BOWIE CENTRAL APPRAISAL DISTRICT
MASS APPRAISAL REPORT

INTRODUCTION

Scope of Responsibility

The Bowie Central Appraisal District has prepared and published this report to provide
citizens and taxpayers with a better understanding of the district's responsibilities and activities.
This report has several parts: a general introduction and then several sections describing the
appraisal effort by the appraisal district.

The Bowie Central Appraisal District (CAD) is a political subdivision of the State of Texas
created effective January 1,1981. The provision of the Texas Property Tax Code governs
the legal, statutory, and administrative requirements of the appraisal district. A member board of
directors, elected by the taxing units within the boundaries of Bowie County, constitutes the
district's governing body. The Chief Appraiser, appointed by the Board of Directors, is the chief
administrator and chief executive officer of the appraisal district.

The appraisal district is responsible for local property tax appraisal and exemption administration
For Thirty one (31) jurisdictions or taxing units in the county. Each taxing unit, such as the
county, a city, school district, emergency response district, community college etc, sets its own
tax rate to generate revenue to pay for such things as police and fire protection, public school,
road and street maintenance, courts water and sewer systems, and other public services.
Appraisals established by the appraisal district allocate the year's tax burden on the basis of each
taxable property's January 1st market value. The district determines eligibility for various types
of property tax exemptions such as those for homeowners, the elderly, disabled veterans, and
charitable and religious organizations.

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

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

The Property Tax Codes defines special appraisal provisions for the valuation of residential homestead
Property (Sec.23.23), productivity (Sec, 23.41), real property inventory (Sec, 23.12), dealer inventory
(Sec, 23.121, 23.124, 23.1241 and 23.127), nominal (Sec, 23.18). The owner of real property
Inventory may elect to have the inventory appraised at its market value as of

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September 1st of the year proceeding the tax year to which the appraisal applies by filing an application with the Chief Appraiser requesting that the inventory be appraised as of September 1st.

The Texas Property Tax Code under Sec.25.18, requires each appraisal office to implement a plan to update appraised values for real property at least once every three years. The district's current policy is to conduct a general reappraisal of real property every (3) years. However, appraised values are reviewed annually and are subject to change for purposes of equalization. Personal property is appraised every year.

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

The district follows the standards of the International Association of Assessing Officers (IAAO) regarding its appraisal practices and procedures, and subscribes to the standards promulgated by the Appraisal Foundation known as the Uniform Standards of Professional Appraisal Practice (USPAP) to the extent they are applicable.

In cases where the appraisal district contracts for professional valuation services, the contract that is entered into by each appraisal firm requires adherence to similar professional standards.

Personnel Resources

The office of the Chief Appraiser is primarily responsible for overall planning, organizing, staffing, coordinating, and controlling of district operations. The administration Department's function is to plan, organize, direct and control the business support functions related to human resources, budget, finance records management, purchasing, fixed assets, facilities and postal services.

The Appraisal Department is responsible for the valuation of all real and personal property accounts. The property types appraised include commercial, residential, business personal, and industrial. The district's appraisers are subject to the provisions of the Property Taxation Professional Certification Act and must be duly registered with The Texas Board of Tax Professional Examiners.

Support functions including records maintenance, information and assistance to property owners, and hearing support are coordinated by the Administrative assistant staff.

The appraisal district staff consists of nineteen (22) employees with the following classifications:

1 – Administrator (Executive level administration)
2 – Supervisory and Management
9 – Professional (Appraisers, program appraisers and network support)
10- Administrative Support (professional, customer service, clerical and other)

Data

The district is responsible for establishing and maintaining approximately 64,000 real and personal property accounts covering 981 square miles within Bowie County. This data includes property characteristics as well as ownership and exemption information. Property characteristic data on new construction is updated through an annual field effort; existing property data is maintained through a field review that is prioritized by last field inspection date. Sales are routinely validated during a separate field effort; however, numerous sales are validated as part of the new construction and data review field activities. General trends in employment, interest rates, new construction trends and cost and market data are acquired through various sources, including internally generated questionnaires to buyer and seller, university research centers, and market data centers and vendors.

Downloadable files of related tax information and district forms, including exemptions Applications and business personal property renditions are also available.

Information Systems

The Information Systems Department maintains the district's data processing facility, software applications, Internet website, and geographical information system. The district operates under a hierarchical non-relational database. The mainframe hardware/system software is an IBM Server and a Dell Sever which host our LAN and Internet. The user base is served by general-purpose Desktop and Sever PC's along with terminal emulation to mainframe windows.

Shared Appraisal District Boundaries

The district does not have shared district boundaries.

Independent Performance Test

According to Chapter 5 of the TPTC and Section 403.302 of the Texas Government Code, the State Comptroller's Property Tax Division (PTD) conducts an annual property value study (PVS) of each Texas school district and each appraisal district. As part of this annual study, the code also requires the Comptroller to: use sales and recognized auditing and sampling techniques, review each appraisal district's appraisal methods and procedures to determine whether the district used recognized standards and practices (MSP review), test the validity of school district taxable values in each appraisal district and presume the appraisal roll values are correct when values are valid, and determine the level and uniformity of property tax appraisal in each appraisal district. The methodology used in the property value study includes stratified samples to improve sample representativeness and techniques or procedures of measuring uniformity. The study utilizes statistical analysis of sold properties (sale ratio studies_ and appraisals of unsold properties (appraisal ratio studies) as a basis for assessment ratio reporting. For appraisal district's, the reported measures include median level of appraisal, coefficient of Dispersion (COD), the percentage of properties within 10% of the median, the percentage of properties within 25% of the median, and price-related differential (PRD) for properties within 25% of the median, and price-related differential (PRD) for properties overall and by state

category (i e., categories A, B, C, D and F1 are directly applicable to real property). There are thirteen (13) independent school districts in Bowie CAD for which appraisal rolls are annually developed. The preliminary results of this are released in January in the year following the year of appraisement. The final results of this study are certified to the Education Commissioner of the Texas Education Agency (TEA) in the following July of each year of appraisement. This outside (third party) ratio Study provides additional assistance to the CAD in determining areas of market activity or changing

Appraisal Activities

INTRODUCTION

Appraisal Responsibilities
The field appraisal staff is responsible for collecting and maintaining property characteristic data for classification, valuation, and other purposes. Accurate valuation of real personal property by any method requires a physical description of property, and land and building characteristics. This appraisal activity is responsible for administering, planning and coordinating all activities involving data collection and maintenance of all commercial, residential and personal property types which are located within the boundaries of Bowie County. The data collection effort involves the field inspection of real and personal property accounts, as well as data entry of all data collected into the existing information system. The goal is to periodically field inspect all residential and personal properties in Bowie County every three (3) years, and all commercial properties every (3) years. Meeting this goal is dependent on budgetary constraints.

Appraisal Resources
Personnel- The appraisal activities consist of (9) appraisers and (10) clerical personnel. Data-the Data used by field appraisers includes the existing property characteristic information contained in CAMA (Computer Mass Appraisal System) from the district's computer system.

The data is printed on a property record card (PRC or personal property data sheets. Other data used Includes maps, sales data, fire and damage reports, building permits, photos and actual cost information.

PRELIMINARY ANALYSIS
Data Collection/Validation
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, 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 CAMA. The type of information contained in CAMA includes personal property such as business inventory, furniture and fixtures, machinery and equipment,

cost and location. 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 available in the district offices. If a property owner/agent wants a copy of the listing procedural manual, appraisal staff will handle this request. Appraisers periodically update the listing procedural manuals with input from the valuation group.

Sources of Data

The sources of data collection are through the new construction field effort, data review/relist field effort, hearings, sales validation field effort, commercial sales verification, newspapers and publications, and property owner interviews. A principal source of data comes from building permits received from taxing jurisdictions that require property owners to take out a building permit. Paper permits are received and matched manually with the property's tax account number for data entry. Data review of entire neighborhoods is generally a good source for data collection. Appraisers drive entire neighborhoods to review the accuracy of the district's data, and identify properties that have to be re-listed. The sales validation effort in real property pertains to the collection of data of properties that have sold. In residential, the sales validation effort involves on-site inspection by the appraisers to verify the accuracy of the property characteristics data and confirmation of the sales price. In commercial, the commercial appraiser is responsible for containing grantee and/or grantor to confirm sales prices and to verify pertinent data.

Property owners are one of the best sources for identifying incorrect data that generates a field check. Frequently, the property owner provides sufficient enough data to allow correction of records without having to send an appraiser on-site. As the district has increased the amount of information available on the internet, property owner's requests to correct data inconsistencies has also increased. For the property owner without access to the internet, telephone contact and letters are often submitted notifying the district of inaccurate data. Properties identified in this manner are added to a work file and inspected at our earliest opportunity.

Data Collection Procedures

Field data collection requires organization, planning and supervision of the field effort. Data Collection procedures have been established for residential, commercial and personal property. The appraisers are assigned throughout Bowie County to conduct field inspections. Appraisers conduct field inspections and record information either on a property record card (PRC), 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 exits through supervisory review of the work being performed by the field appraiser.

Data Maintenance

The field appraiser is responsible to see that data entry of his/her fieldwork entered into the computer file. This responsibility includes not only data entry, but also quality assurance.

INDIVIDUAL VALUE RULE PROCEDURES

Field Review

The data of last inspection extend of that inspection, and the CAD appraiser responsible are listed on the CAMA record. If a property owner or jurisdiction dispute the district's records concerning this data during a hearing, via a telephone call or correspondence received, CAMA may be altered based on the evidence provided. Typically, a field inspection is requested to verify this evidence for the current year's valuation or for the next year's valuation.

Every year a field review of certain areas or neighborhoods in the jurisdiction is done during the Data review/relist field effort.

Office Review

Office reviews are completed on properties where information has been received from the owner of the property. At the request of the property owner, the appraisal staff will verify the property characteristics or current condition of the property. When the property data is verified in this manner, filed inspections are not required.

Performance Test

The appraisers are responsible for conducting ratio studies and comparative analysis, and in many cases may conduct field inspections to insure the ratios produced are accurate and the appraised values utilized are based on accurate property data characteristics.

Residential Valuation Process

INTRODUCTION

Scope of Responsibility
The appraisers and supervisors are responsible for developing equal uniform market values for residential improved and vacant property. There are approximately 32,300 residential improved parcels and 9,550 vacant residential properties in Bowie County.

Appraisal Resources

Personnel- the Residential Valuation appraisal staff consists of seven (9) appraisers.

Data- a common set of data characteristics for each residential dwelling in Bowie County is collected in the field and data entered into the computer. The property characteristics data drives the computer-assisted mass appraisal (CAMA) approach to valuation.

VALUATION APPROACH

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 cost are collected from private vendors and public sources and provide the field appraiser a current economic outlook on the real estate market. Information is gleaned from real estate publications and sources such as continuing education in the form of BTPE classes.

Neighborhood/Area and Market Analysis

Neighborhood/area 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/area analysis is conducted on each of the political entities known as Independent School Districts (ISD).

The first step in neighborhood/area analysis is the identification of a group of properties that share certain common traits. A "neighborhood" for analysis purposed 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/area has been identified, the next step is to define its boundaries. This process is known as "delineation". Some factors used in neighborhood/area delineation include location, sales price range, lot size, age of dwelling, quality of construction and condition of dwelling, 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/area analysis is the consideration of discernible patterns of growth that Influence a neighborhood's individual market. Few neighborhood/areas are fixed in character. Each neighborhood/area 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 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 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/area identification and delineation is the cornerstone of the residential valuation system at the district. All the residential analysis work done is associated with the residential valuation process in neighborhood/area specifics. Neighborhoods are 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 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. Neighborhoods groups, or clustered neighborhoods, increase the available market data by linking comparable properties outside a given neighborhood. Sales ratio analysis, discussed below, is performed on a neighborhood/area basis and in soft sale areas on a neighborhood group basis.

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 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 mis 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 appraiser reviews properties in these areas on a periodic basis to determine if changes in the real estate market require reassessment of the highest and best use of a select population of properties.

VALUATION AND STATISTICAL ANALYSIS (Model Calibration)

Cost Schedules

All residential parcels in the district are valued from identical cost schedules using a comparative unit method. The district's residential cost schedules, originally adopted from a private mass appraisal firm, have been customized to fit Bowie County's local residential building and labor market. The cost schedules are reviewed regularly as a result of recent state legislation requiring that the appraisal district cost schedules be range of plus or minus 5% from nationally recognized cost schedules. An extensive review and revision of the residential cost schedule was performed for this tax year. As part of this process, newly constructed sold properties at various levels of quality of construction in Bowie County were reviewed. The property data characteristics of these properties were verified and photographs were taken of the samples. CAD dwelling costs were compared against Marshall & Swift, a nationally recognized cost estimator. This process included correlation of quality of construction factors from CAD and Marshall & Swift.

Sales Information

A sales file for the storage of "snapshots", sales data at the time of sale, is maintained. Residential vacant land sales, along with commercial improved and vacant land sales are maintained in the sales information system. Residential improved and vacant sales are collected from a variety of sources, including: personal contact to buyer and seller, field discovery, protest hearings, Board of Realtor's MLS, various sales vendors, builders, and realtors. A system of type, source, validity and verification codes were established to define salient facts related to a property's purchase or transfer. School district or neighborhood sales reports are generated as an analysis tool for the appraiser in the development of value estimates.

Land Analysis

Residential land analysis is conducted by each of the residential appraisers. The appraisers develop a base lot, primary rate, and assign each unique neighborhood to one of 100 plus square foot land tables; the 100 plus flat value tables or one of the 20 plus rural cost tables. The square foot land table is designed to systematically value the primary and residual land based on a specified primary rate, or using the flat value method per lot. A computerized land table file stores the land information required to consistently value individual parcels within neighborhoods. Specific land influences are used, where necessary, to adjust parcels outside the neighborhood norm for such factors as view, shape, size, and topography, among others. The appraisers use abstraction and allocation method to ensure that the land values created best reflect the contributory market value of the land to the overall property value.

Statistical Analysis

The residential valuation appraisers perform a statistical analysis annually to evaluate whether values are equitable and consistent with the market. Ratio studies are conducted on 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 appraisers a tool by which to determine both the level and uniformity of appraised value on a stratified neighborhood basis. The level of appraised values is determined by the weighted mean for individual properties within a neighborhood, and a comparison of neighborhood weighted means reflect the general level of appraised value between comparable neighborhoods. Review of the standard deviation, coefficient of variation and coefficient of dispersion discerns appraisal uniformly within and between stratified neighborhoods.

Every neighborhood is reviewed annually by the appraiser through the sales ratio analysis process. The first phase involves glass ratio studies that compare to recent sales prices of neighborhood properties to the appraised values of these sold properties. This set of ratio studies affords the appraiser an excellent means of judging the present level of appraised value and uniformity of the sales. The appraiser, based on the sales ratio statistics and designated parameters for valuation update, makes a preliminary decision 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.

Market Adjustment of Trending Factors

Neighborhood, or market adjustment, factors are developed from appraisal statistics provided from ratio studies and are used to ensure that estimated values are consistent with the market. The district's primary approach to the valuation of residential properties uses a hybrid cost-sale comparison approach. This type of approach accounts for neighborhood market influences not specified in the cost model.

The following equation denotes the hybrid model used:

$$MV=MA [LV+ (RCN-D)]$$

Whereas, the market value equals the market adjustment factor times the land value plus the Replacement cost new less depreciation.

As the cost approach separately estimates both land and building values and uses depreciated replacement cost, which reflect only the supply side of the market, it is expected that adjustments to the cost values are needed to bring the level of appraisal to an acceptable standard. Market or location adjustments are applied uniformly within neighborhoods to account for locational variances between market areas or across a jurisdiction. If a neighborhood is to be updated, the appraiser uses a cost ratio study that compares recent sales prices of properties appropriately adjusted for the effects of within a delineated neighborhood with the properties actual cost value. The calculated ratio derived from the sum of the properties cost value divided by the sum of the sales prices indicates the neighborhood level of value based on the unadjusted cost value for the sold properties. This cost-to-sale ratio is compared to be appraisal-to-sale ratio to determine the market adjustment factor for each neighborhood. This market adjustment factor is needed to trend the values obtained through the cost approach closer to the actual market evidenced by recent sales prices within a given neighborhood. The sales used to determine the market adjustment factor will reflect the market influences and conditions only for the specified neighborhood, thus producing more presentative and supportable values. The market adjustment factor calculated for each update neighborhood is applied uniformly to all properties within a neighborhood. Once the market-trend factors are applied, a second set of ratio studies is generated that compares recent sale price with the purposed appraised values for these sold properties. From this set of ratio studies, the appraiser judges the appraisal level and uniformity in both updated and non-updated neighborhoods, and finally, for the school district as a whole.

Treatment of Residence Homesteads

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

The **market value** or the **preceding years appraised value;**
Plus 10 percent for each year since the property was reappraised;
Plus the value of any improvements added since the last re-appraisal.

Values of capped properties must be recomputed annually. If a capped property sells, the cap automatically expires as of January 1st of the following year. In that following year, that home is reappraised at its market value to bring its appraisal into uniformity with other properties.

An analogous provision applies to new homes. While a developer owns them, unoccupied residences are appraised as part of an inventory using the district's land value and the developer's construction costs as of the valuation date. However, in the year following sale, the trend analysis method is employed.

For each school district, sale-to-appraisal ratio based unadjusted cost values are stratified on a quarterly basis. Statistics produced from the quarterly market data 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) that represent the consistency of appraised values within and between strata. The resulting quarterly medians are graphically plotted for examination and analysis. A linear regression routine is performed on each of the school district samples, along with specific market areas. Linear regression statistics, such as the coefficient of determination (R2) and the P-value, identify the reliability and significance, respectively, of the regression outcome, namely the independent variable of time. A quarterly time adjustment for each market area sample was produced. Analysis was then performed on each school district sample to determine the appropriate quarterly time adjustment to be employed, or if a time adjustment was even warranted. Once the market areas quarterly, time adjustment was determined, a monthly time adjustment was calculated.

INDIVIDUAL VALUE REVIEW PROCEDURES
Field Review

The appraiser identifies individual properties in critical need of field review through sales ratio analysis. Sold properties with a high variance in sales ratios are field reviewed on a monthly basis to check for accuracy of data characteristics.

As the district's parcel count has increased through new home construction, and the homes constructed in the boom years of the late 70's and early 80's and early 2000's experience remodeling, the appraisers are required to perform the field activity associated with transitioning and high demand neighborhoods. Increased sales activity has also resulted in a more substantial field effort on the part of the appraisers to review and resolve sales outliers. Additionally, the appraiser frequently field reviews and 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 appraiser takes valuation documents to the field to test the computer-assisted values against his own appraisal judgement. During this review, the appraiser is able to physically inspect both sold properties and unsold properties for comparability and consistency of values.

Office Review

Given the ample resources and 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 are value reviewed in the office. Valuation reports comparing previous values against proposed and final values are generated for all

residential improved and vacant properties. The dollar amount and percentage of value difference are 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 individually reviewed to determine if the Value remains appropriate for the current year.

Once the appraiser is satisfied with the level and uniformity of value for each neighborhood Within his area of responsibility, the estimates of value go to noticing.

PERFORMANCE TESTS
Sales Ratio Studies

The primary analysis tool used by the appraisers to measure and improve performance is the ratio study. The district ensures that the appraised values that are produced meet the standards of accuracy in several ways. Overall sales ratios are generated for each ISD by quarter to allow the appraiser to view general market trends within their area of responsibility, and provide an indication of market appreciation over a specified period of time. The neighborhood descriptive statistic, along with frequency distribution and scatter diagrams are reviewed for each neighborhood being updated for the current tax year. Reported in the sales ratio statistics for each school district is a level of appraisal value and uniformity profile by land use, sales trends by quarter and 12-month time frame, and appraisal value ranges. The system-based ratio studies are designed to emulate the findings of the state comptroller's annual value study for category 'A' property.

Management Review Process

Once the proposed value estimates are finalized, the appraiser reviews the sales ratio by neighborhood and presents pertinent valuation data, such as, history of hearing protest, sales-to-parcel ratio, and level of appraisal to the Chief Appraiser for final review and approval. This review includes comparison of levels of value between related neighborhoods within and across jurisdiction lines. The primary objective of this review is to ensure that the proposed values have met preset appraisal guidelines appropriate for the tax year in question.

Commercial Valuation Process

INTRODUCTION

Appraisal Responsibility

This mass appraisal assignment includes all of the commercially classed real property which falls within the responsibility of the commercial valuation appraisers of the Bowie County Appraisal District and located within the boundaries of this taxing jurisdiction. The attached appraisal roll displays and identifies each parcel of real property individually. 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 appraisement of any non- exempt taxable fractional interests in real property (i.e. certain multifamily housing projects). Fractional interest or partial holdings of real property are appraised in fee simple for the whole property and divided programmatically based

on their prorated interests.

Appraisal Resources

The improved real property appraisal responsibilities are categorized according to major property types of multifamily or apartment, office, retail, warehouse and special use (i.e. hotels, hospitals, and nursing homes). Two (2) appraisers are assigned to improved commercial property types.

Data- the data used by the commercial appraiser 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 the appraiser 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.), and actual construction cost data. In addition to the actual data obtained from specific properties, market data publications are also reviewed to provide additional support for market trends.

PRELIMINARY ANALYSIS
Pilot Study

Pilot studies are utilized to test new existing procedures or valuation modifications in a limited area (a sample of properties) of the district and also considered whenever substantial changes are made. These studies, which are inclusive of ratio studies, reveal whether a new system is producing accurate and reliable values or whether procedural modifications are required. The appraiser implements this methodology when developing both the cost approach and income approach models.

Survey of Similar Jurisdictions

Bowie CAD coordinates its discovery and valuation activities with other appraisal districts. In addition, Bowie CAD administration and personnel interact with other assessment officials through professional trade organizations including the International Association of Assessing Officers, Texas Association of Appraisal Districts and the Texas Association of Assessing Officers.

VALUATION APPROACH (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 rent, interest rate trends, availability of vacant land, and construction trends and costs are collected from private vendors and public sources. Continuing education in the form of the Texas Association of Assessing Officers (TAAO), and Texas Association of Appraisal Districts (TAAD) courses
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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. 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 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 type (apartment, office, retail, Warehouse and special use) based upon analysis of similar economic or market forces. These include but are not limited to 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. Economics are identification and delineation by each major property use type is the benchmark of the commercial valuation system. All income model valuation (income approach to value estimates) is economic area specific. Economic areas are 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 are for all commercial use types and its corresponding income model may be found in the Appraisal Valuation Manual.

Highest and Best Use Analysis

The highest and best use is 'the reasonable and probably 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 was still vacant. This assists in determining if the existing improvements have a transitional use, interim use, no-conforming 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. This analysis insures that an accurate estimate of market value (something referred to as value in exchange) 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
4. payment in cash or its equivalent

Market Analysis

A market analysis relates to market forces affecting supply and demand. This study

involves the relationship between social, economic, environmental, governmental, and site conditions. Current market activity including sales of commercial properties, new construction, new leases, lease rates, absorption rates, vacancies, allowable expenses (inclusive of replacement reserves), expense ratio trends, capitalization rate studies are analyzed.

DATA COLLECTION/VALIDATION

Data Collection Files

The primary manual pertinent to data collection and documentation is the commercial/Industrial Data Collection Files. These files are continually updated, providing a uniform system of itemizing the multitude of components comprising improved properties. All properties located in Bowie CAD's inventory are coded according to this manual and the approaches to value are structured and calibrated based on this coding system.

Annually, prior to the hearing season and after the sales have been researched, verified, keyed Into the database, and quality control has been completed, the sales data are summarized and produced into book form.

Sources of Data

In terms of commercial sales data CAD's staff researches deeds recorded in Bowie County that conveys commercially classed properties. The deeds involving a change in commercial ownership are entered into sales information system and researched in an attempt

to obtain the pertinent sale information. Other sources of sale data include the hearing process and local, regional and national real estate and financial publications.

For those properties involved in a transfer of commercial ownership, a sales file is produced which begins the research and verification process. Verification is then attempted via phone calls to both parties. 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 that may have the desired information. Finally, closing statements are often provided during the hearing process. The actual closing statement is the most reliable and preferred method of sales verification.

Valuation Analysis

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 can be made to reflect new construction procedures, materials and/or costs of which can vary from year to year. The basic structure of a mass appraisal model can be valid over an extended period of time, with trending factors utilized for updating the data to the current market conditions. However, at some point, if the adjustment process becomes too involved, the model calibration technique can mandate new model specifications or a revise model structure.

Cost Schedules

The cost approach to value is applied to all improved real property utilizing the comparative unit method. This methodology involved the utilization of national cost data services as well as actual cost information on comparable properties whenever possible. Cost models are typically developed based on the Marshall & Swift Valuation Services. 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. Time and 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, locational modifiers are necessary to adjust the base cost specifically for Bowie County. These modifiers are provided by national cost services.

Depreciation schedules are 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 60 years expected life. The schedules are guides, the schedules may or may not reflect actual depreciation. These schedules are then tested to insure they are reflective of current market conditions. The actual effective ages of improvements are noted in CAMA. Effective age estimated 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. Market adjustment factors such as external and/or functional obsolescence and be applied if warranted. A depreciation calculation override can be used if the condition or effective age of a property varies from the norm by appropriately noting the physical condition and functional utility ratings on the property data characteristics. These adjustments are typically applied to a specific property type or location and can be developed via Ration studies or other market analysis. Accuracy in the development in the cost schedules, condition ratings and depreciation schedules will usually minimize the necessity of this type of an adjustment factor.

Income Models

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

A vacancy and collection loss allowance is the next item to consider in the income approach. The projected vacancy and collection loss allowance is established from actual data furnished by property owners and on local market publications. This allowance accounts for periodic fluctuations in occupancy, both above and below an estimated stabilized level. The market derived stabilized vacancy and collection loss allowance is subtracted from the potential gross rent estimate to yield an effective gross rent.

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

then added to effective gross rent to arrive at an effective gross income.

Allowable expenses and ratio estimates are 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 are included in the expenses. A non-recoverable expense represents costs that the owner pays to lease rental space. Different expense ratios are developed for different types of commercial property based on use. For insurance, 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. Under this scenario, if the total operating expense in year one (1) equates to $8.00 per square foot, any increase in expense over $8.00 per square foot throughout the remainder of the lease term would be the responsibility of the tenant. As a result, expense ratios are implemented based on the type of commercial property.

Another form of allowable expense is the replacement of short-lived items (such as roof or floor coverings, air conditioning or major mechanical equipment or appliances) requiring expenditures of 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 yields an estimate of net operating income.

Rates and multipliers are used to convert income into an estimate of market value. These include income multipliers, overall capitalization rates, and discount rates. Each of these is used in specific applications. Rates and multipliers also vary between property types, as well as by location, quality, condition, design, and other factors. Therefore, applications of the various rates and multipliers must be based on a thorough analysis of the market.

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

Rent loss concessions are made on specific properties with vacancy problems. A rent loss concessions accounts for the impact of lost rental income while the building is moving toward stabilized occupancy. The rent loss is calculated by multiplying the rental rate by the percent difference of the property's stabilized occupancy and its actual occupancy. Build out allowances (for first generation space or retrofit/second generation space as appropriate) and leasing

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

Sales Comparison (Market) Approach

Although all three of the approaches to value are based on market data, the Sales Comparison approach is most frequently referred to as the Market Approach. This approach is utilized not only for estimating land value but also in comparing sales of similarly improved properties to each parcel on the appraisal roll. As previously discussed in the Data Collection/Validation section of this report, pertinent data from actual sales of properties, both vacant and improved, is pursued throughout the year in order to obtain relevant information which can be used in all aspects of valuation. Sales of similarly improved properties can provide a basis for the depreciation schedules in the Cost Approach, rates and multipliers used in the income Approach, and as a direct comparison in the Sales Comparison Approach. Improved sales are also used in ratio studies, which afford the appraiser an excellent means of judging the present level and uniformity of the appraised values.

Final Valuation Schedules

Based on the market data analysis and review discussed previously in the cost, income and sales approaches, the cost and income models are calibrated and finalized. The calibration results are keyed to the schedules and models on the mainframe CAMA system for utilization on all commercial properties in the district. The schedules and models are summarized in the Appraisal Review Manual. This manual is provided to appraisers and is made available to the public in an easy to understand format.

Statistical and Capitalization Analysis

Statistical analysis of final values is an essential component of 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 appraisers 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 n value. Review of the standard deviation and the coefficient of variation can discern appraisal uniformity within a specific property type.

The appraisers review every commercial property type annually through the sales ratio analysis process. The first phase involves ratio studies that compare the recent sales prices of properties to the appraised values of the sold properties. This set of ratio studies affords the appraiser an

excellent means of judging the present level of appraised value and uniformity of the appraised values. The appraiser, based on the sales ratio statistics and designated parameters for valuation update, makes a preliminary decision as to whether the value level of a particular property type needs to be updated in an upcoming reappraisal, or whether the level of market value is at an acceptable level. Potential gross rent estimates, occupancy levels, secondary income, allowable expenses (inclusive of non-recoverable 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 are vendors.

INDIVIDUAL VALUE PROCEDURES

Field review

The date of the last inspection, the extent of that inspection, and the Bowie CAD appraiser responsible are listed in the CAMA system. If a property owner disputes the district's records concerning this data in a protest hearing, CAMA may be altered based on the credibility of the evidence provided. Typically, a new field check is then requested to verify this evidence for the current year's valuation or the next year's valuation. In addition, if a building permit is filed for a particular property indicating a change in characteristics, that property is added to a work

file. Finally, even though every property cannot be inspected each year, each appraiser typically designated certain segments of their area of responsibility to conduct field checks.

Commercial appraisers are somewhat limited in the time available to field review all commercial properties of a specific use type. However, a major effort is made by appraisers to review as many properties as possible or areas experiencing large numbers of remodels, renovations, or retrofits, changes in occupancy levels or rental rates, new leasing activity, new construction, or wide variations in sale prices. Additionally, the appraisers frequently field review 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 appraisers test computer assisted value against their own appraisal judgment. While in the field, the appraisers physically inspected sold and unsold properties for comparability and consistency of values.

Office Review

Office reviews are completed on properties not subject to field inspections and are performed in compliance with the guidelines contained in the Appraisal Review Manual. The Appraisal Review Manual outlines the application of the three approaches to value (including Discounted Cash Flow-DCF). This manual is rigorously maintained and updated frequently.

Office reviews are typically limited by the data presented in final value reports. These reports summarize the pertinent data of each property as well as comparing the previous values (two year value history) to proposed value conclusions of the various approaches to value. These

reports show proposed percentage value changes, income model attributes or overrides, economic factor (cost overrides) and special factors affecting the property valuation such as new construction status, prior year litigation, and a three-year sales history (USPAP property history requirement for non-residential property). The appraiser may review methodology for appropriateness to ascertain that it was completed in accordance with USPAP or more stringent statutory and district policies. This review is performed after preliminary ratio statistics have been applied. If the ratio statistics are generally acceptable overall the review process is focused primarily on locating skewed results on an individual basis. Previous value resulting from protest hearings are individually reviewed to determine if the value remains appropriate for the current year based on market conditions. Each appraiser's review is limited to properties in their area of responsibility by property type (improved) or geographic area (commercial vacant land).

Once the appraiser is satisfied with the level and uniformity of value for each commercial property within their area of responsibility, the estimates of value go to noticing. Each parcel is subjected to the value parameters appropriate for its use type. If one of the parcel's component values, land value, improvement value or total value exceeds the permissible change in value range it "fails the value edits". In this case, the parcel does not shift to noticing, but it is placed on a rework list. Therefore, although the value estimates are determined in a computerized mass appraisal environment, value edits and rework lists enable an individual parcel review of value anomalies before the estimate of value is released for noticing.

Performance Test

The primary tool used to measure mass appraisal performance is the ratio study. A ratio study compares appraised values to market values. In a ratio study, market values (value in exchange) are typically represented by sales prices (i.e. a sales ratio study). Independent, expert appraisals may also be used to represent market values in a ratio study (i.e. an appraisal ratio study). If there are not enough sales to provide necessary representativeness, independent appraisals can be used as indicators for market values. This can be particularly useful for commercial, warehouse or industrial real property for which sales are limited. In addition, appraisal ratio studies can be used for properties statutorily not appraised at market value, but reflect the use-value requirement. An example of this is multifamily housing projects subject to subsidized rent provisions or other governmental guarantees as provided by legislative statutes (affordable housing) or agricultural lands to be appraised on the basis of productivity or use value.

Sales Ratio Studies

Sales ratio studies are an integral part of establishing equitable and accurate market value estimates, and ultimately assessments for this taxing jurisdiction. The primary uses of sales ratio studies include the determination of a need for general reappraisal; prioritizing selected groups of properties types for reappraisal; identification of potential problems with appraisal procedures; assist in market analysis; and to calibrate models used to derive appraised values during valuation or reappraisal cycles. However, these studies cannot be used to judge the accuracy of an individual property appraised value. The Bowie CAD Appraisal Review Board may make individual value adjustments based on unequal appraisal (ratio) protest evidence submitted on a case-by-case basis during the hearing process.

Overall sales ratios are generated by use type semi-annually (or more often in specific area) to allow appraisers to review general market trends in their area of responsibility. In many cases,

field checks may be 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 appraisers by providing an indication of market activity by economic area or changing market conditions (appreciation or depreciation).

Comparative Appraisal Analysis

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

Industrial Valuation Process

INTRODUCTION

Appraisal Responsibility

The industrial appraisers and/or contract appraisers of the Bowie CAD are responsible for developing fair, uniform market values for improved industrial properties and industrial vacant land. The industrial appraiser is also responsible for the valuation of all tangible general industrial personal property in Bowie County, of which all are improved properties. The industrial appraiser appraises approximately 120 parcels of tangible personal property.

Appraisal Resources

Personnel-Bowie CAD contracts with Capital Appraisal Group Inc firm to value properties for which the district does not have the available personnel or resources.

Data- the industrial contract appraisal staff inspects their assigned properties to obtain Information about buildings, site improvements, process and shop equipment, and various items of personal property. In addition, appraisal personnel use information provided by property owners concerning the cost to purchase, install, and construct items of real and personal property. The individual characteristics of the property being appraised are the primary factors that drive the appraisal value.

VALUATION APPROACH (Model Specification)
Area Analysis

The scope of market forces affecting industrial products and the capital goods used in the production process tends to extend beyond regional considerations. The effects of information and transportation technology are such that most industrial market forces are measured globally. One exception to this general concept is the market for industrial land. The pricing of land tends to be closely tied to possible alternative uses in the area. For this reason, appraisers assigned to land valuation analyze market forces for specific areas and adjust land value schedules appropriately.

Neighborhood Analysis

Neighborhood analysis of the type of properties valued by the industrial appraiser is not meaningful. Industrial properties do not have the type of generic "sameness" that is appropriate for neighborhood models.

Highest and Best Use Analysis

The highest and best use of real or personal property is the most reasonable and probable use of the property on the date of appraisal that is physically and financially feasible, legal, and that derives maximum production from the property usually, the current use of the property is the highest and best use of that property. Industrial facilities are most commonly located in areas that support industrial use. In areas where mixed use does occur, the highest and best use of the property is examined by the appraiser to estimate the effect of this factor.

Market Analysis

Market analysis is the basis for finalizing value estimates on properties for which the industrial appraiser has responsibility. Even though many industrial properties are unique in nature, the market for this type property is analyzed to see how the values of similar or similar as possible properties are affected by market forces. Industrial properties, such as machine shops, have many similar facilities that can be compared to the subject property in terms of type and size of equipment, type of property fabricated or serviced at the subject facility, and other factors. Those similarities help the appraiser estimate the value of the subject property. However, some facilities, such as specialty chemical plants, are so unique in nature that the appraiser must use the closest available plant in terms of output quality, type of product manufactured, and other factors to estimate the value of the subject property. Many industrial properties use the same type of building and, depending on the type of business, may use the same type of manufacturing or service equipment. However, the manner in which the entire business operation is put together makes that particular facility unique. The district uses information from similar businesses to examine the real personal property values at a particular business, but the individual characteristics of the business being reviewed determine the value estimation. Many of the buildings encountered at industrial facilities are generic in construction, such as pre-engineered metal buildings. The cost per square foot to construct these type structures can be used to estimate values at facilities that have similarly constructed buildings. However, the building as constructed will have differences that must be taken into account when estimating the final value of the property being reviewed. A similar analysis is used for personal property.

Many items of personal property, such as furniture and fixtures, computers, and even machinery and equipment are generic in construction, but individual characteristics that affect value, such as usage, environment where used, and level of care will have an effect on the final value estimation. When cost data for this type property is available and considered reliable, it is used for value estimation purposes at other plant facilities. However, on-site inspection and information provided by the property owner will affect the final value.

DATA COLLECTION/VALIDATION
Data Collection Manuals

An extended range of variations may exist within the same class of industrial property, and there are a multitude of property types within the industrial category. For this reason, effective data collection procedures would be very difficult to organize in a single comprehensive manual.

Industrial personal property also consists of many different classes of assets with a wide range of variation within each class. The district has adopted the convention of listing assets and estimating effective age of assets in the field. The field listing is then compared with information furnished by property owners during the final valuation review.

Sources of Data

The original real and personal property data used by Bowie CAD was supplied by Pritchard & Abbott. Since that time, the district has contracted with Capital Appraisal Group Inc, and Contracted appraisal personnel have updated that information based on field review. As new facilities are built, the appraisal personnel collect all the real personal property data

necessary to value the property initially and update the information when the property is again visited. The district receives building permit information from the cities and from the county when a facility is being built outside an incorporated city. Other sources of data include publications such as the Texas Register regarding waste control permits, various refining and chemical industry magazine, and Texas Industrial Expansion articles on new construction.

Data Collection Procedures

The district and contract appraisal personnel annually or periodically visit assigned plants. The frequency of the visit is determined by the nature of the business conducted at each facility. For example, refineries and chemical plants are continually changing or adding to process to extract greater efficiencies or make new products, but machine shops may not add or remove equipment over a period of two or more years.

The appraisers take with them the historical data on the buildings and site improvements and the previous listing of personal property at the facility being visited. Changes to the existing structures and personal property are noted and that information is used for value estimation purposes. If cost information for the real or personal property is supplied later, the field data can be compared to that information to judge the accuracy of the information.

The district and contract firm appraisal staff members are not assigned any one geographical area of the county. The nature of the business and whether or not the district has the staff resources available determines which properties are valued by contract firms and which properties are valued by contract by the district's appraisal staff.

VALUATION ANALYSIS

Final Valuation Schedules

The contract appraisal firm develops schedules based on indexed Marshall & Swift depreciation factors for use in the valuation of all business and industrial personal property. These schedules are updated annually.

INDIVIDUAL VALUE REVIEW PROCEDURES

Field Review

The district's personnel and contract appraisal firm periodically review their assigned real and personal property accounts where there is evidence of change at a particular facility and when there is not, these accounts are reviewed annually because past experience shows that changes are occurring continually in the real or personal property at that facility. Properties assigned to contract appraisal firms are reviewed annually because changes also occur regularly at these facilities.

The results of prior year hearings and indication of building permits being issued are another source of required field visits. Many times, during hearings, issues are presented that cause a value adjustment. Those issues must be field checked to see if these influences will be on going and warrant permanent value adjustment or are transitory and permanent adjustment is not

warranted. This information needs to be recorded so the appraiser will be better able to estimate the property values. Building permits must be field checked to see what affect these have on existing structures. Any new construction is noted and the information necessary to value the structure is recorded. Additionally, any structure demolition is noted so the improvement value can be adjusted accordingly.

Part of the review includes noting any land characteristics that would affect the land value. The district values all land for the properties over which it has responsibility, including those properties assigned to contract characteristics that would affect the value of the land associated with that assigned facility.

Office Review

All properties not subjected to field review are reviewed in the office by the district appraisers assigned to particular real or personal properties. The Office review relies on historical information in the real or personal property file as the basis for deciding on the estimated value to be placed on the property for the current tax year.

When valuing real property, the characteristics of the property being reviewed are the driving force in value estimation. Experience in valuing other real property, such as a similar building elsewhere, helps the appraiser decide the estimated value to be placed on the subject improvements.

When valuing personal property, the type of furniture, equipment, computers, etc., will be used along with any cost data provided by the property owner to estimate the value. Experience in valuing similar property at other facilities will help the appraiser estimate the value of the subject facility. Individual characteristics of the property, such as usage and maintenance will have a bearing on the value calculated by use of district schedules.

PERFORMANCE TEST

Sales Ratio Studies

Ratio studies are an important tool to examine how close appraised values are to market values. The ratio study may use available sales data or may use independent, expert appraisals. Typically, there are not enough sales of industrial properties to show representativeness of that class of property in a ratio study. Ratio studies of industrial properties usually have to rely on independent appraisals as an indicator of market values.

Comparative Appraisal Analysis

This type of analysis is usually not done on industrial properties due to the unique nature of the property and also because of time and budget constraints regarding available appraisal staff. Only in an instance where a jurisdiction would file a jurisdiction challenge with the Appraisal Review Board would the district perform such an analysis.

If a jurisdiction challenge is received by Bowie CAD on an industrial category of properties, the Appraisers assigned to those accounts will research the appraisal roll to see what other similar Properties exist. The real property values can be compared on an average value per square foot

of structure basis, but the differences from one facility to another must be carefully compared because it is unlikely that two different facilities are going to build like improvements and use them in similar ways. In like manner, the personal property values can be compared per category, such as furniture and fixtures, machinery and equipment, etc., but the same comparison of the type of and use of the property must be examined to ensure property comparison.

Business Personal Property Valuation Process

INTRODUCTION

Appraisal Responsibility

There are four different personal property types appraised by the district's personal property section: Business Personal Property accounts; Leased Assets; Vehicles: and Multi-location Assets. There are approximately 5,200 business personal property accounts in Bowie County.

Appraisal Resources

Personnel- the personal property staff consists of 1 appraiser and one (1) support staff.

Data- a common set of data characteristics for each personal property account in Bowie County is collected in the field and data entered to the district's computer. The property characteristic data drives the computer-assisted personal property appraisal (CAPPA) system. The field data is collected by the personal property appraisers.

VALUATION APPROACH (Model Specification**)**

SIC Code Analysis

Four-digit numeric codes, called Standard Industrial Classification (SIC) codes were developed by the federal government. These classifications are used by Bowie CAD as a way to classify personal property by business type. SIC code identification and delineation is the cornerstone of the personal property valuation system at the district. All of the personal property analysis work done in association with the personal property valuation process is SIC code Specific. There are in excess of 350 CAD personal property SIC codes. SIC codes are delineated based on observable aspects of homogeneity. SIC code delineation is periodically reviewed to determine if further SIC code delineation is warranted.

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, and productive to its maximum. The highest and best use of personal property is normally its current use.

DATA COLLECTION/VALIDATION

Data Collection Procedures

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 sources of data.

Business Personal Property

The district's property characteristic data was originally received from Bowie County, the City Of Texarkana and various school district records in 1981, and where absent, collected through a massive field data collection effort coordinated by the district over a period of time. When revaluation activities permit, district collect new data via an annual field drive-out.
This project results in the discovery of new businesses not revealed through other sources. Various discovery publications such as the Court Reporter and state sales tax listings are also used to discover personal property. Tax assessor, city and local newspapers, and the public often provide the district information regarding new personal property and other useful facts related to property valuation.

Vehicles

An outside vendor provides Bowie CAD with a listing of vehicles within Bowie County. The Vendor develops this listing from the Texas Department of Transportation (DOT) Title and Registration Division records. Other sources of data include property owner rendition and field Inspections.

Leased and Multi-Location Assets

The primary source of leased and multi-location assets, are property owners' renditions of property. Other sources of data include field inspections.

VALUATION AND STATISTICAL ANALYSIS (Model Calibration)

Cost Schedules

Cost schedules are developed by SIC code by district personal property valuation appraisers. The cost schedules are developed by analyzing cost data from property owner renditions, Hearings, state schedules, and published cost guides.

The cost schedules are reviewed as necessary to conform to changing market conditions. The schedules are typically in a square foot format, but some exception SICS' are in an alternate price per unit format, such as per room for hotels.

Statistical Analysis

Summary statistics including, but not limited to, the median, weighted mean, and standard deviation provide the appraisers 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 coded.

DEPRECIATION SCHEDULE AND TRENDING FACTORS

Business Personal Property

Bowie CAD's primary approach to the valuation of business personal property is the cost approach. The replacement cost new (RCN) is either developed from property owner reported historical cost or from Bowie CAD developed valuation models. The trending factors used by Bowie CAD to develop RCN are based on published valuation guides. The percent good Depreciation factors used by Bowie CAD 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:

PVF= INDEX FACTORS x PERCENT GOOD FACTOR

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

MARKET VALUE ESTIMATE = PVF x 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 flowing 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 moved 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

Value estimates for vehicles are provided by an outside vendor and are based on NADA published book values, Blue Book published book values or other reliable value sources. Vehicles that are not valued by
the vendors are valued by an appraiser using published guides.

Leased and Multi- Location Assets

Leased and multi-location assets are valued using the schedules mentioned above. If the asset to be valued in this category is a vehicle, then published book values and/or Blue Book published values are used. Assets that are not valued by the vendor are valued by an appraiser using schedules or published guides.

INDIVIDUAL VALUE REVIEW PROCEDURES

Office Review

Business Personal Property

A district valuation computer program exists in a mainframe 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 model values. Accounts that fail the tolerance parameters are reviewed by the appraisers.

Vehicles

A vehicle master received on tape from an outside vendor and vehicles in the districts 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 the owners are then prioritized by number of vehicles owned. These vehicles are then matched to existing account and new accounts area created as needed. Vehicles that are not valued by the vendor are valued by an appraiser using schedules or published guides.

Leased and Multi-Location Assets

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 rendered by hard copy are data entered by Bowie CAD.

After matching and data entry, reports are generated and reviewed by an appraiser. Once Proofed, the account is noticed after supervisor approval.

PERFORMANCE TESTS

Ratio Studies

Every two (2) years the property Tax Division of the state comptroller's office conducts a property value study (PVS). The PVS is a ratio study used to gauge appraisal district performance. Results from the PVS play a part in school funding. Rather than a sales ratio study, the personal property PVS is a ratio study using state cost and depreciation schedules to develop comparative personal property values. These values are then compared to Bowie Cad's personal property values and ratios are formed.

Internal Testing

Bowie CAD can test new or revised cost and depreciation schedules by running the valuation program in a test mode prior to the valuation cycle. This can give appraisers a chance to make additional refinements to the schedules if necessary.