



MIDLAND CENTRAL APPRAISAL DISTRICT

2019 Mass Appraisal Report

INTRODUCTION

Scope of Responsibility

The Midland Central Appraisal District has prepared and published this report to provide our citizens and taxpayers with a better understanding of the district's responsibilities and activities. This mass appraisal report was written in compliance with Standards Rule 6-7 of the Uniform Standards of Professional Appraisal Practice (USPAP) as promulgated by the Appraisal Standards Board of The Appraisal Foundation. This report has several parts: a general introduction and then several sections describing information specific to particular appraisal divisions.

The **2019** mass appraisal was prepared under the provisions of the Texas Property Tax Code. Taxing jurisdictions that participate in the district must use the appraisals as the basis for imposition of property taxes. The State of Texas allocates state funds to school districts based upon the district's appraisals, as tested and modified by the state comptroller of public accounts.

The **2019** mass appraisal results in an estimate of the market value of each taxable property within the district's boundaries. Where required by law, the district also estimates value on several bases other than market value. These are described where applicable later in this report.

General Assumptions and Limiting Conditions

The appraised value estimates provided by the district are subject to the following conditions:

The appraisals were prepared exclusively for ad valorem tax purposes.

The property characteristic data upon which the appraisals are based is assumed to be correct. Physical inspections of the property appraised were performed as staff resources and time allowed.

Validation of sales transactions occurred through questionnaires to buyer and seller, telephone survey and field review. In the absence of such confirmation, residential sales data obtained from vendors was considered reliable.

- No responsibility is assumed for the legal description or for matters including legal or title considerations. Title to any property is assumed to be good and marketable, unless otherwise stated.
- All property is appraised as if free and clear of any or all liens or encumbrances, unless otherwise stated. All taxes are assumed to be current.
- All property is appraised as though under responsible, adequately capitalized ownership and competent property management.

- All engineering is assumed to be correct. Any plot plans and/or illustrative material contained with the appraisal records are included only to assist in visualizing the property.
- It is assumed that there is full compliance with all applicable federal, state and local environmental regulations and laws unless noncompliance is stated, defined and considered in this mass appraisal report.
- It is assumed that all applicable zoning and use regulations and restrictions have been complied with unless non-conformity has been stated, defined and considered in this mass appraisal report.
- It is assumed that all required licenses, certificates of occupancy, consents or other legislative or administrative authority from any local, state or national government or private entity or organization have been or can be obtained or renewed for any use on which the value estimate contained in this report is based.
- It is assumed that the utilization of the land and improvements of the properties described are within the boundaries or property lines, and that there are no encroachments or trespasses unless noted on the appraisal record.

Unless otherwise stated in this report, the appraiser is not aware of the existence of hazardous substances or other environmental conditions. The value estimates are predicated on the assumption that there is no such condition on or in the property or in such proximity thereto that it would cause a loss in value. No responsibility is assumed for any such conditions, or for any expertise or engineering knowledge required to discover them.

Effective Date of Appraisal and Date of the Report

All appraisals are as of **January 1, 2019**. With the exception of certain inventories for which the property owner has elected a valuation date of **September 1, 2019**,

The date of this report is June 1, 2019.

Definition of Value

Except as otherwise provided by the Texas Tax Code (hereafter "Tax Code"), all taxable property is appraised at its "market value" as of January 1. Under Section 1.04 (7) of the tax code, "market value" is defined as the price at which a property would transfer for cash or its equivalent under prevailing market conditions if:

- (A) exposed for sale in the open market with a reasonable time for the seller to find a purchaser;

- (B) 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;
- (C) 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 Tax Code defines special appraisal provisions for the valuation of several different categories of property. Specially appraised property is taxed on a basis other than market value as defined above. These categories include residential homestead property (Sec. 23.23, Tax Code), agricultural and timber property (Chapter 23, Subchapters C and D, Tax Code), real and personal property inventory (Sec. 23.12, Tax Code), certain types of dealer inventory (Sec. 23.121, 23.124, 23.1241 and 23.127), and nominal (Sec. 23.18) or restricted use properties (Sec. 23.83).

Properties Appraised

The mass appraisal appraised all taxable real and personal property known to the district as of the date of this report, with the exception of certain properties on which valuation was not complete as of the date of this report. These, by law, will be appraised and supplemented to the jurisdictions after equalization. The property rights appraised were fee simple interests, with the exception of leasehold interests in property exempt to the holder of the property's title. The latter are appraised under a statutory formula described in Sec. 25.07, Tax Code. The description and identification of each property appraised is included in the appraisal records submitted to the Midland Central Appraisal Review Board as of the date of this report.

Scope of Work Used to Develop the Appraisal

This mass appraisal appraised all taxable real and tangible personal property within the boundaries of the Midland Central Appraisal District, which encompasses all of Midland County, Texas, including a part of one adjacent county. This involves approximately 69,047 accounts. The district distributes the work of the appraisal among several appraisal personnel. The following sections describe, by area of responsibility, the scope of work performed and those items addressed in USPAP standard 6-7 (k) through (p).

The Chief Appraiser, who is the chief executive officer of the appraisal district, manages the district. All district employees report to the chief appraiser through their immediate supervisor. The district is further subdivided into four departments. The four departments are as follows,

- (1) Appraisal: responsible for all appraisal activities,
- (2) Support Services: responsible for property records maintenance, taxpayer information and assistance, and support of the appraisal review board;

(3) Administration: responsible for budget and financial matters, and

(4) Information Systems: operates the district's computer facilities. 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.

The **2019** appraisal district staff consists of 24 employees with the following classifications:

1	Chief Executive Officer/Administrator (Executive Administration)
4	Managerial/Professional (Assistant Chief, Manager Appraisers)
1	Technicians (Information Systems/Mapping/Network and Data Records Support)
7	Professional (Staff Appraisers)
11	Administrative Support (Clerical, Exemption/Customer Support)

The appraisal district staff conducts most of the appraisal activities. In addition, several members of the collection department assist their time and efforts in regard to clerical and printing functions as required by the appraisal process. The appraisal district also receives significant assistance from an appraisal contract firm and from staff members of neighboring appraisal districts with have overlapping taxing entities. The district establishes procedures whereby ownership and property data information are routinely exchanged with neighboring appraisal districts. A coordinator and staff member are assigned to oversee the ongoing exchange of data. Managers and appraisers from adjacent appraisal districts discuss data collection and valuation issues in order to minimize the possibility of differences in property characteristics, legal descriptions, and other administrative data.

Appraisals Generally

The district's market value appraisals are performed pursuant to Article VIII, Sec. 1., Texas Constitution, which provides that property must be taxed in proportion to its value as determined by law Sec. 23.01 Tax Code implements this provision as follows:

§ 23.01. *Appraisals Generally*

- (a) Except as otherwise provided by this chapter, all taxable property is appraised at its market value as of January 1.
- (b) The market value of property shall be determined by the application of generally accepted appraisal methods and techniques. If the appraisal district determines the appraised value of a property using mass appraisal standards, the mass appraisal standards must comply with the Uniform Standards of Professional Appraisal Practice. The same or similar appraisal methods and techniques shall be used in

appraising the same or similar kinds of property. However, each property shall be appraised based upon the individual characteristics that affect the property's market value, and all available evidence that is specific to the value of the property shall be taken into account in determining the property's market value.

- (c) Notwithstanding Section 1.04(7)(C), in determining the market value of a residence homestead, the chief appraiser may not exclude from consideration the value of other residential property that is in the same neighborhood as the residence homestead being appraised and would otherwise be considered in appraising the residence homestead because the other residential property:
 - (1) was sold at a foreclosure sale conducted in any of the three years preceding the tax year in which the residence homestead is being appraised and was comparable at the time of sale based on relevant characteristics with other residence homesteads in the same neighborhood: or
 - (2) has a market value that has declined because of a declining economy.

- (d) The market value of a residence homestead shall be determined solely on the basis of the property's value as a residence homestead, regardless of whether the residential use of the property by the owner is considered to be the highest and best use of the property.

- (e) Notwithstanding any provision of this subchapter to the contrary, if the appraised value of property in a tax year is lowered under Subtitle F, the appraisal value of the property as finally determined under that subtitle is considered to be the appraised value of the property for that tax year. In the following tax year, the chief appraiser may not increase the appraised value of the property unless the increase by the chief appraiser is reasonably supported by substantial evidence when all of the reliable and probative evidence in the record is considered as a whole. If the appraised value is finally determined in a protest under section 41.41(a)(2) or an appeal under Section 42.26, the chief appraiser may satisfy the requirement to reasonably support by substantial evidence an increase in the appraised value of the property in the following tax year by presenting evidence showing that the inequality in the appraisal of property has been corrected with regard to the properties that were considered in determining the value of the subject property. The burden of proof is on the chief appraiser to support an increase in the appraised value of property under the circumstances described by this subsection.

Appraisal Performance Tests and Performance Measures Attained

Property Value Study

Once every two years, the Property Tax Assistance Division (PTAD) of the Texas State Comptroller's office conducts a study in each appraisal district to determine the degree of uniformity, the median level of appraisal, the coefficient of dispersion, and other statistical measures for each category of property by the appraisal district within each major category of property, as required by Section 5.10 of the Texas Property Tax Code.

The next Comptroller's Property Value Study (PVS) will be conducted in tax year **2020**.

Methods and Assistance Program Audit

Once every two year, in non-PVS study years, the Property Tax Assistance Division (PTAD) of the Texas State Comptroller's office conducts a comprehensive audit of appraisal district operations and procedures as required by 5.012 of the Texas Property Tax Code. The Comptroller conducts MAP reviews of approximately half of all CADs each year. School districts located in counties that do not receive MAP reviews in a year will be subject to property value studies in that year.

Midland Central Appraisal District's last conducted MAP review was in tax year **2017**. A copy of the **2017** MAP audit review for MCAD is maintained at the district offices for public inspection.

The Comptroller's MAP Review will be conducted in tax year **2019**.

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 only by the reported assumptions and limiting conditions, and is my personal impartial, and unbiased professional analyses, opinions, and conclusions.

I have no present or prospective interest in the property that is the subject of this mass appraisal report, and I have no personal interest with respect to the parties involved.

I have no bias with respect to any property that is the subject of this mass appraisal report or to the parties involved with this mass appraisal assignment.

My engagement in this mass appraisal assignment was not contingent upon developing or reporting predetermined results.

My compensation for completing this mass appraisal assignment is not contingent upon the reporting of a predetermined value or direction in value that favors the cause of the taxing jurisdictions, the amount of the value estimate, the attainment of a stipulated result, or the occurrence of a subsequent event.

My analyses, opinions, and conclusions were developed, and this mass appraisal report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice, the International Association of Assessing Officers, and the Texas Department of Licensing and Regulation.

I have not made a personal inspection of the universe of properties that are the subject of this mass appraisal report, however, staff appraisers and valuation contractors employed by the Midland Central Appraisal District have made property inspections in accordance and with respect to their individual duties and job functions as detailed in this report.

The names of Midland Central Appraisal District staff members providing significant assistance to this mass appraisal assignment are contained within this report.



Jerry M. Bundick, RPA, RTA
Chief Appraiser
Midland Central Appraisal District

**ADMINISTRATIVE AND MANAGER STAFF PROVIDING SIGNIFICANT
 MASS APPRAISAL ASSISTANCE**

<u>NAME</u>	<u>TITLE</u>	<u>TDLR</u>	<u>TYPE of ASSISTANCE</u>
Jerry M. Bundick, RPA, RTA	Chief Appraiser	63582	Chief Administrative Officer of all Appraisal District operations
Dennis H. Rambo, RPA	Assistant Chief Appraiser	69102	Oversight of Appraisal, Support Services, Information Systems, and Administration Departments
Judy Whitworth	Director of Administration	74457	Serves as the district's accountant. Monitors compliance to State and Federal laws regarding accounting, human resources, and records.

**APPRAISAL MANAGER STAFF PROVIDING SIGNIFICANT
 MASS APPRAISAL ASSISTANCE**

<u>NAME</u>	<u>TITLE</u>	<u>TDLR</u>	<u>TYPE of ASSISTANCE</u>
Zack Kohn, RPA	Personal Property Manager	74394	Supervisor of business tangible personal property. Coordinates field data collection for business personal property
Daniel Alderete, RPA	Residential-Urban Manager	74123	Supervisor of residential valuations and inspections. Coordinates field data collection for residential property
Carmen Rodelo, RPA	Commercial Real Manager	71357	Supervisor of commercial real valuations and inspections. Coordinates field data collection for commercial property

**APPRAISAL STAFF PROVIDING SIGNIFICANT
 MASS APPRAISAL ASSISTANCE**

Larry Clements, RPA	Appraiser	74441	Appraisal of complex real commercial property. Conducts field inspections.
Dan Price	Appraiser	75678	Appraise real residential property, Conducts field inspection and measurements.
Shawna Niver, RPA	Appraiser	74297	Appraiser for Vehicle Inventory Tax (VIT). Oversees valuation of mobile homes and RV Parks.
Jerry M. Gilmore, RPA	Appraiser - PT	65934	Appraisal of residential real property. And Field inspections. Represents appraisal district at the ARB..
Linda Ornelas	Appraiser	73781	Appraises urban and rural land, conducts field inspection, performs deed splits, subdivisions, and roll-back calculations

**APPRAISAL DATA PROCESSING STAFF PROVIDING SIGNIFICANT
 MASS APPRAISAL ASSISTANCE**

Natalie Villanueva	Data Processing	NA	Coordinates data input activities for appraisal department. Open record request. Processes tax agent info.
Mayela Zubiate	Data Processing	NA	Data input for Personal Property Departments
Laney Sullivan	Data Processing	NA	Real Property data input. Providing data research for appraisal departments
Arlene Rutherford	Data Processing	NA	Real Property and plat data input. Provides information and schedules ARB hearings.

Report by Appraisal Division

As noted above, the district allocated the work of the mass appraisal among several areas within the appraisal department. The Appraisal Department, directs the overall operations of the appraisal of all property in the district. Included within this area are individuals that deal with litigation and agricultural valuation. The appraisers assigned to this area conduct most field inspections of property. The Residential, Commercial, and Personal Property appraisers develop, calibrate, and apply the various mass appraisal models for their respective property types. The contract appraisal firm Pritchard & Abbott appraises complex, mineral and industrial properties, some of which are appraised through mass appraisal models, others of which are directly appraised.

Field Operations

INTRODUCTION

Scope of Work

The field operations activities involve appraisers responsible for collecting and maintaining property characteristic data for all commercial, residential and personal property types, which are located within the boundaries of Midland County. These activities involve the field inspection of real and personal property accounts, as well as data entry of all data collection into the existing property record system.

Periodic physical review of property is recommended at least every four to six years, according to the International Association of Assessing Officers (IAAO). The MCAD is presently in a four year cycle for residential and commercial property re-inspection. Personal property data is being collected and verified annually. All rural real properties are inspected annually.

Procedure for Collecting and Validating Data

Data collection requires organization, planning and supervision of the field staff. Data collection procedures have been established for residential, commercial, and personal property. The appraisers are assigned throughout Midland County to conduct field inspections. Appraisers conduct field inspections and record information on a property record card (PRD), an inventory or a personal property data sheet.

The quality of the data used is extremely important in establishing accurate values of taxable property. While production standards are established and upheld for the various field activities, quality of data is emphasized as the goal and responsibility of each appraiser. New appraisers are trained in the specifics of data collection set forth in the listing manual as “rules” to follow. Experienced appraisers are routinely re-trained in listing procedures prior to major field projects such as new construction, sales validation or data review. A quality assurance process exists to

review the work being performed by all the field appraisers. The quality assurance process is used ensure that appraisers follow listing procedures, identify training issues and provide uniform training throughout the field appraisal staff.

Data collection of real property involves maintaining data characteristics of the property on CAMA (Computer Assisted Mass Appraisal). The information contained in CAMA includes site characteristics, such as land size and topography, and improvement data, such as square foot of living area, year built and effective age, quality of construction, and condition. Field Appraisers use listing manuals that establish uniform procedures for the correct listing of real property. All properties are coded according to these manuals and the approaches to value are structured and calibrated based on this coding system. The field appraisers use these manuals during their initial training and as a guide in the field inspection of properties.

Data collection for personal property involves maintaining information on the Personal Property System. The type of information contained in the personal property system includes property such as business inventory, furniture and fixtures, machinery and equipment, cost and location and mobile homes. The field appraisers conducting on-site inspections use a personal property manual during their initial training and as a guide to correctly list all personal property that is taxable.

The listing procedure manuals that are utilized by the field appraisers are located and maintained in Excel, but are made available to other employees throughout MCAD that may require the use of the manual. Manuals are also readily accessible for public inspection. Field appraisers periodically update the listing procedural manuals with input from the valuation appraisers.

Sources of Data

The sources of our data collection and verification are through building permits, data review/relist field effort, data mailers, hearings, sales validation field effort, commercial sales verification, newspapers and publications, and property owner correspondence via the Internet.

Building permit data obtained from the City of Midland, surrounding cities, triggers field inspections on property experiencing significant characteristics changes due to new construction or remodeling. An annual drive-out was conducted to identify the status of residential new subdivisions. Data accuracy is also enhanced by the availability of the district's property records on the Internet. Property owners frequently contact our web site to report data inaccuracies that initiate a field inspection or office correction of the data. In addition, the Texas Department of Housing and Community Affairs (TDHCA) web site has also enabled the district to verify mobile home ownership, structure information, and verification as personal or real property.

Analysis of neighborhood areas was conducted utilizing ratio studies which indicate dispersions between appraised value and the sale price. In addition, field appraisers conduct property inspection drive-outs to ensure the accuracy of district data and to identify properties which may have missing improvements.

Sales validation was conducted on sold real property accounts to ensure data accuracy. On-site inspection of property is made by field appraisers when sales validation efforts indicate discrepancies in data information with district records. Sales verification and validation is conducted on all property types when sales data is available.

Data Maintenance

The appraisal data support group is responsible for coordinating all activities involving file building, quality assurance and data maintenance of the different property types after data collection. The responsibilities for the data support group falls into three activities: file-build, quality assurance, and data entry.

The file-build activity is to build, and maintain the CAMA data records and prepare printed work files as needed by appraisal field staff. This includes the printing of work books, permit data, query results, agent data, and any other district informational resource available for use by appraisal staff. This group is also responsible for scanning, archiving, and warehousing of this information.

The appraisal data staff is also responsible for quality assurance functions regarding data received from the field appraiser. This quality control includes verifying proper codes, balancing and vectoring sketches, and ensuring proper data entry. In addition, this group writes and executes quality control queries within the CAMA software to find and correct data errors.

The group is also responsible for accurate data entry and maintenance of all data retained in the appraisal district computer CAMA program. Typical functions include: data entry, sorting, researching, building permits, agent data, exemption coding, query reports, account record maintenance, new accounts, processing new subdivisions, account splits, and ARB hearing record maintenance.

Residential Valuation

INTRODUCTION

Scope of Work

Residential Valuation is the development of equal and uniform market values for residential improved and vacant property for ad valorem purposes located inside the jurisdictional boundaries of the appraisal district. There is approximately **67,483** real property accounts coded “R” in the district’s CAMA system. Of this amount, approximately **46,736** accounts are categories “A” residential improved parcels and **7,296** category “C1” vacant residential properties within the district’s boundaries for **2019**.

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 with ongoing gentrification, the appraiser reviews the existing residential property use and makes a determination regarding highest and best use. Once the conclusion is made that the highest and best use remains residential, further highest and best use analysis is done to decide the type of residential use on a neighborhood basis. As an example, it may be determined in a transition area that older, non-remodeled homes are economic miss-improvements, and the highest and best use of such property is the construction of new dwellings. In areas of mixed residential and commercial use, the analyst 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.

Recent legislation in Texas requires the market value of a residence homestead to be determined solely on the basis of the property’s value as a residence homestead, regardless of whether the residential use of the property by the owner is considered to be the highest and best use of the property. The appraisal district follows the Texas Property Tax Code requirements for valuation of residential homestead properties.

Model Specification

Area Analysis

Data on regional economic forces such as demographic patterns, regional location factors, employment and income patterns, general trends in real property prices and rents, interest rates trends, availability of vacant land, and construction trends and costs are collected from private vendors and public sources. Information is gleaned from real estate publications and sources such as the Appraisal Institute, the Midland Chamber of Commerce and Economic Development, and The Midland Board of Realtors, and The Real Estate Center of Texas A&M. Continuing education in the form of TDLR classes, real estate seminars offered by the Texas Association of Appraisal Districts and the Texas Association of Assessing Officers, provide the valuation analysts a current economic outlook on Midland's real estate market. The valuation analysts are responsible for collecting and recording some of the information described above on neighborhood data forms. These data forms are completed as part of the neighborhood analysis that is performed when the analyst delineates newly platted subdivisions into valuation neighborhoods.

Neighborhood and Market 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. Residential valuation and neighborhood analysis is conducted on each of the political entities known as Independent School Districts (ISD).

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 geographic grouping of properties where the property's physical, economic, governmental and social forces are generally similar and uniform. Geographic stratification accommodates the local supply and demand factors that vary across a jurisdiction. Once a neighborhood 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 it can also involve statistical separation or stratification based on attribute analysis. Part of neighborhood analysis is the consideration of discernible patterns of growth 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 the workplace and other 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 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 at the district. All the residential analysis work done in association with the residential valuation process is neighborhood specific. There are in excess of 75 residential valuation neighborhoods. Neighborhoods were field-inspected and delineated based on observable aspects of homogeneity. Neighborhood delineation is periodically reviewed to determine if further neighborhood delineation is warranted. Whereas neighborhoods involve similar properties in the same location, a neighborhood group is simply defined as similar neighborhoods in similar locations. Each residential neighborhood is assigned to a neighborhood group (NBF) based on observable aspects of homogeneity between neighborhoods. Neighborhood grouping is highly beneficial in cost-derived areas of limited or no sales, or use in direct sales comparison analysis. Neighborhood groups, or clustered neighborhoods, increase the available market data by linking comparable properties outside a given neighborhood. Sales ratio analysis, discussed below, was performed on a neighborhood basis, and in soft sale areas on a neighborhood group basis.

Model Calibration

Cost Schedules

All residential parcels in the district were valued from identical cost schedules using a comparative unit method. The district's residential cost schedules are adopted from the private mass appraisal firm, Marshall and Swift Inc. These schedules are then adjusted in order to reflect Midland's local residential real estate market. The cost schedules were reviewed to ensure the district's cost schedules are within a range of plus or minus 10% from nationally recognized cost schedules.

An extensive review and revision of the residential cost schedule was performed in the **2019** tax year. As part of this process, newly constructed sold properties at various levels of quality of construction in Midland County were reviewed. The property data characteristics of these properties were verified. A representative sampling of these properties was selected for use in the MCAD cost system review. MCAD dwelling costs were compared against Marshall Swift Valuation Service, a nationally recognized cost estimator. This process included correlation of quality of construction factors from MCAD and Marshall and Swift.

The results of this comparison were analyzed using statistical measures, including stratification by quality and reviewing estimated building costs plus land to sales prices. As a result of this analysis, a new regional multiplier was developed and is used in the district's cost process. This new regional multiplier was used to adjust the division's cost schedule.

In addition, computer spreadsheet applications have been developed and are used to help analyze unique appraisal situations, such as different levels of remodeling and atypical housing features not normally accounted for in the mainframe benchmark cost system. New residential property class codes and cost code adjustments were made to the existing schedules as needed in order to reflect current year market conditions in the local market.

Sales Information Updates:

A sales file for the storage of “snapshot” sales data at the time of sale is maintained. Residential vacant land sales, along with commercial improved and vacant land sales are maintained in a separate sales information system. Residential improved and vacant sales are collected from a variety of sources, including: district questionnaires sent to buyer and seller, field discovery, protest hearings, Permian Basin MLS, various sale vendors, and area builders. A system of type, source, validity and verification codes was established to define salient facts related to a property’s purchase or transfer. Sales reports are generated by school district and neighborhood area, as an analysis tool for the development of value estimates.

Land Analysis

Residential land analysis was conducted by managers and/or staff appraisers. A base lot criteria and primary rate were developed and assigned to each unique neighborhood utilizing one of many square foot land tables. The square foot land table was designed to systematically value the primary and residual land based on a specified percentage of the primary rate. Computerized land table files store the land information required to consistently value individual parcels within neighborhoods. Specific land influences were used, where necessary, to adjust parcels outside the neighborhood norm for such factors as view, shape, size, and topography, among others. The appraiser may use abstraction and allocation methods to insure that the land values created best reflect the contributory market value of the land to the overall property value.

Statistical Analysis

Residential managers and/or appraisers performed statistical analysis to evaluate whether values are equitable and consistent with the market. Ratio studies were conducted on each of the more than 75 residential valuation neighborhoods in the district to judge the two primary aspects of mass appraisal accuracy--level and uniformity of value. Appraisal statistics of central tendency and dispersion generated from sales ratios are available for each stratified neighborhood within an ISD and summarized by year. These summary statistics including, but not limited to, the weighted mean, median, standard deviation, coefficient of variation, and coefficient of dispersion provide the analysts a tool by which to determine both the level and uniformity of appraised value on a stratified neighborhood basis. The level of appraised values can be determined by the weighted mean for individual properties within a neighborhood, and a comparison of neighborhood-weighted means can reflect the general level of appraised value between comparable neighborhoods. Review of uniformity within and between stratified neighborhoods was conducted by utilizing analysis tools within the district’s CAMA system.

The residential manager or assigned appraiser performed sales ratio analysis process reviews for 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 analyst an excellent means of judging the present level of appraised value and uniformity of the sales. Based on the sales ratio statistics and designated parameters for valuation update, a preliminary decision was made as to whether the value level in a neighborhood needs to be updated in an upcoming reappraisal, or whether the level of market value in a neighborhood is at an acceptable level.

Residential Cost Model:

MCAD's primary residential valuation model utilized was the hybrid of the cost approach method. Neighborhood adjustment factors (NBF), functional obsolescence factors (FD), and economic obsolescence factors (ED) were used to modify base cost estimates and to ensure that estimated values were consistent with the market. This approach accounts for internal and external value influences not specified in a pure cost model. The following equation denotes the hybrid model used:

$$MV = [(RCN-D) (1 + FD) (1 + ED) (NBF + 1)] + LV$$

Whereby; the market value (MV) equals the replacement cost new (RCN) less depreciation (D), multiplied by the functional (FD) and economic (ED) adjustment factors, the result of which is multiplied by the neighborhood adjustment factor (NBF) thus composing the final improvement value, where by the land value (LV) is added to complete the total property value. Market and location adjustments were applied uniformly within neighborhoods to account for location variances between market areas.

Once all adjustment factors are input into the district's CAMA system, property values are recalculated on individual accounts or on a mass basis in order to generate final valuation.

Neighborhoods, also called Geo Areas, are modified by using a cost ratio study whereby time-adjusted recent sales prices within a delineated neighborhood are compared to district's CAMA generated cost approach values. The calculated ratio derived from the sum of the sold properties' cost value divided by the sum of the sales prices indicates the neighborhood level of value based on the unadjusted cost approach value for the sold properties. This cost-to-sale ratio is compared to the appraisal-to-sale ratio to determine the neighborhood adjustment factor (NBF) needed for each neighborhood or Geo Area. This NBF is used adjust values generated by a "pure" cost approach, to property values reflective of actual market influences. The sales used to determine the NBF will reflect the market influences and conditions only for the specified neighborhood, thus producing more representative, supportable, and accurate values.

The NBF calculated for each update neighborhood is applied uniformly within the Geo Area by property class. Once the NBF market-trend factors are applied, a second set of ratio studies are generated which compares the values of recently sold properties to the proposed appraised

values. The ratio data was reviewed by the chief appraiser, appraisal director, and residential manager prior to final application.

When deemed appropriate, monthly time adjustments are developed using the sales ratio trend analysis method. For each property class, sales-to appraisal ratios based on unadjusted cost values are stratified. Statistics produced include measures of central tendency (mean and median) that represent the level of appraised values, and measures of uniformity (coefficient of dispersion and coefficient of variation). The resulting medians are graphically plotted for examination and analysis by the district's CAMA software within the generated ratio study reports. Ratio studies were generated periodically during the year within specific market areas and property class comparison.

In addition, paired-sales analysis studies were performed on sales of individual properties which had sold more than once within a one year period. The analysis of each method was compared and reviewed in order to determine the appropriate time adjustment to be employed, or to determine if a time adjustment is warranted. Once the market areas adjustment is determined, a time adjustment can be calculated. The market data was reviewed in the fourth quarter of the previous year and again in January of the current year. Based on an analysis of the two sets of data, a final time adjustment was established for as deemed appropriate for each GEO area. The application and percent of time adjustment factors vary based on the determination of data indicators and regional market analysis.

Review of Value Estimates

Field Review

The appraiser-analyst identified individual properties in critical need of field review through sales ratio analysis. Sold properties with a high variance in sales ratios were field reviewed on a monthly basis to check for accuracy of data characteristics. If data inaccuracies were found in a large percentage of the sold properties, the entire neighborhood was flagged for field review by the appraisal staff in their annual work plan.

Rapid growth through new home construction and or extensive remodeling in a neighborhood will require additional analysis. An appraiser-analyst calculated the effects associated with transitional, high demand neighborhoods. The increased sales activity in the area will require additional field effort on the part of the analysts to review and resolve sales outliers. Additionally, the appraiser-analyst frequently field reviews subjective data items such as quality of construction, condition, and physical, functional and economic obsolescence, factors contributing significantly to the market value of the property. After preliminary estimates of value have been determined in targeted areas, the analyst takes valuation documents to the field to test the computer-assisted values against his own appraisal judgment. During this review, the analyst is able to physically inspect both sold properties and unsold properties for comparability and consistency of values.

Office Review

Given the time required to conduct a routine field review of all properties, homogeneous properties consisting of tract housing with a low variance in sales ratios and other properties having a recent field inspection date, were reviewed in the office. Valuation reports comparing previous values against proposed and final values were generated for all residential improved and vacant properties. The dollar amount and percentage of value difference were 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-analyst is satisfied with the level and uniformity of value for each neighborhood within his area of responsibility, the estimates of value go through a shift process from CAMA to an ad valorem administrative file for noticing. A critical element of the shift process is value edits, or low and high value limits set for each neighborhood by the appraiser-analyst. Each parcel is subject to the value parameters appropriate for its neighborhood. If one of the parcel's component values, land and improvement, or total value fails the value edits, the parcel does not shift and is placed on a problem tracking report to be resolved by the appraiser-analyst. Although the value estimates was determined in a computerized mass appraisal environment, value edits afford the appraiser-analyst an individual look at value anomalies before the value is released for noticing.

Once the proposed value estimates were finalized, the appraiser-analyst reviewed the sales ratios by neighborhood and presented pertinent valuation data, such as, history of hearing protest, sale-to-parcel ratio, and level of appraisal to his/her supervisor for final review and approval. The primary objective of this review is to ensure that the proposed values have met preset appraisal standards.

Appraisal Performance Tests Used and Performance Measures Attained

The primary analytical tool used by the analysts to measure and improve performance is the ratio study. This ensures that the appraised values that are produced meet the standards of accuracy in several ways. Overall sales ratios were generated to allow the appraiser-analyst to review general market trends within their area of responsibility, and to provide an indication of market appreciation over a specified period of time.

Several sets of neighborhood sales ratios on each of the more than 75 delineated residential neighborhoods were produced prior to the setting of preliminary values and after finalization of appraised values. The neighborhood descriptive statistics, along with frequency distributions and scatter diagrams were reviewed for each neighborhood being updated for the current tax year. Ratio studies were used in accordance with the guidelines set forth in the International Association of Assessing Officers (IAAO) *Standard on Ratio Studies*.

**RESIDENTIAL STAFF PROVIDING SIGNIFICANT
MASS APPRAISAL ASSISTANCE**

NAME	TITLE	TDLR	TYPE OF ASSISTANCE
Jerry M. Bundick	Chief Appraiser	63582	Organize, Plan, and Directs Residential Valuation and Testing Activities
Dennis Rambo	Assist Chief Appraiser	69102	Assist in development and adjustment of residential local market adjustment factors
Daniel Alderete	Residential Manager	74123	Provides market observations and real time feedback from field appraisal staff

Commercial Valuation

INTRODUCTION

Scope of Work

This mass appraisal assignment includes all commercially classed real property assigned to the commercial valuation appraisers and located within the jurisdiction of Midland County and overlapping appraisal districts. Commercial appraisers appraise the fee simple interest of properties according to statute. However, the effect of easements, restrictions, encumbrances, leases, contracts or special assessments are considered on an individual basis, as is the appraisal of any non-exempt taxable fractional interests in real property (i.e. certain multi-family housing projects). Fractional interests or partial holdings of real property are appraised in fee simple for the whole property and divided programmatically based on their pro-rata interests. There were approximately **4,984** “F1” commercial improved real property accounts, approximately **115** “B1” multi-family apartment accounts, and approximately **2,696** “C2” commercial vacant land accounts in 2019.

Procedure for Collecting and Validating Data

The data used by the commercial appraisers includes verified sales of vacant land and improved properties and the pertinent data obtained from each (sales price levels, capitalization rates, income multipliers, equity dividend rates, marketing period, etc.). Other data used by these appraisers includes actual income and expense data (typically obtained through the hearings process), actual contract rental data, leasing information (commissions, tenant finish, length of terms, etc.), actual construction cost data, and in-house surveys. In addition to the actual data obtained from specific properties, market data publications were also reviewed to provide additional support for market trends such as the Chamber of Commerce for market data on apartments, retail, office, and industrial properties. Other sources include the State Comptroller Hotel /Motel Report, IREM rental property surveys, and web sites from real estate professionals. Other publications such as the Korpacz Survey and Appraisal Institute’s economic indicators were used for capitalization rates, typical holding periods for real estate investments, interest rates and other pertinent real estate criteria.

In terms of commercial sales data, MCAD receives a copies of the deeds recorded of public record with the Midland County Clerk’s office. The deeds involving a change in commercial ownership are entered into the sales information database and researched by commercial department staff to obtain the pertinent sale information. For those properties involved in a transfer of commercial ownership, available sales information is collected and verified. The district confirms available sales information by mailing a computer-generated questionnaire to the grantee and/or grantor of the transaction. If a questionnaire is answered and returned, the documented responses are recorded into the sales database with the CAMA system. After the sales data has been keyed into the database, the data is reviewed to maintain quality control. If

no information is provided, verification is then attempted via telephone. If the sales information is still not obtained, other sources are contacted such as the brokers involved in the sale, property managers or commercial vendors. In other instances sales verification is obtained from local appraisers or others that may have the desired information. In addition, property sales information is often obtained during formal public review board hearings.

After sales information has been researched, verified, keyed into the database, the sales data is summarized and produced into book form. The confirmed sales data is categorized by property and use type and sorted by location and chronological order by sales date. These books are available for use by the appraisal staff for informal property reviews during the appeals period. The general public is restricted from sales data unless it is deemed to be classified as non-confidential or the owner has filed a formal protest with the Appraisal Review Board whereby only sales information pertaining to the valuation of the owner's property may be obtained upon written request by the owner in accordance with provisions stated in the tax code.

Highest and Best Use Analysis

The highest and best use of commercial real property 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 assists in determining if the existing improvements have a transitional use, interim use, nonconforming use, multiple uses, speculative use, excess land, or a different optimum use if the site were vacant. For vacant tracts of land within this jurisdiction, the highest and best use is considered speculative based on the surrounding land uses. Improved properties reflect a wide variety of highest and best uses which include, but are not limited to: office, retail, apartment, warehouse, light industrial, special purpose, or interim uses.

In many instances, the property's current use is the same as its highest and best use. Highest and best use analysis insures that an accurate estimate of market value is derived. On the other hand, value in use represents the value of a property to a specific user for a specific purpose. This is significantly different than market value, which approximates market price under the following assumptions: (1) no coercion of undue influence over the buyer or seller in an attempt to force the purchase or sale, (2) well-informed buyers and sellers acting in their own best interests, (3) a reasonable time for the transaction to take place, and (4) payment in cash or its equivalent.

Model Specification

The commercial valuation function is divided into five improved property valuation groups and a vacant commercial land group. The improved real property appraisal responsibilities are categorized according to major property types which include: Multi-family or apartment, Office, Retail, Warehouse and Special use (i.e. hotels, hospitals and, nursing homes).

The cost approach to value was applied to all improved commercial real property utilizing the comparative unit method. The district utilized national cost data reporting services as well as actual cost information on comparable properties whenever possible. Cost models were developed based data from the Marshall Swift Valuation Service. Cost models include the development of replacement cost new (RCN) value estimates of all improvements. Time and location modifiers were used as necessary to adjust the cost data in order to reflect market condition changes in costs over time. In addition, the cost approach also employs the use of sales comparison in order to develop a value estimate of the underlying land value.

The income approach to value was applied to the real property which is typically viewed by market participants as “income producing” and for which the income methodology is considered a leading value indicator. Yield capitalization techniques are employed to determine value.

The sales comparison or market approach was utilized for comparing sales of similarly improved commercial property when data was available. Proper adjustments are made to compensate for differences in properties.

All three approaches to value were considered by the commercial department in estimating market value of commercial property. The most applicable approach was used as the primary approach for each commercial valuation group.

Area Analysis

Data on regional economic forces such as demographic patterns, regional location factors, employment and income patterns, 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. Information is obtained from real estate publications and sources such as Midland’s Chamber of Commerce survey reports, regional newspaper real estate articles, and the Real Estate Center at Texas A & M University. Continuing education in the form of IAAO, Texas Association of Assessing Officers (TAAO), Texas Association of Appraisal Districts (TAAD), Texas Department of Licensing and Regulation (TDLR) approved courses, and real estate seminars provide district appraisal employees a current economic outlook on Midland’s real estate market. Strict adherence to these procedures ensures that appraisers consider pertinent factors and trends about the forces within the governmental bodies and cities in Midland County and within the geographic boundaries of MCAD.

Neighborhood Analysis

The neighborhood is comprised of the land area and commercially classed properties located within the boundaries of this taxing jurisdiction. This area consists of a wide variety of property types including residential, commercial and industrial, and vacant acreage. Neighborhood analysis involves the examination of how physical, economic, governmental and social forces and other influences affect property values. The effect of these forces is also used to identify, classify, and organize comparable properties into smaller, manageable subsets of the universe of properties known as neighborhoods. In the mass appraisal of commercial properties these

subsets of a universe of properties are generally referred to as *market areas* or *economic areas*.

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 similarities of rental rates, classification of projects (known as building class by area commercial market experts), date of construction, overall market activity or other pertinent influences. Property use type is the primary selection delineation criteria utilized by the commercial valuation system. All income model valuation (income approach to value estimates) is use specific. Economic areas are periodically reviewed to determine if re-delineation is required. The geographic boundaries as well as, income, occupancy and expense levels and capitalization rates by age within each economic area for all commercial use types and its corresponding income model may be found in the district's appraisal manual.

Market Analysis

A market analysis relates directly to 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, and capitalization rate studies are analyzed. Local consultation with area real estate professionals are utilized lend support to the various assumptions utilized in the valuation of real estate.

Model Calibration

Model calibration involves the process of periodically adjusting the mass appraisal formulas, tables and schedules to reflect current local market conditions. Once the models have undergone the specification process, adjustments were made as needed 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.

Cost Approach to Value

Cost Schedules

The cost approach to value was applied to all commercial 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 comparable properties whenever possible. Cost models were developed using data from the Marshall Swift Valuation Service. Cost models include the derivation of replacement cost new (RCN) of all improvements. These include comparative base rates, per unit adjustments and lump sum adjustments. This approach also employs the sales comparison approach in the valuation of the underlying land value. Location modifiers are necessary to adjust cost data to reflect conditions in a specific market and

changes in costs over a period of time. Because a national cost service is used as a basis for the cost models, location modifiers were used to adjust these base costs specifically for Midland market. The national cost service provides regional and local modifiers

Depreciation schedules were developed based on what is typical for each property type at that specific age. Depreciation schedules have been implemented for what is typical of each major class of commercial property by economic life categories. Schedules have been developed for improvements with 15, 20, 30, 40, 50, and 70 year expected life. These schedules were then reviewed to ensure they are reflective of current market conditions. The actual age and effective ages of commercial real improvements determined by appraisers and entered in CAMA. 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. While actual age is a matter of chronology, effective age estimates determined by property inspection and analysis by staff commercial appraisers.

Market adjustment factors such as external and/or functional obsolescence were applied as warranted. A depreciation calculation override was used when property condition or its effective age varied from the norm by appropriately noting the physical condition and functional utility of the property. These adjustments were applied to a specific property type or location as needed and were developed via ratio studies or other market analyses. It is observed that accuracy in the development of the cost schedules, condition ratings and depreciation schedules minimizes the necessity of applying this type of adjustment factor.

Income Approach to Value

Income Models

The income approach to value was applied to commercial real properties which are typically viewed by market participants as “income producing”, and for which the income methodology is considered a leading value indicator. The first step in the income approach pertains to the estimation of market rent on a per unit basis. This was derived primarily from surveys of actual rent furnished by property owners and from local market study publications. The per-unit rental rate was multiplied by the number of units which results in an estimate of the property’s potential gross rent.

The projected vacancy and collection loss allowance was established from actual data furnished by property owners and district market surveys. This allowance accounts for periodic fluctuations in occupancy, both above and below an estimated stabilized level. The market derived stabilized vacancy and collection loss allowances were subtracted from the potential gross rent estimate to yield an effective gross rent.

The secondary income or service income was calculated as a percentage of stabilized effective gross rent and or actual data supplied by property owners and agents. Secondary income represents parking income, escalations, reimbursements, and other miscellaneous income generated by the operations of real property. The secondary income estimate was derived from

actual data collected and available market information and was added to the effective gross rent to arrive at an effective gross income.

Allowable expenses and expense ratio estimates were based on a study of the local market, with the assumption of *prudent management*. An allowance for non-recoverable expenses such as leasing costs and tenant improvements were included in the expenses. A non-recoverable expense represents costs that the owner pays to lease rental space. Different expense ratios were developed for different types of commercial property based on use. Actual expense data for the subject property was used when available for analysis and confirmation of model estimates. For instance, retail properties are most frequently leased on a triple-net basis, whereby the tenant is responsible for his pro-rata share of taxes, insurance and common area maintenance. In comparison, a general office building is most often leased on a base year expense stop. This lease type stipulates that the owner is responsible for all expenses incurred during the first year of the lease. However, any amount in excess of the total per unit expenditure in the first year is the responsibility of the tenant. Expense ratios were implemented based on the commercial property type.

Another form of allowable expense which was considered is the replacement of short-lived items (such as roof or floor coverings, air conditioning or major mechanical equipment or appliances) requiring expenditures of large lump sums. 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.

Subtracting the allowable expenses (inclusive of non-recoverable expenses and replacement reserves) from the effective gross income (GRI), results in income estimate known as the net operating income (NOI). Various appraisal techniques were applied to convert the (NOI) into an estimate of market value (MV). Factors, also known as rates and multipliers, used for value conversion include gross income multipliers (GRI), overall capitalization rates (OR), and discount rates. These rates and multipliers also vary between property types, as well as by location, quality, condition, design, age, and other factors. Therefore, application of the various rates and multipliers was based on a thorough analysis of the market.

Yield Capitalization Analysis and Techniques

An appraisal technique known as Capitalization Analysis was used to develop the district's income approach models. This methodology involves the capitalization of net operating income (NOI) as an indication of market value for a specific property types. Capitalization rates are obtained utilizing recognized appraisal methods including; build-up method, market extraction, or appraisal expert surveys. Capitalization rates which are derived by market extraction typically provide the most accurate method, whereby these rates are obtained from analyzing the actual income and expense data obtained from the sale of commercial property. The built-up method or "band-of-investment" method of capitalization rate development relates to satisfying the market return requirements of both the debt and equity positions of a real estate investment. This information is typically obtained from real estate and financial publications.

Direct Capitalization

The appraisal district's primary yield capitalization method for the valuation of commercial property was that of Direct Capitalization. This technique was applied to specific properties with relatively stabilized occupancy. Properties with higher than normal vacancy valued by Direct Capitalization whereby rent loss is compensated for 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 or build out allowances and leasing commissions, becomes the rent loss concession and is deducted from the value indication of the property at stabilized occupancy

The direct capitalization calculations of all appropriate properties were processed and recorded via the use of Microsoft Excel spreadsheets, after which the final values of appropriate properties were entered into the district primary CAMA program.

Discounted Cash Flow Analysis

Another valuation method use to value income producing commercial property is Discount Cash Flow Analysis (DCF). Discounted Cash Flow analysis is defined as "a set of procedures in which an appraiser specifies the quantity, variability, timing, and duration of periodic income, as well as the quantity and timing of reversions and discounts each to its present value at a specified yield rate." This technique takes the future benefits or "incomes" and converts these benefits into an indication of present value by discounting each future benefit at an appropriate yield rate. The formula is expressed as follows:

$$PV = \frac{CF_1}{1 + Y} + \frac{CF_2}{(1 + Y)^2} + \frac{CF_3}{(1 + Y)^3} + \dots + \frac{CF_N}{(1 + Y)^N}$$

Where PV represents "present value"; CF represents "cash flow"; Y represents "yield rate."

The DCF calculations of all appropriate properties were processed and recorded via the use of Microsoft Excel spreadsheets, after which the final values of appropriate properties were entered into the district primary CAMA program.

Care was taken by the chief appraiser and the commercial department's management and appraisal staff to choose the appropriate income value technique for the type of property being appraised and in applying these methods in a uniform and equal way within the particular class and subclasses of commercial property being evaluated on a mass basis. In doing so, the district ensures same or similar appraisal methods and techniques are used to appraisal the same or similar kinds of properties.

Sales Comparison Approach

The Sales Comparison Approach is often referred to as the “market approach” and the terms are used interchangeably. While all three approaches to value are based on data derived from the market place, the Sales Comparison Approach directly compares a subject property's characteristics with those of comparable properties which have recently sold in similar transactions. For the appraisal of commercial real property, the appraisal district utilized this approach in comparing the recent sales of improved commercial real properties to similar and comparable real commercial property accounts on the district's appraisal roll.

Pertinent data from actual sales of commercial properties, both vacant and improved, was collected throughout the year in order to obtain relevant information which could be used for valuation analysis. Sales of similarly improved properties provided verification of commercial depreciation schedules used in the cost approach. In addition, analysis of sales data allowed the appraiser to derive yield rates and multipliers used in the income approach to value.

The commercial appraisal staff collected, recorded, and analyzed the commercial sales information. A database on commercial sale information is maintained within the district's CAMA software system. When sales information was available, a property sales grid was created using MS Excel spreadsheets in order to adjust and compare select commercial properties for cost-model verification and for the development of commercial market adjustment factors.

In addition, the commercial property sales information was used to check the uniformity and accuracy of the district's commercial real property income models by comparing the appraised values to recent verified commercial property sales. This comparison allows the commercial appraiser-analysis to adjust criteria of income model parameters. Based on the analysis available sales information, commercial cost and income models were modified to reflect market conditions

Since Texas is a non-disclosure state, publically available commercial sales information is highly limited. This lack of available information limits the appraisal district's availability to utilize pertinent sales information. The scarcity of relevant sale information often restricts the appraisal district's application of the sales comparable approach for mass appraisal of commercial real and personal property.

Review of Value Estimates

Field Review

Commercial appraisers field review, to the extent possible, properties or economic areas experiencing remodeling, renovations, or retrofits, changes in occupancy levels or rental rates, new leasing activity, new construction, or wide variations in sale prices. Additionally, the appraiser-analyst performs an on-site field review of subjective data items such as building class, quality of construction (known as cost modifiers), 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. With preliminary estimates of value in these targeted areas, the appraiser-analyst test computer assisted values against their own appraisal judgment. While in the field, the appraiser physically inspects sold and unsold properties for comparability and consistency of values.

Office Review

Office reviews were completed on properties not subject to field inspections and were performed in compliance with procedures and guidelines contained in Midland Central Appraisal District's Appraisal Manual. The district's Appraisal Manual outlines the application of the three approaches to value as well as special-valuation methods deemed applicable. The district's appraisal manual details derivation of final value estimates by property use type. This manual is maintained and updated frequently.

Office review consists of analyzing the pertinent data for each property, as well as comparing the previous values (two year value history) to the proposed value conclusions of the various approaches to value. The appraiser may review methodology for appropriateness to ascertain that it was completed in accordance with USPAP or more stringent statutory and district policies. Previous values resulting from protest hearings are individually reviewed to determine if the value remains appropriate for the current year based on market conditions

In addition to on-site inspection, the appraisers used in-house information obtained from the district's geographic information system (GIS) to review cadastral maps for parcel lines, flood data, zoning, and jurisdictional boundaries. The district's mapping system utilizes ArcGIS software licensed by ESRI. The appraisers also used oblique and orthogonal aerial imagery for property inspection, measurement, and verification. The appraisal district has joined with local governmental entities in a joint effort to obtain and maintain aerial imagery data. The appraisal district uses Pictometry aerial imagery services and products for these purposes.

Once the appraiser is satisfied with the level and uniformity of value for the commercial property being reviewed, the estimates of value go through a process from CAMA to an ad valorem administrative review. Valuation edits were used to review accounts for value anomalies before the final estimate of value was released for notification.

Appraisal Performance Tests Used and Performance Measures Attained

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 available for each property type. These summary statistics including, but not limited to, the weighted mean, standard deviation and coefficient of variation, provide the analysts an analytical tool by which to determine both the level and uniformity of appraised value of a particular property type. The level of appraised values can be determined by the weighted mean for individual properties within a specific type, and a comparison of weighted means can reflect the general level of appraised value. Review of the standard deviation and the coefficient of variation can discern appraisal uniformity within a specific property type.

The appraiser reviews every commercial property type annually through sales ratio analysis. Ratio studies are used to compare the recent sales prices of properties to the appraised values of the sold properties. The ratio study affords the appraiser-analyst 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-recoverable items and replacement reserves), net operating income and capitalization rate and multipliers are continuously reviewed utilizing frequency distribution methods or other statistical procedures or measures. Income model conclusions are compared to actual information obtained on individual commercial properties during the hearings process as well as information from published sources and area professionals.

Sales Ratio Studies

Sales ratios are generated by property-use type from the sales database in the CAMA system software. Assigned manager-appraisers utilize desktop applications such as Microsoft Office suite Access and Excel programs to evaluate subsets of data by property category type or a specific and unique data item. Desktop computers are utilized as needed to allow for analysis based on building class, structure age, and other factors. Often on-site field checks are conducted to insure the ratios produced are accurate and the appraised values utilized are based on accurate property data characteristics. These ratio studies aid the appraiser by providing an indication of market activity by economic area or changing market conditions.

Comparative Appraisal Analysis

Commercial managers and/or appraisers perform 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.

Commercial appraisers examine 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.

**COMMERCIAL STAFF PROVIDING SIGNIFICANT
 MASS APPRAISAL ASSISTANCE**

NAME	TITLE	TDLR	TYPE of ASSISTANCE
Dennis H. Rambo	Assistant Chief Appraiser	69102	Supervises commercial appraisal activity. Develops and tests commercial valuation models
Carmen Rodelo	Commercial Manager	71357	Supervise the appraisal of personal property. Update personal property aircraft values
Larry Clements	Commercial Appraiser	74441	Appraise commercial property. Perform survey and site inspections. Commercial Modeling and Analysis

Industrial Valuation

The Midland Central Appraisal District contracts with the firm Prichard and Abbott for the valuation of commercial industrial real and personal property. Prichard and Abbott has prepared a separate and distinct mass valuation report pertaining to industrial property on behalf of the appraisal district for the current tax year. The mass industrial valuation report is made in accordance to current USPAP requirements and standards. These accounts are coded property type “I” in the district’s CAMA system. There were approximately **6,154** category industrial personal property accounts in 2019.

Midland Central Appraisal District maintains a copy of the industrial valuation report on file for public inspection and review.

District Staff Providing Significant Assistance to Valuation Contractors

NAME	TITLE	TDLR	TYPE of ASSISTANCE
Zach Kohn	Personal Property Manager	74394	Supervise the appraisal of personal property. Update personal property aircraft values
Natalie Villanueva	Information Services	N/A	Provides assistance with information and data requests by contractor.
Tommy Sorrells	Appraisal Clerk	N/A	Provides assistance with information and data requests by contractor

Business Personal Property Valuation

INTRODUCTION

Scope of Work

The personal property appraisers are responsible for developing fair and uniform market values for business personal property located within the district. There are four different personal property types appraised by the personal property appraisers: Business Personal Property accounts; Leased Assets; Vehicles; and Multi-Location Assets. These accounts are coded property type “L” in the district’s CAMA system. There were approximately 8,717 business personal property accounts located in Midland County in tax year 2019. The district reviews the value of business personal property on an annual basis.

Procedure for Collecting and Validating Data

A common set of data characteristics for each personal property account in Midland County is collected in the field and data entered to the district’s server computer. Data derived from the personal property characteristics drive the computer-assisted personal property appraisal (CAPPA) system. There are three appraisers assigned to the discovery and collection of business personal property data.

Personal property data collection procedures are published and distributed to all appraisers involved in the appraisal and valuation of personal property. The appraisal procedures are reviewed and revised to meet the changing requirements of field data collection. The most recent revision of the personal property data collection procedures was in 2019.

Sources of Data

Business Personal Property

In addition to data collected and verified by the field appraisers, various publications and informational sources are used to discover business personal property; these sources include but are not limited to: the internet, chamber of commerce surveys, yellow pages, recorded instruments, and state sales tax listings. In addition, the County Tax-Assessor, governmental officials, newspapers, and the public often provide the appraisal district with information regarding new personal property and other relevant facts pertaining to property valuation.

Leased Vehicles and Multi-Location Assets

The Houston based firm, InfoNations Inc., provides MCAD with a listing of vehicles within Midland County. This vendor develops vehicle listing from the Texas Department of Transportation (DOT) Title and Registration Division records. MCAD also uses national and

regional publications to research vehicle value benchmarks. Other sources of data include property owner renditions and field inspections.

The primary source of leased and multi-location assets is property owner renditions of property. Other sources of data include field inspections.

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 taxable business personal property is normally its current use.

Model Specification

SIC Code Analysis

Four digit numeric codes, called Standard Industrial Classification (SIC) codes, were developed by the federal government to identify business entities having common attributes. These classifications are used by MCAD as a way to delineate personal property by business type. MCAD has further stratified these codes by adding alpha suffixes to SIC codes in order to group business types that have similar personal property characteristics.

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. There are over 400 personal property SIC codes. SIC codes are delineated based on observable aspects of homogeneity and are periodically reviewed to determine if further stratification is warranted.

Model Calibration

Cost Schedules

The personal property coordinator builds cost schedules based on SIC codes. Cost data from property owner renditions, hearings, Comptroller of Public Accounts state schedules, and published cost guides are utilized to develop the cost schedules. The cost schedules are reviewed as necessary to conform to changing market conditions. The schedules are typically in a “price per square foot” format, although some SIC codes are in a “unit price” format. Unit-in-place property includes hotels in which property is valued on a “per room” basis.

Statistical Analysis

Summary statistics including, but not limited to, the median, weighted mean, and standard deviation provide the analysts an analytical tool by which to determine both the level and uniformity of appraised value by SIC code. Review of the standard deviation can discern appraisal uniformity within SIC codes.

Final Models: Depreciation Schedule and Trending Factors

Business Personal Property

The 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 from developed valuation models. The trending factors used to develop RCN are based on published valuation guides. The percent good depreciation factors are also based on published valuation guides. The index factors and percent good depreciation factors are used to develop present value factors (PVF), by year of acquisition, as follows:

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

The PVF is used as an “express” calculation in the cost approach. The PVF is applied to reported historical cost as follows:

$$\text{MARKET VALUE ESTIMATE} = \text{PVF} \times \text{HISTORICAL COST}$$

This mass appraisal PVF schedule is used to ensure that estimated values are uniform and consistent within the market.

Computer Assisted Personal Property Appraisal (CAPPA)

The CAPPA valuation process has two main objectives: 1) Analyze and adjust existing SIC models. 2) Develop new models for business classifications not previously integrated into CAPPA. The delineated sample is reviewed for accuracy of SIC code, square footage, field data, and original cost information. Models are created and refined using actual original cost data to derive a typical replacement cost new (RCN) per square foot for a specific category of assets. The RCN per square foot is depreciated by the estimated age using the depreciation table adopted for the tax year.

The data sampling process is conducted in the following order: 1) Prioritizing Standard Industrial Classification (SIC) codes for model analysis. 2) Compiling the data and developing the reports. 3) Field checking the selected samples. The models are built and adjusted using internally developed software. The models are then tested against the previous year's data. The typical RCN per square foot (or applicable unit) is determined by a statistical analysis of the available data.

CAPPA model values are used in the general business personal property valuation program to estimate the value of new accounts for which no property owner's rendition is filed. Model values are also used to establish tolerance parameters for testing the valuation of property for which prior data years' data exist or for which current year rendered information is available. The calculated current year value or the prior year's value is compared to the indicated model value by the valuation program. If the value being tested is within an established acceptable percentage tolerance range of the model value, the account passes that range check and moves to the next valuation step. If the account fails the tolerance range check, it is flagged for individual review. Allowable tolerance ranges may be adjusted from year to year depending on the analysis of the results of the prior year.

Vehicles and Leased and Multi-Location Assets

Value estimates for vehicles are provided by the outside vendor InfoNations, and are based on NADA published book values and Hunter McLean published book values. Vehicles which are not valued by the vendor are valued by an appraiser using PVF schedules or published guides.

Leased and multi-location assets are valued using the PVF schedules mentioned above. If the asset to be valued in this category is a vehicle, then published book values or similar values provided by a vehicle data vendor are adjusted according to current economic criteria. Assets that are not valued by the vendor are valued by an appraiser using PVF schedules or published guides.

How Estimates are reviewed

Business Personal Property

A valuation computer program exists in a computer server environment that identifies accounts in need of review based on a variety of conditions. Property owner renditions, accounts with field or other data changes, accounts with prior hearings, new accounts, and SIC cost table changes are all considered. The accounts are processed by the valuation program and pass or fail preset tolerance parameters by comparing appraised values to prior year and model values. Appraisers individually review accounts that fail the tolerance parameters.

Vehicles and Leased and Multi-Location Assets

A vehicle master file is received on CD media from an outside vendor. Existing vehicles in the MCAD system from the prior year are programmatically matched to current DOT records. The vehicles remaining after the matching process are sorted by owner name and then prioritized by the number of vehicles owned. These vehicles are then matched to existing accounts and new accounts are created as needed. Vehicles that are not valued by the vendor are valued by an appraiser using PVF schedules or published guides.

Leasing and multi-location accounts that have a high volume of vehicles or other assets are loaded programmatically if reported by the property owner electronically. Accounts that render by hard copy are either data entered by MCAD or sent to an outside data entry vendor.

After matching and data entry, reports are generated and reviewed by an appraiser. Once proofed, the report is then mailed to the property owner for review. Corrections are made and the account is noticed after supervisor approval.

Appraisal Performance tests used and performance measures attained

The comptroller’s biennial Property Value Study uses state cost and depreciation schedules to develop comparative value estimates for personal property. These value estimates are compared to MCAD’s personal property values and ratios are calculated, along with descriptive statistics that report appraisal performance.

New or revised cost and depreciation schedules are tested by running the valuation program in a test mode prior to the actual valuation cycle. This gives the appraisers a chance to make additional refinements to the schedules if necessary.

STAFF PROVIDING SIGNIFICANT MASS APPRAISAL ASSISTANCE
 IN THE VALUATION OF BUSINESS PERSONAL PROPERTY

NAME	TITLE	TDLR	TYPE of ASSISTANCE
Zack Kohn	Personal Property Manager	74394	Supervise the appraisal of personal property. Update personal property aircraft values
Zachary Kohn	Appraiser	74394	Appraisal of personal property. Conduct field data collection for personal property
Shawna Niver	Appraiser	74297	Supervises VIT appraisals. Oversees the valuation of mobile homes, MH and RV Parks. Assist with Personal Property valuations.

Mineral Valuation

The Midland Central Appraisal District contracts with the firm Prichard and Abbott for the valuation of mineral real property. Prichard and Abbott has prepared a separate and distinct mass valuation report pertaining to mineral property on behalf of the appraisal district for the current tax year. The mass industrial valuation report is made in accordance to current USPAP requirements and standards. These accounts are coded property type “N” in the district’s CAMA system. There were approximately **112,364** category “G1” mineral real property accounts in 2019.

Midland Central Appraisal District maintains a copy of the mineral valuation report on file for public inspection and review.

District Staff Providing Significant Assistance to Valuation Contractors

NAME	TITLE	TDLR	TYPE of ASSISTANCE
Carmen Rodelo, RPA	Commercial Real Manager	71357	Supervisor of commercial real valuations and inspections. Coordinates field data collection for commercial property
Tommy Sorrells	Appraisal Clerk	N/A	Provides assistance with mineral discovery and division order records.

Review, Analysis and Verification of Contractor Valuation Services:

The Midland Central Appraisal District reviewed and verified the appraisal work completed by the district's valuation contractor, Prichard and Abbott Inc. The appraisal staff verified the work of the contractor following the various phases as listed below:

1. During the discovery process, our staff compared the current accounts that are active and recently inactive. This information was forwarded to the contractor for updating.
2. Renditions and exemption applications on contracted properties were scanned into MCAD's CAMA program and sent to the contractor. In addition, any renditions or applications received by the contractor were sent to MCAD. Data was spot checked to assure proper application.
3. As the contractor completes their appraisal, the MCAD staff entered the data into the CAMA system, checking for any discrepancies. The contractor's owner number was maintained for reference.
4. Communication via telephone, email, and fax was utilized to update all account records as needed. Meetings with MCAD staff and contract personnel were conducted, as needed, to assure proper appraisal standards and methods were utilized.
5. The appraisal district maintained records and documentation for the verification process.
6. The appraisal district verified that all mail-outs including the Notice of Appraised Value, protest notices, and ARB schedule dates, were accurate and complies with the Texas Property Tax Code.
7. Mineral accounts were reviewed and compared with prior year's data. The appraisal district receives and reviewed information from the contractor regarding how their values and estimates were made.