

**REAPPRAISAL PLAN
FOR THE
2013 AND 2014 APPRAISAL YEARS
FOR
ELLIS APPRAISAL DISTRICT
05/22/2012**

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Ellis Appraisal District

Reappraisal Plan

INTRODUCTION

Scope of Responsibility

The Ellis Appraisal District (EAD) has prepared and published this reappraisal plan and appraisal report to provide our Board of Directors, taxing entities, citizens and taxpayers with a better understanding of the district's responsibilities and activities. This report has several parts: a general introduction and then, several sections describing the appraisal effort by the appraisal district.

The Ellis Appraisal District is a political subdivision of the State of Texas created effective January 1, 1980. The provisions of the Texas Property Tax Code govern the legal, statutory, and administrative requirements of the appraisal district. A 6 member Board of Directors, appointed by the taxing units within the boundaries of Ellis, constitutes the district's governing body. The chief appraiser, appointed by the Board of Directors, is the chief administrator of the appraisal district.

The appraisal district is responsible for local property tax appraisal and exemption administration for 41 jurisdictions or taxing units in the county. Each taxing unit, such as the county, a city, school district, water district, emergency service district, sets its own tax rate to generate revenue to pay for such things as police and fire protection, public schools, road and street maintenance, courts, water and sewer systems, and other public services. Property appraisals and estimated values by the appraisal district allocate the year's tax burden on the basis of each taxable property's appraised value. The appraisal district is also responsible for determining eligibility for various types of property tax exemptions such as those for homeowners, the elderly, disabled veterans, charitable or religious organizations and agricultural productivity valuation.

ENTITIES

EAD is an Appraisal District formed by the Texas Legislature in 1979 and is charged with the appraisal of all taxable property within Ellis County. There are 42 taxing entities partially or totally within the District's boundaries. Currently these taxing entities are as follows:

Ellis County	Avalon ISD
Ellis County Lateral Road	Ennis ISD
City of Bardwell	Ferris ISD
City of Cedar Hill	Frost ISD
City of Ennis	Italy ISD
City of Ferris	Maypearl ISD
City of Garrett	Midlothian ISD
City of Glenn Heights	Milford ISD
City of Grand Prairie	Palmer ISD
City of Italy	Red Oak ISD
City of Mansfield	Waxahachie ISD
City of Maypearl	Ellis County Emergency Service District #1
City of Midlothian	Ellis County Emergency Service District #2
City of Milford	Ellis County Emergency Service District #3
City of Oak Leaf	Ellis County Emergency Service District #4
City of Ovilla	Ellis County Emergency Service District #5
City of Palmer	Ellis County Emergency Service District #6
City of Pecan Hill	Ellis County Emergency Service District #7
City of Red Oak	Ellis County Emergency Service District #8
City of Venus	Ellis County Emergency Service District #9
City of Waxahachie	Ellis County Fresh Water Supply District #2

SHARED APPRAISAL DISTRICT PROPERTIES

The 80th Legislature enacted House Bill 1010 effective January 1, 2008, eliminating shared appraisal district properties. Each appraisal district is now responsible for appraising only the properties that exist within its county.

EAD will continue to exchange data with the districts in the overlapping jurisdictions and reconcile any differences in values with the overlap appraisal district for those properties that are split by a county line. Appraisers from adjacent appraisal districts discuss data collection and valuation issues to minimize the possibility of differences in property characteristics, legal descriptions, and other administrative data. Each appraisal district will appraise only that portion of a split property that exists within its county boundary.

PROPERTIES APPRAISED

The 2011 certified tax roll for Ellis County consisted of 80,028 parcels. The breakdown of these parcels was as follows:

Single Family Residential	48,257
Multi Family Residential	802
Mobile Homes	4,006
Vacant Lots	9,460
Vacant Acreage	7,032
Commercial	2,492
Minerals	1,420
Utilities	3,384
Exempt Property	<u>2,488</u>
Total	80,028

APPRAISAL FREQUENCY AND METHOD SUMMARY

- Residential Property- Residential property is physically examined at least once every three years with appraisers by one of two methods, Pictometry review or field inspection. Pictometry review involves reviewing neighborhood oblique images from four different directions of a property, looking for changes that might have occurred to the property since the last inspection, measuring the two most significant exterior walls of each improvement, and verifying that all improvements are on the appraisal roll and listed correctly. Field inspection involves walking in front of each home, and to the rear if accessible, looking for changes that might have occurred to the property since the last inspection, measuring the two most significant exterior walls of each improvement, and verifying that all improvements are on the appraisal roll and listed correctly. Exterior pictures are taken any time an appraiser conducts a field check.

Additionally, the appraisal district uses ChangeFindr, which is a software program that analyzes and detects changes from the most recent set of Pictometry imagery to the

previous imagery. This is helpful in detecting any meaningful improvements that may have not been appraised because no permit was taken out or due to human error, and ensures that all property owners are treated fairly and equally. The ChangeFindr results are reviewed by appraisers to confirm whether a meaningful difference has occurred and whether that difference is already reflected in the appraisal roll. If a meaningful difference has occurred that is not reflected in the appraisal roll, that improvement is added to the appraisal roll.

Every neighborhood is statistically analyzed annually to verify appraisal performance. If sales indicate that current appraised values in a neighborhood are not at market value, adjustments are made to the neighborhood using a process outlined in detail in the Market Analysis section of this report.

- **Commercial/Industrial Property-** Commercial and industrial real estate is observed at least once every three years. All commercial/industrial property is field inspected and the commercial/industrial appraisers concurrently update Business Personal Property (BPP) records by adding new businesses to the appraisal roll and deleting businesses that no longer exist, which requires a field check. Exterior pictures are taken any time an appraiser conducts a field check. Pictometry and ChangeFindr are used by commercial appraisers in the same manner as outlined above.

Real estate accounts are analyzed against sales of similar properties in EAD as well as similar communities in surrounding counties. The income approach to value is also utilized to appraise properties where the highest and best use is as income producing property, such as shopping centers, apartment complexes, office buildings, motels and hotels, and other types of property that typically sell based on net operating income. The cost approach is typically used to value industrial properties due to the lack of reliable income data and comparable sales. This is the recommended approach of the International Association of Assessing Officers (IAAO).

- **Business Personal Property-** Business personal property is observed annually with appraisers actually going into businesses to develop quality and density observations. A rendition is left for new businesses to complete. Similar businesses to a subject are analyzed annually to determine appraisal consistency. Businesses are categorized using Standard Industry Classification (SIC) codes. Rendition laws provide additional information on which to base values of BPP accounts.
- **Minerals-** EAD contracts with Capitol Appraisal Group of Austin for the valuation of mineral accounts. Working and royalty interests of producing oil and gas wells are appraised annually. The most recent production data available from the Texas Railroad Commission is downloaded into appraisal software that estimates economically recoverable reserves. Those reserves are then valued based upon state mandated pricing

using the previous year's average of oil or gas values. A discount is applied over the anticipated life of the well in order to consider the value of money over time to recover those reserves. Each producing lease is valued as a unit and then that value is divided according to the various owners of the lease listed in division orders.

- Utilities and Pipelines- Utility companies and pipelines are appraised annually using a unit value developed using all three approaches to value. A utility company's total value in the state is estimated using cost, market, and income approaches to value and then the entire value is allocated using the components of that utility company that have situs in the various tax units of EAD. Components include such things as miles of transmission lines, miles of distribution lines, substations and the like for an electric utility.

PERFORMANCE ANALYSIS

In addition to sales ratio studies performed by the appraisal district, the State Comptroller's Property Tax Assistance Division (PTAD) conducts a biannual property value study (PVS) of each Texas school district and each appraisal district. As part of this biannual study, the code requires the Comptroller to use sales and recognized auditing and sampling techniques, to test the validity of school district taxable values in each appraisal district and presume the appraisal roll values are correct when values are valid, and determine the level and uniformity of property tax appraisal in each appraisal district.

The methodology used in the property value study includes stratified samples to improve sample representativeness and techniques or procedures of measuring uniformity. This study utilizes statistical analyses of sold properties (sale ratio studies) and appraisals of unsold properties (appraisal ratio studies) as a basis for assessment ratio reporting. For appraisal districts, the reported measures include median level of appraisal, coefficient of dispersion (COD), the percentage of properties within 10% of the median, the percentage of properties within 25% of the median, and the price-related differential (PRD) for properties overall and by state category.

Each of the 11 independent school districts in EAD is tested biannually. The preliminary results of this study are released February 1 in the year following the year of appraisal. The final results of this study are certified to the Education Commissioner of the Texas Education Agency (TEA) the following July of each year. This outside (third party) ratio study provides additional assistance to the CAD in determining areas of market activity or changing market conditions.

The results of this test are very important. The results are used to determine the value assignment to each ISD that is used in the state funding formula. A determination that the CAD has appraised properties in an ISD outside the confidence interval of 5% greater or lesser than the value determined by the Property Tax Assistance Division (PTAD), results in a value assignment by the PTAD and lower funding to school districts based on its value determination.

The results of EAD sales ratio studies, the Property Value Study, and the prior year's Mass Appraisal Report are analyzed to determine if there are any areas where appraisal performance can be improved. Currently, EAD's results indicate that properties are being valued within IAAO standards for both market value and equity, and that there are no areas that require additional resources. This is continually monitored to ensure quality appraisal performance.

Additionally, beginning in 2010, the PTAD will conduct a biannual review of the governance of each appraisal district, taxpayer assistance provided, and the operating and appraisal standards, procedures, and methodology used by the district. EAD will be reviewed during this reappraisal cycle in 2013.

REAPPRAISAL

EAD currently conducts reappraisal on a three-year rotation. While all property values are updated annually to reflect market values, one-third of the district is re-inspected every year. The re-inspection consists mainly of the use of Pictometry images and the geographic information system, augmented by the physical inspection of properties.

The appraisers performing re-inspection via Pictometry neighborhood oblique image review from four different directions of a property, looking for changes that might have occurred to the property since the last inspection, measuring the two most significant exterior walls of each improvement, and verifying that all improvements are on the appraisal roll and listed correctly.

Appraisers in the field have property records that contain specific information regarding the property being appraised in either a paper format or electronically on the pen pad device. These records contain brief legal descriptions, ownership interest, property use codes, property addresses, land size and characteristics, sketches of improvements as well as any available detailed information of the improvements.

Regardless of method, re-inspections require appraisers to check all information on the property and the property record, and to update the appraisal roll as necessary. The appraiser's primary duty is to ensure the accuracy of EAD's property records. Appraisers note their opinion of classification, condition and characteristics of the property. If changes in the size of any structures are observed, the appraiser measures and lists those dimensions. Appraisers take digital photos of each property field inspected. All work is reviewed by a senior appraiser.

In addition to reappraisal, all exemptions and special valuations for properties in the reappraisal area are reviewed to verify qualification.

The reappraisal area for 2013 will be Avalon ISD, Frost ISD, Italy ISD, Maypearl ISD, Midlothian ISD, and Milford ISD. The reappraisal area for 2014 will be Ferris ISD, Palmer ISD, and Waxahachie ISD. The breakdown of the parcels in the reappraisal areas from the 2011 certification is included in the discussion of each year's reappraisal plan.

The reappraisal plan is made under the guidelines of current law. This plan may be revised if the Legislature materially changes current laws governing Appraisal Districts, in the unfortunate event of a natural disaster, or other unforeseeable event. Any proposed revision is subject to public notification and ratification by the Board of Directors of the Ellis Appraisal District.

PERSONNEL RESOURCES

The appraisal district staff for 2012 consists of 19 employees with the following classifications:

- 1 – Administrator
- 2 - Management
- 8- Appraisers
- 8- Administrative Support

The Chief Appraiser is the chief administrative officer of the appraisal district. The Chief Appraiser employs and directs the district's staff, oversees all aspects of the appraisal district operations and performs either directly or through the district staff, a variety of operations.

The Chief Appraiser is primarily responsible for overall planning, organizing, staffing, coordinating, and controlling of district operations. The appraisal department is responsible for the valuation of all real and personal property accounts. The property types appraised include commercial, residential, business personal, mineral, utilities, and industrial. Presently all property in the district, with the exception of oil and gas pipelines, and minerals is appraised by the EAD staff. The district's appraisers are subject to the provisions of the Property Taxation Professional Certification Act and must be duly registered with the Texas Department of Licensing and Regulation. Support functions including records maintenance, exemptions processing, ownership transfers, information and assistance to property owners, and hearings coordinated by personnel in support services.

STAFF EDUCATION AND TRAINING

All personnel performing appraisal valuation work are registered with the Texas Department of Licensing and Regulation are required to take appraisal courses to achieve the designation of Registered Professional Appraiser within five years of employment as an appraiser. After they are awarded their license, they must receive additional training of a minimum of 30 hours of continuing education units every two years. Failure to meet these minimum standards results in the termination of the employee.

Additionally, all appraisal personnel receive extensive training in data gathering processes including data entry into pen pads used in field work and statistical analyses of all types of property to ensure equality and uniformity of appraisal of all types of property. On the job training for new appraisers is delivered by department managers and experienced appraisers. Managers meet regularly with staff to introduce new procedures, provide training, and regularly monitor appraisal activity to ensure standardized appraisal procedures are being followed by all personnel.

EAD personnel interact with other assessment officials through professional trade organizations including the International Association of Assessing Officers and Texas Association of Appraisal Districts. The EAD staff strive to maintain appraisal skills and professionalism by continuing education in the form of courses that are offered by several professional associations such as International Association of Assessing Officers (IAAO), Texas Association of Assessing Officers (TAAO), Texas Association of Appraisal Districts (TAAD) and the Texas Department of Licensing and Regulation (TDLR). Several courses are taught on-site by EAD employees to minimize cost and increase scheduling flexibility.

INFORMATION SYSTEMS

The district is responsible for establishing and maintaining approximately 80,000 real and personal property accounts covering 950 square miles within Ellis County. This data includes property characteristics, ownership, and exemption information. Property characteristic data on new construction is updated through an annual field effort; existing property data is maintained through a field review. Sales are routinely validated during a separate field effort; however, numerous sales are validated as part of the new construction and field inspections. General trends in employment, interest rates, new construction trends, cost and market data are acquired through various sources, including internally generated questionnaires to buyers, university research centers, and market data centers and vendors.

The district utilizes a Computer Assisted Mass Appraisal (CAMA) system developed and maintained by LPS/True Automation. This CAMA system is a state of the art mass appraisal

system that has enabled district appraisers to work more accurately and efficiently and is fully integrated with the district's geographic information (GIS) system.

The district has a geographic information system (GIS) that maintains cadastral maps and various layers of data and aerial photography. Additionally, the district uses aerials, oblique imagery, and change detection software from Pictometry International that have dramatically increased efficiency and accuracy in the reappraisal process.

The district's website makes a broad range of information available for public access, including information on the appraisal process, property characteristics data, certified values, protests and appeal procedures. Downloadable files of related tax information and district forms, including exemption applications and business personal property renditions are also available.

The IS/GIS staff maintains the district's data processing systems, software applications, Internet web site, and the geographical information system (GIS). The district's primary database is accessed with LPS/True Automation's PACS software and a SQL 2005 database run on a Dell PowerEdge R510 Server using Windows Server 2008. Mapping and GIS are run on a Dell PowerEdge R510 using Windows Server 2008 and ARC GIS Server. The user base is networked through a Dell PowerEdge R200 using Windows Server 2003. True Automation provides software services and support for appraisal applications.

After reviewing the 2013-2014 reappraisal plan and based on prior reappraisal efforts, the EAD management and Board of Directors believe it has the necessary resources to successfully complete the 2013-2014 reappraisal effort while maintaining the high level of appraisal performance the citizens of Ellis County have come to expect.

2013 Reappraisal

	<u>Avalon ISD</u>	<u>Frost ISD</u>	<u>Italy ISD</u>
Single Family Residential	345	14	1,046
Multi Family Residential	0	0	11
Mobile Homes	70	2	100
Vacant Lots	82	0	158
Vacant Acreage	218	47	391
Commercial	10	0	84
Utilities	19	8	31
Personal Property	24	0	92
Exempt Property	<u>22</u>	<u>2</u>	<u>77</u>
Total	790	73	1,990

	<u>Maypearl ISD</u>	<u>Midlothian ISD</u>	<u>Milford ISD</u>
Single Family Residential	1,658	10,927	462
Multi Family Residential	6	111	0
Mobile Homes	237	625	74
Vacant Lots	210	2,637	92
Vacant Acreage	457	1,067	228
Commercial	47	392	26
Minerals	36	1,380	0
Utilities	33	178	23
Personal Property	90	731	19
Exempt Property	<u>72</u>	<u>800</u>	<u>51</u>
Total	2,846	18,848	975

The 2013 reappraisal will involve the inspection of approximately 25,000 real property accounts in the reappraisal ISDs, based on 2012 certification totals. Additionally, EAD appraisers will inspect approximately 3,000 real property accounts in the remaining five ISDs due mainly to new improvements and permit activity.

EAD appraisers will also be responsible for inspecting and maintaining all business personal property records, inspecting land designated for special agricultural valuation, inspecting land where the property owner has applied for special agricultural valuation, and administering special inventory valuations.

This effort will be conducted beginning in January of 2012 to April 1, 2013. Field work and re-inspections will be substantially complete by January 1, 2013, allowing sufficient time for market area analysis and schedule updates from January 1 to April 1. The time period of April 1 to July 25, 2013 will be reserved for property owner protests. EAD typically has 6,000-8,000 property owner protests annually. Most are resolved informally with approximately 1,000 resulting in formal hearings before the Appraisal Review Board.

With the exception of commercial, personal property, and land over ten acres, all properties in the Avalon, Frost, Italy, and Milford ISDs will be reinspected by Zone C appraisers. Midlothian ISD will be reinspected by Zone A appraisers and Maypearl ISD will be reinspected by Zone B appraisers. Commercial and personal property will be reinspected by the commercial department. All land over ten acres in will be reinspected by the land appraiser. All other appraisers will continue to perform appraisal functions in the non-reappraisal ISDs and provide reappraisal support if required to ensure timely completion of the re-inspection effort.

2014 Reappraisal

	<u>Ferris ISD</u>	<u>Palmer ISD</u>	<u>Waxahachie ISD</u>
Single Family Residential	3,178	1,948	12,349
Multi Family Residential	28	16	280
Mobile Homes	747	249	683
Vacant Lots	633	260	2,551
Vacant Acreage	605	504	1,341
Commercial	135	64	833
Utilities	72	64	99
Personal Property	197	112	1,323
Exempt Property	<u>157</u>	<u>63</u>	<u>690</u>
Total	5,752	3,280	20,149

The 2014 reappraisal will involve the inspection of approximately 28,000 real property accounts in the reappraisal ISDs, based on 2011 certification totals. Additionally, EAD appraisers will inspect approximately 3,000 real property accounts in the remaining eight ISDs due mainly to new improvements and permit activity.

EAD appraisers will also be responsible for inspecting and maintaining all business personal property records, inspecting land designated for special agricultural valuation, inspecting land where the property owner has applied for special agricultural valuation, and administering special inventory valuations.

This effort will be conducted beginning in January 2013 to April 1, 2014. Field work and re-inspections will be substantially complete by January 1, 2014, allowing sufficient time for market area analysis and schedule updates from January 1 to April 1. The time period of April 1 to July 25, 2014 will be reserved for property owner protests. EAD typically has 6,000-8,000 property owner protests annually. Most are resolved informally with approximately 1,000 resulting in formal hearings before the Appraisal Review Board.

With the exception of commercial, personal property, and land over ten acres, all properties in Ferris ISDs will be reinspected by Zone D appraisers. Palmer ISD will

be reinspected by Zone E appraisers and Waxahachie ISD will be reinspected by Zone B appraisers. Commercial and personal property will be reinspected by the commercial department. All land over ten acres in Ferris, Palmer, and Waxahachie ISDs will be reinspected by the land appraiser. All other appraisers will continue to perform appraisal functions in the non-reappraisal ISDs and provide reappraisal support if required to ensure timely completion of the re-inspection effort.

APPRAISAL RESPONSIBILITIES

Except as otherwise provided by the Property Tax Code, all taxable property is appraised at its “market value” as of January 1st. Under the tax code, “market value” means the price at which a property would transfer for cash or its equivalent under prevailing market conditions if:

- exposed for sale in the open market with a reasonable time for the seller to find a purchaser;
- both the seller and the buyer know of all the uses and purposes to which the property is adapted and for which it is capable of being used and of the enforceable restrictions on its use, and;
- both the seller and buyer seek to maximize their gains and neither is in a position to take advantage of the exigencies of the other.

The Property Tax Code defines special appraisal provisions for the valuation of residential homestead property (Sec. 23.23), productivity (Sec. 23.41), real property inventory (Sec. 23.12), dealer inventory (Sec. 23.121, 23.124, 23.1241 and 23.127), nominal (Sec. 23.18) or restricted use properties (Sec. 23.83) and allocation of interstate property (Sec. 23.03). The owner of inventory may elect to have the inventory appraised at its market value as of September 1st of the year preceding the tax year to which the appraisal applies by filing an application with the chief appraiser by July 31st.

The Texas Property Tax Code, under Sec. 25.18, requires each appraisal office to implement a plan to update appraised values for real property at least once every three years. Business personal properties, minerals and utility properties are appraised every year. The district’s current policy is to conduct a general market value review of all taxable property every year, with a reinspection of specified ISDs each year on a three year rotating basis.

The appraised value of real estate is calculated using specific information about each property. Using computer-assisted mass appraisal programs, and recognized appraisal methods and techniques, we compare that information with the data for similar properties, and with recent cost and market data. The district follows the standards of the International Association of

Assessing Officers (IAAO) regarding its appraisal practices and procedures, and subscribes to the standards promulgated by the Appraisal Foundation known as the Uniform Standards of Professional Appraisal Practice (USPAP) to the extent they are applicable. More specific information concerning the appraisal of property is found in the *Ellis Appraisal District Appraisal Manual* and is incorporated by reference in this reappraisal plan.

PILOT STUDIES

Whenever new procedures are considered, it is prudent to conduct a pilot study of the new procedures, including a ratio study in one or two areas of a jurisdiction to ensure the new procedures produce accurate and reliable results prior to full implementation. A pilot study can be a useful tool in developing or modifying the new procedures or for determining the contemplated procedures do not work as anticipated.

Per IAAO standards, pilot studies are considered for major changes in procedures. Due to the number of successful new procedures implemented in recent years, EAD does not anticipate any major changes that will require a pilot study in the 2013-2014 reappraisal cycle.

DATA COLLECTION/VALIDATION

Data collection and validation of taxable property involves maintaining accurate data characteristics of the property in the CAMA (Computer Assisted Mass Appraisal) system. The information contained in CAMA includes site characteristics, such as land size, topography, and soil type and improvement data, such as square foot of living area, year built, quality of construction, and condition.

The appraisal staff is responsible for collecting and maintaining property characteristic data for classification, valuation, and other purposes. Accurate valuation of real and personal property by any method requires an accurate and comprehensive physical description of the property appraised. Field appraisers are required to use uniform procedures and classifications to ensure the correct listing of property and uniformity of appraisals. The field appraisers' work is reviewed by supervisory personnel to ensure accuracy and uniformity.

Data on individual properties is collected, compiled and analyzed. Buildings and other improvements are inspected, measured and classified. The appraiser estimates the effective age of improvements and determines the condition of the improvements. This data is used to compile depreciation (loss of value) tables and any notes pertaining to the improvements are made at this time.

Residential properties are classified for quality and type of construction, whether frame or brick veneer. The classifications are **Low Cost, Fair, Average, Good, Very Good** and **Excellent**.

Low Cost being the most basic of structures using the poorest quality materials and lowest workmanship while an Excellent structure is of the highest possible quality using only the best of materials and the highest and best quality workmanship available.

Commercial properties are classified by type such as restaurant, office, shopping center, etc. and further defined by quality of construction, from poor to excellent. Business personal property is classified by standard industrial code.

Physical depreciation is calculated based on the effective age of improvements. Effective age is the age the property appears to be due to maintenance and upkeep. Effective age for a house that is properly maintained may be its actual or chronological age. However, if a structure suffers from deferred maintenance due to neglect, its effective age may be older than the actual age. Conversely, if a house is an older structure and has been remodeled or updated, its effective age may be less than its actual age. Standardized physical depreciation tables developed from Marshall & Swift are applied to all properties to ensure uniformity.

Appraisers also estimate the condition of the property. Condition ranges from poor to excellent. Appraisers in the field usually inspect structures from the exterior. Unless specific information is known to the appraiser, the interior condition is assumed to be similar to the exterior.

Foundation failure may occur in varying degrees and may also result in loss of value. EAD makes allowances for foundation problems on a case by case basis. Additional depreciation may be estimated for a variety of reasons including functional obsolescence resulting from bad floor plans, superadequacies, or out of date construction methods. Economic obsolescence results from a loss of value to a property due to adverse influences from outside the physical boundaries of the property. Examples of economic obsolescence may be proximity to a landfill, residences located in an airport flight path, etc.

SOURCES OF DATA

The sources of data collection are through property inspection, new construction field effort, building permits, sales validation, newspapers and publications, and property owner correspondence. A principal source of data comes from building permits received from taxing jurisdictions that require property owners to take out a building permit. Permits are received and matched manually with the property's tax account number for data entry. Sales data is acquired through the Multiple Listing Service, sales questionnaires from buyers and sellers, and from real estate agents and appraisers. Soil surveys and agricultural surveys of farming and ranching property owners and industry professionals are helpful for calculating productivity value. The Texas Railroad Commission is the source for mineral production data and leasing information. Improvement cost information is gathered from local building contractors and Marshall and Swift Valuation Service. Income information is gathered by interviewing lessees, lessors,

property managers, tax representatives, and by monitoring sales activity of income producing real property.

COST SCHEDULES

The EAD replacement cost and value schedules include land and residential improvements. Commercial and residential schedules are based on *Marshall and Swift Valuation Service* and personal property schedules are based on the Property Tax Assistance Division appraisal manual and *Marshall and Swift*. Personal property renditions provided by property owners are also used in the valuation of business personal property. *Marshall and Swift Valuation Service* is a national based cost manual and is recognized throughout the nation by the real estate industry. The Cost manual is based on cost per square foot and also the unit in place method. The unit in place method involves the estimated cost by using actual building components. This national based cost information service provides the base price of buildings as per classification with modifications for characteristics that either enhance or detract from value. The schedule is then modified for time and location. Schedules may also be modified by use of local data to further ensure the accuracy of the schedules.

EAD valuation schedules are divided into three main classifications, Residential, Commercial/Industrial and Business Personal Property. These schedules are based on the most appropriate data available. Miscellaneous special categories such as special inventory, restricted income apartments, and agricultural land are appraised using different techniques. Detailed information on the appraisal methods for the miscellaneous categories is included in the *Ellis Appraisal District Appraisal Manual* and may be obtained upon request at EAD. Depreciation tables and schedules (loss of value schedules) are also included within these schedules. All schedules are reviewed at least once every three years.

RESIDENTIAL SCHEDULES

Residential valuation schedules are cost based tables taken from *Marshall and Swift Valuation Service* adjusted to the local market. That is, the cost reflects actual replacement cost new of the subject property. Market research indicates that the common unit of comparison for new residential construction as well as sales of existing housing is the price paid per square foot. The value of extra items is based on their contributory value to the property. This value may be estimated by the price per square foot or a value of the item as a whole. This data is extracted from the market by paired sales analysis and conversations with local appraisers and brokers.

The residential schedules are based on the size, age and condition of structure, quality of construction, contributory value of amenities, and land value. Each of these variables has a

direct impact on the cost of the property. The following is an example of each of the variables and how they may affect market value.

Quality of construction- Residential construction may vary greatly in quality of construction. The type of construction affects the quality and cost of material used the quality of the workmanship as well as the attention paid to detail. The cost and value of residential property will vary greatly depending on the quality of the construction. As stated above, EAD residential schedules currently class residential structures based on quality of construction from Low Cost to Excellent. This classification schedule is based on the *Marshall and Swift* definitions of residential classes of dwellings with modifications for local market.

Size of Structure- The size of a structure also has a direct impact on its cost as well as value. The larger the structure, the less the cost per square foot. EAD schedules are graduated in size increments. The Property Tax Assistance Division and *Marshall and Swift* also support this economy of scale analysis.

Condition of Improvements- EAD rates conditions from poor to excellent. Properties that in the opinion of the appraiser are unlivable may be given no value or salvage value.

Age of Structure- EAD residential depreciation schedules are based on *Marshall and Swift* and as stated above effective age and chronological age may be the same or different depending on the condition of the structure.

Amenities- As stated above, amenities are valued according to their contributory value to the whole. Examples of extra items include fireplaces, swimming pools and tennis courts.

Land Value- EAD values land based on market transactions whenever possible. Specific land influences are used to adjust values for such factors as view, shape, size and topography. As there are not always market transactions available, other methods of land valuation may be used. The two most common methods are the land residual method and the land ratio method. We also use abstraction and allocation methods to ensure that the land values created best reflect the contributory market value of the land to the overall property value. Land schedules are available at the appraisal district office.

COMMERCIAL SCHEDULES

Commercial/Industrial properties are developed using *Marshall and Swift Valuation* schedules for commercial/industrial property. Replacement cost new is determined and then adjusted for location. Depreciation is then applied using physical observation of the property.

Commercial schedules are based on the property type, size, age and condition of structure, quality of construction, contributory value of amenities, and land value. Each of these variables has a direct impact on the cost of the property. The following is an example of each of the variables and how they may affect market value.

PERSONAL PROPERTY SCHEDULES

The Personal Property Schedules value business furniture, fixtures and equipment as well as inventory that is taxable by law.

Business personal property values are derived from several sources. Business owners are required by Texas Law to render their business personal property each year. It is the experience of the district that about 70% of business' render each year. Rendered values are used on business personal property if the value is reasonable for the type of business and is within acceptable ranges when compared to the Property Tax Assistance Division or *Marshall and Swift* personal property schedules for the type of business rendered. If the rendered value is not considered acceptable, Property Tax Assistance Division or *Marshall and Swift* schedules are used to estimate a value. Values on all business personal property not rendered are established using Property Tax Assistance Division or *Marshall and Swift* schedules for the type of business being valued. Depreciation is determined by the age of the property and its expected life. Schedules are available in the appraisal district office.

Business vehicles are valued based on *N.A.D.A. Used Car Guide* wholesale value for the particular make, model and age of the vehicle. The appraisal district uses a report obtained from Texas Vehicle Information and Computer Services, which list vehicles registered in Ellis County on January 1 of each year. This report uses the vehicle identification number to determine make, model and vehicle characteristics to determine *N.A.D.A.* value. This report along with renditions and physical observations are used to discover and list vehicles that are taxable within the county. When adverse factors such as high mileage are known then the appropriate adjustments are made to value.

INCOME SCHEDULES

Income schedules are developed for any property type where the highest and best use is typically as income producing property and sufficient income information is available to accurately value the property type via the income approach.

EAD appraisers obtain income and expense information on a variety of properties through field inspections, the equalization phase, and market surveys. The use of the income approach to value is particularly useful for properties in which sales data is scarce and the market indicates the property is likely to sell for its income producing capacity.

HIGHEST AND BEST USE ANALYSIS

The highest and best use of real estate is defined as the most reasonable and probable use of land that will generate the highest return to the property over a period of time. This use must be legal, physically possible, economically feasible and the most profitable of the potential uses. An appraiser's identification of the property's highest and best use is always a statement of opinion never a statement of fact.

In order to complete the highest and best use analysis of a property, an appraiser must estimate its highest and best use as if the land were vacant. This is the highest value the land could have if it were available for any legal, physically possible and economically feasible kind of development.

In determining highest and best use, preliminary judgments are made in the field by appraisers. EAD property records contain information regarding lot size and frontage, therefore, appraisers normally make judgments on possible use of sites in the field. Economically feasible and most profitable uses are determined by observing surrounding property. However, changes in property use require a more detailed and technical highest and best use analysis. These studies are usually performed in the office.

Beginning in 2010, a Constitutional amendment was ratified that overrides the concept of highest and best use in regards to properties receiving a residential homestead exemption. These properties now must be valued as residential property regardless of their highest and best use or true market value.

SALES

Sales data is gathered by sending sales letters to the buyers of properties that the district knows changed ownership. EAD also subscribes to the *Multiple Listing Service*. Sales are confirmed from the direct parties involved whenever possible. Confirmation of sales from local real estate appraisers is also considered a reliable source.

Sales data is compiled and the improved properties are physically inspected and photographed. All data listed on the property record is verified and updated as needed including building classification, building size, additions or added out buildings, condition of structures and any type change in data or characteristics that would affect the value of the property.

Individual sales are analyzed to verify whether they meet the definition of market value per Texas Property Tax Code section 1.04(7). Only arms length transactions are used for mass appraisal purposes. Examples of reasons why sales may be deleted or not considered are:

1. Property acquired through foreclosures or auction, if the transaction does not meet the definition of market value in the Texas Property Tax Code.
2. Property sold between relatives.
3. The buyer or seller is under duress and may be compelled to sell or purchase.
4. Financing may be non-typical or below or above prevailing market rates.
5. Considerable improvements or remodeling have been done since the date of the sale and the appraiser is unable to make judgments on the property's condition at the time of the transaction.
6. Sales may be unusually high or low when compared with typical sales located in the market area due to a seller relocation or divorce proceedings.
7. The property is purchased through an estate sale.
8. The sale involves intangibles, such as goodwill.
9. There are value-related problems associated with the sale, i.e. incorrect land size or square footage of living area.
10. Property use changes occurring after the sale.

Under some of these conditions a sale may still be able to be adjusted and then used as an arms length transaction. EAD will use an adjusted sales price only when it can be reliably adjusted. Examples are when a sale includes more than the fee simple estate and the appraiser can

confidently remove the personal property that was included in the sale or can accurately measure the difference between the value of the fee simple estate and the interest conveyed in the sale (such as a leased fee estate). If a sales adjustment cannot be accurately and reliably measured, then no adjustment should be attempted, and the sale should not be considered.

EAD monitors changes in price levels and, if necessary, adjusts sales prices for time. Sales are adjusted to the appraisal date of January 1. Time adjustment factors are developed in each school district in the county. Adjustment factors are developed by comparing per unit value changes over time.

Once a reliable time adjustment factor has been developed for a stratum it is used to adjust sales to the appraisal date. This factor is used when analyzing sales data for potential market adjustments that occur annually.

MARKET ANALYSIS

Economic trends, national, regional and local trends affect the universe of property appraised in Ellis County. An awareness of social, economic, governmental and environmental conditions is essential in understanding, analyzing and identifying local trends that affect the real estate market. Market analysis is performed throughout the year. Both general and specific data is collected and analyzed.

Examples of sources of general data include “*Trends*” issued by The Real Estate Center at Texas A&M University, “*The Appriser*” published by The Texas Association of Appraisal Districts and “Texas Assessor’s News” published by the Texas Association of Assessing Officers. When possible local sources such as lending institutions and the Chamber of Commerce are used to obtain financing information and demographics and labor statistics.

Sales information is received from various sources. Asking prices are gathered from the realtor listings and conversations with local real estate appraisers, agents and brokers.

EAD tracks all deed transactions. From this information, sales letters are mailed to the buyer to obtain information on the sale. Disclosure of this information is not mandatory in the State of Texas and only a small percentage of letters are returned with useful information. This presents a problem in that there is sometimes inadequate sales data to perform as thorough an analysis of sales data as *USPAP* would require. The Property Tax Assistance Division also sends out sales letters and that data is made available to EAD at least once a year. EAD also subscribes to the multiple listing service and conducts property owner interviews to obtain sales information.

Properties are defined by market area or “neighborhood”. Market areas consist of properties that share common characteristics and should be valued similarly in the marketplace.

Market areas are grouped by like land size, neighborhood demographics, class range, size, and age. A homogeneous market area is a market area where all of the properties are similar in age, class, and size. This is often the case for many subdivisions. All properties in a homogeneous market area should sell in a fairly tight price range, differing only for size and amenities.

EAD categorizes every residential property into a market area based on the factors listed above in order to compare all like properties, sold and unsold, and ensure that all are valued at market value and treated equitably. Commercial/Industrial properties are categorized based on property type. All market areas in Ellis County are reviewed annually.

STATISTICAL ANALYSIS

EAD performs statistical analysis annually to confirm that values are equitable and consistent with the market. Ratio studies are conducted on all properties in the district to judge the two primary aspects of mass appraisal –accuracy and uniformity of value. Appraisal statistics of central tendency and dispersion generated from sales ratios are available for property within an ISD. These statistics include, but are not limited to, the weighted mean, standard deviation and coefficient of dispersion and provide the analysts an analytical tool by which to determine both the level and uniformity of appraised value in the district.

EAD reviews values annually through the sales ratio analysis process. The first phase involves ratio studies, which compares the recent sales prices of properties to the appraised values of these sold properties. This set of ratio studies affords the analyst an excellent means of judging the present level of appraised value and uniformity of the sales. The analyst, based on the sales ratio statistics and designated parameters for valuation update, makes a preliminary decision as to whether the value level needs to be updated in an upcoming reappraisal, or whether the level of market value is at an acceptable level.

RATIO STUDY STANDARDS

Sales ratio studies are used to evaluate the districts mass appraisal performance. These studies not only provide a measure of performance but also are an excellent means of improving mass appraisal performance. EAD used ratio studies not only to aid in the revaluation of properties, but also to verify the results of the Comptroller's Property Tax Assistance Division annual property value study.

Sales ratio studies are usually performed monthly. At this time individual properties which have sold are reviewed for accuracy in their data. Property record cards indicating the results of the field inspections are used to further aid in the analysis and decision making.

Ratio studies are usually done on a countywide base of all sales in the county and then by market area. The median ratio within each is then compared to the desired ratio to determine if schedule adjustments should be made. The coefficient of dispersion is also studied to indicate how tight the ratios are in relation to measures of central tendency. The median and coefficient of dispersion are good indicators that identify statistically the results of the valuation process. EAD adheres to the following standards recommended by the IAAO *Standard on Ratio Studies*.

A. *Appraisal Level* – The overall level of appraisal for the jurisdiction and each major stratum of properties should be within 10 percent of the legal standard – 100 percent of market value.

B. *Appraisal Uniformity*

1. Uniformity amount Strata. The level of appraisal for each stratum should be within 5 percent of the overall level of appraisal for the jurisdiction.
2. Single Family Residential Strata. CODs generally should be 15.0 or less and for areas of newer and fairly similar residences, 10.0 or less.
3. Strata Composed of Income Producing Properties. CODs should be 15.0 or less for larger, urban jurisdiction and 20.0 or less in small rural jurisdictions.
4. Vacant Land. CODs should be 20.0 or less.
5. Other Strata. Target CODs should reflect the nature of the properties involved and the availability of reliable market indicators.
6. Vertical Equity. PRDs (Price related differential) should generally lie between 0.98 and 1.03. An appropriate statistical test should be conducted when bias is indicated.

RESIDENTIAL VALUATION ANALYSIS

The residential appraisers are responsible for estimating equal and uniform market values for residential improved and vacant property. There are approximately 50,000 residential improved parcels and 18,000 vacant properties within Ellis County.

RESOURCES:

- **Personnel** - The residential appraisal staff consists of 7 appraisers.
- **Data** - An individualized set of data characteristics for each residential dwelling and multiple family units in this district is collected in the field and data entered to the computer. The property characteristic data drives the application of computer-assisted mass appraisal (CAMA) under the Cost, Market, and Income Approaches to property valuation.

VALUATION APPROACH

Land Analysis

Land valuation analysis is conducted prior to neighborhood sales analysis. The value of the land component to the property is estimated based on available market sales for comparable and competing land under similar usage. A comparison and analysis of comparable land sales is conducted based on a comparison of land characteristics found to influence the market price of land located in the neighborhood. Land tables are utilized to consistently value individual parcels given known land characteristics. Specific land influences are considered, where necessary, and depending on neighborhood and individual lot or tract characteristics, to adjust parcels outside the neighborhood norm for such factors as access, view, shape, size, trees, easements, and topography. Appraisers use abstraction and allocation methods to ensure that estimated land values best reflect the contributory market value of the land to the overall property value.

Area Analysis

Data on regional economic forces such as demographic patterns, regional factors, general trends in real property prices and rents, interest rate trends, availability of vacant land, and construction trends and costs are collected from private vendors and public sources and provide the appraiser a current economic outlook on the real estate market. Information is gleaned from real estate publications and sources such as continuing education in the form of IAAO, TAAD, and TAAO classes and seminars approved by the Property Tax Assistance Division of the Comptroller's Office.

Neighborhood (Market Area) Analysis

Neighborhood analysis involves the examination of how physical, economic, governmental and social forces and other influences affect property values. The effects of these forces are also used to identify, classify, and stratify comparable properties into smaller, manageable subsets of the universe of properties known as neighborhoods. Analysis of comparable market sales forms the basis of estimating market activity and the level of supply and demand affecting market prices for any given market area, neighborhood or district. Market sales indicate the effects of these market forces and are interpreted by the appraiser into an indication of market price ranges and indications of property component change considering a given time period relative to the date of appraisal. The Market Approach is the primary approach to estimate value based on actual sales. The Cost Approach is used for unique properties, where sales and rental information is scarce. The Income Approach is used whenever the highest and best use of the property is as income producing property.

The first step in neighborhood analysis is the identification of a group of properties that share certain common traits. A "neighborhood" for analysis purposes is defined as the largest grouping of properties where the property's physical, economic, governmental and social forces are generally similar and uniform. Once a neighborhood with similar characteristics has been identified, the next step is to define its boundaries. This process is known as "delineation". Some factors used in neighborhood delineation include location, sales price range, lot size, age of dwelling, quality of construction and condition of dwellings, square footage of living area, and story height. Delineation can involve the physical drawing of neighborhood boundary lines on a map, but usually it involves statistical separation or stratification based on attribute analysis. That is, a neighborhood is not necessarily a geographic grouping of properties. A neighborhood is often a statistical grouping of like properties.

Part of neighborhood analysis is the consideration of discernible patterns that influence a neighborhood's individual market. Few neighborhoods are fixed in character. Each neighborhood may be characterized as being in a stage of growth, stability or decline. The growth period is a time of development and construction. As new neighborhoods in a community are developed, they compete with existing neighborhoods. An added supply of new homes tends to induce population shift from older homes to newer homes. In the period of stability, or equilibrium, the forces of supply and demand are about equal. Generally, in the stage of equilibrium, older neighborhoods can be more desirable due to their stability of residential character and proximity to community facilities. The period of decline reflects diminishing demand or desirability. During decline, general property use may change from residential to a mix of residential, rental, and commercial uses. Declining neighborhoods may also experience renewal, reorganization, rebuilding, or restoration, which promotes increased demand and economic desirability.

Neighborhood identification and delineation is the cornerstone of the residential valuation system. All the residential analysis work done in association with the residential valuation process is neighborhood specific. Neighborhoods are field inspected and delineated based on observable aspects of homogeneity and statistical tests. Neighborhood delineation is further reviewed through PACS profiling and sales ratio analysis to determine if further neighborhood delineation or combination is warranted.

All market areas in Ellis County are reviewed at least annually. This review consists of reviewing the component properties that make up the market area and screening for outliers as well as reviewing sales ratio statistics to identify outliers or trends among property types or groupings that may indicate a different level of appraisal for said type or group. An example is where a second phase of a subdivision may consist of larger homes than the first phase. These properties may sell at different levels. If the two groups of properties are combined, one group will be over-appraised, while the other group will be under-appraised. If such a trend is detected in a market area, then the two groups should be separated in order to appraise both at market value and equitably.

Market trends vary and can only be detected through careful analysis. Market trends include, but are not limited to, class of property, size of improvements, amenities, lot size, location within the market area, and other factors that may influence the market. Therefore, the EAD appraiser looks not only at the overall appraisal statistics for a market area, but also attempts to identify market trends by isolating property characteristics and outliers to verify the appraisal statistics and refine the market area.

Once the market area is properly refined, a final sales ratio for that neighborhood is conducted. When sales or income data demonstrate that current valuations need to be adjusted to achieve market value, all properties in the same neighborhood grouping are adjusted with the same adjustment factor.

Neighborhood grouping is highly beneficial in sales comparison analysis. Neighborhood groups, or clustered subdivisions, increase the available market data by linking comparable properties outside a given subdivision. Sales ratio analysis is performed on a neighborhood basis. A complete list of market areas, including market adjustments, is maintained in the appraisal district's CAMA system and is reported upon completion in the Mass Appraisal Report.

Highest and Best Use Analysis

The highest and best use of property is the reasonable and probable use that supports the highest present value as of the date of the appraisal. The highest and best use must be physically possible, legal, financially feasible, and productive to its maximum. The highest and best use of residential property is normally its current use. This is due in part to the fact that residential development, in many areas, through use of deed restrictions and zoning, precludes other land uses. Residential valuation undertakes reassessment of highest and best use in transition areas

and areas of mixed residential and commercial use. In transition areas, the appraiser reviews the existing residential property use and makes a determination regarding highest and best use. In areas of mixed residential and commercial use, the appraiser reviews properties in these areas on a periodic basis to determine if changes in the real estate market require reassessment of the highest and best use of a select population of properties.

Beginning in 2010, a Constitutional amendment was ratified that overrides the concept of highest and best use in regards to properties receiving a residential homestead exemption. These properties now must be valued as residential property regardless of their highest and best use or true market value.

VALUATION AND STATISTICAL ANALYSIS (Model Calibration)

Cost Schedules

All residential parcels in the district are valued with a replacement cost estimated from one set of cost schedules based on the improvement classification system on a cost per square foot basis. The district's residential cost schedules are estimated from Marshall and Swift, a nationally recognized cost estimator service. These cost estimates are compared with construction costs of new improvements and adjusted to reflect the local residential building market. The cost schedules are reviewed at least once every three years to ensure they reflect current costs.

Sales Information

Residential improved sales, vacant land sales, along with commercial improved and vacant land sales are maintained in a sales database. Residential improved and vacant sales are collected from a variety of sources, including: district questionnaires sent to buyers, field discovery, protest hearings, the multiple listing service, builders, and realtors.

Neighborhood sales reports are generated as an analysis tool for the appraiser in the development and estimation of market price ranges and property component value estimates. Abstraction and allocation of property components based on sales of similar property is an important analysis tool to interpret market sales under the cost and market approaches to value. These analysis tools help determine and estimate the effects of change, with regard to price, as indicated by sale prices for similar property within the current market.

Time adjustments are estimated based on comparative analysis using paired comparison of sold property. Sales of the same property are considered and analyzed for any indication of price change attributed to a time change or influence. Property characteristics, financing, and conditions of sale are compared for each property sold in the pairing of property to isolate only the time factor as an influence on price.

Statistical Analysis

Residential appraisers perform statistical analysis annually to evaluate whether estimated values are equitable and consistent with the market. Ratio studies are conducted on each residential neighborhood to judge the two primary aspects of mass appraisal accuracy--level and uniformity of value. Appraisal statistics of central tendency generated from sales ratios are evaluated and analyzed for each neighborhood. The level of appraised values is determined by the median ratio, mean ratio, and weighted mean ratio for sales. The uniformity of appraised values is determined by the Coefficient of Dispersion (COD) and the Price Related Differential (PRD).

The appraiser, through the sales ratio analysis process, reviews every neighborhood annually. The first phase involves neighborhood ratio studies that compare the recent sales prices of neighborhood properties to the appraised values of these sold properties. This set of ratio studies affords the appraiser an excellent means of judging the present level of appraised value and uniformity of the sales. The appraiser makes the decision as to whether the value level in a neighborhood needs to be updated or whether the level of market value in a neighborhood is at an acceptable level.

Market and Cost Reconciliation and Valuation

Neighborhood analysis of market sales to achieve an acceptable sale ratio or level of appraisal also involves the reconciliation of the market and cost approaches to valuation. Market factors are developed from appraisal statistics provided from market analyses and ratio studies and are used to ensure that estimated values are consistent with the market and to reconcile cost indicators. The district's primary approach to the valuation of residential properties uses a hybrid cost-sales comparison approach. This type of approach accounts for neighborhood market influences that cannot be captured in a purely cost model.

The following equation denotes the hybrid model used:

$$MV = LV + (RCNLD * MA)$$

The estimated market value (MV) of the property equals the land value (LV) plus the replacement cost new of property improvements less accrued depreciation (RCNLD) multiplied by a market adjustment (MA) derived from sales analysis. As the cost approach separately estimates both land and building contributory values and uses depreciated replacement costs, which reflect only the supply side of the market, it is expected that adjustments to the cost values may be needed to bring the level of appraisal to an acceptable standard as indicated by market sales.

The demand side is economic factors and influences, which may be observed from market activity. These market, or location adjustments, may be calculated and applied uniformly within neighborhoods based on market activity. For residential property, the unit of comparison is

typically the price per square foot of living area or the price indicated for the improvement contribution to total market value.

LV (land value) is estimated based on sales of similar lots, by the allocation method based on the contributory value of land to total sales prices, or the abstraction method. Equity is achieved by ensuring similar lots are valued similarly.

The level of improvement contribution to the property is measured by abstraction of comparable market sales, which is the property sale price less land value. Essential to this hybrid cost-sales approach is accurate condition data, which can only be achieved through diligent field work.

When the appraiser reviews a neighborhood, the appraiser reviews and evaluates a ratio study that compares recent sales prices of properties, appropriately adjusted for the effects of time, within a delineated neighborhood, with the value of the properties' based on the estimated depreciated replacement cost of improvements plus land value. The calculated ratio derived from the sum of the sold properties' estimated value divided by the sum of the time adjusted sales prices indicates the neighborhood level of appraisal based on sold properties. If the level of appraisal for the neighborhood is less than or greater than 100%, adjustments to the entire neighborhood are made to reflect current market trends.

Therefore, based on analysis of recent sales located within a given neighborhood, estimated property values will reflect the market influences and conditions only for the specified neighborhood, thus producing more representative and supportable values. The estimated property values calculated for each update neighborhood are based on market indicated factors applied uniformly to all properties within a neighborhood. Finally, with all the market-trend factors applied, a final ratio study is generated that compares recent sale prices with the proposed appraised values for these sold properties. From this set of ratio studies, the appraiser judges the appraisal level and uniformity.

A complete list of market areas, including market adjustments, is maintained in the appraisal district's CAMA system and is reported upon completion in the Mass Appraisal Report.

INDIVIDUAL VALUE REVIEW PROCEDURES

Inspection

Appraisers are required to measure and classify every new improvement as well as perform field checks on all permit activity such as remodels and additions. Appraisers are also responsible for ensuring every parcel of real property is inspected at least once every three years. Appraisers ensure the accuracy of the data in the EAD Computer Assisted Mass Appraisal (CAMA) system and review subjective items such as quality of construction, condition, and physical, functional

and economic obsolescence, factors contributing to the market value of the property. During this review, the appraiser is able to visually inspect both sold properties and unsold properties for comparability and consistency of values.

Office Review

Once field review is completed and reviewed by a supervisor, the appraiser conducts a routine valuation review of all properties as outlined in the discussion of ratio studies and market analysis. Valuation reports comparing previous values against proposed and final values are generated for all residential improved and vacant properties. The percentage of value difference is noted for each property within a delineated neighborhood allowing the appraiser to identify, research and resolve value anomalies before final appraised values are released. Previous values resulting from a hearing protest are individually reviewed to determine if the value remains appropriate for the current year. Once the appraiser is satisfied with the level and uniformity of value for each neighborhood within his area of responsibility, the estimates of value are finalized.

PERFORMANCE TESTS

Sales Ratio Studies

The primary analytical tool used by the appraisers to measure and improve performance is the ratio study. The district ensures that the appraised values that it produces meet the standards of accuracy in several ways. Overall sales ratios are generated for each neighborhood to allow the appraiser to review general market trends within his area of responsibility, and provide an indication of market appreciation over a specified period of time.

Once the proposed value estimates are finalized, the residential appraisal supervisor reviews the sales ratios by neighborhood. This review includes comparison of level of values and an analysis of sold and unsold properties to ensure appraisal uniformity.

TREATMENT OF RESIDENCE HOMESTEADS

Beginning in 1998, the State of Texas implemented a constitutional classification scheme concerning the appraisal of residential property that receives a residence homestead exemption. Under that law, beginning in the second year a property receives a homestead exemption, increases in the assessed value of that property are "capped." The value for tax purposes (appraised value) of a qualified residence homestead will be the LESSER of:

- the market value; or
- the preceding year's appraised value;
PLUS 10 percent;
PLUS the value of any improvements.

Assessed values of capped properties must be recomputed annually. If a capped property sells, the cap automatically expires as of January 1st of the year following sale of the property and the property is appraised at its full market value.

COMMERCIAL AND INDUSTRIAL VALUATION ANALYSIS

Commercial appraisers appraise the fee simple interest of properties according to statute and court decisions. However, the affect of easements, restrictions, encumbrances, leases, contracts or special assessments are considered on an individual basis.

RESOURCES:

Personnel - The commercial appraisal staff consists of 2 appraisers who are responsible for estimating the market value of commercial property. The chief appraiser and deputy chief appraiser assist in the valuation of large, complex industrial properties.

Data - Data used by commercial appraisers includes verified sales of vacant land and improved properties and the pertinent data obtained from each such as sales price levels, capitalization rates and income multipliers. Other data used by the appraisers include actual income and expense data, actual contract rental data, leasing information (commissions, tenant finish, length of terms, etc.), and actual construction cost data. In addition to the actual data obtained from specific properties, market data publications are also reviewed to provide additional support for market trends.

PRELIMINARY ANALYSIS

Market studies are utilized to test new or existing procedures or valuation modifications in a limited sample of properties located in the district and are also considered and become the basis of updating whenever substantial changes in valuation are made. These studies target certain types of improved property to evaluate current market prices for rents and for sales of commercial and industrial real property. Comparable sale studies and ratio studies reveal whether the valuation system is producing accurate and reliable value estimates or whether procedural and economic modifications are required. The appraiser implements this methodology when developing cost approach, market approach, and income approach models.

VALUATION APPROACH

Land Value

Commercial land is analyzed annually to compare appraised values with recent sales of land in the market area. If appraised values differ from sales prices being paid, adjustments are made to all land in that region. Generally, commercial property is appraised on a price per square foot basis with individual property characteristics such as size, corner influence, depth of site, shape of site, easements, traffic patterns, and other factors reflected in the valuation. The land is valued as though vacant at its highest and best use.

Economic Area Analysis

Area data on regional economic forces such as demographic patterns, employment and income patterns, general trends in real property prices and rents, vacancies, interest rate trends, availability of vacant land, and construction trends and costs are collected from private vendors and public sources.

Economic areas are defined by each of the improved property use types (apartment, office, retail, warehouse and special use) based upon an analysis of similar economic or market forces. These include but are not limited to similarities of rental rates, building class, date of construction, overall market activity or other pertinent influences. Economic area identification and delineation by each major property use type is the benchmark of the commercial valuation system. All income model valuation (income approach to value estimates) is economic area specific.

Economic areas are reviewed annually to determine if delineation adjustments are required. Income, occupancy and expense levels, and capitalization rates by building class and age within each economic area for all commercial use types are reviewed annually. Any property type that cannot be placed in an economic area due to the lack of reliable income information is grouped by property use type and valued via the cost or sales comparison approach to ensure equitable valuation.

Highest and Best Use Analysis

The highest and best use is the most reasonable and probable use that generates the highest present value of the real estate as of the date of valuation. The highest and best use of any given property must be physically possible, legally permissible, financially feasible, and maximally productive. For improved properties, highest and best use is evaluated as improved and as if the site were still vacant. This perspective assists in determining if the existing improvements have a transitional use, interim use, nonconforming use, multiple uses, speculative use, is excess land, or a different optimum use if the site were vacant.

Improved properties reflect a wide variety of highest and best uses which include, but are not limited to: office, retail, apartment, motel, warehouse, light industrial, or special uses. In many instances, the property's current use is the same as its highest and best use. This analysis ensures that an accurate estimate of market value is derived.

Market Analysis

A market analysis relates directly to examining market forces affecting supply and demand. This study involves the relationships between social, economic, environmental, governmental, and site conditions. Current market activity including sales of commercial properties, new construction, new leases, lease rates, absorption rates, vacancies, allowable expenses (inclusive

of replacement reserves), expense ratio trends, capitalization rate studies are analyzed to determine market ranges in price, operating costs and investment return expectations.

DATA COLLECTION / VALIDATION

Data Collection Manuals

Data collection and documentation for Commercial/Industrial property is continually updated, providing a uniform system of itemizing the multitude of components comprising improved properties. All properties located in EAD are coded according to a specific classification system and the approaches to value are structured and calibrated based on this coding system.

Sales data is categorized by property use type and location. If income data of a sold property is known, it is used in cap rate analysis.

Sources of Data

EAD receives a copy of the deeds recorded in Ellis County that convey commercially classed properties. These deeds involving a change in commercial ownership are entered into the sales information system and researched in an attempt to obtain the pertinent sale information. Other sources of sale data include the multiple listing service, sales questionnaires, protest hearings, and regional and national real estate and financial publications.

VALUATION ANALYSIS

Model calibration involves the process of periodically adjusting the mass appraisal tables and schedules to reflect current local market conditions. Once the models have undergone the specification process, adjustments can be made to reflect new construction procedures, materials and/or costs, which can vary from year to year. The basic structure of a mass appraisal model can be valid over an extended period of time, with trending factors utilized for updating the data to the current market conditions. However, at some point, if the adjustment process becomes too involved, the model calibration technique can mandate new model specifications or a revised model structure.

Cost Schedules

The cost approach to value is applied to improved real property utilizing the comparative unit method. This methodology involves the utilization of national cost data reporting services as well as actual cost information on local comparable properties whenever possible. Cost models are typically developed based on the Marshall Valuation Service which indicate estimated hard or direct costs of various improvement types and modified based on local information. Cost models are used to estimate the replacement cost new (RCN) of all commercial and industrial improvements.

Accrued depreciation is the sum of all forms of loss affecting the contributory value of the improvements. It is the measured loss against replacement cost new taken from all forms of physical deterioration, functional, and economic obsolescence. Accrued depreciation is estimated and developed based on losses typical for each property type at that specific age. Depreciation estimates are based on what is typical of each major class of commercial property by economic life categories. Estimates of accrued depreciation are calculated for improvements with a range of variable years expected life based on observed condition considering actual age. Effective age estimates are based on the utility of the improvements relative to where the improvement lies on the scale of its total economic life and its competitive position in the marketplace.

Additional forms of depreciation such as external and/or functional obsolescence can be applied if observed. Functional depreciation is usually due to a specific condition deficiency, while economic depreciation is usually based economic trends that affect the value of a property.

The result of estimating accrued depreciation and deducting that from the estimated replacement cost new of improvements indicates the estimated contributory value of the improvements. Adding the estimated land value, as if vacant, to the contributory value of the improvements indicates a property value by the cost approach. With reliable cost estimates and market related measures of accrued depreciation, the indicated value of the property by the cost approach becomes a very reliable valuation technique.

Income Models

The income approach to value is applied to those real properties which are typically viewed by market participants as “income producing”, and for which the income methodology is considered the most reliable value indicator. The first step in the income approach pertains to the estimation of market rent. This is derived primarily from actual rent data furnished by property owners and lessees and from regional information obtained from various sources.

A vacancy and collection loss allowance is the next item to consider in the income approach. The projected vacancy and collection loss allowance is established from actual data furnished by property owners and local market survey trends. This allowance accounts for periodic fluctuations in occupancy, both above and below an estimated stabilized level. This feature may also provide for a reasonable lease-up period for multi-tenant properties, where applicable. The market derived stabilized vacancy and collection loss allowance is subtracted from the potential gross rent estimate to yield an indication of estimated annual effective gross rent to the property.

Next, a secondary income or service income is considered and, if applicable, calculated as a percentage of stabilized effective gross rent. Secondary income represents parking income, escalations, reimbursements, and other miscellaneous income generated by the operations of real property. The secondary income estimate is derived from actual data collected and available market information. The secondary income estimate is then added to effective gross rent to

arrive at an effective gross income, when applicable.

Allowable expenses and expense ratio estimates are based on a study of the local market, with the assumption of prudent management. Relevant expense ratios are developed for different types of commercial property based on use and market experience.

Another form of allowable expense is the replacement of short-lived items (such as roof or floor coverings, air conditioning or major mechanical equipment or appliances) requiring expenditures of lump sum costs. When these capital expenditures are analyzed for consistency and adjusted, they may be applied on an annualized basis as stabilized expenses. When performed according to local market practices by commercial property type, these expenses when annualized are known as replacement reserves. For some types of property, typical management does not reflect expensing reserves and is dependent on local and industry practices.

Subtracting the allowable expenses (inclusive of non-recoverable expenses and replacement reserves when applicable) from the annual effective gross income yields an estimate of annual net operating income to the property.

Return rates and income multipliers are used to convert operating income expectations into an estimate of market value for the property under the income approach. These include income multipliers and overall capitalization rates. Each of these multipliers or capitalization rates are considered and used in specific applications. Rates and multipliers may vary between property types, as well as by location, quality, condition, design, age, and other factors. Therefore, application of the various rates and multipliers must be based on a thorough analysis of the market for individual income property types and uses. These procedures are supported and documented based on analysis of market sales for these property types.

Capitalization analysis is used in the income approach models to form an indication of value. This methodology involves the direct capitalization of net operating income as an indication of market value for a specific property. Capitalization rates applicable for direct capitalization method and yield rates for estimating terminal cap rates for discounted cash flow analysis are derived from the market. Sales of improved properties from which actual income and expense data are obtained provide a very good indication of property return expectations a specific market participant is requiring from an investment at a specific point in time. In addition, overall capitalization rates can be derived and estimated from the built-up method (band-of-investment). This method relates to satisfying estimated market return requirements of both the debt and equity positions in a real estate investment. This information is obtained from available sales of property, local lending sources, and from real estate and financial publications.

Rent loss concessions are estimated for specific properties with vacancy problems. A rent loss concession accounts for the impact of lost rental income while the building is moving toward stabilized occupancy. The rent loss is calculated by multiplying the rental rate by the percent difference of the property's stabilized occupancy and its actual occupancy. Build out allowances

(for first generation space or retrofit/second generation space as appropriate) and leasing expenses are added to the rent loss estimate. The total adjusted loss from these real property operations is discounted using an acceptable risk rate. The discounted value (inclusive of rent loss due to extraordinary vacancy, build out allowances and leasing commissions) becomes the rent loss concession and is deducted from the value indication of the property at stabilized occupancy. A variation of this technique allows a rent loss deduction to be estimated for every year that the property's actual occupancy is less than stabilized occupancy.

Sales Comparison (Market) Approach

Although all three of the approaches to value are based on market data, the Sales Comparison Approach is most frequently referred to as the Market Approach. This approach is utilized not only for estimating land value but also in comparing sales of similarly improved properties to parcels on the appraisal roll. Sales of similarly improved properties can provide a basis for the depreciation schedules in the Cost Approach, rates and multipliers used in the Income Approach, and as a direct comparison in the Sales Comparison Approach. Improved sales are also used in ratio studies, which afford the appraiser an excellent means of judging the present level and uniformity of the appraised values.

Final Valuation Schedules

Based on the market data analysis and review discussed previously in the cost, income and sales approaches, the cost and income models are calibrated and finalized. The calibration results are keyed to the schedules and models in the CAMA system for utilization on all commercial properties in the district. Market factors reflected within the cost and income approaches are evaluated and confirmed based on market sales of commercial and industrial properties. The appraisers review the cost, income, and sales comparison approaches to value for each of the types of properties with available sales information. The final valuation of a property is estimated based on reconciling these indications of value considering the weight of the market information available for evaluation and analysis in these approaches to value.

Statistical and Capitalization Analysis

Statistical analysis of final values is an essential component of quality control. This methodology represents a comparison of the final value against the standard and provides a concise measurement of the appraisal performance. Statistical comparisons of many different standards are used including sales of similar properties, the previous year's appraised value, audit trails, value change analysis and sales ratio analysis.

Appraisal statistics of central tendency and dispersion generated from sales ratios are calculated for each property type with available sales data. These summary statistics including, but not limited to, the median, mean, and weighted mean, provide the appraisers an analytical tool by which to determine both the level and uniformity of appraised value of a particular property type.

The appraisers review every commercial property type annually through the sales ratio analysis process. The first phase involves ratio studies that compare the recent sales prices of properties to the appraised values of the sold properties. This set of ratio studies affords the appraiser an excellent means of judging the present level of appraised value and uniformity of the appraised values. The appraiser, based on the sales ratio statistics and designated parameters for valuation update, makes a preliminary decision as to whether the value level of a particular property type needs to be updated in an upcoming reappraisal, or whether the level of market value is at an acceptable level.

Potential gross rent estimates, occupancy levels, secondary income, allowable expenses (inclusive of non-recoverables and replacement reserves), net operating income and capitalization rate and multipliers are continuously reviewed. Income model estimates and conclusions are compared to actual information obtained on individual commercial and industrial income properties, as well as with information from published sources and area property managers and owners.

INDIVIDUAL VALUE REVIEW PROCEDURES

Field Review

Field review of real property accounts is accomplished while business personal property is reviewed and inspected in the field. Additionally, the appraisers frequently field review subjective data items such as building class, quality of construction, condition, and physical, functional and economic obsolescence factors contributing significantly to the market value of the property. In some cases field reviews are warranted when sharp changes in occupancy or rental rate levels occur between building classes or between economic areas.

Office Review

Office reviews are completed on properties subject to field inspections and are performed in compliance with the guidelines required by the existing classification system. Office reviews are typically limited by the available market data presented for final value analysis. These reviews summarize the pertinent data of each property as well as comparing the previous value to the proposed value conclusions of the various approaches to value. These evaluations and reviews show proposed value changes, income model attributes or overrides, economic factor, and special factors affecting the property valuation such as new construction status, and a sales history, if any.

After preliminary ratio statistics have been calculated, if the ratio statistics are generally acceptable overall, the review process is focused primarily on locating skewed results on an individual basis. Previous values resulting from protest hearings are individually reviewed to determine if the value remains appropriate for the current year based on market conditions.

PERFORMANCE TESTS

The primary tool used to measure mass appraisal performance is the ratio study. A ratio study compares appraised values to market prices. In a ratio study, market values are typically represented with the range of sale prices, i.e. a sales ratio study. Independent, expert appraisals may also be used to represent market values in a ratio study. This can be particularly useful for commercial or industrial real property for which sales are limited.

Sales Ratio Studies

Sales ratio studies are an integral part of estimating equitable and accurate market values, and ultimately property assessments for these taxing jurisdictions. The primary uses of sale ratio studies include the determination of a need for general reappraisal; prioritizing selected groups of property types for reappraisal; identification of potential problems with appraisal procedures; assist in market analyses; and, to calibrate models used to estimate appraised values during valuation or reappraisal cycles.

Overall sales ratios are generated quarterly by use type and location to allow appraisers to review general market trends in their area of responsibility. In many cases, field checks may be conducted to ensure the ratios produced are accurate and the appraised values utilized are based on accurate property data characteristics. These ratio studies aid the appraisers by providing an indication of market activity by economic area or changing market conditions.

Comparative Appraisal Analysis

The commercial appraiser performs an average unit value comparison in addition to a traditional ratio study. These studies are performed on commercially classed properties by property use type (such as apartment, office, retail and warehouse usage or special use). The objective to this evaluation is to determine appraisal performance of sold and unsold properties. Appraisers average unit prices of sales and average unit appraised values of the same parcels and the comparison of average value changes of sold and unsold properties. These studies are conducted on substrata such as building class and on properties located within various economic areas. In this way, overall appraisal performance is evaluated geographically, by specific property type to discern whether sold parcels have been selectively appraised. When sold parcels and unsold parcels are appraised equally, the average unit values are similar. These sales and equity studies are performed prior to final appraisal and to annual noticing.

BUSINESS PERSONAL PROPERTY VALUATION ANALYSIS

RESOURCES:

- **Personnel** – Business Personal Property is valued by the commercial/industrial appraisers.
- **Data** - Data used by business personal property appraisers includes business personal property renditions, published density schedules such as the Property Tax Assistance Division's field appraiser manual, valuation services, and market data publications.

SIC Code Analysis

Business personal property is classified and utilizes a four digit numeric codes, called Standard Industrial Classification (SIC) codes that were developed by the federal government to describe property. These classifications are used by EAD to classify personal property by business type

SIC code identification and delineation is the cornerstone of the personal property valuation system at the district. All of the personal property analysis work done in association with the personal property valuation process is SIC code specific. SIC codes are delineated based on observable aspects of homogeneity and business use.

Highest and Best Use Analysis

The highest and best use of property is the reasonable and probable use that supports the greatest income and the highest present value as of the date of the appraisal. The highest and best use must be physically possible, legal, financially feasible, and productive to its maximum. The highest and best use of personal property is normally its current use.

DATA COLLECTION/VALIDATION

Personal property data collection procedures are published and distributed to all appraisers involved in the appraisal and valuation of personal property. These procedures consist of categorization standards and field review standards. Data is also obtained through annual renditions from business personal property owners.

Sources of Data

From year to year, reevaluation activities permit district appraisers to collect new data via an annual field inspection. This project results in the discovery of new businesses, changes in ownership, changes in assets, relocation of businesses, and closures of businesses not revealed through other sources. Assumed name certificates, sales tax permits, certificates of occupancy, tax assessors, city and local newspapers, and the public often provide the district information regarding new personal property and other useful facts related to property valuation.

An outside vendor provides EAD with a listing of vehicles within the jurisdiction. The vendor develops this listing from the Vehicle Registration records. Other sources of data include property owner renditions and field inspections.

VALUATION AND STATISTICAL ANALYSIS (model calibration)

Cost Schedules

Cost schedules are developed based on the SIC code by the Property Tax Assistance Division of the Comptroller's Office and by district personal property appraisers. The cost schedules are developed by analyzing cost data from property owner renditions, state schedules, and published cost guides. The cost schedules are reviewed as necessary to conform to changing market conditions. The schedules are typically in a price per square foot format.

Depreciation Schedules:

EAD's primary approach to the valuation of business personal property is the cost approach. The replacement cost new (RCN) is either developed from property owner reported historical cost or estimated from CAD developed valuation models. The percent good depreciation factors used by EAD are also based on published valuation guides. The percent good depreciation factors are used to develop present value factors (PVF), by year of acquisition, as follows:

$$\text{PVF} = \text{RCN} \times \text{PERCENT GOOD FACTOR}$$

This mass appraisal PVF schedules are used to ensure that estimated values are uniform and consistent.

EQUALIZATION PHASE

Final sales ratio reports and equity studies are conducted prior to submission of the appraisal roll to the Appraisal Review Board, which begins the equalization phase. During equalization, informal and formal hearings are conducted. This is an opportunity to further refine the appraisal roll as appraisers learn more information about properties due to property owner appeals. Any information that will produce a more accurate appraisal roll, whether for individual properties or if applied to a group of similar properties, is to be applied prior to certification of the appraisal roll and used to improve the appraisal model in future years.

FINAL PERFORMANCE ANALYSIS

EAD management reviews appraisal performance for the prior appraisal year by analyzing sales ratio reports, the Mass Appraisal Report, and the results of the latest Property Value Study. The objective is to continue improving performance in order to better serve the citizens of Ellis County.

CERTIFICATION

I certify that, to the best of my knowledge and belief:

- the statements of fact contained in this report are true and correct;
- the reported analyses, opinions and conclusions are limited by the reported assumptions and limiting conditions, and are my personal, unbiased professional analyses, opinions and conclusions;
- I have no present or prospective interest in the properties that are the subject of this report and I have no personal interest or bias with respect to the parties involved;
- my compensation is not contingent upon the reporting of a predetermined value or direction in value that favors the cause of the taxing jurisdiction, the amount of the value estimate, the attainment of a stipulated result, or the occurrence of a subsequent event;
- the analyses, opinions and conclusions were developed and this report has been prepared, in conformity with the Uniform Standards of Profession Appraisal Practice, the Texas Department of Licensing and Regulation, and the International Association of Assessing Officers;
- I have not made a personal inspection of the properties that are the subject of this report;
- this report was prepared with the assistance of the EAD appraisal staff.



Kathy A. Rodrigue, RPA, RTA
Chief Appraiser

In accordance with Texas Property Tax Code Section 6.05(i):

The 2013-2014 Proposed Reappraisal Plan was mailed to all taxing units participating in the Ellis Appraisal District on May 23, 2012.

A public hearing was held on June 26, 2012 to consider the 2013-2014 Reappraisal Plan.

The 2013-2014 Reappraisal Plan was approved on June 26, 2012 by minute order 5577.