**Total Accrued Depreciation:**	$5,017,514
Non-Grain Structures RCNLD:		**Net Sale Price:**	$583,766
Seller:	ADM Company	**Grain Storage:**	1,025,000
Buyer:	Skyland Grain LLC	**Net Storage per Bu:**	$0.57
Situs Address:	First Avenue, Manter, KS	**Avg Conc:**	$0.84
		Avg Steel:	
		Avg Flat:	$0.64
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
Manter	
On RR but service unknown	

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Manter	Slip Form Concrete Headh	1956	62	500,000	$4,230,000	90%	$422,196
Manter	Flat Storage	1971	47	525,000	$1,543,500	78%	$333,790

Notes: The is a three-location sale, Manter, Big Bow and Johnson City, all in Stanton County. Per the Seller, the sale price ($6,000,000) and the amount for personal property ($1,080,000) was allocated, Manter 15%, Big Bow 50% and Johnson City 35%.

Sale Number: 74

Guide Year: 2020

Sale Number: 75

Guide Year: 2020

Region	County	Sale Month/Year:
West	Stanton	3 / 2019

Total Sale Price:	$2,957,418	**Avg Effective Age:**	34.84
Land Size:		**Total Depreciation %:**	0.7057
Land Value:	$6,260	**Annual Depreciation:**	2.03%
Amt PP/BV:	$1,120,684	**Total Accrued Depreciation:**	$8,701,599
Non-Grain Structures RCNLD:		**Net Sale Price:**	$1,781,858
Seller:	ADM Company	**Grain Storage:**	3,034,720
Buyer:	Skyland Grain LLC	**Net Storage per Bu:**	$0.59
Situs Address:	Big Bow, KS	**Avg Conc:**	$0.64
		Avg Steel:	$1.82
		Avg Flat:	$0.57
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
Big Bow	
On RR but service unknown	

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Big Bow	Slip Form Concrete Headh	1953	65	505,000	$4,166,250	90%	$388,419
Big Bow	Slip Form Concrete Annex	1962	56	557,000	$3,158,190	90%	$294,438
Big Bow	Steel Bin	1998	20	474,000	$1,156,560	33%	$718,841
Big Bow	Steel Bin	2010	8	980,000	$2,391,200	13%	$1,932,073
Big Bow	Flat Storage	1971	47	518,720	$1,457,603	78%	$294,433

Notes: The is a three-location sale, Manter, Big Bow and Johnson City, all in Stanton County. Per the Seller, the sale price ($6,000,000) and the amount for personal property ($1,080,000) was allocated, Manter 15%, Big Bow 50% and Johnson City 35%.

Sale Number: 75

Guide Year: 2020

Sale Number: 76

Guide Year: 2020

Region	County	Sale Month/Year:
West	Stanton	3 / 2019

Total Sale Price:	$2,140,170	**Avg Effective Age:**	51.03
Land Size:		**Total Depreciation %:**	0.7874
Land Value:	$6,400	**Annual Depreciation:**	1.54%
Amt PP/BV:	$806,034	**Total Accrued Depreciation:**	$5,974,789
Non-Grain Structures RCNLD:		**Net Sale Price:**	$1,300,576
Seller:	ADM Company	**Grain Storage:**	1,052,000
Buyer:	Skyland Grain LLC	**Net Storage per Bu:**	$1.24
Situs Address:	304 West Highland Ave, Johnson City, KS	**Avg Conc:**	$1.53
		Avg Steel:	
		Avg Flat:	
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
Johnson City	
On RR but service unknown	

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Johnson City	Slip Form Concrete Headh	1953	65	562,000	$4,653,360	90%	$444,768
Johnson City	Slip Form Concretet Anne	1983	35	490,000	$2,935,100	58%	$1,168,903

Notes: The is a three-location sale, Manter, Big Bow and Johnson City, all in Stanton County. Per the Seller, the sale price ($6,000,000) and the amount for personal property ($1,080,000) was allocated, Manter 15%, Big Bow 50% and Johnson City 35%.

Sale Number: 76

Guide Year: 2020

Sale Number: 77

Guide Year: 2020

Region	County	Sale Month/Year:
West	Haskell	8 / 2019

Total Sale Price:	$950,000	**Avg Effective Age:**	39.43
Land Size:		**Total Depreciation %:**	0.6944
Land Value:	$9,970	**Annual Depreciation:**	1.76%
Amt PP/BV:	$330,000	**Total Accrued Depreciation:**	$7,718,261
Non-Grain Structures RCNLD:		**Net Sale Price:**	$610,030
Seller:	Sublette Enterprises	**Grain Storage:**	1,847,232
Buyer:	Sublette COOP	**Net Storage per Bu:**	$0.33
Situs Address:	West Lalande Ave, Sublette, KS	**Avg Conc:**	$1.08
		Avg Steel:	
		Avg Flat:	$2.81
		Avg Metal Clad:	$11.24

Railroad Service

Location	Number of Cars
Sublette	
On RR but service unknown	

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Sublette	Steel flat storage	1957	61	550,000	$1,589,854	90%	$1,547,060
Sublette	Wood frame metal clad	1930	88	43,699	$504,723	90%	$491,247
Sublette	Slip Form Concrete Annex	1977	41	365,000	$2,281,250	68%	$703,108
Sublette	Concrete Stave bins @ 14,	1930	88	56,030	$510,994	90%	$49,736
Sublette	Slip Form Concrete Annex	1956	62	550,000	$3,173,000	90%	$308,877
Sublette	Slip Form Concrete Headh	1956	62	200,000	$2,036,000	90%	$198,164
Sublette	Slip Form Concrete Headh	1940	78	82,503	$1,019,737	90%	$99,251

Notes: The SVQ indicated a personal property amount of $140,000.

Sale Number: 77

Guide Year: 2020

Sale Number: 78

Guide Year: 2020

Region	County	Sale Month/Year:
West	Cheyenne	7 / 2019

Total Sale Price:	$2,050,000	**Avg Effective Age:**	9.91
Land Size:		**Total Depreciation %:**	0.1952
Land Value:	$12,820	**Annual Depreciation:**	1.97%
Amt PP/BV:	$410,000	**Total Accrued Depreciation:**	$392,159
Non-Grain Structures RCNLD:		**Net Sale Price:**	$1,564,050
Seller:	Busse Enterprises	**Grain Storage:**	714,000
Buyer:	Scoular Company	**Net Storage per Bu:**	$2.19
Situs Address:	1892 Road E, Hwy 27, St Francis, KS	**Avg Conc:**	
		Avg Steel:	$2.26
		Avg Flat:	
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
St Francis	
no service	

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
St Francis	Steel hopper Bin	1982	36	2,214	$11,756	60%	$4,560
St Francis	Steel Bin @ 9,135	1982	36	18,280	$63,797	60%	$24,746
St Francis	Steel Bin @ 54,242	2000	18	108,538	$312,589	30%	$212,182
St Francis	Steel Bin @ 146,168	2010	8	438,726	$1,215,271	13%	$1,021,322
St Francis	Steel Bin	2012	6	146,242	$405,090	10%	$353,534

Notes: There are two SVQ's for this sale, #4558 is the transfer from Seller to Buyer to pay-off a Contract for Deed and SVQ #4559 is the sale to Scoular Grain. The amount for personal property list on the SVQ was not allowed, there is not a breakdown or explanation of those costs. Attempts to contact the Seller were unsuccessful.

Sale Number: 78

Guide Year: 2020

Sale Number: 79

Guide Year: 2020

Region	County	Sale Month/Year:
West	Barton	2 / 2020

Total Sale Price:	$2,600,000	**Avg Effective Age:**	34.42
Land Size:		**Total Depreciation %:**	0.6221
Land Value:	$36,030	**Annual Depreciation:**	1.81%
Amt PP/BV:	$50,000	**Total Accrued Depreciation:**	$3,635,179
Non-Grain Structures RCNLD:		**Net Sale Price:**	$2,484,062
Seller:	Mid Kansas Agri Co	**Grain Storage:**	2,173,937
Buyer:	Great Bend COOP	**Net Storage per Bu:**	$1.14
Situs Address:	355 SW 60th Ave, Dundee, KS	**Avg Conc:**	
		Avg Steel:	$1.36
		Avg Flat:	$0.23
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
Dundee	
On RR but service unknown	

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Dundee	Flat Storage	1958	60	669,252	$1,800,288	90%	$156,859
Dundee	raised hopper bins @ 7,25	1960	58	14,500	$53,650	90%	$4,675
Dundee	Raised hopper bins @ 3,6	1960	58	14,500	$59,160	90%	$5,155
Dundee	Bolted Steel bins @ 74,58	1960	58	298,332	$1,053,112	90%	$91,757
Dundee	steel Bin @ 260,000	2009	9	520,000	$1,263,600	15%	$935,828
Dundee	Steel Bin	2013	5	117,000	$290,160	8%	$231,748
Dundee	Steel Bin	2007	11	276,844	$678,268	18%	$482,630
Dundee	Steel Bin	1990	28	263,509	$645,597	47%	$300,004

Notes: There is $50,000 in personal property listed on the SVQ.

Sale Number: 79

Guide Year: 2020

Sale Number: 80

Guide Year: 2020

Region	County	Sale Month/Year:
West	Rice	4 / 2020

Total Sale Price:	$100,000	**Avg Effective Age:**	77.39
Land Size:		**Total Depreciation %:**	0.905
Land Value:	$23,700	**Annual Depreciation:**	1.17%
Amt PP/BV:	$0	**Total Accrued Depreciation:**	$2,124,692
Non-Grain Structures RCNLD:		**Net Sale Price:**	$52,817
Seller:	ADM Company	**Grain Storage:**	250,445
Buyer:	Central Prairie COOP	**Net Storage per Bu:**	$0.21
Situs Address:	321 N East Ave, Lyons, KS	**Avg Conc:**	$0.89
		Avg Steel:	
		Avg Flat:	
		Avg Metal Clad:	

Railroad Service

Location	Number of Cars
Lyons	
no service	

Grain Structures

Location	Structure	Year Built	Eff Age	Capacity (bu.)	RCN	% Depr	RCN less All Depr
Lyons	Slip Form Concrete Annex	1945	73	171,878	$1,330,336	90%	$126,409
Lyons	Slip Form Concrete Headh	1931	87	78,567	$1,017,443	90%	$96,678

Notes: There are 5 metal bins on a separate parcel that are not licensed at the time of sale but they were included.

Sale Number: 80

Guide Year: 2020

2023 GRAIN ELEVATOR APPRAISAL GUIDE - ADDENDUM

This addendum is applicable to the 2023 valuation year as authorized by K.S.A. 79-1412a(b)

Introduction

The purpose of this addendum is to inform Kansas County Appraisers, industry representatives and other interested parties of amendments to the Kansas Grain Elevator Appraisal Guide for the 2023 tax year. It will serve as the update and provide the only changes for the 2023 Grain Elevator Valuation Guide.

The changes stem from a court ruling of a longstanding grain elevator appeal in Gray County, Kansas. In July of 2022, the Kansas Court of Appeals released a ruling finding that key components of a grain handling facility are personal property items and not fixtures. In late-October, the Kansas Supreme Court denied Gray County's petition for review of the Kansas Court of Appeals decision in the case. This action makes the ruling binding and provides guidance to the appraisal process.

To classify property for ad valorem tax purposes, K.S.A. 79-261 requires the county appraiser to conform to a) the definitions of real and personal property in Kansas law; and b) the factors set forth in the Personal Property Guide published by the Director of Property Valuation.

K.S.A. 79-102 defines real property and personal property in the following manner:

> "That the terms "real property," "real estate," and "land" ... shall include not only the land itself, but all buildings, fixtures, improvements, mines, minerals, quarries, mineral springs and wells, rights and privileges appertaining thereto."
>
> "The term "personal property" shall include every tangible thing which is the subject of ownership, not forming part or parcel of real property..."

Where the proper classification of Commercial Industrial Machinery & Equipment (CIME) is not clearly determined from the definitions of real and personal property provided in Kansas law, the appraiser shall use the three-part fixture law test as set forth in K.S.A. 79-261 and the Personal Property Guide prescribed by the Director of Property Valuation pursuant to K.S.A. 75-5105a(b), and amendments thereto, and shall consider the following:

a. The **annexation** of the machinery and equipment to the real estate;
b. The **adaptation** to the use of the realty to which it is attached and determination whether the property at issue serves the real estate; and

c. The **intention** of the party making the annexation, based on the nature of the item affixed; the relation and situation of the party making the annexation; the structure and mode of annexation; and the purpose or use for which the annexation was made.

Additionally, K.S.A. 79-261(b)(3) states that "basic factors for clarifying items as real or personal property are their designated use and purpose."

All three parts of the test must be satisfied before an item can be classified as real property.

Using Kansas' three-part fixture law, the appellate court determined much of the elevator's CIME was not sufficiently annexed to the realty to be classified as fixtures. The Court considered the degree of permanency of the CIME and other details surrounding an item's physical attachment and removability. Much of the CIME was large integral parts of the grain handling operation that were bolted to the grain storage bins. Following is a general list of the equipment cited in the order. It seems logical that other CIME items can be viewed as natural extensions to the list below and be classified as personal property as well (i.e. vertical elevator conveyor leg).

- Conveyors
- Spouting
- Transitions
- Gates
- Aeration components
- Connecting bridges
- Temperature monitoring equipment
- Loadout system modules and components

There will obviously be some changes in the way the CIME is handled for appraisals. Based on the court order, the appraiser will need to consider what items qualify as real property and what qualifies as personal property. The court order can provide guidance on some, but likely not all items, and the three-part fixture law test should be utilized when needed.

2023 Grain Elevator Guide Changes

Since no grain elevator sales or Marshall Swift cost information was updated for the 2023 guide, the 2022 grain elevator valuation can serve as the basis for the 2023 valuation. ***However, the tax year should be updated in the worksheet where applicable (i.e. Depreciation Analysis worksheet).*** Appraisers are reminded to retain a copy of the 2022 valuation documents for the required work file, then create a 2023 document from 2022. Obviously, physical changes such as new construction and demolition must be accounted for.

CIME in the Cost Approach

For simplicity as well as consistency, CIME items are bundled together in the Grain Elevator Guide sales used to establish depreciation for the cost approach to value. The Marshall Swift (MS) bundled CIME costs consider the complexity of the grain handling operation in the quality component (low, average, good, excellent). Theoretically, the more complex the operation, the better the quality assignment used to account for this variable. Because MS bundled costs are used, an accurate extraction of the individual

CIME items is not available. Since the appraiser will seek guidance from the court order (and three-part fixture law test if needed), it is recommended the bundled CIME costs be removed from the cost approach when valuing subject properties through the guide worksheet. If an analysis of the three-part fixture test indicates individual items need to be added back into the real estate equation, this can be done individually item by item.

Adjustments for CIME were applied in Section 2-Storage Equipment of the cost valuation worksheet. The costs were broken up by MS bundled costs and aeration costs. When displaying the contributory CIME cost from the worksheet, it is best practice to retain and display the original CIME RCN value in section 2 to show the amount that was originally added to the RCN. See the RCN column in the "partial" section 2 display below. The user can then show the value was deducted the overall RCN calculation in Section 3-Cost Reconciliation. The grain storage will have multipliers and depreciation applied to arrive at the final depreciated cost estimate.

Partial Display of Cost Worksheet Section 2 - EXAMPLE

SECTION 2 - STORAGE EQUIPMENT		Year Built	Bu. Capacity/ Units	Rate	RCN
(6)	Aeration System				
	Slip Form Concrete .18 Per Bushel (no aeriation)		0	$0.18	0
	All other Storage .14 Per Bushel		582,000	$0.14	81,480
(7a)	Consolidated Grain Handling Equipment - Rate x $ Per Bushel				
			582,000	$1.20	698,400
					0
Section 2, TOTAL RCN: Transfer to Line 9, Section 3					779,880

Display of Cost Worksheet Section 3 - EXAMPLE

SECTION 3 - COST RECONCILIATION				
(8)	Total Cost Section 1		$2,900,417	
(9)	Total Cost Section 2		$779,880	
(10)	Total Cost for Section 1 and 2		3,680,297	
(10a)	CIME $ Adjustment		(779,880)	Minus Total CIME cost
(10b)	Adjusted Cost for Section 1 and 2		$2,900,417	Total Cost-CIME cost
(10c)	CIME Cost Percentage of Total RCN (For use in Comparable Sale Adjustment)		21.1907%	Total cost / CIME cost
(11)	Current Cost Multiplier		1.01	
(12)	Local Multiplier		0.93	
(13)	Total Replacement Cost New (RCN)		2,724,362	
(14)	Depreciation - Physical & Functional (%)	86.5%	no calc	
(15)	Economic Obsolescence (%)		no calc	
(16)	Total Obsolescence & Depreciation cannot be more than 90%	86.5%	$2,355,211	
(17)	Total Replacement Cost New Less Depreciation (RCNLD)		$369,151	
(18)	ESTIMATED MARKET VALUE (Rounded)	$0.63 Per Bushel	$369,200	

CIME in the Comparable Sales Approach

In the comparable sales approach to value, the MS bundled CIME costs are embedded in the sale and not specifically segregated out like in the cost approach. Therefore, an extraction of the CIME bundled costs from the sales is problematic. Since the CIME costs calculated in the cost approach is already documented, it is recommended this cost adjustment also be applied to the comparable sales approach. To apply the MS cost numbers to the comparable sales approach, the contributory value of the CIME from the cost approach must be converted from a dollar amount to a percentage of the total grain handling value. To calculate the contributory CIME cost as a %, the user should take the total CIME cost on line 9, section 3 of the cost worksheet, and divide it by the total improvement cost on line 10, section 3. The resulting calculation is a % of the CIME as it was applied to the cost valuation. Once converted to a %, it can be applied to the final comparable sale dollar per bushel value.

There are multiple ways to analyze the sales for the comparable sales approach. For example, the appraiser may analyze sales individually, by the total statewide or regional database considering construction type, size, and age etc. The example below shows the reconciliation of the different data sets. The 21.1907% CIME adjustment represents a -$0.1879 (rounded) adjustment. The final value is adjusted to from $0.8867 to $0.6988 per bushel.

2023 SALES COMPARISON APPROACH
Price Per Bushel Storage

Category or Sub-Category	# Properties	Low	Mean	Median	High	
Total Database						
Type of Construction	28	$0.26	$1.40	$1.41	$2.83	
Size (Total DB)	24	$0.12	$1.25	$1.08	$3.30	
Age (Total DB)	15	$0.12	$1.00	$0.64	$2.11	
Total Regional Database						$1.04
Type of Construction (Regional DB)	1	$0.12	$0.12	$0.12	$0.12	
Size (Regional DB)	6	$0.12	$1.44	$1.27	$3.30	
Age (Regional DB)	6	$0.12	$1.12	$1.08	$2.11	
Types of Storage (Regional DB)						
Upright Concrete						$0.82
Upright Steel						
Crib						
Flat Storage						
Mixed						
Other:	**Type**	**Eff Age**	**Capacity**		**Net $/bu**	
Subject Property		44.79	582,000			
Individual Sale No. _____64___	STEEL	26.56	445,368		$0.88	
Individual Sale No. ___47_____	STEEL	32.48	933,000		$0.70	
Individual Sale No. ____26_____	MIXED	31.00	415,308		$0.80	$0.79

Conclusion	**$0.8867**	Dollars Per Bushel	
	-$0.1879	**CIME $ Adjustment**	**CIME % Adjustment**
	$0.6988	**Final Value**	21.1907%

Personal Property CIME Items

Considering CIME items personal property rather than real property puts a reporting burden on the property owner. By law, individuals, companies and corporations that own or have tangible personal property subject to their control on January 1st, must list the property with the county appraiser on or before March 15th. This is a self-reporting function and it the responsibility of the property owner. The county appraiser is required by law to apply a penalty to the assessed value of personal property that is not listed by the March 15th deadline.

In 2006, to promote and stimulate new investments in CIME in Kansas, and to encourage economic expansion and job growth, Kansas legislation was passed that exempted all new CIME acquired by a qualified purchaser, or CIME transported into the state for the purpose of expanding an existing business or creating a new business after June 30, 2006 from ad valorem property taxation. This legislation can be found in K.S.A. 79-223. While many grain elevator CIME items will qualify for this exemption, there will still be items that will not qualify.

Initially, owners will be requested to complete a comprehensive personal property rendition for all CIME items by the March 15th deadline. It will be the responsibility of the county appraiser to review the completed rendition and determine which items qualify for the exemption and which do not. Although it may be prudent to provide a comprehensive listing of all items to the county appraiser annually, items qualifying for the exemption will not be required to be reported in future years. If the county appraiser does not feel like an initial comprehensive listing has been made by the owner, they may arrange a visit to the property for an on-site physical inspection of the facility.

The personal property penalty schedule is as follows:

March 16 through April 15 ……..	5%
April 16 through May 15 ……	10%
May 16 through June 15 ……	15%
June 16 through July 15 ……..	20%
July 16 through March 14 of the following year…….	25%

If **within one year following the March 15th filing deadline**, the county discovers personal property that a taxpayer has failed to file, or failed to file a *complete* list of, the county appraiser *must* determine the assessed value of the property and apply a 50% penalty for failure to file. When the taxpayer fails to file a *complete* list of personal property, the penalty is applied *only* to the omitted or underreported portion of the property.

Property owners should refer to the current Personal Property Valuation Guide on the PVD website at ***https://www.ksrevenue.gov/pvdvaluation.html*** for additional information on personal property and penalties.

2022 and Prior Appeals

Compliance with the court order is understood to be retroactive. For the 2022 tax year, county appraisers may find property owners paying taxes under protest expecting the CIME change to be considered. If a property owner appeals a value due to personal property CIME items being included in the real property appraisal, and the county appraiser agrees with the requested change, the appraiser should make the adjustment for the 2022 tax year even though the court order was issued after January 1, 2022. A real property valuation appeal adjustment can be handled in the same manner as 2023 valuations described previously in this document. At the time of the appeal, the county should request a new or corrected personal property rendition be submitted for the year of the appeal. This will serve as the basis for the CIME review by the county appraiser. The real property valuation adjustment for a 2022 appeal should follow the 2023 valuation guidance designated by the Director of Property Valuation per K.S.A. 75-5105a(b) in this supplemental publication.

Note: The property owner may not file an equalization appeal and a payment under protest appeal in the same tax year.

If CIME personal property adjustments are made to an appeal for the 2022 tax year, the county appraiser will retroactively add the CIME items removed from the real property appraisal to a 2022 personal property rendition AND apply the required statutory penalty to the delinquent rendition from the schedule above per K.S.A. 79-1422. The taxpayer may apply for a tax grievance from the BOTA to remove the penalty.

2023 Valuation Notices

For the tax year 2023, there could be two property valuation notices, real and personal. If all personal property qualifies for exemption, there will only be a real property notice of value. The real property valuation notice will be issued on or before March 1, and the taxpayer will have 30 days to file an equalization appeal with the county appraiser. The personal property valuation notice will be issued on or before May 1, and the taxpayer will have until May 15 to file an equalization appeal with the county appraiser.