Division of Property Valuation

GRAIN ELEVATOR APPRAISAL GUIDE FOR THE STATE OF KANSAS

2018

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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."*[1]

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

[1] Kaufman, "Duopoly' grates on gain shippers," [http://www.railwayage.com/may99/grain.html], December, 2004.

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of this guide is intended for the valuation of commercial facilities. Commercial grain storage facilities must be licensed by either the USDA or the State 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.

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PART II - PREMISES 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. The list of facilities licensed by Kansas Department of Agriculture may be obtained at this website: http://wapp.kda.ks.gov/grain-warehouse/gw_public.pdf. 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 purports to value, and that property cannot include tangible or intangible personal property.

SCOPE OF THE APPRAISAL GUIDE

The data utilized in this report was verified by the Division of Property Valuation staff as well as Robert Stickney (until 2016). Assistance was also provided by the Kansas Cooperative Council. Additional data utilized in this report was verified by public, published, and private sources.

Rob Stickney is a Certified General Real Property Appraiser licensed in the State of Kansas acting as an independent contractor. Mr. Stickney became involved in mass appraisal in 1987. Along with his fee appraisal business he also provides consulting services for valuation of special use properties for ad valorem tax purposes. He has been a member IAAO since 1989 and is an affiliate member of the Kansas County Appraisers Association, holding the CKA designation.

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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.)[2]

Year	Wheat	Corn	Oats	Barley	Sorghum	Soybeans
2016	467,400	698,640	1,710	No data	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
2011	276,500	449,400	950	174	110,000	101,520
2010	360,000	581,250	1,250	301	171,000	138,125
2009	369,600	598,300	1,855	459	224,400	160,600
Average production	342,375	546,644	1,379	361	190,519	136,443

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

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	2008	2009	2010	2011	2012	2013	2014	2015	2016
Number of Off Farm Facilities	730	725	725	725	725	715	715	726	715
Off Farm Capacity in 1,000 BU.	885,000	895,000	920,000	940,000	940,000	1,000,000	1,025,000	1,050,000	1,075,000
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
Average Off Farm Capacity per Facility	1,212,329	1,234,483	1,268,966	1,296,552	1,296,552	1,398,601	1,433,566	1,446,281	1,503,497

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.[3]

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).[4]

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. [5]This transition encompasses both 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

[3]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

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

[5]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

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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, simply 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:
http://www.bnsf.com/customers/grain-facilities/shuttles/

The Shuttle Train Elevators (Kansas), effective 2017, 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)
New Cambria	ADM Grain Co.
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 following UP website:
http://dx01.my.uprr.com/pubdir/graindir.nsf/$$Search?OpenForm&ExpandView&Seq=2

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

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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 can't make a profit from short trains, and it's the rail rates that 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 is looking for as level a site as possible to minimize power required and potential for accident. BNSF offers far more detailed requirements for shuttle-loading facilities and trackage in a series of documents available on the Internet at:
http://www.bnsf.com/customers/grain-facilities/

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."*[6]

> "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

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

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record corn crop, ensuring ample feedstock supplies and ending the outlandish 'food vs. fuel' myth once and for all." [7]

Kansas Ethanol Plants

(RFA, Renewable Fuels Association, lists only 11 ethanol plants in Kansas currently producing ethanol)[8]

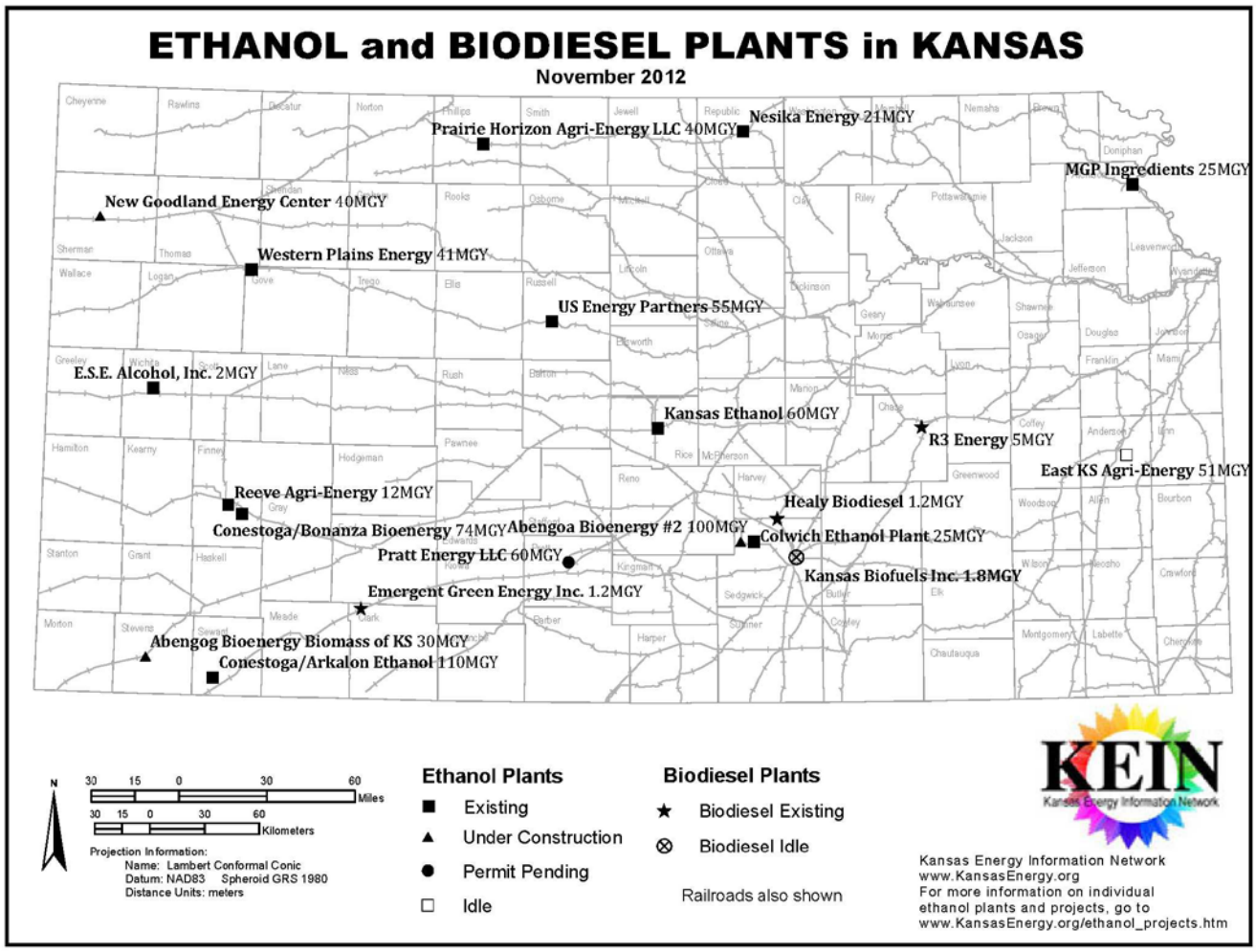
Name	Location	Millions of Gallons
Kansas Ethanol LLC	Lyons	60
NESIKA Energy LLC	Scandia	21
Arkalon Energy	Hayne/Liberal	110
Bonanza Bioenergy	Garden City	55
White Energy-Russell	Russell	55
Prairie Horizon Agri-Energy	Phillipsburg	40
Western Plains Energy, LCC	Campus	50
East Kansas Agri-Energy	Garnett	42
Reeve Agri-Energy	Garden City	12
ESE Alcohol	Leoti	2
Pratt Energy	Pratt	55
TOTAL	Kansas	502

"Ethanol is a top use for Kansas Corn. The state's 12 [other sources indicate that there are currently only 11] *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."*[9]

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

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

[9] 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."[10]

"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

[10] 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." [11]

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."[12]

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!

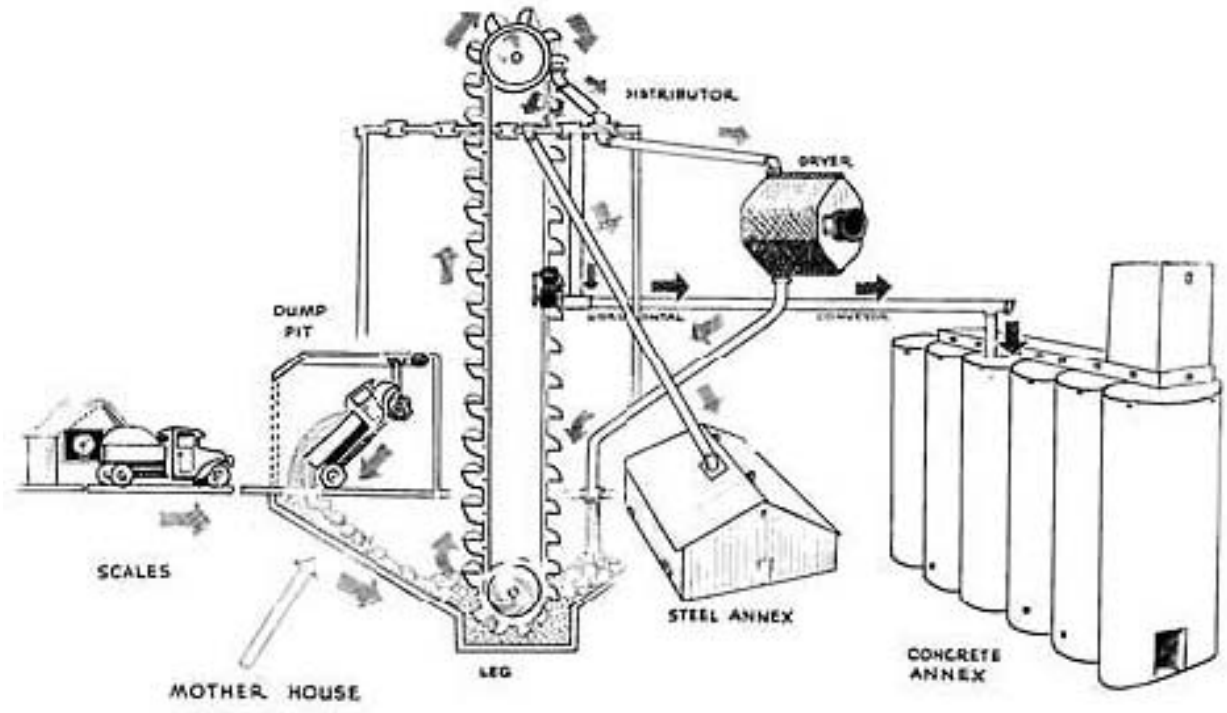
After a combine cuts and cleans the wheat, the combine dumps the wheat kernels into a truck which heads to a grain elevator. At the elevator, there's a huge scale - big enough to weigh a semi-truck. One at a time, each full wheat truck drives onto the scale and is weighed. Once the truck is weighed, 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.

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

[12] http://www.wheatmania.com/prairieskyscrapers/prairieskyscrapers.htm

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.

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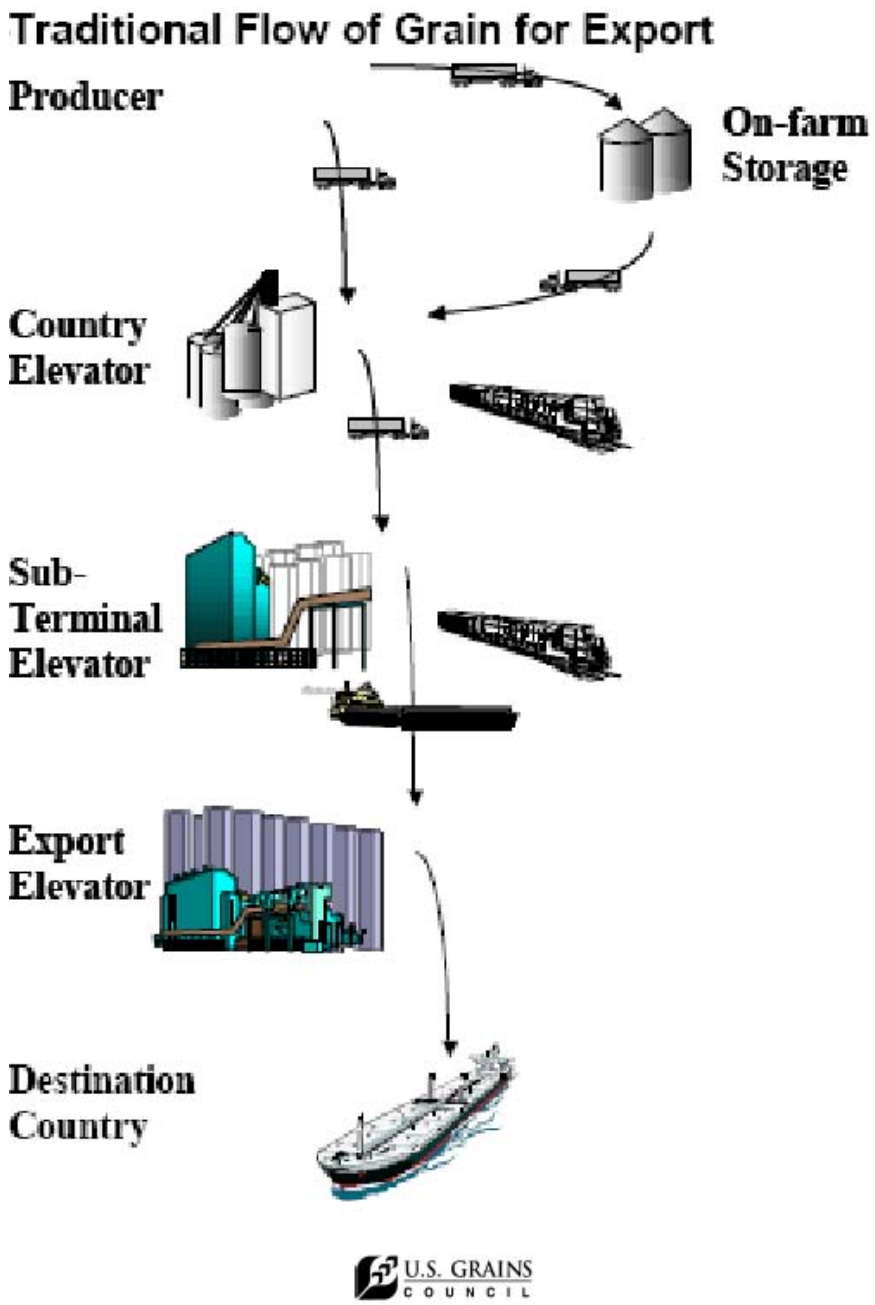
Traditional Flow of Grain for Export
Producer
On-farm Storage
Country Elevator
Sub-Terminal Elevator
Export Elevator
Destination Country
U.S. GRAINS COUNCIL

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 Study 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: http://wapp.kda.ks.gov/grain-warehouse/gw_public.pdf. 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.

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INSTRUCTIONS FOR THE GRAIN ELEVATOR WORKSHEET

The following inspection/cost analysis work sheet is based upon information abstracted from the Marshall Valuation Service. 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.

Marshall Valuation Service indicates that Jump Formed elevators should be reduced by $0.42 to $0.61 per bushel from the cost indicated in the Valuation Guide.

(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 (tanks). Marshall Valuation Service 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 Marshall Valuation Service. 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]).

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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 a 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) Total Depreciation - All Causes (%)
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) 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 added any Orion generated values on the Computer Assisted Mass Appraisal (CAMA) record.

(16) Estimated Market Value
This is the total indicated RCNLD in 15 above rounded to the nearest hundred dollars.

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GRAIN ELEVATOR COVER SHEET

County _____ **Appraisal Year** _____

Owner _____

Situs Address _____

Company Name _____

Contact _____ **Phone #** _____

	Co. No.	Map	Sec	Sheet	Qtr	Blk	Parcel
Parcel ID's							

Land Ownership _____ Owner Occupied / Right of Way / Both _____

Primary Storage Type _____

Licensed Bu. Capacity _____ State or Federal

Bushel Thru-Put _____

Est. Effective Age _____

Inspection Date _____

Review Appraiser _____

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2018 GRAIN ELEVATOR WORK SHEET

Parcel ID: _____ **Owner:** _____

Situs Address: _____

SECTION 1 - GRAIN STORAGE		Year Built	Bu. Capacity/ Units	Rate	RCN
(1)	Concrete Storage: Designate "Slip" or "Jump" Form				
					$0
					$0
					$0
					$0
					$0
					$0
(2)	Frame Elevator: Designate "Crib" or "Wood Frame"				
					$0
					$0
					$0
(3)	Upright Steel Storage				
	Corrugated Steel:				$0
					$0
					$0
					$0
	Bolted Steel:				$0
					$0
					$0
(4)	Flat Storage				
	Without Attached Loading and Unloading System				$0
					$0
	With One Attached Loading and Unloading System				$0
					$0
	With Both Attached Loading and Unloading System				$0
					$0
(5)	Other Storage				
	Concrete Stave:				$0
					$0
	Covered Storage:				$0
					$0
	Miscellaneous:				$0
					$0
	Section 1 TOTAL RCN: Transfer to Line 8, Section 3				$0
	Total Capacity		0	Bushels	

Notes:

SECTION 2 - STORAGE EQUIPMENT		Year Built	Bu. Capacity/ Units	Rate	RCN
(6)	Aeration System				
	Slip Form Concrete .14 Per Bushel			$0.14	$0
	All other Storage .12 Per Bushel			$0.12	$0
(7a)	Consolidated Grain Handling Equipment - Rate x $ Per Bushel (Pg23)				
					$0
					$0
(7b)	Pollution Control System				
	Cyclone System ($32,000 to $40,000/unit)				
	Bag House System ($65,000/unit)			$65,000	
(7c)	Additional Loading and Unloading Systems				
	Drag:				$0
					$0
	Auger:				$0
					$0
	Belt:				$0
					$0
(7d)	Grain Dryer - Designate "Batch" or "Continuous Flow"				
	Type:				$0
	Type:				$0
(7e)	Outside Leg - Designated Height and Bushels Per Hour				
					$0
					$0
					$0
(7f)	Heat Detectors				
					$0
(7g)	Cleaner - Designate Bushels Per Hour				
					$0
					$0
	Section 2, TOTAL RCN: Transfer to Line 9, Section 3				$0

SECTION 3 - COST RECONCILIATION			
(8)	Total Cost Section 1		$0
(9)	Total Cost Section 2		$0
(10)	Total Cost for Section 1 and 2		$0
(11)	Current Cost Multiplier		
(12)	Local Multiplier		
(13)	Total Replacement Cost New (RCN)		$0
(14)	Total Depreciation - All Causes (%)	0.0%	$0
(15)	Total Replacement Cost New Less Depreciation (RCNLD)		
(16)	ESTIMATED MARKET VALUE (Rounded)		$0

Notes:

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.[13]

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.[14]

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.

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

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

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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. It is important to note that there are no financial reporting standards. 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.

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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.[15]

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 #17-048 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.

[15] 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.* [16]

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)*[17]

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)*[18]

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,*

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

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

[18] 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."*[19]

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.

[19] 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 some 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 Marshall Valuation Service was 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.

Marshall Valuation Service 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 Marshall Valuation Service. 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 Marshall Valuation Service, it would appear that the local multipliers for most of rural Kansas would range from 0.85 to 0.96, with the overall Kansas multipliers for the July 2013 publication being 0.93 to 0.94.

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 80 years for upright concrete grain storage elevators, 70 years for bolted steel, 60 years for corrugated steel, wood crib metal clad and concrete stave, and 50 years for flat storage. In addition, the division has established a depreciation floor of 5% good for wood crib metal clad, concrete stave and flat storage, 10% good for steel and bolted steel, and 15% good for concrete. 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)*[20]

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. The newest facilities will suffer from accelerated depreciation.

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

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

of industrial or commercial property. Measuring the proper amount of physical deterioration and/or 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 Marshall Valuation Service 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 2009 and 2017. The individual write-ups of each transaction are included in the addendum of this guide.

Total accrued depreciation abstracted from the database ranged from -4.70% to 97.7% with a mean of 68.92% and median of 73.82%. The annual depreciation factor ranged from -0.43% to 12.76% with a mean of 2.20% and a median of 1.90%.

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.

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Annual Depreciation Rate

Type of Storage	Number of Properties	Low	Mean	Median	High
Concrete	11	1.01%	1.71%	1.70%	2.17%
Steel	18	-0.43%	2.67%	2.20%	12.76%
Mixed	6	1.08%	1.70%	1.75%	2.27%

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	-0.43%	1.81%	1.99%	3.26%
West	22	0.84%	2.43%	1.83%	12.76%
Statewide	35	-0.43%	2.20%	1.90%	12.76%

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	14	1.01%	1.92%	1.90%	3.12%
500,000 bu. & Over	21	-0.43%	2.39%	1.89%	12.76%

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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	19	-0.43%	2.71%	2.23%	12.76%
40 Years & Over	16	1.01%	1.60%	1.66%	1.99%

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Regional Market Analysis

Kansas has have 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 -4.70% to 97.70% with a mean of 68.84% and a median of 73.82%. The annual depreciation factor ranged from -0.43% to 3.26% with a mean of 1.81% and a median of 1.99%.

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	1.01%	1.53%	1.45%	2.14%
Steel	8	-0.43%	1.87%	2.08%	3.26%
Mixed	2	1.78%	2.03%	2.03%	2.27%

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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	8	1.01%	1.83%	1.95%	2.62%
500,000 bu. & Over	5	-0.43%	1.78%	2.14%	3.26%

The sales were segregated according to age (39 years & under, and 40 years & over). Annual depreciation rates were analyzed according to age. The least effective age in the Eastern sales was 11.15 years.

Annual Depreciation Rate

Age	Number of Properties	Low	Mean	Median	High
39 Years & Under	7	-0.43%	2.02%	2.23%	3.26%
40 Years & Over	6	1.01%	1.58%	1.62%	1.99%

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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 18.20% to 96.63% with a mean of 68.97% and a median of 73.99%. The annual depreciation factor ranged from 0.84% to 12.76%with a mean of 2.43% and a median of 1.83%.

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	8	1.42%	1.78%	1.80%	2.17%
Steel	10	0.84%	3.31%	2.45%	12.76%
Mixed	4	1.08%	1.53%	1.58%	1.89%

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	6	1.42%	2.05%	1.82%	3.12%
500,000 bu. & Over	16	0.84%	2.58%	1.83%	12.76%

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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	12	0.84%	3.11%	2.29%	12.76%
40 Years & Over	10	1.08%	1.61%	1.66%	1.90%

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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.*[21]

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

All of 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 similar to 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).

[21] 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.

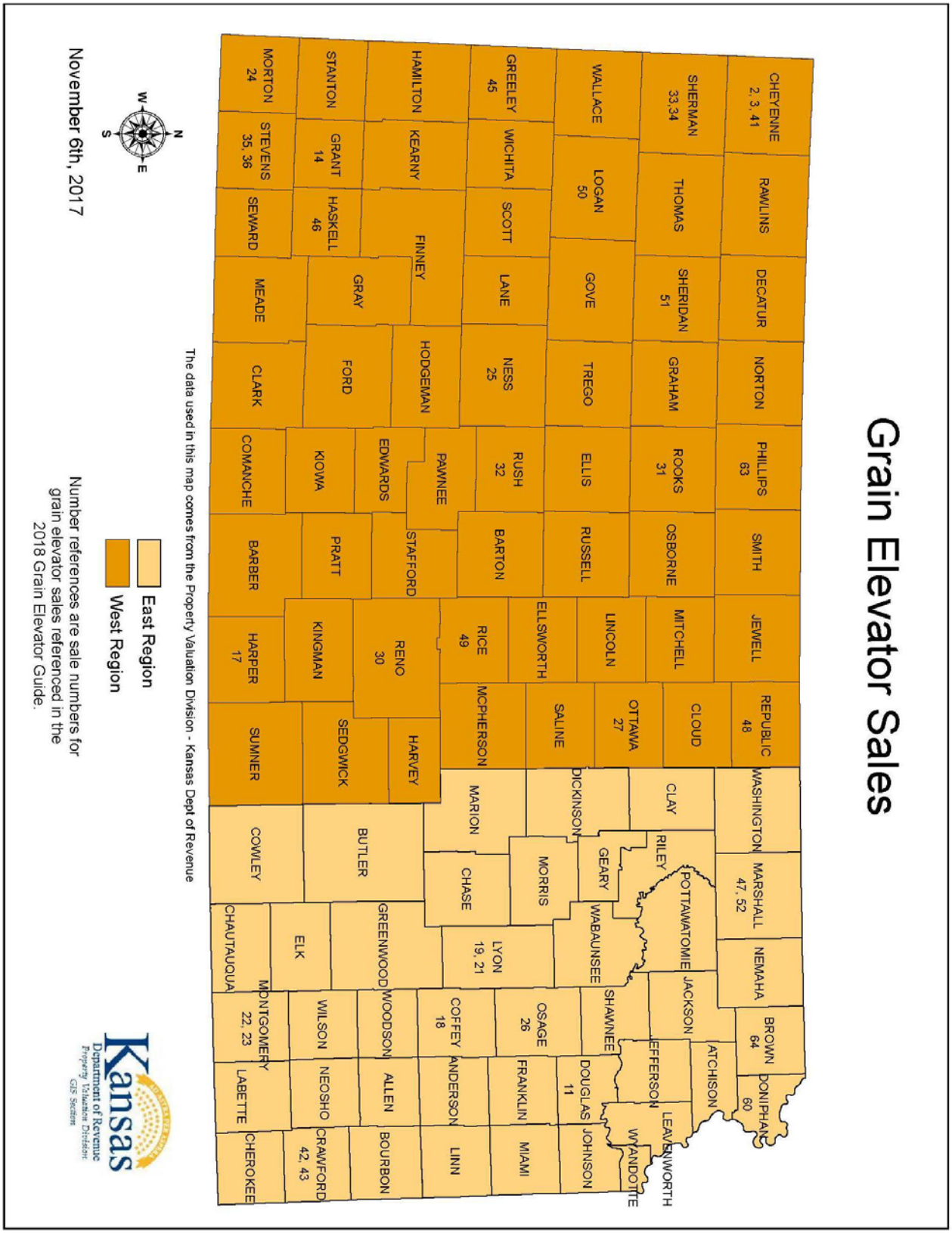
Essentially, the Sales Comparison Approach is a systematic procedure for comparison. In applying the Sales Comparison Approach, an appraiser:

- *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 comparables 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."[22]

[22] 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 41 grain elevator sales. The time frame for these sales ranged from June 2009 through September 2016. 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 located 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.

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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 $0.11 per bu. to $3.26 per bu. with a mean of $0.93 per bu. and a median of $0.75 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	16	$0.28	$1.32	$0.85	$3.27
Steel	28	$0.14	$0.95	$0.73	$3.26
Flat	7	$0.06	$0.52	$0.58	$1.10
Metal Clad	2	$1.35	$2.45	$2.45	$3.54

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	$0.11	$0.95	$0.75	$3.26
West	22	$0.22	$0.91	$0.76	$2.58
Statewide	35	$0.11	$0.93	$0.75	$3.26

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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	14	$0.22	$0.61	$0.61	$1.45
500,000 bu. & Over	21	$0.11	$1.14	$0.93	$3.26

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	19	$0.31	$1.14	$0.86	$3.26
40 Years & Over	16	$0.11	$0.67	$0.56	$1.81

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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 $0.11 to $3.26 per bu. with a mean of $0.95 per bu. and a median of $0.75 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	$0.75	$1.03	$0.83	$1.52
Steel	12	$0.14	$0.98	$0.73	$3.26

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	8	$0.31	$0.74	$0.73	$1.45
500,000 bu. & Over	5	$0.11	$1.29	$0.95	$3.26

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 11.15 years.

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Age	Number of Properties	Low	Mean	Median	High
39 Years & Under	7	$0.58	$1.21	$0.86	$3.26
40 Years & Over	6	$0.11	$0.64	$0.61	$1.45

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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 $0.22 per bu. to $2.58 per bu. with a mean of $0.91 per bu. and a median of $0.76 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	13	$0.28	$1.38	$0.87	$3.27
Steel	16	$0.29	$0.92	$0.72	$2.39
Flat	6	$0.06	$0.51	$0.49	$1.10
Metal Clad	2	$1.35	$2.45	$2.45	$3.54

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	6	$0.22	$0.44	$0.39	$0.77
500,000 bu. & Over	16	$0.28	$1.09	$0.92	$2.58

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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	12	$0.31	$1.10	$0.84	$2.58
40 Years & Over	10	$0.22	$0.69	$0.55	$1.81

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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.*[23]

It is recommended that several different units of comparison be considered for each property. Consideration should be given to the factors that are considered to be the most important in analyzing the subject grain storage (elevator) facility. If the principle 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 similar to 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 in both methods of analysis, in both the Sales Comparison Approach and the Cost Approach.

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.* [24]

It is important now 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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[23] The Dictionary of Real Estate Appraisal, Fourth Edition, Appraisal Institute, 2002, page 236.

[24] 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."[25]

[25] 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.

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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 proceed 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.[26]

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 this 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 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.

In the reconciliation process it is necessary to consider three factors for each value indication. These factors include appropriateness, accuracy, and quantity of supporting evidence.

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 (Marshall's Valuation Service). The measurement of accrued depreciation is based upon the abstraction of depreciation from a large database of grain

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

elevator transactions. The land value would be based upon a locally supported land valuation. The major weakness in the Cost Approach is 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.

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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.[27]

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

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Bulk Loader/Weigher

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.[28]

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.

[28] 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.[29]

Interstice

The space formed between physically connected circular concrete silos. The interstices themselves become storage bins.[30]

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.[31]

Licensed Capacity

Capacity of commercial grain storage may be licensed by either the Kansas Department of Agriculture or the US Department of Agriculture. The Kansas Department of Agriculture list may be obtained at this website: http://wapp.kda.ks.gov/grain-warehouse/gw_public.pdf. The Kansas Department of Agriculture may 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

Load-in

The process of receiving grain into the elevator.[32]

Load-out

The process of discharging grain from the elevator into a truck, rail car, or other vessel.[33]

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

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

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

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

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

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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.[34]

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.[35]

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

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

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Thruput

((bushels received + bushels shipped) ÷ 2) Often referenced on an annual basis, i.e., annual thruput. It is also referred to as put-thru.[36]

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 thruput ÷ 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.[37]

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.

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

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

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APPENDIX A: DIRECTIVES AND STATUTES

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Samuel M. Williams, Acting Secretary
David N. Harper, Director

Sam Brownback, Governor

DIRECTIVE #17-048

TO: **County Appraisers**

SUBJECT: **Procedures and Guidelines for Valuing Property**

This Directive Supersedes Directive #98-036

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 2017 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* (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. 2016 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

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. 2016 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* (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. 2016 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: _____

_____
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.

APPENDIX B: MARSHALL VALUATION SERVICE

May 2017 Edition

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CALCULATOR METHOD

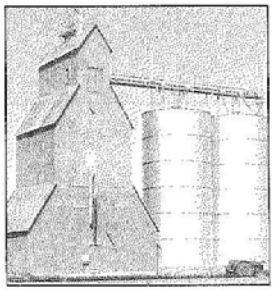
GRAIN ELEVATORS

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.

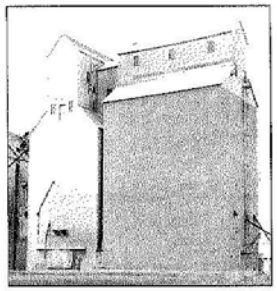
Costs are based on total licensed bushel capacity of the elevator and/or annex facility except for steel tanks and bins which are priced on a cost-per-tank basis. Special foundation work such as pilings or extremely large concrete pads are not included and must be added separately.

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.

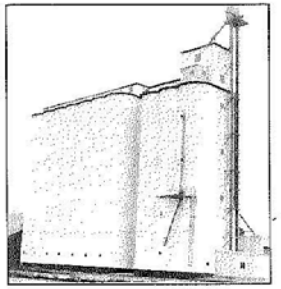
ANNEX costs are for vertical storage facilities. They are to be used for elevators when there is an exposed leg system and no headhouse or for additional detached storage which utilizes the headhouse of the original elevator as well as its basic machinery. If the annex has a headhouse, it should be priced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



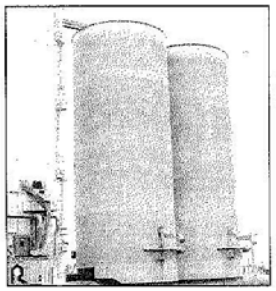
1. Metal-clad elevator with bolted steel annex tanks.



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	18.65	-----	-----	-----
10,000	17.10	-----	-----	11.35
15,000	14.55	-----	-----	10.25
20,000	13.05	7.91	14.70	9.56
25,000	11.85	7.18	13.95	9.04
30,000	11.05	6.64	13.35	8.63
40,000	9.91	5.90	12.45	8.03
50,000	9.08	5.36	11.70	7.59
75,000	7.74	4.48	10.60	6.87
100,000	6.92	3.96	9.88	6.38
150,000	5.92	3.33	8.94	5.78
200,000	5.27	2.93	8.33	5.38
250,000	4.84	2.67	7.87	5.08
300,000	4.49	2.46	7.52	4.86
400,000	4.02	2.18	7.01	4.52
500,000	3.64	1.99	6.61	4.28
750,000	-----	-----	5.97	3.88
1,000,000	-----	-----	5.58	3.59
2,000,000	-----	-----	4.69	3.02
over 2,000,000	-----	-----	4.23	2.74

NOTES: For attached covered elevator driveway, add 40.00 to 89.00 per square foot. For detached annex silos without tunnel and conveyor gallery, deduct 430.00 to 469.00 per running foot of silo.
Deduct 0.53 to 0.68 per bushel for lack of intersticing.
Deduct 0.42 to 0.61 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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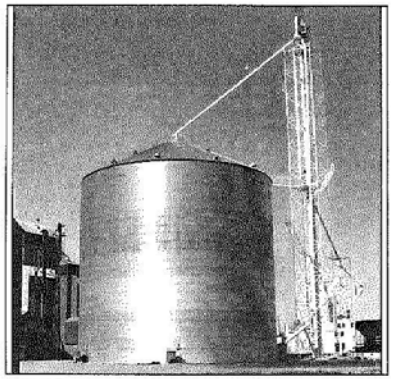
GRAIN ELEVATORS

STEEL TANKS



BUSHEL CAPACITY (Per tank)	HEAVY BOLTED STEEL (Cost per bushel)
15,000	2.86
20,000	2.74
25,000	2.64
30,000	2.55
35,000	2.50
40,000	2.45
50,000	2.35
60,000	2.28
80,000	2.17
100,000	2.10
125,000	2.02
150,000	1.96
175,000	1.93
200,000	1.87

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

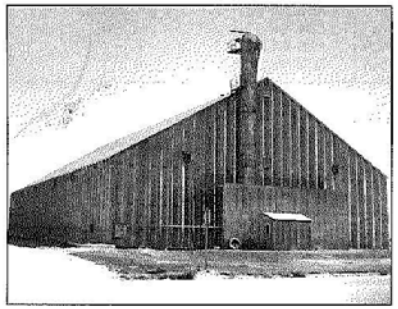
For heavy corrugated utility bins, see Page 54.

Add 269.00 – 285.00 per running foot for the tunnel and 157.00 – 184.00 for the conveyor gallery.

Add 0.11 – 0.19 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	1.87	2.05	2.51
75,000	1.76	1.96	2.36
100,000	1.65	1.87	2.27
150,000	1.57	1.78	2.14
200,000	1.48	1.68	2.05
250,000	1.45	1.65	2.00
300,000	1.39	1.59	1.96
400,000	1.33	1.56	1.87
500,000	1.29	1.49	1.84
750,000	1.21	1.41	1.73
1,000,000	1.15	1.37	1.64
2,000,000 and over	1.04	1.24	1.49

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	2.27	2.75	3.34	4.04
10,000	2.18	2.66	3.21	3.90
15,000	2.02	2.46	2.97	3.63
20,000	1.93	2.31	2.83	3.46
25,000	1.85	2.23	2.74	3.34
30,000	1.79	2.17	2.66	3.24
40,000	1.69	2.04	2.52	3.08
50,000	1.62	1.99	2.42	2.96
75,000	1.49	1.85	2.25	2.79
100,000	1.44	1.76	2.16	2.66
150,000	1.32	1.63	2.01	2.47
200,000	1.25	1.56	1.92	2.37
250,000	1.20	1.48	1.85	2.28
300,000	1.16	1.44	1.79	2.20
400,000	1.09	1.37	1.69	2.12
500,000	1.06	1.31	1.63	2.03
750,000	0.95	1.23	1.50	1.92
1,000,000	0.93	1.15	1.45	1.84
2,000,000	0.81	1.02	1.29	1.62
over 2,000,000	0.78	0.95	1.24	1.57

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.

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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	38.50	43.50	48.50	53.00	57.00	62.50	-----	-----	-----	-----	-----	-----	-----	-----
750	27.75	31.00	34.50	37.50	41.25	45.00	-----	-----	-----	-----	-----	-----	-----	-----
1,000	21.75	24.45	27.25	30.00	32.25	35.00	37.50	40.50	43.25	45.75	48.50	50.50	53.50	56.00
1,500	15.60	17.50	19.40	21.20	23.15	25.00	27.00	28.50	30.75	32.25	34.25	36.00	37.50	40.00
2,000	12.40	13.80	15.25	16.70	18.10	19.60	21.00	22.40	22.30	25.25	27.00	28.25	30.00	31.25
3,000	8.92	9.89	10.90	11.85	12.90	13.95	15.00	16.00	17.00	17.95	19.00	20.00	21.00	22.00
3,500	7.84	8.72	9.61	10.50	11.35	12.25	13.15	14.05	14.95	15.75	16.70	17.55	18.40	19.35
4,000	7.04	7.83	8.62	9.39	10.20	10.95	11.70	12.55	13.35	14.15	14.85	15.60	16.45	17.25
5,000	5.86	6.50	7.16	7.81	8.45	9.09	9.74	10.40	11.00	11.65	12.35	12.95	13.60	14.30
6,000	5.05	5.61	6.15	6.70	7.24	7.82	8.38	8.93	9.48	10.00	10.55	11.05	11.65	12.25
7,000	4.46	4.96	5.43	5.92	6.38	6.87	7.33	7.83	8.33	8.81	9.29	9.75	10.25	10.70
8,000	4.00	4.43	4.86	5.29	5.73	6.14	6.56	7.01	7.43	7.85	8.29	8.72	9.16	9.58
10,000	-----	-----	-----	4.40	4.74	5.09	5.45	5.81	6.15	6.50	6.85	7.21	7.57	7.91

NOTES: Add for discharge transition, each: 6" round, 381.00; 8" round, 414.00; 10" round, 469.00; 12" round, 510.00; 14" round, 550.00; 16" round, 600.00.
For spouting, add per linear foot: 6", 25.75 – 58.00; 8", 30.50 – 68.00; 10", 53.00 – 96.50; 12", 83.00 – 129.00; 14", 92.00 – 145.00; 16", 96.50 – 157.00.
For receiving pit, add 2.18 – 3.81 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"	3300	248	13"	790
9"	32"	3900	269	18"	905
12"	40"	5650	344	21"	1290
14"	46"	6000	388	24"	1380
16"	52"	8750	545	27"	2280
18"	58"	10100	655	30"	2450
20"	64"	11500	720	------	-----
24"	75"	13900	815	37"	3275

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)	69000.00	1,875 (3,550)	282000.00	150 (285)	39300.00
400 (750)	86250.00	2,000 (3,800)	296000.00	200 (380)	45900.00
500 (950)	102000.00	2,250 (4,300)	324000.00	270 (515)	54500.00
600 (1,150)	119000.00	2,500 (4,750)	351000.00	390 (740)	70250.00
700 (1,350)	132000.00	2,750 (5,250)	377000.00		
800 (1,500)	146000.00	3,250 (6,200)	430000.00		
900 (1,700)	161000.00	3,500 (6,650)	453000.00		
1,000 (1,900)	175000.00	4,000 (7,600)	504000.00		
1,200 (2,300)	200000.00	4,250 (8,100)	528000.00		
1,500 (2,800)	237000.00	4,500 (8,550)	553000.00		

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"	69.00	12"	119.00
8"	94.00	18"	184.00
10"	124.00	24"	215.00
12"	167.00	30"	248.00
14"	195.00	36"	264.00
16"	242.00	48"	339.00

MAN LIFTS

Uncoded, electrically operated personnel lifts..... 7850.00 – 10600.00
add cost per stop 4500.00

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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	4750	6900	660
	11	1,792	6200	9150	720
	15	2,329	7400	10900	825
	18	2,864	8400	12200	960
18'	11	2,647	6900	10000	890
	15	3,422	8600	12400	925
	18	4,189	9750	14100	960
	22	4,973	11400	-----	1010
	26	5,748	12800	-----	1080
	33	7,299	16000	-----	1130
	40	8,849	19000	-----	1210
	48	10,400	21700	-----	1290
21'	11	3,693	7600	11100	1220
	15	4,753	9750	14100	1260
	18	5,813	11800	17200	1310
	22	6,874	13800	-----	1400
	26	7,934	15400	-----	1470
	33	10,055	19300	-----	1590
	40	12,175	21700	-----	1680
	48	14,296	23900	-----	1810
24'	11	4,949	9350	13600	1540
	15	6,344	11400	16700	1610
	18	7,739	14200	20600	1680
	22	9,134	16400	-----	1800
	26	10,528	18700	-----	1880
	33	13,318	22200	-----	1980
	40	16,107	24900	-----	2120
	48	18,897	26800	-----	2270
27'	11	6,409	11100	16200	1980
	15	8,182	13700	19800	2070
	18	9,955	16300	23400	2150
	22	11,728	18700	-----	2290
	26	13,500	21100	-----	2430
	33	17,046	26400	-----	2525
	40	20,591	28600	-----	2725
	48	24,137	30500	-----	2900

BIN DIAMETER (feet)	EAVE HEIGHT (feet)	MAXIMUM CAPACITY (bushels)	COST W/OUT DRYING BIN	COST WITH DRYING BIN	SLAB FLOOR
30'	15	10,278	16600	23900	2280
	18	12,473	19600	28400	2400
	22	14,668	22500	-----	2525
	26	16,863	25100	-----	2775
	33	21,252	29900	-----	3000
	40	25,624	33100	-----	3250
	48	30,031	35500	-----	3475
36'	15	15,297	23300	33900	3375
	18	18,473	26500	38600	3575
	22	21,648	30900	-----	3725
	26	24,823	34600	-----	3975
	33	31,174	39100	-----	4125
	40	37,524	43300	-----	4450
	48	43,875	49400	-----	4750
	59	53,400	58500	-----	5050
42'	15	21,416	29700	43400	4700
	18	25,738	34900	50750	4950
	22	30,060	39400	-----	5100
	26	34,382	42500	-----	5500
	33	43,026	50250	-----	5750
	40	51,670	59000	-----	6150
	48	60,314	68750	-----	6550
	59	73,279	81500	-----	7050
48 ~~42'~~	15	26,749	33300	51250	6150
	18	34,394	42200	61750	6450
	22	40,039	48600	-----	6650
	26	45,684	54750	-----	7150
	33	56,974	67250	-----	7500
	40	68,264	79750	-----	7950
	48	79,554	92250	-----	8650
	59	96,488	110000	-----	9200
60'	15	56,170	66500	-----	9500
	26	73,810	86000	-----	10000
	40	109,092	125000	-----	10400
	48	126,732	144000	-----	11400
	59	152,870	173000	-----	12400
	64	165,563	184000	-----	14200

BIN DIAMETER (feet)	EAVE HEIGHT (feet)	MAXIMUM CAPACITY (bushels)	COST W/OUT DRYING BIN	COST WITH DRYING BIN	SLAB FLOOR
75'	32	147,000	170000	-----	14700
	40	176,000	201000	-----	16300
	48	206,000	231000	-----	19500
	59	246,000	273000	-----	21000
	64	266,000	290000	-----	22100
90'	32	221,000	249000	-----	21300
	40	263,000	292000	-----	23400
	48	305,000	335000	-----	27700
	59	358,223	392000	-----	32100
105'	32	306,180	345000	-----	29000
	40	363,558	406000	-----	32100
	48	420,936	466000	-----	37800
	59	500,000	550000	-----	43500

DIAMETER (feet)	TOTAL HEIGHT	CAPACITY (bushels)	CAPACITY (tons)	COST	SLAB BASE
15'	33	4,030	100.75	14500.00	810.00
	41	5,220	130.50	17200.00	900.00
	49	6,400	160.00	20000.00	960.00
	57	7,580	189.50	22400.00	1010.00
18'	34	5,980	149.50	20500.00	1070.00
	42	7,810	195.25	25000.00	1130.00
	50	9,530	238.25	28000.00	1230.00
	58	11,250	281.25	32700.00	1330.00
	63	12,396	310.00	35600.00	1410.00
21'	35	8,340	208.50	26800.00	1460.00
	43	10,640	266.00	33400.00	1630.00
	51	12,950	323.25	39700.00	1730.00
	59	15,260	381.50	44900.00	1790.00
	65	16,800	420.00	47200.00	1880.00
24'	36	11,170	279.25	33100.00	1930.00
	44	14,170	354.25	43200.00	2040.00
	52	17,170	429.25	54000.00	2280.00
	60	20,170	504.25	60250.00	2525.00
	66	22,170	554.25	62750.00	2725.00
30'	39	18,347	458.75	62000.00	3050.00
	47	23,048	576.25	72250.00	3275.00
	55	27,749	693.75	81250.00	3425.00
	63	32,450	811.25	91250.00	3500.00
	69	35,584	889.50	95250.00	3575.00

ADJUSTMENTS

Auger and drive 395.00
plus 38.50 to 46.75 per foot of bin diameter
Add for spreaders ..... 770.00 to 1160.00 each
Aeration systems ..... Add 0.11 to 0.18 per bushel

Stirrators ..... 180.00 to 274.00 per foot of bin diameter
Ladders ..... 66.50 plus 9.49 per linear foot
Add for safety cages ..... 18.45 to 22.95 per foot installed

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The data included on this page becomes obsolete after update delivery, scheduled for May 2019.

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CALCULATOR METHOD

FARM STORAGE

HOPPER BOTTOM FEED BINS

Costs are averages of typical feed hoppers with roof, manhole and ladder, including necessary steel structural supports and concrete footings. Height is overall, from ground level to top of tank. Capacity in tons is figured at 50 pounds per bushel.

STEEL HOPPER BOTTOM FEED BINS

DIAMETER	OVERALL HEIGHT	CAPACITY (cubic feet)	CAPACITY (bushels)	CAPACITY (tons)	COST
6'	10'	149	120	3.0	1770.00
	16'	299	240	6.0	2500.00
	21'	448	360	9.0	2850.00
	25'	597	480	12.0	3200.00
	28'	747	600	15.0	3525.00
7'	11'	195	157	4.0	2430.00
	14'	297	239	6.0	2625.00
	16'	399	321	8.0	2825.00
	19'	501	403	10.0	3025.00
9'	14'	373	300	7.5	3625.00
	17'	570	458	11.5	4375.00
	20'	739	594	14.8	4750.00
	22'	908	730	18.3	5050.00
	25'	1,078	866	21.8	5500.00
	28'	1,244	1,000	25.0	5800.00
	31'	1,406	1,130	28.3	6000.00
12'	20'	1,083	870	21.8	8150.00
	25'	1,674	1,345	33.8	9250.00
	31'	2,271	1,825	45.8	10600.00
	36'	2,862	2,300	57.5	11400.00
	42'	3,459	2,780	69.5	12400.00

NOTE: For larger hopper bins, see Page 54.

FIBERGLASS HOPPER BOTTOM FEED BINS

DIAMETER	OVERALL HEIGHT	CAPACITY (cubic feet)	CAPACITY (bushels)	CAPACITY (tons)	COST
6'	11'	130	104	2.5	2675.00
7'	13'	228	183	4.5	3475.00
8'	16'	400	321	8.0	4500.00
	21'	525	422	10.5	5800.00
10'	19'	550	442	11.0	11000.00
	21'	700	563	14.0	12400.00
	23'	850	683	17.0	13800.00
	25'	1,000	804	20.0	15000.00
	27'	1,150	924	23.0	16600.00
	29'	1,300	1,045	26.3	18500.00
	31'	1,450	1,165	29.3	20500.00
	33'	1,600	1,286	32.3	22700.00
	35'	1,750	1,406	35.3	24900.00
	37'	1,900	1,527	38.3	26900.00
	39'	2,050	1,647	41.3	28800.00

STEEL TANKS

CAPACITY (bushels)	COST
500,000	704000.00
600,000	843000.00
700,000	980000.00
800,000	1119000.00
900,000	1257000.00
1,000,000	1394000.00
Costs do not include loading system or other features.	

SCALES

TYPE	PLATFORM SCALES CAP. (lb.)	PLATFORM SCALES COST	TRUCK SCALES CAP. (tons)	TRUCK SCALES COST	R.R. TRACK SCALES CAP. (tons)	R.R. TRACK SCALES COST	HOPPER SCALES CAP. (tons)	HOPPER SCALES COST
Portable	1,000	1600.00	20	33900.00	150	95750.00	25	30500.00
(beam type)	2,000	2625.00	30	39500.00	175	108000.00	36	38500.00
Fixed	4,000	9500.00	40	45400.00	200	120000.00	75	66750.00
	6,000	12600.00	50	51250.00	250	149000.00	100	72500.00
	10,000	18200.00	60	57750.00	300	189000.00		
	20,000	29400.00	70	66750.00	350	232000.00		
			80	67750.00				

NOTES: Costs of truck and track scales include reinforced concrete pit and platform, with steel scale mechanism. For wood platform, deduct 6%. For card printer, add 1560.00 to 2380.00. For steel plate over platform, add 5%. For remote-control electronic reader, add 7250.00 to 9750.00.

CONVERSION SYSTEMS

1 cubic foot = .8036 bushels
1 bushel = 1.2444 cubic feet
1 gallon = .1337 cubic feet = .1074 bushels

To calculate a grain bin's bushel capacity according to eave height:

$$\left(\frac{\text{Diameter of Bin}}{2}\right)^2 \times 3.1416 \times .8036 \times \text{Height to Eave}$$

To calculate the capacity of a grain bin's cone in bushels:

$$\frac{1}{3}\left(\frac{\text{Diameter of Bin}}{2}\right)^2 \times 3.1416 \times .8036 \times \text{Height of Cone}$$

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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 (11/16)	12 (8/16)	13 (5/16)	14 (2/16)	15 (11/15)	16 (8/15)	17 (5/17)	18 (2/17)
EASTERN	A	1.05	1.04	1.04	1.02	1.03	1.03	1.04	1.06
	B	1.06	1.06	1.04	1.05	1.03	1.04	1.04	1.06
	C	1.04	1.04	1.05	1.04	1.05	1.05	1.04	1.03
	D	1.03	1.04	1.03	1.02	1.02	1.03	1.01	1.02
	S	1.07	1.06	1.05	1.04	1.05	1.03	1.02	1.06
CENTRAL	A	1.00	0.99	0.98	0.99	0.98	0.99	0.98	0.99
	B	1.00	1.00	0.99	1.00	1.01	1.00	0.97	0.99
	C	1.00	1.00	1.01	0.99	1.00	0.99	0.98	0.99
	D	0.99	1.00	1.00	1.00	1.01	1.01	0.97	0.99
	S	0.98	1.00	0.98	0.99	0.99	0.98	0.99	0.99
WESTERN	A	1.00	1.02	1.03	1.04	1.02	1.01	1.01	0.99
	B	0.99	1.00	1.04	1.02	1.03	1.04	1.01	1.00
	C	1.00	1.03	1.01	1.03	1.02	1.03	1.00	1.02
	D	1.02	1.01	1.02	1.03	1.00	1.00	1.02	1.01
	S	1.00	1.00	1.03	1.02	1.00	1.04	1.01	0.99

SEGREGATED COST SECTIONS

(Effective Date of Cost Pages)		41 (12/16)	42 (9/16)	43 (6/16)	44 (3/16)	45 (12/15)	46 (9/15)	47 (6/17)	48 (3/17)
EASTERN	A	1.05	1.04	1.04	1.02	1.03	1.03	1.04	1.06
	B	1.06	1.06	1.04	1.05	1.03	1.04	1.04	1.06
	C	1.04	1.04	1.05	1.04	1.05	1.05	1.04	1.03
	D	1.03	1.04	1.03	1.02	1.02	1.03	1.01	1.02
	S	1.07	1.06	1.05	1.04	1.05	1.03	1.02	1.06
CENTRAL	A	1.00	0.99	0.98	0.99	0.98	0.99	0.98	0.99
	B	1.00	1.00	0.99	1.00	1.01	1.00	0.97	0.99
	C	1.00	1.00	1.01	0.99	1.00	0.99	0.98	0.99
	D	0.99	1.00	1.00	1.00	1.01	1.01	0.97	0.99
	S	0.98	1.00	0.98	0.99	0.99	0.98	0.99	0.99
WESTERN	A	1.00	1.02	1.03	1.04	1.02	1.01	1.01	0.99
	B	0.99	1.00	1.04	1.02	1.03	1.04	1.01	1.00
	C	1.00	1.03	1.01	1.03	1.02	1.03	1.00	1.02
	D	1.02	1.01	1.02	1.03	1.00	1.00	1.02	1.01
	S	1.00	1.00	1.03	1.02	1.00	1.04	1.01	0.99

UNIT-IN-PLACE COST SECTIONS (51 – 70)

Sec.	Page	Date		Eastern	Central	Western
51 -	2-3	(3/17)	Concrete Foundations	1.03	0.99	1.01
51 -	4	(3/17)	Pilings	1.04	0.98	1.02
51 -	7-8	(3/17)	Steel and Concrete Frame	1.04	0.98	1.02
51 -	3,7	(3/17)	Wood Foundations, Frame	1.00	0.99	1.03
52 -	1-4, 6	(3/17)	Interior Construction	1.02	1.00	1.01
52 -	5	(3/17)	Bank Vaults and Equipment	1.04	0.99	1.00
53 -	1-8	(6/17)	Heating, Cooling & Ventilating	1.02	0.98	1.01
53 -	9-12	(6/17)	Plumbing, Fire Protection, etc.	1.02	0.97	1.01
54 -	1-6	(6/17)	Electrical, Security	1.01	1.02	1.00
55 -	3-7	(8/15)	Wall Costs	1.03	1.00	1.03
56 -	1-2	(8/15)	Stained Glass	1.03	1.00	1.03
56 -	3-6	(8/15)	Storefronts	1.03	1.00	1.03
56 -	7	(8/15)	Stonework	1.02	1.01	1.03
56 -	8	(8/15)	Columns, Stone & Concrete	1.02	1.01	1.03
56 -	8	(8/15)	Columns, Wood & Aluminum	1.02	0.99	1.03
57 -	1-6	(9/15)	Roofs	1.02	1.01	1.03
58 -	1	(9/15)	Cold Storage	1.02	1.00	1.04
58 -	2-8	(9/15)	Elevators, Conveying Systems	1.03	0.99	1.03

Sec.	Page	Date		Eastern	Central	Western
61 -	1-8	(12/16)	Tanks	1.02	1.00	1.02
62 -	1	(6/16)	Industrial Pumps & Boilers	1.05	0.96	1.05
62 -	2-3, 6	(6/16)	Piping	1.05	0.96	1.05
62 -	4	(6/16)	Electrical Motors	1.05	0.96	1.05
62 -	5	(6/16)	Steel Stacks, Chutes	1.05	0.96	1.05
62 -	5	(6/16)	Masonry & Concrete Chimneys	1.03	0.98	1.04
62 -	6	(6/16)	Compactors, Incinerators	1.05	0.96	1.05
63 -	1-4	(9/16)	Trailer and Mfg. Housing Parks	1.01	1.00	1.04
63 -	5-10	(9/16)	Manufactured Housing	1.02	1.01	1.03
64 -	1-6	(3/16)	Service Stations, Car Washes	1.05	1.00	1.01
64 -	7-9	(3/16)	Prefabricated Metal Structures	1.03	0.99	1.03
64 -	7-8	(3/16)	Prefab. Wood & Air Structures	1.02	1.00	1.02
65 -	1-12	(3/16)	Equipment Costs	1.03	1.01	1.01
66 -	1	(12/15)	Subdivision Costs	1.02	0.99	1.03
66 -	2-9	(12/15)	Yard Improvements	1.02	0.99	1.04
66 -	10-11	(12/15)	Demolition & Remediation	1.01	1.00	1.03
67 -	1-2	(12/15)	Golf Courses	1.01	1.01	1.02
67 -	3-7	(12/15)	Recreational Facilities	1.01	1.00	1.03
70 -	1-20	(1/17)	Green Section	1.01	1.00	1.03

This page supersedes the June 2017 Green Supplement.

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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	1.01	1.00	1.01	1.00	1.00
Aspen	1.16	1.14	1.14	1.13	1.14
Boulder	0.97	0.96	0.96	0.95	0.95
Colorado Springs	0.98	0.98	0.96	0.96	0.97
Costilla County	0.88	0.87	0.87	0.87	0.88
Denver	0.96	0.96	0.96	0.96	0.97
Durango	0.94	0.92	0.93	0.91	0.93
Eagle Co. (x/resort areas)	0.96	0.94	0.95	0.94	0.96
Fort Collins	0.98	0.98	1.01	0.98	0.98
Grand Junction	0.97	0.97	0.97	0.97	0.97
Greeley	0.98	0.98	0.99	0.98	0.97
Gunnison County	0.98	0.99	0.99	0.98	0.99
Kit Carson County	0.88	0.88	0.89	0.89	0.89
Logan County	0.91	0.91	0.90	0.89	0.90
Longmont	0.96	0.95	0.98	0.96	0.96
Loveland	0.96	0.96	1.01	0.98	0.96
Moffat County	0.91	0.92	0.91	0.91	0.91
Montrose County	0.93	0.92	0.93	0.90	0.92
Prowers County	0.90	0.90	0.90	0.90	0.91
Pueblo	0.96	0.94	0.94	0.94	0.93
Steamboat Springs	1.19	1.16	1.16	1.15	1.14
Vail	1.17	1.15	1.15	1.13	1.15
CONNECTICUT	1.19	1.18	1.17	1.18	1.18
Bridgeport	1.21	1.21	1.22	1.21	1.22
Bristol	1.16	1.16	1.16	1.14	1.16
Danbury	1.21	1.20	1.22	1.23	1.22
Fairfield	1.18	1.18	1.21	1.20	1.19
Greenwich	1.35	1.30	1.27	1.30	1.36
Hartford	1.19	1.20	1.20	1.20	1.18
Meriden	1.15	1.16	1.15	1.15	1.14
Middletown	1.15	1.16	1.17	1.16	1.13
Milford	1.14	1.13	1.12	1.12	1.14
New Britain	1.17	1.16	1.16	1.16	1.13
New Haven	1.18	1.16	1.16	1.14	1.16
New London	1.11	1.11	1.10	1.14	1.09
Norwich	1.11	1.11	1.10	1.13	1.09
Stamford	1.33	1.30	1.27	1.30	1.34
Waterbury	1.16	1.14	1.11	1.11	1.14
Windsor Locks	1.17	1.18	1.16	1.16	1.16
DELAWARE	1.13	1.09	1.10	1.11	1.12
Dover	1.09	1.07	1.08	1.08	1.09
Wilmington	1.16	1.11	1.12	1.14	1.14
DIST. OF COLUMBIA	1.07	1.08	1.05	1.04	1.05
FLORIDA	0.96	0.96	0.96	0.95	0.97
Bradenton	0.98	0.97	0.96	0.97	0.98
Brevard County	0.95	0.96	0.94	0.93	0.95
Broward County	0.98	0.97	0.97	0.97	0.99
Dade County	0.97	0.95	0.96	0.97	0.99
Daytona Beach	0.93	0.94	0.94	0.92	0.94
Fort Myers	0.95	0.93	0.94	0.94	0.96
Fort Pierce	0.96	0.94	0.94	0.93	0.97
Gainesville	0.93	0.95	0.96	0.92	0.94
Jacksonville	0.94	0.96	0.96	0.95	0.95
Key West	1.14	1.12	1.15	1.13	1.12
Lakeland	0.95	0.96	0.97	0.96	0.96
Marathon	1.10	1.06	1.09	1.06	1.10

CLASS	A	B	C	D	S
FLORIDA (Continued)					
Miami	0.97	0.95	0.96	0.97	0.99
Naples	0.95	0.95	0.94	0.94	0.96
Ocala	0.93	0.93	0.95	0.93	0.94
Orlando	0.96	0.99	0.98	0.98	0.96
Palm Beach	1.00	0.98	0.97	0.98	1.01
Panama City	0.80	0.81	0.80	0.82	0.81
Pensacola	0.84	0.83	0.83	0.85	0.85
Pinellas County	0.99	0.99	0.98	0.98	0.98
Sarasota	0.98	0.98	0.96	0.99	0.98
Tallahassee	0.94	0.93	0.92	0.92	0.94
Tampa	0.99	0.99	0.98	0.98	0.98
Vero Beach	0.97	0.96	0.94	0.91	0.96
GEORGIA	0.89	0.89	0.86	0.85	0.86
Albany	0.88	0.88	0.82	0.83	0.85
Athens	0.92	0.91	0.87	0.84	0.87
Atlanta	0.95	0.94	0.92	0.92	0.92
Augusta	0.88	0.88	0.82	0.81	0.83
Columbus	0.88	0.88	0.84	0.83	0.84
Macon	0.89	0.88	0.86	0.85	0.87
Rome	0.91	0.91	0.88	0.87	0.87
Savannah	0.87	0.87	0.88	0.87	0.88
Valdosta	0.84	0.83	0.82	0.83	0.82
HAWAII	1.66	1.64	1.66	1.67	1.65
Hilo	1.69	1.67	1.70	1.72	1.71
Kauai	1.82	1.80	1.82	1.84	1.82
Maui	1.57	1.55	1.58	1.58	1.56
Oahu	1.54	1.52	1.53	1.53	1.52
IDAHO	1.01	1.00	1.00	0.98	1.01
Boise	0.99	0.97	1.01	1.00	1.00
Caldwell	0.97	0.96	1.00	0.99	0.98
Coeur d' Alene	1.05	1.04	1.02	1.00	1.05
Idaho Falls	1.01	1.00	1.02	1.00	1.01
Lewiston	1.02	1.01	0.98	0.96	1.01
Moscow	1.03	1.02	0.98	0.97	1.02
Pocatello	0.98	0.97	0.96	0.95	0.99
Twin Falls	0.99	0.99	1.01	1.00	1.00
ILLINOIS	1.14	1.14	1.14	1.14	1.14
Alton	1.04	1.05	1.08	1.07	1.04
Aurora	1.24	1.24	1.24	1.24	1.22
Belleville	1.10	1.10	1.12	1.10	1.07
Bloomington	1.07	1.10	1.09	1.10	1.10
Carbondale	1.09	1.09	1.09	1.08	1.07
Centralia	1.08	1.07	1.09	1.08	1.07
Champaign	1.09	1.09	1.09	1.10	1.09
Chicago	1.28	1.28	1.28	1.28	1.28
Danville	1.10	1.09	1.09	1.10	1.10
De Kalb	1.23	1.23	1.22	1.22	1.21
Decatur	1.08	1.07	1.08	1.09	1.08
East St. Louis	1.08	1.08	1.10	1.10	1.09
Elgin	1.23	1.23	1.23	1.24	1.23
Evanston	1.25	1.25	1.25	1.24	1.24
Galesburg	1.11	1.09	1.08	1.09	1.10
Joliet	1.24	1.24	1.24	1.24	1.22
Kankakee	1.25	1.25	1.25	1.27	1.26
Marion	1.09	1.09	1.09	1.08	1.08
Moline	1.07	1.05	1.05	1.04	1.06

CLASS	A	B	C	D	S
ILLINOIS (Continued)					
Normal	1.08	1.10	1.10	1.11	1.11
Peoria	1.10	1.10	1.09	1.10	1.09
Quincy	1.12	1.13	1.14	1.13	1.12
Rock Island	1.09	1.06	1.07	1.08	1.07
Rockford	1.15	1.17	1.15	1.15	1.14
Skokie	1.26	1.26	1.27	1.28	1.26
Springfield	1.10	1.09	1.10	1.11	1.10
Urbana	1.09	1.09	1.09	1.10	1.09
Waukegan	1.23	1.23	1.24	1.22	1.23
INDIANA	1.03	1.02	1.01	1.02	1.03
Anderson	0.98	0.95	0.95	0.96	0.97
Bloomington	1.02	0.99	0.98	0.99	1.02
Columbus	1.00	0.99	0.97	0.98	0.98
Elkhart	1.03	1.02	1.00	1.01	1.03
Evansville	1.01	1.01	0.99	0.99	1.02
Fort Wayne	0.97	0.99	0.98	0.97	0.98
Gary	1.24	1.23	1.24	1.24	1.24
Hammond	1.24	1.23	1.24	1.24	1.24
Indianapolis	1.01	1.01	1.00	1.01	1.02
Kokomo	1.00	0.99	0.97	0.98	0.98
Lafayette	1.00	0.99	0.97	0.98	1.00
Logansport	0.96	0.94	0.91	0.92	0.95
Marion	0.96	0.96	0.93	0.93	0.96
Michigan City	1.24	1.22	1.22	1.23	1.22
Muncie	0.96	0.95	0.96	0.97	0.96
Richmond	0.95	0.94	0.93	0.94	0.95
South Bend	1.01	1.00	1.00	1.00	1.01
Terre Haute	1.01	1.00	1.00	1.00	1.01
IOWA	1.00	0.99	0.98	0.99	0.99
Burlington	1.01	0.99	0.97	0.98	0.99
Cedar Rapids	1.00	0.99	0.97	0.98	0.97
Council Bluffs	0.95	0.96	0.93	0.92	0.94
Davenport	1.08	1.06	1.07	1.08	1.07
Des Moines	0.98	0.97	0.98	0.97	0.99
Dubuque	1.05	1.04	1.01	1.04	1.03
Fort Dodge	0.99	0.98	0.98	0.97	0.99
Iowa City	1.01	1.00	0.98	1.00	0.98
Mason City	1.01	1.01	1.00	1.03	1.02
Sioux City	0.95	0.93	0.92	0.93	0.94
Waterloo	1.00	0.99	0.98	0.99	1.00
KANSAS	0.95	0.95	0.96	0.95	0.96
Dodge City	0.91	0.90	0.92	0.90	0.91
Fort Scott	0.93	0.94	0.94	0.95	0.94
Garden City	0.87	0.86	0.88	0.87	0.87
Goodland	0.91	0.89	0.91	0.91	0.90
Hays	0.87	0.86	0.85	0.83	0.87
Kansas City	1.07	1.09	1.09	1.10	1.09
Lawrence	1.02	1.03	1.04	1.05	1.04
Liberal	0.86	0.85	0.87	0.85	0.87
Manhattan	0.92	0.93	0.95	0.95	0.93
Olathe	1.08	1.10	1.10	1.10	1.09
Overland Park	1.08	1.10	1.10	1.10	1.09
Pittsburg	0.91	0.91	0.91	0.90	0.91
Salina	0.93	0.92	0.92	0.92	0.93
Topeka	0.99	0.99	0.97	0.94	1.00
Wichita	0.92	0.90	0.89	0.86	0.91

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LOCAL MULTIPLIERS

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UNITED STATES

CLASS	A	B	C	D	S
KENTUCKY	0.97	0.96	0.97	0.97	0.97
Ashland	1.04	1.03	1.04	1.06	1.06
Bowling Green	0.95	0.94	0.93	0.94	0.96
Covington	0.96	0.96	0.97	0.97	0.97
Frankfort	0.95	0.93	0.95	0.96	0.93
Lexington	0.96	0.94	0.95	0.96	0.94
Louisville	0.96	0.96	0.96	0.98	0.97
Newport	0.96	0.96	0.97	0.97	0.97
Owensboro	0.99	0.98	0.98	0.96	1.01
Paducah	0.96	0.93	0.94	0.95	0.95
LOUISIANA	0.88	0.88	0.89	0.88	0.87
Alexandria	0.85	0.86	0.88	0.87	0.87
Baton Rouge	0.86	0.86	0.87	0.88	0.86
Lafayette	0.87	0.87	0.88	0.89	0.84
Lake Charles	0.90	0.88	0.89	0.85	0.88
Monroe	0.88	0.89	0.89	0.89	0.88
New Orleans	0.90	0.88	0.89	0.90	0.87
Shreveport	0.90	0.89	0.90	0.88	0.88
MAINE	1.03	1.01	1.03	1.02	1.02
Auburn	1.06	1.04	1.07	1.06	1.04
Augusta	1.07	1.05	1.08	1.07	1.07
Bangor	1.01	0.98	1.03	1.02	1.02
Biddeford	1.07	1.04	1.07	1.06	1.03
Caribou	0.97	0.95	0.95	0.96	0.97
Lewiston	1.06	1.04	1.07	1.06	1.04
Portland	1.06	1.02	1.05	1.04	1.05
Presque Isle	0.97	0.95	0.95	0.96	0.97
Waterville	0.98	0.98	0.99	0.99	0.98
MARYLAND	1.04	1.04	1.03	1.02	1.03
Anne Arundel County	1.04	1.04	1.01	1.01	1.05
Baltimore	1.01	1.01	1.01	1.01	1.02
Bethesda	1.06	1.08	1.04	1.02	1.03
Cumberland	1.05	1.02	1.04	1.03	1.04
Eastern Shore Area	0.99	0.96	0.97	0.97	0.99
Hagerstown	1.03	0.99	1.01	1.01	1.02
Silver Spring	1.06	1.08	1.04	1.02	1.04
MASSACHUSETTS	1.17	1.17	1.18	1.18	1.15
Boston	1.29	1.28	1.30	1.30	1.28
Cape Cod	1.18	1.18	1.19	1.20	1.16
Fall River	1.15	1.16	1.18	1.17	1.14
Holyoke	1.12	1.12	1.13	1.12	1.10
Lawrence	1.18	1.17	1.19	1.19	1.14
Lowell	1.18	1.17	1.18	1.18	1.15
Lynn	1.22	1.21	1.22	1.22	1.20
Methuen	1.18	1.15	1.18	1.20	1.15
Natick	1.20	1.20	1.21	1.23	1.18
New Bedford	1.16	1.18	1.18	1.18	1.15
Pittsfield	1.08	1.09	1.09	1.10	1.08
Springfield	1.16	1.17	1.17	1.15	1.15
Worcester	1.12	1.11	1.12	1.13	1.13

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

CLASS	A	B	C	D	S
MISSOURI	1.01	1.01	1.01	1.01	1.01
Cape Girardeau	0.94	0.92	0.94	0.93	0.91
Columbia	1.06	1.04	1.02	1.02	1.06
Independence	1.07	1.08	1.09	1.10	1.08
Jefferson City	1.00	0.98	0.98	1.00	0.98
Joplin	0.93	0.91	0.93	0.92	0.94
Kansas City	1.08	1.09	1.09	1.10	1.09
Rolla	0.90	0.90	0.91	0.90	0.88
Springfield	1.02	1.01	1.03	1.02	1.04
St. Joseph	1.02	1.05	1.04	1.05	1.02
St. Louis	1.08	1.08	1.10	1.10	1.09
MONTANA	0.95	0.93	0.96	0.94	0.96
Billings	0.98	0.94	0.99	0.96	0.98
Bozeman	0.96	0.94	0.96	0.96	0.98
Butte	0.94	0.94	0.97	0.94	0.96
Great Falls	0.94	0.94	0.95	0.92	0.97
Helena	0.92	0.90	0.94	0.93	0.94
Lewistown	0.93	0.91	0.93	0.93	0.92
Missoula	0.97	0.96	0.97	0.95	0.98
NEBRASKA	0.96	0.94	0.95	0.94	0.95
Grand Island	0.93	0.91	0.92	0.93	0.92
Lincoln	0.96	0.94	0.91	0.91	0.94
Norfolk	0.97	0.96	0.98	0.97	0.97
North Platte	0.97	0.96	0.98	0.96	0.96
Omaha	0.95	0.95	0.94	0.93	0.95
NEVADA	1.11	1.08	1.09	1.08	1.11
Carson City	1.09	1.07	1.07	1.07	1.11
Elko	1.13	1.10	1.10	1.08	1.12
Fallon	1.02	0.98	1.00	0.99	1.02
Las Vegas	1.13	1.10	1.11	1.13	1.13
Lincoln County	1.02	1.01	1.03	1.04	1.02
Nye County	0.95	0.92	0.91	0.88	0.95
Reno	1.10	1.06	1.05	1.03	1.09
Sparks	1.10	1.06	1.06	1.03	1.09
Tahoe Area	1.21	1.21	1.22	1.22	1.23
NEW HAMPSHIRE	1.04	1.05	1.05	1.04	1.03
Concord	0.98	0.99	0.98	0.98	0.97
Dover	1.10	1.11	1.10	1.10	1.08
Keene	0.99	1.00	0.98	0.99	0.98
Laconia	0.97	0.98	0.97	0.97	0.97
Littleton	0.97	0.96	0.96	0.95	0.97
Manchester	1.03	1.04	1.05	1.03	1.02
Nashua	1.16	1.17	1.16	1.15	1.13
Portsmouth	1.07	1.07	1.07	1.06	1.05
Rochester	1.07	1.08	1.08	1.08	1.06
Salem	1.10	1.11	1.11	1.09	1.09

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The data included on this page becomes obsolete after update delivery, scheduled for July 2017.

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APPENDIX C: GRAIN ELEVATOR SALES

Sales through June 2017

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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.

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Depreciation Floor

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 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 and are only used in the abstraction process when arriving at the DRCN.

Many times an 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 and minimum percent good assignments are shown in the table below.

Storage Type	Economic Life	Depreciation Maximum	Minimum Pct Good
Upright Concrete	80 years	85%	15%
Bolted Steel	70 years	90%	10%
Steel	60 years	90%	10%
Wood Crib Metal Clad	60 years	95%	5%
Concrete Stave	60 years	95%	5%
Flat Storage	50 years	95%	5%

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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 Marshall Valuation Service 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. So 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 1.45%	412,000 74%	$1,300,000 $598,883	$3.16 $1.45
East 18	Steel Coffey	5 2012	43.85 1.99%	65,000 87%	$150,000 $30,537	$2.31 $0.47
East 19	Steel Lyon	9 2010	40 1.33%	121,728 53%	$102,500 $92,711	$0.84 $0.76
East 21	Steel Lyon	6 2010	27.3 2.23%	222,000 61%	$300,000 $155,627	$1.10 $0.70
East 22	Concrete Montgomery	4 2010	39.55 2.14%	873,000 85%	$885,000 $655,906	$1.01 $0.75
East 23	Concrete Montgomery	4 2010	91 1.01%	114,000 92%	$100,000 $86,059	$0.88 $0.75
East 26	Mix Osage	7 2012	31 2.27%	415,308 70%	$860,000 $239,445	$2.07 $0.58
East 42	Steel Crawford	4 2015	47.25 1.90%	223,000 90%	$150,000 $68,676	$0.67 $0.31
East 43	Steel Crawford	4 2015	11.149 -0.43%	555,000 -5%	$4,199,500 $1,808,963	$7.57 $3.26
East 47	Steel Marshall	9 2014	31.5 2.16%	933,000 68%	$1,660,000 $883,573	$1.78 $0.95
East 52	Steel Marshall	8 2016	13.32 3.26%	1,652,000 43%	$3,932,465 $2,239,323	$2.38 $1.36
East 60	Mix Doniphan	9 2016	55.04 1.78%	1,146,253 98%	$178,800 $131,087	$0.15 $0.11
East 64	Steel Brown	9 2016	31.53 2.48%	445,368 78%	$432,000 $384,287	$0.97 $0.86
West 2	Steel Cheyenne	12 2010	46.64 1.73%	167,000 81%	$125,000 $106,894	$0.84 $0.64
West 3	Steel Cheyenne	3 2010	15.67 2.49%	1,097,736 39%	$1,250,000 $819,485	$1.14 $0.75

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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 14	Steel Grant	7 2009	19.01 3.75%	845,500 71%	$500,000 $359,381	$0.59 $0.43
West 17	Concrete Harper	12 2012	64.71 1.42%	276,415 92%	$165,000 $126,036	$0.63 $0.46
West 24	Concrete Morton	6 2009	51.9 1.46%	1,165,597 76%	$1,374,925 $1,085,086	$1.18 $0.93
West 25	Concrete Ness	3 2010	50.57 1.90%	417,000 96%	$129,260 $101,813	$0.31 $0.24
West 27	Mix Ottawa	9 2010	54.34 1.43%	1,051,128 78%	$1,200,000 $887,829	$1.14 $0.84
West 30	Steel Reno	4 2010	28.62 3.12%	347,111 89%	$195,000 $107,079	$0.58 $0.31
West 31	Concrete Rooks	3 2010	50.27 1.90%	565,000 95%	$245,700 $157,083	$0.43 $0.28
West 32	Concrete Rush	7 2010	57.01 1.70%	265,000 97%	$109,112 $58,429	$0.23 $0.22
West 33	Concrete Sherman	4 2010	53.24 1.62%	2,677,049 86%	$1,382,063 $1,147,420	$0.52 $0.43
West 34	Concrete Sherman	4 2011	39.29 2.17%	2,109,078 85%	$2,300,000 $1,493,620	$1.09 $0.71
West 35	Steel Stevens	6 2009	21.22 2.57%	1,805,000 54%	$2,225,075 $1,976,108	$1.23 $1.09
West 36	Steel Stevens	9 2009	25.93 2.41%	210,000 63%	$200,000 $161,419	$0.95 $0.77
West 41	Mix Cheyenne	10 2015	40.55 1.89%	786,000 77%	$1,425,000 $799,296	$1.81 $1.02
West 45	Steel Greeley	7 2013	21.68 0.84%	1,996,714 18%	$5,020,000 $4,329,461	$2.51 $2.17
West 46	Steel Haskell	6 2014	13.57 1.76%	1,804,000 24%	$3,725,652 $2,767,651	$2.07 $1.53
West 48	Mix Republic	3 2014	45.06 1.08%	5,735,722 49%	$13,700,000 $10,396,852	$2.39 $1.81

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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 49	Concrete Rice	9 2014	22.98 2.09%	951,294 48%	$3,100,000 $2,450,374	$3.26 $2.58
West 50	Mix Logan-Scott	9 2014	36.01 1.72%	2,633,920 62%	$4,500,000 $3,646,066	$1.59 $1.38
West 51	Steel Sheridan	8 2015	5.68 12.76%	1,441,782 72%	$950,000 $825,677	$0.66 $0.57
West 63	Steel Phillips	6 2016	39.29 1.67%	869,231 66%	$1,500,000 $786,258	$1.73 $0.90

Note: For terminal elevator sale information, please contact PVD.

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Sale Number: **2**

Guide Year: **2018**

Wheeler, Cheyenne County

Wheeler, Cheyenne County

Wheeler, Cheyenne County

Region: West

County: Cheyenne

Sale Year: 2010

SVQ:

Total Sale Price: $125,000

Land Size Acres:

Land Value in Sale:

Amount Personal Property:

Non-Grain Structures RCNLD: $18,106

Seller: Dougal-Sager Grain Co.

Buyer: Johnathan Waters

Situs Address(es): Wheeler, KS

Railroad Service:

Location	Number of Cars
Wheeler	8

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Wheeler	Metal Clad	1949	61	36,447	$322,191	76%	$49,132
Wheeler	Bolted Steel Tanks	1960	50	43,270	$99,521	71%	$19,975
Wheeler	Steel Bin	1976	34	60,095	$67,907	57%	$23,654
Wheeler	Bolted Steel Tanks	1960	50	27,188	$70,417	71%	$14,133

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.

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Sale Number: **2**

Guide Year: **2018**

Avg. Effective Age:	46.64
Total Depreciation %:	80.91%
Annual Depreciation:	1.73%
Total Accrued Depreciation:	$405,536
Net Sale Price:	$106,894
Grain Storage in Bu.:	167,000
Net Storage per Bu.:	$0.64
Avg. Concrete per Bu.:	
Avg. Steel per Bu.:	$0.44
Avg Flat per Bu.:	
Avg Metal Clad per Bu.:	$1.35

Wheeler, Cheyenne County

Sale Number: **3**

Guide Year: **2018**

Bird City, Cheyenne County

Bird City, Cheyenne County

Bird City, Cheyenne, County

Region: West

County: Cheyenne

Sale Year: 2010

SVQ: 3268

Total Sale Price: $1,250,000

Land Size Acres: 7

Land Value in Sale: $17,150

Amount Personal Property: $68,342

Non-Grain Structures RCNLD: $65,585

Seller: Dougal-Sager Grain Co.

Buyer: Frontier Ag Inc.

Situs Address(es): 2874 US Hwy 36, Bird City, KS 67731

Railroad Service:

Location	Number of Cars
Bird City	20

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Bird City	Flat Storage	1991	19	308,141	$369,769	38%	$196,478
Bird City	Steel Bin	1999	11	480,000	$552,000	18%	$401,867
Bird City	Steel Bin	1996	14	115,276	$116,429	23%	$78,941
Bird City	Steel Bins 2 @ 52,923 bu.	1995	15	105,846	$106,904	25%	$70,702
Bird City	Steel Bin	1980	30	33,172	$35,494	50%	$14,601
Bird City	Steel Bin	1977	33	11,237	$33,037	55%	$11,938
Bird City	Steel Bins 2 @ 11,041 bu.	1975	35	22,082	$65,142	58%	$21,368
Bird City	Steel Bins 2 @ 10,991 bu.	1977	33	21,982	$65,287	55%	$23,591

Sale Number: **3**

Guide Year: **2018**

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.

Avg. Effective Age:	15.67
Total Depreciation %:	39.03%
Annual Depreciation:	2.49%
Total Accrued Depreciation:	$405,429
Net Sale Price:	$819,485
Grain Storage in Bu.:	1,097,736
Net Storage per Bu.:	$0.75
Avg. Concrete per Bu.:	
Avg. Steel per Bu.:	$0.79
Avg Flat per Bu.:	$0.64
Avg Metal Clad per Bu.:	

Bird City, Cheyenne County

Sale Number: **11**

Guide Year: **2018**

Lawrence, Douglas County

Lawrence, Douglas County

Lawrence, Douglas County

Region: East

County: Douglas

Sale Year: 2011

SVQ: 57834

Total Sale Price: $1,300,000

Land Size Acres: 9

Land Value in Sale: $238,373

Amount Personal Property: $5,856

Non-Grain Structures RCNLD: $196,888

Seller: Acorn East, LLC

Buyer: Ottawa Cooperative Association

Situs Address(es): 2001 Moodie Road, Lawrence, KS 66044

Railroad Service:

Location	Number of Cars
Lawrence	no service

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Lawrence	Bolted Steel Tanks 2 @ 13,109 bu.	1960	51	26,218	$67,118	73%	$4,554
Lawrence	Concrete - Slip Form Annex	1960	51	232,026	$1,039,476	64%	$274,927
Lawrence	Concrete - Slip Form Elevator	1960	51	153,756	$1,180,846	64%	$312,317

Notes: Business value adjustment of $260,000 .

Sale Number: **11**

Guide Year: **2018**

Avg. Effective Age:	51.00
Total Depreciation %:	73.82%
Annual Depreciation:	1.45%
Total Accrued Depreciation:	$1,464,356
Net Sale Price:	$598,883
Grain Storage in Bu.:	412,000
Net Storage per Bu.:	$1.45
Avg. Concrete per Bu.:	$1.52
Avg. Steel per Bu.:	$0.17
Avg Flat per Bu.:	
Avg Metal Clad per Bu.:	

Lawrence, Douglas County

Sale Number: **14**

Guide Year: **2018**

Ulysses, Grant County

Ulysses, Grant County

Ulysses, Grant County

Region: West

County: Grant

Sale Year: 2009

SVQ: 4896

Total Sale Price: $500,000

Land Size Acres: 60

Land Value in Sale: $106,580

Amount Personal Property: $10,000

Non-Grain Structures RCNLD: $24,039

Seller: Prairie Land Organics

Buyer: Cimarron Valley Grain, LLC

Situs Address(es): Tract 1, Weaver Addition, Grant County, KS

Railroad Service:

Location	Number of Cars
Ulysses	no service

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Ulysses	Steel Bins 10 @ 26,000 bu.	1992	17	260,000	$403,000	28%	$129,240
Ulysses	Steel Bins 10 @ 26,000 bu.	1990	19	260,000	$340,600	32%	$97,875
Ulysses	Steel Bins 12 @ 10,500 bu.	1989	20	126,000	$196,560	33%	$53,208
Ulysses	Steel Bins 19 @ 10,500 bu.	1988	21	199,500	$311,220	35%	$79,058

Notes: No notes.

Sale Number: **14**

Guide Year: **2018**

Avg. Effective Age:	19.01
Total Depreciation %:	71.28%
Annual Depreciation:	3.75%
Total Accrued Depreciation:	$396,487
Net Sale Price:	$359,381
Grain Storage in Bu.:	845,500
Net Storage per Bu.:	$0.43
Avg. Concrete per Bu.:	
Avg. Steel per Bu.:	$0.43
Avg Flat per Bu.:	
Avg Metal Clad per Bu.:	

Ulysses, Grant County

Sale Number: **17**

Guide Year: **2018**

Freeport, Harper County

Freeport, Harper County

Freeport, Harper County

Region: West

County: Harper

Sale Year: 2012

SVQ: 6811

Total Sale Price: $165,000

Land Size Acres: 5

Land Value in Sale: $12,825

Amount Personal Property: $0

Non-Grain Structures RCNLD: $26,139

Seller: Danville Cooperative Association

Buyer: Schmidt Family Land & Cattle

Situs Address(es): Freeport, KS

Railroad Service:

Location	Number of Cars
Freeport	no service

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Freeport	Concrete - Stave Concrete Annex	1970	42	60,000	$180,600	53%	$72,581
Freeport	Concrete - Slip Form Elevator	1941	71	174,000	$878,700	89%	$34,610
Freeport	Concrete - Slip Form Elevator	1941	71	42,415	$478,441	89%	$18,845

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

Sale Number: **17**

Guide Year: **2018**

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.

Avg. Effective Age:	64.71
Total Depreciation %:	91.80%
Annual Depreciation:	1.42%
Total Accrued Depreciation:	$1,299,278
Net Sale Price:	$126,036
Grain Storage in Bu.:	276,415
Net Storage per Bu.:	$0.46
Avg. Concrete per Bu.:	$0.46
Avg. Steel per Bu.:	
Avg Flat per Bu.:	
Avg Metal Clad per Bu.:	

Freeport, Harper County

Sale Number: **18**

Guide Year: **2018**

Lebo, Coffey County

Lebo, Coffey County

Lebo, Coffey County

Region: East

County: Coffey

Sale Year: 2012

SVQ:

Total Sale Price: $150,000

Land Size Acres: 1

Land Value in Sale: $10,360

Amount Personal Property: $70,000

Non-Grain Structures RCNLD: $39,283

Seller: Lebo Grain Company Inc.

Buyer: Lohmeyer & Lohmeyer Company LLC

Situs Address(es): North Elm & Broadway, Lebo, KS

Railroad Service:

Location	Number of Cars
Lebo	no service

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Lebo	Steel Hopper Bin	1972	40	10,000	$34,500	67%	$5,195
Lebo	Steel Hopper Bin	1969	43	10,000	$60,095	72%	$6,044
Lebo	Steel - Corrugated	1967	45	40,000	$62,000	75%	$4,169
Lebo	Steel - Hopper bins	1980	32	2,000	$11,440	53%	$3,248
Lebo	Steel - Elevator	1960	52	3,000	$69,960	65%	$11,701

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.

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Sale Number: **18**

Guide Year: **2018**

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.

Avg. Effective Age:	43.85
Total Depreciation %:	87.24%
Annual Depreciation:	1.99%
Total Accrued Depreciation:	$164,143
Net Sale Price:	$30,537
Grain Storage in Bu.:	65,000
Net Storage per Bu.:	$0.47
Avg. Concrete per Bu.:	
Avg. Steel per Bu.:	$0.47
Avg Flat per Bu.:	
Avg Metal Clad per Bu.:	

Lebo, Coffey County

Sale Number: **19**

Guide Year: **2018**

Neosho Rapids, Lyon County

Neosho Rapids, Lyon County

Neosho Rapids, Lyon County

Region: East

County: Lyon

Sale Year: 2010

SVQ: 20551

Total Sale Price: $102,500

Land Size Acres: 1

Land Value in Sale: $4,340

Amount Personal Property:

Non-Grain Structures RCNLD: $5,449

Seller: Hartford Elevator Inc.

Buyer: Miller Elevator Inc.

Situs Address(es): North Park, Neosho Rapids, KS

Railroad Service:

Location	Number of Cars
Neosho Rapids	no service

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Neosho Rapid	Steel Hopper Bin	1970	40	1,100	$8,008	67%	$3,738
Neosho Rapid	Steel Bins	1970	40	120,628	$190,592	67%	$88,973

Notes: SVQ states property was not made available to other potential purchasers. Seller sold the grain storage in nearby Hartford (sale 21) to the same buyer in June 2010. The sale appears to be only grain storage.

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Sale Number: **19**

Guide Year: **2018**

Avg. Effective Age:	40.00
Total Depreciation %:	53.32%
Annual Depreciation:	1.33%
Total Accrued Depreciation:	$132,400
Net Sale Price:	$92,711
Grain Storage in Bu.:	121,728
Net Storage per Bu.:	$0.76
Avg. Concrete per Bu.:	
Avg. Steel per Bu.:	$0.76
Avg Flat per Bu.:	
Avg Metal Clad per Bu.:	

Neosho Rapids, Lyon County

Sale Number: **21**

Guide Year: **2018**

Hartford, Lyon County

Hartford, Lyon County

Hartford, Lyon County

Region: East

County: Lyon

Sale Year: 2010

SVQ: 20363

Total Sale Price: $300,000

Land Size Acres: 1

Land Value in Sale: $8,330

Amount Personal Property: $50,000

Non-Grain Structures RCNLD: $61,043

Seller: Hartford Elevator Inc.

Buyer: Miller Elevator Inc.

Situs Address(es): Hartford, KS

Railroad Service:

Location	Number of Cars
Hartford	no service

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Hartford	Steel Bins	1986	24	25,000	$57,750	40%	$25,651
Hartford	Overhead Bins	1980	30	2,000	$11,440	50%	$3,937
Hartford	Steel Bins	1980	30	50,000	$86,000	50%	$29,599
Hartford	Steel Bins	1980	30	70,000	$117,600	50%	$40,474
Hartford	Steel Bins	1986	24	75,000	$126,000	40%	$55,965

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

Sale Number: **21**

Guide Year: **2018**

Avg. Effective Age:	27.30
Total Depreciation %:	60.98%
Annual Depreciation:	2.23%
Total Accrued Depreciation:	$181,020
Net Sale Price:	$155,627
Grain Storage in Bu.:	222,000
Net Storage per Bu.:	$0.70
Avg. Concrete per Bu.:	
Avg. Steel per Bu.:	$0.70
Avg Flat per Bu.:	
Avg Metal Clad per Bu.:	

Hartford, Lyon County

Sale Number: **22**

Guide Year: **2018**

Coffeyville, Montgomery County

Liberty, Montgomery County

Liberty, Montgomery County

Region: East

County: Montgomery

Sale Year: 2010

SVQ: 27942

Total Sale Price: $885,000

Land Size Acres: 18

Land Value in Sale: $40,570

Amount Personal Property: $0

Non-Grain Structures RCNLD: $188,524

Seller: SEK Grain Inc.

Buyer: Midwest Fertilizer Inc.

Situs Address(es): Coffeyville, KS; Liberty, KS and rural area, Montgomery County, KS

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 Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Liberty	Bolted Steel Tanks 3 @ 5,557 bu.	1977	33	16,671	$45,679	47%	$10,324
Liberty	Steel Hopper Bins 2 @ 888 bu.	1977	33	1,776	$9,910	55%	$1,461
Liberty	Steel Bins 2 @ 14,760 bu.	1977	33	29,520	$107,748	55%	$15,887
Liberty	Steel Bin with leg and handling	1977	33	73,776	$157,143	55%	$23,171
Liberty	Steel Bin with 250 bu. BPH dryer	1977	33	20,567	$82,885	55%	$12,221
Liberty	Steel Bin	1977	33	5,557	$14,448	55%	$2,130
Liberty	Steel Bin	1977	33	8,469	$15,668	55%	$2,310

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Sale Number: **22**

Guide Year: **2018**

Liberty	Steel Hopper Bin	1977	33	2,914	$11,219	55%	$1,654
Liberty	Concrete - Jump Form Annex	2006	4	205,750	$917,645	5%	$594,129
Coffeyville	Concrete - Slip Form Elevator	1954	56	508,000	$2,895,600	70%	$0

Notes: No notes.

Avg. Effective Age:	39.55
Total Depreciation %:	84.60%
Annual Depreciation:	2.14%
Total Accrued Depreciation:	$2,313,798
Net Sale Price:	$655,906
Grain Storage in Bu.:	873,000
Net Storage per Bu.:	$0.75
Avg. Concrete per Bu.:	$0.83
Avg. Steel per Bu.:	$0.43
Avg Flat per Bu.:	
Avg Metal Clad per Bu.:	

SW of Independence, Montgomery County

Sale Number: **23**

Guide Year: **2018**

Cherryvale, Montgomery County

Cherryvale, Montgomery County

Cherryvale, Montgomery County

Region: East

County: Montgomery

Sale Year: 2010

SVQ: 28003

Total Sale Price: $100,000

Land Size Acres: 1

Land Value in Sale: $4,824

Amount Personal Property:

Non-Grain Structures RCNLD: $9,117

Seller: SEK Grain Inc.

Buyer: Midwest Fertilizer

Situs Address(es): Galveston Rd., Cherryvale, KS

Railroad Service:

Location	Number of Cars
Cherryvale	no service

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Cherryvale	Concrete - Slipform	1919	91	114,000	$1,086,420	85%	$86,059

Notes: The seller reportedly let it be known by word of mouth that this property in Cherryvale and the parcels sold in earlier transaction occurring in Coffeyville, Liberty and SW of Independence (sale 22) were available for purchase. This transaction also included a small vacant strip of land adjacent to a Coffeyville parcel that was conveyed in the earlier transaction. The property was

Sale Number: **23**

Guide Year: **2018**

used by seller for grain storage, fertilizer and feed sales and continues to be used in similar manner. Feed mill on parcel did not appear to be in operation.

Avg. Effective Age:	91.00
Total Depreciation %:	92.08%
Annual Depreciation:	1.01%
Total Accrued Depreciation:	$923,457
Net Sale Price:	$86,059
Grain Storage in Bu.:	114,000
Net Storage per Bu.:	$0.75
Avg. Concrete per Bu.:	$0.75
Avg. Steel per Bu.:	
Avg Flat per Bu.:	
Avg Metal Clad per Bu.:	

Cherryvale, Montgomery County

Sale Number: **24**

Guide Year: **2018**

Elkhart, Morton County

Elkhart, Morton County

Elkhart, Morton County

Region: West

County: Morton

Sale Year: 2009

SVQ: 2675

Total Sale Price: $1,374,925

Land Size Acres: 3

Land Value in Sale: $25,360

Amount Personal Property: $0

Non-Grain Structures RCNLD: $100,479

Seller: Cargill Inc.

Buyer: Prairie Sky Acquisitions LLC

Situs Address(es): 510 & 530 Border Avenue, Elkhart, KS 67523

Railroad Service:

Location	Number of Cars
Elkhart	26

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Elkhart	Bolted Steel Tank	1974	35	34,503	$77,287	50%	$24,220
Elkhart	Bolted Steel Tank	1951	58	34,503	$77,287	83%	$0
Elkhart	Steel Bins - usable at time of sale	1974	35	203,695	$313,690	58%	$72,162
Elkhart	Concrete - Slip Form Annex	1955	54	406,801	$1,549,912	68%	$503,721
Elkhart	Concrete - Slip Form Annex	1951	58	274,908	$1,036,403	73%	$222,422
Elkhart	Concrete - Slip Form Elevator	1951	58	211,187	$1,389,610	73%	$298,224

Notes: No notes.

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Sale Number: **24**

Guide Year: **2018**

Avg. Effective Age:	51.90
Total Depreciation %:	75.58%
Annual Depreciation:	1.46%
Total Accrued Depreciation:	$2,529,707
Net Sale Price:	$1,085,086
Grain Storage in Bu.:	1,165,597
Net Storage per Bu.:	$0.93
Avg. Concrete per Bu.:	$1.15
Avg. Steel per Bu.:	$0.53
Avg Flat per Bu.:	
Avg Metal Clad per Bu.:	

Elkhart, Morton County

Sale Number: **25**

Guide Year: **2018**

Brownell, Ness County

Brownell, Ness County

Brownell, Ness County

Region: West

County: Ness

Sale Year: 2010

SVQ: 3736

Total Sale Price: $129,260

Land Size Acres: 2

Land Value in Sale: $3,267

Amount Personal Property: $5,756

Non-Grain Structures RCNLD: $18,424

Seller: Brownell Archer-Daniels-Midland Co.

Buyer: Midland Marketing Co-op Inc.

Situs Address(es): Davis Ave., Brownell, KS 67521

Railroad Service:

Location	Number of Cars
Brownell	no service

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Brownell	Concrete - Slipform	1967	43	206,558	$1,086,495	54%	$162,559
Brownell	Concrete - Slipform	1952	58	210,442	$1,603,568	73%	$0

Notes: Seller sold the 3 locations: Palco in Rooks County (sale 31), McCracken in Rush County (sale 32) and Brownell in Ness County (sale 25) to Midland Marketing on one deed filed in each county with 3 separate SVQ's filed listed 3 different sale prices. Each location sale price would be an allocated price for the real estate or improvements on leased land. Property was used and

Sale Number: **25**

Guide Year: **2018**

continues to be used to store wheat, corn and milo.

Avg. Effective Age:	50.57
Total Depreciation %:	96.22%
Annual Depreciation:	1.90%
Total Accrued Depreciation:	$1,746,578
Net Sale Price:	$101,813
Grain Storage in Bu.:	417,000
Net Storage per Bu.:	$0.24
Avg. Concrete per Bu.:	$0.39
Avg. Steel per Bu.:	
Avg Flat per Bu.:	
Avg Metal Clad per Bu.:	

Sale Number: **26**

Guide Year: **2018**

Osage City, Osage County

Osage City, Osage County

Osage City, Osage County

Region: East

County: Osage

Sale Year: 2012

SVQ: 12921

Total Sale Price: $860,000

Land Size Acres: 4

Land Value in Sale: $62,400

Amount Personal Property: $172,000

Non-Grain Structures RCNLD: $356,717

Seller: Dayoff Elevators

Buyer: MFA Enterpises

Situs Address(es): N 3rd Street, Osage City, KS 66523

Railroad Service:

Location	Number of Cars
Osage City	no service

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Osage City	Flat Storage	1986	26	216,571	$327,022	52%	$124,667
Osage City	Steel Bin	1968	44	11,667	$37,568	73%	$6,307
Osage City	Steel Bins 2 bins @ 11,567 bu.	1968	44	23,134	$74,491	73%	$12,506
Osage City	Steel Bins 2 @ 71,810 bu.	1981	31	143,620	$262,825	52%	$101,069
Osage City	Wood Crib / Metal Clad Elevator	1950	62	9,948	$33,923	95%	$0
Osage City	Concrete Stave next to MC	1950	62	10,368	$70,710	95%	$0

Notes: SVQ did not indicate personal property but in interview with county appraiser it was indicated

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Sale Number: **26**

Guide Year: **2018**

that inventory, some personal property and vehicles were included. Fertilizer tanks that would be considered personal property were located on the property.

Avg. Effective Age:	31.00
Total Depreciation %:	70.31%
Annual Depreciation:	2.27%
Total Accrued Depreciation:	$487,378
Net Sale Price:	$239,445
Grain Storage in Bu.:	415,308
Net Storage per Bu.:	$0.58
Avg. Concrete per Bu.:	$0.00
Avg. Steel per Bu.:	$0.67
Avg Flat per Bu.:	$0.58
Avg Metal Clad per Bu.:	$0.00

Osage City, Osage County

Sale Number: **27**

Guide Year: **2018**

Ada, Ottawa County

Minneapolis, Ottawa County

Minneapolis, Ottawa County

Region:	West
County:	Ottawa
Sale Year:	2010
SVQ:	6733
Total Sale Price:	$1,200,000
Land Size Acres:	19
Land Value in Sale:	$50,995
Amount Personal Property:	$43,300
Non-Grain Structures RCNLD:	$217,876
Seller:	Ada Grain
Buyer:	Scoular Co.
Situs Address(es):	100 S Main, Ada, KS

Railroad Service:

Location	Number of Cars
Ada	no service
Minneapolis	number of cars unknown

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Minneapolis	Flat Storage	1950	60	32,466	$61,036	95%	$977
Minneapolis	Flat Storage	1950	60	71,306	$134,055	95%	$2,146
Minneapolis	Flat Storage	1958	52	105,285	$168,456	95%	$8,423
Ada	Steel Bins 2 @ 1,902 bu.	1969	41	3,804	$13,542	68%	$3,828
Ada	Steel Bins 2 @ 23,662 bu.	1970	40	47,324	$136,766	67%	$40,939
Minneapolis	Steel Bin	1950	60	15,017	$24,478	90%	$1,616
Minneapolis	Steel Bin	1950	60	3,593	$8,120	90%	$536
Minneapolis	Steel Bulk Tanks 5 averaging 933.2 bu.	1950	60	4,666	$37,048	90%	$2,445

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Sale Number: **27**

Guide Year: **2018**

Minneapolis	Steel Bin	1958	52	55,025	$73,734	87%	$9,831
Minneapolis	Steel Bin	1955	55	107,927	$216,933	92%	$10,703
Minneapolis	Concrete - Slip Form Annex	1959	51	296,200	$1,238,116	64%	$448,817
Minneapolis	Concrete - Slip Form Annex	1954	56	195,865	$902,938	70%	$240,186
Minneapolis	Concrete - Slip Form Elevator	1947	63	112,650	$939,501	79%	$167,706

Notes: No notes.

Avg. Effective Age:	54.34
Total Depreciation %:	77.55%
Annual Depreciation:	1.43%
Total Accrued Depreciation:	$2,932,453
Net Sale Price:	$887,829
Grain Storage in Bu.:	1,051,128
Net Storage per Bu.:	$0.84
Avg. Concrete per Bu.:	$1.42
Avg. Steel per Bu.:	$0.29
Avg Flat per Bu.:	$0.06
Avg Metal Clad per Bu.:	

Minneapolis, Ottawa County

Sale Number: **30**

Guide Year: **2018**

Yoder, Reno County

Yoder, Reno County

Yoder, Reno County

Region: West

County: Reno

Sale Year: 2010

SVQ: 51183

Total Sale Price: $195,000

Land Size Acres: 1

Land Value in Sale: $12,458

Amount Personal Property:

Non-Grain Structures RCNLD: $75,463

Seller: C. B. Showalten

Buyer: Mark Nissley

Situs Address(es): 3419 E Lawrence, Yoder, KS

Railroad Service:

Location	Number of Cars
Yoder	no service

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Yoder	Steel Bins	1961	49	9,901	$27,327	82%	$0
Yoder	Steel Bins	1985	25	240,188	$501,993	42%	$114,899
Yoder	Steel Bins	1983	27	71,192	$135,977	45%	$26,591
Yoder	Concrete	1951	59	25,830	$323,392	73%	$0

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.

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Sale Number: **30**

Guide Year: **2018**

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.

Avg. Effective Age:	28.62
Total Depreciation %:	89.17%
Annual Depreciation:	3.12%
Total Accrued Depreciation:	$531,171
Net Sale Price:	$107,079
Grain Storage in Bu.:	347,111
Net Storage per Bu.:	$0.31
Avg. Concrete per Bu.:	$0.00
Avg. Steel per Bu.:	$0.44
Avg Flat per Bu.:	
Avg Metal Clad per Bu.:	

Yoder, Reno County

Sale Number: **31**

Guide Year: **2018**

Palco, Rooks County

Palco, Rooks County

Palco, Rooks County

Region: West

County: Rooks

Sale Year: 2010

SVQ: 8205560

Total Sale Price: $245,700

Land Size Acres: 11

Land Value in Sale: $21,200

Amount Personal Property: $20,671

Non-Grain Structures RCNLD: $46,746

Seller: Brownell Archer-Daniels-Midland Co.

Buyer: Midland Marketing Co-op Inc.

Situs Address(es): W Rd, 104 Main, Ash Street, Palco, KS 67657

Railroad Service:

Location	Number of Cars
Palco	no service

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Palco	Concrete - Slipform	1961	49	206,012	$1,050,661	61%	$66,413
Palco	Concrete - Slipform	1959	51	358,988	$2,372,911	64%	$90,670

Notes: Seller sold the 3 locations: Palco in Rooks County (sale 31), McCracken in Rush County (sale 32) and Brownell in Ness County (sale 25) to Midland Marketing on one deed filed in each county with 3 separate SVQ's filed listed 3 different sale prices. Each location sale price would be an allocated price for the real estate or improvements on leased land. Property was used and

Sale Number: **31**

Guide Year: **2018**

continues to be used to store wheat, corn and milo. Since the sale the buyer has added 541,000 bushels of ground bunker storage on land acquired in the sale and additional 536,000 bushel of ground bunker storage on a tract situated adjacent to the north that was acquired after the sale.

Avg. Effective Age:	50.27
Total Depreciation %:	95.41%
Annual Depreciation:	1.90%
Total Accrued Depreciation:	$2,156,261
Net Sale Price:	$157,083
Grain Storage in Bu.:	565,000
Net Storage per Bu.:	$0.28
Avg. Concrete per Bu.:	$0.28
Avg. Steel per Bu.:	
Avg Flat per Bu.:	
Avg Metal Clad per Bu.:	

Palco, Rooks County

Sale Number: **32**

Guide Year: **2018**

McCracken, Rush County

McCracken, Rush County

McCracken, Rush County

Region: West

County: Rush

Sale Year: 2010

SVQ: 3992

Total Sale Price: $109,112

Land Size Acres: 2

Land Value in Sale: $5,080

Amount Personal Property:

Non-Grain Structures RCNLD: $45,603

Seller: Brownell Archer-Daniels-Midland Co.

Buyer: Midland Marketing Co-op Inc.

Situs Address(es): 1st St., 201 Main St., 2nd St., W Elm Ave., McCracken, KS 67556

Railroad Service:

Location	Number of Cars
McCracken	number of cars unknown

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
McCracken	Steel Bin	1960	50	53,616	$100,262	83%	$0
McCracken	Hopper Tanks	1960	50	2,276	$35,210	83%	$0
McCracken	Hopper Tanks	1960	50	2,724	$40,206	83%	$0
McCracken	Concrete - Slip Form Elevator	1951	59	206,384	$1,560,263	74%	$67,648

Notes: Seller sold the 3 locations: Palco in Rooks County (sale 31), McCraken in Rush County (sale 32), and Brownell in Ness County (sale 25) to Midland Marketing on one deed filed in each county with 3 separate SVQ's filed listed 3 different sale prices. Each location sale price would be an allocated price for the real estate or improvements on leased land. Property was used and

Sale Number: **32**

Guide Year: **2018**

continues to be used to store wheat, corn and milo. Bill of sale listed only 266,000 bushels of storage purchased which would equal a per bushel price of $0.41. Some of the storage on the bin chart is identified as non-licensed. Buyer most likely rehabbed some of the non-used storage to increase to current license capacity which is 260,000 bushels for the head house and 212,000 bushels for the jump form concrete elevator.

Avg. Effective Age:	57.01
Total Depreciation %:	96.63%
Annual Depreciation:	1.70%
Total Accrued Depreciation:	$1,297,092
Net Sale Price:	$58,429
Grain Storage in Bu.:	265,000
Net Storage per Bu.:	$0.22
Avg. Concrete per Bu.:	$0.33
Avg. Steel per Bu.:	$0.00
Avg Flat per Bu.:	
Avg Metal Clad per Bu.:	

McCracken, Rush County

Sale Number: **33**

Guide Year: **2018**

Goodland, Sherman County

Goodland, Sherman County

Goodland, Sherman County

Region: West

County: Sherman

Sale Year: 2010

SVQ: 5995

Total Sale Price: $1,382,063

Land Size Acres: 3

Land Value in Sale: $53,920

Amount Personal Property: $20,000

Non-Grain Structures RCNLD: $160,723

Seller: Mueller Enterprises, Inc.

Buyer: Scoular Co.

Situs Address(es): 17th & Main, Goodland, KS

Railroad Service:

Location	Number of Cars
Goodland	28 loaded , 36 empty per management

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Goodland	Flat Storage	1964	46	646,291	$814,327	92%	$0
Goodland	Concrete - Slip Form Annex	1956	54	1,264,034	$3,766,821	68%	$717,190
Goodland	Concrete - Slip Form Annex	1954	56	498,538	$1,889,459	70%	$312,510
Goodland	Concrete - Slip Form Elevator	1948	62	268,186	$1,794,164	78%	$162,186

Notes: No notes.

Sale Number: **33**

Guide Year: **2018**

Avg. Effective Age:	53.24
Total Depreciation %:	86.12%
Annual Depreciation:	1.62%
Total Accrued Depreciation:	$6,004,884
Net Sale Price:	$1,147,420
Grain Storage in Bu.:	2,677,049
Net Storage per Bu.:	$0.43
Avg. Concrete per Bu.:	$0.59
Avg. Steel per Bu.:	
Avg Flat per Bu.:	$0.00
Avg Metal Clad per Bu.:	

Goodland, Sherman County

Sale Number: **34**

Guide Year: **2018**

Kanorado, Sherman County

Kanorado, Sherman County

Kanorado, Sherman County

Region: West

County: Sherman

Sale Year: 2011

SVQ: 6413

Total Sale Price: $2,300,000

Land Size Acres: 31

Land Value in Sale: $62,193

Amount Personal Property: $0

Non-Grain Structures RCNLD: $244,106

Seller: Kanorado Cooperative Association

Buyer: Frontier Ag Inc.

Situs Address(es): Kanorado, KS

Railroad Service:

Location	Number of Cars
Kanorado	33

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Kanorado	Steel Bins 20 @ 6,500 bu each	1961	50	130,000	$130,000	83%	$0
Kanorado	Concrete - Jump Form Annex	2000	11	300,000	$1,125,000	14%	$616,183
Kanorado	Concrete - Jump Form Annex	1993	18	300,000	$1,125,000	23%	$517,746
Kanorado	Concrete - Slip Form Annex	1977	34	220,000	$998,800	43%	$259,906
Kanorado	Concrete - Slip Form Annex	1967	44	311,780	$1,297,005	55%	$185,441
Kanorado	Concrete - Slip Form Annex	1961	50	259,156	$1,127,329	63%	$67,886
Kanorado	Concrete - Slip Form Elevator	1960	51	220,000	$1,548,800	64%	$73,906
Kanorado	Concrete - Slip Form Elevator	1955	56	200,142	$1,441,022	70%	$0
Kanorado	Concrete - Slip Form Elevator	1945	66	168,000	$1,265,040	83%	$0

Sale Number: **34**

Guide Year: **2018**

Notes: No notes.

Avg. Effective Age:	39.29
Total Depreciation %:	85.15%
Annual Depreciation:	2.17%
Total Accrued Depreciation:	$5,398,303
Net Sale Price:	$1,493,620
Grain Storage in Bu.:	2,109,078
Net Storage per Bu.:	$0.71
Avg. Concrete per Bu.:	$0.87
Avg. Steel per Bu.:	$0.00
Avg Flat per Bu.:	
Avg Metal Clad per Bu.:	

Kanorado, Sherman County

Sale Number: **35**

Guide Year: **2018**

Hugoton, Stevens County

Moscow, Stevens County

Moscow, Stevens County

Region: West

County: Stevens

Sale Year: 2009

SVQ: 3797

Total Sale Price: $2,225,075

Land Size Acres: 62

Land Value in Sale: $56,564

Amount Personal Property: $0

Non-Grain Structures RCNLD: $263,782

Seller: Cargill Inc.

Buyer: Prairie Sky Acquisitions LLC

Situs Address(es): 1349 Road 11, Hugoton, KS 67951; 2456 Road 21, Moscow, KS 67952

Railroad Service:

Location	Number of Cars
Hugoton	30
Moscow	27

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Moscow	Steel Bin	1988	21	100,000	$109,000	35%	$41,355
Moscow	Steel Bin	1988	21	325,000	$503,750	35%	$191,125
Moscow	Steel Bin	1988	21	325,000	$503,750	35%	$191,125
Moscow	Steel Bin	1988	21	325,000	$341,250	35%	$129,472
Moscow	Steel Bin	1988	21	325,000	$341,250	35%	$129,472
Hugoton	Concrete - Slip Form Elevator	1987	22	405,000	$2,539,350	28%	$1,235,643

Notes: No notes.

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Sale Number: **35**

Guide Year: **2018**

Avg. Effective Age:	21.22
Total Depreciation %:	54.45%
Annual Depreciation:	2.57%
Total Accrued Depreciation:	$1,188,307
Net Sale Price:	$1,976,108
Grain Storage in Bu.:	1,805,000
Net Storage per Bu.:	$1.09
Avg. Concrete per Bu.:	$3.05
Avg. Steel per Bu.:	$0.53
Avg Flat per Bu.:	
Avg Metal Clad per Bu.:	

Hugoton, Stevens County

Sale Number: **36**

Guide Year: **2018**

Dermot, Stevens County

Dermot, Stevens County

Dermot, Stevens County

Region: West

County: Stevens

Sale Year: 2009

SVQ: 3853

Total Sale Price: $200,000

Land Size Acres: 6

Land Value in Sale: $5,080

Amount Personal Property:

Non-Grain Structures RCNLD: $33,501

Seller: Cargill Inc.

Buyer: North Harmony Ag. LLC

Situs Address(es): NW Stevens County (Dermot), KS

Railroad Service:

Location	Number of Cars
Dermot	no service

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Dermot	Steel	1988	21	165,000	$321,750	35%	$151,730
Dermot	Steel	1965	44	45,000	$109,800	73%	$9,689

Notes: Permanent storage does not appear to have changed since November 1999 sale, however past ground storage is evident. There are several Seaboard hog facilities in the nearby area.

Sale Number: **36**

Guide Year: **2018**

Avg. Effective Age:	25.93
Total Depreciation %:	62.60%
Annual Depreciation:	2.41%
Total Accrued Depreciation:	$193,133
Net Sale Price:	$161,419
Grain Storage in Bu.:	210,000
Net Storage per Bu.:	$0.77
Avg. Concrete per Bu.:	
Avg. Steel per Bu.:	$0.77
Avg Flat per Bu.:	
Avg Metal Clad per Bu.:	

Dermot, Stevens County

Sale Number: **41**

Guide Year: **2018**

St. Francis, Cheyenne County, Kansas

St. Francis, Cheyenne County, Kansas

St. Francis, Cheyenne County, Kansas

Region: West

County: Cheyenne

Sale Year: 2015

SVQ: 4045

Total Sale Price: $1,425,000

Land Size Acres: 10

Land Value in Sale: $63,612

Amount Personal Property: $138,880

Non-Grain Structures RCNLD: $60,864

Seller: Bartlett Grain Company, L.P.

Buyer: St. Francis Mercantile Equity Exchange

Situs Address(es): Saint Francis, KS

Railroad Service:

Location	Number of Cars
St. Francis	No service.

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
St. Francis	Steel Bin - 1 bin @ 436,711 bu	1994	21	436,711	$930,194	35%	$530,377
St. Francis	Concrete Elevator with M&E	1950	65	349,289	$2,497,416	81%	$268,918

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

Sale Number: **41**

Guide Year: **2018**

Avg. Effective Age:	40.55
Total Depreciation %:	76.68%
Annual Depreciation:	1.89%
Total Accrued Depreciation:	$2,354,719
Net Sale Price:	$799,296
Grain Storage in Bu.:	786,000
Net Storage per Bu.:	$1.02
Avg. Concrete per Bu.:	$0.77
Avg. Steel per Bu.:	$1.21
Avg Flat per Bu.:	
Avg Metal Clad per Bu.:	

St. Francis, Cheyenne County, Kansas

Sale Number: **42**

Guide Year: **2018**

Girard, Crawford County, Kansas

Girard, Crawford County, Kansas

Girard, Crawford County, Kansas

Region: East

County: Crawford

Sale Year: 2015

SVQ: 28251

Total Sale Price: $150,000

Land Size Acres: 2

Land Value in Sale: $11,480

Amount Personal Property:

Non-Grain Structures RCNLD: $39,844

Seller: Beachner Grain, Inc.

Buyer: Producers Cooperative Association of Girard

Situs Address(es): Girard, KS

Railroad Service:

Location	Number of Cars
Girard	No service.

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Girard	Steel Hopper - 2 tanks @ 2,046 bu	1960	55	4,092	$24,225	92%	$200
Girard	Steel Bin - 1 bin @ 86,386 bu	1980	35	86,386	$189,185	58%	$64,621
Girard	Steel Bins - 6 bins @ 22,087 bu	1960	55	132,522	$467,803	92%	$3,855

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

Sale Number: **42**

Guide Year: **2018**

Avg. Effective Age:	47.25
Total Depreciation %:	89.92%
Annual Depreciation:	1.90%
Total Accrued Depreciation:	$561,383
Net Sale Price:	$68,676
Grain Storage in Bu.:	223,000
Net Storage per Bu.:	$0.31
Avg. Concrete per Bu.:	
Avg. Steel per Bu.:	$0.31
Avg Flat per Bu.:	
Avg Metal Clad per Bu.:	

Girard, Crawford County, Kansas

Sale Number: **43**

Guide Year: **2018**

Pittsburg, Crawford County, Kansas

Pittsburg, Crawford County, Kansas

Pittsburg, Crawford County, Kansas

Region:	East
County:	Crawford
Sale Year:	2015
SVQ:	28252
Total Sale Price:	$4,199,500
Land Size Acres:	52
Land Value in Sale:	$174,440
Amount Personal Property:	$333,000
Non-Grain Structures RCNLD:	$177,397
Seller:	KAMO Grain, Inc.
Buyer:	The Scoular Company
Situs Address(es):	Pittsburg, KS

Railroad Service:

Location	Number of Cars
Pittsburg	Number of cars unknown

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Pittsburg	Steel Bin 1 bin @ 169,558 bu	2011	4	169,558	$535,803	7%	$629,262
Pittsburg	Steel Bins 2 bins @ 44,293 bu	2008	7	88,586	$249,813	12%	$280,896
Pittsburg	Steel Bins 2 bins @ 67,070 bu	2008	7	134,140	$368,885	12%	$414,785
Pittsburg	Steel Hopper 2 tanks@2,073bu.	2008	7	4,146	$25,788	12%	$28,997
Pittsburg	Steel Hopper 1 tank @ 2,381 bu	2008	7	2,381	$14,024	12%	$15,769
Pittsburg	Steel Hopper 1 tank @ 1,012 bu	1990	25	1,012	$7,094	42%	$5,849
Pittsburg	Steel Hopper 3 tanks @ 1,851 bu	1990	25	5,553	$38,927	42%	$32,092
Pittsburg	Steel Bins 2 bins @ 30,699 bu	1990	25	61,398	$204,455	42%	$168,559

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Sale Number: **43**

Guide Year: **2018**

Pittsburg	Steel Bins 2 bins @ 41,113 bu	1990	25	88,226	$282,323	42%	$232,755

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

Avg. Effective Age:	11.15
Total Depreciation %:	-4.70%
Annual Depreciation:	-0.43%
Total Accrued Depreciation:	$334,546
Net Sale Price:	$1,808,963
Grain Storage in Bu.:	555,000
Net Storage per Bu.:	$3.26
Avg. Concrete per Bu.:	
Avg. Steel per Bu.:	$3.26
Avg Flat per Bu.:	
Avg Metal Clad per Bu.:	

Pittsburg, Crawford County, Kansas

Sale Number: **45**

Guide Year: **2018**

Tribune, Greeley County, Kansas

Tribune, Greeley County, Kansas

Tribune, Greeley County, Kansas

Region: West

County: Greeley

Sale Year: 2013

SVQ: 2507

Total Sale Price: $5,020,000

Land Size Acres: 42

Land Value in Sale: $120,470

Amount Personal Property: $250,000

Non-Grain Structures RCNLD: $320,069

Seller: Tribune Grain LLC

Buyer: The Scoular Company

Situs Address(es): Tribune, NW Tribune & Inland Station, KS

Railroad Service:

Location	Number of Cars
Tribune, NW Tribun	Number of cars unknown

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Tribune	Steel Bin 1 bin @ 127,331 bu.	1985	28	127,331	$306,868	47%	$247,361
Tribune	Steel Bins 1 bin @ 173,055 bu.	2007	6	173,055	$377,260	10%	$442,432
Tribune	Steel Hopper 1 tank @ 2,583 bu.	2007	6	2,583	$13,044	10%	$15,298
Tribune	Steel Bin 1 bin @ 247,192 bu.	2009	4	247,192	$521,575	7%	$629,063
Tribune	Steel Bin 1 bin @ 67,106 bu.	2013	0	67,105	$148,973	0%	$189,606
Tribune	Bolted Steel 4 bins @ 15,654 bu.	1949	50	62,616	$226,670	83%	$99,603
Tribune	Steel Bins 3 bins @ 59,727 bu.	1975	38	179,181	$451,536	63%	$288,720
Tribune	Steel Bin 1 bin @ 1,710 bu.	1975	38	1,710	$10,602	63%	$6,779

Sale Number: **45**

Guide Year: **2018**

Tribune	Wood Crib Metal Clad	1949	65	27,985	$306,995	95%	$99,083
Tribune	Steel Bin 1 bin @ 123,770 bu.	1985	28	123,770	$299,523	47%	$241,441
Tribune	Flat Storage - Behlen	1961	40	193,837	$505,915	80%	$239,171
Tribune	Steel Bin 1 bin @ 59,727 bu.	2010	3	59,727	$150,512	5%	$184,039
Tribune	Steel Hopper 1 tank @ 2,690 bu.	2010	3	2,690	$14,042	5%	$17,170
Tribune	Steel Hopper Bins 4 @ 7,422 bu.	1970	43	29,688	$128,846	72%	$71,649
Tribune	Steel Bin 1 bin @ 155,241 bu.	1996	17	155,241	$397,417	28%	$393,211
Tribune	Steel Bin 1 bin @ 72,699 bu.	1996	17	72,699	$194,106	28%	$192,052
Tribune	Steel Bin 1 bin @ 261,086 bu.	2003	10	261,086	$684,045	17%	$756,612
Tribune	Flat Storage - Butler	1948	45	196,627	$513,196	90%	$191,294
Tribune	Steel Bin 1 bin @ 12,591 bu.	1975	38	12,591	$38,906	63%	$24,877

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."

Avg. Effective Age:	21.68
Total Depreciation %:	18.20%
Annual Depreciation:	0.84%
Total Accrued Depreciation:	$2,403,432
Net Sale Price:	$4,329,461
Grain Storage in Bu.:	1,996,714
Net Storage per Bu.:	$2.17
Avg. Concrete per Bu.:	
Avg. Steel per Bu.:	$2.17
Avg Flat per Bu.:	$1.10
Avg Metal Clad per Bu.:	$3.54

Tribune, Greeley County, Kansas

Sale Number: **46**

Guide Year: **2018**

Sublette, Haskell County, Kansas

Sublette, Haskell County, Kansas

Sublette, Haskell County, Kansas

Region: West

County: Haskell

Sale Year: 2014

SVQ: 3299

Total Sale Price: $3,725,652

Land Size Acres: 57

Land Value in Sale: $185,395

Amount Personal Property: $525,000

Non-Grain Structures RCNLD: $247,606

Seller: Providence Grain LLC

Buyer: Hansen-Mueller Co.

Situs Address(es): Sublette, KS

Railroad Service:

Location	Number of Cars
Sublette	No service.

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Sublette	Steel Bins 2 bins @ 121,439 bu.	2004	10	242,878	$478,470	17%	$392,365
Sublette	Steel Hopper 1 tanks @ 1,096 bu.	2002	12	1,096	$5,085	20%	$4,001
Sublette	Steel Hopper 1 tanks @ 878 bu.	2002	12	878	$4,803	20%	$3,778
Sublette	Steel Bins 2 bins @ 73,661 bu.	2002	12	147,322	$309,376	20%	$243,389
Sublette	Steel Hopper 2 tanks @ 3,431 bu.	2000	14	6,862	$26,899	23%	$20,265
Sublette	Steel Bins 2 bins @ 459,604 bu.	2000	14	919,208	$1,856,800	23%	$1,398,868
Sublette	Steel Bins 4 bins @ 121,439 bu.	1999	15	485,756	$956,939	25%	$704,986

Sale Number: **46**

Guide Year: **2018**

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.

Avg. Effective Age:	13.57
Total Depreciation %:	23.90%
Annual Depreciation:	1.76%
Total Accrued Depreciation:	$822,362
Net Sale Price:	$2,767,651
Grain Storage in Bu.:	1,804,000
Net Storage per Bu.:	$1.53
Avg. Concrete per Bu.:	
Avg. Steel per Bu.:	$1.53
Avg Flat per Bu.:	
Avg Metal Clad per Bu.:	

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Sale Number: **47**

Guide Year: **2018**

Home, Marshall County, Kansas

Home, Marshall County, Kansas

Home, Marshall County, Kansas

Region: East

County: Marshall

Sale Year: 2014

SVQ: 10608

Total Sale Price: $1,660,000

Land Size Acres: 7

Land Value in Sale: $35,730

Amount Personal Property: $621,000

Non-Grain Structures RCNLD: $119,697

Seller: Lewis Seed & Fertilizer, Inc.

Buyer: SLK Assets Inc.

Situs Address(es): Home, KS

Railroad Service:

Location	Number of Cars
Home	On RR but service unknown

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Home	Bolted Steel 2 bins @11,313 bu.	1950	64	22,626	$114,261	91%	$0
Home	Steel Bin	1981	33	29,021	$96,930	55%	$32,359
Home	Steel Bin	1981	33	22,783	$79,285	55%	$26,468
Home	Steel Bins 2 bins @ 54,285 bu.	1981	33	108,570	$359,367	55%	$119,969
Home	Steel Bins 2 bins @ 190,382 bu.	1987	27	380,764	$951,910	45%	$412,971
Home	Steel Bins 2 bins @ 171,118 bu.	1983	31	342,236	$859,012	52%	$315,401
Home	Wood Crib / Metal Clad Elevator	1915	65	27,000	$304,020	95%	$0

Sale Number: **47**

Guide Year: **2018**

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.

Avg. Effective Age:	31.50
Total Depreciation %:	68.04%
Annual Depreciation:	2.16%
Total Accrued Depreciation:	$1,560,039
Net Sale Price:	$883,573
Grain Storage in Bu.:	933,000
Net Storage per Bu.:	$0.95
Avg. Concrete per Bu.:	
Avg. Steel per Bu.:	$1.00
Avg Flat per Bu.:	
Avg Metal Clad per Bu.:	$0.00

Home, Marshall County, Kansas

Sale Number: **48**

Guide Year: **2018**

Courtland (West), Republic County, Kansas

Courtland (East), Republic County, Kansas

Belleville (North), Republic County, Kansas

Region:	West
County:	Republic
Sale Year:	2014
SVQ:	6058
Total Sale Price:	$13,700,000
Land Size Acres:	55
Land Value in Sale:	$128,650
Amount Personal Property:	$897,500
Non-Grain Structures RCNLD:	$527,298
Seller:	Hansen-Mueller Co.
Buyer:	Farmway Coop, Inc

Situs Address(es): Belleville, Courtland & Scandia, KS

Railroad Service:

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

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Republic	Slip Form Annex	1953	61	307,958	$1,613,700	76%	$737,025
Republic	Steel Hopper 3 tanks @ 5,371 bu.	1986	28	16,113	$87,332	47%	$65,723
Republic	Steel Hopper 1 tank @ 2,190 bu.	1986	28	2,005	$14,396	47%	$10,834
Republic	Steel Bins 1 bin @ 113,879 bu.	1999	15	113,789	$399,399	25%	$387,110
Republic	Steel Bins 1 bin @ 136,601 bu.	1999	15	136,601	$476,737	25%	$462,068
Republic	Steel Hopper 2 tanks @ 2,260 bu.	1986	28	4,520	$30,013	47%	$22,587
Republic	Steel Hopper 2 tanks @ 2,259 bu.	1986	28	4,518	$29,367	47%	$22,101

Sale Number: **48**

Guide Year: **2018**

Republic	Steel Hopper 1 tank @ 2,190 bu.	1999	15	1,941	$14,596	25%	$14,147
Republic	Slip Form Elevator	1951	63	157,366	$1,398,984	79%	$603,983
Republic	Flat Storage -204,200 bu.	1958	45	1,492,031	$2,909,460	90%	$928,786
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
Republic	Flat Storage -207,147 bu.	1958	45	1,376,880	$2,698,685	90%	$861,501
Republic	Steel Bins 2 bins @ 296,998 bu.	1986	28	593,996	$1,467,170	47%	$1,104,138

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

Avg. Effective Age:	45.06
Total Depreciation %:	48.90%
Annual Depreciation:	1.08%
Total Accrued Depreciation:	$14,394,841
Net Sale Price:	$10,396,852
Grain Storage in Bu.:	5,735,722
Net Storage per Bu.:	$1.81
Avg. Concrete per Bu.:	$3.27
Avg. Steel per Bu.:	$2.39
Avg Flat per Bu.:	$0.62
Avg Metal Clad per Bu.:	

Belleville (East), Republic County, Kansas

Sale Number: **49**

Guide Year: **2018**

Silica, Rice County, Kansas

Silica, Rice County, Kansas

Region: West

County: Rice

Sale Year: 2014

SVQ: 205333

Total Sale Price: $3,100,000

Land Size Acres: 30

Land Value in Sale: $199,600

Amount Personal Property: $363,300

Non-Grain Structures RCNLD: $86,726

Seller: Silica Gran, L.C.

Buyer: Gavilon Grain LLC

Situs Address(es): Silica, KS

Silica, Rice County, Kansas

Railroad Service:

Location	Number of Cars
Silica	60 car facility

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Silica	Conc. Stave Silo 1 @ 2,669 bu.	1954	60	2,669	$34,670	75%	$2,995
Silica	Conc. Stave Silo 1 @ 29,796 bu.	1954	60	29,796	$199,037	75%	$17,196
Silica	Conc. Stave Silos 2 @ 29,473 bu.	1954	60	58,946	$394,938	75%	$34,120
Silica	Conc. Stave Silo 1 @ 29,196 bu.	1954	60	29,196	$195,905	75%	$16,925
Silica	Conc. Stave Silos 3 @ 29,703 bu.	1954	60	89,109	$596,139	75%	$51,503
Silica	Jump Form 2 silos @256,996 bu.	2011	3	513,992	$2,724,158	4%	$2,176,313
Silica	Steel Bins 1 bin @ 115,702 bu.	1980	34	115,702	$285,784	57%	$77,084

Sale Number: **49**

Guide Year: **2018**

Silica	Steel Bins 1 bin @ 111,884 bu.	1980	34	111,884	$275,235	57%	$74,238

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.

Avg. Effective Age:	22.98
Total Depreciation %:	47.90%
Annual Depreciation:	2.09%
Total Accrued Depreciation:	$1,485,584
Net Sale Price:	$2,450,374
Grain Storage in Bu.:	951,294
Net Storage per Bu.:	$2.58
Avg. Concrete per Bu.:	$3.18
Avg. Steel per Bu.:	$0.66
Avg Flat per Bu.:	
Avg Metal Clad per Bu.:	

Silica, Rice County, Kansas

Sale Number: **50**

Guide Year: **2018**

Pence, Scott County, Kansas

Pence, Scott County, Kansas

Winona, Logan County, Kansas

Region: West

County: Logan-Scott

Sale Year: 2014

SVQ:

Total Sale Price: $4,500,000

Land Size Acres: 5

Land Value in Sale: $20,240

Amount Personal Property: $500,000

Non-Grain Structures RCNLD: $333,694

Seller: Winona Feed & Grain

Buyer: The Scoular Company

Situs Address(es): Winona & Pence, KS

Railroad Service:

Location	Number of Cars
Winona & Pence	Winona has rail service, number of cars unk

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Winona	Steel Bins 1 bin @ 151,724 bu.	1977	37	151,724	$304,965	62%	$91,904
Pence	Steel Bins 1 bin @ 181,807 bu.	1966	48	181,807	$474,516	80%	$56,005
Pence	Steel Bins 1 bin @ 30,176 bu.	1973	41	30,176	$79,966	68%	$18,767
Pence	Steel Bins 1 bin @ 52,973 bu.	1977	37	52,973	$139,849	62%	$42,145
Pence	Steel Hopper 1 tanks @ 2,190 bu.	1985	29	2,190	$10,622	48%	$4,617
Pence	Steel Hopper 1 tanks @ 1,233 bu.	1985	29	1,233	$8,064	48%	$3,505
Pence	Steel Bins 1 bin @ 210,272 bu.	2009	5	210,272	$548,810	8%	$458,087
Pence	Steel Bins 2 bins @ 52,793 bu.	1966	48	105,946	$279,697	80%	$33,011

Sale Number: **50**

Guide Year: **2018**

Winona	Steel Bins 1 bin @ 151,566 bu.	1977	37	151,566	$304,648	62%	$91,808
Winona	West Flat Storage -204,200 bu.	1960	45			90%	
Winona	Bolted Steel 1 bin @ 358,120 bu.	1965	49	358,120	$852,326	70%	$185,828
Winona	Slip Form Elevator	1946	68	95,498	$921,556	85%	$62,689
Winona	Slip Form Annex	1951	63	179,506	$1,024,979	79%	$133,785
Winona	Slip Form Annex	1957	57	315,129	$1,594,553	71%	$327,720
Winona	Jump Form Annex-2@189,115 bu.	2006	8	378,230	$1,963,014	10%	$1,605,794
Winona	East Flat Storage -207,147 bu.	1961	40	207,147	$495,081	80%	$58,432
Pence	Steel Bins 1 bin @ 212,403 bu.	2010	4	212,403	$554,372	7%	$471,969

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 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.

Avg. Effective Age:	36.01
Total Depreciation %:	61.80%
Annual Depreciation:	1.72%
Total Accrued Depreciation:	$5,127,513
Net Sale Price:	$3,646,066
Grain Storage in Bu.:	2,633,920
Net Storage per Bu.:	$1.38
Avg. Concrete per Bu.:	$2.20
Avg. Steel per Bu.:	$1.00
Avg Flat per Bu.:	$0.28
Avg Metal Clad per Bu.:	

Winona, Logan County, Kansas

Sale Number: **51**

Guide Year: **2018**

Hoxie, Sheridan County, Kansas

Hoxie, Sheridan County, Kansas

Hoxie, Sheridan County, Kansas

Region: West

County: Sheridan

Sale Year: 2015

SVQ: 3938

Total Sale Price: $950,000

Land Size Acres: 9

Land Value in Sale: $20,860

Amount Personal Property: $78,185

Non-Grain Structures RCNLD: $83,353

Seller: Bainter Construction Company, Inc.

Buyer: Hoxie Feedyard, Inc.

Situs Address(es): Hoxie, KS

Railroad Service:

Location	Number of Cars
Hoxie	No service.

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Hoxie	Steel Hopper 3 tanks @ 594 bu.	2006	9	1,782	$12,314	15%	$2,672
Hoxie	Steel Bins 15 bins @ 58,000	2010	5	870,000	$2,175,000	8%	$616,975
Hoxie	Steel Bins 5 bins @ 50,000 bu.	2009	6	250,000	$332,500	10%	$88,778
Hoxie	Steel Bins 8 bins @ 30,000 bu.	2008	7	240,000	$350,400	12%	$87,717
Hoxie	Steel Bins 4 bins @ 20,000 bu.	2007	8	80,000	$126,400	13%	$29,535

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

Sale Number: **51**

Guide Year: **2018**

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.

Avg. Effective Age:	5.68
Total Depreciation %:	72.40%
Annual Depreciation:	12.76%
Total Accrued Depreciation:	$274,080
Net Sale Price:	$825,677
Grain Storage in Bu.:	1,441,782
Net Storage per Bu.:	$0.57
Avg. Concrete per Bu.:	
Avg. Steel per Bu.:	$0.57
Avg Flat per Bu.:	
Avg Metal Clad per Bu.:	

Sale Number: **52**

Guide Year: **2018**

Axtell, Marshall County, Kansas

Axtell, Marshall County, Kansas

Axtell, Marshall County, Kansas

Region: East

County: Marshall

Sale Year: 2016

SVQ: 11277

Total Sale Price: $3,932,465

Land Size Acres: 2

Land Value in Sale: $21,530

Amount Personal Property: $573,995

Non-Grain Structures RCNLD: $263,592

Seller: Axtell Grain Company

Buyer: The Nemaha County Cooperative Association

Situs Address(es): Axtell, KS

Railroad Service:

Location	Number of Cars
Axtell	Leased parcels have 25 car siding served by

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Axtell	Steel Bins 2 bins @ 404,537 bu.	2014	2	809,074	$1,901,324	3%	$1,443,393
Axtell	Steel Bins 2 bins @ 4,953 bu.	1985	31	9,906	$35,067	52%	$9,672
Axtell	Steel Bin 1 bin @ 114,291 bu.	1986	30	114,291	$282,299	50%	$82,568
Axtell	Steel Bin 1 bin @ 163,679 bu.	1986	30	163,679	$401,014	50%	$117,290
Axtell	Steel Bins 2 bins @ 79,247 bu.	1982	34	158,494	$389,895	57%	$88,045
Axtell	Steel Bin 1 bin @ 136,156 bu.	2000	16	136,156	$325,413	27%	$171,108
Axtell	Steel Bins 2 bins @ 130,200 bu.	2000	16	260,400	$622,356	27%	$327,246

Sale Number: **52**

Guide Year: **2018**

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

Avg. Effective Age:	13.32
Total Depreciation %:	43.40%
Annual Depreciation:	3.26%
Total Accrued Depreciation:	$896,831
Net Sale Price:	$2,239,323
Grain Storage in Bu.:	1,652,000
Net Storage per Bu.:	$1.36
Avg. Concrete per Bu.:	
Avg. Steel per Bu.:	$1.36
Avg Flat per Bu.:	
Avg Metal Clad per Bu.:	

Axtell, Marshall County, Kansas

Sale Number: **60**

Guide Year: **2018**

White Cloud, Doniphan County

White Cloud, Doniphan County

White Cloud, Doniphan County

Region: East

County: Doniphan

Sale Year: 2016

SVQ: 5323

Total Sale Price: $178,800

Land Size Acres:

Land Value in Sale: $19,020

Amount Personal Property:

Non-Grain Structures RCNLD: $28,693

Seller: Fairview Grain, LLC

Buyer: Ag Partners Cooperative, Inc.

Situs Address(es): 105 Hwy 7, Market Street & S First Street, White Cloud, KS

Railroad Service: Location Number of Cars

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
White Cloud	Steel Bin/Farm Storage type	1990	26	322,993	$733,194	43%	$242,692
White Cloud	Bolted Steel Bins 2 @ 153,144 bu.	1980	36	306,288	$934,178	51%	$233,551
White Cloud	Slip Form Annex	1940	77	197,007	$1,282,516	85%	$0
White Cloud	Slip Form Headhouse	1940	77	319,965	$2,745,300	85%	$0

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: **2018**

Avg. Effective Age:	55.04
Total Depreciation %:	97.70%
Annual Depreciation:	1.78%
Total Accrued Depreciation:	$4,221,784
Net Sale Price:	$131,087
Grain Storage in Bu.:	1,146,253
Net Storage per Bu.:	$0.11
Avg. Concrete per Bu.:	$0.00
Avg. Steel per Bu.:	$0.76
Avg Flat per Bu.:	
Avg Metal Clad per Bu.:	

White Cloud, Doniphan County

Sale Number: **63**

Guide Year: **2018**

Logan, Phillips County

Logan, Phillips County

Logan, Phillips County

Region: West

County: Phillips

Sale Year: 2016

SVQ: 6978

Total Sale Price: $1,500,000

Land Size Acres:

Land Value in Sale: $25,590

Amount Personal Property: $600,000

Non-Grain Structures RCNLD: $88,152

Seller: N. Terry Nelson

Buyer: Rangeland Cooperative, Inc.

Situs Address(es): 206 S Douglas & East Walnut, Logan, KS

Railroad Service: Location Number of Cars

Grain Structures:

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

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

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Sale Number: **63**

Guide Year: **2018**

Avg. Effective Age:	39.29
Total Depreciation %:	65.70%
Annual Depreciation:	1.67%
Total Accrued Depreciation:	$1,584,380
Net Sale Price:	$786,258
Grain Storage in Bu.:	869,231
Net Storage per Bu.:	$0.90
Avg. Concrete per Bu.:	
Avg. Steel per Bu.:	$1.02
Avg Flat per Bu.:	$0.36
Avg Metal Clad per Bu.:	

Logan, Phillips County

Sale Number: **64**

Guide Year: **2018**

Hiawatha, Brown County

Hiawatha, Brown County

Hiawatha, Brown County

Region: East

County: Brown

Sale Year: 2016

SVQ: 160184

Total Sale Price: $432,000

Land Size Acres:

Land Value in Sale: $19,020

Amount Personal Property:

Non-Grain Structures RCNLD: $28,693

Seller: Fairview Grain, LLC

Buyer: Ag Partners, Inc.

Situs Address(es): 913 Oregon Street and 110 S 10th Street, Hiawatha, KS

Railroad Service: Location Number of Cars

Grain Structures:

Location	Structure	Year Blt.	Eff. Age	Capacity (bu.)	RCN	%Depr.	RCN Less All Dep.
Hiawatha	Steel Commercial Storage Bin	2015	1	149,531	$515,882	0%	$374,789
Hiawatha	Steel Commercial Storage Bin	2005	11	54,001	$207,364	18%	$112,633
Hiawatha	Steel Farm Bins 2 @ 23,400	1990	26	46,800	$142,272	43%	$41,710
Hiawatha	Steel Farm Bins 2 @ 26,280 bu.	1980	36	52,560	$159,782	60%	$20,213
Hiawatha	Flat Storage	1960	76	110,481	$371,216	95%	$0
Hiawatha	Metal Headhouse/Metal Clad	1960	56	31,995	$367,303	95%	$0

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

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Sale Number: **64**

Guide Year: **2018**

Avg. Effective Age:	31.53
Total Depreciation %:	78.20%
Annual Depreciation:	2.48%
Total Accrued Depreciation:	$897,130
Net Sale Price:	$384,287
Grain Storage in Bu.:	445,368
Net Storage per Bu.:	$0.86
Avg. Concrete per Bu.:	
Avg. Steel per Bu.:	$1.81
Avg Flat per Bu.:	$0.00
Avg Metal Clad per Bu.:	$0.00

Hiawatha, Brown County

GRAIN ELEVATOR VALUATION EXAMPLE

For example analysis and application of data contained within this guide, the following hypothetical grain elevator property is described. The information included in this description will be utilized in the applications of the data and analysis described in the following three approaches.

The description of this hypothetical grain elevator facility will be outlined on the property inspection and cost analysis form previously discussed in this guide.

The subject is a country elevator located in the western region of Kansas. It includes a 500,000 bushel slip form concrete elevator, which was built in 1960. Additional grain storage is provided by a cluster of two – 50,000 bushel metal grain bins, which were constructed in 1975. The metal bins are filled and un-loaded by a separate free-standing leg. There is aeration in all of the grain storage and its value is included with the value of the structures. The office building containing 1,500 S.F. was built in 1960. Grain handling speeds are 10,000 BPH in the concrete elevator and 5,000 BPH for the freestanding elevator leg which is 110' tall.

The property has been typically maintained during its life. The property is in average condition for its age. The effective age of the facility was determined to be 56 years. The effective age could be done by inspection and appraisal judgment. Here a weighted average of the age of the structures is used. The total capacity is 600,000 bushels with the 500,000 bushel structure 58 years old and the 100,000 bushel structures 48 years old. The following formula was used:

$$\frac{\text{Capacity times age plus Capacity times age}}{\text{Total capacity}} = \frac{(500{,}000 \times 58) + (100{,}000 \times 43)}{600{,}000} = 56 \text{ years}$$

This was rounded to 56 years.

The property is located in a stable market. There have been no new elevators, shuttle terminals or end users of grain constructed in this market during the past several years. Annual grain yields have remained stable other than those fluctuations caused by climatic changes.

The Site contains 7.00 acres and is valued by the county appraiser at $8,750.

Example Property for Application in the Cost Approach

The example property is located in the western region. It includes 500,000 bu. of concrete and 100,000 bu. of upright steel storage and has an effective age of 56 years. The property is in average condition for its age. The site contains 7.0 acres and is valued by the county appraiser at $8,750.

In the valuation process, first consideration should be given to the data from the full database. Secondly, consideration should be given to the data from the western region of the database, and finally, consideration should be given to the most similar individual sales.

		Annual Depreciation Rate			
Category or Sub-Category	**Number of Properties**	**Low**	**Mean**	**Median**	**High**
Total Database	35	-0.43%	2.20%	1.90%	12.76%
Upright Concrete		1.01%	1.71%	1.70%	2.17%
500,000 bu. & Over		-0.43%	2.39%	1.89%	12.76%
40 Years & Over		1.01%	1.60%	1.66%	1.99%
Total Western Regional Database	22	0.84%	2.43%	1.90%	12.76%
Upright Concrete		1.42%	1.78%	1.80%	2.17%
500,000 bu. & Over		0.84%	2.58%	1.83%	12.76%
40 Years & Over		1.08%	1.61%	1.66%	1.90%
Other:					
Individual Sale No. ___24___		1.46%			
Individual Sale No. ___27___		1.43%			
Individual Sale No. ___31___		1.90%			

The total database indicated that the annual depreciation factor ranged from -0.43% to 12.76% with a mean of 2.20% and a median of 1.90%. This was further refined by the principal storage type, size, and age.

The western region database indicated that the annual depreciation factor ranged from 0.84% to 12.76% with a mean of 2.43% and a median of 1.90%. This was further refined by the principal storage type, size, and age.

The three individual sales indicated annual depreciation factors of 1.46%, 1.43%, and 1.90%, respectively.

Consideration will be given to all of the annual depreciation factor indications. The greatest consistency appears in the median analysis of the annual depreciation factors. Therefore, a reasonable annual depreciation factor range would be 1.43% to 1.90%. After considering all of this information, it is the appraiser's opinion that the appropriate annual depreciation factor for the subject property would be 1.66%.

EFFECTIVE AGE	X	ANNUAL DEPRECIATION FACTOR	=	TOTAL DEPRECIATION
56 Years	X	1.66 Per Year	=	93%

Following is the Grain Elevator Work Sheet for the example property.

2018 GRAIN ELEVATOR WORK SHEET

Parcel ID: _____*EXAMPLE*_____ **Owner:** _____

Situs Address: _____

SECTION 1 - GRAIN STORAGE		Year Built	Bu. Capacity/ Units	Rate	RCN
(1)	**Concrete Storage: Designate "Slip" or "Jump" Form**				
	Concrete Slip form elevator	1960	500,000	$6.61	$3,305,000
					$0
					$0
					$0
					$0
					$0
(2)	**Frame Elevator: Designate "Crib" or "Wood Frame"**				
					$0
					$0
					$0
(3)	**Upright Steel Storage**				
	Corrugated Steel:	1975	100,000	$2.10	$210,000
					$0
					$0
					$0
	Bolted Steel:				$0
					$0
					$0
(4)	**Flat Storage**				
	Without Attached Loading and Unloading System				$0
					$0
	With One Attached Loading and Unloading System				$0
					$0
	With Both Attached Loading and Unloading System				$0
					$0
(5)	**Other Storage**				
	Concrete Stave:				$0
					$0
	Covered Storage:				$0
					$0
	Miscellaneous:				$0
					$0
	Section 1 TOTAL RCN: Transfer to Line 8, Section 3				**$3,515,000**
	Total Capacity		**600,000**	**Bushels**	

Notes:

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SECTION 2 - STORAGE EQUIPMENT		Year Built	Bu. Capacity/ Units	Rate	RCN
(6)	**Aeration System**				
	Slip Form Concrete .14 Per Bushel		500,000	$0.14	$70,000
	All other Storage .12 Per Bushel		100,000	$0.12	$12,000
(7a)	**Consolidated Grain Handling Equipment - Rate x $ Per Bushel (Pg23)**				
			600,000	$1.58	$948,000
					$0
(7b)	**Pollution Control System**				
	Cyclone System ($32,000 to $40,000/unit)				
	Bag House System ($65,000/unit)				
(7c)	**Additional Loading and Unloading Systems**				
	Drag:				$0
					$0
	Auger:				$0
					$0
	Belt:				$0
					$0
(7d)	**Grain Dryer - Designate "Batch" or "Continuous Flow"**				
	Type:				$0
	Type:				$0
(7e)	**Outside Leg - Designated Height and Bushels Per Hour**				
					$0
					$0
					$0
(7f)	**Heat Detectors**				
					$0
(7g)	**Cleaner - Designate Bushels Per Hour**				
					$0
					$0
	Section 2, TOTAL RCN: Transfer to Line 9, Section 3				**$1,030,000**

SECTION 3 - COST RECONCILIATION			
(8)	**Total Cost Section 1**		$3,515,000
(9)	**Total Cost Section 2**		$1,030,000
(10)	**Total Cost for Section 1 and 2**		**$4,545,000**
(11)	**Current Cost Multiplier**		0.98
(12)	**Local Multiplier**		0.92
(13)	**Total Replacement Cost New (RCN)**		**$4,097,772**
(14)	**Total Depreciation - All Causes (%)**	89.0%	$3,647,017
(15)	**Total Replacement Cost New Less Depreciation (RCNLD)**		$450,755
(16)	**ESTIMATED MARKET VALUE (Rounded)**		**$450,800**

Notes:

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Annual Depreciation Rate

Category or Sub-Category	Number of	Low	Mean	Median	High
Total Database	35	-0.43	2.20	1.90	12.76
Type of Construction (Total DB)	11	1.01	1.71	1.70	2.17
Size (Total DB)	21	-0.43	2.39	1.89	12.76
Age (Total DB)	16	1.01	1.60	1.66	1.99
Total Regional Database					
Type of Construction (Regional DB)	8	1.42	1.78	1.80	2.17
Size (Regional DB)	16	0.84	2.58	1.83	12.76
Age (Regional DB)	10	1.08	1.61	1.66	1.90
Other					
Individual Sale No. ___24____	1.46				
Individual Sale No. ___27____	1.43				
Individual Sale No. ___31____	1.90				
Individual Sale No. _____					
Individual Sale No. _____					

Effective Age	App Year	Year Built	Actual Age	Bushel Cap	
	2018	1960	58	500,000	29,000,000
		1975	43	100,000	4,300,000
			2018		0
			2018		0
			2018		0
			2018		0
			2018		0
			2018		0
			2018		0
			2018		0
			2018		0
			2018		0
				600,000	33,300,000

Effective Age	55.5
Annual Dep Rate	1.60
Depreciation (Physical & Functiona	88.8

Example Property for Application in the Sales Comparison Approach

The example property is located in the western region. It includes 500,000 bu. of concrete and 100,000 bu. of upright steel storage and has an effective age of 56 years. The property is in average condition for its age.

In the valuation process, first, consideration should be given to the data from the full database. Secondly, consideration should be given to the data from the western region of the database, and finally, consideration should be given to the most similar individual sales.

Price Per Bushel of Storage

Category or Sub-Category	Number of Properties	Low	Mean	Median	High
Total Database	35	$0.11	$0.93	$0.75	$3.26
Upright Concrete		$0.28	$1.32	$0.85	$3.27
500,000 bu. & Over		$0.11	$1.14	$0.93	$3.26
40 Years & Over		$0.11	$0.67	$0.56	$1.81
Total Western Regional Database	22	$0.22	$0.91	$0.76	$2.58
Upright Concrete		$0.28	$1.38	$0.87	$3.27
500,000 bu. & Over		$0.28	$1.09	$0.92	$2.58
40 Years & Over		$0.22	$0.69	$0.55	$1.81
Types of Storage (Regional DB)					
Upright Concrete		$0.28	$1.38	$0.87	$3.27
Upright Steel		$0.29	$0.92	$0.72	$2.39
Other:					
Individual Sale No. __24____	$0.93	Concrete	$1.15		
Individual Sale No. __27____	$0.84	Concrete	$1.42	Steel	$0.29
Individual Sale No. __31____	$0.28	Concrete	$0.28		

The total database indicated that the price per bushel of storage ranged from $0.11 to $3.26 with a mean of $0.93 and a median of $0.75. This was further refined by the principal storage type, size, and age.

The western region database indicated that the price per bushel of storage ranged from $0.22 to $2.58 with a mean of $0.91 and median of $0.76. This was further refined by the principal storage type, size, and age.

The three individual sales indicated price per bushel of storage of $0.93, $0.84, and $0.28, respectively.

Consideration will be given to all of the price per bushel of storage indications. The greatest consistency appears in the median analysis of the price per bushel of storage. Therefore, a reasonable value conclusion would be in the range of $0.55 to $0.93 per bushel of storage. After considering all of this information, it is the appraiser's opinion that the appropriate price per bushel of storage for the subject property would be $0.75

+..

SIZE	X	PRICE PER UNIT	=	TOTAL
600,000	X	$0.75 Per Bu.	=	$450,000

The values were also analyzed based upon the allocated price per bushel of storage for the different types of storage. The concrete storage in the western region indicated that the price per bushel of storage ranged from $0.28 to $3.27 with a mean of $1.38 and a median of $0.87. The upright steel storage indicated that the price per bushel of storage ranged from $0.29 to $2.39 with a mean of $0.92 and a median of $0.72.

Consideration will be given to all of the price per bushel of storage indications for the different types of storage. The greatest consistency appears in the median analysis of the price per bushel of storage for the different types of storage. After considering all of this information, it is the appraiser's opinion that the appropriate price per bushel of storage for the different types of storage for the subject property would be $0.80 for the concrete storage and $0.70 for the upright steel storage.

	SIZE	X	PRICE PER UNIT	=	TOTAL
Concrete	500,000 Bu.	X	$0.80 Per Bu.	=	$400,000
Upright Steel	100,000 Bu.	X	$0.70 Per Bu.	=	$ 70,000
					$470,000

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.*1 The Dictionary of Real Estate Appraisal, Fourth Edition, Appraisal Institute, 2002, page 236.

It is important now 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.

These value indications ($450,000 and $470,000) are based upon the storage capacity of the subject property (600,000 bu.).

Based upon the history, current, and expected operational levels of the subject property, it is the appraiser's opinion that the value indication by the Sale Comparison Approach would be: $460,000.

Sales Comparison Approach
Price Per Bushel Storage

Category or Sub-Category	Number of	Low	Mean	Median	High
Total Database	35	$0.11	$0.93	$0.75	$3.26
Type of Construction	16	$0.28	$1.32	$0.85	$3.27
Size (Total DB)	21	$0.11	$1.14	$0.93	$3.26
Age (Total DB)	16	$0.11	$0.67	$0.56	$1.81
Total Regional Database					
Type of Construction (Regional DB)	13	$0.28	$1.38	$0.87	$3.27
Size (Regional DB)	16	$0.28	$1.09	$0.92	$2.58
Age (Regional DB)	10	$0.22	$0.69	$0.55	$1.81
Types of Storage (Regional DB)					
Upright Concrete					
Upright Steel					
Crib					
Flat Storage					
Mixed					

Other:	Type	Eff Age	Cap	Net $/bu
Subject Property	conc	56.00	600,000	
Individual Sale No. ___24____	conc	51.90	417,000	$0.93
Individual Sale No. ___27____	mix	54.34	1,051,128	$0.84
Individual Sale No. ___31____	conc	50.27	565,000	$0.28

Conclusion $0.68 Dollars Per Bushel Storage

Price Per Bushel - Thru-Put

Category or Sub-Category	Number of	Low	Mean	Median	High
Total Database	0				
Type of Construction (Total DB)					
Size (Total DB)					
Age (Total DB)					
Total Regional Database					
Type of Construction (Regional DB)					
Size (Regional DB)					
Age (Regional DB)					
Individual Sale No. _____					
Individual Sale No. _____					
Individual Sale No. _____					
Individual Sale No. _____					
Individual Sale No. _____					

Conclusion [ ] Dollars Per Bushel Thru-Put

Example Property for Application in Reconciliation of Value

The subject is a country elevator located in the western region of Kansas. It includes a 500,000 bushel slip form concrete elevator, which was built in 1960. Additional grain storage is provided by a cluster of two – 50,000 bushel metal grain bins, which were constructed in 1975. The office building containing 1,500 S.F. was built in 1960. The property has been typically maintained during its life. The property is in average condition for its age. Based upon the inspection, it is the judgment of this appraiser that the effective age of this grain elevator would be 56 years. The site contains 7.00 acres and is valued by the county appraiser at $8,750.

In the reconciliation process it is necessary to consider three factors for each value indication. These factors include appropriateness, accuracy, and quantity of supporting evidence. The two approaches provide two independent value indications.

Cost Approach	$450,800
Sales Comparison Approach	$460,000

The cost estimate is based upon a national cost service (Marshall's Valuation Service). The measurement of accrued depreciation is based upon the abstraction of depreciation from the statewide database of grain elevator transactions. The well supported estimate of accrued depreciation strengthened the reliability of the value indication by the Cost Approach. The weakness of this approach is its inability to compensate for the grain volume and income stream of the subject operation.

The strength of the Sales Comparison Approach value indication is that it is based on the statewide database of sales. It is important now to consider all of the factors/characteristics influencing the various value indications. These value indications were based upon the storage capacity of the subject property (600,000 bu.) which would be similar to the value indication from the Cost Approach.

After considering these factors of reconciliation as they apply to each of these value indications, the quantity of supporting evidence supported the Cost and Sales Comparison Approaches. In final reconciliation it is the appraiser's opinion that the final estimate of value would be:

Final Estimate of Value

$460,000

Exposure Time Estimate

The marketing history of the sales included in the database indicated that a typical exposure period for an appropriately priced and actively marketed property would have been 6 to 12 months.