

# **DALLAS CENTRAL APPRAISAL DISTRICT 2025 - 2026 REAPPRAISAL PLANS**

## **Introduction**

### **General Overview of Tax Code Requirement**

Passage of Senate Bill 1652 in 2005 amended the Texas Property Tax Code to require each Appraisal District to prepare a biennial reappraisal plan. The following details the Tax Code requirements:

### **The Written Plan**

Section 6.05, Property Tax Code, is amended by adding Subsection (i) to read as follows:

- (i) To ensure adherence with generally accepted appraisal practices, the board of directors of an appraisal district shall develop biennially a written plan for the periodic reappraisal of all property within the boundaries of the district according to the requirements of Section 25.18 and shall hold a public hearing to consider the proposed plan. Not later than the 10<sup>th</sup> day before the date of the hearing, the secretary of the board shall deliver to the presiding officer of the governing body of each taxing unit participating in the district a written notice of the date, time and place of the hearing. Not later than September 15 of each even numbered year, the board shall complete its hearing, make any amendments, and by resolution finally approve the plan. Copies of the approved plan shall be distributed to the presiding officer of the governing body of each taxing unit participating in the district and to the comptroller within 60 days of the approval date.

### **Plan for Periodic Reappraisal**

Subsections (a) and (b), Section 25.18, Texas Property Tax Code, are amended to read as follows:

- (a) Each appraisal office shall implement the plan for periodic reappraisal of property approved by the board of directors under Section 6.05(i).
- (b) The plan shall provide for the following reappraisal activities for all real and personal property in the district at least once every three years:
  - (1) Identifying properties to be appraised through physical inspection or by other reliable means of identification, including deeds or other legal documentation, aerial photographs, land-based photographs, surveys, maps, and property sketches;
  - (2) Identifying and updating relevant characteristics of each property in the appraisal records;
  - (3) Defining market areas in the district;

- (4) Identifying property characteristics that affect property value in each market area, including:
  - (a) The location and market area of the property;
  - (b) Physical attributes of the property , such as size, age, and condition;
  - (c) Legal and economic attributes; and
  - (d) Easements, covenants, leases, reservations, contracts, declarations, special assessments; ordinances, or legal restrictions;
- (5) Developing an appraisal model that reflects the relationship among the property characteristics affecting value in each market area and determines the contribution of individual property characteristics;
- (6) Applying the conclusions reflected in the model to the characteristics of the properties being appraised; and
- (7) Reviewing the appraisal results to determine value.

### **Scope of Responsibilities**

Dallas Central Appraisal District (DCAD) has prepared and published this reappraisal plan to provide its Board of Directors, taxing units, citizens and taxpayers with a better understanding of the District's responsibilities and reappraisal activities. This report has several parts: a general introduction and then, several sections describing the proposed 2025-2026 reappraisal effort by the appraisal departments within the DCAD.

Dallas Central Appraisal District (DCAD) is a political subdivision of the State of Texas created effective January 1, 1980. The provisions of the Texas Property Tax Code govern the legal, statutory, and administrative requirements of the appraisal district. A member Board of Directors, appointed by the taxing units or voted on by the public within the boundaries of Dallas County, constitutes the district's governing body. Effective July 1, 2024, the Dallas Central Appraisal District Board of Directors will be comprised of nine board members. Three board members will be elected at large. Five board members will be appointed by the taxing jurisdictions via a levy vote. With the Dallas County Assessor Collector being the ninth board member. The Chief Appraiser, appointed by the Board of Directors, is the Chief Appraiser and Executive Director of the appraisal district.

Dallas Central Appraisal District is responsible for local property tax appraisal and exemption administration for sixty-three jurisdictions and/or taxing units in the county. Each taxing unit, such as the county, a city, school district, municipal utility district, etc., sets its own tax rate to generate revenue to pay for such things as police and fire protection, public schools, road and street maintenance, courts, water and sewer systems, and other public services. Property appraisals are estimated values by the appraisal district and used by the taxing units to distribute the annual tax burden. They are generally based on each property's worth or market value. DCAD also determines eligibility for various types of property tax exemptions such as those for homeowners, the elderly, disabled persons, disabled veterans, and charitable

or religious organizations.

The Property Tax Code, except as otherwise provided, states that all taxable property is appraised annually at its “market value” as of January 1<sup>st</sup>. Under the tax code, “market value” means the price at which a property would transfer for cash or its equivalent under prevailing market conditions if:

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

The Code defines special appraisal provisions for the valuation of residential homestead property (Sec. 23.01 & 23.23), real property circuit breaker for non-homestead exemption accounts five million or less (Sec. 23.231), productivity (Sec. 23.41 & 23.51), real property inventory (Sec. 23.12), dealer inventory (Sec. 23.121, 23.124, 23.1241 and 23.127), nominal (Sec. 23.18) or restricted use properties (Sec. 23.83) and allocation of interstate property (Sec. 21.03, 21.04, 21.05 and 21.055).

The Texas Property Tax Code, under Sec. 25.18, requires each appraisal office to implement a plan to update appraised values for real property at least once every three years. The district’s current policy is to conduct a general reappraisal of real and business personal property value every year, meaning that a property’s appraised value is established and reviewed for equality and uniformity on an annual basis.

The appraised value of real and business personal property is calculated using specific information and data about each property. Using various computer-assisted mass appraisal (CAMA) programs, and generally recognized appraisal methods and techniques, registered and trained appraisers compare the subject property information with the data for similar properties, and with recent market data. The district adheres to the standards of the International Association of Assessing Officers (IAAO) regarding its appraisal practices and procedures, and subscribes to the standards promulgated by the Appraisal Foundation known as the Uniform Standards of Professional Appraisal Practice (USPAP) to the extent they are applicable. Chapter 23 of the Texas Property Tax code contains statutes dealing with appraisal methods and procedures. Section 23.01 of this Chapter was amended in 1997 to specify that appraisal districts be required to comply with the mass appraisal standards of USPAP (Standard 6 – now Standards 5 and 6) when the appraised value of a property is established using mass appraisal techniques. 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.

### **Reappraisal Plan Assumptions and Limiting Conditions**

The 2025 - 2026 Reappraisal Plan adopted by the Dallas Central Appraisal District Board of Directors will occur no later than September 15, 2024. The assessment dates for the 2025 and 2026 Reappraisal Plan is January 1, 2025 and January 1, 2026 respectively.

DCAD's goal is to appraise all properties at fair market value as of January 1 of every year by reflecting the market place. The Reappraisal Plan itself regarding 2025 and 2026 building permit and reappraisal account projections are based on historical data and best guess estimates as to what number of properties will be targeted for reappraisal in these years. At that time of approval for 2025-2026 Reappraisal Plan, a complete listing of the actual properties to be targeted for reappraisal cannot be specifically identified, as DCAD does not undertake a geographical reappraisal effort. DCAD's position has always been to reflect the market place as of January 1 of every year. Therefore, DCAD undertakes an as needed reappraisal approach as opposed to a geographical reappraisal approach in order to better achieve the goal of appraising all property at fair market value as of January 1 of every year.

With this said, DCAD's Reappraisal Plan will always target the properties who meet the following building permit and reappraisal criteria during the course of the appraisal year cycle (August 1 – April 1):

1) Any Residential or Commercial account that has a Code Z (re-inspect code) or Code 9 (partial complete code), as of January 1 of the prior appraisal year.

2) Any Residential or Commercial account that had a significant building permit issued from one of the thirty-one cities in Dallas County from January 1 to December 31 and construction begun prior to January 1.

3) Any Residential or Commercial account where data or inquiry has been provided to DCAD that indicates the property has had a conditional change that is not currently reflected on the record as of January 1.

4) Any Residential account that falls within a Residential Neighborhood that has been targeted for reappraisal based a neighborhood sales ratio analysis for the current appraisal year. Neighborhood sales ratio analysis occurs in October, January and March of every appraisal year. Residential neighborhood sales ratio analysis is a process whereby the Residential supervisory staff analyzes and compares actual neighborhoods sales prices to DCAD's current appraised value. Typically, neighborhoods whose overall sales ratio is less than 95% or greater than 105% will be targeted for reappraisal. In neighborhoods where there is an absence of sales competing neighborhood sales and appraised information will be analyzed and targeted as needed.

5) All residential mobile home accounts that have an account number beginning with 75.

6) Any Commercial account that falls within a Commercial Improved Market Area (IMA) or Commercial Land Market Area (LMA) that has been targeted for reappraisal based on current market analysis. Annual market analysis typically takes place between January and March of every year. Market analysis consists of a sales analysis, cost analysis and income and expense analysis for the major Commercial property types (Apartments, Offices, Industrial, Retail) and market areas. It should be noted, due to the dynamic nature of commercial property with regard to changing of income and expense data on an annual basis, all significant commercial improved property and high profile improved market areas will likely be reappraised on annual basis either through the reappraisal effort or appeals process.

7) All mineral accounts.

- 8) All business personal property accounts.
- 9) Any real property account in 2025 and 2026 that has a last reappraisal of 2022 and 2023 respectively.
- 10) Any account in the reappraisal year in which a rendition has been filed.

DCAD can query its database at any given time to identify the specific accounts that have been targeted for reappraisal as of that date. Identifying the actual accounts and proposed market value that were targeted for reappraisal based on the criteria upon for a given appraisal year can be made available to the public after May 1 of any given appraisal year.

As stated, 2025 and 2026 Residential and Commercial Reappraisal analysis will be conducted typically in January of 2025 and January 2026. Please see the Appraisal Divisions 2025 and 2026 Reappraisal Plans below for more specific details concerning the 2025 and 2026 reappraisal effort.

Parcel counts and other statistical data are based on the District’s current operation as of the date of this report. Personnel numbers are based on DCAD’s 2024/2025 Approved Budget. Those key DCAD personnel involved in the annual Reappraisal Plan are identified in Appendix A. A detailed organizational chart can always be located within DCAD’s annual Budget and annual Management Plan.

Appraisal Division manuals document all DCAD’s appraisal processes and the Mass Appraisal Records System (MARS) functionality. DCAD also has copies of Hugh Landrum and Associates mineral appraisal manual and reappraisal plan associated with mineral valuations.

A listing of all Residential Neighborhoods, Commercial Improved Market Areas (IMA) and Land Market Areas (LMA), and Business Personal Property (BPP) Routes are located in the Appendix. Area maps for Residential, Commercial, and BPP are also located in the Appendix. These maps can be tied back to specific residential neighborhood codes, commercial market areas and BPP routes targeted for reappraisal. More detailed maps can be made available when requested.

**Appraisal Notification**

The Dallas Central Appraisal District (DCAD) provides an appraisal notice for all taxable property on the DCAD website annually.

DCAD’s notification criteria is to mail an appraisal notice annually to all new owners, any property that had an increase in market value from the prior tax year, all new accounts, any account that had a capped homestead or circuit breaker limitation value in the prior tax year, all rendered accounts, all mineral accounts, and all business personal property accounts.

**Reappraisal Plan Appendix & Overview of District’s Operation**

Key Personnel on Reappraisal Plan Implementation..... Appendix A

Residential Neighborhoods..... Appendix B

Residential Neighborhood Map..... Appendix C

Commercial Improved Market Areas and Land Market Areas ..... Appendix D

Commercial LMA and IMA Maps ..... Appendix E

Business Personal Property (BPP) Routes ..... Appendix F

2025 & 2026 Reappraisal Plan Timeline and Calendar of Key Appraisal Events ..... Appendix G

The 2024/2025 & 2025/2026 Financial Budgets are adopted annually.

The 2024/2025 & 2025/2026 Management Plans are developed annually. The 2025/2026 Management Plan adopted in August 2025 will reflect any changes to the 2026 Reappraisal Plan account projections.

**Personnel Resources**

The Office of the Chief Appraiser is primarily responsible for overall planning, organizing, staffing, coordinating, and controlling of district operations which includes the Quality Control Division. The Administration Division’s function is to plan, organize, direct and control the business support functions related to human resources, budget, finance, records management, purchasing, fixed assets, facilities and postal services. The Administration Division also oversees the Appeals, Finance, Human Resources, and Building Services Divisions. The Appraisal Division is responsible for the valuation of all real property and business personal property accounts. The property types appraised include commercial, residential, mineral, and business personal property. The Property Records Exemption Customer Service Division and GIS Division are now operating divisions within Community Relations Services. The Property Records Exemption Customer Service Division processes deed documents filed at the county clerk’s office, any total or partial exemptions filed with the appraisal district as well as other documents such as tax deferrals, historic exemptions, agricultural applications, abatements, tax increment finance districts, and all mapping records.

- 28 - Administrative Services (Executive level administration)
- 133 - Appraisal Services (Residential, Commercial, Business Personal Property)
- 65- Community Relations Services (Property Records Exemption Customer Service and GIS)
- 5 - Technical Services (Litigation functions)
- 14 – Information Technology (Technology related functions)

**Staff Education and Training**

All appraisal district employees that perform appraisal work are subject to the provisions of the Property Taxation Professional Certification Act and must be registered with the Texas Department of Licensing and Regulation (TDLR). TDLR is responsible for ensuring appraisers are professional, knowledgeable, competent and ethical. This is accomplished through a statewide program of registration, licensing, education, experience, testing and certification for all property tax professionals.

Upon registration, appraisers registered with the TDLR have up to five years to take a series of appraisal

courses and exams in order to achieve certification as a Registered Professional Appraiser (RPA). During each subsequent twenty-four month period after certification, appraisers must complete an additional 30 hours of continuing education. Continuing education is in the form of IAAO, Texas Association of Assessing Officers (TAAO), Texas Association of Appraisal Districts (TAAD), in-house program offerings, and other approved Property Tax Assistance Division (PTAD) courses and seminars.

Failure to meet these minimum standards will result in a registrant losing their TDLR license and will also result in the removal of the employee from an appraiser position.

Additionally, all appraisal personnel receive extensive training in the data gathering and valuation processes. Standardized manuals are provided to ensure uniform and accurate data collection.

Supervisors and senior appraisal personnel provide on-the-job data collection training in the office and the reappraisal field area. Managers meet regularly with staff to introduce new procedures and regularly monitor appraisal activity to ensure that all personnel are following standardized appraisal methods and techniques.

### **Data**

The district is responsible for establishing and maintaining approximately 855,846 real property and business personal property accounts covering 908.7 square miles within the DCAD's territorial boundaries. This data includes property characteristic, ownership, and exemption information. Property characteristic data on new construction is updated through an annual field effort; existing property data is maintained through a field and office review. Sales are routinely validated during an office review and a separate field effort when applicable; however, numerous sales are validated as part of the building permit process and annual reappraisal effort. General trends in employment, interest rates, new construction trends, and cost and market data are acquired through various sources, including internally generated questionnaires to buyer and seller, university research centers, and market data centers and vendors.

The district has a Geographic Information System (GIS) that maintains maps and various layers of data, including aerial photography. The district's website makes a broad range of information available for public access, including detailed information on the appraisal process, property characteristics data, certified values, protests and appeal procedures, frequently ask questions, links to other government agencies, property maps, and a tax calendar. Downloadable files of related tax information and district forms, including exemption applications, business personal property renditions, and protest forms are also available. An Online BPP Rendition System, Online Homestead Exemption Filing System, Online Tax Consultant Protest System, and Online Residential, Commercial, and Business Personal Property Protest and Settlement System (uFile) have also been developed by DCAD.

### **Information Systems**

The Information Technology Division maintains the district's data processing facility, software applications and Internet website. The GIS Division will be responsible for maintaining the Geographical Information Systems within DCAD. The district operates under both DB2 and SQL relational databases. The hardware is Intel Servers, NT Servers host the LAN, Internet, and document imaging; and the user base is served by general-purpose Desktop and Server PC's, along with iPads for field appraisal data

collection and valuation. The Geographic Information System software is an ESRI based product -Arc View/Arc Info (version 10.7). The District's Mass Appraisal Records System (MARS) is the District's software application that has incorporated its Computer Assisted Mass Appraisal system with iPad Technology, Digital Photography, GIS and Image Workflow/Scanning.

### **Independent Performance Test**

According to Chapter 5 of the TPTC and Section 403.302 of the Texas Government Code, the State Comptroller's Property Tax Assistance Division (PTAD) conducts a biennial property value study (PVS) of each Texas school district and each appraisal district unless the study reveals invalid findings, in which case the study is conducted every year until the school district receives valid findings.

The methodology used in the property value study includes stratified samples to improve sample representativeness and techniques or procedures of measuring uniformity. This study utilizes statistical 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 median level of appraisal, coefficient of dispersion (COD), the percentage of properties within 10% of the median, the percentage of properties within 25% of the median, and price-related differential (PRD) for properties overall and by state category (i.e., categories A, B, C1, D and F1 are directly applicable to real property). There are 16 Independent School Districts (ISD) in Dallas CAD for which appraisal rolls are annually developed. The preliminary results of this study are released in January in the following appraisal year. The final results of this study are certified to the Education Commissioner of the Texas Education Agency (TEA) in the following July of each year. This outside (third party) ratio study provides additional assistance to the CAD in determining areas of market activity or changing market conditions. The District also contracts with the University of Texas at Dallas to conduct an annual ratio study for Residential neighborhoods.

The Comptroller's Property Tax Assistance Division is also required to review each CAD's governance, taxpayer assistance, operating standards, appraisal standards, appraisal procedures, and appraisal methodology at least every two years. This review referred to as the Methods and Assistance Program (MAP) will be conducted during the year in which a Property Value Study is not undertaken. The Comptroller is required to deliver a written report to the chief appraiser, CAD board of directors and each superintendent and board of trustees in school districts in the CAD concerning the MAP findings. DCAD had its first MAP review in 2011 and have had MAP reviews in 2013, 2015, 2017, 2019, 2021 and 2023. PTAD's Property Value Study (PVS) will occur in 2024 and 2026 with another MAP review in 2025.

Management and appraisal staff members are also responsible for conducting ratio studies and comparative analysis to insure accurate and equitable appraised values. The Quality Control Division also undertakes performance testing annually to insure accuracy and uniformity.

### **Appraisal Activities**

#### **Appraisal Responsibilities**

The appraisal staff is responsible for collecting and maintaining property characteristic data for classification and valuation. Accurate valuation of real and personal property by any method requires a



physical description of personal property, land and building characteristics. This appraisal activity is responsible for administering, planning and coordinating all activities involving data collection and maintenance of all commercial, residential and personal property types which are located within Dallas County. The data collection effort involves the field inspection of real and business personal property accounts, as well as data entry of all data collected into the existing information system. The goal is to periodically field inspect residential and commercial properties in Dallas County every six years. In homogeneous areas and areas where there is high degree of confidence with our existing data, a six-year inspection cycle may not occur. The use of aerial photography and a periodic digital photography project may also be used in meeting this goal. Ultimately, meeting this goal is dependent on budgetary constraints.

### **Appraisal Resources**

- **Personnel** - The appraisal activities consists of 95 appraisers and 12 appraisal support staff.
- **Data** - The data used by field appraisers includes the existing property characteristic information contained in MARS (Mass Appraisal Records System). The data is collected and inputted using iPads. Other data used includes maps, sales data, building permits, photos and actual cost, income and expense information from properties.

### **Data**

#### **Data Collection/Validation**

Data collection of real property involves maintaining data characteristics of the property in MARS (Mass Appraisal Records System). The information contained in MARS includes site characteristics, such as land size and topography, and improvement data, such as square foot of living area, year built, quality of construction, and condition. Commercial and Residential appraisers use Commercial and Residential appraisal manuals that establish uniform procedures for the correct listing of real property. All properties are coded according to these manuals and the approaches to value are structured and calibrated based on this coding system. Appraisers use these manuals during their initial training and as a guide in the field inspection and valuation of properties. Data collection for business personal property also involves maintaining information in MARS. The type of business personal property information contained in MARS includes items such as business inventory, furniture and fixtures, machinery and equipment, cost and location.

The appraisal manuals that are utilized by the appraisal staff are available in the district offices. Appraisal manuals can be located in the Customer Service Division for public inspection. If a property owner/agent wants a copy of the divisional appraisal manual or DCAD's Mass Appraisal Report, Customer Service will handle this request. Management staff updates the divisional manuals and Mass Appraisal Report annually.

#### **Sources of Data**

The sources of data collection are through the new construction field efforts, reappraisal, hearings, sales processing, newspapers and publications, property owner correspondence and inquiries received via the Internet and customer service. A principal source of data comes from building permits received from the

cities that require property owners to take out a building permit. Where available, permits are received electronically and loaded in MARS. Otherwise, paper permits are received and matched manually with the property's tax account number by the appraisal support staff and then updated and scanned into MARS.

Data review of entire neighborhoods is generally a good source for data collection. Appraisers typically review entire neighborhoods to ensure the accuracy of the data and identify properties that need to be updated during the permit and reappraisal effort. During Sales Processing, property characteristics are verified as well. In Residential and Commercial, the sales validation effort involves office review and verification and when needed on-site inspection by appraisers to verify the accuracy of the property characteristics. Sale surveys are also mailed out to the grantee and grantor on all undisclosed Commercial sales and for certain undisclosed Residential sales.

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

### **Data Collection Procedures**

Field data collection requires organization, planning and supervision of the field effort. Data collection procedures have been established for Residential, Commercial, and Business Personal Property (BPP). Appraisers have territorial assignments throughout Dallas County to conduct field inspections. Appraisers conduct field inspections and record information in MARS via their iPads.

The quality of the data used is extremely important in establishing accurate values of taxable property. While production standards are established and upheld for the various field activities, quality of data is emphasized as the goal and responsibility of each appraiser. New appraisers are trained in the specifics of data collection set forth in their divisional manual. Appraisers are routinely re-trained in listing procedures prior to major field projects such as new construction and reappraisal. A quality control process exists through supervisory review of the work being performed by the appraisers. Supervisors are charged with the responsibility of ensuring that appraisers follow listing procedures, identify training issues and provide uniform training throughout year. When applicable, Senior and Territorial Appraisers will also assist with the quality control of the appraisal product.

### **Data Maintenance**

The field appraiser is responsible for the data entry of his/her fieldwork directly into MARS via his/her iPad. This responsibility includes not only data entry, but also quality assurance. The date of last inspection, extent of that inspection, and the appraiser responsible is listed on the account record. Most on-site inspection of properties is due primarily to the issuances of a current city building permit or the annual reappraisal effort.

Office reviews are also completed on properties where information has been received from the property owner, taxing jurisdictions or other sources and a physical on-site inspection is deemed not to be

imperative to correct the property data or characteristic. In many instances, aerial photographs and digital photographs are used to verify property characteristics. When the property data is verified in this manner, field inspections are not required.

### **Quality Control**

Quality control of the appraisal product occurs throughout the year by supervisory and management staff in the form of monitoring valuation reports, ratio studies, audit trail (value change) reports, file maintenance reports, and other customized reports and queries development in the Mass Appraisal Records System (MARS). Field checks by supervisory staff and senior appraisal staff members are conducted throughout the appraisal field cycle on an annual basis to insure accurate appraisal records and compliance with standard operating procedures as detailed in the Division's Appraisal Manual.

### **Performance Test**

Management and appraisal staff members are also responsible for conducting ratio studies and comparative analysis to insure accurate and equitable appraised values. The Quality Control Division also undertakes Performance Testing annually to insure accuracy and uniformity. The Quality Control Division independent of the Appraisal Divisions (Residential, Commercial, Business Personal Property) annually undertakes a final performance analysis for all Divisions to insure value accuracy and equal and uniformity.

## **RESIDENTIAL VALUATION PROCESS**

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### **Scope of Responsibility**

The Residential Division is responsible for establishing the fair market value of all residential accounts as of January 1 of every year. There are approximately 671,832 residential properties within Dallas County.

### **Appraisal Resources**

- **Personnel** - The Residential appraisal staff consists of 45 appraisers and 3 appraisal support staff.
- **Data** - A common set of data characteristics for each residential property in Dallas County is collected and updated by Residential appraisers and maintained in the various MARS (Mass Appraisal Records System) modules. The property characteristic data drives the computer-assisted mass appraisal (CAMA) approach to valuation. Property data attribute information is verified and corrected based on on-site inspections as well as office review using digital photographs and aerial photography. The following data attribute information is captured on each appraisal record: Land Value, Zoning, Property Classification Use Code, Building Class, Desirability rating, Quality Design factor, Actual Year Built, Effective Year Built, Living Area, Additional Improvements, Total Living Area, Foundation, Basement, Heating, Roof Type, Roofing, Garage, Frame, Exterior Walls, Fireplace, Bedrooms, Wet bars, Kitchens, Full Baths, Half Baths, Remodel Year, Air Conditioning, Level Of Finish-out, Deck, Security, Porch, Spa, Fence, Sprinklers, Landscaping, Wooded Lot, Quiet Street, Special Features, and Percent Complete.

### **Area and Highest and Best Use Analysis**

#### **Regional Analysis**

Data on regional economic forces such as demographic patterns, regional location factors, employment and income patterns, general trends in real property prices and rents, interest rate trends, availability of vacant land, and construction trends and costs are collected from private vendors and public sources and provide the field appraiser a current economic outlook on the real estate market. Information is gleaned from real estate publications and other third party publications and resources including seminars attended by staff members.

#### **Neighborhood and Market Analysis**

Neighborhood analysis involves the examination of how physical, economic, governmental and social forces and other influences affect property values. The effects of these forces are also used to identify, classify, and stratify comparable properties into smaller, manageable subsets of the universe of properties known as neighborhoods. Residential model development and analysis is typically conducted at the neighborhood level. A residential neighborhood boundary is typically within the same independent school district as a motivating factor for many residential home buyers is the school district itself.

The first step in neighborhood analysis is the identification of a group of properties that share certain

common traits. A "neighborhood" for analysis purposes is defined as the largest geographic grouping of properties where the property's physical, economic, governmental and social forces are generally similar and uniform. Geographic stratification accommodates the local supply and demand factors that vary across a jurisdiction. Once a neighborhood has been identified, the next step is to define its boundaries. This process is known as "delineation". Some factors used in neighborhood delineation include location, sales price range, lot size, age of dwelling, quality of construction and condition of dwellings, square footage of living area, and story height. Delineation involves the physical drawing of neighborhood boundary lines on a map. Part of neighborhood analysis is the consideration of discernible patterns of growth that influence a neighborhood's individual market. Few neighborhoods are fixed in character. Each neighborhood may be characterized as being in a stage of growth, stability or decline. The growth period is a time of development and construction. As new neighborhoods in a community are developed, they compete with existing neighborhoods. An added supply of new homes tends to induce population shift from older homes to newer homes. In the period of stability, or equilibrium, the forces of supply and demand are about equal. Generally, in the stage of equilibrium, older neighborhoods can be more desirable due to their stability of residential character and proximity to the workplace and other community facilities. The period of decline reflects diminishing demand or desirability. During decline, general property use may change from residential to a mix of residential and commercial uses. Declining neighborhoods may also experience renewal, reorganization, rebuilding, or restoration, which promotes increased demand and economic desirability.

Neighborhood identification and delineation is the cornerstone of the residential valuation system at the district. When delineating neighborhood boundaries a major factor is to determine a defined area in which homes compete for each other for resale purposes. All the residential analysis work done in association with the residential valuation process is neighborhood specific. Neighborhoods are driven and delineated based on observable aspects of homogeneity. Neighborhood delineation is periodically reviewed to determine if further neighborhood delineation is warranted. Whereas neighborhoods involve similar properties in the same location, a neighborhood group is simply defined as similar properties in similar locations. Each residential neighborhood is assigned to a neighborhood group based on observable aspects of homogeneity between neighborhoods. Neighborhood grouping is highly beneficial in cost-derived areas of limited or no sales, or use in direct sales comparison analysis. Neighborhood groups, or clustered neighborhoods, increase the available market data by linking comparable properties outside a given neighborhood. Sales ratio analysis, discussed below, is performed on a neighborhood basis, and in soft sale areas on a neighborhood group basis. For estate and unique properties, the neighborhood concept may not always be applicable if better comparables reside outside the subject's immediate neighborhood. For truly unique properties, a larger sub-market may be appropriate.

### **Highest and Best Use Analysis**

The highest and best use of property is the reasonable and probable use that supports the highest present value as of the date of the appraisal. The highest and best use must be physically possible, legal, financially feasible, and productive to its maximum. The highest and best use of residential property is normally its current use. This is due in part to the fact that residential development, in many areas, through use of deed restrictions and zoning, precludes other land uses. Residential valuation undertakes reassessment of highest and best use in transition areas and areas of mixed residential and commercial use. In transition areas with ongoing gentrification, the appraiser reviews the existing residential property use and makes a determination regarding highest and best use. Once the conclusion is made that the

highest and best use remains residential, further highest and best use analysis is done to decide the type of residential use on a neighborhood basis. As an example, it may be determined in a transition area that older, non-remodeled homes are economic miss-improvements, and the highest and best use of such property is the construction of new dwellings. In areas of mixed residential and commercial use, the appraiser reviews properties in these areas on a periodic basis to determine if changes in the real estate market require reassessment of the highest and best use of a select population of properties.

Effective January 1, 2010, the market value of a residential homestead is to be solely determined by its value as a residential homestead regardless of its highest and best use. DCAD will value residential homestead properties based on its current use using residential comparables to support a total market value.

## **Valuation and Model Development**

### **Cost Schedules**

Residential parcels in the district are valued from building class cost schedules using a comparative unit method. DCAD's residential base building class cost schedules have been customized to fit Dallas County's local residential building and labor market. DCAD calibrates each building class cost table at the neighborhood level during the reappraisal effort to insure equitable and accurate appraised values. Review and revision to the residential base building class cost schedules occur annually and are adjusted as needed. These building class costs are compared against Marshall and Swift, a nationally recognized cost estimator and local market cost data typically obtained during the building permit and appraisal review board processes. Mobile Homes cost schedules are derived annually from Marshall and Swift's Cost Handbook.

### **Sales Information**

A sales file for sales data is maintained in MARS as well as in other data files such as Access and Excel when customized queries are needed. Residential improved and vacant sales are collected from a variety of sources, including: surveys sent to buyer and seller, renditions, protest hearings, Title companies, builders, fee appraisers and realtors. Sale price, sale date, sale type, and source are recorded. Sales are used for ratio analysis, neighborhood building class model development and will be provided to property owner if the sale was used in the valuation of the property owner's property but the source of the sale always remains confidential.

### **Land Analysis**

Residential land analysis is conducted by each of the residential appraisers. The appraisers develop a base lot value and can price land on flat-price, square foot, acreage or front foot basis. Land market adjustments may be established for factors as view, shape, size, topography, utility easements, greenbelts, major thoroughfares, among others. In lieu of land sale information appraisers may use abstraction and allocation methods to insure that the land values created best reflect the contributory market value of the land to the overall property value.

## **Statistical Analysis**

The residential appraisal staff performs statistical analysis annually to evaluate whether values are equitable and consistent with the market. Ratio studies are conducted on each of the approximately 5,268 residential neighborhoods to determine the level of assessment and whether the neighborhood and associated building classes are in need of reappraisal. The level of appraised values is determined by the weighted mean for individual properties within a neighborhood and also by building class within a neighborhood. Every neighborhood is reviewed annually by the supervisory staff undertaking 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 staff an excellent means of judging the present level of appraised value within a given neighborhood, independent school district, and city.

The University of Texas at Dallas (UTD) also conducts an annual regression and census ratio analysis by neighborhood and Independent School District (ISD) to determine the level of assessment within these market areas. The UTD Study in conjunction with in-house ratio analysis is used to target neighborhoods in need of reappraisal for a given appraisal year. Ratio analysis targeting neighborhoods for reappraisal typically occurs in October, January and March of each tax year.

## **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 hybrid cost-sales comparison approach. This type of approach accounts for neighborhood market influences not specified in the base building class cost tables.

The following equation denotes the hybrid model used:

$$MV = LV + ((RCN \times BCLF) - D)$$

Whereas the market value (MV) equals land value (LV) plus the replacement cost new (RCN) times the neighborhood building class location factor (BCLF) less depreciation (D). As the cost approach separately estimates both land and building values and uses depreciated replacement costs, which reflect only the supply side of the market, it is expected that adjustments to the cost values are needed to bring the level of appraisal to an acceptable standard. Therefore, market, or building class location factors are applied uniformly by building class by neighborhood to insure equitable and accurate market values within these market areas. The MARS Neighborhood Analysis module is where the appraiser undertakes these calculations and documents the neighborhood trends and findings for the given reappraisal effort.

If a neighborhood is to be updated, the appraiser uses a sale ratio that compares recent sales prices of properties within a delineated neighborhood by building class with the properties actual cost value. The calculated ratio derived from the sum of the sold properties' cost value divided by the sum of the sales prices by building class indicates each neighborhood's building class level of value based on the unadjusted cost value for the sold properties within that building class range. A common building class location factor is then calculated to appraise the sold properties within that building class range at 100%

of market value. The calculated building class location factor is then applied to both the sold and unsold properties within that neighborhood to insure equitable and accurate market values. This market adjustment factor or building class location factor is needed to trend the values obtained through the cost approach closer to the actual market evidenced by recent sales prices within a given neighborhood. The sales used to determine the building class location factor will reflect the market influences for a given building class within a neighborhood producing a more representative and supportable indication of value. The building class location factor is applied uniformly to all similar class properties within the neighborhood. Once the building class location factor(s) are applied for a given neighborhood, the appraiser reviews the final neighborhood's building class ratio and value reviews the neighborhood accounts proposed market values to insure accurate and equitable market values. This value review process may occur in the office or field if needed. GIS, aerial photography, digital photography and other MARS functionality are used during the neighborhood value review process.

### **Treatment of Residence Homesteads**

Beginning in 1998, per Texas Property Tax Code Section 23.23, the State of Texas implemented a constitutional classification scheme concerning the appraisal of residential property that receives a residence homestead exemption. Under the new law, beginning in the second year a property receives a homestead exemption, increases in the value of that property are "capped." The value for tax purposes (appraised value) of a qualified residence homestead will be the LESSER of:

- The market value; or
- The preceding year's appraised value;  
PLUS 10 percent;  
PLUS the value of any improvements added since the last re-appraisal.

Values of capped properties must be recomputed annually. If a capped property sells, the cap automatically expires as of January 1<sup>st</sup> of the following year. The MARS Capped Homestead module is where these calculations take place programmatically.

### **Treatment of Real Property Non Homestead Exemption Property**

Effective January 1, 2024, per Texas Property Code Section 23.231, all real property accounts without a homestead exemption and an ownership change within the preceding 12 months and their market value is \$5,000,000 or less will now be subject to a twenty percent (20%) appraisal cap valuation (circuit breaker).

- The market value; or
- The preceding year's appraised value;  
PLUS 20 percent;  
PLUS the value of any improvements added since the last re-appraisal.



## **Value Review Procedures**

### **Building Permit Review**

Building permits are received monthly from each city and are then updated to the applicable account so a physical inspection and/or an office review can take place for the current appraisal year. All significant value related building permits issued from January 1, 2024 through December 31, 2024 associated with an account will be inspected and reappraised for the 2025 Appraisal Year. All significant value related building permits issued from January 1, 2025 through December 31, 2025 associated with an account will be inspected and reappraised for the 2026 Appraisal Year. Also, those accounts that were partially complete as of January 1, 2024 and January 1, 2025 will be re-inspected for 2025 and 2026 respectively. Any property that has new construction activity as of January 1 and was not 100% complete will be targeted for reappraisal the next appraisal year. This also includes those properties whereby a building permit was issued prior to January 1 but no new construction activity had taken place as of January 1 of the current appraisal year. Property data attribute information is verified and corrected based on on-site inspections as well as office review using digital photographs and aerial photography.

### **Field Review**

Management and appraisal staff members also identify individual properties in need of field or office review through sales ratio analysis. Sold properties with a high variance in sales ratios are field reviewed to check for accuracy of data characteristics. Additionally, the appraiser frequently field reviews subjective data items such as quality of construction, condition, and physical, functional and economic obsolescence, factors contributing significantly to the market value of the property. After preliminary estimates of value have been determined in targeted areas, the appraiser value reviews the results. During this review, the appraiser is able to physically inspect both sold properties and unsold properties for comparability and consistency of values. GIS, aerial photography, digital photography and other MARS functionality are also used during the value review process.

Neighborhoods targeted for reappraisal are identified through the University of Texas at Dallas (UTD) Ratio Study in conjunction with annual in-house Neighborhood Ratio Studies conducted during October, January, and March of every appraisal year. Also, including in the annual reappraisal effort are all mobile homes, any new subdivisions and where an inspection and/or office review was undertaken to correct data on an account that wasn't a result of a building permit being issued or wasn't a part of the annual neighborhood reappraisal effort. Account Reviews are typically identified from third party inquiries, the sales qualification process, re-inspections initiated during the Appraisal Review Board process and/or a general review of accounts in non-reappraisal neighborhoods.

### **Office Review**

Given the ample resources and time required to conduct a routine field review of all properties, homogeneous properties consisting of tract housing with a low variance in sales ratios and other properties having a recent field inspection date are value reviewed in the office. Valuation reports comparing previous values against proposed and final values are generated for all residential improved and vacant properties. GIS, aerial photography, digital photography and other MARS functionality are also used during the value review process.

## **Neighborhood Reappraisal Value Review**

A Residential Neighborhood Value Report is reviewed by appraisal staff members for all neighborhoods targeted during the annual reappraisal effort. The Residential Neighborhood Value Review report provides the dollar amount and percentage of value difference are noted for each property within a delineated neighborhood allowing the appraiser to identify, research and resolve value anomalies before final appraised values are released. Previous values resulting from a hearing protest are individually reviewed to determine if the value remains appropriate for the current year. Once the appraiser is satisfied with the level and uniformity of value for each neighborhood within his/her area of responsibility, the estimates of values will be reviewed and approved by a supervisor for appraisal notification purposes.

### **Residential Neighborhoods**

A listing of all Residential Neighborhoods has been provided in Appendix A and the Residential Neighborhood Map in Appendix C. Based on the Residential Division's pending in-house ratio studies to be conducted in October and January 2024/2025 and 2025/2026 respectively, any neighborhood whose ratio is typically less than 95% or greater than 105% will be targeted for reappraisal assuming sufficient and adequate sales data. A complete listing of those neighborhoods reappraised in 2025 and 2026 will be available for review April 15, 2025, and April 15, 2026, respectively.

### **Three Approaches to Value**

The Mass Appraisal Records System (MARS) utilized by the Residential Division of the Dallas Central Appraisal District gives the ability to appraise property by all three approaches to value: Cost Approach, Sales Approach and Income Approach.

#### **Cost Approach**

The Cost Approach is the first approach to value used by DCAD. For residential properties there will always be a Cost Approach to value established on an account. The Cost Approach involves calculating the replacement cost new for each home and then deducting the appropriate amount for depreciation (effective age and condition, desirability, and utility). The result of this process is the sum of the depreciated value of the house and any other buildings or amenities on the property. The land value is then added back to the total depreciated value of all improvements established on account to arrive at the estimated market value of the account via the Cost Approach. The Cost Approach is the primary valuation approach used when undertaking the reappraisal of a neighborhood. During the reappraisal effort, the Cost Approach is modified based on recent sales information by building class by neighborhood to arrive at estimated market value. Equity is achieved by applying the same location factor for all properties with the same building classification within a given neighborhood. The Cost Approach may be the preferred method used during the informal meetings with property owner or authorized agent and at the formal Appraisal Review Board hearing if the residential property is truly unique and does not have comparable sales information.

## **Sales Approach**

The Sales Approach compares the property being appraised with similar properties that have recently sold. The characteristics of the sold properties are analyzed for their similarity to those of the subject property. Because no two properties are exactly alike, the prices of the sold properties must be adjusted to the subject property to account for any differences between the properties and the subject property. For instance, if the sold property had a pool and the subject property does not, an adjustment would be warranted. The newly adjusted sale prices give a direct reflection of the indicated market value of the unsold subject property. The sales approach can be used to value any property, whether improved or vacant. The Sales Approach is typically utilized during the informal meeting with property owners or authorized agent and at the formal Appraisal Review Board hearing when analyzing a residential property's estimated market value.

## **Income Approach**

The Income Approach is used in very limited instances for residential properties. It is typically the preferred method for income producing Commercial properties.

When reviewing a residential property's estimated market value during the informal and formal Appraisal Review Board process, the Sales Approach is typically the preferred method.

## **Equal and Uniform Analysis**

An equal and uniform analysis can be undertaken on any given property. For Residential property, a sample size of approximately seven properties is typically used whereby each appraisal comparable is appropriately adjusted when compared to the subject property based on land valuation differences, additional improvement differences and/or physical attribute differences.

## **Performance Tests**

### **Sales Ratio Studies**

The primary analytical tool used by the appraisers to measure and improve performance is the ratio study. The district ensures that the appraised values that it produces meet the standards of accuracy in several ways. Overall sales ratios can be generated by building class, by neighborhood, by city, and by ISD to allow the appraiser to review general market trends within their area of responsibility, and provide an indication of market appreciation over a specified period of time. These sales ratio statistics are available under the MARS Reappraisal Analysis module and typically cover a 12 month time frame.

The Quality Control Division also undertakes performance testing annually to insure accuracy and uniformity as required by USPAP and State Law.

## **Residential Reappraisal Plan Overview**

The Residential Division's 2025 and 2026 Reappraisal Plan consists of two primary tasks – Fixed Tasks and Variable Tasks. Fixed tasks are those tasks required to be done on an annual basis and are associated

with working building permits received on a monthly basis from the thirty-one cities within Dallas County. Variable tasks are those tasks associated with our annual reappraisal effort. The Reappraisal Plan account projections for 2025 and 2026 below are based on past historical permit and reappraisal activity.

**RESIDENTIAL DIVISION  
2025 REAPPRAISAL PLAN**

**FIXED TASKS:**

NEW CONSTRUCTION:	ACCOUNTS
Permit Inspection	45,000
Permit Remeasure	6,000
Permit Remeasure Complex	150
Permit Office Review	1,800

**VARIABLE TASKS:**

REAPPRAISAL:	
Reappraisal Office Review	300,000
Reappraisal Inspection	20,000
Reappraisal Remeasure	100
Mobile Home Reappraisal	13,700
Neighborhood Analysis	2,800

**ACCOUNT REVIEW:**

Account Office Review	20,000
Account Inspection	2,000
Account Remeasure	100

**RESIDENTIAL DIVISION  
2026 REAPPRAISAL PLAN**

**FIXED TASKS:**

**NEW CONSTRUCTION:**

**ACCOUNTS**

Permit Inspection	50,000
Permit Remeasure	7,000
Permit Remeasure Complex	250
Permit Office Review	2,500

**VARIABLE TASKS:**

**REAPPRAISAL:**

Reappraisal Office Review	500,000
Reappraisal Inspection	20,000
Reappraisal Remeasure	200
Mobile Home Reappraisal	14,500
Neighborhood Analysis	3,500

**ACCOUNT REVIEW:**

Account Office Review	39,000
Account Inspection	2,000
Account Remeasure	150

### **Residential Division Fixed Tasks Definitions**

**Permit Office Review:** Reappraising an account that has a building permit issued and the appraiser is working the permit/account in the office and/or is not physically at the site.

**Permit Inspect:** Reappraising an account that has a building permit issued and the appraiser is physically at the site location and a measurement of the structure(s) is not required nor done.

**Permit Remeasure:** Reappraising an account that has a building permit issued and the appraiser is physically at the site and a measurement of the structure(s) is required and done. Total square footage of structure is less than 10,000 square feet.

**Permit Remeasure Complex:** Reappraising an account that has a building permit issued and the appraiser is physically at the site and a measurement of the structure(s) is required and done. Total square footage of structure is greater than 10,000 square feet.

### **Residential Divisions Variable Tasks Definitions**

**Reappraisal Office Review:** Reappraising an account during the annual neighborhood reappraisal effort while in the office and/or not physically at the site.

**Reappraisal Inspect:** Reappraising an account during the annual neighborhood reappraisal effort while physically at the site and a measurement is not required nor done.

**Reappraisal Remeasure:** Reappraising an account during the neighborhood reappraisal while physically at the site and a measurement is required and done.

**Mobile Home Reappraisal:** Reappraising a mobile home account.

**Reappraisal Neighborhood Analysis:** Updating the Neighborhood Overview and undertaking Location Factor Analysis on a neighborhood targeted for the annual neighborhood reappraisal effort.

**Account Review Office Review:** Reappraising an account in the office and/or not physically at the site which does not involve a building permit or is not associated with the annual neighborhood reappraisal effort.

**Account Review Inspect:** Reappraising an account while physically at the site which does not involve a building permit or is not associated with the annual neighborhood reappraisal effort and a measurement is not required nor done.

**Account Review Remeasure:** Reappraising an account while physically at the site which does not involve a building permit or is not associated with the annual neighborhood reappraisal effort and a measurement is required and done.

## **COMMERCIAL VALUATION PROCESS**

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### **Scope of Responsibility**

The Commercial Division is responsible for establishing the fair market value of all commercial accounts as of January 1 of every year. There are approximately 78,451 commercial properties within Dallas County.

### **Appraisal Resources**

- **Personnel** - The Commercial appraisal staff consists of 21 appraisers and 3 appraisal support staff.
- **Data** - A common set of data characteristics for each commercial property in Dallas County is collected and updated by commercial appraisers and maintained in the various MARS (Mass Appraisal Records System) modules. The property characteristic data drives the computer-assisted mass appraisal (CAMA) approach to valuation. Property data attribute information is verified and corrected based on on-site inspections and during office review. During office review, tools such as digital photographs, aerial photography and third party data sources are used. The following data attribute information is captured on each appraisal record where applicable: Land Value, Property Classification Code, Building Class, Construction Type/Quality/Condition Codes, Gross Building Area, Net Leasable Area, Actual Year Built, Effective Age, Remodel Year, Number of Stories, Story Height, Number of Buildings, Foundation Type, Basement, Overhead Doors, Finish-out Quality, Percent Finish-out, Framework, Exterior Walls, Roof Type, Roof Structure, Roofing, Heating, A/C, Interior Walls, Floors, Restrooms, Rail Access, Average Unit Size, and Dock High Construction.

In addition to the physical characteristics noted above, data captured for income producing properties includes Net Leasable Area, Gross Rent, Rent Adjustments, Adjusted Rent, Plus Electric Charges, Parking Income, Percent Vacancy, Other Income, Expenses, Cap Rates, Loaded Cap Rates, Lease-up Expenses, Deferred Maintenance Costs and Excess Land Value Contribution.

The data used by the commercial appraiser also includes verified sales of vacant land and improved properties and the pertinent data obtained from each (sales price levels, capitalization rates, income multipliers, equity dividend rates, marketing period, etc.). Other data used by the appraiser includes actual income and expense data (typically obtained through the hearings process), actual contract rental data, leasing information (commissions, tenant finish, length of terms, etc.), and actual construction cost data. In addition to the actual data obtained from specific properties, market data publications and informational databases are also reviewed to provide additional support for market trends.

### **Market Area and Highest and Best Use Analysis**

#### **Regional Analysis**

Data on regional economic forces such as demographic patterns, regional location factors, employment and income patterns, general trends in real property prices and rents, interest rate trends, availability of

vacant land, and construction trends and costs are collected from private vendors and public sources and provide the field appraiser a current economic outlook on the real estate market. Information is gleaned from real estate publications and other third party publications and resources including seminars attended by staff members.

### **Neighborhood Analysis (Land Market Area & Improved Market Area)**

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 Land Market Areas and Improved Market Areas. In the mass appraisal of commercial properties these subsets of a universe of properties are generally referred to as land market areas (LMA's) and improved market areas (IMA's).

Economic areas and/or Improved Market Areas (IMA's) are defined by each of the improved property use types (apartment, office, retail, warehouse, industrial and special use) based upon an analysis of similar economic or market forces. These include, but are not limited to, similarities of rental rates, classification of projects (known as building class by area commercial market experts), date of construction, overall market activity or other pertinent influences. Improved market 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 improved market area (IMA) specific. Improved market areas are periodically reviewed to determine if re-delineation is required. The geographic boundaries as well as, income, occupancy and expense levels and capitalization rates by age within each economic area for all commercial use types and its corresponding income model may be found in the Commercial Mass Appraisal Records System (MARS).

### **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 insures that an accurate estimate of market value (sometimes referred to as value in exchange) is derived.

### **Data**

#### **Data Collection Procedures**

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



and/or characteristics associated within a given property. All commercial property located in Dallas County are coded according to this manual with the data being maintained in the various MARS modules (Ownership, Land, Physical, etc.).

Sales data is captured in DCAD's sales file database after the sale has been researched, verified and quality controlled by a Commercial appraisal staff member. The sales database is used by the Dallas CAD appraisers during the appraisal and appraisal review board processes and is maintained in MARS Sales Processing module.

Income and expense data is also collected from data received during the appraisal review process and from outside sources and is used primarily for Income Model Development for the various property types. Income and expense data is maintained in the MARS Income and Expense Processing module.

### **Sources of Data**

In terms of commercial sales data, Dallas CAD receives a copy of the deeds recorded in Dallas County that convey commercially classed properties. Other sources of sale data include the hearings process and local, regional and national real estate and financial publications, Real Capital Analytics database, Loopnet sales database, TREPP database, and the CoStar Comps sales database.

For those properties involved in a transfer of commercial ownership, a sale file is produced which begins the research and verification process. If DCAD does not have a high degree of confidence that the sales information being provided is accurate then a sales file will not be created until confirmation is established from the parties involved in the transaction. The initial step in sales verification involves a computer-generated questionnaire, which is mailed to both parties in the transaction (Grantor and Grantee). If a questionnaire is answered and returned, the documented responses are recorded into the computerized sales database system. If no information is provided, verification may be attempted via phone calls to both parties. If the sales information is still not obtained, other sources may be contacted, such as the brokers involved in the sale, property managers or commercial vendors. In other instances sales verification is obtained from local appraisers or others that may have the desired information. Finally, closing statements are often provided during the hearings process. The actual closing statement is the most reliable and preferred method of sales verification. Sales data will be given to a property owner if the sale was used in the valuation of the property owner's property but the source of the sale always remains confidential.

Actual property income and expense data remains confidential however, the model pro forma income and expense components used in income models for a given property type and comparability code is not considered confidential.

### **Valuation and Model Development**

Model development and 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 of time, with trending factors utilized for updating the data to the current market

conditions. However, if at some point, the adjustment process becomes too involved, the model calibration technique can mandate new model specifications or a revised model structure. Due to the dynamic commercial marketplace in Dallas County, Income and Cost models are typically updated annually.

### **Cost Schedules**

The cost approach to value is applied to all improved real property utilizing the comparative unit method. This methodology involves the utilization of national cost data reporting services as well as actual cost information on comparable properties whenever possible. Cost models are typically developed based on the Marshall Swift Valuation Service and review of local area trends. Cost models include the derivation of replacement cost new (RCN) of all improvements. These include comparative base rates, per unit adjustments and lump sum adjustments. This approach also employs the sales comparison approach in the valuation of the underlying land value. Time and location modifiers are necessary to adjust cost data to reflect conditions in a specific market and changes in costs over a period of time. Because a national cost service is used as a starting point for the cost models, location modifiers are necessary to adjust these base costs specifically for Dallas County. The Commercial Cost tables are reviewed annually and updated as needed.

Depreciation schedules are developed based on what is typical for each property type at that specific age. Depreciation schedules have been implemented for what is typical of each major class of commercial property by economic life categories. Schedules have been developed for improvements with 15, 20, 30, 40, 50 and 60 year expected life. The actual and effective ages of improvements are noted in MARS. Effective age estimates are based on the utility of the improvements relative to where the improvement lies on the scale of its total economic life and its competitive position in the marketplace.

Market adjustment factors, such as external and/or functional obsolescence, can be applied if warranted. A depreciation calculation override can be used if the condition or effective age of a property varies from the norm by appropriately noting the physical condition and functional utility ratings on the property data characteristics. These adjustments are typically applied to a specific property type or location and can be developed via ratio studies or other market analyses. In certain instances, Commercial properties being valued using the Income Approach, may not have an appropriate functional and/or economic obsolescence factor calculated in the Cost Approach as the Income Approach value in itself will reflect these cost depreciation factors.

### **Land Analysis**

Commercial land analysis is conducted by each of the commercial land appraisers. The appraisers develop a base lot value and can price land on flat price, square foot, acreage or front foot basis. Land market adjustments may be established for factors as view, shape, size, topography, utility easements, greenbelts, major thoroughfares, among others. In lieu of land sales information, appraisers may use abstraction and allocation methods to insure that the land values created best reflect the contributory market value of the land to the overall property value. Undisclosed land sales are also targeted for analysis and reappraisal.

## **Income Models**

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

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

Next, secondary income or plus electric income is calculated as a percentage of stabilized effective gross rent. Secondary income represents parking income, escalations, reimbursements, and other miscellaneous income generated by the 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. An allowance for non-recoverable expenses such as leasing costs and tenant improvements are included in the expenses. A non-recoverable expense represents costs that the owner pays to lease rental space. Different expense ratios are developed for different types of commercial property based on use. For instance, retail properties are most frequently leased on a triple-net basis, whereby the tenant is responsible for his pro-rata share of taxes, insurance and common area maintenance. In comparison, a general office building is most often leased on a base year expense stop. This lease type stipulates that the owner is responsible for all expenses incurred during the first year of the lease. However, in subsequent years, any amount in excess of the total per unit expenditure that occurred in the first year is the responsibility of the tenant. Under this scenario, if the total operating expense in year one (1) equates to \$8.00 per square foot, any increase in expense over \$8.00 per square foot throughout the remainder of the lease term would be the responsibility of the tenant. As a result, expense ratios are implemented based on the type of commercial property.

Another form of allowable expense is the replacement of short-lived items (such as roof or floor coverings, air conditioning or major mechanical equipment or appliances) requiring expenditures of large lump sums. When these capital expenditures are analyzed for consistency and adjusted, they may be applied on an annualized basis as stabilized expenses. When performed according to local market practices by commercial property type, these expenses when annualized are known as replacement reserves.

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

Rates and multipliers are used to convert income into an estimate of market value. These include income

multipliers, overall capitalization rates, and discount rates. Each of these is used in specific applications. Rates and multipliers also vary between property types, as well as by location, quality, condition, design, age, and other factors. Therefore, application of the various rates and multipliers must be based on a thorough analysis of the market.

Capitalization analysis is used in the income approach models. This methodology involves the capitalization of net operating income as an indication of market value for a specific property. Capitalization rates, both overall (going-in) cap rates for the direct capitalization method and terminal cap rates for discounted cash flow analyses, can be derived from the market. 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.

Rent loss concessions are made on specific properties with vacancy problems. A rent loss concession accounts for the impact of lost rental income while the building is moving toward stabilized occupancy. The rent loss is calculated by multiplying the rental rate by the percent difference of the property's stabilized occupancy and its actual occupancy. Build out allowances (for first generation space or retrofit/second generation space as appropriate) and leasing expenses are added to the rent loss estimate. The total adjusted loss from these real property operations is discounted using an acceptable risk rate. The discounted value (inclusive of rent loss due to extraordinary vacancy, build out allowances and leasing commissions) becomes the rent loss concession and is deducted from the value indication of the property at stabilized occupancy. A variation of this technique allows that for every year that the property's actual occupancy is less than stabilized occupancy a rent loss deduction may be estimated.

### **Sales Comparison (Market) Approach**

Although all three of the approaches to value are based on market data, the Sales Comparison Approach is most frequently referred to as the Market Approach. This approach is utilized not only for estimating land value but also in comparing sales of similarly improved properties to each parcel on the appraisal roll. As previously discussed in the Data 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.

### **Statistical and Capitalization Analysis**

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

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

Potential gross rent estimates, occupancy levels, secondary income, allowable expenses (inclusive of non-recoverables and replacement reserves), net operating income and capitalization rate and multipliers are continuously reviewed utilizing statistical procedures or measures. Income model conclusions are compared to actual information obtained on individual commercial properties during the hearings process as well as information from published sources and area vendors such as CoStar Properties and TREPP.

### **Individual Review Procedures**

#### **Building Permit Review**

Building permits are received monthly from each city and are then updated to the applicable account so a physical inspection and/or an office review can take place for the current appraisal year. All significant value related building permits issued from January 1, 2024, through December 31, 2024, associated with an account will be inspected and reappraised for the 2025 Appraisal Year. All significant value related building permits issued from January 1, 2025, through December 31, 2025, associated with an account will be inspected and reappraised for the 2026 Appraisal Year. Also, those accounts that were partially complete as of January 1, 2024, and January 1, 2025, will be re-inspected for 2025 and 2026 respectively. Any property that has new construction activity as of January 1 and was not 100% complete will be targeted for reappraisal the next appraisal year. This also includes those properties whereby a building permit was issued prior to January 1 but no new construction activity had taken place as of January 1 of the current appraisal year. Property data attribute information is verified and corrected based on on-site inspections as well as office review using digital photographs and aerial photography.

#### **Field Review**

The Commercial Division will typically reappraise at least 33% of all improved commercial accounts. In addition, 33% of all land accounts, whether vacant or improved, will be reappraised. Vacant land sales and improved property sales data will be reviewed and updated. In addition to the one-third reappraisal area, individual properties will be reviewed for equality. Markets showing significant activity will also be reviewed as time allows. Property types whereby their income and expense components and capitalization rates change will be typically reviewed and reappraised annually.

Improved Market Areas (IMA) and Land Market Areas (LMA) are targeted annually for reappraisal based on the market activity and changes between appraisal years within each of these markets. Accounts within these market areas are reviewed and are value based on current market standards for the given appraisal year. Field inspections will typically occur on most properties identified in the IMA and LMA annual reappraisal effort. However, an office review in lieu of a field inspection may occur. When commercial

appraisers conduct an office review aerial photography, digital photographs, and access to third party market data for particular properties will be utilized. Accounts may also be reviewed based on property owner inquiries, third party inquiries, the sales qualification process, and re-inspections initiated during the Appraisal Review Board process. The date of last property review, extent of that review, and the Dallas CAD appraiser responsible are listed in the MARS system.

Major income producing properties such as offices, retail, apartment, warehouse, and industrial are coded with an Improved Market Area (IMA) Code defining the properties located within the same competing market area. There are approximately 70 office IMA's, 30 retail IMA's, 25 apartment IMA's and 66 industrial IMA's identified within the appraisal district. Other IMA's also exist for other improved property types such as Fast Food/Restaurants, Tech/Data Centers, Auto Displays, etc. Each area is defined physically on a map for each respective market area and each respective property type. Income models are then developed for each class of comparability codes A, B, C, and occasionally D for the respective property types. Multiple competing Improved Market Areas are identified for each property type and appropriate adjustments are made to the income models to reflect market influences observed affecting the market values both within and between said Improved Market Areas.

### **Office Review**

Office reviews are typically limited by the data presented in final value reports. These reports summarize the pertinent data of each property as well as comparing the previous values to the proposed value conclusions of the various approaches to value. These reports show proposed percentage value changes, income model attributes or overrides, economic factor (cost overrides) and special factors affecting the property valuation such as new construction status, prior year litigation and a sales history.

Each appraiser's review is typically limited to properties in their area of responsibility by property type (improved) or geographic area (commercial vacant land). With preliminary estimates of value in these targeted areas, the appraisers test computer assisted values against their own appraisal judgment. Once the appraiser is satisfied with the level and uniformity of value for each commercial property within their area of responsibility, the estimates of value go to noticing. Each parcel is subjected to the value parameters appropriate for its use type. Therefore, although the value estimates are determined in a computerized mass appraisal environment, value edits enable an individual parcel review of value anomalies before the estimate of value is released for appraisal notification.

### **Commercial Market Areas**

A listing of all Commercial Improved Market Areas (IMA) and Land Market Areas (LMA) has been provided in Appendix D. Maps for the four major property types (Apartment, Industrial, Office and Retail) as well as the LMA map has been provided in Appendix E. A complete listing of those IMA's and LMA's reappraised in 2025 and 2026 will be available for review April 15, 2025, and April 15, 2026, respectively.

### **Three Approaches to Value**

The Mass Appraisal Records System (MARS) utilized by the Commercial Division of DCAD gives the ability to appraise property by all three approaches to value: Cost Approach, Sales Approach and Income

Approach.

### **Cost Approach**

The Cost Approach involves calculating the replacement cost new for each improvement and then deducting the appropriate amount of depreciation using age/life tables. The cost tables utilized by DCAD are initially derived from a recognized national cost publication service that develops its data from actual case studies of sales and market value appraisals. DCAD further augments this data with its own cost information received during the appeals process through property cost of construction documentation and other cost sources. Based on the physical characteristics of a subject property, the DCAD cost tables generate a price per square foot that is applied to the subject improvement. The land value is then added to the depreciated value of the improvements to establish the estimated market value of the property via the Cost Approach. The DCAD building class cost tables are reviewed on an annual basis. The Cost Approach may be the preferred method used during the informal meetings with property owners or authorized agents and at the formal Appraisal Review Board hearing if the Commercial property is a special use property, a new property recently constructed, lacks comparable sale information, and/or the property doesn't lend itself to the Income Approach to value.

### **Sales Approach**

The Sales Approach involves determining the market value of a subject property by analyzing sales of comparable properties. DCAD collects sales from several sources including sales surveys, market research companies, third-party appraisals and local media. The bulk of sales information is received through the Appraisal Review Board process in the form of closing statements. The sales are processed and entered into the Commercial sales database. The Commercial MARS system then allows the appraiser to select the most comparable sale properties based on the subject's physical characteristics and market area. The sale prices can further be adjusted based on sale conditions, land size, improvement size, age, condition and location. Finally, the appraiser may weigh the sales to arrive at an overall adjusted value per square foot or unit via the Sales Approach.

### **Income Approach**

The Income Approach involves the capitalization of income in to an estimation of market value. DCAD emphasizes the Direct Capitalization Approach where a single year's net operating income is capitalized. Capitalization is the process of dividing the subject property's estimated net operating income by a market capitalization rate to arrive at an indicated estimate of market value via the Income Approach. Market income data is compared to the subject's property income data to insure subject's income data is reflective of market standards. If not, then market standards will be used for income calculations. DCAD collects income/expense statements and rent rolls from property owners throughout the year, but primarily during the appeals process. Rents, occupancies, expenses, secondary income and net operating income for these properties are entered in to the Commercial income database. Capitalization rates are then estimated based on sale prices of properties and their respective net operating incomes. Outside sources such as market research companies and real estate publications are also referenced for data pertaining to income, expense, occupancy, and capitalization rates. DCAD analyzes this data to determine market income models for properties based on their physical characteristics and improved market areas. Actual income components for a property are then compared to market indicators and an estimated market value is established via the

Income Approach. The Income Approach is typically the preferred method when analyzing typical income producing Commercial properties (Retail, Office, Apartments, and Industrial) not only during the reappraisal effort but during the informal meetings with property owners or authorized agents and at the formal Appraisal Review Board hearing.

### **Equal and Uniform Analysis**

An Equal and Uniform Module (Equity Module) has been developed to augment the three approaches to value. In this module, comparable properties are determined for a subject property. These comparables are then appropriately adjusted to the subject based on physical attributes. The median adjusted value per square foot, or per unit, of the comparables is selected and applied to the subject net leasable area, or number of units, to arrive at an equal and uniform value based on the selected comparables.

### **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 (i.e. a sales ratio study). Independent, expert appraisals may also be used to represent market values in a ratio study (i.e. an appraisal ratio study). If there are not enough sales to provide necessary representativeness, independent appraisals can be used as indicators for market value. In addition, appraisal ratio studies can be used for properties statutorily not appraised at market value, but reflect the use-value requirement. Examples of these are multi-family housing projects subject to subsidized rent provisions or other governmental guarantees as provided by legislative statutes (affordable housing) and agricultural lands to be appraised on the basis of productivity value. The Quality Control Division also undertakes performance testing annually to insure accuracy and uniformity.

### **Sales Ratio Studies**

Sales ratio studies are an integral part of establishing equitable and accurate market value estimates, and ultimately assessments for this taxing jurisdiction. The primary uses of sale ratio studies include the determination of a need for general reappraisal; prioritizing selected groups of properties types for reappraisal; identification of potential problems with appraisal procedures; assist in market analyses; and to calibrate models used to derive appraised values during valuation or reappraisal cycles. When undertaking sale ratio analysis for a given sale, the appraiser must consider the fee simple interest of the property as opposed to the lease fee interest of the property. When such a difference occurs during sales analysis, an adjusted sale amount will be made to the actual sale amount.

Overall sales ratios are generated by use type annually (or more often in specific areas) to allow appraisers to review general market trends in their area of responsibility. The appraisers utilize reports developed in MARS (Mass Appraisal Records System), our in-house CAMA appraisal system, to evaluate subsets of data by economic area or a specific and unique data item. In MARS, this may be customized and performed by building class, by age, or by several other economic or physical attributes. In many cases, field checks may be conducted to insure the ratios produced are accurate and the appraised values utilized are based on accurate property data characteristics. These ratio studies aid the appraisers by providing an indication of market activity by land market area and improved market area and provide insight into



changing market conditions (appreciation or depreciation).

### **Comparative Appraisal Analysis**

The commercial appraiser performs an average unit value comparison in addition to a traditional ratio study. These studies are performed on commercially classed properties by property use type (such as apartment, office, retail and warehouse usage or special use). The objective to this evaluation is to determine appraisal performance of sold and unsold properties. Appraisers use their judgment and experience to analyze average unit prices of sales and average unit appraised values of the same parcels and the comparison of average value changes of sold and unsold properties. These studies are conducted on substrata such as building class and on properties located within various improved market areas. In this way, overall appraisal performance is evaluated geographically, by specific property type to discern whether sold parcels have been selectively appraised. When sold parcels and unsold parcels are appraised equally, the average unit values should be within a reasonable range assuming they are similar in terms of physical characteristics and performance.

### **Mineral Valuations**

Mineral valuations within Dallas County are conducted annually by the firm of Hugh L. Landrum Associates, Inc. The mineral valuation process is documented in the mineral appraisal manual provided by Hugh L. Landrum Associates, Inc.

### **Treatment of Real Property Non Homestead Exemption Property**

Effective January 1, 2024, per Texas Property Code Section 23.231, all real property accounts without a homestead exemption and an ownership change within the preceding 12 months and their market value is \$5,000,000 or less will now be subject to a twenty percent (20%) appraisal cap valuation (circuit breaker)

- The market value; or
- The preceding year's appraised value;  
PLUS 20 percent;  
PLUS the value of any improvements added since the last re-appraisal.

### **Commercial Division Reappraisal Plan Overview**

The following pages describe the Commercial Division's Reappraisal Plan. The Commercial Division's 2025 and 2026 Reappraisal Plan consists of two primary tasks – Fixed Tasks and Variable Tasks. Fixed tasks are those tasks required to be done on an annual basis and are associated with working building permits received on a monthly basis from the thirty-one cities within Dallas County. Variable tasks are those tasks associated with our annual reappraisal effort. The Reappraisal Plan account projections for 2025 and 2026 below are based on past historical permit and reappraisal activity.

**COMMERCIAL DIVISION  
2025 REAPPRAISAL PLAN**

<b>FIXED TASKS:</b>	<b>ACCOUNTS</b>
NEW CONSTRUCTION:	
Average	385
Major	85
Complex	150
Miscellaneous Permits	4,000
<b>VARIABLE TASKS:</b>	
LAND REAPPRAISAL:	
Land Pricing – Commercial	8,000
Land Inspections	1,400
IMPROVED REAPPRAISAL:	<b>ACCOUNTS</b>
Improved Inspections	3,000
Improved Value Review	18,000
Re-measure	125
Security	300
Mineral Accounts	4,300
Shared CAD Accounts	50
Sold Properties	2,250

**2026 REAPPRAISAL PLAN  
COMMERCIAL DIVISION**

<b>FIXED TASKS:</b>	<b>ACCOUNTS</b>
<b>NEW CONSTRUCTION:</b>	
Average	400
Major	90
Complex	155
Miscellaneous Permits	4,250
 <b>VARIABLE TASKS:</b>	
<b>LAND REAPPRAISAL:</b>	
Land Pricing – Commercial	8,250
Land Inspections	1,450
 <b>IMPROVED REAPPRAISAL:</b>	
	<b>ACCOUNTS</b>
Improved Inspections	3,250
Improved Value Review	19,000
Re-measure	125
Security	300
Mineral Accounts	4,500
Shared CAD Accounts	50
Sold Properties	2,400

## **Commercial Division Fixed Tasks Definitions**

### **New Construction**

**Average:** The actual field inspection and on-site measuring, classification and collection of physical characteristics of improvements with a value range of \$0 to \$2,499,999. Also, includes needed preparation and final value review.

**Major:** The actual field inspection and on-site measuring, classification and collection of physical characteristics of improvements with a value range of \$2,500,000 to \$6,999,999. Also, includes needed preparation and final value review.

**Complex:** The actual field inspection and on-site measuring, classification and collection of physical characteristics of improvements with a value range of \$7,000,000 and greater. Also, includes needed preparation and final value review.

**Miscellaneous Permits:** The actual field inspection of properties that do not require a measurement but do involve: partial completions, no starts, remodels, finish-out, repairs and demolition permits. Also, includes needed preparation and final value review.

## **Commercial Division Variable Tasks Definitions**

### **Land Reappraisal**

**Land Pricing – (Commercial & Residential):** The determination of land values for vacant and improved properties within a designated reappraisal area. This task also includes the determination of land values within selected active market areas that are not in reappraisal areas. Also, includes the development of land pricing schedules and Mass updating.

**Land Inspections:** The actual field inspection of vacant land accounts in a designated reappraisal area or selected active market area.

### **Improved Reappraisal**

**Improved Inspections:** The actual field inspection of improved accounts in a designated reappraisal area. Classification, physical characteristics and sketches are verified. This category may also include the review of recent photographs and ortho photography of improved accounts in a reappraisal area where time limitations prevent actual field inspection.

**Improved (& Active Market) Value Review:** The final determination of value for improved accounts in a designated reappraisal area based on an analysis of cost, comparable sales and market income/expense data as well as an analysis of equity considerations. This also includes time spent reviewing various value reports as needed to ensure accuracy and uniformity of work. Analyze and rectify cost versus income approach discrepancies. Insure proper comparison code application for respective Improved Market Areas. Additionally, time is spent updating Improved Market Area (IMA) and Land Market Area (LMA) related information such as boundary adjustments, sales data, pricing schemes, land market adjustments,

competing LMAs, overall market activity, transition trends, and other pertinent influences.

Major property type IMAs and certain LMAs will be reviewed for high market activity and will be designated for reappraisal based on analysis of cost, comparable sales and market income/expense data as well as an analysis of equity considerations. These areas may or may not be part of the overall one-third reappraisal effort.

**Re-measure:** The actual re-measure of improved properties in a designated reappraisal area due to an error in the sketch or net leasable area, or due to additions/demolitions since the last reappraisal.

**Security:** Fieldwork in high crime areas worked by two appraisers for safety purposes.

### **Miscellaneous**

**Mineral Accounts:** Appraise all mineral accounts.

**Shared CAD Accounts:** Appraising accounts split by the county line.

**Sale Processing:** The retrieval and classification of sales documentation received during the year and the preparation of those sales in a manner that they may be entered into the Commercial sales file. Also, includes the review of accounts with a change in ownership.

## **BUSINESS PERSONAL PROPERTY VALUATION PROCESS**

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### **Scope of Responsibility**

The Business Personal Property Division (BPP) is responsible for establishing the fair market value of all business personal property accounts as of January 1 of every year. There are approximately 104,096 business personal property accounts within the Dallas CAD territorial boundaries. There are four different personal property types appraised by the district's personal property section: Business Personal Property accounts; Leased Assets; Multi-Location Assets; and Vehicles.

### **Appraisal Resources**

- **Personnel** - The personal property staff consists of 29 appraisers and 8 appraisal support staff.
- **Data** - A common set of data characteristics for each business personal property (BPP) account in Dallas County is collected and updated by BPP appraisers and maintained in the various MARS (Mass Appraisal Records System) modules. The property characteristic data drives the computer-assisted mass appraisal (CAMA) approach to valuation. Property data information is verified and corrected based on on-site inspections, during office and rendition review. Data typically collected is the type of business and the various business personal property assets used in the course of business such as furniture and fixtures, machinery and equipment, computer equipment, vehicles, inventory and other tangible business personal property assets.

### **Business Personal Property Routes and Reappraisal Accounts**

The BPP file consists of approximately 104,096 accounts that fall into two general categories. The first category is for all accounts that have a single physical location and the second category is for multiple location accounts and specialty properties.

The single physical location accounts are divided into 31 geographic routes and one appraiser is typically assigned to each one. There are also six geographic sub routes with security concerns that are assigned to two person appraisal teams.

The second category of accounts are made up of multiple location accounts and specialty accounts. The multiple location accounts include leased equipment, telecommunications, utilities, pipelines and billboards. The specialty accounts in this group include tenant accounts, and special inventory accounts for auto, boat, heavy equipment, and manufactured housing dealers.

The BPP Division reviews all BPP accounts each year. However, accounts that were not rendered in the previous year, or that were rendered, but the rendition was not used to arrive at the appraised value are flagged for reappraisal. The flagged accounts are reappraised using Business Type Code models.

When valuing Business Personal Property all three approaches to value are considered, however, the cost approach is typically considered to be the most appropriate. The BPP Division has developed cost models based on information gleaned from taxpayer renditions and financial records. The models are built for the Business Type Codes. The typical model uses a price per square foot that is comprised of original cost

and an averaged depreciation. The list of comparables provides a value range that includes overall depreciation for the subset of assets unique to that business ID type. The model is applied to the subject property by multiplying the square footage of the subject against the selected comparable price per foot to arrive at an estimate. There are separate price per foot comparables for inventory. The model equation is Comparable Price per Foot (CPPF) x Estimated Subject Square Footage (SF).

The third area of reappraisal is based on the information provided on the taxpayer's rendition form. The rendered data often includes cost and year acquired information for fixed assets and inventory. This information is used in conjunction with the field appraisal or field confirmation process to reappraise the property. Renditions are filed by taxpayers on approximately 51,000 BPP accounts or 49% of the total BPP file.

### **Valuation Approach (Model Specification)**

#### **Business Type Code Analysis**

The Dallas Appraisal District, used the Standard Industrial Classification (SIC) codes to develop the BPP Business Type Codes. These codes are used by the Dallas CAD as a way to classify similar types of business personal property.

Business Type Code identification and delineation is the cornerstone of the personal property valuation system at the Dallas CAD. All of the personal property analysis work done in association with the personal property valuation process is Business Type Code specific. There are 400 Dallas CAD personal property Business Type Codes. These codes are delineated based on observable aspects of homogeneity. Business Type Code delineation is periodically reviewed to determine if further Business Type Code delineation is warranted. A comprehensive review of all Business Type Codes was completed in 2017. In 2018 the Business Type Codes were verified and matched to their equivalent North American Industrial Classification System or (NAICS) code.

#### **Highest and Best Use Analysis**

The highest and best use of property is the reasonable and probable use that supports the highest present value as of the date of the appraisal. The highest and best use must be physically possible, legal, financially feasible, and productive to its maximum. The highest and best use of 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. The personal property data collection procedures are reviewed annually and updated as needed.

## **Sources of Data**

### **Business Personal Property**

The district's property characteristic data was originally received from Dallas County 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 of time. Since the initial data collection, the District appraisers have maintained the appraisal roll through annual field drive-outs. This project results in the discovery of new businesses not revealed through other sources. Various published sources such as the Dallas Business Journal, trade journals, and other publications are also used to discover personal property. Tax assessors, municipalities, local newspapers, the public, and internet research provide the District with information regarding new personal property and useful facts related to property valuation.

### **Vehicles**

An outside vendor provides the Dallas CAD with a listing of vehicles within the Dallas CAD's jurisdiction. The vendor develops this listing from the Texas Department of Motor Vehicles' Title and Registration Division records. Other sources of data include property owner renditions and field inspections.

### **Leased and Multi-Location Assets**

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

## **Valuation and Model Development**

### **Cost Schedules**

Cost schedules are developed by Business Type Code by district personal property valuation appraisers. The cost schedules are developed by analyzing cost data from property owner renditions, hearings, state schedules, and published cost guides. The cost schedules are reviewed as necessary to conform to changing market conditions. The schedules are typically in a price per square foot format, but some exception Codes are in an alternate price per unit format.

### **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 Business Type Code. Review of the standard deviation can discern appraisal uniformity within the business type codes.



## **Depreciation Schedule and Trending Factors**

### Business Personal Property

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

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

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

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

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

### **Mass Appraisal Records System (MARS)**

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

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

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

## Vehicles

Value estimates for vehicles are provided by an outside vendor and are based on published values. Vehicles that are not valued by the vendor are valued by an appraiser using PVF schedules or published value guides.

## Leased and Multi-Location Assets

Leased and multi-location assets are valued using the PVF schedules or published value guides.

## **Individual Value Review Procedures**

### **Field Review**

The Business Personal Property file has defined routes and/or areas of assignments. Each of these routes are driven annually by BPP appraisal staff members to discover and list any new businesses, delete any businesses no longer operating as of January 1 and to make any necessary changes to existing businesses. Thus, effectively, every BPP account is reappraised annually.

Due to the dynamic nature of Business Personal Property all businesses are reviewed each year for either reappraisal or field confirmation. DCAD's jurisdiction is broken down into geographic routes that are worked by individual appraisers. Sub-routes that cover geographic areas with security concerns are worked by two appraiser teams. Within the routes and sub-routes, accounts are slated for reappraisal or field confirmation based on the following criteria:

New business accounts are set up during the August through February field inspection portion of the appraisal year. The appraisers drive or walk all streets that are within their assigned geographic routes during this time period. Various sources such as Certificates of Occupancy, articles in local papers and business journals, as well as online research, supplement the physical inspection process used to identify and set up the new Business Personal Property accounts.

Business Type Code / Rendition Filing Review: Specific groups of businesses may be slated for reappraisal based on timing or analysis that indicates a market value adjustment is needed. Businesses that have not filed a rendition, or filed a rendition was not used to arrive at the appraised value for the BPP account in the previous year are flagged for reappraisal.

The remaining accounts are worked under the field confirmation task, which verifies that these businesses are still in operation. If the appraiser determines that there has been some type of change, an inspection and reappraisal of the property may be performed at that time.

### **Office Review**

#### **Business Personal Property**

A district valuation computer program (MARS) exists in a 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, and Business Type code changes are all considered. The accounts are processed by MARS and pass or fail preset tolerance parameters by comparing appraised values to prior year and model values. Accounts that fail the tolerance parameters are reviewed by the appraisers.

### Vehicles

A list of commercial vehicles registered in Dallas County is received in an electronic format from an outside vendor. These vehicles are matched to existing BPP accounts and the accounts are updated. New accounts may be created as needed. Vehicles that are not valued by the vendor are valued by an appraiser using PVF schedules or published guides.

### Leased and Multi-Location Assets

Leasing and multi-location accounts that have a high volume of vehicles or other assets are loaded programmatically into MARS, if reported by the property owner electronically. Electronic renditions, usually in an excel spreadsheet or CD, often require reformatting before they can be loaded to the account. Accounts that render in a hard copy format are manually entered in a database by BPP staff.

After matching and data entry, reports are generated and reviewed by an appraiser. Corrections are made and the accounts is notified after supervisor approval.

### Rendition Review

The most significant office review task is the rendition processing period. The BPP division expects to receive in excess of 51,000 renditions each year. Between March and when notices are mailed in late May, Business Personal Property will receive and data enter the information provided on the renditions. The Appraisal Staff will review the rendered data and incorporate the inventory and depreciated cost information into the appraisals. Renditions for Leased Equipment, Telecommunications, and Utilities will be worked as the renditions are received. These business types are typically reappraised each year, and processing the accounts is part of the variable task process.

### **Rendition Process**

BPP Renditions contain information provided by the property owner and are legally required to be filed annually by the property owner per the Texas Property Tax Code not later than April 15, or upon written request by the property owner the chief appraiser shall extend the deadline for filing a rendition statement to May 15. Not filing a business personal property rendition by the annual April 15<sup>th</sup> deadline date will result in a 10% penalty being applied to the business personal property tax bill. DCAD encourages all business owners to file an Online Business Personal Property rendition.

The BPP Rendition requests basic information about a business including cost and year acquired of assets, inventory values, consigned goods, leased equipment, and the property owner's opinion of value.

The DCAD mails BPP Rendition forms to all existing BPP accounts in Dallas County in January each year. DCAD also provides on its website ([www.dallascad.org](http://www.dallascad.org)) an Online BPP Rendition filing system that is simple and easy to use. The Online BPP Rendition filing system can be accessed by using a PIN number located at top of the BPP Rendition that is mailed in January. DCAD would like to encourage all business owners to use the Online BPP Rendition filing system as opposed to filing a rendition using the paper form. Utilizing The Online BPP filing system is beneficial for both DCAD and the property owner.

A properly filed BPP rendition form allows the BPP appraiser to:

- Verify the Legal Owner, DBA, and Physical Location of the property January 1 of the appraisal year.
- Use contact information on the rendition form if the appraiser has questions about the business being appraised.
- Compare cost or opinion of value information against the estimate of value made by the appraiser in the field.

With the appraiser's information gathered in the field and a properly filed BPP rendition form from the property owner or authorized agent, the BPP appraiser has sufficient information to make an accurate and equitable business personal property market value estimate used to determine the business' property taxes.

### **Three Approaches to Value**

The Mass Appraisal Records System (MARS) utilized by the Business Personal Property Division of the Dallas Central Appraisal District gives the ability to appraise property by all three approaches to value: Cost Approach, Sales Approach and Income Approach.

#### **Cost Approach**

The Cost Approach is typically the approach used to value business personal property, although all approaches (Income Approach and Sales Approach) are considered, the Cost Approach offers the most equitable and consistent method for mass appraisal of business personal property. The BPP appraiser will estimate the market value by comparing the subject business being appraised against similar types of businesses. The appraiser takes into account the size of the business, the quality and condition of the assets, and estimates the overall age of the assets. In addition to the business assets, the appraiser will also estimate the market value of the inventory based on the quantity, and make any known condition adjustments.

#### **Sales Approach**

The Sales Approach may be used for certain types of business personal property that have substantial secondary markets such as cars and trucks. However, the Sales Approach is often less useful with many types of business assets that don't have an active used market.

## **Income Approach**

The Income Approach is rarely used, since it is often impossible to differentiate the income from the business personal property being valued and the income associated with the components of a business.

## **Equal and Uniform Analysis**

BPP's preferred method when dealing with equal and uniform analysis, is to request the business to provide an asset listing with the cost and year of acquisition per asset so DCAD can uniformly apply the applicable depreciation schedule to determine a fair and equitable value.

## **Performance Tests**

### **Ratio Studies**

The Property Tax Assistance Division of the State Comptroller's office conducts a Property Value Study (PVS). The PVS is a ratio study used to gauge appraisal district performance. Results from the PVS play a part in school funding. Rather than a sales ratio study, the personal property PVS is a ratio study using state cost and depreciation schedules to develop comparative personal property values. These values are then compared to Dallas CAD's personal property values and ratios are formed.

### **Internal Testing**

The Dallas CAD can test new or revised cost and depreciation schedules by running the valuation program in a test mode prior to the valuation cycle. This can give appraisers a chance to make additional refinements to the schedules if necessary. The Quality Control Division also undertakes performance testing annually to insure accuracy and uniformity.

## **BUSINESS PERSONAL PROPERTY REAPPRAISAL PLAN OVERVIEW**

The Business Personal Property Division 2025 and 2026 Reappraisal Plan is made up of both fixed and variable tasks. The fixed tasks include setting up new business accounts, and the annual field reappraisal of Business Personal Property as well as deleting inactive accounts. Variable tasks are associated with aircraft, special inventory accounts, leased equipment processing and rendition processing.

### **BUSINESS PERSONAL PROPERTY DIVISION 2025 REAPPRAISAL PLAN**

<b>FIXED TASKS:</b>	<b>ACCOUNTS</b>
Add / New Accounts	9,800
Business ID Type Reappraisal	6,700

Tenant Account Reappraisal	8,000
Re-inspection Account Reappraisal	75
Complex Account Reappraisal	1,100

**VARIABLE TASKS:**

Aircraft Accounts Reappraisal	625
Rendition Processing / Reappraisal	51,000

**BUSINESS PERSONAL PROPERTY DIVISION  
2026 REAPPRAISAL PLAN**

**FIXED TASKS:**

**ACCOUNTS**

Add / New Accounts	9,900
Business ID Type Reappraisal	7,000
Tenant Account Reappraisal	8,200
Re-inspection Account Reappraisal	75
Complex Account Reappraisal	1,200

**VARIABLE TASKS:**

Aircraft Account Reappraisal	625
Rendition Processing / Reappraisal	51,500

**BUSINESS PERSONAL PROPERTY FIXED TASKS DEFINITIONS**

**Add/New Accounts:** This category captures the time required to tour a new business and set up the add/new account in MARS.

**Business ID Type Reappraisal:** Selection of accounts for reappraisal based on specific business types and previous year rendition status.

**Tenant Account Reappraisal:** The Tenant accounts are furnished by public warehouses, craft malls,

storage garages, consignment stores, executive office suites, etc.

**Re-inspection Account Reappraisal:** These are accounts in business types that are not designated for reappraisal, however, due to physical changes such as downsizing, mergers, plant expansion, etc., a complete reappraisal is warranted.

**Complex Account Reappraisal:** Accounts with a value of \$10,000,000 or greater.

### **BUSINESS PERSONAL PROPERTY VARIABLE TASK DEFINITIONS**

**Aircraft Account Reappraisal:** Valuing and confirming ownership of aircraft.

**Rendition Process / Reappraisal:** Property owners' statements calculated and data entered by appraisers.

### **LIMITING CONDITIONS**

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

1. The appraisals are prepared exclusively for ad valorem tax purposes with a January 1 assessment date.
2. The property characteristic data upon which the appraisals are based is assumed to be correct. Exterior inspections of the property appraised are performed as staff resources and time allowed. Some interior inspections of property appraised are performed at the request of the property owner and required by the district for clarification purposes and to correct property descriptions.
3. Sales data provided by third party sources that have historically provided extremely reliable and accurate sales information is considered verified and confirmed by DCAD assuming deed transfer dates correlate with sale dates. If discrepancies arise then DCAD will attempt to re-verify and confirm the sales data information from the appropriate parties.
4. Appraisals prepared by third-party appraisal firms will discuss Assumptions and Limiting Conditions in their appraisal manuals provided to DCAD. Currently, only mineral interest appraisals are prepared by Hugh L. Landrum & Associates.
5. Appendix A has a list of staff providing significant assistance to the person signing this certification.

### **Certification Statement:**

"I, Shane Docherty, Chief Appraiser/Executive Director for Dallas Central Appraisal District, solemnly swear that I have made or caused to be made a reappraisal plan for Dallas Central Appraisal District for the 2025 and 2026 tax years as required by law."



Shane Docherty  
Chief Appraiser / Executive Director

## Appendix A

### Key Personnel on Reappraisal Plan Implementation

<u>Department</u>	<u>Employee</u>	<u>Position</u>
Administration	Shane Docherty	Chief Appraiser/Executive Director
	Cheryl Jordan	Deputy Chief Appraiser
	Jimmy Cox	Director of Appraisal
Residential	Mike Robinson	Manager
	Brad Ward	Assistant Manager
	Chad Johnson	Supervisor
	Jered Kimmel	Supervisor
	Hung Nguyen	Supervisor
	Robert Newman	Supervisor
	Max Angelich	Supervisor
Jackie McKamy	Supervisor	
Commercial	Greyson Johnson	Manager
	Mason Massei	Assistant Manager
	Richard Davis	Supervisor
	Molly Vaughan	Supervisor
	Joe Flores	Supervisor
	Johnny Blount	Supervisor
	Jeff Richardson	Supervisor
BPP	Raul Reyes	Manager
	Adrian Jackson	Assistant Manager
	Mel Sims	Supervisor
	Kathy Nora	Supervisor
	Tonya Gee	Supervisor
	Schantell Dearing	Supervisor
Arthur Salinas	Supervisor	
Quality Control	Steve Wise	Manager
	William Welles	Assistant Manager
	Paul Nguyen	Development Analyst



## Appendix B

### Residential Neighborhoods

1DS09N	1DS137	1DS176	1DS309	1DS348	1DS388
1DS100	1DS138	1DS177	1DS310	1DS349	1DS389
1DS101	1DS139	1DS178	1DS311	1DS350	1DS38N
1DS102	1DS140	1DS179	1DS312	1DS352	1DS390
1DS103	1DS141	1DS180	1DS313	1DS353	1DS391
1DS104	1DS142	1DS181	1DS314	1DS354	1DS392
1DS105	1DS143	1DS182	1DS315	1DS355	1DS393
1DS106	1DS144	1DS183	1DS316	1DS356	1DS394
1DS107	1DS145	1DS184	1DS317	1DS357	1DS395
1DS108	1DS146	1DS185	1DS318	1DS358	1DS396
1DS109	1DS147	1DS186	1DS319	1DS359	1DS397
1DS110	1DS148	1DS187	1DS320	1DS360	1DS398
1DS111	1DS149	1DS188	1DS321	1DS361	1DS399
1DS112	1DS150	1DS189	1DS322	1DS362	1DS400
1DS113	1DS151	1DS190	1DS323	1DS363	1DS401
1DS114	1DS152	1DS191	1DS324	1DS364	1DS402
1DS115	1DS153	1DS192	1DS325	1DS365	1DS403
1DS116	1DS154	1DS193	1DS326	1DS366	1DS404
1DS117	1DS155	1DS194	1DS327	1DS367	1DS405
1DS118	1DS156	1DS195	1DS328	1DS368	1DS406
1DS119	1DS157	1DS196	1DS329	1DS369	1DS407
1DS11N	1DS158	1DS197	1DS330	1DS370	1DS408
1DS120	1DS159	1DS198	1DS331	1DS371	1DS409
1DS121	1DS160	1DS199	1DS332	1DS372	1DS410
1DS122	1DS161	1DS201	1DS333	1DS373	1DS411
1DS123	1DS162	1DS204	1DS334	1DS374	1DS412
1DS124	1DS163	1DS206	1DS335	1DS375	1DS413
1DS125	1DS164	1DS212	1DS336	1DS376	1DS414
1DS126	1DS165	1DS213	1DS337	1DS377	1DS415
1DS127	1DS166	1DS214	1DS338	1DS378	1DS416
1DS128	1DS167	1DS300	1DS339	1DS379	1DS417
1DS129	1DS168	1DS301	1DS340	1DS380	1DS418
1DS130	1DS169	1DS302	1DS341	1DS381	1DS419
1DS131	1DS170	1DS303	1DS342	1DS382	1DS420
1DS132	1DS171	1DS304	1DS343	1DS383	1DS421
1DS133	1DS172	1DS305	1DS344	1DS384	1DS422
1DS134	1DS173	1DS306	1DS345	1DS385	1DS423
1DS135	1DS174	1DS307	1DS346	1DS386	1DS424
1DS136	1DS175	1DS308	1DS347	1DS387	1DS425

1DS426	1DS471	1DS516	1DS559	1DS602	1DS645
1DS427	1DS472	1DS517	1DS560	1DS603	1DS646
1DS428	1DS474	1DS518	1DS561	1DS604	1DS647
1DS429	1DS475	1DS519	1DS562	1DS605	1DS648
1DS430	1DS476	1DS520	1DS563	1DS606	1DS649
1DS431	1DS477	1DS521	1DS564	1DS607	1DS650
1DS432	1DS478	1DS522	1DS565	1DS608	1DS651
1DS433	1DS479	1DS523	1DS566	1DS609	1DS652
1DS434	1DS480	1DS524	1DS567	1DS610	1DS653
1DS435	1DS482	1DS525	1DS568	1DS611	1DS654
1DS436	1DS483	1DS526	1DS569	1DS612	1DS655
1DS437	1DS484	1DS527	1DS570	1DS613	1DS656
1DS438	1DS485	1DS528	1DS571	1DS614	1DS657
1DS439	1DS486	1DS529	1DS572	1DS615	1DS658
1DS440	1DS487	1DS530	1DS573	1DS616	1DS659
1DS441	1DS488	1DS531	1DS574	1DS617	1DS660
1DS442	1DS489	1DS532	1DS575	1DS618	1DS661
1DS443	1DS490	1DS533	1DS576	1DS619	1DS662
1DS444	1DS491	1DS534	1DS577	1DS620	1DS663
1DS445	1DS492	1DS535	1DS578	1DS621	1DS664
1DS447	1DS493	1DS536	1DS579	1DS622	1DS665
1DS448	1DS494	1DS537	1DS580	1DS623	1DS666
1DS449	1DS495	1DS538	1DS581	1DS624	1DS667
1DS450	1DS496	1DS539	1DS582	1DS625	1DS668
1DS451	1DS497	1DS540	1DS583	1DS626	1DS669
1DS452	1DS498	1DS541	1DS584	1DS627	1DS670
1DS453	1DS499	1DS542	1DS585	1DS628	1DS671
1DS454	1DS500	1DS543	1DS586	1DS629	1DS672
1DS455	1DS501	1DS544	1DS587	1DS630	1DS673
1DS456	1DS502	1DS545	1DS588	1DS631	1DS674
1DS457	1DS503	1DS546	1DS589	1DS632	1DS675
1DS458	1DS504	1DS547	1DS590	1DS633	1DS676
1DS459	1DS505	1DS548	1DS591	1DS634	1DS677
1DS460	1DS506	1DS549	1DS592	1DS635	1DS678
1DS462	1DS507	1DS550	1DS593	1DS636	1DS679
1DS463	1DS508	1DS551	1DS594	1DS637	1DS680
1DS464	1DS509	1DS552	1DS595	1DS638	1DS681
1DS465	1DS510	1DS553	1DS596	1DS639	1DS682
1DS466	1DS511	1DS554	1DS597	1DS640	1DS683
1DS467	1DS512	1DS555	1DS598	1DS641	1DS684
1DS468	1DS513	1DS556	1DS599	1DS642	1DS685
1DS469	1DS514	1DS557	1DS600	1DS643	1DS686
1DS470	1DS515	1DS558	1DS601	1DS644	1DS687

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1DS689	1DS732	1DS776	1DS819	1DS862	1DS905
1DS690	1DS733	1DS777	1DS820	1DS863	1DS906
1DS691	1DS734	1DS778	1DS821	1DS864	1DS907
1DS692	1DS735	1DS779	1DS822	1DS865	1DS908
1DS693	1DS736	1DS780	1DS823	1DS866	1DS909
1DS694	1DS737	1DS781	1DS824	1DS867	1DS910
1DS695	1DS738	1DS782	1DS825	1DS868	1DS911
1DS696	1DS739	1DS783	1DS826	1DS869	1DS912
1DS697	1DS741	1DS784	1DS827	1DS870	1DS913
1DS698	1DS742	1DS785	1DS828	1DS871	1DS914
1DS699	1DS743	1DS786	1DS829	1DS872	1DS915
1DS700	1DS744	1DS787	1DS830	1DS873	1DS916
1DS701	1DS745	1DS788	1DS831	1DS874	1DS917
1DS702	1DS746	1DS789	1DS832	1DS875	1DS918
1DS703	1DS747	1DS790	1DS833	1DS876	1DS919
1DS704	1DS748	1DS791	1DS834	1DS877	1DS920
1DS705	1DS749	1DS792	1DS835	1DS878	1DS921
1DS706	1DS750	1DS793	1DS836	1DS879	1DS922
1DS707	1DS751	1DS794	1DS837	1DS880	1DS923
1DS708	1DS752	1DS795	1DS838	1DS881	1DS924
1DS709	1DS753	1DS796	1DS839	1DS882	1DS925
1DS710	1DS754	1DS797	1DS840	1DS883	1DS926
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1DS712	1DS756	1DS799	1DS842	1DS885	1DS928
1DS713	1DS757	1DS800	1DS843	1DS886	1DS929
1DS714	1DS758	1DS801	1DS844	1DS887	1DS930
1DS715	1DS759	1DS802	1DS845	1DS888	1DS931
1DS716	1DS760	1DS803	1DS846	1DS889	1DS932
1DS717	1DS761	1DS804	1DS847	1DS890	1DS933
1DS718	1DS762	1DS805	1DS848	1DS891	1DS934
1DS719	1DS763	1DS806	1DS849	1DS892	1DS935
1DS720	1DS764	1DS807	1DS850	1DS893	1DS936
1DS721	1DS765	1DS808	1DS851	1DS894	1DS937
1DS722	1DS766	1DS809	1DS852	1DS895	1DS938
1DS723	1DS767	1DS810	1DS853	1DS896	1DS939
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1DS725	1DS769	1DS812	1DS855	1DS898	1DSA01
1DS726	1DS770	1DS813	1DS856	1DS899	1DSA02
1DS727	1DS771	1DS814	1DS857	1DS900	1DSA03
1DS728	1DS772	1DS815	1DS858	1DS901	1DSA04
1DS729	1DS773	1DS816	1DS859	1DS902	1DSA05
1DS730	1DS774	1DS817	1DS860	1DS903	1DSA06

1DSA07	1DSJ07	1DSM20	1DSV04	1HS321	1HS364
1DSA08	1DSJ08	1DSM21	1DSV06	1HS322	1HS365
1DSA09	1DSJ09	1DSM22	1DSX02	1HS323	1HS366
1DSA10	1DSJ10	1DSM23	1DSY01	1HS324	1HS367
1DSB01	1DSJ11	1DSM24	1DSY10	1HS325	1HS368
1DSC01	1DSJ12	1DSM26	1DSZ01	1HS326	1HS369
1DSD01	1DSJ13	1DSO01	1DSZ99	1HS327	1HS370
1DSD02	1DSJ14	1DSP02	1HS100	1HS328	1HS371
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1DSD10	1DSJ20	1DSP12	1HS106	1HS334	1HS377
1DSD11	1DSJ21	1DSP13	1HS108	1HS335	1HS378
1DSD12	1DSJ22	1DSP15	1HS201	1HS336	1HS379
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1DSH01	1DSM12	1DST01	1HS313	1HS356	1HS570
1DSH02	1DSM13	1DST02	1HS314	1HS357	1HS900
1DSI01	1DSM14	1DST03	1HS315	1HS358	1HS901
1DSJ01	1DSM15	1DST06	1HS316	1HS359	1HS902
1DSJ02	1DSM16	1DST07	1HS317	1HS360	1HS912
1DSJ03	1DSM17	1DSV01	1HS318	1HS361	1HSL01
1DSJ05	1DSM18	1DSV02	1HS319	1HS362	1HSM01
1DSJ06	1DSM19	1DSV03	1HS320	1HS363	1HSM02

1HSM03	1HSV20	2DS212	2DS351	2DS396	2DSM04
1HSP03	1HSV21	2DS213	2DS353	2DS398	2DSM05
1HSP04	1HSV22	2DS214	2DS354	2DS399	2DSM06
1HSP05	1HSY01	2DS300	2DS355	2DS400	2DSM10
1HSP07	1HSY02	2DS301	2DS356	2DS401	2DSM31
1HSP08	1HSY03	2DS302	2DS357	2DS402	2DSM32
1HSP09	1HSY04	2DS303	2DS358	2DS403	2DSN01
1HSP10	1HSY05	2DS304	2DS359	2DS404	2DSN02
1HSP11	1HSY09	2DS305	2DS360	2DS405	2DSN03
1HSP12	1HSY10	2DS306	2DS361	2DS406	2DSO02
1HSP13	1HSY11	2DS307	2DS362	2DS407	2DSO04
1HSP14	1HSY12	2DS308	2DS363	2DS408	2DSO05
1HSP15	1HSY13	2DS309	2DS364	2DS409	2DSP01
1HSP16	1HSY14	2DS30N	2DS365	2DS410	2DSP02
1HSP17	1HSZ02	2DS310	2DS366	2DS411	2DSP03
1HSP18	1HSZ03	2DS311	2DS367	2DS412	2DSP04
1HSP20	2DS01N	2DS312	2DS369	2DS413	2DSP05
1HSS01	2DS03N	2DS313	2DS370	2DS414	2DSP06
1HSS02	2DS04N	2DS314	2DS371	2DS415	2DSP07
1HSS03	2DS05N	2DS315	2DS372	2DS416	2DSP08
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1HSS05	2DS102	2DS317	2DS374	2DS418	2DSP10
1HSS06	2DS103	2DS318	2DS375	2DS419	2DSP11
1HSS07	2DS104	2DS319	2DS376	2DS420	2DSP12
1HSS09	2DS105	2DS320	2DS377	2DS422	2DSP14
1HSS10	2DS106	2DS321	2DS378	2DS423	2DSP15
1HSS11	2DS107	2DS322	2DS379	2DS424	2DSP16
1HSS13	2DS108	2DS323	2DS380	2DS425	2DSP17
1HST06	2DS109	2DS324	2DS381	2DS426	2DSP18
1HSV01	2DS110	2DS325	2DS382	2DS427	2DSP19
1HSV02	2DS111	2DS326	2DS383	2DS428	2DSP20
1HSV05	2DS112	2DS327	2DS384	2DS429	2DSR01
1HSV06	2DS113	2DS328	2DS385	2DS430	2DSR02
1HSV07	2DS114	2DS329	2DS386	2DS431	2DSR03
1HSV08	2DS115	2DS331	2DS387	2DS432	2DSR04
1HSV09	2DS120	2DS333	2DS388	2DS433	2DSS01
1HSV13	2DS122	2DS334	2DS389	2DS434	2DSS02
1HSV14	2DS201	2DS335	2DS390	2DS900	2DSS03
1HSV15	2DS203	2DS337	2DS391	2DS901	2DSS04
1HSV16	2DS204	2DS340	2DS392	2DS902	2DSS05
1HSV17	2DS207	2DS346	2DS393	2DSM01	2DSS07
1HSV18	2DS210	2DS349	2DS394	2DSM02	2DSS08
1HSV19	2DS211	2DS350	2DS395	2DSM03	2DSS09

2DSS10	2DSW10	2DSZ99	2RS209	2RS331	2RSJ12
2DSS11	2DSW11	2RS01N	2RS210	2RS332	2RSJ13
2DSS12	2DSW12	2RS02N	2RS211	2RS333	2RSJ14
2DSS13	2DSW13	2RS05N	2RS212	2RS334	2RSJ15
2DSS14	2DSW14	2RS06N	2RS213	2RS335	2RSJ16
2DSS15	2DSW15	2RS09N	2RS215	2RS337	2RSJ17
2DST01	2DSX01	2RS100	2RS216	2RS338	2RSJ18
2DST02	2DSX02	2RS101	2RS217	2RS339	2RSJ19
2DST03	2DSX03	2RS102	2RS218	2RS340	2RSJ20
2DST04	2DSX04	2RS103	2RS219	2RS341	2RSJ21
2DST05	2DSX05	2RS104	2RS220	2RS342	2RSJ22
2DST08	2DSX06	2RS105	2RS221	2RS343	2RSJ23
2DST09	2DSX07	2RS106	2RS300	2RS344	2RSJ24
2DST10	2DSX08	2RS107	2RS301	2RS345	2RSJ25
2DST11	2DSX09	2RS108	2RS302	2RS346	2RSJ26
2DST12	2DSX10	2RS109	2RS303	2RS347	2RSJ27
2DST13	2DSX11	2RS110	2RS304	2RS348	2RSJ29
2DST14	2DSX13	2RS111	2RS305	2RS349	2RSJ30
2DST15	2DSX14	2RS112	2RS306	2RS350	2RSJ31
2DST16	2DSX16	2RS113	2RS307	2RS351	2RSK01
2DSU01	2DSX17	2RS114	2RS308	2RS352	2RSK03
2DSU03	2DSX19	2RS115	2RS309	2RS353	2RSK04
2DSU06	2DSX20	2RS116	2RS310	2RS354	2RSK05
2DSU07	2DSX21	2RS117	2RS311	2RS355	2RSK06
2DSU08	2DSX22	2RS118	2RS312	2RS356	2RSK07
2DSV01	2DSX23	2RS119	2RS313	2RS357	2RSK08
2DSV02	2DSX24	2RS120	2RS314	2RS420	2RSK09
2DSV03	2DSX25	2RS121	2RS315	2RSF01	2RSK10
2DSV04	2DSX26	2RS122	2RS316	2RSG01	2RSK11
2DSV06	2DSX27	2RS123	2RS317	2RSH01	2RSK12
2DSV07	2DSX28	2RS124	2RS318	2RSH02	2RSK13
2DSV08	2DSX29	2RS125	2RS319	2RSI01	2RSK16
2DSV09	2DSY01	2RS126	2RS320	2RSJ01	2RSK17
2DSV5N	2DSY02	2RS127	2RS321	2RSJ02	2RSK18
2DSV5S	2DSY03	2RS128	2RS322	2RSJ03	2RSK19
2DSW01	2DSY04	2RS200	2RS323	2RSJ04	2RSK20
2DSW02	2DSY05	2RS201	2RS324	2RSJ05	2RSK21
2DSW03	2DSY06	2RS202	2RS325	2RSJ06	2RSL01
2DSW04	2DSY07	2RS203	2RS326	2RSJ07	2RSL02
2DSW05	2DSY08	2RS204	2RS327	2RSJ08	2RSL04
2DSW06	2DSY09	2RS205	2RS328	2RSJ09	2RSL08
2DSW08	2DSY10	2RS206	2RS329	2RSJ10	2RSL09
2DSW09	2DSZ01	2RS207	2RS330	2RSJ11	2RSM01

2RSM02	2RSP02	2RSR05	2RST09	3DS105	3DSJ14
2RSM03	2RSP03	2RSR06	2RSU01	3DS201	3DSJ15
2RSM04	2RSP04	2RSR07	2RSU03	3DS202	3DSJ16
2RSM05	2RSP05	2RSR08	2RSU05	3DS203	3DSJ18
2RSM06	2RSP06	2RSR09	2RSU06	3DS204	3DSJ19
2RSM09	2RSP07	2RSR10	2RSV01	3DS205	3DSJ20
2RSM11	2RSP08	2RSR11	2RSV02	3DS207	3DSJ25
2RSM12	2RSP09	2RSR12	2RSV03	3DS208	3DSJ50
2RSM13	2RSP10	2RSR13	2RSV04	3DS209	3DSK01
2RSM14	2RSP11	2RSR14	2RSV05	3DS302	3DSK02
2RSM15	2RSP12	2RSR15	2RSV06	3DS304	3DSK05
2RSM16	2RSP13	2RSR16	2RSV07	3DS305	3DSK06
2RSM17	2RSP14	2RSS01	2RSW01	3DSA04	3DSK07
2RSM19	2RSP15	2RSS02	2RSW02	3DSAB3	3DSK08
2RSM20	2RSP16	2RSS03	2RSW04	3DSG01	3DSK09
2RSM21	2RSP17	2RSS04	2RSW05	3DSG02	3DSL02
2RSM22	2RSP18	2RSS05	2RSW06	3DSG03	3DSL04
2RSM23	2RSP19	2RSS06	2RSX01	3DSG04	3DSL07
2RSM24	2RSP21	2RSS07	2RSX02	3DSG05	3DSL24
2RSM25	2RSP22	2RSS08	2RSX03	3DSG06	3DSM01
2RSM26	2RSP23	2RSS09	2RSX04	3DSG07	3DSM02
2RSM28	2RSP24	2RSS10	2RSX05	3DSG08	3DSM03
2RSM31	2RSP25	2RSS11	2RSX06	3DSG10	3DSM05
2RSM33	2RSP26	2RSS12	2RSX07	3DSG12	3DSM06
2RSM34	2RSP27	2RSS13	2RSX08	3DSG13	3DSM07
2RSM40	2RSP28	2RSS14	2RSX09	3DSG14	3DSM08
2RSM41	2RSP29	2RSS15	2RSX10	3DSG15	3DSM09
2RSM42	2RSP30	2RSS16	2RSX11	3DSG16	3DSM10
2RSM43	2RSP31	2RSS17	2RSX99	3DSG19	3DSM11
2RSM44	2RSP36	2RSS18	2RSY01	3DSG20	3DSM14
2RSM45	2RSQ01	2RSS19	2RSY02	3DSG24	3DSM15
2RSN01	2RSQ02	2RSS20	2RSY03	3DSH01	3DSM18
2RSN02	2RSQ03	2RSS21	2RSY06	3DSH02	3DSM19
2RSN03	2RSQ04	2RSS22	2RSY07	3DSJ01	3DSM59
2RSN05	2RSQ05	2RSS23	2RSY08	3DSJ02	3DSO07
2RSN06	2RSQ07	2RST01	2RSZ01	3DSJ03	3DSP04
2RSO01	2RSQ08	2RST02	3DS01N	3DSJ06	3DSP06
2RSO02	2RSQ09	2RST03	3DS04N	3DSJ07	3DSR01
2RSO04	2RSQ10	2RST04	3DS100	3DSJ08	3DSS01
2RSO05	2RSR01	2RST05	3DS101	3DSJ09	3DSS02
2RSO06	2RSR02	2RST06	3DS102	3DSJ11	3DSS03
2RSO07	2RSR03	2RST07	3DS103	3DSJ12	3DSS04
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3GS01M	3GS12M	3GS320	3GSG10	3GSJ02	3GSJ45
3GS01N	3GS12N	3GS321	3GSG11	3GSJ03	3GSJ46
3GS02M	3GS13M	3GS322	3GSG12	3GSJ04	3GSJ48
3GS02N	3GS13N	3GS323	3GSG13	3GSJ05	3GSJ49
3GS03M	3GS14M	3GS324	3GSG14	3GSJ06	3GSJ51
3GS03N	3GS14N	3GS326	3GSG15	3GSJ07	3GSJ52
3GS04M	3GS15M	3GS327	3GSG16	3GSJ08	3GSJ53
3GS04N	3GS15N	3GS328	3GSG17	3GSJ09	3GSJ54
3GS05M	3GS16M	3GS329	3GSG18	3GSJ10	3GSJ55
3GS05N	3GS16N	3GS330	3GSG19	3GSJ11	3GSJ58
3GS06M	3GS17M	3GS331	3GSG20	3GSJ12	3GSJ59
3GS06N	3GS19N	3GS332	3GSG21	3GSJ13	3GSJ61
3GS07M	3GS200	3GS335	3GSG23	3GSJ14	3GSJ62
3GS07N	3GS201	3GS336	3GSG24	3GSJ15	3GSJ64
3GS08M	3GS202	3GS337	3GSG26	3GSJ16	3GSJ65
3GS08N	3GS203	3GS36N	3GSG27	3GSJ17	3GSJ66
3GS09M	3GS204	3GS41N	3GSG28	3GSJ18	3GSJ67
3GS09N	3GS205	3GS44N	3GSG31	3GSJ19	3GSJ68
3GS100	3GS206	3GS46N	3GSG32	3GSJ20	3GSJ69
3GS101	3GS207	3GS50N	3GSG33	3GSJ21	3GSJ70
3GS102	3GS208	3GS51N	3GSH01	3GSJ22	3GSJ71
3GS103	3GS209	3GS55N	3GSH02	3GSJ23	3GSJ72
3GS104	3GS210	3GS69N	3GSH03	3GSJ24	3GSJ74
3GS105	3GS211	3GSAB1	3GSH04	3GSJ25	3GSJ75
3GS106	3GS212	3GSAB3	3GSH05	3GSJ26	3GSJ76
3GS107	3GS21N	3GSAB6	3GSH06	3GSJ27	3GSK02
3GS108	3GS26N	3GSAB7	3GSH07	3GSJ28	3GSK03
3GS109	3GS301	3GSD01	3GSH08	3GSJ29	3GSK04
3GS10M	3GS302	3GSD02	3GSH10	3GSJ30	3GSK05
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3GS110	3GS306	3GSD04	3GSH12	3GSJ32	3GSK07
3GS111	3GS307	3GSD05	3GSH13	3GSJ33	3GSK08
3GS112	3GS308	3GSD06	3GSH14	3GSJ34	3GSK10
3GS113	3GS309	3GSE01	3GSH16	3GSJ35	3GSK11
3GS114	3GS30N	3GSE02	3GSH18	3GSJ36	3GSK12
3GS115	3GS310	3GSG01	3GSH20	3GSJ37	3GSK13
3GS116	3GS311	3GSG02	3GSH21	3GSJ38	3GSK14
3GS117	3GS312	3GSG03	3GSH22	3GSJ39	3GSK15
3GS118	3GS313	3GSG04	3GSI01	3GSJ40	3GSK16
3GS119	3GS314	3GSG05	3GSI02	3GSJ41	3GSK17
3GS11M	3GS315	3GSG06	3GSI03	3GSJ42	3GSK18
3GS120	3GS316	3GSG08	3GSI04	3GSJ43	3GSK20
3GS121	3GS317	3GSG09	3GSJ01	3GSJ44	3GSK21



3GSK23	3GSM03	3GSM64	3GSO13	3GSP41	3GSR17
3GSK27	3GSM04	3GSM65	3GSO15	3GSP42	3GSR18
3GSK28	3GSM05	3GSM67	3GSO18	3GSP43	3GSR19
3GSK29	3GSM06	3GSM68	3GSO19	3GSP44	3GSR20
3GSK30	3GSM07	3GSMHP	3GSO20	3GSP45	3GSR21
3GSK31	3GSM08	3GSN01	3GSO21	3GSP46	3GSR22
3GSK33	3GSM09	3GSN02	3GSO22	3GSP47	3GSR23
3GSK34	3GSM10	3GSN03	3GSO24	3GSQ01	3GSR24
3GSK35	3GSM11	3GSN04	3GSO25	3GSQ02	3GSR25
3GSL01	3GSM12	3GSN05	3GSP01	3GSQ03	3GSR26
3GSL02	3GSM13	3GSN06	3GSP02	3GSQ04	3GSR27
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3GSL04	3GSM16	3GSN08	3GSP04	3GSQ06	3GSR29
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3GSL10	3GSM23	3GSN15	3GSP10	3GSQ13	3GSS02
3GSL11	3GSM24	3GSN16	3GSP11	3GSQ14	3GSS03
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3GSL18	3GSM30	3GSN23	3GSP16	3GSQ19	3GSS08
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3GSL21	3GSM33	3GSN26	3GSP19	3GSR01	3GSS11
3GSL22	3GSM34	3GSN27	3GSP20	3GSR02	3GSS12
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3GSL24	3GSM36	3GSN29	3GSP23	3GSR04	3GSS14
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3GSL26	3GSM40	3GSO01	3GSP25	3GSR06	3GSS16
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3GSL29	3GSM43	3GSO04	3GSP29	3GSR09	3GSS20
3GSL30	3GSM44	3GSO05	3GSP30	3GSR10	3GSS21
3GSL31	3GSM45	3GSO07	3GSP32	3GSR11	3GSS22
3GSL32	3GSM47	3GSO08	3GSP33	3GSR12	3GSS23
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3GSL34	3GSM53	3GSO10	3GSP36	3GSR14	3GSS25
3GSM01	3GSM56	3GSO11	3GSP39	3GSR15	3GSS26
3GSM02	3GSM57	3GSO12	3GSP40	3GSR16	3GSS27

3GSS28	3MS11N	3MSD07	3MSH01	3MSJ38	3MSL03
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3GSS30	3MS12N	3MSD10	3MSH29	3MSJ40	3MSL05
3GSS31	3MS13M	3MSD11	3MSI02	3MSJ41	3MSL06
3GSS32	3MS14M	3MSD12	3MSI04	3MSJ42	3MSL07
3GSS33	3MS15M	3MSD13	3MSI06	3MSJ43	3MSL08
3GST01	3MS16M	3MSD14	3MSJ01	3MSJ44	3MSL09
3GST02	3MS17M	3MSD15	3MSJ02	3MSJ45	3MSL10
3GST03	3MS18M	3MSD16	3MSJ03	3MSJ46	3MSL11
3GST04	3MS19M	3MSD18	3MSJ04	3MSK01	3MSL12
3GST05	3MS201	3MSE02	3MSJ05	3MSK02	3MSL13
3GST06	3MS202	3MSE03	3MSJ06	3MSK03	3MSL14
3GSU01	3MS203	3MSE04	3MSJ07	3MSK04	3MSL15
3GSU02	3MS204	3MSE05	3MSJ08	3MSK05	3MSL16
3GSU03	3MS205	3MSE06	3MSJ09	3MSK06	3MSL17
3GSU04	3MS206	3MSE07	3MSJ10	3MSK07	3MSL18
3MS01M	3MS207	3MSE08	3MSJ11	3MSK08	3MSL19
3MS01N	3MS208	3MSE09	3MSJ12	3MSK09	3MSL20
3MS02M	3MS209	3MSG01	3MSJ13	3MSK10	3MSM01
3MS02N	3MS20M	3MSG02	3MSJ14	3MSK11	3MSM02
3MS03M	3MS210	3MSG03	3MSJ15	3MSK12	3MSM03
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3MS05M	3MS24M	3MSG07	3MSJ19	3MSK16	3MSM07
3MS05N	3MS25M	3MSG08	3MSJ20	3MSK17	3MSM08
3MS06M	3MS26M	3MSG09	3MSJ21	3MSK18	3MSM09
3MS06N	3MS27M	3MSG10	3MSJ22	3MSK19	3MSM10
3MS07M	3MS28M	3MSG12	3MSJ23	3MSK20	3MSM11
3MS07N	3MS300	3MSG13	3MSJ24	3MSK21	3MSM12
3MS08M	3MS301	3MSG14	3MSJ25	3MSK22	3MSM13
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3MS09M	3MSA01	3MSG16	3MSJ27	3MSK25	3MSM15
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3MS100	3MSAB1	3MSG18	3MSJ29	3MSK27	3MSM17
3MS101	3MSAB2	3MSG19	3MSJ30	3MSK28	3MSM18
3MS102	3MSAB3	3MSG20	3MSJ31	3MSK29	3MSM19
3MS103	3MSAB4	3MSG21	3MSJ32	3MSK30	3MSM20
3MS104	3MSD01	3MSG22	3MSJ33	3MSK31	3MSM21
3MS105	3MSD02	3MSG23	3MSJ34	3MSK36	3MSM22
3MS10M	3MSD03	3MSG24	3MSJ35	3MSK37	3MSM23
3MS10N	3MSD04	3MSG25	3MSJ36	3MSL01	3MSM25
3MS11M	3MSD05	3MSG67	3MSJ37	3MSL02	3MSM26

3MSM27	3YSM04	4DS09N	4DS214	4DS329	4DSA9C
3MSM28	3YSM05	4DS100	4DS215	4DS32M	4DSAB2
3MSM29	3YSM06	4DS101	4DS216	4DS330	4DSAB3
3MSM30	3YSM07	4DS102	4DS220	4DS331	4DSAB5
3MSM91	3YSM08	4DS103	4DS223	4DS332	4DSAB6
3MSO01	3YSP01	4DS104	4DS22N	4DS33M	4DSAB7
3MSO03	3YSR01	4DS105	4DS23M	4DS34M	4DSAB8
3MSO04	3YSR02	4DS106	4DS26M	4DS36M	4DSAB9
3MSO05	3YSR03	4DS107	4DS26N	4DS38M	4DSB02
3MSO06	3YSS01	4DS108	4DS27M	4DS39M	4DSB03
3MSO07	3YSS02	4DS109	4DS28M	4DS40M	4DSB04
3MSO08	3YSS03	4DS10M	4DS29M	4DS43M	4DSB06
3MSO09	3YSS04	4DS110	4DS300	4DS44M	4DSB07
3MSP01	3YSS05	4DS111	4DS301	4DS45M	4DSB08
3MSP02	3YSS06	4DS112	4DS302	4DS46M	4DSB09
3MSP03	3YSS07	4DS113	4DS303	4DS47M	4DSC01
3MSP04	3YSS08	4DS114	4DS304	4DS48M	4DSC03
3MSP05	3YSS09	4DS115	4DS305	4DS49M	4DSC04
3MSP06	3YSS10	4DS116	4DS306	4DS50M	4DSC05
3MSP07	3YSS11	4DS117	4DS307	4DS51M	4DSD02
3MSP08	3YSS13	4DS118	4DS308	4DS52M	4DSD03
3MSP09	3YSS14	4DS119	4DS309	4DS53M	4DSD04
3MSP10	3YSS16	4DS11M	4DS30M	4DS54M	4DSD05
3MSP11	3YSS17	4DS11N	4DS30N	4DS55M	4DSD06
3MSP13	3YSS18	4DS120	4DS310	4DS56M	4DSD07
3MSQ01	3YSS19	4DS121	4DS311	4DS57M	4DSD08
3MSQ02	3YSS21	4DS122	4DS312	4DS58M	4DSD09
3MSS01	3YSS22	4DS12M	4DS313	4DS900	4DSD10
3MSS02	3YSS23	4DS12N	4DS314	4DSA02	4DSD11
3MSS03	3YSS25	4DS13N	4DS315	4DSA03	4DSD12
3MSS04	3YSS26	4DS14M	4DS316	4DSA04	4DSD13
3MSS05	3YSS27	4DS15M	4DS317	4DSA05	4DSD14
3MSS06	3YSS28	4DS15N	4DS318	4DSA07	4DSD15
3MSS07	4DS01M	4DS16M	4DS31M	4DSA08	4DSD16
3MSS21	4DS01N	4DS17M	4DS31N	4DSA10	4DSD17
3MSS30	4DS02M	4DS17N	4DS320	4DSA11	4DSD18
3YS03N	4DS02N	4DS201	4DS321	4DSA12	4DSD19
3YS10N	4DS03M	4DS207	4DS322	4DSA14	4DSD20
3YS41N	4DS04M	4DS208	4DS323	4DSA17	4DSD21
3YS42N	4DS06M	4DS209	4DS324	4DSA5C	4DSD22
3YS44N	4DS07M	4DS20N	4DS326	4DSA6C	4DSD23
3YSM01	4DS07N	4DS211	4DS327	4DSA7C	4DSD24
3YSM02	4DS09M	4DS212	4DS328	4DSA8C	4DSD25

4DSD26	4DSD72	4DSE17	4DSG08	4DSG55	4DSH17
4DSD27	4DSD73	4DSE18	4DSG09	4DSG56	4DSH18
4DSD28	4DSD74	4DSE19	4DSG10	4DSG57	4DSH19
4DSD29	4DSD75	4DSE20	4DSG11	4DSG58	4DSH20
4DSD30	4DSD76	4DSE21	4DSG12	4DSG59	4DSH21
4DSD31	4DSD77	4DSE22	4DSG13	4DSG60	4DSH22
4DSD32	4DSD78	4DSE23	4DSG14	4DSG61	4DSH23
4DSD33	4DSD79	4DSE24	4DSG15	4DSG62	4DSH24
4DSD34	4DSD80	4DSE25	4DSG16	4DSG63	4DSH25
4DSD35	4DSD81	4DSE26	4DSG17	4DSG64	4DSH26
4DSD36	4DSD82	4DSE27	4DSG19	4DSG65	4DSH27
4DSD37	4DSD83	4DSE28	4DSG20	4DSG66	4DSH28
4DSD38	4DSD84	4DSE29	4DSG21	4DSG67	4DSH29
4DSD39	4DSD85	4DSE30	4DSG22	4DSG68	4DSH30
4DSD40	4DSD86	4DSE31	4DSG23	4DSG70	4DSH31
4DSD41	4DSD87	4DSE32	4DSG24	4DSG71	4DSH32
4DSD42	4DSD88	4DSE33	4DSG25	4DSG72	4DSH33
4DSD43	4DSD89	4DSE34	4DSG26	4DSG73	4DSH34
4DSD44	4DSD90	4DSE35	4DSG27	4DSG74	4DSH35
4DSD45	4DSD91	4DSE36	4DSG28	4DSG75	4DSH37
4DSD47	4DSD92	4DSE37	4DSG29	4DSG77	4DSH38
4DSD48	4DSD93	4DSE38	4DSG30	4DSG78	4DSH40
4DSD50	4DSD94	4DSE39	4DSG31	4DSG80	4DSH42
4DSD51	4DSD95	4DSE40	4DSG32	4DSG82	4DSH43
4DSD52	4DSD96	4DSE54	4DSG33	4DSG83	4DSH44
4DSD53	4DSD97	4DSF01	4DSG34	4DSG84	4DSH45
4DSD54	4DSD98	4DSF02	4DSG35	4DSG85	4DSH46
4DSD55	4DSD99	4DSF03	4DSG36	4DSG86	4DSI01
4DSD56	4DSE01	4DSF04	4DSG38	4DSH01	4DSI02
4DSD57	4DSE02	4DSF05	4DSG40	4DSH02	4DSI03
4DSD58	4DSE03	4DSF06	4DSG41	4DSH03	4DSI04
4DSD59	4DSE04	4DSF07	4DSG42	4DSH04	4DSI05
4DSD60	4DSE05	4DSF08	4DSG43	4DSH05	4DSI06
4DSD61	4DSE06	4DSF09	4DSG44	4DSH06	4DSI07
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4DSD65	4DSE09	4DSG01	4DSG47	4DSH09	4DSI10
4DSD66	4DSE10	4DSG02	4DSG49	4DSH10	4DSI11
4DSD67	4DSE12	4DSG03	4DSG50	4DSH11	4DSI12
4DSD68	4DSE13	4DSG04	4DSG51	4DSH12	4DSI13
4DSD69	4DSE14	4DSG05	4DSG52	4DSH13	4DSI14
4DSD70	4DSE15	4DSG06	4DSG53	4DSH14	4DSI15
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4DSI31	4DSJ36	4DSJ80	4DSL07	4DSM24	4ES201
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4DSI40	4DSJ46	4DSK07	4DSL16	4DSO03	4ES56N
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4DSJ07	4DSJ53	4DSK14	4DSL25	4DSP08	4ESF01
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4DSJ09	4DSJ55	4DSK16	4DSL29	4DSQ02	4ESG02
4DSJ11	4DSJ56	4DSK17	4DSL30	4DSS01	4ESG05
4DSJ12	4DSJ57	4DSK19	4DSL31	4DSS02	4ESG06
4DSJ13	4DSJ58	4DSK20	4DSL32	4DSS03	4ESG07
4DSJ14	4DSJ59	4DSK21	4DSL33	4DSS04	4ESH01
4DSJ15	4DSJ60	4DSK22	4DSM01	4DSS05	4ESH02
4DSJ16	4DSJ61	4DSK23	4DSM02	4DSS06	4ESJ01
4DSJ18	4DSJ62	4DSK24	4DSM03	4DST01	4ESJ02
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4US02M	4USJ05	4USM03	4USP18	4WSG08	5AS211
4US02N	4USJ06	4USM04	4USR02	4WSI01	5AS212
4US03M	4USJ08	4USM05	4USR03	4WSI26	5AS213
4US04M	4USJ09	4USM06	4USR04	4WSI28	5AS214
4US05M	4USJ10	4USM07	4USS03	4WSL01	5AS215
4US100	4USJ11	4USM08	4USS04	4WSMHP	5AS216
4US102	4USJ13	4USM09	4USS05	5AS01N	5AS218
4US103	4USJ14	4USM10	4USV01	5AS02M	5AS300
4US104	4USJ15	4USM11	4USV02	5AS02N	5AS301
4US105	4USJ16	4USM13	4USV03	5AS03N	5AS302
4US107	4USJ17	4USM14	4USX01	5AS04N	5AS303
4US108	4USJ18	4USM15	4WS01M	5AS05N	5AS304
4US109	4USJ19	4USM16	4WS01N	5AS100	5AS305
4US13N	4USJ20	4USM18	4WS02M	5AS101	5AS306
4US16N	4USJ21	4USM19	4WS03M	5AS102	5AS307
4US200	4USJ22	4USM21	4WS04M	5AS103	5AS308
4US201	4USJ23	4USM22	4WS05M	5AS104	5AS309
4US202	4USJ24	4USM23	4WS06M	5AS105	5AS310
4US203	4USJ25	4USM24	4WS200	5AS106	5AS312
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4US205	4USJ27	4USN06	4WSA02	5AS108	5AS315
4US300	4USJ28	4USO02	4WSAB1	5AS109	5ASAB1
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4USAB3	4USJ31	4USO08	4WSAB5	5AS112	5ASE01
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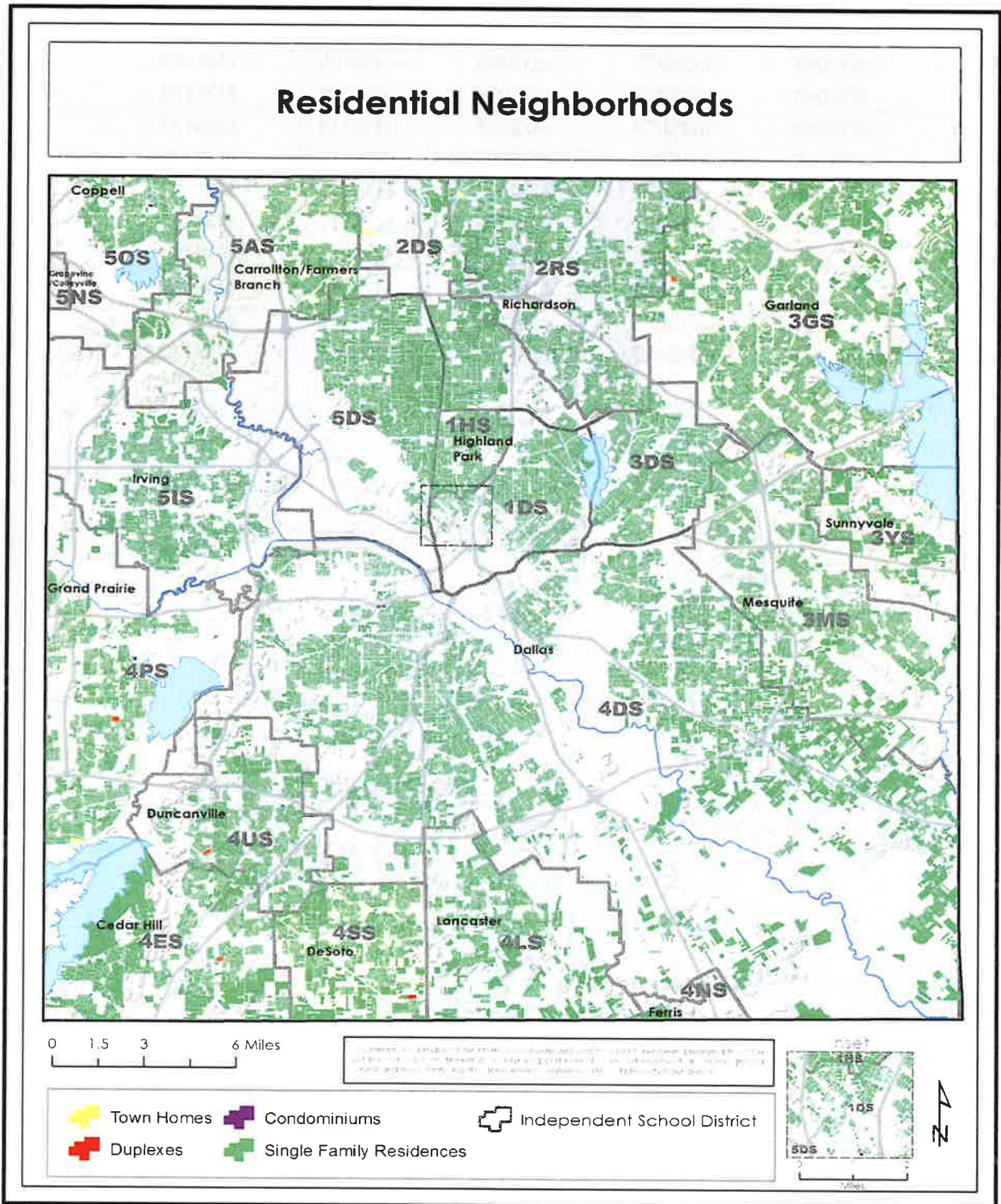
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5IS208	5ISD03	5ISH02	5ISJ21	5ISK23	5ISL30
5IS209	5ISD05	5ISH03	5ISJ22	5ISK26	5ISL32
5IS20M	5ISD08	5ISH04	5ISJ24	5ISK28	5ISL33
5IS20N	5ISD10	5ISH07	5ISJ25	5ISK29	5ISL34
5IS21M	5ISD13	5ISH08	5ISJ26	5ISK31	5ISM02
5IS21N	5ISD15	5ISH09	5ISJ27	5ISK32	5ISM03
5IS22M	5ISD16	5ISH12	5ISJ29	5ISK33	5ISM04
5IS23M	5ISD18	5ISH13	5ISJ30	5ISK34	5ISM05
5IS23N	5ISD19	5ISH16	5ISJ31	5ISK35	5ISM06
5IS24M	5ISD20	5ISH18	5ISJ32	5ISK36	5ISM07
5IS24N	5ISE02	5ISH19	5ISJ33	5ISK37	5ISM08
5IS25M	5ISG01	5ISH20	5ISJ34	5ISK38	5ISM09
5IS25N	5ISG02	5ISH21	5ISJ35	5ISK40	5ISM11
5IS26M	5ISG03	5ISH22	5ISJ36	5ISK41	5ISM12
5IS26N	5ISG04	5ISH28	5ISJ37	5ISK42	5ISM14
5IS300	5ISG05	5ISH30	5ISJ39	5ISK45	5ISM15
5IS301	5ISG06	5ISH31	5ISJ40	5ISK46	5ISM16
5IS302	5ISG07	5ISH34	5ISJ41	5ISK47	5ISM17
5IS303	5ISG08	5ISH35	5ISJ42	5ISK48	5ISM18
5IS304	5ISG10	5ISI01	5ISJ43	5ISL01	5ISM19
5IS305	5ISG11	5ISI04	5ISJ44	5ISL03	5ISM20
5IS307	5ISG12	5ISI06	5ISJ46	5ISL04	5ISM21
5IS308	5ISG13	5ISI09	5ISJ47	5ISL05	5ISM22
5IS309	5ISG15	5ISI10	5ISJ48	5ISL06	5ISM23
5IS30N	5ISG16	5ISJ01	5ISJ50	5ISL07	5ISM24
5IS310	5ISG17	5ISJ02	5ISK01	5ISL08	5ISM27
5IS311	5ISG18	5ISJ03	5ISK02	5ISL09	5ISM28
5IS312	5ISG19	5ISJ04	5ISK03	5ISL10	5ISM29
5IS313	5ISG20	5ISJ05	5ISK05	5ISL11	5ISM30
5IS314	5ISG21	5ISJ06	5ISK06	5ISL12	5ISM31
5IS315	5ISG22	5ISJ07	5ISK07	5ISL13	5ISM32
5IS316	5ISG23	5ISJ08	5ISK08	5ISL14	5ISM33
5IS317	5ISG24	5ISJ09	5ISK09	5ISL15	5ISM34
5IS318	5ISG25	5ISJ10	5ISK10	5ISL16	5ISM35
5IS319	5ISG27	5ISJ11	5ISK11	5ISL17	5ISM36
5IS31N	5ISG28	5ISJ12	5ISK13	5ISL19	5ISN01
5IS900	5ISG29	5ISJ13	5ISK14	5ISL20	5ISN03

5ISO01	5ISS05	5OSJ09	5OSP12	5OSS23	5OSW01
5ISO02	5ISS06	5OSK01	5OSP13	5OSS24	5OSW02
5ISO03	5ISS09	5OSK02	5OSP14	5OSS26	5OSW03
5ISO05	5ISS10	5OSL01	5OSP15	5OSS28	6DS001
5ISO06	5ISS11	5OSL03	5OSQ01	5OSS29	6DS002
5ISO07	5IST01	5OSL04	5OSQ02	5OST01	6DS003
5ISO10	5ISU01	5OSL05	5OSQ03	5OST02	6DS004
5ISP01	5ISU03	5OSM01	5OSQ05	5OST03	6DS005
5ISP02	5ISV01	5OSM02	5OSR01	5OST04	6DS006
5ISP03	5ISW02	5OSM03	5OSR02	5OST05	6DS007
5ISP04	5ISW03	5OSM04	5OSR03	5OST06	6DS008
5ISP05	5ISW05	5OSM05	5OSR04	5OST07	6DS009
5ISP06	5ISY01	5OSM06	5OSR05	5OST08	6DS010
5ISP07	5ISY02	5OSM08	5OSR06	5OST09	6DS011
5ISP08	5ISY03	5OSM09	5OSR07	5OST10	6DS012
5ISP10	5ISY04	5OSM10	5OSR08	5OST11	6DS013
5ISP11	5OS01M	5OSM11	5OSR09	5OST12	6DS014
5ISP12	5OS02M	5OSM12	5OSR10	5OST13	6DS015
5ISP13	5OS03M	5OSM13	5OSR11	5OST14	6DS016
5ISP14	5OS03N	5OSM14	5OSR12	5OST16	6DS017
5ISP15	5OS04M	5OSM15	5OSR13	5OST17	6DS018
5ISP16	5OS100	5OSM16	5OSS01	5OST19	6DS019
5ISP17	5OS101	5OSN01	5OSS02	5OST21	6DS020
5ISP18	5OS102	5OSN02	5OSS03	5OSU01	6DS021
5ISP19	5OS103	5OSN03	5OSS04	5OSU02	6DS022
5ISP20	5OS105	5OSN04	5OSS05	5OSU03	6DS023
5ISP21	5OS106	5OSO01	5OSS06	5OSU04	6DS024
5ISP22	5OS107	5OSO02	5OSS07	5OSU05	6DS025
5ISP23	5OS201	5OSO03	5OSS08	5OSU06	6DS026
5ISP24	5OS202	5OSO04	5OSS09	5OSU07	6DS027
5ISP25	5OS203	5OSO05	5OSS10	5OSU08	6DS028
5ISP26	5OS300	5OSO06	5OSS11	5OSU09	6DS029
5ISP27	5OS301	5OSO07	5OSS12	5OSU10	6DS030
5ISP28	5OS302	5OSP01	5OSS13	5OSU11	6DS031
5ISR01	5OS303	5OSP02	5OSS14	5OSU12	6DS032
5ISR03	5OS304	5OSP03	5OSS15	5OSU13	6DS033
5ISR04	5OSAB1	5OSP04	5OSS16	5OSU14	6DS034
5ISR05	5OSAB3	5OSP05	5OSS17	5OSU15	6DS035
5ISR06	5OSG04	5OSP06	5OSS18	5OSU16	6DS036
5ISR07	5OSJ01	5OSP07	5OSS19	5OSU17	6DS037
5ISS01	5OSJ02	5OSP08	5OSS20	5OSU18	6DS038
5ISS02	5OSJ03	5OSP10	5OSS21	5OSU19	6DS039
5ISS04	5OSJ08	5OSP11	5OSS22	5OSV01	6DS040

6DS041	6DS057	6DS072	6DS088	6DS103	6DS118
6DS042	6DS058	6DS073	6DS089	6DS104	6DS119
6DS043	6DS059	6DS074	6DS090	6DS105	6DS120
6DS045	6DS060	6DS075	6DS091	6DS106	6DS121
6DS046	6DS061	6DS076	6DS092	6DS107	6DS122
6DS047	6DS062	6DS077	6DS093	6DS108	6DS123
6DS048	6DS063	6DS078	6DS094	6DS109	6DS124
6DS049	6DS064	6DS079	6DS095	6DS110	6DS125
6DS050	6DS065	6DS080	6DS096	6DS111	6DS126
6DS051	6DS066	6DS081	6DS097	6DS112	6DS127
6DS052	6DS067	6DS082	6DS098	6DS113	6DS128
6DS053	6DS068	6DS084	6DS099	6DS114	6DS129
6DS054	6DS069	6DS085	6DS100	6DS115	6DS130
6DS055	6DS070	6DS086	6DS101	6DS116	6DS131
6DS056	6DS071	6DS087	6DS102	6DS117	6DS132

# Appendix C

## Residential Neighborhood Map



**Appendix D**  
**Commercial Improved Market Areas (IMA) and Land Market Areas (LMA)**

**Apartment IMA's**

540100	540600	541100	541600	542100
540200	540700	541200	541700	542200
540300	540800	541300	541800	543000
540400	540900	541400	541900	543100
540500	541000	541500	542000	543200

**Industrial IMA's**

100100	101500	110700	111900	131300
100200	101600	110800	112000	131400
100300	101700	110900	114400	131500
100400	10171V	111000	130100	131600
100500	101800	111100	130300	131700
100600	101900	111200	130400	131800
100700	102000	111300	130500	131900
100800	104400	111400	130600	132000
100900	110100	111500	130700	150000
101000	110200	111600	130800	152000
101100	110300	111700	130900	
101200	110400	11171V	131000	
101300	110500	11172V	131100	
101400	110600	111800	131200	

**Office IMA's**

210100	2105PC	211100	211600	2122BK
2101BK	2105SN	2111BK	2116BK	212300
2101LF	210600	211200	211700	2123BK
210200	2106BK	2112BK	2117BK	212400
2102BK	210700	211300	2117MO	2124BK
210300	2107BK	2113BK	211800	2124MO
2103BK	2107MO	2113MO	2118BK	212500
210400	210800	211400	211900	212800
2104BK	2108BK	2114BK	2119BK	2102MO
2104MO	210900	2114MO	212000	2103MO
210500	2109BK	211500	2120BK	2108MO
2105BK	211000	2115BK	2120MO	2109MO
2105MO	2110BK	2115MO	212200	2111MO
2112MO	2118MO	2119MO	2122MO	2123MO

**Retail IMA's**

360100	360500	361000	361600	362200
360200	360600	361100	361700	362300
36020L	360700	361200	361800	362400
3602PC	360800	361300	361900	362500
3602SP	360900	361400	362000	362600
360400	3609DE	361500	362100	370000

**Fast Food/Restaurant IMA's**

720100	720700	721200	721700	722200
720200	720800	721300	721800	722300
720400	720900	721400	721900	722400
720500	721000	721500	722000	722500
720600	721100	721600	722100	722600

**Tech/Data Center IMA's**

610000	610500	610900	611400	611800
610100	610600	611000	611500	611900
610200	610700	611200	611600	612000
610300	610800	611300	611700	611100
610400				

**Auto Display IMA's**

640000	640700	642600	641900	642500
640200	640800	641400	642000	
640400	640900	641500	642200	
640500	641000	641700	642300	
640600	641200	641800	642400	



**Car Wash IMA's**

660100	660700	661200	661700	662200
660200	660800	661300	661800	662300
660400	660900	661400	661900	662400
660500	661000	661500	662000	662500
660600	661100	661600	662100	662600

**Convenience/Mini-Mart/Service Station IMA's**

690200	690800	691300	691800	692300
690400	690900	691400	691900	692400
690500	691000	691500	692000	692500
690600	691100	691600	692100	692600
690700	691200	691700	692200	

**Country Club IMA's**

4800MU  
4800PR

**Love Field Airport**

DO1LFA

### Commercial LMA's

LMA's				
1AS001	1DSE04	1DSH15	1DSJ7D	1ISD07
1AS002	1DSE05	1DSH16	1DSJ7E	1ISD08
1AS003	1DSE06	1DSH17	1DSJ7F	1ISD09
1AS004	1DSE07	1DSH18	1DSJ7G	1OS001
1AS005	1DSE08	1DSH19	1DSK04	1OS002
1AS006	1DSE09	1DSH20	1DSK05	1OS003
1AS007	1DSE10	1DSH21	1DSK06	1OS004
1AS008	1DSE11	1DSH5A	1DSK07	1OS005
1AS009	1DSF04	1DSH5B	1DSK6A	2DSCL1
1ASVR1	1DSF05	1DSH6A	1DSK7A	2DSK08
1CA001	1DSF06	1DSH6B	1DSOL1	2DSK09
1CA002	1DSF07	1DSH9A	1DSOL2	2DSK10
1CA003	1DSF08	1DSH9B	1DSOL3	2DSK11
1DSA08	1DSF09	1DSH9C	1DSOL4	2DSK12
1DSB01	1DSF4A	1DSI05	1DSOL5	2DSK13
1DSB02	1DSG04	1DSI06	1DSOL6	2DSK14
1DSB03	1DSG05	1DSI07	1DSOL7	2DSK15
1DSB04	1DSG06	1DSI09	1DSOL8	2DSK16
1DSB05	1DSG07	1DSI10	1HS001	2DSK17
1DSC01	1DSG08	1DSI11	1HS002	2DSK18
1DSC02	1DSG10	1DSI12	1ISA03	2DSK19
1DSC03	1DSG11	1DSI13	1ISA04	2DSK20
1DSC04	1DSG12	1DSI14	1ISA05	2DSK21
1DSCE1	1DSG13	1DSI5A	1ISA06	2DSK22
1DSCE2	1DSG14	1DSI7A	1ISA07	2DSK23
1DSCE3	1DSG15	1DSJ04	1ISA08	2DSK24
1DSCE4	1DSG16	1DSJ05	1ISB03	2DSK4A
1DSCE5	1DSG17	1DSJ06	1ISB04	2DSK5A
1DSCE6	1DSG18	1DSJ09	1ISB05	2DSK9A
1DSCE7	1DSG6A	1DSJ10	1ISB06	2DSL03
1DSCE8	1DSH04	1DSJ11	1ISB07	2DSL04
1DSCE9	1DSH05	1DSJ12	1ISB08	2DSL05
1DSCEX	1DSH06	1DSJ13	1ISB09	2DSL06
1DSD01	1DSH07	1DSJ14	1ISB10	2DSL07
1DSD02	1DSH08	1DSJ15	1ISC04	2DSL08
1DSD03	1DSH09	1DSJ16	1ISC05	2DSL09
1DSD04	1DSH10	1DSJ5A	1ISC06	2DSL10
1DSD05	1DSH11	1DSJ6A	1ISC07	2DSL11
1DSD06	1DSH12	1DSJ7A	1ISC08	2DSL12
1DSD07	1DSH13	1DSJ7B	1ISC09	2DSL13
1DSDE1	1DSH14	1DSJ7C	1ISC10	2DSL14

LMA's					
2DSL15	2DSP08	2ES004	2US003	3GSD06	3MSH02
2DSL16	2DSP09	2ES005	2US004	3GSE01	3MSH03
2DSL17	2DSP10	2ES006	2US005	3GSE02	3MSH04
2DSL18	2DSP11	2ES007	2US006	3GSE03	3MSI03
2DSL19	2DSP12	2ES008	2US007	3GSE04	3MSJ03
2DSL20	2DSP13	2ES009	2US008	3GSE05	3MSK04
2DSL21	2DSP14	2ES010	2WS001	3GSE06	3RSA01
2DSL22	2DSP15	2ES011	2WS002	3GSF01	3RSA02
2DSL4A	2DSP4A	2ES01A	2WS003	3GSF02	3RSA03
2DSL6A	2DSP4B	2LS001	2WS004	3GSF03	3RSA04
2DSL6B	2DSP4C	2LS002	2WS005	3GSF04	3RSC01
2DSL7A	2DSP4D	2LS003	2WS006	3GSF05	3RSC02
2DSM05	2DSP5A	2LS004	2WS007	3GSF06	3RSC03
2DSM06	2DSP6A	2LS005	3DSI01	3GSG01	3RSC04
2DSM07	2DSQ01	2LS006	3DSI02	3GSG02	3RSC05
2DSM08	2DSQ02	2LS007	3DSI03	3GSG03	3RSC06
2DSM09	2DSQ03	2LS008	3DSJ01	3GSG04	3RSC07
2DSM10	2DSQ04	2LS009	3DSJ02	3MSA01	3RSD01
2DSM11	2DSQ05	2LS010	3DSJ03	3MSA02	3RSD02
2DSM12	2DSQ06	2LS011	3DSK01	3MSA03	3RSE03
2DSM13	2DSQ07	2LS01A	3DSK02	3MSB01	3RSE04
2DSM14	2DSR01	2OV001	3DSK03	3MSB02	3RSF03
2DSM5A	2DSR02	2PS001	3DSK04	3MSB03	3RSF04
2DSM6A	2DSR04	2PS002	3DSL01	3MSC01	3YSB04
2DSN05	2DSR05	2PS003	3DSL02	3MSC02	3YSB05
2DSN06	2DSR06	2PS004	3DSM01	3MSC03	3YSC05
2DSN07	2DSR07	2PS005	3GSA01	3MSC04	
2DSN08	2DSR08	2PS007	3GSB02	3MSD01	
2DSN09	2DSR09	2PS008	3GSB03	3MSD02	
2DSN10	2DSR10	2PS009	3GSB04	3MSD03	
2DSN11	2DSR11	2PS010	3GSB05	3MSD04	
2DSN12	2DSR12	2PS03A	3GSC01	3MSD05	
2DSN13	2DSR13	2PS04A	3GSC02	3MSE01	
2DSN14	2DSR14	2PS05A	3GSC03	3MSE02	
2DSN15	2DSR1A	2SS001	3GSC04	3MSF01	
2DSN16	2DSR1B	2SS002	3GSC05	3MSF02	
2DSN6A	2DSRA1	2SS003	3GSD01	3MSF03	
2DSN6B	2DSRB3	2SS004	3GSD02	3MSG01	
2DSN6C	2ES001	2SS005	3GSD03	3MSG02	
2DSN6D	2ES002	2US001	3GSD04	3MSG03	
2DSP04	2ES003	2US002	3GSD05	3MSG04	

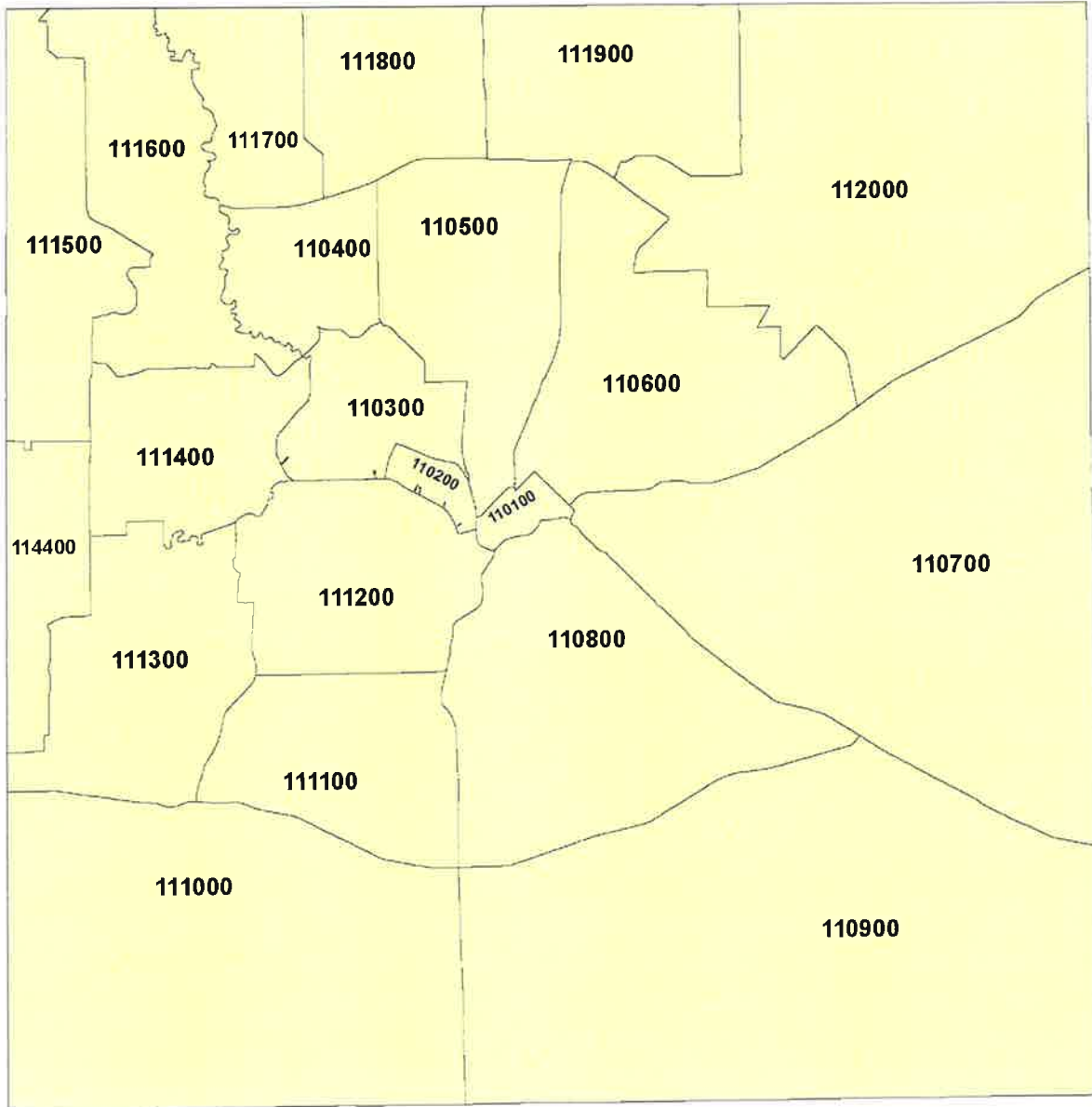
## Appendix E

### Commercial IMA and LMA Maps

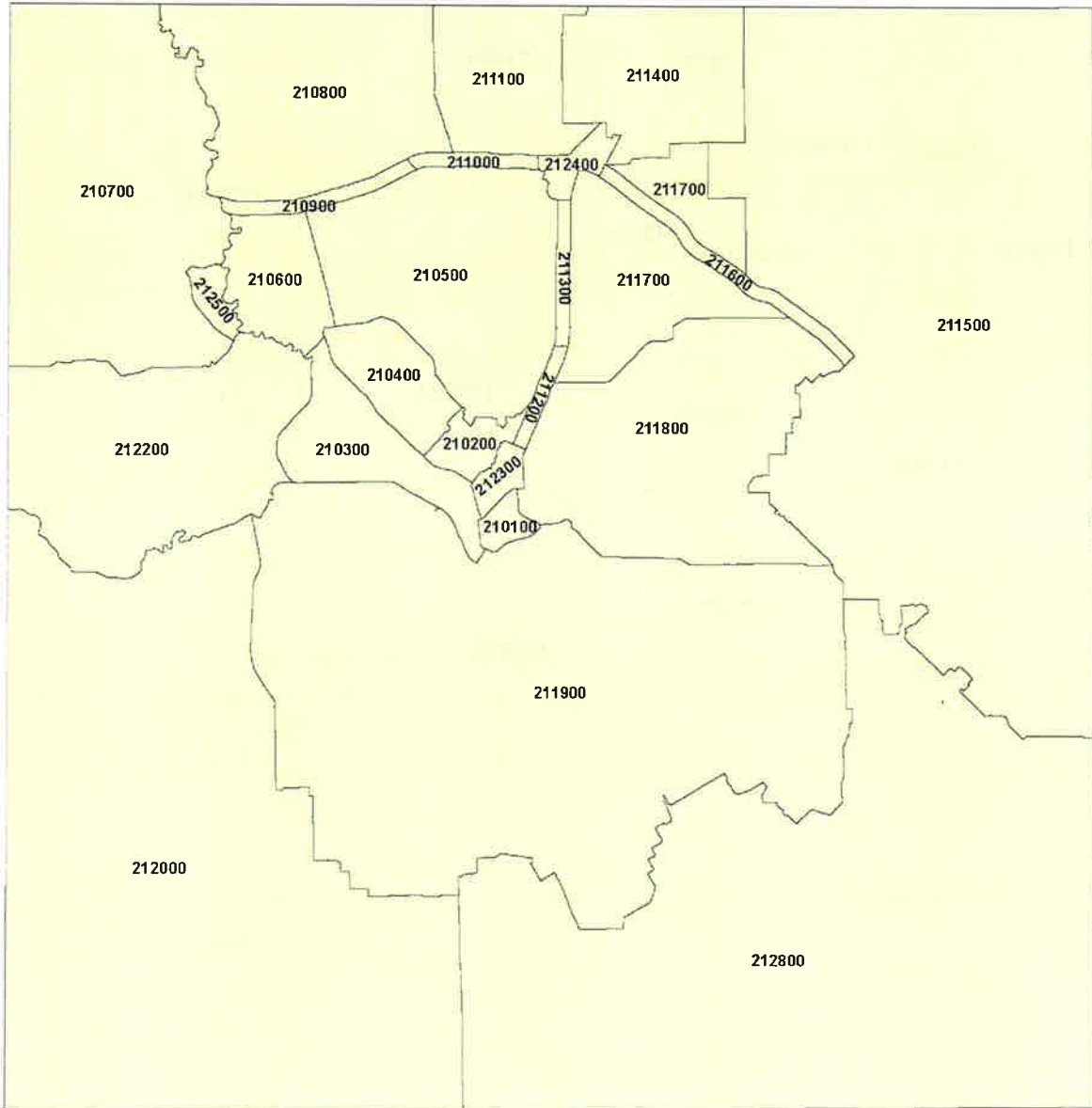
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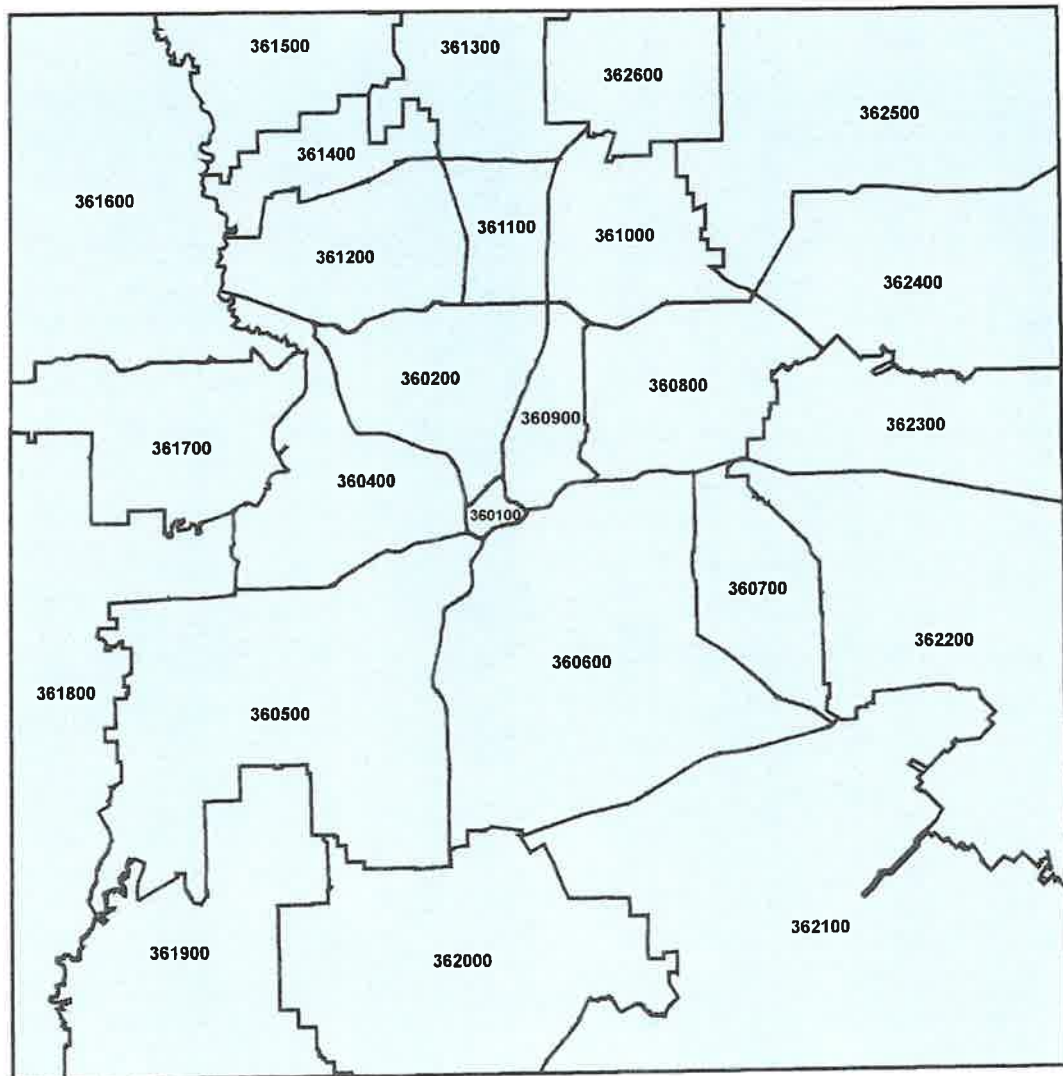
# INDUSTRIAL IMPROVEMENT SUBMARKETS



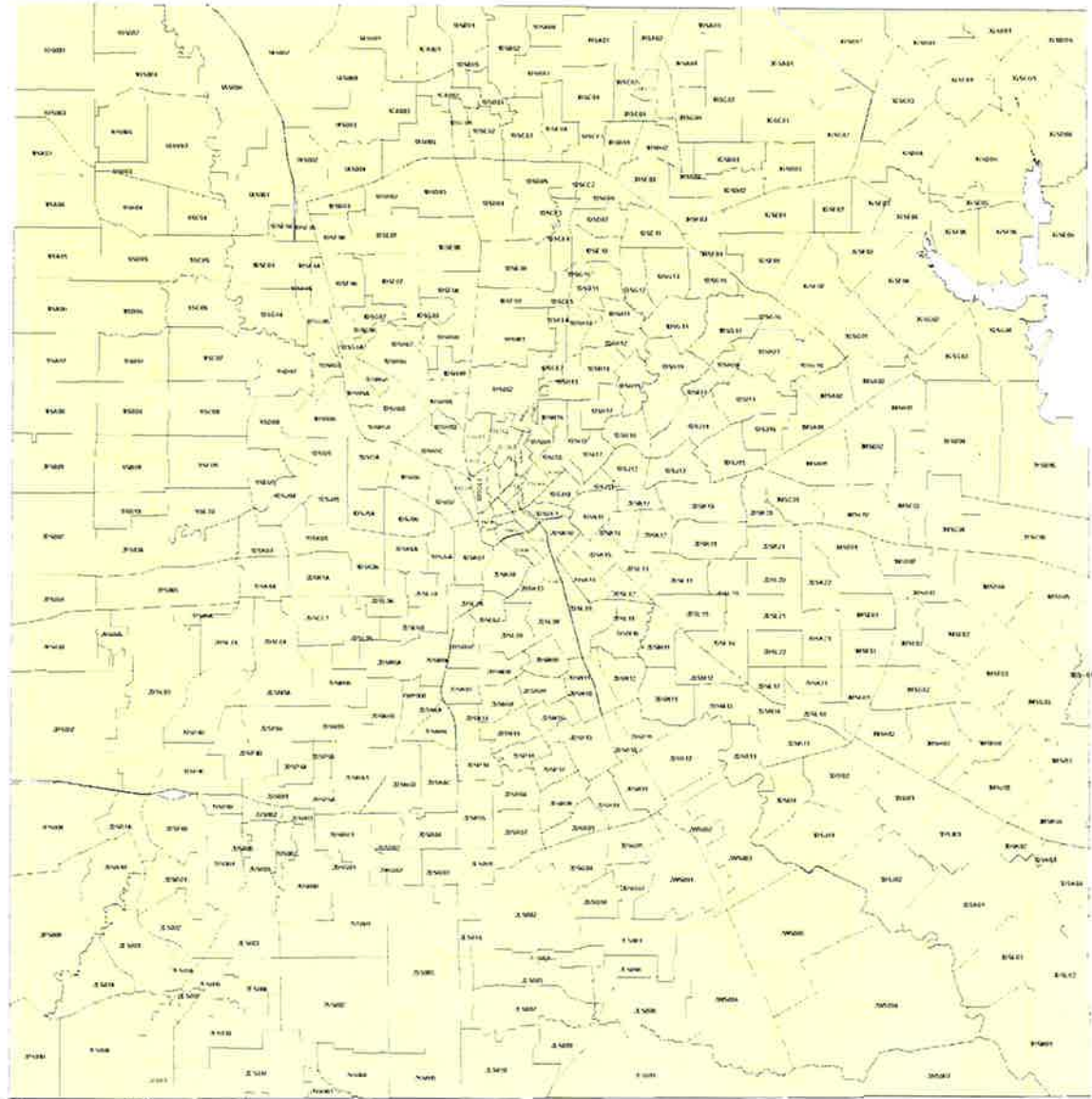
# OFFICE IMPROVEMENT SUBMARKETS



# RETAIL IMPROVEMENT SUBMARKETS



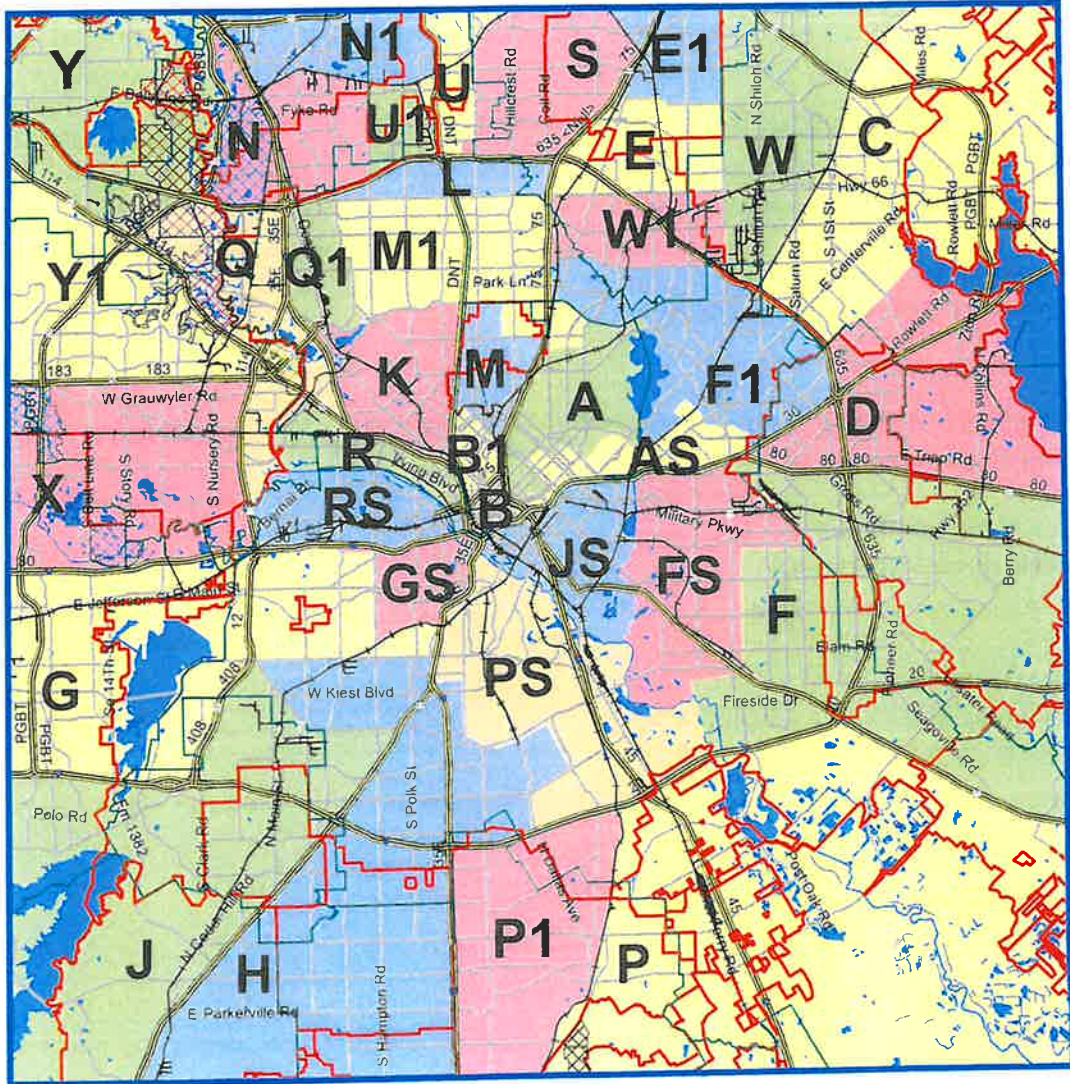
# Commercial Land Market Areas





## Appendix F Business Personal Property (BPP) Routes

### Dallas Central Appraisal District Business Personal Property Routes



**Legend**

**Special Districts**

- NAME
- DALLAS COUNTY FCD # 1
- DALLAS COUNTY LRD
- DENTON COUNTY LEVEE IMPROVEMENT DISTRICT
- DENTON COUNTY LID - RUD
- DENTON COUNTY ROAD UTILITY DISTRICT
- GRAND PRAIRIE METRO LRD
- IRVING FSD SECTION I
- IRVING FSD SECTION III
- LANCASTER MUD #1
- NW DALLAS COUNTY FCD
- VALWOOD IMPROVEMENT AUTHORITY

- County
- School Districts
- Creek
- Railroads
- Highways
- Major Roads
- Lakes
- 2016 Routes

ROUTE	E1	J5	P1	U1
A	F	K	PS	W
AS	F1	L	G	W1
B	F5	M	G1	Y
B1	G	M1	H	Y1
C	G5	N	AS	Y1
D	H	N1	S	
E	J	P	U	



APR 21, 2017

## Appendix G

### DCAD 2025 and 2026 Reappraisal Timeline and Calendar of Events

#### Reappraisal Plan Timeline

August 1 – July 25

- Building Permit Processing
- Sales Processing
- Statistical Testing

August 1 – January 30

- Residential and Commercial Building Permit Inspections
- BPP Route Inspections
- Account Field and Office review

August 15 – October 1

- Commercial Income and Expense Processing

October 15 – March 15

- Residential Reappraisal Analysis (Neighborhood Ratio Review)
- Commercial Income Model Development

January 15 – February 15

- Mobile Home Inspections
- BPP Phone Verification Project

February 1 – March 15

- Residential Neighborhood Reappraisal
- Commercial IMA and LMA Reappraisal

February 1 – May 15

- BPP Rendition Processing
- BPP Valuation
- Leased Equipment Project

March 1 – March 15

- Final Performance Analysis

April 15 – May 26

- Real Property Appraisal Notification
- BPP Appraisal Notification

April 16 – July 20

- Appraisal Review Board Process

**DALLAS CENTRAL APPRAISAL DISTRICT  
KEY APPRAISAL DATES  
2024 - 2025 APPRAISAL YEAR**

Mon, 07/29/2024	- Management Plan Year 2024-2025 begins.
Wed, 08/07/2024	- Board of Directors' meeting. Public hearing on 2024-2025 Reappraisal Plan. (TENTATIVE) - Data Entry Cutoff Supplemental #08-2024.
Thu, 08/15/2024	- ARB Full Board approves Supplemental #08-2024.
Sat, 08/31/2024	- Fiscal Year 2023-2024 ends.
Sun, 09/01/2024	- Fiscal Year 2024-2025 begins. - Statutory appraisal date for certain BPP inventory properties (Sec. 23.12).
Mon, 09/02/2024	- Labor Day holiday.
Wed, 09/04/2024	- Data Entry Cutoff Supplemental #09-2024.
Thu, 09/12/2024	- ARB Full Board approves Supplemental #09-2024.
Mon, 09/30/2024	- 2023 Property Tax Bills are mailed to taxpayers (approximate date).
Wed, 10/02/2024	- Data Entry Cutoff Supplemental #10-2024.
Thu, 10/10/2024	- ARB Full Board approves Supplemental #10-2024.
Sun, 11/03/2024	- Daylight Saving Ends.
Wed, 11/06/2024	- Board of Directors' meeting. (TENTATIVE) - Data Entry Cutoff Supplemental #11-2024.
Thu, 11/14/2024	- ARB Full Board approves Supplemental #11-2024. - Fall Taxing Entity Meeting.
Nov 28-29, 2024	- Thanksgiving Day holidays.
Wed, 12/04/2024	- Data Entry Cutoff Supplemental #12-2024. - Board of Directors' meeting. (TENTATIVE)
Thu, 12/12/2024	- ARB Full Board approves Supplemental #12-2024.
Tue, 12/24/2024	- Christmas Eve (Office Closed)
Wed, 12/25/2024	- Christmas Day (Office Closed)
Wed, 01/01/2025	- New Year's Day (Office Closed), Assessment Date.
Thu, 01/02/2025	- BPP Renditions and Freeport Exemption Applications are mailed.
Wed, 01/08/2025	- Board of Directors' meeting. Board member election results announced. (TENTATIVE)
Wed, 01/15/2025	- Data Entry Cutoff Supplemental # 01-2025.
Mon, 01/20/2025	- Martin Luther King, Jr. Day holiday.
Thu, 01/23/2025	- ARB Full Board approves Supplemental #01-2025.
Fri, 01/31/2025	- Unpaid 2023 Property Tax Bills become delinquent and subject to penalties and interest. - Homestead Exemption Applications are mailed.
Wed, 02/05/2025	- Data Entry Cutoff Supplemental #02-2025. - Board of Directors' meeting. (TENTATIVE)
Thu, 02/13/2025	- ARB Full Board approves Supplemental #02-2025.
Wed, 03/05/2025	- Data Entry Cutoff Supplemental #03-2025.
Thu, 03/13/2025	- ARB Full Board approves Supplemental #03-2025.
Mon, 03/31/2025	- Data Entry Cutoff for Mail 1.

**DALLAS CENTRAL APPRAISAL DISTRICT  
KEY APPRAISAL DATES  
2024 - 2025 APPRAISAL YEAR**

Wed, 04/02/2025	- Data Entry Cutoff Supplemental #04-2025.
Wed, 04/09/2025	- Board of Directors' meeting. Public hearing on proposed Fiscal Year 2025-2026 budget. (TENTATIVE) - Spring Taxing Entity Meeting.
Mon, 04/14/2025	- 1st Mailing Notices of Appraised Value are mailed. - ARB Period begins (4-1/2 day work week). - Online 2025 notices for real property are available on DCAD Website at end of day.
Tue, 04/15/2025	- Deadline for filing renditions and requests for BPP rendition extensions. - Extended hours for Residential to 5:30 P.M.
Thu, 04/17/2025	- ARB Full Board receives 1st Mailing appraisal records (real property) and approves Supplemental #04-2024.
Mon, 04/21/2025	- Preliminary Certification Estimates are released to the taxing entities.
Tue, 04/22/2025	- Extended hours for Residential to 5:30 P.M.
Sat, 04/26/2025	- Extended hours for Residential (8:00 A.M. to Noon).
Tue, 04/29/2025	- Extended hours for Residential to 5:30 P.M.
Sat, 05/03/2025	- Extended hours for Residential (8:00 A.M. to Noon).
Wed, 05/07/2025	- Board of Directors' meeting. Fiscal Year 2025-2026 budget adopted. (TENTATIVE) - Data Entry Cutoff Supplemental #05-2025
Mon, 05/12/2025	- First Preliminary EVR is available to the taxing entities on the DCAD Website.
Tue, 05/13/2025	- 2nd Mailing Notices of Appraised Value are mailed. 2025 proposed values for 2nd Mailing are available on DCAD Website at the end of the day. - Extended hours for Residential to 5:30 P.M.
Thu, 05/15/2025	- Protest deadline for 1st Mailing Notices of Appraised Value. - Deadline for filing BPP renditions with timely extensions.
Fri, 05/16/2025	- ARB Full Board approves Supplemental #05-2025. ARB Full Board accepts 2nd Mailing (BPP) appraisal records.
Mon, 05/19/2025	- ARB Hearings begin for Real Property (tentative date).
Wed, 05/21/2025	- Data Entry cutoff 2nd Preliminary EVR. - Data Entry Cutoff for 3rd Mail of Appraisal Notices.
Mon, 05/26/2025	- Memorial Day Holiday
Tue, 05/27/2025	- Second Preliminary EVR and Preliminary Certification output is available to taxing entities on DCAD Website. - 3rd Mail Notices of Appraised Value are mailed. - 2025 proposed values for 3rd Mailing are available on DCAD Website at the end of the day.
Sat, 05/31/2025	- Saturday ARB Hearings for Residential accounts (tentative date).
Wed, 06/04/2025	- Data Entry Cutoff Supplemental #06-2025.
Sat, 06/07/2025	- Saturday ARB Hearings for Residential accounts (tentative date).
Thu, 06/12/2025	- Protest deadline for 2nd Mailing Notices of Appraised Value.
Fri, 06/13/2025	- ARB Full Board receives 3rd Mailing (real property and BPP) appraisal records, and approves #06-2025.
Thu, 06/19/2025	- Juneteenth Holiday
Sat, 06/21/2025	- Saturday ARB Hearings for Residential accounts (tentative date).
Thu, 06/26/2025	- Protest deadline for 3rd Mailing Notices of Appraised Value.
Wed, 07/02/2025	- Data Entry Cutoff Supplemental #07-2025.
Fri, 07/04/2025	- Independence Day
Thu, 07/17/2025	- Last day of ARB Hearings (tentative date).
Fri, 07/18/2025	- Data entry cutoff for Certification. - ARB Full Board approves 2025 appraisal records and submits records to Chief Appraiser for Certification of Appraisal Rolls. ARB approves Supplemental #07-2025.
Fri, 07/25/2025	- Chief Appraiser certifies the 2025 Appraisal Rolls.

**DALLAS CENTRAL APPRAISAL DISTRICT  
KEY APPRAISAL DATES  
2024 - 2025 APPRAISAL YEAR**

Sun, 07/27/2025	- 2025 Certified EVR's, Certified Appraisal Rolls and other Certification reports are available to the taxing entities on the DCAD Staff Website. - Management Plan Year 2024-2025 ends.
Mon, 07/28/2025	- Management Plan Year 2025-2026 begins.
Mon, 08/04/2025	- 2025 Values Released on Truth-in-Taxation Website.
Wed, 08/06/2025	- Board of Directors' meeting. (TENTATIVE)
<b>Note: Most dates are subject to change if circumstances warrant.</b>	

**DALLAS CENTRAL APPRAISAL DISTRICT  
KEY APPRAISAL DATES  
2025 - 2026 APPRAISAL YEAR**

Mon, 07/28/2025	- Management Plan Year 2025-2026 begins.
Wed, 08/06/2025	- Board of Directors' meeting. (TENTATIVE)
Thu, 08/14/2025	- Data Entry Cutoff Supplemental #08-2025.
Sun, 08/31/2025	- ARB Full Board approves Supplemental #08-2025.
	- Fiscal Year 2024-2025 ends.
Mon, 09/01/2025	- Fiscal Year 2025-2026 begins.
	- Statutory appraisal date for certain BPP inventory properties (Sec. 23.12).
	- Labor Day holiday.
Wed, 09/03/2025	- Data Entry Cutoff Supplemental #09-2025.
Thu, 09/11/2025	- ARB Full Board approves Supplemental #09-2025.
Tue, 09/30/2025	- 2025 Property Tax Bills are mailed to taxpayers (approximate date).
Wed, 10/08/2025	- Data Entry Cutoff Supplemental #10-2025.
Thu, 10/16/2025	- ARB Full Board approves Supplemental #10-2025.
Sun, 11/02/2025	- Daylight Saving Ends.
Wed, 11/05/2025	- Board of Directors' meeting.(TENTATIVE)
	- Data Entry Cutoff Supplemental #11-2025.
Thu, 11/13/2025	- ARB Full Board approves Supplemental #11-2025.
	- Fall Taxing Entity Meeting.
Nov 27-28, 2025	- Thanksgiving Day holidays.
Wed, 12/03/2025	- Data Entry Cutoff Supplemental #12-2025.
	- Board of Directors' meeting. (TENTATIVE)
Thu, 12/11/2025	- ARB Full Board approves Supplemental #12-2025.
Wed, 12/24/2025	- Christmas Eve (Office Closed)
Thu, 12/25/2025	- Christmas Day (Office Closed)
Thu, 01/01/2026	- New Year's Day (Office Closed), Assessment Date.
Fri, 01/02/2026	- BPP Renditions and Freeport Exemption Applications are mailed.
Wed, 01/07/2026	- Board of Directors' meeting. Board member election results announced. (TENTATIVE)
	- Data Entry Cutoff Supplemental # 01-2026.
Thu, 01/15/2026	- ARB Full Board approves Supplemental #01-2026.
Mon, 01/19/2026	- Martin Luther King, Jr. Day holiday.
Mon, 02/02/2026	- Unpaid 2025 Property Tax Bills become delinquent and subject to penalties and interest.
	- Homestead Exemption Applications are mailed.
Wed, 02/04/2026	- Data Entry Cutoff Supplemental #02-2026.
	- Board of Directors' meeting. (TENTATIVE)
Thu, 02/12/2026	- ARB Full Board approves Supplemental #02-2026.
Wed, 03/04/2026	- Data Entry Cutoff Supplemental #03-2026.
Thu, 03/12/2026	- ARB Full Board approves Supplemental #03-2026.
Thu, 03/26/2026	- Data Entry Cutoff for Mail 1.

**DALLAS CENTRAL APPRAISAL DISTRICT  
KEY APPRAISAL DATES  
2025 - 2026 APPRAISAL YEAR**

Wed, 04/08/2026	- Data Entry Cutoff Supplemental #04-2026. - Board of Directors' meeting. Public hearing on proposed Fiscal Year 2026-2027 budget. (TENTATIVE)
Thu, 04/09/2026	- Spring Taxing Entity Meeting.
Fri, 04/10/2026	- 1st Mailing Notices of Appraised Value are mailed. - Online 2026 notices for real property are available on DCAD Website at end of day.
Mon, 04/13/2026	- ARB Period begins (4-1/2 day work week).
Tue, 04/14/2026	- Extended hours for Residential to 5:30 P.M.
Wed, 04/15/2026	- Deadline for filing renditions and requests for BPP rendition extensions.
Thu, 04/16/2026	- ARB Full Board receives 1st Mailing appraisal records (real property) and approves Supplemental #04-2025.
Sat, 04/18/2026	- Extended hours for Residential (8:00 A.M. to Noon).
Mon, 04/20/2026	- Preliminary Certification Estimates are released to the taxing entities.
Tue, 04/21/2026	- Extended hours for Residential to 5:30 P.M.
Sat, 04/25/2026	- Extended hours for Residential (8:00 A.M. to Noon).
Tue, 04/28/2026	- Extended hours for Residential to 5:30 P.M.
Sat, 05/02/2026	- Extended hours for Residential (8:00 A.M. to Noon).
Wed, 05/06/2026	- Board of Directors' meeting. Fiscal Year 2026-2027 budget adopted. (TENTATIVE) - Data Entry Cutoff Supplemental #05-2026
Tue, 05/12/2026	- First Preliminary EVR is available to the taxing entities on the DCAD Staff Website. - 2nd Mailing Notices of Appraised Value are mailed. - 2026 proposed values for 2nd Mailing are available on DCAD Website at the end of the day. - Extended hours for Residential to 5:30 P.M.
Fri, 05/15/2026	- Protest deadline for 1st Mailing Notices of Appraised Value. - Deadline for filing BPP renditions with timely extensions. - ARB Full Board accepts 2nd Mailing (BPP) appraisal records. - ARB Full Board approves Supplemental #05-2025.
Mon, 05/18/2026	- ARB Hearings begin for Real Property (tentative date).
Wed, 05/20/2026	- Data Entry cutoff 2nd Preliminary EVR. - Data Entry Cutoff for 3rd Mail of Appraisal Notices.
Mon, 05/25/2026	- Memorial Day Holiday
Tue, 05/26/2026	- Second Preliminary EVR and Preliminary Certification output is available to taxing entities on DCAD Staff Website. - 3rd Mail Notices of Appraised Value are mailed. - 2026 proposed values for 3rd Mailing are available on DCAD Website at the end of the day.
Sat, 05/30/2026	- Saturday ARB Hearings for Residential accounts (tentative date).
Wed, 06/03/2026	- Data Entry Cutoff Supplemental #06-2026.
Sat, 06/06/2026	- Saturday ARB Hearings for Residential accounts (tentative date).
Thu, 06/11/2026	- Protest deadline for 2nd Mailing Notices of Appraised Value.
Fri, 06/12/2026	- ARB Full Board receives 3rd Mailing (real property and BPP) appraisal records, and approves #06-2025.
Fri, 06/19/2026	- Juneteenth Holiday
Sat, 06/20/2026	- Saturday ARB Hearings for Residential accounts (tentative date).
Thu, 06/25/2026	- Protest deadline for 3rd Mailing Notices of Appraised Value.
Sat, 07/04/2026	- Independence Day
Wed, 07/08/2026	- Data Entry Cutoff Supplemental #07-2026.
Thu, 07/16/2026	- Last day of ARB Hearings (tentative date).
Fri, 07/17/2026	- Data entry cutoff for Certification. - ARB Full Board approves 2026 appraisal records and submits records to Chief Appraiser for Certification of Appraisal Rolls. - ARB approves Supplemental #07-2026.
Fri, 07/24/2026	- Chief Appraiser certifies the 2026 Appraisal Rolls.

**DALLAS CENTRAL APPRAISAL DISTRICT  
KEY APPRAISAL DATES  
2025 - 2026 APPRAISAL YEAR**

Sun, 07/26/2026	- 2026 Certified EVR's, Certified Appraisal Rolls and other Certification reports are available to the taxing entities on the DCAD Staff Website. - Management Plan Year 2025-2026 ends.
Mon, 07/27/2026	- Management Plan Year 2026-2027 begins.
Wed, 08/05/2026	- Board of Directors' meeting. Public Hearing on 2027/2028 Reappraisal Plan. (TENTATIVE)
<b>Note: Most dates are subject to change if circumstances warrant.</b>	