



# Guadalupe Appraisal District

## Mass Appraisal Report **2022**

**Before making copies, some information related to confidential information shall need to be redacted.**

### **Confidential Information**

Please be advised that pursuant to Texas Government Code Section 552.149(a), "Information relating to real property sales prices, descriptions, characteristics, and other related information received from a private entity by the comptroller or the chief appraiser of an appraisal district under Chapter 6, Tax Code, is excepted from the requirements of Section 552.021."

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# GUADALUPE APPRAISAL DISTRICT

## 2022 Mass Appraisal Report

### INTRODUCTION

#### *Scope of Responsibility*

The Guadalupe Appraisal District has prepared and published this report to provide our citizens and property owners with a better understanding of the district's responsibilities, activities, and results of mass appraisal for the January 1<sup>st</sup> appraisal date. This report has several parts: a general introduction and several sections describing the appraisal efforts and results by the appraisal district and staff.

The Guadalupe Appraisal District (G.A.D.) is a political subdivision of the state of Texas created effective January 1, 1980. The provisions of the Texas Tax Code govern the legal, statutory, and administrative requirements of the appraisal district. A board of directors, appointed by the taxing units within the boundaries of Guadalupe 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 23 jurisdictions in the district. Each jurisdiction, such as the county, a city, school district, municipal utility district, sets its own tax rates to generate revenue to pay for public services provided by the unit to the public. Appraisals established by the appraisal district allocate the year's tax burden based on each taxable property's January 1<sup>st</sup> market value. The G.A.D. also determines eligibility for partial property tax exemptions such as homestead, disabled veteran's homestead, over 65, disability, and disabled veterans. As well, the G.A.D. also determines eligibility for absolute exemptions, for religious organization, and qualifying charitable organizations that are also specifically outlined in the Texas Tax Code.

#### **The Guadalupe Appraisal District does not perform assessment or collection functions for any taxing units.**

The collection and assessment function are determined by the taxing unit itself. It should be noted that there could be the situation that the County portion of ad-valorem taxes is assessed and collected by the Guadalupe County Tax Assessor-Collector while ISD and City (if applicable) ad-valorem tax is assessed and collected by another Tax Assessor-Collector, as determined by the taxing unit.

It should also be understood that the scope of appraisal for ad-valorem purposes is conducted as a mass appraisal where there is a universe of properties to appraise, and there could be information that the District does not know about a property, and only becomes aware when either the property owner provides the District with a rendition of real property or when the property owners file a protest.

All taxable property is appraised at its "market value" as of January 1<sup>st</sup> of each year except as otherwise provided by the Texas Tax Code. Under the Texas 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 able to take advantage of the exigencies of the other.

The Texas Tax Code defines special appraisal provisions for the valuation of residential homestead property (§23.23), productivity (§23.41), real property inventory (§23.12), dealer inventory (§23.121, 23.124, 223.1241 and 23.127) related to motor vehicle, vessels and outboard motors, manufactured housing, and heavy equipment. As well, Texas Tax Code outlines nominal (§23.18) or restricted use properties (§23.83). The owner of real property inventory may elect to have the inventory appraised at its market value as of September 1<sup>st</sup> 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 1<sup>st</sup>.

In addition, §23.01 (c) of the Texas Tax Code indicates that 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.

Distress sales are included in the model calibration for residential properties in the G.A.D. for the 2022 year, as in previous years since requirement under legislation was effective.

Also, in §23.01 (d) the Texas Tax Code indicates that: “The market value of a residence homestead shall be determined solely based on the property’s value as a residence homestead, regardless of whether the residential use of the property by the owner is the highest and best use of the property.

The G.A.D. has made a concerted effort to recognize residential properties in areas where the highest and best use of the property is commercial or industrial and value these residential properties on a residential basis. This is a recognized jurisdictional exception required in the Texas Tax Code.

As well, §23.01 (e) of the Texas Tax Code indicates “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 appraised 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 the reliable and probative evidence in the record is considered in its entirety. 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 when compared to 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.” For the 2022 year, the G.A.D. made a concerted effort to abide by this section of the Texas Tax Code and reviewed properties that had an A.R.B. decision or arbitration ruling in the 2021.

The Texas Tax Code, under Section 25.18, requires each appraisal office to implement a plan to update appraised values for real and personal property at least once every three to five years. The district’s current policy is to conduct a general reappraisal of real property annually. Personal property, industrial property, complex commercial property, and utility property values are reviewed or reappraised every year and changes are made based on the quality and availability of market data and/ or rendition data.

The appraised value of real estate is calculated using specific information knowledgeable to the Guadalupe Appraisal District about each property. As information becomes known to the Guadalupe Appraisal District, the opinion of the appraiser may change based on observations currently known and thus modifications may be made to the market or appraised value of property. Using computer-assisted appraisal programs, and recognized appraisal methods and techniques, the Guadalupe Appraisal District will compare 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 (I.A.A.O.) 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 (U.S.P.A.P.) to the extent they are applicable, and where there are jurisdictional exceptions outlined in the Texas Tax Code. 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 Chief Appraiser is primarily responsible for overall planning, organizing, staffing, coordinating, and controlling of district operations. The function of the Operations Department is to plan, organize, direct and control the business support functions related to human resources, budget, finance, records management, purchasing, fixed assets, facilities and ancillary services. The Appraisal Department is responsible for the valuation of all real and personal property parcels in the district. Categories of property appraised include vacant land, commercial, residential, business personal, manufactured housing, and industrial. The Deputy Chief Appraiser maintains oversight and management over this department. All district appraisers are registered with the Texas Department of Licensing and Regulation (T.D.L.R.) and are in good standing. Support functions include customer service, data entry, mapping-abstracting-G.I.S., and systems. The Director of Administration maintains oversight and management over these functions. The primary responsibility of G.A.D. support staff is related to serving property owners in a wide range of issues that are not related specifically to the appraisal of properties in the district, however, are crucial to the overall efficient operation, appraisal of property, and administration of exemptions for the Guadalupe Appraisal District.

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

- 3 – Administrators
- 2 – Human Resource Coordinators
- 2 – Appraisal Team Leaders
- 14 – Appraisal Professionals
- 18 – Support Professionals (full-time)
- 1 - Support Professional (part-time)

### *Data- (Support Function)*

The district is responsible for establishing and maintaining approximately 91,720 parcels covering 713 square miles. Total property count for 2022 climbed to 99,439 when personal property (4,855) and mineral accounts (2,864) are included. This data includes individual property characteristic as well as ownership and exemption information. The data currently provided in our database dates to the 2002 year. Property characteristic data on new construction is updated through an annual field inspection effort and in-house G.I.S. inspection efforts; existing property data is maintained through a field review that is prioritized first by flagged accounts for field

inspection and outdated field inspection date ranges. Confirmation of sales activity is continuous throughout the majority of calendar year. Validation of sales activity is accomplished through multiple sources which can occur while in the field, through completed sale survey letters, submitted appeal documentation, or from private entities.

The district has a geographic information system (G.I.S.) that maintains a parcel map and various layers of data, to include dated aerial photography, applicable zoning information, and presence of FEMA flood hazard zones, to point out a few of the more important layers. The aerial photography for the 2022 year was obtained through a paid subscription with Nearmap. The subscription includes two image dates annually, generally taking place in June and December. In 2021 flyovers occurred Wednesday, June 16<sup>th</sup> and Sunday, November 28<sup>th</sup>. The district's website contains a broad range of information available for public access, including detailed information on the appraisal process, the appraisal of property in the Guadalupe Appraisal District, property maps, a portal for eligible e-file properties to file protests online, tax calendar, and a wealth of industry related information. Downloadable files of related tax information (this is not the official tax rate listing, see appropriate Tax Assessor-Collector for this listing), local district promulgated forms, including exemption applications and business personal property renditions are also available. The District website is updated nightly and contains historical data as well. Some information retained in the District records is specifically exempt from Open Records requests, such as sales data, and an individual's personal data where an owner may qualify to keep their address confidential, social security numbers, rendition information provided by a property owner, and email addresses to list a few.

#### *Information Systems (Support Function)*

The information systems employed by G.A.D. include a data processing server, software applications, an internet website (*via service agreement with third-party software vendor*), and a VoIP phone system. The Information Systems personnel also maintains the District's geographical information system with support from the Mapping and Abstracting staff, where technical assistance is required. The District operates a Client-Server type systems architecture. This architecture requires a main server, and individual personal computer workstations. The district currently maintains a substation on the west end of the county to serve the property owners more conveniently in that part of the county. The District retains a contract for appraisal database maintenance services, G.I.S. maintenance services, and website maintenance services. The appraisal software is P.A.C.S., which is owned by The Harris Company, D.B.A. True Automation, Inc.

## **INDEPENDENT PERFORMANCE TESTING**

According to Chapter 5 of the Texas Tax Code, the Texas Comptroller of Public Accounts is required to test the validity of school district taxable values in each appraisal district and presume the appraisal roll values are correct when values are valid; and determine the level and uniformity of property tax appraisal in each appraisal district. With the implementation of HB 8, the Property Value Study will occur every other year. For 2022, the Texas State Comptroller of Public Accounts will be conducting a Property Value Study (P.V.S.) on the appraised values of the Guadalupe Appraisal District. The methodology used in the P.V.S. includes stratified samples to improve sample representativeness and techniques or procedures of measuring uniformity. This 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 districts, the reported measures include weighted mean, median level of appraisal, coefficient of dispersion (C.O.D.), level of properties within 10% of the median, the level of properties within 25% of the median and price-related differential (P.R.D.) for properties overall and by state category tested. At the time of this report preliminary results have yet to be published by the Comptroller's office.

There are 11 independent school districts in Guadalupe Appraisal District for which appraisal rolls are annually developed. The preliminary results of the P.V.S. are released in January of the year following the year of appraisal. The final results of this study are certified to the Education Commissioner of the Texas Education Agency (T.E.A.) in the following July of each year for the year of appraisal. This outside ratio study provides additional

assistance to the Guadalupe Appraisal District in determining areas of market activity, changing market conditions, or areas of appraisal review for the subsequent appraisal year.

# Appraisal Activities

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## INTRODUCTION

### *Appraisal Responsibilities*

The appraisal staff is responsible for collecting and maintaining property characteristic data for classification, valuation, and other purposes. Accurate valuation of real and personal property by any method requires physical description of property real and personal, as well as land and building characteristics. This appraisal activity is responsible for administering, planning, and coordinating all activities involving data collection and verification and maintenance of all commercial, residential and personal property types which are located within the boundaries of the district. The data collection and validation effort involve the field inspection of real and personal property accounts. Additionally, the use of aerial photography for field inspection efforts is acceptable, where reasonable and reliable information can be discerned from this tool. The goal is to field inspect property in the district once every five years. The G.A.D. retains an ongoing list of parcels both real and personal in this regard that are beyond this regarding the inspection dates.

### *Appraisal Resources*

- **Personnel** – The appraisal department consist of 16 appraisal positions.
- **Data** – The data used by field and G.I.S. appraisers include the existing property characteristic information contained in the appraisal card which is generated from the district’s appraisal database. Other data used includes parcel maps, aerial photography, sales data, fire or damage reports, building permits, septic permits, driveway permits, photography, survey information, and actual cost or income information.

## PRELIMINARY ANALYSIS

### *Data Collection/Validation*

Data collection of real property involves maintaining data characteristics of the property in the appraisal database. The information contained in the appraisal database includes site characteristics, such as land size, topography, and improvement data, such as square foot of living area (derived from exterior measurements of structures) year built, quality of construction, type of construction and condition. Field appraisers use appraisal manuals that establish uniform procedures for the correct listing of real property, which include established tolerances for measurements of structures. All properties are coded according to these procedures and the approaches to value are structured and calibrated based on this coding system. Field and G.I.S. appraisers use these manuals during their initial training and as a guide in their inspection of properties. Data collection for personal property involves maintaining information much like that of real property. The type of information retained in the appraisal database will be relative to business inventory, furniture & fixtures, machinery & equipment, cost, and location. More specifically, type, quality, count, and may include noted density of the items observed. Appraisers conducting field inspections will use a business personal property manual, initially within training, as a guide to consistently list all discovered business personal property that is taxable throughout their inspection processes. Data collection will strictly consist of factual property data readily available and photography of the property for appraisal services.

The appraisal manuals, utilized by the G.A.D. appraisers, are located onsite at main district office. The master copy of each manual is stored on the G.A.D.'s server. The softcopy on the appraisal manuals is considered the master copy for District purposes. Procedural manuals are reviewed periodically and updated, when necessary.

### *Sources of Data*

Data collection is achieved through multiple sources and methods, to include new construction field inspections, existing parcel field inspections, data review based on prior year discovery field inspection, informal and formal hearings, sales validation/surveys, newspapers/publications, internet websites, exemption applications and validation of structures listed on the appraisal card, as well as property owner correspondence where an updated application is not filed. A large amount of data comes from building permits, mobile home move permits, statements of location filed in the courthouse, driveway and septic permits received from taxing jurisdictions, as well as rendition information deemed reliable from the property owner.

Field inspection of properties in developing neighborhoods is generally a starting point and good source for beginning the data collection and validation process for the next year. Appraisers will validate entire neighborhoods to update the accuracy of characteristics of properties for new subdivisions filed at the County Clerk's office or in subdivisions that have vacant lots in the prior year and are not completely built out. The sales validation effort in real property pertains to the collection of data of properties that have sold. In residential and commercial, the sales validation effort can involve an on-site or aerial inspection by field appraisers to verify the accuracy of district data and to obtain confirmation of the sales price, if not already confirmed. In addition, discussions with the current owner surrounding the sale of the property maybe necessary to acquire additional information concerning the circumstances present during the sale. The real property sales conformation process has occurred for the 2022 year by way of sales survey letters in addition to third party information, and thus were validate using multiple sources.

Another possible source of information that will generate a field/aerial inspection of both real and personal property is information provided by property owners. This may come via a phone call, letter, email correspondence, or in person. This information will need to be carefully verified by a field inspection to be deemed a valid source of information. The district will flag these referenced properties for inspection; however, the appraiser will need to exercise good judgment to consider the ancillary environment for which such information is presented (i.e., during informal hearings, neighboring property owners, etc.).

### *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 make inspections throughout Guadalupe County, and information is recorded through use of hand-held mobile CAMA devices, a Data Entry Record Form, or on a subject property's appraisal card itself. Various Data Entry Record Forms exist, based on type of property inspected in the District, which aids in achieving an equal and uniform collection of data, among appraisal staff, across varying categories of property.

The quality of the data used is extremely important in establishing an accurate market value for a universe of properties. While production standards are established and upheld for the various field activities, quality of data is emphasized as the overriding goal of each appraiser. New appraisers are trained in the specifics of data collection set forth in the procedures section of G.A.D. appraisal manuals. Experienced appraisers will routinely complete in-house refresher training on these procedures prior to returning to major field projects, such as new construction, sales validation, or data review. These retraining efforts are routine during periodic appraisal staff meetings. Any identified quality control concerns are addressed at these appraisal staff meetings. Similarly, this approach to quality assurance is applied to appraisal support activities performed by G.A.D. support professionals. Both appraisal team leaders and the Deputy Chief Appraiser are charged with the responsibility of ensuring appraisers follow current listing procedures, identify potential areas of necessary training, and develop uniformed

training modules for application throughout appraisal staff. As previously mentioned, areas of concern identified are periodically discussed during both general appraisal staff and support staff meetings for awareness, training, or retraining purposes. To promote consistency through district staff, when a procedural change is being implemented within one area of district operations, personnel from other departments will be included in the training or retraining efforts. Generally speaking, annual appeal season begins in the month of April with the mailing of appraisal notices and runs through the certification of the appraisal roll on or before July 25<sup>th</sup>. This period of the year is not ideal for holding full staff meetings. Memos will be delivered to staff, during these periods, to address discovered quality control issues or as a notification tool.

### *Data Maintenance*

The field appraiser may elect to have data entry enter some of the data collected but appraisers are trending towards entering more of the data themselves. In the instance of the GIS team appraisers almost all the data is entered by the appraiser out of practicality. With the advent of new technology (I pads) the field appraiser is required to enter the data changes resulting from field inspections on their own. Field staff are now storing floor plans of homes electronically in the database rather than on hard copy paper. Having the calls to each sketch stored electronically contributes considerably to the ease in which field staff can now enter data for new home construction in developing subdivisions. The efficiency created is that a second individual is not required to interpret an appraiser's field inspection and reduces the opportunity for an error in interpretation. This will also free staff used for data entry for other tasks. In instances where there is a large amount of redundant data entry resulting from field inspections, the appraiser may still opt to turn their work into data entry. The appraiser will make every effort to afford neatness and legibility to aid in accuracy of entry of the collected data. These process changes, created by technology, contribute to improved efficiency throughout the Guadalupe Appraisal District, as a whole.

## **INDIVIDUAL VALUE REVIEW PROCEDURES**

### *Field Review*

The date of last inspection, extent of that inspection, and the appraiser responsible are listed on the appraisal card. If a property owner or jurisdiction dispute the entry on the appraisal records concerning this data presented during a hearing, via a telephone call or correspondence received, the appraisal record may be altered based on the level and quality of evidence provided. A field inspection can be made to verify property characteristics for the current year's valuation or for the next year's valuation, unless evidence is presented that in the judgment of the acting appraiser is substantial enough to make change to the appraisal record. The addition of annual aerial photography, along with confirmation received during industry conferences and seminars, the Comptroller's Office has indicated that inspections can be made from aerial photography. This process is used in the Guadalupe Appraisal District, and those inspection dates will reflect January 1<sup>st</sup> of the inspection year in the official record. Procedurally, the G.A.D. makes a written request to obtain consent from the legal owner or authorized agent of the property prior to any on the ground field inspections, as this enhances safety, and reduces the chance of potential liability claims for the Guadalupe Appraisal District. However, with this, the problem presents itself that there will not be a response from either the property owner or the agent. In these cases, the District will make a conservative estimation of value, based on the evidence and facts that the appraiser is aware of at the time.

### *Office Review*

Office reviews are completed on properties where validated information has been received from the owner of the property, when access to property cannot be attained. When the property data is verified in this manner, field inspections are not required, however may be conducted, and the use of aerial photography is employed, if deemed appropriate and reliable.

## **PERFORMANCE TEST**

The appraisal staff will be responsible for conducting ratio studies and comparative/statistical analysis.

Field appraisers, in many cases, may conduct field inspections to ensure the ratios produced are accurate and the appraised values utilized are based on accurate property data characteristics.

# Residential Valuation Process

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## INTRODUCTION

### *Scope of Responsibility*

The Residential Valuation appraisers are responsible for developing equal and uniformed market valuation models for the appraisal of residential improved and vacant property. There are approximately 70,000 improved residential parcels and approximately 9,500 vacant parcels; 5,200 residential inventory lots (O1) and 4,300 vacant parcels (C1).

### *Appraisal Resources*

- **Data** – A common set of data characteristics for each residential dwelling in Guadalupe County is collected in the field or by G.I.S. and data entered to the appraisal database. Through quality and condition classification schedules, the property characteristic data drives the appraisal database values and associated automated depreciation matrices.

## VALUATION APPROACH (Model Specification)

### *Area Analysis*

When possible and readily available, data on regional economic forces such as demographic patterns, regional locational 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 vetted from real estate publications and sources such as continuing education in the form of I.A.A.O. and T.A.A.D., and T.A.A.O. offerings, as required for T.D.L.R. registration requirements, which provides the appraisers a current economic outlook on the real estate market nationally, statewide and locally.

### *Neighborhood and Market Analysis*

Neighborhood analysis involves the examination of how physical, economic, governmental, social forces and other influences impact property values in a defined market area. 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 analysis is conducted on the individual neighborhoods annually. The appraisal staff is constantly redefining and looking for occurrences when a new neighborhood must be developed, or existing neighborhoods combined based on a property or group of properties outpacing or under pacing the general neighborhood in valuation.

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, type of construction and condition of dwellings, square footage of living area, access to amenities, natural boundaries such as a waterway or jurisdictional/governmental boundaries such as a school district or city limits line. This list of examples is used for illustration purposes only and is not an exhaustive list of items for neighborhood delineation. Delineation can and most of the time will 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, and overtime may ultimately change. 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 in nature. 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 or local facilities. The period of decline reflects diminished 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 revitalization; rebuilding, reorganization, or restoration which may promote increased demand and economic desirability. It is imperative to understand what stage the neighborhood is in during the delineation and analysis process; this alone will contribute to a better base understanding for the appraiser during calibration process and efforts to arrive at an equal and uniform market value.

Neighborhood identification and delineation is the cornerstone of the residential valuation system at the district. This aids to ensure equality and uniformity across the district. Additionally, properly identified neighborhoods increase the accuracy and equality of appraisals across the board. Residential analysis in association with the residential valuation process is neighborhood specific. Neighborhoods are field-inspected and delineated based on observable aspects of homogeneity. This effort may be easier to undertake in track style subdivisions and may require more time to develop for residential properties located in unincorporated areas, or along waterways. Neighborhood delineation is constantly reviewed to determine if further neighborhood delineation is warranted. Neighborhood grouping is highly beneficial in cost-derived areas of limited or no sales. Neighborhood groups, or clustered neighborhoods, increase the available market data by linking comparable properties outside a given neighborhood. Sales ratio analysis is performed at the neighborhood level annually. The concept of "Super Neighborhoods" can be implemented and effectively used during times of limited market sales information. A "Super Neighborhood" can be identified more broadly by profiling fewer property characteristics such as builder, general quality and year build. This approach increases flexibility regarding statistical analysis in the event market data is limited within the District.

### *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 permissible, 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. There is a process of logic for highest and best use analysis conducted for any mixed-use area. If the conclusion is made that the highest and best use remains residential, further highest and best use analysis is performed to decide the type of residential use of a neighborhood basis. Highest and best use analysis is an opinion. For 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 commercial improvements. Legislative changes that have occurred due to HB 3613 amending § 23.01 of the Texas Tax Code, now "require that the market value of a residence homestead, as defined by the property tax code, be determined solely on the basis of the current use of the property regardless of its highest and best use.", and thus evaluated based on the current use and not the highest and best use. This piece of legislation creates a jurisdictional exception and limitation for properties that qualify as a Residence Homestead, where the Highest and Best Use is something other than residential in nature. As stated previously in this report, the Guadalupe Appraisal District has recognized some residence homestead property where the highest and best use of the parcel is commercial in nature. In this situation, the District follows the jurisdictional exception, and the District provides for a residential valuation to the property instead of a commercial valuation of the property. Caution should be exercised in comparing these properties as related to equal and uniform appraisal, as the jurisdictional exception

may create the appearance of unequal appraisal, however, it is rather this jurisdictional exception that creates this appearance.

## **DATA COLLECTION/VALIDATION**

### *Sources of Data*

The district's property characteristic data was originally received from the taxing jurisdiction records in 1980 and where absent, collected through ongoing massive data collection efforts coordinated by the district each day. Tax assessor-collector offices, taxing jurisdictions and local newspapers, and the public often provide the district information regarding new construction, market patterns, and other useful facts related to property valuation that the District may not be aware of.

## **VALUATION AND STATISTICAL ANALYSIS (Model Calibration)**

### *Cost Schedules-Market Modified*

Residential parcels in the district are valued from market modified cost schedules using a comparative unit method. The district's residential cost schedules have been customized to fit Guadalupe County's local residential real estate market, based on acquired sales data. The cost schedules are reviewed annually and updated based on available and validated cost information over the prior year through information reported in Marshall and Swift Residential Valuation Service and adjusted locally.

An extensive review and modification of the residential cost schedule was performed for the January 1, 2022 appraisal date. As part of this process, sales of new and existing residential properties at various levels of class/quality of construction in Guadalupe County were reviewed. The data characteristics of these properties were verified. The results of the residential analysis for the Guadalupe Appraisal District are detailed at length in **Exhibit B**. The 2022 residential analysis indicated a county-wide average sales-based time-adjustment factor of approximately 2.5% per month or 30% annually. Similar historical year-over-year appreciation was observed state-wide and largely a result of market conditions involving high demand and limited supply.

### *Sales Information*

A sales file for the storage of sales data at the time of sale is maintained. Sales information is categorized by the geographic account numbering system the district assigns related to abstract/survey or subdivision. Residential improved and vacant sales are collected from a variety of sources, including owner's confirmations in the field or during protest hearings, multiple listing service, sales survey letters, various private entities, online sources, builders, realtors, brokers and various publications. A system of type, source, and verification codes has been established to define salient facts related to a property's purchase or transfer. School district and or neighborhood sales reports are generated as an analysis tool throughout the year for the appraiser in the development of value estimates. Sales information is held confidential by the Guadalupe Appraisal District, and exceptions are outlined in Section 552 of the Texas Government Code.

### *Land Analysis*

Residential land analysis is conducted by the residential appraisers on staff. The appraiser develops a base lot, front foot, or acreage value, and assigns each unique neighborhood to an appropriate land acreage, front foot, or lot schedule. A computerized land table stores the land information required to consistently value individual parcels within neighborhoods. Specific land influences are used, where necessary and when readily known to the appraiser, to adjust parcels outside the neighborhood parameters for such factors as shape, size, and topography, among other relevant factors. The appraisers use abstraction and allocation methods to ensure that the land values created best reflect the contributory market value of the land to the overall property value. Typically, in average

track style subdivisions the land will have an average contributory value of 12%, based on a prior Guadalupe Appraisal District study<sup>1</sup>. For land with a waterfront influence, the land will contribute about 50% to the overall property value, based on a Guadalupe Appraisal District study<sup>2</sup>. Further, appraisers will run sales ratio reports for vacant land market data during the calibration of the neighborhood, in determining base land values. Similarly, the use of competing neighborhoods where there may be available sales data can be used to evaluate base land values in addition.

### *Statistical Analysis*

The residential valuation department performs statistical analysis annually to evaluate whether values are equitable and consistent with the market. Ratio studies are conducted on each of the approximately 500 residential valuation neighborhoods in the district to judge the two primary aspects of mass appraisal level of accuracy and uniformity of value. Appraisal statistics of central tendency and dispersion generated from sales ratios are reviewed where available. These summary statistics include, but are not limited to, the weighted mean, median, standard deviation, coefficient of variation, and coefficient of dispersion. These observations provide the appraisers tools by which to determine both the level and uniformity of appraised value. The level of appraised values can be determined by the weighted mean for individual properties within a neighborhood. A comparison of neighborhood-weighted means can reflect the general level of appraised value between comparable neighborhoods. Review of the standard deviation, coefficient of variation, and coefficient of dispersion can discern appraisal uniformity within and between stratified neighborhoods.

Every residential neighborhood is reviewed annually by the appraiser through the sales ratio analysis process. The first phase involves neighborhood ratio studies that compare the recent sales prices of neighborhood properties to the appraised values of these sold properties. This set of ratio studies affords the appraiser an excellent means of judging the present level of appraised value and uniformity of the sales. The appraiser, based on the sales ratio statistics and designated parameters for valuation update, will make a recommendation as to whether the value level in a neighborhood should be updated in an upcoming reappraisal, or whether the level of market value in a neighborhood and uniformity is at an acceptable level, based on established tolerances. The analysis conducted by the appraisal staff tasked with this level of analysis is subjected to random review by the Residential Appraisal Team Leader and Deputy Chief Appraiser for quality assurance purposes.

### *Market Adjustment or 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 market modified cost comparison approach. This type of approach accounts for neighborhood market influences not specified in cost model.

The following equation denotes a general illustration of the market modified cost comparison model used:

$$\text{Market Value of Subject} = \{ \{ [\text{Sq. Ft.} * (\text{Replacement Cost New} * \text{Countywide Market Adjustment}) * \text{Depreciation}] + \text{Land Value} \} * \text{Neighborhood Adjustment}$$

The cost approach separately estimates both land and building values which reflect only the replacement cost of the property, The County wide market adjustment to the cost value is needed to calibrate the cost approach to value to an average level of market value for the County as a whole. Automated depreciation factors are applied and neighborhood adjustments account for market variances across a jurisdiction.

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<sup>1</sup> Process to determine base lot values in typical track home subdivisions when there is an absence of confirmed or credible vacant lot market data (2014)

<sup>2</sup> Study Guide Land Contribution (2013)

When a neighborhood is to be reviewed, the appraiser uses a ratio study that compares recent sales prices of properties within a delineated neighborhood to the County wide average market modified cost approach derived value. The calculated ratio derived from the sum of the sold properties' County wide average modified cost value divided by the sum of the sales prices indicates the average weighted mean level of accuracy for the neighborhood. The average weighted mean level of accuracy, if under 100% or over 100%, identifies if the neighborhood, as a whole including sold and unsold properties, needs to be factored up or down. This helps ensure equity. This market adjustment factor is needed to trend the values obtained through the County wide average market modified 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 accurate and equitable values for the public regarding the stated scope of appraisals for ad-valorem tax purposes. The market adjustment factor calculated for each neighborhood is applied uniformly to all properties within a neighborhood. Once market-trend factors are applied, ratio studies are reviewed with the proposed appraised values for these properties. From this set of ratio studies, the appraiser judges the appraisal results for level of accuracy and uniformity.

## **TREATMENT OF RESIDENCE HOMESTEADS**

Beginning in 1998, the State of Texas implemented a highest and best use restriction concerning the appraisal of residential property that receives a residence homestead exemption. Under the law, beginning in year two of qualification, under a residence homestead exemption; increases in the value of that property are "capped." The value for tax purposes (appraised value not market value) of a qualified residence homestead will be no more than the preceding year's appraised value:

PLUS, 10 percent for each year since the property was re-appraised.

PLUS, the value of any improvements added.

Values of capped properties must be recomputed annually. If a capped property sells, the cap automatically expires as of January 1<sup>st</sup> 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 without any base cap limitation in place. An analogous provision applies to new homes. While a developer owns them, unoccupied residences may be appraised as part of an inventory, subject to an application and rendition process. However, in the year following a transfer of ownership, any applicable adjustments for the developer inventory status are removed. It should be noted that for equity comparisons, the market value is the base comparison, rather than the capped value, as this would lead to extreme cases of inequity due to the jurisdictional exception outlined in the Texas Tax Code. Further, not all property that have a Homestead Exemption are capped, thus the accurate comparison for equity purposes would be the market value as the baseline.

## **INDIVIDUAL VALUE REVIEW PROCEDURES**

### *G.I.S./Field Review*

The appraiser identifies individual properties in critical need of G.I.S./field review through sales ratio analysis, among other sources of discovery. Sold properties with a high variance in sales ratios are field inspected and or reviewed by G.I.S. to check for accuracy of data characteristics and updating all relevant individual property characteristics.

The sustained growth observed within the county over the previous decade requires appraisal staff annually conduct field or G.I.S. review activities in areas considered to be transitioning or in high demand. The increased sales activity in the more populous sections of the district over this period has required a substantial field effort

on the part of the residential appraisers to identify sale outliers for inspection while seeking additional sources, when necessary, to validate transaction details in an effort to resolve cause of outlier status. As part of the G.I.S./field review, appraisers review subjective data items such as quality of construction, condition (physical depreciation), functional or economic obsolescence factors which contribute significantly to the market value of the property. The subjective data is reviewed when properties are flagged for inspection or during new flagged construction on an ongoing basis.

### *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 may be reviewed in the office. Valuation reports comparing previous values against proposed and final values are generated for residentially improved properties; these reports will be run to gain a total review. The dollar amount and percentage of value differences 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. Prior appraisal year values resulting from an A.R.B. hearing, arbiter's ruling, or lawsuit are individually reviewed to determine if the value remains appropriate for the current year in relation to equity for the coming year.

Once the appraiser is satisfied with the level and uniformity of value for each neighborhood within his area of responsibility, the value estimates may be released for the notice process.

## **PERFORMANCE TESTS**

### *Sales Ratio Studies*

The primary analytical tool used by the appraisers to measure and improve performance is the ratio study.

### *Management Review Process*

Once the proposed value estimates are finalized, the appraiser reviews the sales ratios by neighborhood and presents pertinent valuation data to the Residential Appraisal Team Leader, Complex Appraisal Team Leader, or Deputy Chief Appraiser for final review and approval. The primary objective of this review is to ensure that the proposed values have met preset appraisal standards of tolerance.

An independent test of the appraisal performance of the district is conducted by the State of Texas Comptroller's Office through the Property Value Study. The study determines the accuracy, degree of uniformity and the median level of appraisals by the appraisal district within each major category of property. The Comptroller's Office publishes a report of the findings of the study for each category of property tested, including the median appraisal levels, the coefficient of dispersion, and any other standard statistical measures that the Comptroller deems appropriate.

A complete copy of the district's 2021 Texas Comptroller MAPS Review can be found online at:

<https://comptroller.texas.gov/taxes/property-tax/map/2021/guadalupe-2021.pdf>

- For the sake of volume, the website for this stored data is referenced in **Exhibit A**.

A complete copy of the district's most recently completed Property Value Study (2020) by Texas Comptroller of Public Accounts can be found online at: <https://comptroller.texas.gov/taxes/property-tax/pvs/2020p/094index.php>

- For the sake of volume, the website for this stored data is referenced in **Exhibit A**.

# Commercial Valuation Process

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## INTRODUCTION

### *Appraisal Responsibility*

This mass appraisal assignment falls within the responsibility of the Complex Appraisal Team Leader and includes all commercial, industrial, or multi-family classed real property located within the boundaries of the jurisdiction. The 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 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 allocated based on their legally recorded interests.

### *Appraisal Resources*

The improved real property appraisal responsibilities are categorized according to major property types of multi-family or apartment, office, retail, warehouse, and special use (i.e., hotels, hospitals, and nursing homes). Staffing includes two staff plus the Complex Appraisal Team Leader.

**Data** – The data used by the commercial appraisal staff includes verified sales of vacant land and improved properties and the pertinent data obtained from each (sales price levels, capitalization rates, income multipliers, marketing period, etc.). Other data used by the appraiser includes actual income and expense data typically obtained through the hearings process, surveys conducted by the Commercial Appraisal team, actual contract rental data, leasing information (commissions, tenant finish, length of terms, etc.) publications, and actual construction cost data. In addition to the actual data obtained from specific properties, market data publications are also reviewed and used to provide additional support for market trends and or capitalization rates. Various publications are attained for this purpose.

## PRELIMINARY ANALYSIS

### *Pilot Study*

Pilot studies are utilized to test new or existing procedures or valuation modification in a limited area of the district and are 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.

## 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 rents, interest rate trends, availability of vacant land, and construction trends and costs are collected from private vendors as well as from public sources. Continuing education as related to economic and legislative changes is in the form as required by the Texas Department of Licensing and Regulation (T.D.L.R.) is made available by offerings provided by Texas Association of Appraisal

Districts (T.A.A.D.), Texas Association of Assessing Officers (T.A.A.O) and International Association of Assessing Officers (I.A.A.O.).

### *Neighborhood Analysis*

The neighborhood is comprised of the land area and commercially classed properties located within the boundaries of Guadalupe County. 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, and for commercial valuation, commercial neighborhoods or land areas. 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 to similarities in rental rates, classification of projects date of construction, overall market activity or other pertinent influences, such as location. Economic area identification and delineation by each major property use type is the benchmark of the commercial valuation system. All income model valuation (income approach to value estimates) is economic area specific. This can be seen as developed and implemented in commercial valuation in the district where such influences as westerly and easterly commercial property types that are the same may have different values due to the delineated economic area due to location within Guadalupe County.

### *Highest and Best Use Analysis*

The highest and best use is the most reasonable and probable use that generates the highest present value of the real estate as of the date of valuation. The highest and best use of any given property must be physically possible, legally permissible, financially feasible, and maximally productive. For improved properties, highest and best use is evaluated as improved and as if the site were still vacant. This 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. This analysis ensures 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.

### *Market Analysis*

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, capitalization rate studies are analyzed.

## **DATA COLLECTION / VALIDATION**

### *Data Collection Manuals*

The primary manual pertinent to data collection and documentation is the Commercial Appraisal Manual. This manual is continually updated providing a uniform system of itemizing the multitude of components comprising improved commercial properties. All commercial properties located in Guadalupe Appraisal District's inventory are coded according to this manual and the approaches to value are structured and calibrated based on this coding system.

The sales information retained by the district is protected in nature, according to Chapter 552 of the Government Code, and only exempted from public disclosure in certain circumstances that are outlined therein.

### *Sources of Data*

With respect to the property characteristic data inventory system, every property subject to taxation by a jurisdiction within Guadalupe Appraisal District's area of responsibility is incorporated into the computer assisted mass appraisal database. Appraisers perform maintenance of special purpose properties. Any alterations to the properties involving building permits or other sources of discovery upon modifications are then reviewed. Also, if any major discrepancies are discovered during the hearings process or at any other time, properties are scheduled for field inspection process prior to the following notice cycle for the following January 1<sup>st</sup> appraisal date.

In terms of commercial sales data, Guadalupe Appraisal District receives a copy of the deeds recorded in the Guadalupe County Clerk's office that convey commercially classed properties. The deeds involving a change in commercial ownership are entered into the sales information system and researched to obtain the pertinent sales information. Other sources of sales data include the hearings process, local, regional and national real estate and financial publications. It is recognized by the district that since there is not any requirement of sales disclosure in the State of Texas, limited commercial sales data is obtained through multiple listing services, and thus is extremely problematic in the development process of a sales comparison approach to value. Instead, the Guadalupe Appraisal District relies heavily upon the survey process for income and expense information, as well as individual owner confirmations of properties sold, third party publications, and cost of construction may be discovered with new construction of various facilities in the Guadalupe Appraisal District.

### *Data Collection Procedures*

Data collection procedures have been established for commercial collection of data. Appraisers conduct G.I.S. and field inspections and record information on either a specifically designed commercial property data entry record or an appraisal card. This information is entered into the computer system and serves as the basis for the valuation of property.

The quality of data used is of paramount importance to accurate valuation of taxable commercial 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 procedures. Experienced appraisers are routinely re-trained in listing procedures prior to reentering major field projects such as new construction, sales validation or data review.

For those properties involved in a transfer of commercial ownership, an appraiser inquiry to research and validate the sale begins. Due to the limited and exclusive nature of the transfers of commercial property other sources may be used by the district to validate the sale in addition to the traditional sales survey. Other sources may include contacting the brokers involved in the sale, property managers or commercial vendors. In other instances, sales verification is obtained from local industry professionals. Finally, closing statements are periodically provided

during the hearings process. The actual closing statement is the most reliable and preferred method of sales verification. Also, deeds of trust will be given some weight, especially in the absence of any other available information.

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

### *Cost Schedules*

The cost approach to value is applied to improved real property utilizing the comparative unit method. This methodology involves the utilization of national cost data reporting services as well as actual cost information on comparable properties whenever possible. Cost model foundations are built and developed based on the Marshall & Swift Valuation Service models which includes 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 may be necessary to adjust cost data to reflect conditions in a specific market and changes in costs over a period. Automated depreciation schedules have been developed and employed based on what is typical for each property type.

Market adjustment factors such as external and/or functional obsolescence can be applied if warranted and based on evidence presented and are at the discretion of the appraiser during the hearing process. Procedurally, documented evidence is required to substantiate and validate these adjustments. A depreciation calculation override can be used if the condition or effective age of a property varies from the normal conditions 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 ratio studies or other market analysis. Accuracy in the development of the cost schedules, condition ratings and depreciation schedules will usually minimize the necessity of this type of adjustment factor, but nonetheless may be necessary to arrive at market value, based on the opinion of the appraiser.

### *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, or surveys conducted by the District. 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, and district surveys provided by property owners. 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 could represent parking income, laundry room facilities, 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 expense ratio estimates are based on a study of the local market, with the assumption of prudent management practices. Different expense ratios are developed for different types of commercial property based on use, and what is typical.

Another form of allowable expense is the replacement of short-lived items (such as roof or floor coverings, air conditioning or major mechanical equipment, appliances, and the like) 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 reserves for replacement.

Subtracting the allowable expenses, 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, age, and other factors. Therefore, application of the various rates and multipliers must be based on a thorough analysis of the market. A good example locally would be differences in market areas as seen in the west and northwest portion of the district compared to rest of the district.

Capitalization analysis is used in the income approach models. This methodology involves the capitalization of net operating income as an indication of market value for a specific property. Capitalization rates, both overall cap rates for the direct capitalization method and terminal cap rates for discounted cash flow analyses, can be derived from the market. When this information is available from the market, these capitalization rates are derived. Sales of improved properties from which actual income and expense data are obtained provide a very 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 specific to the region. The District will rely upon industry accepted publications by property type for the surveyed area closest to the District for capitalization rates for use in the income model for the 2022 year, as well as capitalization rates derived from the sales when available and deemed reliable.

### *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 (market modified) and income models become finalized. The results are keyed to the schedules and models in the appraisal database for utilization on all commercial properties in the district. The schedules are summarized in the Commercial Appraisal Manual. This manual is provided to appraisers and is made available to the public in a detailed and easy to understand format.

### *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, value change analysis and sales ratio analysis.

Appraisal statistics of central tendency may be generated from sales ratios and are available for each property type. These summary statistics 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 comparison of weighted means can reflect the general level of appraised value.

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, vacancy and occupancy levels, secondary income, allowable expenses, net operating income and capitalization rate and multipliers are continuously reviewed and validated. Income model conclusions are compared to actual information obtained on individual commercial properties during the hearings process as well as information from published sources, area vendors, and District surveys.

## **INDIVIDUAL VALUE REVIEW PROCEDURES**

### *G.I.S./Field Review*

The date of last inspection, extent of that inspection, and the Guadalupe Appraisal District appraiser responsible are listed in the appraisal records. If a property owner disputes the District's records concerning this data in an informal or formal protest hearing, the appraisal records may be altered based on the credibility and weight of the evidence provided. Typically, a G.I.S. or field check may be requested to verify this evidence for the current year's valuation or for the next year's valuation. In addition, if a building permit or any other similar source of discovery type is filed for a particular property indicating a change in properties characteristics, that property is flagged for an inspection. Finally, even though every property cannot be inspected each year, each appraiser typically designates certain segments of their area of responsibility to conduct G.I.S. and or field inspections to update individual property characteristics.

Commercial appraisers are somewhat limited in the time available to field review all commercial properties annually. However, a major effort is made by appraisers to conduct a G.I.S. and or field inspection once every three to five years or as many properties as time allows or in economic 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 inspect to review subjective data items such as building class, quality of construction, condition, and physical, functional and economic obsolescence factors contributing significantly to the market value of a commercial property. In some cases, field inspections 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 values against their own appraisal judgment. While in the field, and when sales information is available, the appraisers physically inspect sold and unsold properties for comparability and consistency of values District wide.

### *Office Review*

Office reviews are completed on properties not flagged for field inspections. The use of all three approaches to value for commercial property is necessary, as information essential to fully develop and perfect a specific approach to value will remain limited due to the nature and source of available data from the property owners. Thus, the Appraiser will need to determine annually what information is available and the quality of this available information to guide them to decide which would be the most appropriate model.

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 are submitted to the notice process. 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 the notice process.

## **PERFORMANCE TESTS**

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 are typically represented by sales prices. Independent appraisals may also be used to represent market value in a ratio study when presented and are deemed reliable. This can be particularly useful for commercial, warehouse or industrial real property for which sales are limited. In addition, appraisal ratios studies can be used for properties statutorily not appraised at market value but reflect the use-value requirement. An example of this is multi-family housing projects subject to subsidized rent provisions or other governmental guarantees as provided by legislative statutes.

Guadalupe Appraisal District adheres to the IAAO Standards on Ratio Studies. Ratio studies generally have six basic steps: (1) determination of the purpose and objectives, (2) data collection and preparation, (3) comparing appraisal and market data, (4) stratification, (5) statistical analysis, and (6) evaluation and application of the results.

### *Sales Ratio Studies*

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

Commercial sales ratios may be generated by use type to allow appraisers to review general market trends in their area of responsibility. The appraisers utilized desktop applications such as Microsoft Excel programs as well as sales ratio analysis programs folded into the appraisal database to evaluate subsets of data by economic area or a

specific and unique data items. In many cases, field inspections may be conducted to ensure the ratios produced are accurate and the appraised values utilized are based on accurate property data characteristics. These ratio studies aid the appraisers by providing an indication of market activity by economic area or changing market conditions.

### **Comparative Appraisal Analysis**

The commercial appraiser performs an average unit value comparison in addition to a traditional ratio study for some specific property types. These studies are performed on commercially classed properties by property use type. The objective to this evaluation is to determine appraisal performance of sold and unsold properties. Appraiser's average unit prices of sales and average unit appraised values of the same parcel and the comparison of average value changes of sold and unsold properties. In this way, overall appraisal performances are 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 when accounting for differences.

### **Annual Commercial Summary Report**

A copy of the 2022 Commercial Summary Report has been included as **Exhibit C**.

# Business Personal Property Valuation Process

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## INTRODUCTION

### *Appraisal Responsibility*

There are three different personal property types appraised by the district's personal property section: General Business Personal Property accounts; Leased Assets, and Vehicles. These three types combined total approximately 4,855 business personal property accounts in Guadalupe County for the 2022 year.

### **Appraisal Resources**

- **Personnel** – The personal property staff consists of two appraisers.
- **Data** – A common set of data characteristics for each personal property account in Guadalupe County is collected in the field and data entered to the district's computer. 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 modeled from those outlined by O.S.H.A., which are referenced by the Texas State Comptroller of Public Accounts Sales Tax Division. These classifications are used by Guadalupe Appraisal District 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. 130 business personal property SIC codes are currently in use by the district. O.S.H.A. outlines approximately 1,000 SIC codes. SIC codes are 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 feasible, and productive to its minimum. 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 process. Renditions received by the Guadalupe Appraisal District are deemed confidential, under Section 22.27 of the Texas Tax Code.

## *Sources of Data*

### Business Personal Property

The district's property characteristic data was originally received from the taxing jurisdictions and various school district records in 1980, and where absent, collected through a massive field data collection effort coordinated by the district over a period. When revaluation activities permit, district appraisers collect new data via the annual field and G.I.S. inspection process. This project results in the discovery of new businesses not revealed through other sources. Various discovery publications which are referenced in detail in the business personal property manual are also employed to discover new or historically existing business personal property. Tax assessor, city and local newspapers, tenant lists, internet website listings, and the public often provide the district information regarding new business personal property and other useful facts related to property valuation.

### Vehicles

An outside vendor will provide the Guadalupe Appraisal District with a listing of vehicles within Guadalupe County. The vendor develops this listing from the Texas Department of Transportation (DOT) Title and Registration Division records. This information will aid the Business Personal Property Appraisers to implement a Quality Control Project when comparing the renditions supplied by a company. Other sources of data include property owner renditions and G.I.S. and field inspections.

### Leased Assets

The primary source of leased and multi-location assets is property owner or agent rendition of property. Other sources of data include G.I.S. and field inspections at the specific location(s) where such leased assets hold situs.

## **VALUATION AND STATISTICAL ANALYSIS (model calibration)**

### *Cost Schedules*

Cost schedules may be developed by SIC code by district Business Personal Property Appraisers. The cost schedules may be 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. Since confirming sales for this type of property is rare, the District will rely on the cost approach less depreciation method for valuation of business personal property in the Guadalupe Appraisal District. The District has built local schedules, where data to do so is available and reliable, applicable to several SIC codes in the District.

### *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 codes.

### *Depreciation Schedule and Trending Factors:*

### Business Personal Property

Guadalupe Appraisal District's primary approach to the valuation of business personal property is the cost approach. The replacement cost new less depreciation (RCNLD) is developed from property owner reporting

the original cost and acquisition year data. The percent good depreciation factors used by Guadalupe Appraisal District are updated annually.

### Vehicles

Value estimates for vehicles are provided by an outside vendor and are based on NADA published book values. Vehicles that are not valued by the vendor are valued by an appraiser using published guides. The valuation method is based on market value with adjustments made for known upgrades and mileage where applicable.

### Leased Assets

Leased and multi-location assets are valued using the RCNLD method as well. If the asset to be valued in this category is a vehicle, then NADA published book values are used. Assets that are not valued by the vendor are valued by an appraiser determining the present value of the asset or published industry guides.

## **INDIVIDUAL VALUE REVIEW PROCEDURES**

### *Office Review*

#### Business Personal Property

A district valuation computer program exists in the client 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, parcels that exceed \$1 million in value are validated annually, as well as the systematic field inspection of non-rendered business personal property accounts from the prior year and parcels that have recently transacted.

### Vehicles

A vehicle master file is received in a soft file format from an outside vendor. The district conducts a match in conjunction with working the renditions, and any unmatched vehicles used for business purposes will have a new account created as needed where there is an identifiable business entity within the jurisdiction. In those instances where there are a vast number of vehicles under an individual's name, the District will take an opportunity to correlate this information with additional District resources to validate if these could potentially be used for business purposes. Vehicles that are not valued by the vendor are valued by an appraiser using the present market value of the asset using recognized published industry guides.

### Leased Assets

Leased assets are required to be rendered annually, as is all business personal property. The appraisers will individually catalog assets in like jurisdictions into one account. The reported data is used to match existing accounts or create new accounts on the appraisal roll. Application of the RCNLD method of valuation will be applicable to these assets. Assets that are not rendered may likely no longer be located at the situs, and the appraiser will need to verify this with the deleted properties listing if provided or determine if the asset is at the location. The appraiser will take the necessary action to validate whether the asset is still at the location, either through a field inspection or documentation from a reporting agency, or both.

## **PERFORMANCE TESTS**

### ***Ratio Studies***

With the implementation of HB8, the Property Tax Division of the Texas State Comptroller of Public Accounts will conduct a Property Value Study (P.V.S.), every other year and may occur annually if local value is not certified to T.E.A. The P.V.S. is a ratio study used to gauge appraisal district performance. Results from the P.V.S. play a role in the school funding formula. Rather than a sales ratio study, the business 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 Guadalupe Appraisal District's personal property values and ratios are formed.

## Contracted Appraisal Services

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The appraisal of certain heavy industrial improvements (F2), business personal property (L2), utilities, and minerals are performed by Capitol Appraisal Group, LLC (CAG). The required mass appraisal valuation procedures and processes, for these categories of properties, are outlined in Exhibit E.

Provided below is contact information and listing of CAG appraisal staff assigned to provide mass appraisal assistance in 2022.

Capitol Appraisal Group  
9300 Research Blvd., Suite 100  
Austin, Texas 78759-6510  
512.346.5480

### Appraisal Staff

<u>NAME</u>	<u>TDLR#</u>	<u>EXPIRATION DATE</u>
Dave Popelar	#71614	December 27, 2022
Kenneth Hitt	#71452	June 27, 2022
Gregg Davis	#71552	October 13, 2022
Noel Wilcoxson	#71581	November 21, 2022
Geri "Tilly" Renfroe	#70171	March 16, 2022
Sandra Fain	#74641	November 13, 2022
Jeff Ronk	#75306	December 01, 2022

## G.A.D. APPRAISAL STAFF

Listed below are appraisal staff members that provided significant appraisal assistance in the mass appraisal of all taxable properties within the district's jurisdiction for 2022.

<b><u>NAME</u></b>	<b><u>TITLE</u></b>	<b><u>T.D.L.R. #</u></b>	<b><u>TYPE OF ASSISTANCE</u></b>
Erich Strey, R.P.A.	Deputy Chief Appraiser	63449 05/31/2022	Valuation Correlation
Jason Herrera, R.P.A.	Lead Agriculture/Land/Appraiser	73438 1/18/2022	Data Collection/Update Property Data/ Valuation Correlation
Jessica Lopez, R.P.A.	Lead Business Personal Property Appraiser	71054 03/10/2022	Data Collection/Update Property Data Valuation Correlation
Jennifer Tovar, R.P.A.	Complex Appraisal Team Leader	71947 10/12/2022	Data Collection/Update Property Data Valuation Correlation
Maria Villanueva.	Residential Appraiser	76588 11/16/2022	Data Collection/Update Property Data
Jim Fealy, R.P.A.	Senior Appraiser Analyst	69774 2/31/2022	Residential Team Management Valuation Correlation
Cassidy Smith	Residential Appraiser	76639 01/22/2022	Data Collection/Update Property Data
Robin Baker, R.P.A.	Commercial/Land Appraiser	74593 10/8/2022	Data Collection/Update Property Data Valuation Correlation
Angel Patterson, R.P.A.	Business Personal Property Appraiser	75617 11/17/21	Data Collection/Update Property Data
Laura Acuna	G.I.S Appraiser	75341 01/12/2022	Data Collection/Update Property Data
M'Cheyl Cox	GIS Appraiser	76351 10/22/2022	Data Collection/Update Property Data
Amber Sepulveda	GIS Appraiser	75288 02/20/2022	Data Collection/Update Property Data
Joe Clark	Residential Appraiser	75591 11/1/2022	Data Collection/Update Property Data
Renee Bond	Complex Team Appraiser	77035 01/28/2022	Data Collection/Update Property Data

## LIMITING CONDITIONS

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

1. The appraisals were prepared exclusively for ad valorem tax purposes only. Any other use of appraisal records is expressly prohibited. The issuer does not warrant any other uses.
2. The extraordinary assumption is that title to the property is good and marketable and the legal description is correct.
3. No responsibility for legal matters is assumed. All existing liens, mortgages, or other encumbrances have been disregarded and the property is appraised as though free and clear, under responsible ownership and competent management.
4. All sketches in the appraisal documents are intended to be visual aids and should not be construed as surveys or engineering reports.
5. Appraisers who are developing appraisals under mass appraisal guidelines and for ad-valorem purposes only are not required to give testimony or attendance in court by reason of the appraisal, unless directed by, employed by and provided legal counsel by the Guadalupe Appraisal District.
6. The Appraisers have inspected properties by observation and are limited where consent is not given by property owners for a field inspection. Inspections may be conducted via aerial observations and where consent is given for exterior field inspections. However, it is not possible to personally observe conditions unavailable to view such as the interior of structures or items beneath the soil or hidden structural components within the improvements. Therefore, no representations are made as to these matters unless specifically considered in an individual appraisal. Interior structure inspections are not conducted.
7. The property characteristic data upon which the appraisals are based is assumed to be correct. Exterior inspections of the property appraised were performed as appraisal staff resources and time allowed, with use of aerial photography where access to the property is not granted or when time constraints are present.
8. Validation of sales transactions are attempted through, owner sales confirmations, field inspections, and sales data obtained from private entities, and are deemed reliable. The sales file held by the Guadalupe Appraisal District is deemed confidential in nature as outlined in Section 552 of the Texas Government Code.
9. Attached is a list of those staff members and contract appraisers who have provided significant mass appraisal assistance.
10. Extraordinary assumptions are made through the entirety of the mass appraisal for the January 1st valuation date conducted and are based on the available information known to the Guadalupe Appraisal District at the time of the appraisal. If it is proven that the extraordinary assumption made is inaccurate, either in whole or part, the appraiser may change their opinion of value, and revise the opinion of value related to the January 1st value of the property.

Certification Statement:

“I, Peter Snaddon, Chief Appraiser for the Guadalupe Appraisal District, solemnly swear that I have made or caused to be made a diligent inquiry to ascertain all property in the district subject to appraisal by me, and that I have included in the records all property that I am aware of, at this time, at an appraised value which, to the best of my knowledge and belief, was determined as required by law. I have no present or prospective interest in the properties that are the subject of the report. I have no bias in respect to the properties that are the subject of this report. My engagement in the assignment was not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, or the attainment of a stipulated result. All appraisal staff and contracted appraisal firms that have provided significant mass appraisal assistance are identified on the subsequent pages.”

*Peter Snaddon*

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Peter Snaddon R.P.A. C.C.A.  
Guadalupe Appraisal District, Chief Appraiser  
TDLR # 72458

## EXHIBIT A

# 2022 Residential Improvement Valuation Summary

### Overview

Mass appraisal application for state category A1 Residential Improvements was conducted in the spirit of conformity as stated in USPAP Standard 5 in effect at the time of preparation. The replacement cost new approach is based on data contained in Residential Cost Handbook: Marshal and Swift adjusting for local market sales, property characteristics and unique improvement conditions. Sales data is received from the following public sources: Sales Confirmation Survey Letters provided by property owners, Multiple Listing Service Listings, and deed transfers recorded with the county. The sales data is analyzed to identify the inflationary trend over the year and then adjusted for time. Modifiers are applied to indicated replacement-cost- new (RCN) to adjust for size (economy of scale), market area (county wide sales), improvement quality of construction (class), local market area (school district), specific market area (subdivision) and physical condition of the property. These modifiers are derived from recognized appraisal valuation services data and local sales data.

Provided is a summary of the value inputs used to calibrate model. These values will impact the improvement value of properties identified by state codes: A, D and E.

### Time Adjustment Analysis

For a detailed review of the analysis, please refer to publication 'SUMMARY 2021 to 2022 Inflationary Trend Analysis that may be incorporated into 2022 Mass Appraisal Residential Property Valuation'.

### Value & Value Modifiers

#### Modifiers used to calculate unit price (2022 -vs 2021)

2022 Modifier		2021 Modifier	% Change	PACS Matrix
Various, see TABLE A	RCN at 1800 sqft	Various, see TABLE A	Various, see TABLE A	RESI #1 MS RCN @ 1800 sqft
99	Quarterly Multiplier, December, Current Cost Multiplier, Central District, Frame, Single-family, Detached Houses (all qualities) <sup>1</sup>	102	-2.94%	COMBINED #2 MS DISTRICT QRTLTY MUTPLYCENT
82	Quarterly Multiplier, December, Local Multiplier, United States, Texas, San Antonio, Frame/Masonry <sup>1</sup>	86	-4.65%	COMBINED #3 MS LOCAL MULTIPLIER TX-SA
Various, see TABLE B	Economy of Scale	Various, see TABLE B	Various, see TABLE B	RESI #4 MS AREA (ECOofSCALE) MODIFIER
140.50	GAD County Modifier-SALES (with respect to modifier, taking into consideration change in M&S multipliers) based on county wide sales analysis)	119.97	+17.11%	RESI #Sa GAD (Sales) MODIFIER
Various, see TABLE C	GAD County Modifier - CLASS (with respect to modifier, taking into consideration change in M&S multipliers and, county sales analysis) based on individual class sales analysis	Various, see TABLE C	Various, see TABLE C	RESI #Sb GAD (Class) MODIFIER
Various, see TABLE E	'Phantom' Unit Price at 1800 sqft	Various, see TABLE E	Various, see TABLE E	n/a

## RCN @ 1800 sq. ft.

The changes in replacement cost new (\$/sq.ft.) for each quality of construction class of main residential structure are detailed in TABLE A. These values are derived from data promulgated by CoreLogic®, Inc (Marshall & Swift). TABLE A duplicates data contained in software: Improvement Matrix RESI #1 MS RCN @ 1800 sq. ft.

**Table A**

RCN at 1800 sq ft. 2022

\$/sq.ft.								
Class	2022	2021	Change		Class	2022	2021	Change
R2	49.72	40.93	+21.48%		R6-	143.49	118.49	+21.10%
R3-	81.50	67.14	+21.39%		R6	146.42	120.07	+21.99%
R3	82.33	67.49	+21.99%		R6+	159.95	131.65	+21.50%
R3+	87.66	72.12	+21.55%		R7-	174.07	143.07	+21.67%
R4-	93.13	76.30	+22.06%		R7	187.69	154.07	+21.82%
R4	94.06	77.11	+21.98%		R7+	203.70	167.50	+21.61%
R4+	100.23	82.79	+21.97%		R8-	257.55	211.91	+21.54%
R5-	108.83	89.37	+21.77%		R8	274.90	225.13	+22.11%
R5	110.73	90.61	+22.21%		R8+	297.88	245.55	+21.31%
R5+	119.75	98.61	+21.44%		R9	342.56	282.38	+21.31%

# Economy of Scale

The changes in economy of scale modifier for each quality of construction class of main residential structure are detailed in TABLE B<sub>1</sub> and TABLE B<sub>2</sub>. These values are derived from data promulgated by CoreLogic®, Inc (Marshall & Swift). TABLE B<sub>1</sub> duplicates data contained in software: Improvement Matrix RES1 #4 MS AREA (ECO of SCALE) MODIFIER. TABLE B<sub>2</sub> indicates the change in 2022 values from 2021 values.

**TABLE B<sub>1</sub>**  
Economy of Scale (modifier) - 2022

2022 data	BASIC	LOW-	LOW	LOW+	FAIR-	FAIR	FAIR+	AVG-	AVG	AVG+	GOOD-	GOOD	GOOD+	VG-	VG	VG+	EXC-	EXC	EXC+	PREM	AREA
CLASS	2	3-	3	3+	4	4	4+	5-	5	5+	6-	6	6+	7-	7	7+	8-	8	8+	9	
1	228.83%	228.83%	228.01%	243.20%	194.05%	197.58%	205.50%	197.58%	197.58%	200.47%	191.98%	193.36%	202.58%	204.03%	213.76%	219.19%	189.52%	193.36%	198.27%	198.27%	1
50	228.83%	228.83%	228.01%	243.20%	194.05%	197.58%	205.50%	197.58%	197.58%	200.47%	191.98%	193.36%	202.58%	204.03%	213.76%	219.19%	189.52%	193.36%	198.27%	198.27%	50
200	166.12%	166.12%	165.76%	172.45%	150.15%	151.81%	155.53%	151.81%	151.81%	156.90%	149.17%	149.82%	154.16%	154.84%	159.33%	161.80%	148.19%	149.82%	152.15%	152.15%	200
400	141.54%	141.54%	141.33%	145.21%	132.08%	133.08%	135.30%	133.08%	133.08%	135.12%	131.48%	131.86%	134.49%	134.88%	137.55%	139.01%	130.90%	131.88%	133.28%	133.28%	400
600	128.88%	128.88%	128.75%	131.32%	122.54%	123.21%	124.71%	123.21%	123.21%	125.26%	122.13%	122.40%	124.16%	124.44%	126.25%	127.20%	121.73%	122.40%	123.35%	123.35%	600
800	120.60%	120.60%	120.50%	122.28%	116.19%	116.66%	117.70%	116.66%	116.66%	118.09%	115.98%	116.06%	117.32%	117.51%	118.76%	119.43%	115.62%	116.06%	116.75%	116.75%	800
1000	114.54%	114.54%	114.48%	115.89%	111.48%	111.82%	112.54%	111.82%	111.82%	112.81%	111.28%	111.42%	112.26%	112.41%	113.27%	113.74%	111.09%	111.42%	111.88%	111.88%	1000
1200	109.82%	109.82%	109.77%	110.58%	107.79%	108.01%	108.49%	108.01%	108.01%	108.67%	107.68%	107.75%	108.32%	108.40%	108.96%	109.29%	107.53%	107.75%	108.05%	108.05%	1200
1400	105.98%	105.98%	105.95%	106.43%	104.76%	104.89%	105.18%	104.89%	104.89%	105.29%	104.68%	104.73%	105.05%	105.13%	105.47%	105.66%	104.60%	104.73%	104.92%	104.92%	1400
1600	102.76%	102.76%	102.75%	102.96%	102.20%	102.25%	102.40%	102.25%	102.25%	102.44%	102.17%	102.19%	102.35%	102.37%	102.53%	102.61%	102.13%	102.19%	102.28%	102.28%	1600
1800	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	1800
2000	97.60%	97.60%	97.61%	97.42%	98.01%	98.02%	97.90%	98.02%	98.02%	97.86%	98.10%	98.08%	97.95%	97.93%	97.79%	97.72%	98.13%	98.08%	98.01%	98.01%	2000
2200	95.47%	95.47%	95.49%	95.15%	95.36%	95.25%	95.06%	95.25%	95.25%	95.91%	95.41%	95.31%	95.12%	95.09%	95.04%	95.70%	95.47%	95.31%	95.24%	95.24%	2200
2400	93.57%	93.57%	93.60%	93.11%	94.82%	94.89%	94.38%	94.68%	94.68%	94.27%	94.90%	94.84%	94.46%	94.44%	94.08%	93.89%	94.98%	94.84%	94.65%	94.65%	2400
2600	91.86%	91.86%	91.89%	91.28%	93.42%	93.25%	92.88%	93.25%	93.25%	92.74%	93.53%	93.46%	93.01%	92.94%	92.50%	92.26%	93.63%	93.46%	93.22%	93.22%	2600
2800	90.30%	90.30%	90.34%	89.62%	92.15%	91.95%	91.58%	91.95%	91.95%	91.34%	92.27%	92.19%	91.66%	91.58%	91.05%	90.79%	92.40%	92.19%	91.91%	91.91%	2800
3000	88.87%	88.87%	88.91%	88.10%	90.98%	90.75%	90.24%	90.75%	90.75%	90.06%	91.12%	91.03%	90.45%	90.33%	89.74%	89.42%	91.29%	91.03%	90.70%	90.70%	3000
3200	87.55%	87.55%	87.60%	86.70%	89.96%	89.64%	89.08%	89.64%	89.64%	88.87%	90.06%	89.96%	89.28%	89.18%	88.52%	88.16%	90.21%	89.95%	89.59%	89.59%	3200
3400	86.34%	86.34%	86.39%	85.41%	88.99%	88.62%	88.00%	88.62%	88.62%	87.78%	89.07%	88.96%	88.22%	88.11%	87.39%	87.00%	89.24%	88.96%	88.56%	88.56%	3400
3600	85.20%	85.20%	85.25%	84.21%	87.98%	87.60%	86.99%	87.60%	87.60%	86.75%	88.15%	88.03%	87.24%	87.12%	86.33%	85.92%	88.33%	88.03%	87.60%	87.60%	3600
3800	84.15%	84.15%	84.21%	83.08%	87.09%	86.70%	86.09%	86.70%	86.70%	85.86%	87.26%	87.15%	86.31%	86.19%	85.35%	84.90%	87.49%	87.15%	86.70%	86.70%	3800
4000	83.16%	83.16%	83.22%	82.03%	86.27%	85.92%	85.17%	85.92%	85.92%	84.90%	86.47%	86.34%	85.44%	85.31%	84.43%	83.96%	86.68%	86.34%	85.85%	85.85%	4000
4200	82.22%	82.22%	82.28%	81.06%	85.49%	85.13%	84.34%	85.13%	85.13%	84.06%	85.71%	85.56%	84.63%	84.49%	83.56%	83.08%	85.93%	85.56%	85.06%	85.06%	4200
4400	81.34%	81.34%	81.42%	80.12%	84.76%	84.38%	83.56%	84.38%	84.38%	83.26%	84.99%	84.83%	83.85%	83.71%	82.74%	82.22%	85.21%	84.83%	84.31%	84.31%	4400
4600	80.51%	80.51%	80.59%	79.24%	84.06%	83.67%	82.81%	83.67%	83.67%	82.50%	84.30%	84.14%	83.12%	82.97%	81.95%	81.43%	84.54%	84.14%	83.59%	83.59%	4600
4800	79.73%	79.73%	79.80%	78.41%	83.41%	83.00%	82.11%	83.00%	83.00%	81.79%	83.65%	83.49%	82.43%	82.27%	81.23%	80.67%	83.90%	83.49%	82.92%	82.92%	4800
5000	78.98%	78.98%	79.06%	77.62%	82.76%	82.34%	81.44%	82.34%	82.34%	81.10%	83.03%	82.86%	81.77%	81.60%	80.53%	79.95%	83.29%	82.86%	82.27%	82.27%	5000
5200	78.27%	78.27%	78.35%	76.87%	82.16%	81.74%	80.80%	81.74%	81.74%	80.45%	82.44%	82.27%	81.14%	80.97%	79.85%	79.27%	82.70%	82.27%	81.66%	81.66%	5200
5400	77.59%	77.59%	77.67%	76.15%	81.61%	81.16%	80.19%	81.16%	81.16%	79.83%	81.88%	81.70%	80.54%	80.36%	79.22%	78.62%	82.15%	81.70%	81.01%	81.01%	5400
5600	76.94%	76.94%	77.02%	75.47%	81.06%	80.60%	79.60%	80.60%	80.60%	79.24%	81.34%	81.15%	79.95%	79.76%	78.61%	77.99%	81.61%	81.15%	80.51%	80.51%	5600
5800	76.32%	76.32%	76.41%	74.81%	80.54%	80.07%	79.04%	80.07%	80.07%	78.67%	80.82%	80.63%	79.41%	79.23%	78.03%	77.40%	81.10%	80.63%	79.91%	79.91%	5800
6000	75.72%	75.72%	75.81%	74.19%	80.03%	79.55%	78.51%	79.55%	79.55%	78.13%	80.32%	80.13%	78.88%	78.69%	77.47%	76.82%	80.61%	80.13%	79.46%	79.46%	6000
6500	74.33%	74.33%	74.43%	72.73%	78.68%	78.35%	77.25%	78.35%	78.35%	76.85%	79.16%	78.97%	77.65%	77.45%	76.17%	75.49%	79.47%	78.96%	78.25%	78.25%	6500
7000	73.07%	73.07%	73.17%	71.40%	77.78%	77.26%	76.11%	77.26%	77.26%	75.70%	78.16%	77.97%	76.53%	76.32%	74.98%	74.27%	78.42%	77.89%	77.15%	77.15%	7000
7500	71.92%	71.92%	72.02%	70.19%	76.86%	76.25%	75.06%	76.25%	76.25%	74.64%	77.13%	76.91%	75.49%	75.28%	73.89%	73.18%	77.46%	76.91%	76.14%	76.14%	7500
8000	70.85%	70.85%	70.96%	69.08%	75.88%	75.32%	74.08%	75.32%	75.32%	73.69%	76.22%	76.00%	74.54%	74.32%	72.89%	72.13%	76.57%	76.00%	75.21%	75.21%	8000
8500	69.87%	69.87%	69.99%	68.05%	75.04%	74.46%	73.20%	74.46%	74.46%	72.74%	75.39%	75.15%	73.65%	73.43%	71.90%	71.18%	75.74%	75.15%	74.34%	74.34%	8500
9000	68.95%	68.95%	69.07%	67.09%	74.25%	73.65%	72.38%	73.65%	73.65%	71.90%	74.61%	74.37%	72.83%	72.59%	71.06%	70.30%	74.97%	74.37%	73.54%	73.54%	9000
9500	68.09%	68.09%	68.21%	66.20%	73.51%	72.90%	71.58%	72.90%	72.90%	71.10%	73.88%	73.63%	72.06%	71.82%	70.28%	69.47%	74.25%	73.63%	72.78%	72.78%	9500
9999	67.29%	67.29%	67.41%	65.36%	72.82%	72.20%	70.85%	72.20%	72.20%	70.35%	73.19%	72.94%	71.33%	71.09%	69.52%	68.69%	73.67%	72.94%	72.07%	72.07%	9999
9999	39.53%	39.53%	39.69%	36.92%	47.55%	46.61%	44.60%	46.61%	46.61%	43.89%	48.13%	47.75%	45.32%	44.96%	42.67%	41.49%	48.72%	47.75%	46.43%	46.43%	9999

**TABLE B<sub>2</sub>**

Change in Economy of Scale (modifier) 2022 - 2021

% change	BASIC	LOW-	LOW	LOW+	FAIR-	FAIR	FAIR+	AVG-	AVG	AVG+	GOOD-	GOOD	GOOD+	VG-	VG	VG+	EXC-	EXC	EXC+	PREM	LAREA
CLASS	2	3-	3	3+	4	4	4+	5-	5	5+	6-	6	6+	7-	7	7+	8-	8	8+	9	CLASS
1	-0.14%	-0.14%	-2.58%	-0.93%	-1.53%	-0.13%	-0.57%	0.43%	0.11%	-0.50%	-1.81%	-1.60%	-1.46%	-0.65%	0.40%	-1.17%	-0.96%	-1.67%	-1.99%	-1.99%	1
50	-0.14%	-0.14%	-2.58%	-0.93%	-1.53%	-0.13%	-0.57%	0.43%	0.11%	-0.50%	-1.81%	-1.60%	-1.46%	-0.65%	0.40%	-1.17%	-0.96%	-1.67%	-1.99%	-1.99%	50
200	-0.09%	-0.09%	-1.59%	-0.57%	-0.94%	-0.04%	-0.35%	0.27%	0.07%	-0.31%	-1.12%	-0.98%	-0.90%	-0.40%	0.24%	-0.72%	-0.59%	-1.03%	-1.22%	-1.22%	200
400	-0.06%	-0.06%	-1.09%	-0.39%	-0.65%	0.00%	-0.24%	0.18%	0.04%	-0.21%	-0.76%	-0.68%	-0.61%	-0.27%	0.16%	-0.49%	-0.41%	-0.70%	-0.84%	-0.84%	400
600	-0.05%	-0.05%	-0.80%	-0.28%	-0.47%	0.18%	-0.18%	0.13%	0.03%	-0.15%	-0.54%	-0.49%	-0.45%	-0.20%	0.12%	-0.36%	-0.29%	-0.52%	-0.61%	-0.61%	600
800	-0.03%	-0.03%	-0.59%	-0.21%	-0.35%	0.15%	-0.13%	0.10%	0.02%	-0.11%	-0.41%	-0.37%	-0.33%	-0.14%	0.09%	-0.26%	-0.22%	-0.38%	-0.45%	-0.45%	800
1000	-0.02%	-0.02%	-0.43%	-0.15%	-0.25%	0.29%	-0.10%	0.07%	0.01%	-0.08%	-0.30%	-0.27%	-0.24%	-0.11%	0.06%	-0.20%	-0.16%	-0.28%	-0.33%	-0.33%	1000
1200	-0.02%	-0.02%	-0.30%	-0.11%	-0.18%	-0.02%	-0.06%	0.04%	0.01%	-0.06%	-0.21%	-0.18%	-0.17%	-0.07%	0.04%	-0.13%	-0.11%	-0.19%	-0.23%	-0.23%	1200
1400	-0.01%	-0.01%	-0.19%	-0.06%	-0.11%	0.11%	-0.04%	0.03%	0.01%	-0.03%	-0.12%	-0.11%	-0.10%	-0.05%	0.03%	-0.09%	-0.07%	-0.12%	-0.14%	-0.14%	1400
1600	0.00%	0.00%	-0.08%	-0.03%	-0.05%	0.09%	-0.01%	0.01%	0.00%	-0.02%	-0.06%	-0.06%	-0.05%	-0.02%	0.01%	-0.04%	-0.03%	-0.06%	-0.06%	-0.06%	1600
1800	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1800
2000	0.01%	0.01%	0.08%	0.03%	0.04%	-0.03%	0.01%	-0.01%	0.00%	0.01%	0.05%	0.05%	0.05%	0.02%	-0.01%	0.03%	0.03%	0.05%	0.06%	0.06%	2000
2200	0.01%	0.01%	0.15%	0.05%	0.09%	0.17%	0.03%	-0.02%	0.00%	0.03%	0.10%	0.09%	0.09%	0.04%	-0.03%	0.06%	0.05%	0.10%	0.11%	0.11%	2200
2400	0.01%	0.01%	0.21%	0.08%	0.12%	0.34%	0.04%	-0.03%	-0.01%	0.04%	0.15%	0.13%	0.12%	0.05%	-0.03%	0.09%	0.07%	0.13%	0.16%	0.16%	2400
2600	0.02%	0.02%	0.27%	0.09%	0.15%	0.21%	0.06%	-0.04%	-0.01%	0.05%	0.19%	0.17%	0.15%	0.07%	-0.04%	0.12%	0.10%	0.17%	0.20%	0.20%	2600
2800	0.02%	0.02%	0.32%	0.11%	0.19%	0.21%	0.07%	-0.06%	-0.01%	0.07%	0.22%	0.20%	0.18%	0.08%	-0.05%	0.15%	0.11%	0.21%	0.25%	0.25%	2800
3000	0.02%	0.02%	0.38%	0.14%	0.22%	0.33%	0.08%	-0.07%	-0.01%	0.08%	0.27%	0.23%	0.21%	0.09%	-0.06%	0.16%	0.13%	0.24%	0.29%	0.29%	3000
3200	0.03%	0.03%	0.42%	0.15%	0.25%	0.31%	0.09%	-0.07%	-0.02%	0.08%	0.30%	0.26%	0.24%	0.10%	-0.06%	0.19%	0.16%	0.27%	0.33%	0.33%	3200
3400	0.03%	0.03%	0.47%	0.16%	0.27%	0.27%	0.10%	-0.08%	-0.01%	0.09%	0.33%	0.29%	0.27%	0.12%	-0.07%	0.21%	0.17%	0.30%	0.35%	0.35%	3400
3600	0.03%	0.03%	0.51%	0.19%	0.30%	0.22%	0.11%	-0.08%	-0.02%	0.10%	0.35%	0.31%	0.28%	0.12%	-0.08%	0.23%	0.18%	0.33%	0.39%	0.39%	3600
3800	0.03%	0.03%	0.55%	0.20%	0.32%	0.23%	0.12%	-0.09%	-0.02%	0.10%	0.39%	0.34%	0.30%	0.13%	-0.08%	0.24%	0.21%	0.35%	0.42%	0.42%	3800
4000	0.03%	0.03%	0.58%	0.21%	0.35%	0.20%	0.13%	-0.10%	-0.02%	0.11%	0.41%	0.36%	0.33%	0.14%	-0.09%	0.26%	0.22%	0.38%	0.45%	0.45%	4000
4200	0.03%	0.03%	0.62%	0.22%	0.37%	0.16%	0.13%	-0.11%	-0.02%	0.11%	0.43%	0.38%	0.35%	0.16%	-0.10%	0.28%	0.23%	0.40%	0.47%	0.47%	4200
4400	0.03%	0.03%	0.65%	0.24%	0.39%	0.16%	0.14%	-0.11%	-0.02%	0.13%	0.46%	0.41%	0.36%	0.16%	-0.10%	0.30%	0.24%	0.42%	0.51%	0.51%	4400
4600	0.04%	0.04%	0.69%	0.24%	0.40%	0.17%	0.15%	-0.12%	-0.03%	0.14%	0.48%	0.42%	0.39%	0.17%	-0.11%	0.31%	0.25%	0.45%	0.52%	0.52%	4600
4800	0.05%	0.05%	0.71%	0.25%	0.43%	0.17%	0.15%	-0.12%	-0.03%	0.14%	0.51%	0.44%	0.40%	0.17%	-0.10%	0.32%	0.26%	0.47%	0.55%	0.55%	4800
5000	0.04%	0.04%	0.75%	0.27%	0.43%	0.17%	0.17%	-0.13%	-0.03%	0.14%	0.52%	0.49%	0.42%	0.19%	-0.12%	0.34%	0.27%	0.48%	0.58%	0.58%	5000
5200	0.05%	0.05%	0.78%	0.27%	0.45%	0.17%	0.17%	-0.13%	-0.03%	0.14%	0.54%	0.47%	0.43%	0.20%	-0.11%	0.35%	0.28%	0.50%	0.60%	0.60%	5200
5400	0.05%	0.05%	0.81%	0.29%	0.48%	0.18%	0.17%	-0.13%	-0.04%	0.16%	0.56%	0.50%	0.45%	0.20%	-0.12%	0.37%	0.30%	0.51%	0.62%	0.62%	5400
5600	0.05%	0.05%	0.83%	0.30%	0.48%	0.18%	0.18%	-0.13%	0.00%	0.15%	0.58%	0.51%	0.47%	0.20%	-0.12%	0.38%	0.31%	0.54%	0.64%	0.64%	5600
5800	0.05%	0.05%	0.85%	0.30%	0.51%	0.18%	0.19%	-0.14%	-0.03%	0.17%	0.60%	0.52%	0.49%	0.21%	-0.13%	0.38%	0.31%	0.55%	0.66%	0.66%	5800
6000	0.05%	0.05%	0.88%	0.32%	0.52%	0.18%	0.20%	-0.15%	-0.03%	0.16%	0.62%	0.54%	0.49%	0.22%	-0.14%	0.40%	0.33%	0.56%	0.68%	0.68%	6000
6500	0.05%	0.05%	0.95%	0.33%	0.56%	0.19%	0.21%	-0.15%	-0.04%	0.18%	0.66%	0.58%	0.53%	0.23%	-0.15%	0.42%	0.35%	0.61%	0.72%	0.72%	6500
7000	0.06%	0.06%	1.00%	0.36%	0.59%	0.19%	0.21%	-0.13%	-0.04%	0.20%	0.70%	0.62%	0.56%	0.25%	-0.14%	0.45%	0.37%	0.64%	0.76%	0.76%	7000
7500	0.05%	0.05%	1.05%	0.38%	0.61%	0.20%	0.23%	-0.17%	-0.04%	0.19%	0.73%	0.65%	0.59%	0.26%	-0.16%	0.47%	0.38%	0.68%	0.80%	0.80%	7500
8000	0.06%	0.06%	1.09%	0.39%	0.64%	0.20%	0.24%	-0.18%	-0.04%	0.21%	0.72%	0.67%	0.62%	0.26%	-0.17%	0.49%	0.40%	0.70%	0.84%	0.84%	8000
8500	0.07%	0.07%	1.14%	0.41%	0.67%	0.21%	0.24%	-0.19%	-0.04%	0.21%	0.80%	0.70%	0.63%	0.28%	-0.17%	0.51%	0.42%	0.73%	0.87%	0.87%	8500
9000	0.06%	0.06%	1.19%	0.42%	0.69%	0.21%	0.25%	-0.20%	-0.05%	0.22%	0.82%	0.73%	0.66%	0.30%	-0.18%	0.54%	0.44%	0.76%	0.90%	0.90%	9000
9500	0.07%	0.07%	1.23%	0.43%	0.71%	0.21%	0.27%	-0.20%	-0.05%	0.23%	0.86%	0.76%	0.68%	0.30%	-0.18%	0.55%	0.46%	0.78%	0.93%	0.93%	9500
9999	0.07%	0.07%	1.26%	0.45%	0.74%	0.22%	0.28%	-0.20%	-0.05%	0.25%	0.87%	0.80%	0.71%	0.35%	-0.18%	0.56%	0.46%	0.80%	0.97%	0.97%	9999
99999	0.16%	0.16%	2.96%	1.05%	1.75%	0.37%	0.65%	-0.49%	-0.12%	0.57%	2.07%	1.83%	1.66%	0.73%	-0.44%	1.33%	1.10%	1.90%	2.28%	2.28%	99999
CLASS	2	3-	3	3+	4	4	4+	5-	5	5+	6-	6	6+	7-	7	7+	8-	8	8+	9	CLASS

## GAD County (Class) Modifier

The changes in county (class) modifier for each quality of construction class of main residential structure are detailed in TABLE C. TABLE C duplicates data contained in software: Improvement Matrix RES1 #5b GAD (Class) MODIFIER.

## Unit Price (\$) at 1800 sq.ft. – Table D

Various changes to base values, modifiers, and multipliers resulted in change to the ‘phantom’ RCN unit price detailed in “2022 GCAD RES1 RCN”; this ‘phantom’ data does not appear in the PACS software. Overall change in the unit price [at 1800 sq.ft.] for each quality of construction class of main residential structure is detailed in TABLE D.

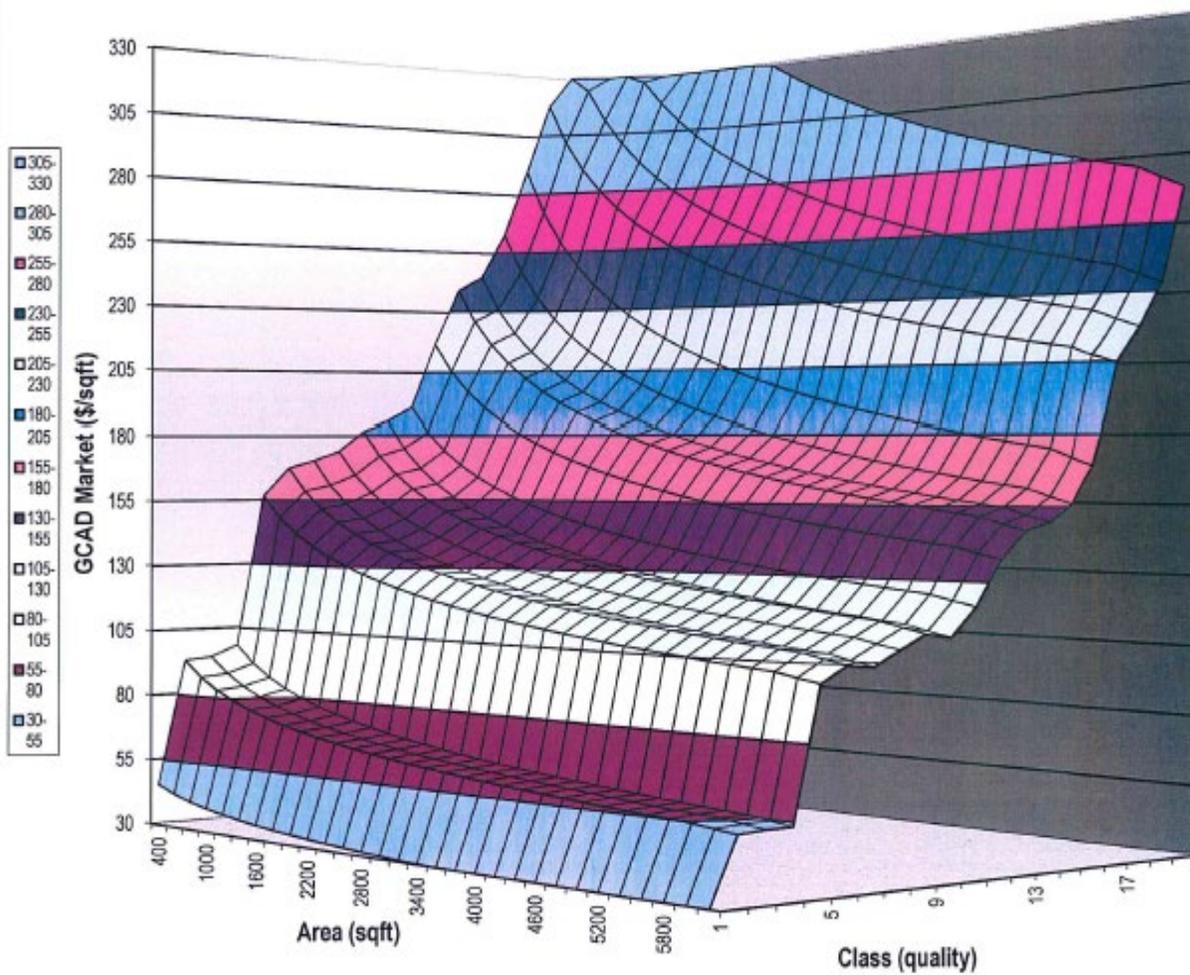
Class	2022	2021	Change
R2	0.6244	1.1111	-43.8%
R3-	0.7779	0.8755	-11.2%
R3	0.9280	1.0556	-12.1%
R3+	0.7500	1.0154	-26.1%
R4+	1.2026	1.0351	+16.2%
R4	1.2656	1.5910	-20.5%
R4+	1.1934	1.1178	+6.8
R5-	1.1359	1.0190	+11.5%
R5	1.1665	1.1111	+5.0%
R5+	1.0840	1.0884	-0.4%
R6-	0.9552	0.9421	+1.4%
R6	1.0590	1.0621	-0.2%
R6+	1.0548	1.0111	+4.3%
R7-	0.9900	1.0985	-9.9%
R7	0.9715	1.0500	-10.7%
R7+	0.9800	1.0978	-10.7%
R8-	0.8880	0.9409	-5.6%
R8	0.8900	0.9409	-6.2%
R8+	0.8900	0.9409	-6.2%
R9	0.8900	0.9409	-6.2%

Class	2022	2021	Change
R2	35.41	47.86	-26.0%
R3-	72.31	61.86	+16.9%
R3	73.17	74.97	-2.4%
R3+	74.99	77.07	-2.7%
R4+	127.74	83.11	+53.7%
R4	135.78	85.94	+58.0%
R4+	136.43	97.39	+40.0%
R5-	141.00	95.84	+47.1%
R5	147.32	105.95	+39.0%
R5+	148.06	113.29	+30.7%
R6-	156.33	117.48	+33.1%
R6	176.86	134.21	+31.8%
R6+	192.43	140.05	+37.4%
R7-	196.56	165.39	+18.8%
R7	207.97	170.25	+22.2%
R7+	227.69	193.51	+17.7%
R8-	260.86	209.12	+24.7%
R8	279.06	222.92	+25.2%
R8+	302.38	243.14	+24.4%
R9	347.74	279.61	+24.4%

Two attritional modifiers are included in PACS calculations that are not detailed in the above: RES1 #5c GAD (Sales) STORY MODIFIER [sales analysis based 99.5% adjustment to ‘phantom’ RCN for multi-story residences] in conjunction with UPST Improvement Schedule [74% of BASE UP based on data promulgated by M&S]. These two modifiers are specific to certain properties and are therefor not considered to be universal to all properties as is other data presented in this document.

**N.B.** The above data is statistical in nature and is not intended to represent exact change in value for any one account as it does not take into consideration: revisions to land value tables, revisions to Improvement-to-Property ratios, revisions to neighborhood or other market area adjusters, revisions to ancillary detail valuation, inclusion of new value, etc.

# 2022 Guadalupe County Market Unit Value



# SUMMARY

## 2021 to 2022 Inflationary Trend Analysis

Inflationary trend analysis indicators for possible use in the Guadalupe Appraisal Districts CAMA algorithms indicate a residential real estate market increase of approximately 30% from January 1<sup>st</sup>, 2021 to January 1<sup>st</sup> 2022.

Several inferential method / analyses were utilized, and each is summarized herein.

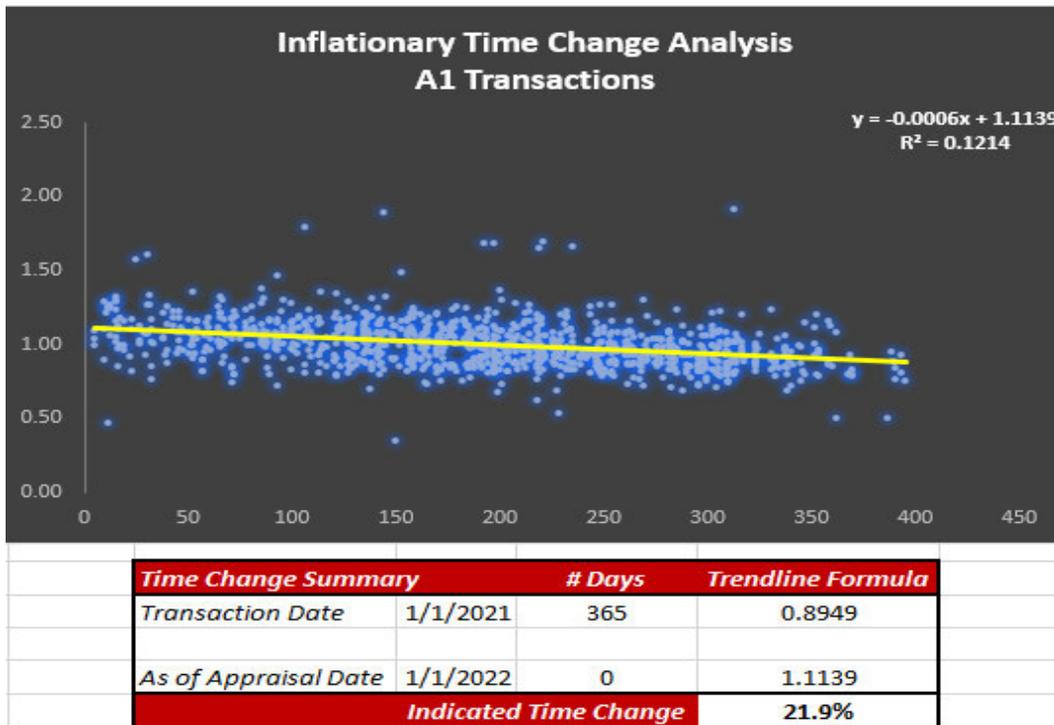
**Published Data:**

A nationally recognized appraisal firm’s residential single-frame detached family housing replacement cost new (RCN) data indicates a year-over-year RCN increase of approximately 22%. In-house vacant land sales analysis for the period of interest indicates an approximate overall land value increase of 45%. Using industry ordinary assumption range of 87% improvement to property ratio, the indicated 2021 to 2022 year-over-year market increase would be:

$$25\% = 0.87 \times 22 + 0.13 \times 45$$

**Regression Analysis:**

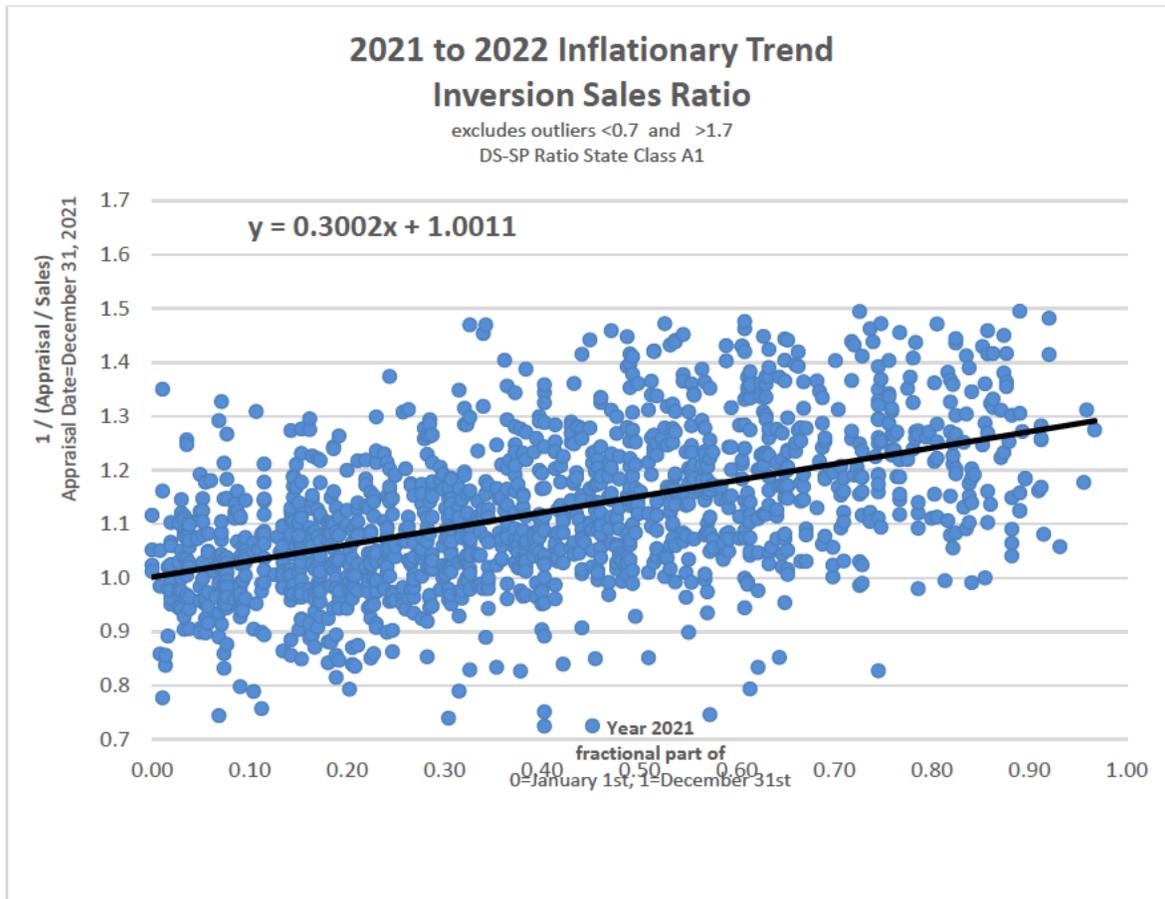
Commercially available multiple regression analysis software to analyze A1 sales data for period of interest indicates a 2021 to 2022 year-over-year time change summary of 21.9%



**Inverted Appraisal Ratio (Sales Ratio):**

Calculating invert of 2021 sales of state category A1 properties coded SP DS appraisal ratio and establishing a trend line plot of the data results in several indications of the inflationary trend based on market areas analyzed.

The first analysis plotted the ratio as a function day and resultant trendline indicated a 2021 to 2022 year-over-year inflation tend time adjustment of: **30%**.



Analyzing same data grouping by 'month' (16<sup>th</sup> day of the prior month to 15<sup>th</sup> day of the month) and then grouped by taxing entity indicated the following:

**Indicated 2021 to 2022 year-over-year inflation trendline time adjustment**

<b>Taxing Entity</b>	<b>Sales Analyzed</b>	<b>Year-over-Year Inflationary Trend % Increase</b>
GCO	1598	31.2
COS	169	36.1
MAS	22	20.6
NAS	194	44.6
NBS	335	26.3
SCS	447	35.6
SGS	422	31.2
CCI	236	49.2
CNB	407	30.6
CSC	192	44.6
CSE	20	37.1
CSG	470	36.2

Graphic data for above table is attached herewith.

# **2022 Annual Waterfront Report**

## **INTRODUCTION**

This report has been prepared for use by the Guadalupe Appraisal District and may serve as a component of the District's 2022 mass appraisal of property located within Guadalupe County, Texas, for ad valorem taxation purposes. As such, this report may be considered part of the District's work file and should be retained in accordance with USPAP Record Keeping Rule.

Work file is defined by USPAP as, "Documentation necessary to support an appraiser's analysis, opinions, and conclusions".

## **PURPOSE**

The purpose of this assignment is to review, analyze, calibrate, and/or modify existing waterfront land table schedules and mass market modifiers used for the purpose of the mass appraisal of properties that fall under the responsibility of the Complex Appraisal Waterfront Department. New land schedule, land tables and mass market modifiers will be developed, if the need to do so is deemed necessary, when the review and analysis process has concluded.

## **INTENDED USE / INTENDED USER**

The intended use of this report is to aid in the production of the District's 2021 mass appraisal of property located within Guadalupe County, Texas, for ad valorem taxation purposes.

The intended user of this report is the Guadalupe Appraisal District.

Use of this report by others, or for any other purpose, is not intended by the appraiser.

## **Scope of Work**

Analysis described herein was conducted in accordance with USPAP Rules and applicable sections of Standard 5 & 6, 2020-2021 Edition, Uniform Standards of Professional Appraisal Practice (USPAP).

**Essentially, the Scope of Work Rule states that an appraiser must:**

- 1. identify the problem to be solved;**
- 2. determine and perform the scope of work necessary to develop credible assignment results; and**
- 3. disclose the scope of work in the report.**

The problem to be solved in this assignment is to accurately interpret current market conditions for the purpose of appraising the real estate within Guadalupe County that falls within the residential waterfront department's scope of duties and responsibilities (vacant or improved).

In order to solve the problem defined in this assignment, the appraiser will use various data collection methods (sales surveys, MLS data and county deed records, etc.) and approved appraisal techniques and methods for market and schedule analysis. The appraiser performed a ratio study utilizing confirmed sales within Guadalupe County that were found to have met the necessary requirements to be considered an arms-length transaction.

The analysis described herein was conducted in accordance with the IAAO Standard on Ratio Studies. (Approved April 2013)

The search criteria utilized in this assignment's Ratio Study is as follows:

- Searched for Improved Properties and Vacant Land.
- Searched by Sale Date - from 01/01/2021 to 12/31/2021. This time frame was established in accordance with the jurisdictional time limitation dictated by the Texas Property Tax Code, Section 23.013(b).
- Searched by State Code – A1 (Residential Single Family), A2 (Mobile Residential) A6 (Person Property Mobile on land with same owner) E1 (Real Farm and Ranch Improvements), E2 (Mobile Homes Rural), E6 (Varies By Year) A3(Substantial non res+1000), C1(Vacant Res & Comm lots) , C3 (Description Varies By Year)D1(Acreage Ranch Land), D1A(Conv Code) D2(Description Varies By Year),D3(Cultivated Land), D4(Barren Land) D5 (Native Pasture Land) D5G(Conv Code) D7(Ochards), E3(Barns, Sheds,Silos and Other Bldgs)E5(Rural land Non-Qualified) O1(Inventory-Residential)
- Searched by Sale Type – WS(Waterfront Sale) LS(Land Sale)-DS (Distressed Sale), MS (Multiple Sale), QS (Questionable Sale) and SP (Sales Price).
- Searched by All Waterfront Neighborhood Codes.

## **AREAS OF CONCERN RELATING TO WATERFRONT VALUES**

On October 14, 2021, Lake Placid dam spillgate malfunctioned in the open position resulting in a lowering of the water level within the Lake Placid designated section of the Guadalupe River. GBRA made the determination to not replace faulty components of spillgate based on safety concerns associated with the aging dam.

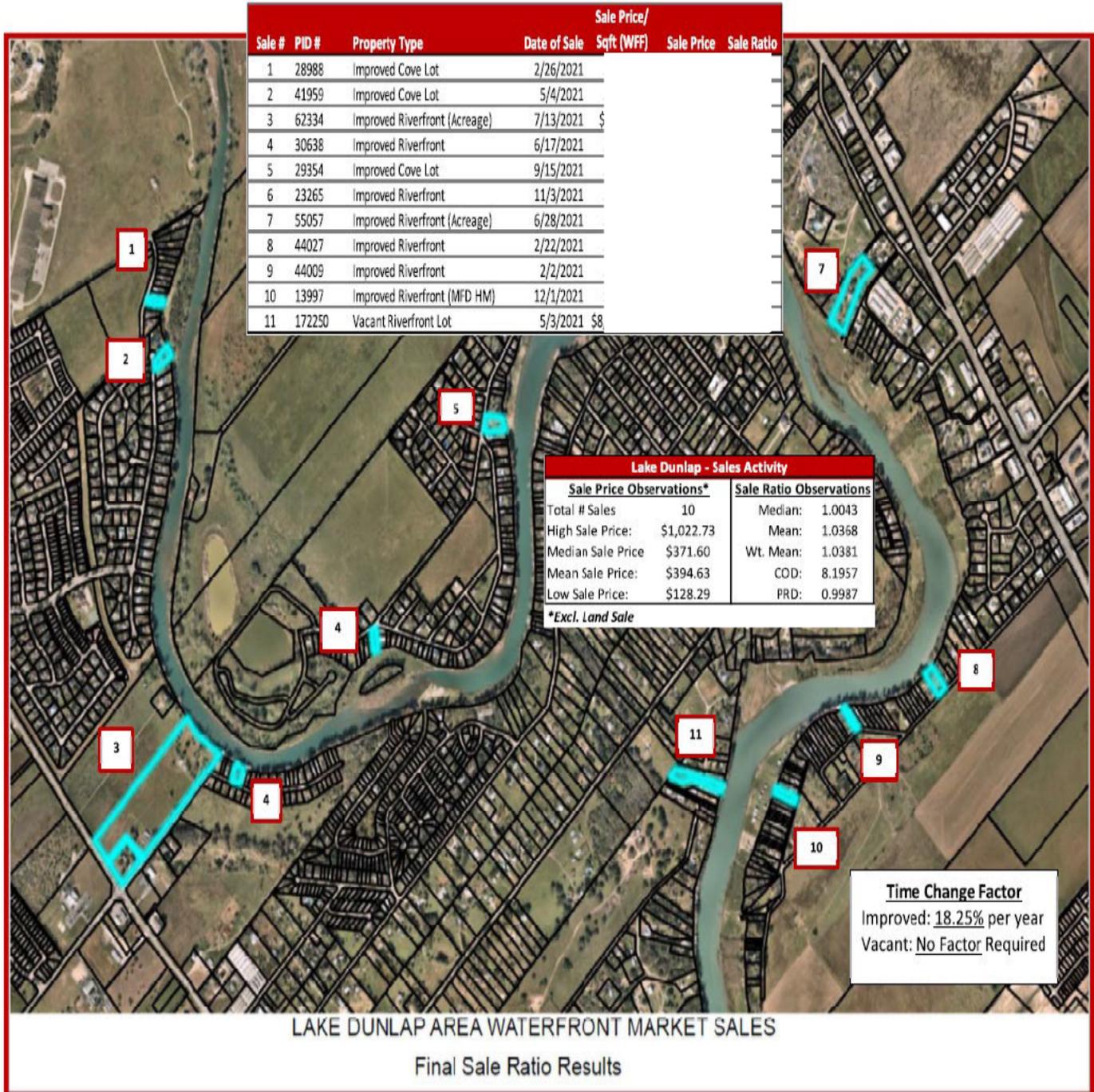
Additionally, creation of three new Water Control & Improvement Districts (WCID), with the ability to levy a property tax for replacement of their respective dams, can potentially impact actions of market participants.

## **2022 WATERFRONT ANALYSIS**

The waterfront properties on Guadalupe River were analyzed according to the lake they are found on. Any property on the Guadalupe River that was located below the Meadow Lake dam is considered to be on the Lower Guadalupe River. Also considered in the waterfront analysis is the San Marcos River waterfront. The existing

Neighborhood codes were maintained for this year. After the land schedules were determined, a Neighborhood Analysis was performed to determine any neighborhood specific adjustments needing to be applied.

A summary of the findings are below. The complete working files are maintained on the Guadalupe Appraisal District shared server in the WATERFRONT > 2022 Waterfront folder.



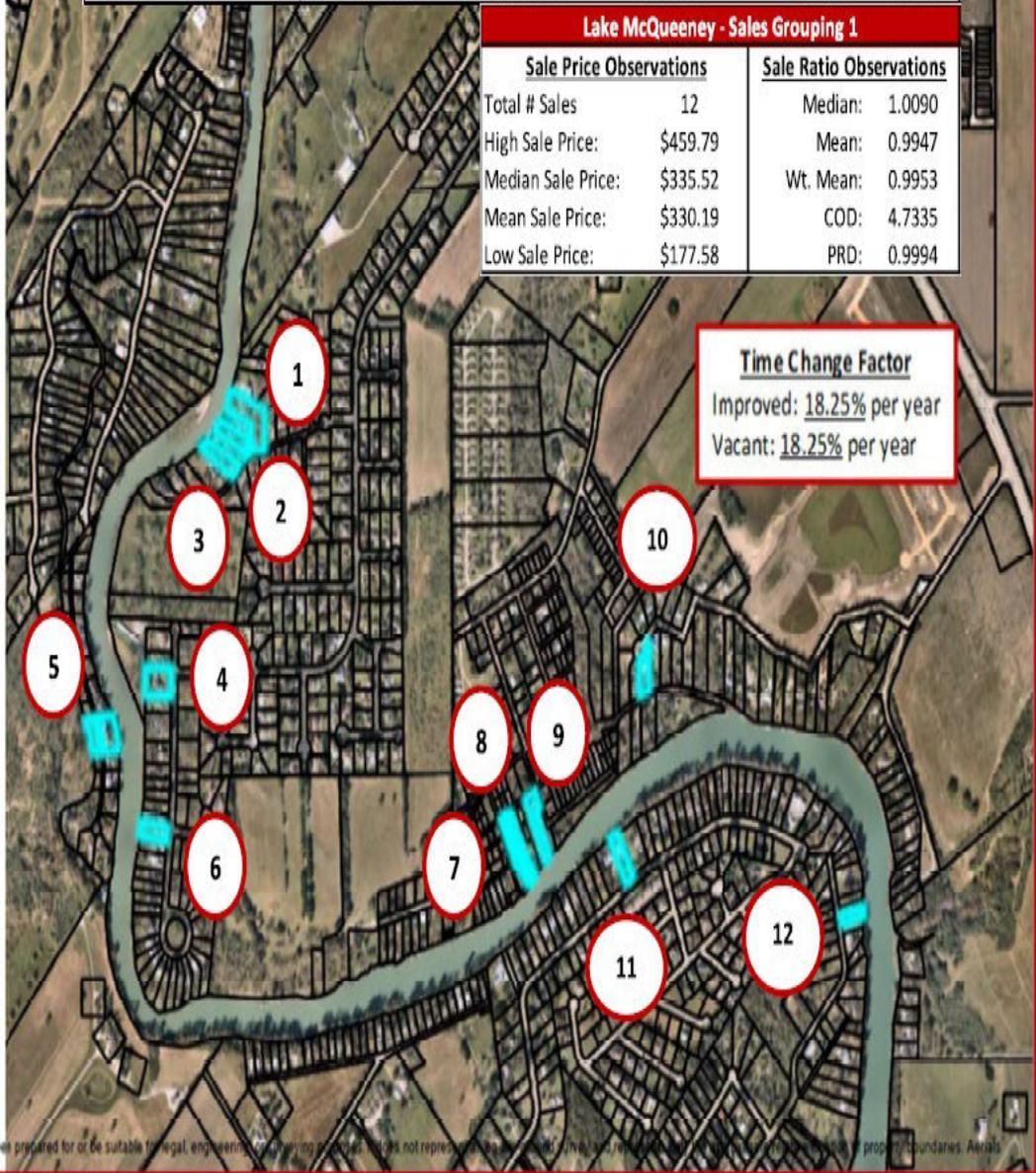


**LAKE McQUEENEY  
SALES ACTIVITY  
(LAS BRISAS to  
WOODLAKE)**

Sale #	PID #	Property Type	Date of Sale	Sale Price/ Sqft	Sale Price	Sale Ratio
1	31107	Improved Riverfront	11/8/2021			
2	31105	Improved Riverfront	6/8/2021			
3	31103	Improved Riverfront	6/24/2021			
4	30884	Improved Canal	5/17/2021			
5	109916	Improved Riverfront	4/5/2021			
6	30873	Improved Riverfront	2/25/2021			
7	121717	Improved Riverfront	7/22/2021			
8	21700	Improved Riverfront	8/25/2021			
9	21696	Improved Riverfront	6/2/2021			
10	39002	Improved Canal	11/12/2021			
11	144367	Improved Riverfront	4/28/2021			
12	46808	Improved Riverfront	1/5/2021			

**Lake McQueeny - Sales Grouping 1**

Sale Price Observations		Sale Ratio Observations	
Total # Sales	12	Median:	1.0090
High Sale Price:	\$459.79	Mean:	0.9947
Median Sale Price:	\$335.52	Wt. Mean:	0.9953
Mean Sale Price:	\$330.19	COD:	4.7335
Low Sale Price:	\$177.58	PRD:	0.9994



**Time Change Factor**  
Improved: 18.25% per year  
Vacant: 18.25% per year

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# Lake McQueeney Sales Activity

(Laguna Vista, Terminal Loop, Lake Ridge)



Sale #	PID #	Property Type	Date of Sale	Sale Price/	
				Sqft (WFF)	Sale Price Sale Ratio
1	29585	Improved Riverfront	7/9/2021		
2	29582	Improved Riverfront	1/13/2021		
3	39019	Improved Riverfront	6/9/2021		
4	39023	Improved Riverfront	4/1/2021		
5	116291	Improved Riverfront	10/28/2021		
6	116286	Improved Riverfront	10/28/2021		
7	39029	Improved Riverfront	8/23/2021		
8	30101	Improved Riverfront	4/28/2021		
9	30104	Improved Riverfront	11/22/2021		
10	50675	Vacant River Lot	1/12/2021	\$	
11	135223	Vacant Cove Lot	9/17/2021	\$	
12	135224	Vacant Cove Lot	6/30/2021	\$	

Lake McQueeney - Sales Grouping 2		
Sale Price Observations*		Sale Ratio Observations
Total # Sales	9	Median: 1.0233
High Sale Price:	\$457.68	Mean: 1.0474
Median Sale Price:	\$359.71	Wt. Mean: 1.0353
Mean Sale Price:	\$352.29	COD: 6.3211
Low Sale Price:	\$223.32	PRD: 1.0116

\*Excl. Vacant Land Sales

**Time Change Factor**  
 Improved: 18.25% per year  
 Vacant: 18.25% per year

# Lake McQueeney Sales Activity

(Treasure Island, Isle View/ Hot Shot Ln, Big Lake Area)

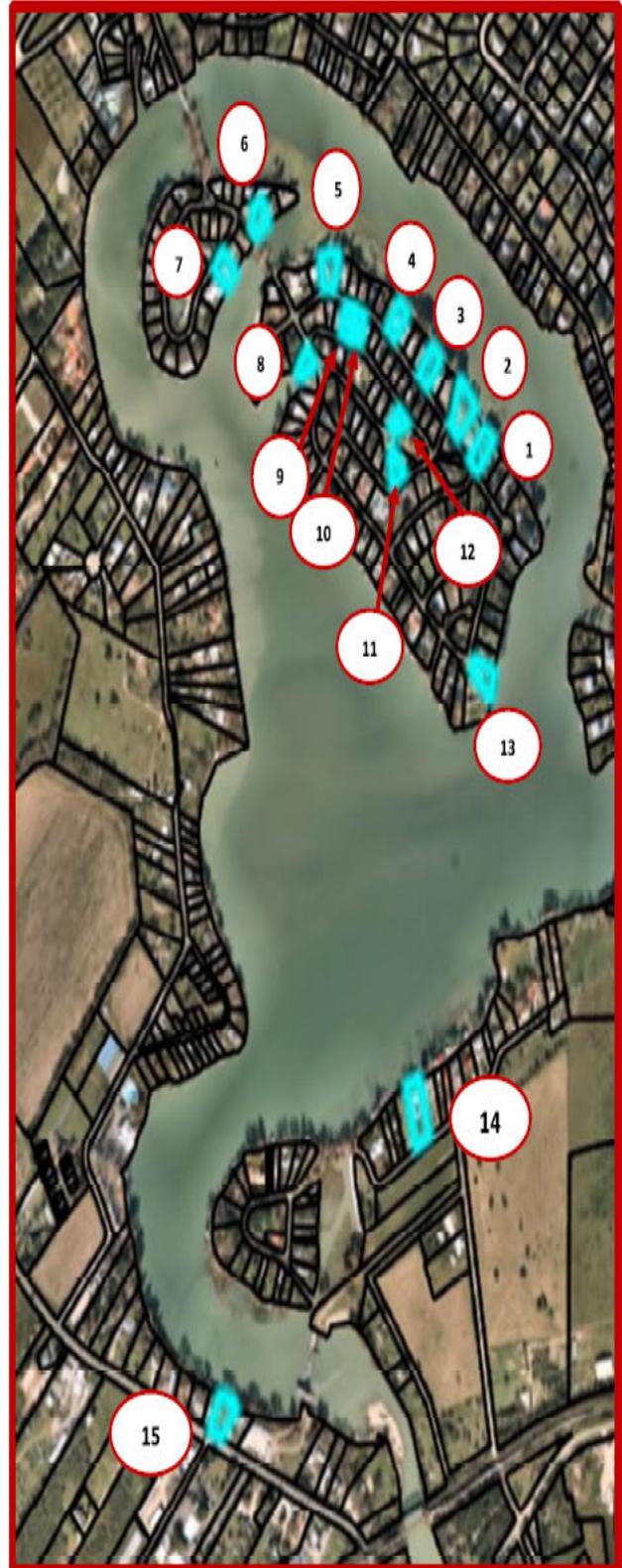
Sale #	PID #	Property Type	Date of Sale	Sale Price/ Sqft (WFF)	Sale Price	Sale Ratio
1	44338	Improved Riverfront	9/8/2021			
2	44336	Improved Riverfront	12/1/2021			
3	44333	Improved Riverfront	10/1/2021			
4	44329	Improved Riverfront	4/28/2021			
5	44322	Improved Riverfront	8/23/2021			
6	44449	Improved Cove Lot	10/6/2021			
7	44453	Improved Cove Lot	2/22/2021			
8	44375	Improved Cove Lot	1/27/2021			
9	44387	Improved Canal Lot	5/17/2021			
10	44388	Improved Canal Lot	5/21/2021			
11	44417	Improved Canal Lot	4/13/2021			
12	44419	Improved Canal Lot	10/14/2021			
13	44350	Improved Lake Front	1/22/2021			
14	28237	Improved Lake Front	7/23/2021			
15	50900	Vacant Riverfront Lot*	8/25/2021			

\*High Bluff, Prohibited Area

Lake McQueeney - Sales Grouping 3	
Sale Price Observations*	Sale Ratio Observations
Total # Sales: 14	Median: 1.0229
High Sale Price: \$937.50	Mean: 1.0904
Median Sale Price: \$260.35	Wt. Mean: 1.0854
Mean Sale Price: \$347.98	COD: 10.8202
Low Sale Price: \$181.00	PRD: 1.0046

\*Excl. Vacant Land Sale

**Time Change Factor**  
Improved: 18.25% per year  
Vacant: 18.25% per year

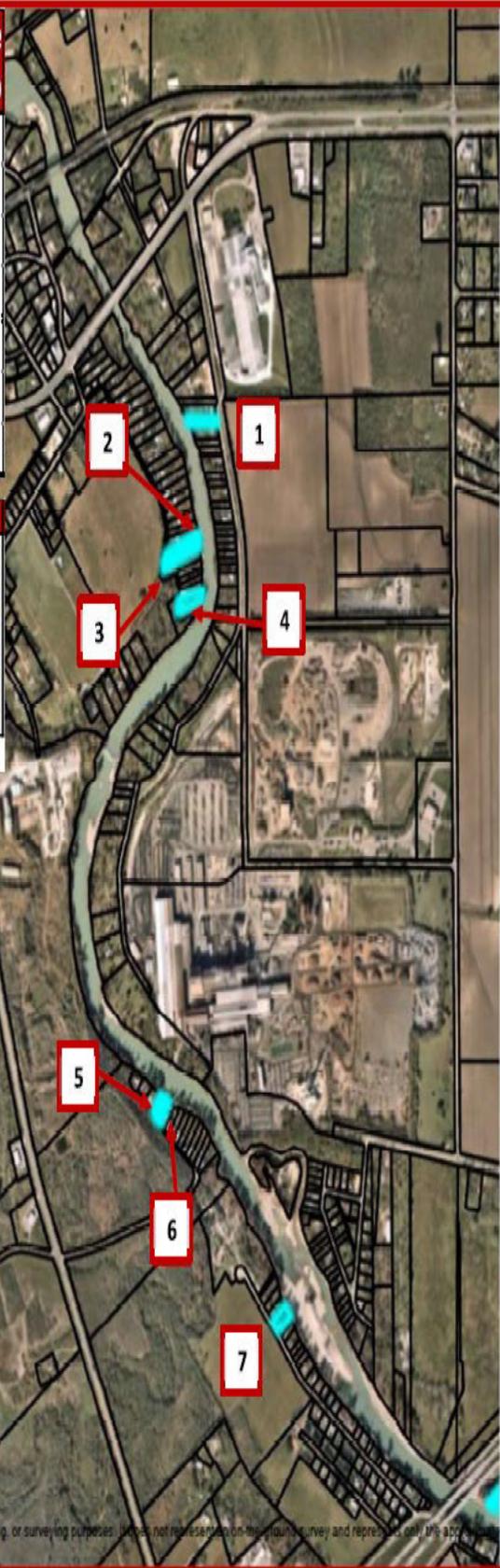


Sale #	PID #	Property Type	Date of Sale	Sale Price/ Sqft (WFF)	Sale Price	Sale Ratio
2	70548	Improved Riverfront	11/1/2021			
4	70611	Improved Riverfront	2/22/2021			
6	21952	Improved Riverfront	8/19/2021			
7	58106	Improved Riverfront (MFD)	5/11/2021			
1	48553	Unimproved Riverfront	6/29/2021			
3	70533	Unimproved Riverfront	11/4/2021			
5	21953	Unimproved Riverfront	8/19/2021			

Lake Placid - Sales Grouping 1	
Sale Price Observations*	Sale Ratio Observations
Total # Sales: 4	Median: 1.0435
High Sale Price: \$687.50	Mean: 1.0344
Median Sale Price: \$247.87	Wt. Mean: 1.0375
Mean Sale Price: \$344.54	COD: 4.0998
Low Sale Price: \$194.90	PRD: 0.9971

**\*Excl. Unimproved Land Sales**

**Time Change Factor**  
 Improved: 18.3% per year  
 Vacant: 18.3% per year

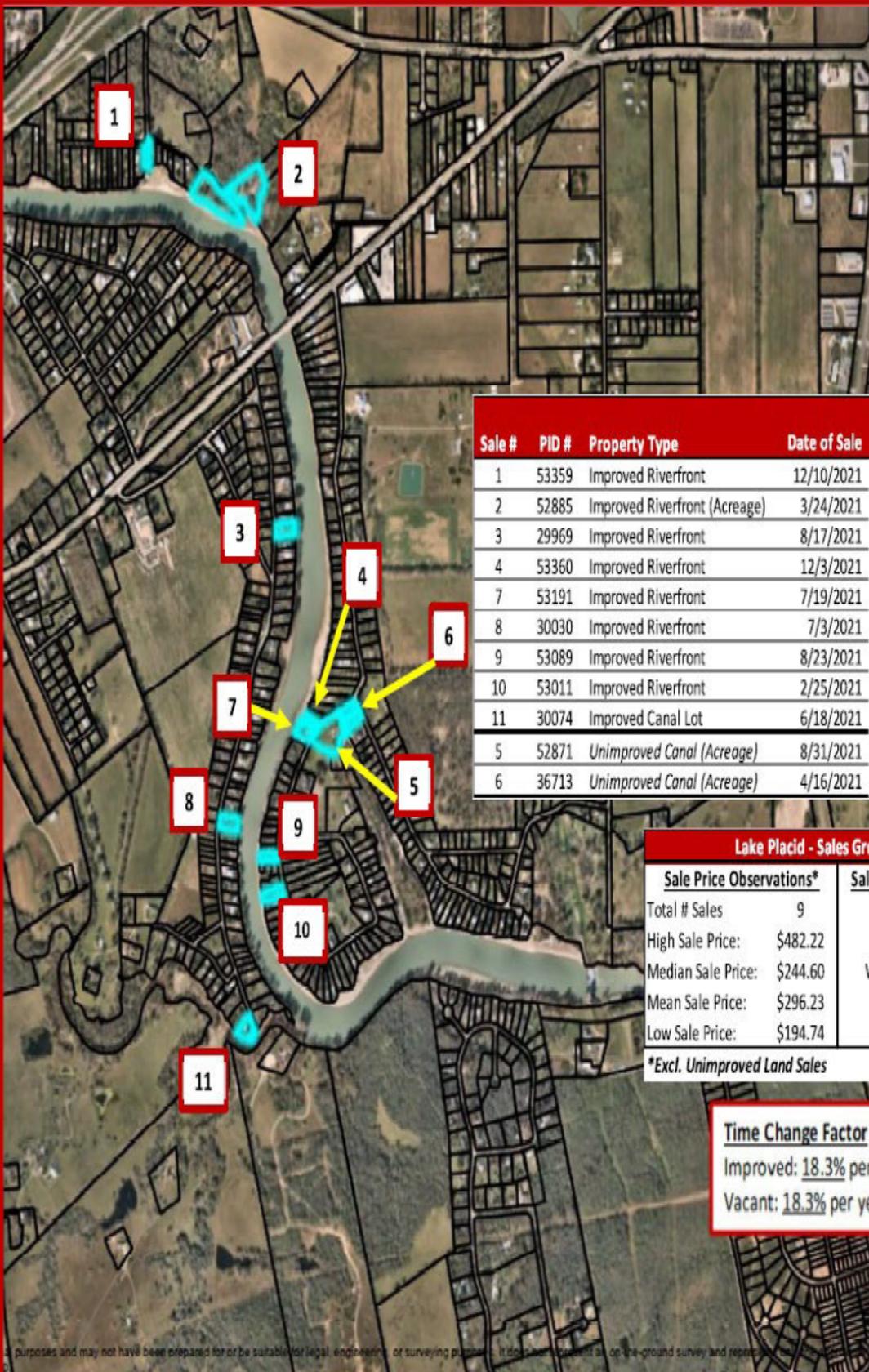


LAKE PLACID  
 MARKET AREA  
 GROUPING.

esri  
 The boundary lines shown on this map are for informational purposes and have not been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an official survey and representation. It is applicable only to the relative location of property boundaries. Aerials are a proprietary product of Esri.



**LAKE PLACID  
MARKET AREA  
GROUPING.**



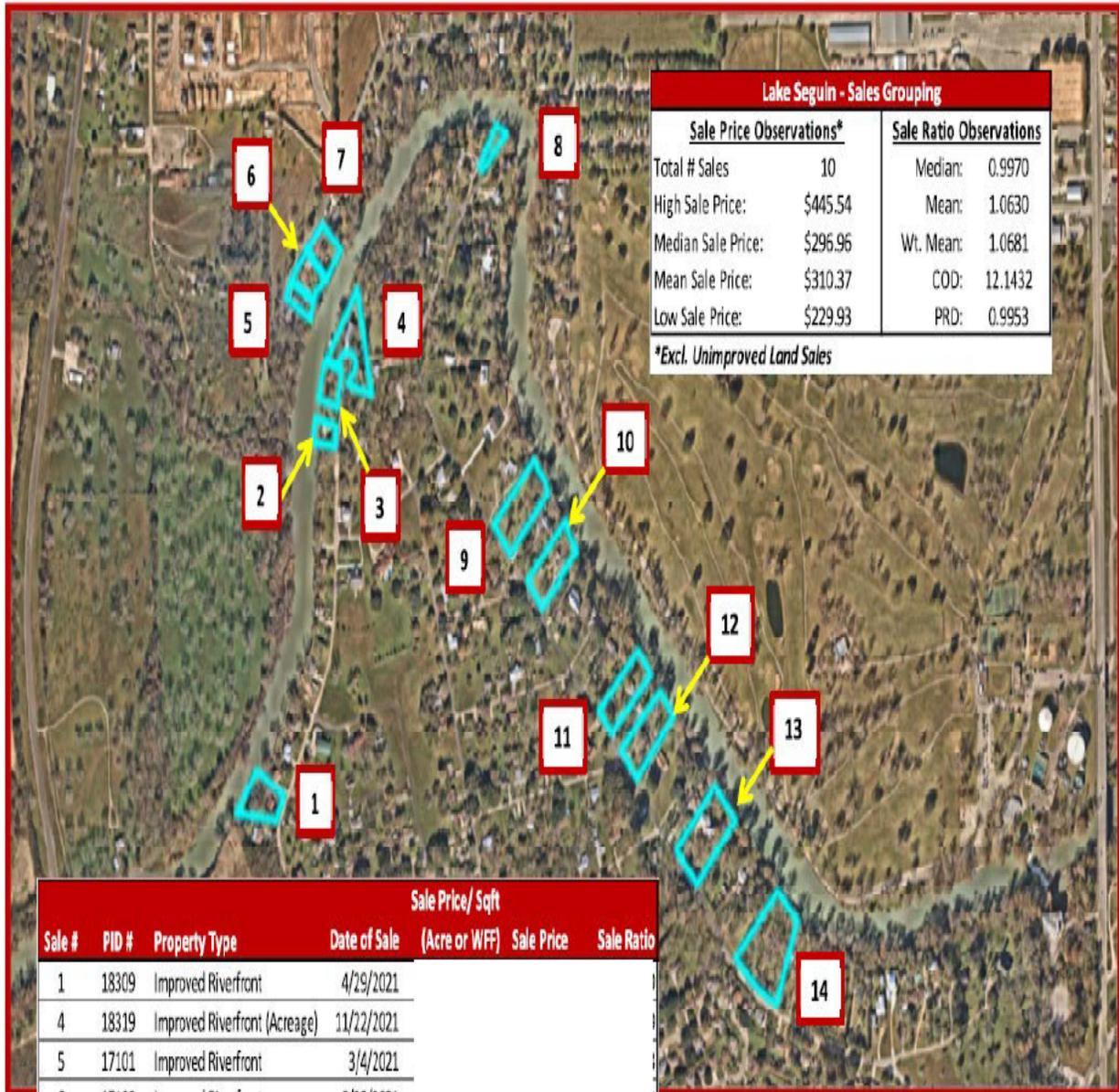
Sale #	PID #	Property Type	Date of Sale	Sale Price/ Sqft (Acre)	Sale Price**	Sale Ratio
1	53359	Improved Riverfront	12/10/2021			
2	52885	Improved Riverfront (Acreage)	3/24/2021			
3	29969	Improved Riverfront	8/17/2021			
4	53360	Improved Riverfront	12/3/2021			
7	53191	Improved Riverfront	7/19/2021			
8	30030	Improved Riverfront	7/3/2021			
9	53089	Improved Riverfront	8/23/2021			
10	53011	Improved Riverfront	2/25/2021			
11	30074	Improved Canal Lot	6/18/2021			
5	52871	Unimproved Canal (Acreage)	8/31/2021			
6	36713	Unimproved Canal (Acreage)	4/16/2021			

Lake Placid - Sales Grouping 2		
Sale Price Observations*		Sale Ratio Observations
Total # Sales	9	Median: 1.0332
High Sale Price:	\$482.22	Mean: 1.0325
Median Sale Price:	\$244.60	Wt. Mean: 1.0316
Mean Sale Price:	\$296.23	COD: 1.8384
Low Sale Price:	\$194.74	PRD: 1.0008

\*Excl. Unimproved Land Sales

**Time Change Factor**  
Improved: 18.3% per year  
Vacant: 18.3% per year

... purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not constitute an on-the-ground survey and represents the relative location of property boundaries. Aerials are a



Lake Seguin - Sales Grouping		
Sale Price Observations*		Sale Ratio Observations
Total # Sales	10	Median: 0.9970
High Sale Price:	\$445.54	Mean: 1.0630
Median Sale Price:	\$296.96	Wt. Mean: 1.0681
Mean Sale Price:	\$310.37	COD: 12.1432
Low Sale Price:	\$229.93	PRD: 0.9953

\*Excl. Unimproved Land Sales

Sale #	PID #	Property Type	Date of Sale	Sale Price/ Sqft		
				(Acre or WFF)	Sale Price	Sale Ratio
1	18309	Improved Riverfront	4/29/2021			
4	18319	Improved Riverfront (Acreage)	11/22/2021			
5	17101	Improved Riverfront	3/4/2021			
6	17100	Improved Riverfront	9/23/2021			
7	17099	Improved Riverfront	6/28/2021			
10	116018	Improved Riverfront (DT only)	12/14/2021			
11	36676	Improved Riverfront	7/23/2021			
12	36678	Improved Riverfront	6/2/2021			
13	36683	Improved Riverfront	8/16/2021			
14	36688	Improved Riverfront	9/23/2021			
2	18294	Vacant Riverfront (WFF)	10/2/2021			
3	18292	Vacant Riverfront (WFF)	9/30/2021			
8	36665	Vacant Riverfront (WFF)	11/29/2021			
9	36669	Vacant Riverfront (Acreage)	8/16/2021			

**Time Change Factors**  
 Improved: 43.8% per year  
 Vacant: No Factor Required



**GLEN COVE /  
UPPER MEADOWLAKE  
MARKET AREA**



**Time Change Factors**  
Improved: 21.9% per year  
Vacant: 32.9% per year

Glen Cove/ Meadowlake - Sales Grouping	
Sale Price Observations*	Sale Ratio Observations
Total # Sales: 6	Median: 0.9850
High Sale Price: \$368.71	Mean: 1.0002
Median Sale Price: \$225.34	Wt. Mean: 0.9942
Mean Sale Price: \$222.25	COD: 9.0350
Low Sale Price: \$103.94	PRD: 1.0061

**\*Excl. Unimproved Land Sales**

Sale #	PID #	Property Type	Date of Sale	Sale Price/ Sqft (Acre or WFF)	Sale Price	Sale Ratio
2	24585	Improved Riverfront	6/30/2021			
3	24577	Improved Riverfront	10/7/2021			
5	38527	Improved Riverfront	8/31/2021			
7	120447	Improved Riverfront (Acreage)	7/29/2021			
9	59151	Improved Riverfront	1/25/2021			
6	43852	Improved Riverfront (MFD)	4/30/2021			
1	24587	Vacant Riverfront Lot	9/2/2021			
4	43850	Vacant Riverfront Lot	4/23/2021			
8	23631	Vacant Riverfront Lot	6/7/2021			
10	59129	Vacant Riverfront Lot	7/29/2021			

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## LOWER MEADOWLAKE MARKET AREA

### Time Change Factors

Improved: 21.9% per year

Vacant: 32.9% per year

Sale #	PID #	Property Type	Date of Sale	Sale Price/ Sqft (Acre or WFF)	Sale Price Ratio
2	24585	Improved Riverfront	6/30/2021		
3	24577	Improved Riverfront	10/7/2021		
5	38927	Improved Riverfront	8/31/2021		
7	120447	Improved Riverfront (Acreage)	7/19/2021		
9	59151	Improved Riverfront	1/15/2021		
6	43952	Improved Riverfront (MFD)	4/30/2021		
1	24587	Vacant Riverfront Lot	9/2/2021		
4	43850	Vacant Riverfront Lot	4/23/2021		
8	23631	Vacant Riverfront Lot	6/7/2021		
10	59129	Vacant Riverfront Lot	7/29/2021		

### Glen Cove/ Meadowlake - Sales Grouping

Sale Price Observations*		Sale Ratio Observations	
Total # Sales	6	Median:	0.9850
High Sale Price:	\$368.71	Mean:	1.0002
Median Sale Price:	\$225.34	Wt. Mean:	0.9942
Mean Sale Price:	\$222.25	COD:	9.0350
Low Sale Price:	\$103.94	PRD:	1.0061

\*Excl. Unimproved Land Sales

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The effective date of the analysis as it relates to the above referenced mass appraisal is January 1 of the current appraisal year as prescribed by the Texas Property Tax Code, Section 23.01.(a), or 01/01/2022.

The market area considered was all of Guadalupe County, Texas, pursuant to the Texas Property Tax Code, Section 6.02.(a). Numerous economic market segments and neighborhoods, within Guadalupe County, have been developed for the purpose of creating land schedules and neighborhood calibration, through use of mass adjustment factors, in an effort to achieve acceptable ratio analysis results. The appraiser's work file contain sales ratio reports, spreadsheets, subdivision/neighborhood profiles, other supporting documentation, and reconciliation notes.

USPAP Advisory Opinion 32 "Scope of Work" states in part that, "In the interests of equity, the scope of work in mass appraisal assignments for ad valorem taxation can include consideration of appraisal level (the overall proximity between appraised values and actual prices) and the uniformity of property values (equity within groups of like properties)."

#### **ASSUMPTIONS AND LIMITING CONDITIONS**

The appraiser signing this report's Certification Statement has conducted this analysis and arrived at the conclusions contained herein subject to the following extraordinary assumptions and limiting conditions:

1. This report has been prepared exclusively for mass appraisal for ad valorem tax purposes.
2. GAD Staff Members, if any, that provided significant mass appraisal assistance related to this report are listed in the attached Certification Statement
3. The property characteristic data upon which this analysis is based is assumed to be correct. Exterior inspections of properties appraised were performed as staff resources and time allowed.
4. The schedules, tables, modifiers, etc. utilized in the mass appraisal are assumed to be properly calibrated within acceptable guidelines.
5. Validation of sales transactions are attempted through owner confirmations, field reviews, and sales data obtained from third party vendors, and are deemed reliable.

Extraordinary assumption is defined by USPAP as, "An assumption, directly related to a specific assignment, as of the effective date of the assignment results, which, if found to be false, could alter the appraiser's opinions or conclusions."

Extraordinary assumptions, when necessary, were taken during the process of schedule development, modification, and calibration and are noted within the 2020 Annual Residential Waterfront Report.

## **RESEARCH / COLLECTION OF DATA**

The collection of data pertaining to the current market conditions was obtained through numerous methods. They include:

- In-house surveys
- MLS sales data
- County Deed records
- 2019-2020 Formal and Informal Hearings

## **ANALYSIS AND EXHIBITS**

Work file contains all analysis documentation that was used to arrive at conclusions and recommendations outlined within the Annual Residential Waterfront Report.

## **CONCLUSIONS**

Having reviewed and reconciled the findings generated from this analysis, the Residential Waterfront Department has found various areas that required either modifications or calibrations of existing schedules and neighborhood modifiers.

## **RECOMMENDATIONS FOR APPLICATION AND IMPLEMENTATION**

Changes to land should be representative of conclusions found during sales ratio analysis of vacant land and improved sales found within noted waterfront neighborhoods. After updating improvement modifiers for changes found in land and neighborhood modifiers. Abstracting land values, calibration of improvement schedules should then be done so with changes to market modifiers based on conclusions found during sales ratio analysis of residential waterfront property. Further calibration of neighborhood modifiers should follow based on conclusions found during sales ratio analysis of those specific neighborhoods where transactions have occurred.

## EXHIBIT B

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### Appraisal District Independent Performance Reviews

- Methods and Assistance Program Review (M.A.P.)
  - 2021 Methods and Assistance Program Review results. Visit the link provided and *select* Guadalupe (pdf) to review report.  
  
<https://comptroller.texas.gov/taxes/property-tax/map/2021/index.php>
  
- Property Value Study (P.V.S.)
  - Guadalupe Appraisal District is scheduled to be tested in 2022 with preliminary results expected to be released in January 2023.
  - 2020 Property Value Study (P.V.S.). Visit link provided below and *select* Guadalupe to review results of most recently completed study.  
  
<https://comptroller.texas.gov/taxes/property-tax/pvs/2020f/094index.php>

## EXHIBIT C

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# 2022 Complex Appraisal Valuation Summaries

### Multi-Family Summary

The Guadalupe Appraisal District has the multifamily units broken down into one to two submarkets, three economic classes and three property classes depending upon quality/project size/location/age of the complexes with additional categories for complexes that are master metered for utilities or are subsidized housing.

The San Antonio metro area which includes the Seguin/Guadalupe area has seen a rise in rental rates and occupancy rates over the last two years with vacancy rates at their lowest point most recently as new construction slows and demand rises. Our apartment schedule for High Class multifamily complexes in the Seguin market that are 90 units and larger have seen the largest increase in rental rates at 23% over last year while Mid-Class and Low-Class rental rates have increased at a lower percentage rate of 14.8% and 10.5% respectively. Income schedules for Schertz market area are High and Mid with Low Class created and implemented new for this year. Rent rates for High Class apartments in the Schertz area increased 26.4% over last year while Mid Class properties have increased 14.7% over last year.

Income schedule apartment complexes that are 5 – 89 units have one market area, Guadalupe County. High Class apartments are experiencing a 3.7% rent increase while the Mid Class and Low-Class projects are indicating rent increases of 13.1% and 5.4% in turn.

Master metered apartments rental rates had an 8.4% increase in Mid class while High- and Low-Class complexes had no change from last year.

Vacancy rates continue to drop in this market as rising home prices and for sale home inventory wanes increasing demand for upper-tier apartments. Our apartment schedule indicates that although slightly lower, occupancy rates for projects that have unit counts of 5 to 89 units, follow closely behind the larger complexes. Our income schedule shows for the projects that are 90 units and larger, occupancy levels increased from 93.9% for High Class and Mid to 95.5% in the Seguin market and from 82.4% to 94.7% for Low Class properties. The Schertz market indicates a similar increase from 93.5% to 95.5% for High Class and Mid sectors while Low Class properties for the Schertz submarket went from 92.0% to 95.5%.

Statistics on rent rates, occupancy levels and Cap Rates are compiled from various sources such as CoStar, Marcus & Millichap, IRR-Viewpoint, RealtyRates.com Market Survey, and CBRE as well as the observed trends from local data sources.

## **INDUSTRIAL SUMMARY**

### **FLEX (530) & DISTRIBUTION (510)**

The Guadalupe Appraisal District has classified Light Industrial (Flex) properties being less than 50,000 sq. ft. in size and Industrial Warehouse (Distribution) properties as greater than 50,000 sq. ft. in size with further submarket differentiations.

Guadalupe County has continued to experience very favorable occupancy levels overall and rent rates have remained strong in the last couple of years. For the Seguin and Schertz distribution markets, rent rates have remained relatively level while occupancy levels have increased from 90% to 95%. Although new industrial growth has continued in Guadalupe County, it has been more offset by the net absorption in the past 12 months which has been more than twice that of the five-year average. This is largely due to the logistics of Guadalupe County with distribution and manufacturing being the leading subtypes. The continued increase in e-commerce and the need for increased levels of additional stock inventory to counteract supply chain disruptions and rising fuel costs has resulted in high demand for warehouse and distribution space, especially along the IH-10 and IH-35 corridors.

Rent rates for mid economic class flex space in the Seguin market have increased slightly over 9.0% while rents on high economic flex space in the Seguin market have remained level. The Schertz market has experienced similar rent rates and occupancy levels as last year.

Statistics on rent rates, occupancy levels and Cap Rates are compiled from various sources such as CoStar, Marcus & Millichap, IRR-Viewpoint, RealtyRates.com Market Survey, and CBRE as well as the observed trends from local data sources.

## **OFFICE SUMMARY**

### **PROFESSIONAL (400) & MEDICAL (410)**

Guadalupe Appraisal Districts has Offices that are broken down into two Economic areas SHMKT for Schertz/Cibolo/Selma, this is called (East End) and SGMKT for Seguin Market

The offices are a bit different in the two Property types. Offices/400 and Medical Office/410 has four classifications 1, 1.5, 2, and 3. East End has some newer complexes that coincides with the growth indicated in South Texas. Seguin market has seen growth in residential, but office properties has not followed. In Seguin, The Guadalupe Regional Medical Center is a large employer. This is jointly owned by the City of Seguin and Guadalupe County. The GRMC has many procedures and services, and medical office space is not prevalent as on East End.

Our schedule reflects for property A and B's a 90% vacancy and property C and D's 90% vacancy rate. This is up from 83.3 that was seen in 2021. Costar – Guadalupe has 4- & 5-star properties with vacancies at 20.3, 3 stars at 2.2 and 1 & 2 stars at 3.7. averaged 8.7 %. CBRE (Austin) had vacancies at 16.7 with notations that Comal was seeing less vacancies. The observation from appraiser and knowledge of the market the newer properties did not absorb as well as expected, but new leases were active. This may still be a factor from Covid Omicron variant active in 2021.

A quartile was used of all the lease rates of sample area. After analysis with Costar information on sales and leases. We used a combination of Realty Rates survey cap rates, information from informal protest data and investor surveys.

In Summary, most lease rates did not warrant an increase due to market conditions with vacancy being reduced.

In 2023 two new office properties should be completed in East End that would encompass more medical offices.

## **SELF-STORAGE SUMMARY**

### **CLIMATE CONTROLLED & NON-CLIMATE CONTROLLED (550)**

Guadalupe Appraisal Districts has the storage units broken down into two sub classes. Facilities 30,000 sq ft or less in gross building area are coded 550-S(mall). Facilities greater than 30,000 sqft in gross building area are coded 550-L(arge). Facilities are also categorized by economic class.

- Class A - Best quality, prime locations
- Class B - Good quality, secondary locations
- Class C - Aging assets, secondary locations
- Class D - Aging asset, less desirable locations with limited traffic.

We did a sampling of types and locations and most of the storage units in our market are 100% occupied.

We have had 2 sales in 2021 by same buyer in two entirely different locations. We have one facility under construction in a rural location that currently has 262,800 sq.ft. of storage that while being built had a waiting list for units.

Our schedule reflects for occupancy rates for property classes A and B at 95% (5% vacancy) and property classes C and D at 90% (10% vacancy).

In 2021 we observed increased vacancy rates of 27% among the market, as a whole. This may have been due to COVID shutdowns, but the county has experienced a flurry of moving and relocation to the South Texas market once pandemic restrictions eased.

A supply shortage of available units resulted in rising rental rates. Following a review of available data obtained through CoStar, an average observation of rental rates found within sample of facilities was used within income valuation schedules; unit of measure was annual rental rate per sqft of net rentable area (if known). We used a combination of obtained capitalization rate data: Realty Rates (1<sup>st</sup> Qtr 2022), discovery data through informal/ formal appeals, and industry investor surveys.

In 2023 we will look at the open-air storage as a blend and possibly put in its own class, as secondary income is not being captured to the extent that is present.

## **RENTAL PARKS' SUMMARY**

### **MOBILE HOME PARKS (160) & RECREATIONAL VEHECLE PARKS (165)**

#### *Mobile Home Parks*

Mobile home parks have experienced sustained stability for several years. The increase in the market area reflects the elevated migration to the geographic region, specific south Texas. A shortage in affordable housing has pushed rental rates upward while vacancy rates have compressed. Mobile home communities are starting to package used and new manufactured homes for sale with a management company for the park holding the note and rolling all associated costs: principal, interest, property taxes, pad site rental fees; into a single monthly payment. This approach aids management in maintaining the park's overall desirability within market and improvement uniformity within park.

#### *Recreational Vehicle (RV) Parks*

Similar to mobile home parks, RV parks have seen an increase in achievable rental rates; occupancy levels have climbed as well. Monthly rental rates per pad site is the unit of measure used in income schedules. GIS aerial imagery supports opinion that approximately 70-80% of RV park residents are permanent year-round and remain in-place. The introduction of 'tiny' homes has been observed in recent years, as the option begins to gain favor within marker place.

The use of RV parks, as intermediate living accommodations, for individuals that encountered delays in the construction of their home as a result of supply chain interruptions experienced during the previous 12-24 months.

RV Parks located along waterways within the county remain the most sought-after locations among market participants. The benefit of access to waterways has resulted in these parks maintaining the highest observed lease rates among county parks.

## LAND APPRAISAL SUMMARY

The reappraisal of land, county-wide, was performed to incorporate a matrix driven valuation schedule. In doing so, multiple regression analysis (MRA) was used to determine various datapoints for implementation in four matrix schedules used to determine a parcel's base unit price (per acre): Base Unit Price, Location Modifier (by ISD), and Influence Modifiers.

Results of the analysis are provided below for reference.

### *Platted Land Schedules*

LAND CLASS (ISD) MODIFIERS	SIZE OF		BASE SCHEDULE
	PARCEL	MODIFIER	
<b>COMAL ISD</b>	0.00	189	\$295,590.33
	0.10	189	\$295,590.33
	0.15	189	\$257,004.09
	0.20	189	\$232,721.37
	0.25	189	\$215,477.01
	0.50	189	\$169,646.40
	0.75	172	\$134,233.96
	1.00	161	\$113,777.09
	2.00	137	\$76,224.06
	3.00	125	\$60,468.75
	5.00	110	\$44,614.90
	10.00	92	\$29,377.44
	15.00	89	\$24,709.96
	20.00	87	\$21,871.80
	30.00	87	\$19,017.33
	40.00	87	\$17,219.91
	50.00	87	\$15,944.49
	60.00	87	\$14,971.83
	70.00	87	\$14,196.66
	80.00	87	\$13,557.21
90.00	87	\$13,017.81	
100.00	87	\$12,553.23	
9999999.00	87	\$12,553.23	

LAND CLASS (ISD) MODIFIERS	SIZE OF		BASE SCHEDULE
	PARCEL	MODIFIER	
<b>LUS ISD</b>	0.00	159	\$248,671.23
	0.10	159	\$248,671.23
	0.15	145	\$197,172.45
	0.20	136	\$167,460.88
	0.25	129	\$147,071.61
	0.50	111	\$99,633.60
	0.75	101	\$78,823.43
	1.00	95	\$67,135.55
	2.00	81	\$45,066.78
	3.00	74	\$35,797.50
	5.00	66	\$26,768.94
	10.00	57	\$18,201.24
	15.00	57	\$15,825.48
	20.00	57	\$14,329.80
	30.00	57	\$12,459.63
	40.00	57	\$11,282.01
	50.00	57	\$10,446.39
	60.00	57	\$9,809.13
	70.00	57	\$9,301.26
	80.00	57	\$8,882.31
90.00	57	\$8,528.91	
100.00	57	\$8,224.53	
9999999.00	57	\$8,224.53	

LAND CLASS (ISD) MODIFIERS	SIZE OF PARCEL	MODIFIER	BASE SCHEDULE
	0.00	126	\$197,060.22
	0.10	126	\$197,060.22
	0.15	126	\$171,336.06
	0.20	126	\$155,147.58
	0.25	126	\$143,651.34
	0.50	108	\$96,940.80
	0.75	99	\$77,262.57
	1.00	94	\$66,428.86
	2.00	82	\$45,623.16
	3.00	76	\$36,765.00
<b>MARION ISD</b>	5.00	71	\$28,796.89
	10.00	71	\$22,671.72
	15.00	71	\$19,712.44
	20.00	71	\$17,849.40
	30.00	71	\$15,519.89
	40.00	71	\$14,053.03
	50.00	71	\$13,012.17
	60.00	71	\$12,218.39
	70.00	71	\$11,585.78
	80.00	71	\$11,063.93
	90.00	71	\$10,623.73
	100.00	71	\$10,244.59
9999999.00	71	\$10,244.59	

LAND CLASS (ISD) MODIFIERS	SIZE OF PARCEL	MODIFIER	BASE SCHEDULE
	0.00	144	\$225,211.68
	0.10	144	\$225,211.68
	0.15	137	\$186,293.97
	0.20	135	\$166,229.55
	0.25	136	\$155,052.24
	0.50	121	\$108,609.60
	0.75	137	\$106,918.91
	1.00	140	\$98,936.60
	2.00	111	\$61,758.18
	3.00	127	\$61,436.25
<b>NAVARRO ISD</b>	5.00	113	\$45,831.67
	10.00	97	\$30,974.04
	15.00	97	\$26,931.08
	20.00	97	\$24,385.80
	30.00	97	\$21,203.23
	40.00	97	\$19,199.21
	50.00	97	\$17,777.19
	60.00	97	\$16,692.73
	70.00	97	\$15,828.46
	80.00	97	\$15,115.51
	90.00	97	\$14,514.11
	100.00	97	\$13,996.13
9999999.00	97	\$13,996.13	

LAND CLASS (ISD) MODIFIERS	SIZE OF PARCEL	MODIFIER	BASE SCHEDULE
	0.00	159	\$248,671.23
	0.10	159	\$248,671.23
	0.15	145	\$197,172.45
	0.20	136	\$167,460.88
	0.25	129	\$147,071.61
	0.50	111	\$99,633.60
	0.75	101	\$78,823.43
	1.00	95	\$67,135.55
	2.00	81	\$45,066.78
	3.00	74	\$35,797.50
<b>LA VERNIA ISD</b>	5.00	66	\$26,768.94
	10.00	57	\$18,201.24
	15.00	57	\$15,825.48
	20.00	57	\$14,329.80
	30.00	57	\$12,459.63
	40.00	57	\$11,282.01
	50.00	57	\$10,446.39
	60.00	57	\$9,809.13
	70.00	57	\$9,301.26
	80.00	57	\$8,882.31
	90.00	57	\$8,528.91
	100.00	57	\$8,224.53
9999999.00	57	\$8,224.53	

LAND CLASS (ISD) MODIFIERS	SIZE OF PARCEL	MODIFIER	BASE SCHEDULE
	0.00	189	\$295,590.33
	0.10	189	\$295,590.33
	0.15	189	\$257,004.09
	0.20	189	\$232,721.37
	0.25	189	\$215,477.01
	0.50	189	\$169,646.40
	0.75	172	\$134,233.96
	1.00	161	\$113,777.09
	2.00	137	\$76,224.06
	3.00	125	\$60,468.75
<b>NBS</b>	5.00	110	\$44,614.90
	10.00	92	\$29,377.44
	15.00	89	\$24,709.96
	20.00	87	\$21,871.80
	30.00	87	\$19,017.33
	40.00	87	\$17,219.91
	50.00	87	\$15,944.49
	60.00	87	\$14,971.83
	70.00	87	\$14,196.66
	80.00	87	\$13,557.21
	90.00	87	\$13,017.81
	100.00	87	\$12,553.23
9999999.00	87	\$12,553.23	

LAND CLASS (ISD) MODIFIERS	SIZE OF PARCEL	MODIFIER	BASE SCHEDULE
<b>NIS</b>	0.00	159	\$248,671.23
	0.10	159	\$248,671.23
	0.15	145	\$197,172.45
	0.20	136	\$167,460.88
	0.25	129	\$147,071.61
	0.50	111	\$99,633.60
	0.75	101	\$78,823.43
	1.00	95	\$67,135.55
	2.00	81	\$45,066.78
	3.00	74	\$35,797.50
	5.00	66	\$26,768.94
	10.00	57	\$18,201.24
	15.00	57	\$15,825.48
	20.00	57	\$14,329.80
	30.00	57	\$12,459.63
	40.00	57	\$11,282.01
	50.00	57	\$10,446.39
	60.00	57	\$9,809.13
	70.00	57	\$9,301.26
	80.00	57	\$8,882.31
90.00	57	\$8,528.91	
100.00	57	\$8,224.53	
9999999.00	57	\$8,224.53	

LAND CLASS (ISD) MODIFIERS	SIZE OF PARCEL	MODIFIER	BASE SCHEDULE
<b>PLS</b>	0.00	159	\$248,671.23
	0.10	159	\$248,671.23
	0.15	145	\$197,172.45
	0.20	136	\$167,460.88
	0.25	129	\$147,071.61
	0.50	111	\$99,633.60
	0.75	101	\$78,823.43
	1.00	95	\$67,135.55
	2.00	81	\$45,066.78
	3.00	74	\$35,797.50
	5.00	66	\$26,768.94
	10.00	57	\$18,201.24
	15.00	57	\$15,825.48
	20.00	57	\$14,329.80
	30.00	57	\$12,459.63
	40.00	57	\$11,282.01
	50.00	57	\$10,446.39
	60.00	57	\$9,809.13
	70.00	57	\$9,301.26
	80.00	57	\$8,882.31
90.00	57	\$8,528.91	
100.00	57	\$8,224.53	
9999999.00	57	\$8,224.53	

LAND CLASS (ISD) MODIFIERS	SIZE OF PARCEL	MODIFIER	BASE SCHEDULE
<b>SCS</b>	0.00	204	\$319,049.88
	0.10	204	\$319,049.88
	0.15	204	\$277,401.24
	0.20	204	\$251,191.32
	0.25	204	\$232,578.36
	0.50	204	\$183,110.40
	0.75	204	\$159,207.72
	1.00	204	\$144,164.76
	2.00	174	\$96,810.12
	3.00	159	\$76,916.25
	5.00	142	\$57,593.78
	10.00	121	\$38,637.72
	15.00	121	\$33,594.44
	20.00	121	\$30,419.40
	30.00	121	\$26,449.39
	40.00	121	\$23,949.53
	50.00	121	\$22,175.67
	60.00	121	\$20,822.89
	70.00	121	\$19,744.78
	80.00	121	\$18,855.43
90.00	121	\$18,105.23	
100.00	121	\$17,459.09	
9999999.00	121	\$17,459.09	

LAND CLASS (ISD) MODIFIERS	SIZE OF PARCEL	MODIFIER	BASE SCHEDULE
<b>SGS</b>	0.00	175	\$273,694.75
	0.10	175	\$273,694.75
	0.15	155	\$210,770.55
	0.20	143	\$176,080.19
	0.25	134	\$152,772.06
	0.50	109	\$97,838.40
	0.75	97	\$75,701.71
	1.00	89	\$62,895.41
	2.00	73	\$40,615.74
	3.00	65	\$31,443.75
	5.00	56	\$22,713.04
	10.00	45	\$14,369.40
	15.00	45	\$12,493.80
	20.00	45	\$11,313.00
	30.00	45	\$9,836.55
	40.00	45	\$8,906.85
	50.00	45	\$8,247.15
	60.00	45	\$7,744.05
	70.00	45	\$7,343.10
	80.00	45	\$7,012.35
90.00	45	\$6,733.35	
100.00	45	\$6,493.05	
9999999.00	45	\$6,493.05	

LAND CLASS (ISD) MODIFIERS	SIZE OF PARCEL	MODIFIER	BASE SCHEDULE
<b>SMS</b>	0.00	111	\$173,600.67
	0.10	111	\$173,600.67
	0.15	111	\$150,938.91
	0.20	111	\$136,677.63
	0.25	111	\$126,549.99
	0.50	111	\$99,633.60
	0.75	101	\$78,823.43
	1.00	95	\$67,135.55
	2.00	81	\$45,066.78
	3.00	74	\$35,797.50
	5.00	66	\$26,768.94
	10.00	57	\$18,201.24
	15.00	57	\$15,825.48
	20.00	57	\$14,329.80
	30.00	57	\$12,459.63
	40.00	57	\$11,282.01
	50.00	57	\$10,446.39
	60.00	57	\$9,809.13
	70.00	57	\$9,301.26
	80.00	57	\$8,882.31
90.00	57	\$8,528.91	
100.00	57	\$8,224.53	
999999.00	57	\$8,224.53	

*Rural/ Abstract Land Schedules*

LAND CLASS (ISD) MODIFIERS	SIZE OF PARCEL	MODIFIER	BASE SCHEDULE
<b>COMAL ISD</b>	0.00	213	\$333,125.61
	0.10	213	\$333,125.61
	0.20	213	\$262,273.29
	0.25	213	\$242,839.17
	0.50	212	\$190,291.20
	0.75	212	\$165,451.16
	1.00	211	\$149,111.59
	2.00	209	\$116,283.42
	3.00	207	\$100,136.25
	5.00	203	\$82,334.77
	10.00	194	\$61,948.08
	15.00	186	\$51,641.04
	20.00	179	\$45,000.60
	30.00	165	\$36,067.35
	40.00	154	\$30,481.22
	50.00	144	\$26,390.88
	60.00	144	\$24,780.96
	70.00	144	\$23,497.92
	80.00	144	\$22,439.52
	90.00	144	\$21,546.72
100.00	144	\$20,777.76	
200.00	144	\$16,358.40	
999999.00	144	\$16,358.40	

LAND CLASS (ISD) MODIFIERS	SIZE OF PARCEL	MODIFIER	BASE SCHEDULE
<b>LUS ISD</b>	0.00	53	\$82,108.43
	0.10	53	\$82,108.43
	0.20	53	\$64,644.83
	0.25	53	\$59,854.73
	0.50	53	\$47,124.00
	0.75	53	\$40,972.58
	1.00	53	\$37,101.23
	2.00	53	\$29,209.95
	3.00	53	\$25,396.88
	5.00	53	\$21,293.48
	10.00	53	\$16,764.30
	15.00	53	\$14,576.10
	20.00	52	\$13,072.80
	30.00	55	\$12,022.45
	40.00	58	\$11,479.94
	50.00	62	\$11,362.74
	60.00	67	\$11,530.03
	70.00	73	\$11,912.14
	80.00	79	\$12,310.57
	90.00	88	\$13,167.44
100.00	99	\$14,284.71	
200.00	99	\$11,246.40	
999999.00	99	\$11,246.40	

LAND CLASS (ISD) MODIFIERS	SIZE OF PARCEL	MODIFIER	BASE SCHEDULE
	0.00	108	\$168,908.76
	0.10	108	\$168,908.76
	0.20	108	\$132,983.64
	0.25	108	\$123,129.72
	0.50	108	\$96,940.80
	0.75	108	\$84,286.44
	1.00	108	\$76,322.52
	2.00	99	\$55,081.62
	3.00	91	\$44,021.25
	5.00	79	\$32,041.61
<b>MARION ISD</b>	10.00	59	\$18,839.88
	15.00	59	\$16,380.76
	20.00	59	\$14,832.60
	30.00	59	\$12,896.81
	40.00	59	\$11,677.87
	50.00	59	\$10,812.93
	60.00	59	\$10,153.31
	70.00	59	\$9,627.62
	80.00	59	\$9,193.97
	90.00	59	\$8,828.17
	100.00	59	\$8,513.11
	200.00	59	\$6,702.40
	999999.00	59	\$6,702.40

LAND CLASS (ISD) MODIFIERS	SIZE OF PARCEL	MODIFIER	BASE SCHEDULE
	0.00	67	\$104,785.99
	0.10	67	\$104,785.99
	0.20	67	\$82,499.11
	0.25	67	\$76,386.03
	0.50	67	\$60,139.20
	0.75	67	\$52,288.81
	1.00	67	\$47,348.23
	2.00	67	\$37,277.46
	3.00	67	\$32,411.25
	5.00	67	\$27,174.53
<b>NAVARRO ISD</b>	10.00	67	\$21,394.44
	15.00	68	\$18,879.52
	20.00	68	\$17,095.20
	30.00	69	\$15,082.71
	40.00	69	\$13,657.17
	50.00	70	\$12,828.90
	60.00	70	\$12,046.30
	70.00	70	\$11,422.60
	80.00	70	\$10,908.10
	90.00	70	\$10,474.10
	100.00	70	\$10,100.30
	200.00	70	\$7,952.00
	999999.00	70	\$7,952.00

LAND CLASS (ISD) MODIFIERS	SIZE OF PARCEL	MODIFIER	BASE SCHEDULE
	0.00	56	\$87,582.32
	0.10	56	\$87,582.32
	0.20	56	\$68,954.48
	0.25	56	\$63,845.04
	0.50	56	\$50,265.60
	0.75	56	\$43,704.08
	1.00	56	\$39,574.64
	2.00	56	\$31,157.28
	3.00	56	\$27,090.00
	5.00	56	\$22,713.04
<b>LA VERNIA ISD</b>	10.00	56	\$17,881.92
	15.00	56	\$15,547.84
	20.00	56	\$14,078.40
	30.00	55	\$12,022.45
	40.00	55	\$10,886.15
	50.00	55	\$10,079.85
	60.00	54	\$9,292.86
	70.00	54	\$8,811.72
	80.00	54	\$8,414.82
	90.00	54	\$8,080.02
	100.00	53	\$7,647.37
	200.00	53	\$6,020.80
	999999.00	53	\$6,020.80

LAND CLASS (ISD) MODIFIERS	SIZE OF PARCEL	MODIFIER	BASE SCHEDULE
	0.00	106	\$165,780.82
	0.10	106	\$165,780.82
	0.20	106	\$130,520.98
	0.25	106	\$120,849.54
	0.50	106	\$95,145.60
	0.75	106	\$82,725.58
	1.00	106	\$74,909.14
	2.00	106	\$58,976.28
	3.00	106	\$51,277.50
	5.00	106	\$42,992.54
	10.00	106	\$33,847.92
<b>NBS</b>	15.00	106	\$29,429.84
	20.00	106	\$26,648.40
	30.00	106	\$23,170.54
	40.00	106	\$20,980.58
	50.00	106	\$19,426.62
	60.00	106	\$18,241.54
	70.00	106	\$17,297.08
	80.00	106	\$16,517.98
	90.00	106	\$15,860.78
	100.00	106	\$15,294.74
	200.00	106	\$12,041.60
	999999.00	106	\$12,041.60

LAND CLASS (ISD) MODIFIERS	SIZE OF PARCEL	MODIFIER	BASE SCHEDULE
<b>NIS</b>	0.00	53	\$82,108.43
	0.10	53	\$82,108.43
	0.20	53	\$64,644.83
	0.25	53	\$59,854.73
	0.50	53	\$47,124.00
	0.75	53	\$40,972.58
	1.00	53	\$37,101.23
	2.00	53	\$29,209.95
	3.00	53	\$25,396.88
	5.00	53	\$21,293.48
	10.00	53	\$16,764.30
	15.00	53	\$14,576.10
	20.00	52	\$13,072.80
	30.00	55	\$12,022.45
	40.00	58	\$11,479.94
	50.00	62	\$11,362.74
	60.00	67	\$11,530.03
	70.00	73	\$11,912.14
	80.00	79	\$12,310.57
	90.00	88	\$13,167.44
100.00	99	\$14,284.71	
200.00	99		
9999999.00	99	\$11,246.40	

LAND CLASS (ISD) MODIFIERS	SIZE OF PARCEL	MODIFIER	BASE SCHEDULE
<b>PLS</b>	0.00	48	\$75,070.56
	0.10	48	\$75,070.56
	0.20	48	\$59,103.84
	0.25	48	\$54,724.32
	0.50	48	\$43,084.80
	0.75	48	\$37,460.64
	1.00	48	\$33,921.12
	2.00	49	\$27,262.62
	3.00	49	\$23,703.75
	5.00	49	\$19,873.91
	10.00	51	\$16,285.32
	15.00	51	\$14,159.64
	20.00	52	\$13,072.80
	30.00	55	\$12,022.45
	40.00	58	\$11,479.94
	50.00	62	\$11,362.74
	60.00	67	\$11,530.03
	70.00	71	\$11,651.05
	80.00	71	\$11,126.26
	90.00	71	\$10,683.58
100.00	71	\$10,302.31	
200.00	71	\$8,111.04	
9999999.00	71	\$8,111.04	

LAND CLASS (ISD) MODIFIERS	SIZE OF PARCEL	MODIFIER	BASE SCHEDULE
<b>SCS</b>	0.00	95	\$148,577.15
	0.10	95	\$148,577.15
	0.20	95	\$116,976.35
	0.25	95	\$108,308.55
	0.50	95	\$85,272.00
	0.75	95	\$74,140.85
	1.00	95	\$67,135.55
	2.00	95	\$52,856.10
	3.00	95	\$45,956.25
	5.00	95	\$38,531.05
	10.00	95	\$30,335.40
	15.00	95	\$26,375.80
	20.00	95	\$23,883.00
	30.00	95	\$20,766.05
	40.00	95	\$18,803.35
	50.00	95	\$17,410.65
	60.00	95	\$16,348.55
	70.00	95	\$15,502.10
	80.00	95	\$14,803.85
	90.00	95	\$14,214.85
100.00	95	\$13,707.55	
200.00	95	\$10,792.00	
9999999.00	95	\$10,792.00	

LAND CLASS (ISD) MODIFIERS	SIZE OF PARCEL	MODIFIER	BASE SCHEDULE
<b>SGS</b>	0.00	114	\$178,292.58
	0.10	114	\$178,292.58
	0.20	114	\$140,371.62
	0.25	114	\$129,970.26
	0.50	113	\$101,428.80
	0.75	105	\$81,945.15
	1.00	100	\$70,669.00
	2.00	88	\$48,961.44
	3.00	82	\$39,667.50
	5.00	75	\$30,419.25
	10.00	67	\$21,394.44
	15.00	62	\$17,213.68
	20.00	60	\$15,084.00
	30.00	56	\$12,241.04
	40.00	53	\$10,490.29
	50.00	52	\$9,530.04
	60.00	61	\$10,497.49
	70.00	60	\$9,790.80
	80.00	59	\$9,193.97
	90.00	59	\$8,828.17
100.00	58	\$8,368.82	
200.00	71	\$8,008.80	
9999999.00	71	\$8,008.80	

LAND CLASS (ISD) MODIFIERS	SIZE OF PARCEL	MODIFIER	BASE SCHEDULE
<b>SMS</b>	0.00	83	\$129,809.51
	0.10	83	\$129,809.51
	0.20	83	\$102,200.39
	0.25	83	\$94,627.47
	0.50	83	\$74,500.80
	0.75	83	\$64,775.69
	1.00	83	\$58,655.27
	2.00	83	\$46,179.54
	3.00	83	\$40,151.25
	5.00	83	\$33,663.97
	10.00	83	\$26,503.56
	15.00	84	\$23,321.76
	20.00	84	\$21,117.60
	30.00	84	\$18,361.56
	40.00	85	\$16,824.05
	50.00	85	\$15,577.95
	60.00	70	\$12,046.30
	70.00	70	\$11,422.60
	80.00	70	\$10,908.10
	90.00	70	\$10,474.10
100.00	70	\$10,100.30	
200.00	70	\$7,952.00	
9999999.00	70	\$7,952.00	

### Land Influence Factors

<b>INFLUENCE FACTORS</b>		
DESCRIPTION	CODE	FACTOR %
<b>100 YR FLD PLAIN</b>	<b>100yrFLD</b>	<b>85.0%</b>
<b>FLOOD WAY</b>	<b>FLDWAY</b>	<b>73.0%</b>
<b>LAND LOCK PROPERTIES</b>	<b>LNDLCK</b>	<b>85.7%</b>
<b>HV TRANSMISSION LINE</b>	<b>HVTL</b>	<b>92.5%</b>
<b>PIPELINE</b>	<b>UGPipeline</b>	<b>92.5%</b>
<b>SHAPE "FLAG"</b>	<b>SHAPE:FLAG</b>	<b>86.0%</b>
<b>SHAPE "LONG &amp; SKINNY"</b>	<b>SHAPE:L/N</b>	<b>93.0%</b>

## AGRICULTURAL USE – PRODUCTIVITY SCHEDULES

### Productivity Value Comparison From 2021 to 2022

2021 Productivity Values (Cap Rate = 10.00%)				2022 Productivity Values (Cap Rate=10%)	
Category					
D1G - IMPROVED GOOD	212		1%		213
D1A/D1B - IMPROVED AVG.	114		6%		120
D1P - IMPROVED POOR	64		7%		68
D3G - TILLABLE GOOD	236		3%		242
D3A/D3B - TILLABLE AVG.	184		6%		194
D3P - TILLABLE POOR	130		8%		141
D5G - NATIVE GOOD	143		0%		143
D5A/D5B - NATIVE AVG.	81		2%		83
D5P - NATIVE POOR	46		9%		50
D4M - WASTELAND	26		0%		26
D7I/O(D7P) - IMPROVED PECAN	433		-32%		293
D7N - NATIVE PECAN	126		6%		134

### ACREAGE TOTAL W/ AG VALUATION IN CITY LIMITS

*2020 FOR 2022 CALCULATION*

ENTITY	ENTITY CODE	SUM LAND ACRES
<i>CITY OF CIBOLO</i>	<i>CCI</i>	5,426
<i>CITY OF LULING</i>	<i>CLU</i>	462
<i>CITY OF MARION</i>	<i>CMA</i>	81
<i>CITY OF NEW BRAUNFELS</i>	<i>CNB</i>	3,980
<i>CITY OF SANTA CLARA</i>	<i>CSA</i>	3,987
<i>CITY OF SCHERTZ</i>	<i>CSC</i>	1,395
<i>CITY OF SELMA</i>	<i>CSE</i>	110
<i>CITY OF SEGUIN</i>	<i>CSG</i>	10,973
<i>CITY OF SAN MARCOS</i>	<i>CSM</i>	377
<b>TOTAL ACRES</b>		
		26,793

*\* Acreage used to calculate weighted average city tax rate*

### TOTAL ACREAGE UNDER AGRICULTURAL VALUATION (2020)

*(COUNTY-WIDE)*

STATE CLASSIFICATION	ACREAGE (rounded)
D1	91,243
D3	70,400
D4	300
D5	220,326
D7	2,106
<b>TOTAL ACREAGE</b>	
384,376	

# EXHIBIT D

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## **Contracted Valuation Process**

### **INDUSTRIAL PROPERTY APPRAISED BY CAPITOL APPRAISAL GROUP**

**2021-2022**

#### **Overview**

This type of property consists of processing facilities and related personal property. Capitol Appraisal Group, Inc. is contracted to reappraise this type of property according to the scope of work in the normal course of business of the client consistent with the Uniform Standards of Professional Appraisal Practice guidelines. The completed appraisals are all retrospective in nature. The purpose of the appraisals is to estimate market value as of January 1 in accordance with the definition of market value established in the Texas Property Tax Code (Sec. 1.04). "Market value" means 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 purchaser 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 purchaser seek to maximize their gains and neither is in a position to take advantage of the exigencies of the other.

The effective date of the appraisals is January 1 of the year for which this report is submitted unless the property owner or agent has applied for and been granted September 1 inventory valuation as allowed by Section 23.12(f) of the Texas Property Tax Code. The date of this report is April 20 of the tax year for which it is submitted.

The client for the mass appraisal is the Texas appraisal district named on the last page of this report. The intended users of this report are the client and the property owners of the client appraisal district.

The appraisal results will be used as the tax base upon which a property tax will be levied. The properties are appraised in fee simple in conformance with the Texas Property Tax Code Sec. 25.06. This is a jurisdictional exception to the Standards Rule 6-5 © Comment of the Uniform Standards of Professional Appraisal Practice 2008. A listing of the industrial properties appraised by Capitol Appraisal Group, Inc. for the appraisal district is available at the appraisal district office. Industrial properties are normally re-inspected annually.

Documents relevant to an understanding of these appraisals include the confidential rendition, if any, filed with the appraisal district by the owner or agent of the property; other reports described in the Texas Property Tax Code; asset lists and other confidential data supplied by the owner or agent; the General Appraisal Manual adopted by the Texas Comptroller of Public Accounts; Property Assessment Valuation published by the International Association of Assessing Officers and adopted by the Texas Comptroller of Public Accounts; and Engineering Valuation and Depreciation by Marston, Winfrey, and Hempstead; and the Texas Property Tax Code.

Capitol's industrial appraisal staff includes licensed engineers as well as experienced appraisers who are knowledgeable in all three approaches to value. Industrial appraisal staff stays abreast of current trends affecting industrial properties through review of published materials, attendance at conferences, course work, and continuing education. All industrial appraisers are registered with the Texas Board of Tax Professional Examiners.

### **Assumptions and Limiting Conditions**

All appraisals are subject to the following assumptions and limiting conditions:

1. Title to the property is assumed to be good and marketable and the legal description correct.
2. No responsibility for legal matters is assumed. All existing liens, mortgages, or other encumbrances have been disregarded and the property is appraised as though free and clear, under responsible ownership and competent management.
3. The appraisers developing these appraisals are not requested to give testimony or attendance in court by reason of the appraisals, unless directed by, employed by, and provided legal counsel by the Appraisal District.
4. The appraisers do not necessarily inspect every property every year.
5. All sketches on the appraisal documents are intended to be visual aids and should not be construed as surveys or engineering reports unless otherwise specified.
6. All information in the appraisal documents has been obtained by members of Capitol Appraisal Group's staff or by other reliable sources.
7. The appraisals were prepared exclusively for ad valorem tax purposes.
8. The appraisers have inspected as far as possible, by observation, the improvements being appraised, however, it is not possible to personally observe conditions beneath the soil or hidden structural components within the improvements. Therefore no representations are made as to these matters unless specifically considered in an individual appraisal.

### **Data Collection and Validation**

Data on the subject properties is collected as part of the inspection process and through later submissions by the property owner. Submitted data may be on a rendition form or in other modes which require confidentiality. Subject property data is verified through previously existing records and through published reports. Additional data are obtained and verified through published sources, regulatory reports, and through analysis of comparable properties, if any. Due to the unique nature of many industrial properties there is no standard data collection form or manual.

### **Valuation Approach and Analysis**

Industrial properties are appraised using replacement/reproduction cost new less depreciation models. Replacement costs are estimated from published sources, other publicly available information, and comparable properties. Reproduction costs are based on actual investment in the subject or comparable properties adjusted for typical changes in cost over time. Depreciation is calculated on the age/life method using typical economic lives and depreciation rates based on published sources, market evidence, and the experience of knowledgeable appraisers. Adjustments for functional and economic obsolescence may be made if utilization and income data for the subject property justify such. Income Approach models (direct capitalization and discounted cash flow) are also used when economic and/or subject property income information is available. Capitalization and discount rates are based on published capital costs for the industry of the subject property. A market data model based on typical selling prices per unit of capacity is also used when appropriate market sales information is available.

Because cost information is the most readily available type of data, the cost approach model is always considered and used. If sufficient data is available either of both of the other two models may also be considered and used. The market data and income approach models may need to

Model calibration in the cost approach involves the selection of the appropriate service life for each type or class of property. Further calibration can occur through the use of utilization or through-put data provided by the owner or agent. Income approach calibration involves the selection of the cost of capital or discount rate appropriate to the type of property being appraised as well as adjusting the projected income stream to reflect the individual characteristics of the subject property. Model calibration in the market data approach involves adjusting sales prices of comparable properties to reflect the individual characteristics of the subject property.

The mathematical form of each model is described below.

## Cost Approach

$$\begin{aligned} & \text{RCN} \\ & -\text{PD} \\ & -\text{FO} \\ & \underline{-\text{EO}} \\ & =\text{Cost Indicator of Value} \end{aligned}$$

Where:

RCN = Replacement or Reproduction Cost New

PD = Physical Depreciation

FO = Functional Obsolescence

EO = Economic Obsolescence

## Income Approach

$$\begin{aligned} & \text{PGR} \\ & -\text{VCL} \\ & -\text{FE} \\ & \underline{-\text{VE}} \\ & \text{NOI} \end{aligned}$$

$$\text{NOI/R} = \text{Income Indicator of Value}$$

Where:

NOI = Net Operating Income

PGR = Potential Gross Rent

VCL = Vacancy and Collection Loss

FE = Fixed Expenses

VE = Variable Expenses

R = Discount Rate or Cost of Capital

A variation of the income model is:

NOI for year 1 x DF for year 1 = PW of year 1 NOI

NOI for year n x DF for year n = PW of year n NOI

Net Reversion x DF for year n = PW of Reversion

Sum of PW's for all years 1 - n = Income Indicator of Value

Where:

DF = Discount Factor

PW = Present Worth

n = Last year of holding period

## Market Data Approach

$$\text{ASPCP}/\text{U} = \text{PU}$$

$$\text{PU} \times \text{SU} = \text{Market Data Indicator of Value}$$

Where:

ASPCP = Adjusted Sales Price of Comparable Property

U = Unit of comparison

PU = Price per Unit of comparison

ASPU = Adjusted Sales Price per Unit of comparison

SU = Subject Property's number of Units of comparison

In reconciling multiple model results for a property the appraiser considers the model results that best address the individual characteristics of the subject property and that are based on the most reliable data while maintaining equalization among like properties. Final results for each property may be found on the appraisal district's appraisal roll.

Land valuation for industrial properties is the responsibility of appraisal district staff as is the highest and best use analysis of the site. Sites are analyzed for highest and best use as though they were vacant. Highest and best use analysis of the improvements is based on the likelihood of the continued use of the improvements in their current and/or intended use. An appraiser's identification of a property's highest and best use is always a statement of opinion, never a statement of fact.

### **Review and Testing**

Field review of appraisals is performed through the regular inspection of subject properties. The periodic reassignment of properties among appraisers or the review of appraisals by an experienced appraiser also contributes to the review process. A computer-assisted statistical review of property value changes is also conducted.

Appraisal-to-sales ratios are the preferred method for measuring performance, however sales are very infrequent. Furthermore, market transactions normally occur for multiple sites and include both real and personal property, tangible and intangible, making analysis difficult and subjective. Performance is also measured through comparison with valid single-property appraisals submitted for staff review. Lastly, Capitol Appraisal Group's industrial appraisal methods and procedures are subject to review by the Property Tax Division of the Texas Comptroller's office. The Comptroller's review as well as comparisons with single-property appraisals indicate the validity of the models and the calibration techniques employed.

**BUSINESS PERSONAL PROPERTY**  
**APPRAISED BY CAPITOL APPRAISAL GROUP**

**2021-2022**

**Overview**

This type of property consists of tangible personal property owned by a business or individual for the purpose of producing an income. The Uniform Standards of Professional Appraisal practice define personal property as “identifiable portable and tangible objects which are considered by the general public as being “personal,” e.g. furnishings, artwork, antiques, gems and jewelry, collectibles, machinery and equipment; all property that is not classified as real estate.” The Texas Property Tax Code (Sec. 1.04(5)) defines tangible personal property as “...personal property that can be seen, weighed, measured, felt, or otherwise perceived by the senses but does not include a document or other perceptible object that constitutes evidence of a valuable interest, claim, or right and has negligible or no intrinsic value.” The Texas Property Tax Code (Sec. 1.04(4)) defines personal property as “...property that is not real property.”

Capitol Appraisal Group, Inc. is contracted to reappraise this type of property according to the scope of work in the normal course of business of the client consistent with the Uniform Standards of Professional Appraisal Practice guidelines. The completed appraisals are all retrospective in nature. The purpose of the appraisals is to estimate market value as of January 1 in accordance with the definition of market value established in the Texas Property Tax Code (Sec. 1.04). “Market value” means 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 purchaser 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 purchaser seek to maximize their gains and neither is in a position to take advantage of the exigencies of the other.

A separate definition of the value of inventory is found in the Texas Property Tax Code (Sec. 23.12(a)), “...the market value of an inventory is the price for which it would sell as a unit to a purchaser who would continue the business.” Additionally, some inventories may qualify for appraisal as of September 1 in accordance with the provisions of Texas Property Tax Code Section 23.12(f).

The effective date of the appraisals is January 1 of the year for which this report is submitted unless the property owner or agent has applied for and been granted September 1 inventory valuation as allowed by Section 23.12(f) of the Texas Property Tax Code. The date of this report is April 20 of the tax year for which it is submitted.

The client for the mass appraisal is the Texas appraisal district named on the last page of this report. The intended users of this report are the client and the property owners of the client appraisal district.

The appraisal results will be used as the tax base upon which a property tax will be levied. A listing of the personal property appraised by Capitol Appraisal Group, Inc. for the appraisal district is available at the appraisal district office. Personal property is normally re-inspected annually.

Documents relevant to an understanding of these appraisals include the confidential rendition, if any, filed with the appraisal district by the owner or agent of the property; other reports described in the Texas Property tax Code; asset lists and other confidential data supplied by the owner or agent; Property Assessment Valuation published by the International Association of Assessing Officers and adopted by the Texas Comptroller of Public Accounts; and Engineering Valuation and Depreciation by Marston, Winfrey, and Hempstead; and the Texas Property Tax Code.

Capitol’s personal property appraisal staff includes licensed engineers as well as experienced appraisers who are knowledgeable in all three approaches to value. Personal property appraisal staff stays abreast of current trends affecting personal property through review of published materials, attendance at conferences, course work, and continuing education. All personal property appraisers are registered with the Texas Board of Tax Professional Examiners.

### **Assumptions and Limiting Conditions**

All appraisals are subject to the following assumptions and limiting conditions:

1. Title to the property is assumed to be good and marketable and the legal description correct.
2. No responsibility for legal matters is assumed. All existing liens, mortgages, or other encumbrances have been disregarded and the property is appraised as though free and clear, under responsible ownership and competent management.
3. The appraisers developing these appraisals are not Requested to give testimony or attendance in court by reason of the appraisals, unless directed by, employed by, and provided legal counsel by the Appraisal District.
4. The appraisers do not necessarily inspect every property every year.
5. All sketches on the appraisal documents are intended to be visual aids and should not be construed as surveys or engineering reports unless otherwise specified.
6. All information in the appraisal documents has been obtained by members of Capitol Appraisal Group's staff or by other reliable sources.
7. The appraisals were prepared exclusively for ad valorem tax purposes.

### **Data Collection and Validation**

Data on the subject properties are collected as part of the inspection process and through later submissions by the property owner. Submitted data may be on a rendition form or in other modes which require confidentiality. Subject property data is verified through previously existing records and through published reports. Additional data are obtained and verified through published sources, regulatory reports, and through analysis of comparable properties. Due to the multitude of personal property types there is no standard data collection form or manual.

### **Valuation Approach and Analysis**

Personal property is appraised using replacement/reproduction cost new less depreciation models. Replacement costs are estimated from published sources, other publicly available information, and comparable properties. Reproduction costs are based on actual investment in the subject or comparable properties. Depreciation is calculated on the age/life method using typical economic lives and depreciation rates based on published sources, market evidence, and the experience of knowledgeable appraisers. Adjustments for functional and economic obsolescence may be made if utilization and income data for the subject property justify such. Income Approach models (direct capitalization and discounted cash flow) are also used when economic and/or subject property income information is available. Capitalization and discount rates are based on published capital costs for the industry of the subject property. A value estimate derived from an income approach model in which the operating income of a business was capitalized must be reduced by the value of any real property in order to arrive at the value of the operating personal property. A market data model based on typical selling prices per item or unit of capacity is also used when appropriate market sales information is available. In the case

of some personal property types, such as licensed vehicles, market data from published pricing guides is used to construct a market value model. In other cases, models are based on sales information available through published sources or through private sources.

Because cost information is the most readily available type of data, the cost approach model is always considered and used. If sufficient data is available either of both of the other two models may also be considered and used. The market data and income approach models may need to be reduced by the value of the land in order to arrive at a value of improvements and personal property.

Model calibration in the cost approach involves the selection of the appropriate service life for each type or class of property. Further calibration can occur through the use of utilization or through-put data provided by the owner or agent. Income approach calibration involves the selection of the cost of capital or discount rate appropriate to the type of property being appraised as well as adjusting the projected income stream to reflect the individual characteristics of the subject property. Model calibration in the market data approach involves adjusting sales prices of comparable properties to reflect the individual characteristics of the subject property.

The mathematical form of each model is described below.

## Cost Approach

$$\begin{aligned} & \text{RCN} \\ & -\text{PD} \\ & -\text{FO} \\ & \underline{-\text{EO}} \\ & =\text{Cost Indicator of Value} \end{aligned}$$

Where:

RCN = Replacement or Reproduction Cost New

PD = Physical Depreciation

FO = Functional Obsolescence

EO = Economic Obsolescence

## Income Approach

$$\begin{aligned} & \text{PGR} \\ & -\text{VCL} \\ & -\text{FE} \\ & \underline{-\text{VE}} \\ & \text{NOI} \end{aligned}$$

$$\text{NOI/R} = \text{Income Indicator of Value}$$

Where:

PGR = Potential Gross Rent

VCL = Vacancy and Collection Loss

FE = Fixed Expenses

VE = Variable Expenses

R = Discount Rate or Cost of Capital

A variation of the income model is:

$$\begin{aligned} & \text{NOI for year 1} \times \text{DF for year 1} = \text{PW of year 1 NOI} \\ & \text{NOI for year n} \times \text{DF for year n} = \text{PW of year n NOI} \\ & \text{Net Reversion} \times \text{DF for year n} = \text{PW of Reversion} \\ & \text{Sum of PW's for all years 1 - n} = \text{Income Indicator of Value} \end{aligned}$$

Where:

NOI = Net Operating Income

DF = Discount Factor

PW = Present Worth

n = Last year of holding period

# Market Data Approach

$$\text{ASPCP}/\text{U} = \text{PU}$$

$$\text{PU} \times \text{SU} = \text{Market Data Indicator of Value}$$

Where:

ASPCP = Adjusted Sales Price of Comparable Property

U = Unit of comparison

ASPU = Adjusted Sales Price per Unit of comparison

SU = Subject Property's number of Units of comparison

In reconciling multiple model results for a property the appraiser considers the model results that best address the individual characteristics of the subject property and that are based on the most reliable data while maintaining equalization among like properties. Final results for each property may be found on the appraisal district's appraisal roll.

Highest and best use analysis of personal property is based on the likelihood of the continued use of the personal property in its current and/or intended use. An appraiser's identification of a property's highest and best use is always a statement of opinion, never a statement of fact.

## **Review and Testing**

Field review of appraisals is performed through the regular inspection of subject properties. The periodic reassignment of properties among appraisers or the review of appraisals by an experienced appraiser also contributes to the review process. A computer-assisted statistical review of property value changes is also conducted.

Appraisal-to-sales ratios are the preferred method for measuring performance and are used when possible. However sales for some types of personal property are very infrequent. Furthermore, many market transactions occur for multiple sites and include both real and personal property, tangible and intangible, making analysis difficult and subjective. Performance is also measured through comparison with valid single-property appraisals submitted for staff review. Lastly, Capitol Appraisal Group's industrial appraisal methods and procedures for real and personal property are subject to review by the Property Tax Division of the Texas Comptroller's office. The Comptroller's review as well as appraisal-to-sale ratios and comparisons with single-property appraisals indicate the validity of the models and the calibration techniques employed. Commercial personal property appraised by Capitol Appraisal Group, Inc. is not subject to a methods and procedures review however it is included in the Property Tax Division's annual ratio study with satisfactory results.

**UTILITY, RAILROAD, AND PIPELINE PROPERTIES  
APPRAISED BY CAPITOL APPRAISAL GROUP  
2021-2022**

**Overview**

This type of property consists of operating property, excluding land, owned by utility, railroad, and pipeline companies, and related personal property and improvements. Capitol Appraisal Group, Inc. is contracted to reappraise this type of property according to the scope of work in the normal course of business of the client consistent with the Uniform Standards of Professional Appraisal Practice guidelines. The completed appraisals are all retrospective in nature. The purpose of the appraisals is to estimate market value as of January 1 in accordance with the definition of market value established in the Texas Property Tax Code (Sec. 1.04). "Market value" means 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 purchaser 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 purchaser seek to maximize their gains and neither is in a position to take advantage of the exigencies of the other.

The effective date of the appraisals is January 1 of the year for which this report is submitted unless the property owner or agent has applied for and been granted September 1 inventory valuation as allowed by Section 23.12(f) of the Texas Property Tax Code. The date of this report is April 20 of the tax year for which it is submitted.

The client for the mass appraisal is the Texas appraisal district named on the last page of this report. The intended users of this report are the client and the property owners of the client appraisal district

The appraisal results will be used as the tax base upon which a property tax will be levied. The properties are appraised in fee simple in conformance with the Texas Property Tax Code Sec. 25.06. This is a jurisdictional exception to Standards Rule 6-5 (c) comment of the Uniform Standards of Professional Appraisal Practice 2008. A listing of the utility, railroad, and pipeline properties appraised by Capitol Appraisal Group, Inc. for the appraisal district is available at the appraisal district office. Such utility, railroad, and pipeline properties that are susceptible to inspection (e.g. compressor stations, pump stations, buildings, and power plants) are normally re-inspected at least every three years.

Capitol's utility, railroad, and pipeline appraisal staff includes licensed engineers as well as experienced appraisers who are knowledgeable in all three approaches to value. The appraisal staff stays abreast of current trends affecting utility, railroad, and pipeline properties through review of published materials, attendance at conferences, course work, and continuing education. All appraisers are registered with the Texas Board of Tax Professional Examiners.

**Assumptions and Limiting Conditions**

All appraisals are subject to the following assumptions and limiting conditions:

1. Title to the property is assumed to be good and marketable and the legal description correct.
2. No responsibility for legal matters is assumed. All existing liens, mortgages, or other encumbrances have been disregarded and the property is appraised as though free and clear, under responsible ownership and competent management.
3. The appraisers developing these appraisals are not Requested to give testimony or attendance in court by reason of the appraisals, unless directed by, employed by, and provided legal counsel by the Appraisal District.
4. The appraisers do not necessarily inspect every property every year.
5. All sketches on the appraisal documents are intended to be visual aids and should not be construed as surveys or engineering reports unless otherwise specified.
6. All information in the appraisal documents has been obtained by members of Capitol Appraisal Group's staff or by other reliable sources.
7. The appraisals were prepared exclusively for ad valorem tax purposes.

8. The appraisers have inspected as far as possible, by observation, the improvements being appraised, however, it is not possible to personally observe conditions beneath the soil or hidden structural components within the improvements. Therefore no representations are made as to these matters unless specifically considered in an individual appraisal.

### **Data Collection and Validation**

Data on the subject properties is collected as part of the inspection process and through later submissions by the property owner. Submitted data may be on a rendition form or in other modes which require confidentiality. Subject property data is verified through previously existing records and through published reports. Additional data are obtained and verified through published sources, regulatory reports, and through analysis of comparable properties. Due to the varied nature of utility, railroad, and pipeline properties there is no standard data collection form or manual.

### **Valuation Approach and Analysis**

For all pipelines a value is calculated using a Replacement Cost New Less Depreciation (RCNLD) model. This involves first calculating the cost of building a new pipeline of equal utility using current prices. The Replacement Cost New (RCN) is a function of location, length, diameter, and composition. Depreciation is then subtracted from RCN to produce the final value estimate. Depreciation is defined as the loss of value resulting from any cause. The three common forms of depreciation are physical, functional, and economic. Physical depreciation is accounted for on the basis of the age of the subject pipeline. Functional and economic obsolescence (depreciation) can be estimated through the use of survivor curves or other normative techniques. Specific calculations to estimate abnormal functional and/or economic obsolescence can be made on the basis of the typical utilization of the subject pipeline.

After deductions from RCN have been made for all three forms of depreciation the remainder is the RCNLD or cost approach model indicator of value.

In addition to the RCNLD indicator, a unit value model may also be used for those pipelines for which appropriate income statements and balance sheets are also available. Generally, this model is used for those pipelines that by regulation are considered to be common carriers. The unit value model must be calculated for the entire pipeline system.

The unit value model typically involves an income approach to value and a rate base cost approach. The income approach is based on a projection of expected future typical net operating income (NOI). The projected NOI is discounted to a present worth using a current cost of capital that is both typical of the industry and reflective of the risks inherent in the subject property. The unit value model cost approach is typically an estimation of the current rate base of the subject pipeline (total investment less book depreciation allowed under the current form of regulation). An additional calculation is made to detect and estimate economic obsolescence. Any economic obsolescence is deducted from the rate base cost less book depreciation to achieve a final cost indicator. The unit value model may also include a stock and debt approach in lieu of a market data approach. The stock and debt approach involves finding the total value of the owner's liabilities (equity and debt) and assuming that they are equal to the value of the assets. The two (or three, if the stock and debt approach is included) unit value indicators are then reconciled into a final unit appraisal model indicator of value. The unit value must then be reconciled with the RCNLD model indicator of value for the entire pipeline system being appraised. The final correlated value of the system can then be allocated among the various components of the system to determine the tax roll value for each pipeline segment.

Utility and railroad properties are appraised in a manner similar to pipeline except the RCNLD model is not used. For all three types of property (utility, railroad, and pipeline) the appraiser must first form an opinion of highest and best use. If the highest and best use of the operating property is the current use under current regulation, the unit value model is considered highly appropriate. If the highest and best use is something different, then the RCNLD model may be more appropriate.

Compressor stations, pump stations, improvements, and related facilities are appraised using a replacement cost new less depreciation model.

Model calibration in the RCNLD model involves the selection of the appropriate service life for each type or class of property. Further calibration can occur through the use of utilization or through-put data provided by the owner or agent. Model calibration in the unit value cost approach involves the selection of the appropriate items to include in the rate base calculation and selection of the best measure of obsolescence, if any. Income approach calibration involves the selection

of the cost of capital or discount rate appropriate to the type of property being appraised as well as adjusting the projected income stream to reflect the individual characteristics of the subject property. Model calibration in the stock and debt approach involves allocating sales prices of debt and equity to reflect the contribution to value of the operating property of the subject company.

The mathematical form of each model is described below.

### **RCNLD Approach**

$$\begin{aligned} & \text{RCN} \\ & -\text{PD} \\ & -\text{FO} \\ & \underline{-\text{EO}} \\ & =\text{RCNLD Indicator of Value} \end{aligned}$$

Where:

RCN = Replacement or Reproduction Cost New  
PD = Physical Depreciation  
FO = Functional Obsolescence  
EO = Economic Obsolescence

### **Unit Cost Approach**

$$\begin{aligned} & \text{OC} \\ & -\text{AD} \\ & \underline{-\text{EO}} \\ & =\text{Unit Cost Approach Indicator of Value} \end{aligned}$$

Where:

OC = Original Cost  
AD = Allowed Depreciation  
EO = Economic Obsolescence

### **Unit Income Approach**

$$\begin{aligned} & \text{PGR} \\ & -\text{VCL} \\ & -\text{FE} \\ & \underline{-\text{VE}} \\ & \text{NOI} \end{aligned}$$

NOI/R = Income Indicator of Value

Where:

PGR = Potential Gross Rent  
VCL = Vacancy and Collection Loss  
FE = Fixed Expenses  
VE = Variable Expenses  
R = Discount Rate or Cost of Capital

A variation of the income model is:

NOI for year 1 x DF for year 1 = PW of year 1 NOI  
NOI for year n x DF for year n = PW of year n NOI  
Net Reversion x DF for year n = PW of Reversion  
Sum of PW's for all years 1 - n = Income Indicator of Value

Where:  
NOI = Net Operating Income  
DF = Discount Factor  
PW = Present Worth  
n = Last year of holding period

## Stock and Debt Approach

MVE  
+MVD  
=Market Value of Assets

Where:  
MVE = Market value of Equity  
MVD = Market value of Debt

In reconciling multiple model results for a property the appraiser considers the model results that best address the individual characteristics of the subject property while maintaining equalization among like properties. Final results for each property may be found on the appraisal district's appraisal roll.

Land valuation for utility and pipeline properties is the responsibility of appraisal district staff as is the highest and best use analysis of the site. Sites are analyzed for highest and best use as though they were vacant. Highest and best use analysis of the improvements is based on the likelihood of the continued use of the improvements in their current and/or intended use. Railroad corridor land is included in the appraisal of the operating property. The highest and best use of railroad corridor land is presumed to be as operating property. An appraiser's identification of a property's highest and best use is always a statement of opinion, never a statement of fact.

The rate-base cost approach, stock and debt approach, and income approach models must be reduced by the value of the land in order to arrive at a value of improvements, personal property, and other operating property.

### **Review and Testing**

Field review of appraisals is performed through the regular inspection of subject properties. The periodic reassignment of properties among appraisers or the review of appraisals by an experienced appraiser also contributes to the review process. A computer-assisted statistical review of property value changes is also conducted.

Appraisal to sales ratios are the preferred method for measuring performance, however sales are very infrequent. Furthermore, market transactions normally occur for multiple sites and include both real and personal property, tangible and intangible, making analysis difficult and subjective. Performance is also measured through comparison with valid single-property appraisals submitted for staff review. Appraisal results are tested annually by the Property Tax Division of the Texas Comptroller's Office. The Comptroller's review as well as comparisons with single-property appraisals indicate the validity of the models as well as the calibration techniques employed.

**OIL AND GAS RESERVES**  
**APPRAISED BY CAPITOL APPRAISAL GROUP**

**2021-2022**

**Overview**

Capitol Appraisal Group, Inc. (CAGI) contracts with Appraisal Districts and other governmental entities to appraise all oil & gas subsurface, producing, mineral interests within the purview of the entity. The contractual purpose is to estimate market value as defined in Section 1.04 of the Texas Property Tax Code as of January 1 of each year and report these values to the entity. The results of our work are used as part of the tax base upon which property taxes are levied. Each mineral interest is listed on the appraisal roll separately from other interests in the minerals-in-place in conformance with the Texas Property Tax Code Sec. 25.12. Subsurface mineral rights are not susceptible to physical inspection. This provision requires a jurisdictional exception to Standards Rules 5-2 (c) of the Uniform Standards of Professional Appraisal Practice 2018-2019. However, the inability to physically examine the sub-surface mineral rights does not appreciably affect the appraisal process or the quality of the results.

**Assumptions and Limiting Factors**

All appraisals are subject to the following:

1. Title to the property is assumed to be good and marketable and the ownership interest and legal description is assumed to be correct.
2. No responsibility for legal matters is assumed. Properties are appraised as if free and clear of any encumbrance and operated under responsible ownership and competent management.
3. Not every property is inspected every year.
4. All information in the appraisal documents has been obtained by Capitol Appraisal Group's employees or through other reliable sources.
5. The appraisals were prepared exclusively for ad valorem tax purposes

**Data Collection**

Data on the properties appraised are collected from regulatory agencies, such as the Texas Railroad Commission and the Texas Comptroller of Public Accounts, from submissions by the property operator or owner(s), or from other sources. **Submitted data from operators, taxpayers and/or their agents on the appraised properties are considered "rendition statements" and, as such, are confidential data, subject to Sec. 22.27 of the Texas Property Tax Code.** Additional data are obtained through published sources, regulatory reports, public investment reports, licensed data services, service for fee organizations and through comparable properties, if any. The state of Texas is a non-disclosure state and thus many forms of information, pertinent to the value of the properties, are not available to the appraiser.

**Valuation and Analysis**

The Income Method of Appraisal, as described in Section 23.012 of the Texas Property Tax Code, is the principal appraisal method used. The Market Data Comparison Method of Appraisal (section 23.013) and the Cost Method of Appraisal (section 23.011) are considered. Industry averages of reserve replacement cost and acquisition cost are used for comparative purposes. The non-disclosure nature of the laws of Texas makes

market data comparison unreliable. However, if within the scope of Capitol's work assignment market sales disclosures on interests are available, then those data is considered. The nearly exclusive reliance on the income approach, using the discounted cash flow (DCF) technique adjusted for specific property risk and market conditions, is typical of the oil and gas industry. Fee for service organizations are used for survey data with respect to price expectations and discount rates, and licensed data services are used for Industry indicators detailing costs, income, acquisitions costs in dollars per barrel of oil equivalent (\$/BOE), finding and development costs (\$/BOE) and reserve replacement costs (\$/BOE) for over 100 E&P companies.

Due to the demands of Section 23.175 of the Texas Property Tax Code and the Texas Constitution, Capitol Appraisal Group, Inc. takes great care to not appraise properties more than their fair market value. We analyze a segment of the Petroleum Producing E&P market, determining the impact on their stock and debt value of the pricing requirements of Sec. 23.175 and the pricing that could be reasonably anticipated from the market. Capitol Appraisal Group Inc.'s opinion of oil and gas prices is guided by the market's anticipation of those prices through the futures market, oil and gas stock prices and oil and gas industry indexes. A base discount rate is developed using the Securities and Exchange Commission (SEC) 10k Standard Measure of Value, Before Federal Income Tax (BFIT), for a grouping of 20 Exploration and Production (E&P) companies, and then matching their 10k Standard Measure of Value (BFIT), reserves and costs, through a discounted cash flow (DCF) technique. This reserve and cost match is used with Capitol's developed pricing scenario and Section 23.175 pricing directives to determine a discount rate necessary to equal the stock and debt value of the companies, as of January 1 for a given tax year.

The Weighted Average Cost of Capital (WACC) technique is also performed for a subset of these companies grouped according to the Petroleum Producing Industry Exploration and Production companies used in *The Value line Investment Survey*. These separate pricing scenarios and the resulting discount rates derived from using the stock and debt techniques are applied to the universe of oil and gas properties we appraise. In seeking to avoid appraising any oil and gas property **above** its fair cash market value, Capitol Appraisal employs a market adjustment factor (MAF) to its base discount rate to apply property specific risk(s). These factors, which create a wide range of discount rates for the properties that Capitol appraises, are necessary to equitably evaluate disparate leases with respect to remaining reserves, price and costs. By performing two DCF income approach appraisals on each property, Capitol Appraisal provides clients with our opinion of market value, while always endeavoring to guard against appraising a mineral lease at greater than its fair cash market value. [A **jurisdictional exception** to the Discounted Cash Flow technique, as this process is described in the Statement on Appraisal Standards #5, 2018-2019 edition of the Uniform Standards of Professional Appraisal Practice, must be taken. Section 23.175(a) of the Texas Property Tax Code both specifies the directives concerning oil and gas pricing that appraisal districts in Texas must follow and also that each appraisal district must adhere to procedure and methodology contained in manuals developed by the Property Tax Division (PTD) of the Texas Comptroller of Public Accounts. Because adherence to this Property Tax Code directive, without discretion, can result in values greater than fair cash market value, we must express caution.]

The resulting oil and gas lease value is then allocated to each owner on the lease based upon his fractional mineral ownership interest. Royalty and working interests have different impacts on their respective values, since only working interests bear the costs of lease operation. Therefore, royalty mineral interest owner's values are allocated from 100% of the appraised royalty value of the lease, according to their fractional royalty interest, while the working interest owner's value(s) are allocated from 100% of the determined working interest value of the lease, according to their fractional working interest.

## **Review and Testing**

Each year we review the estimated market value for each mineral property appraised according to its year-to-year value change and also to industry expected payouts and income indicators. We also examine income projected to be received with the previous year's income and test that income against the lease's appraised value. Market value for income producing properties is a multiple of its monthly or annual income. Our experience through the years indicates that values typically vary within in a range of 2-5 times income, provided all appropriate income factors have been appropriately identified. Periodic reassignment of properties among appraisers and review of appraisals by a more experienced appraiser also contribute to the review process.

Application of appraisal-to-sales ratios is another method for measuring performance. However, single property sales or sales of interest(s) within a property remain difficult to obtain due Texas' disclosure laws. Furthermore, many market transactions are normally for multiple properties in multiple areas and include both real and personal property, tangible and intangible. We access licensed databases providing statistical data for company and property sales to compare our efforts. We also measure our performance through comparison of valid single-property market transactions, if any, that are submitted for staff review. Lastly, Capitol Appraisal's mineral appraisal values are subject to review each year in the Property Value Study conducted by the Property Tax Division of the Texas Comptroller of Public Accounts. The Property Tax Division's review as well as comparisons to industry transactions and to single-property market value sales (when available), indicate the validity of the models, techniques and assumptions used.