

# **DALLAS CENTRAL APPRAISAL DISTRICT 2023 - 2024 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 2023-2024 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 within the boundaries of Dallas County, constitutes the district's governing body. 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-one 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), 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 2023 - 2024 Reappraisal Plan adopted by the Dallas Central Appraisal District Board of Directors will occur no later than September 15, 2022. The assessment dates for the 2023 and 2024 Reappraisal Plan is January 1, 2023 and January 1, 2024 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 2023 and 2024 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 2023-2024 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 (reinspect 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 2023 and 2024 that has a last reappraisal of 2020 and 2021 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, 2023 and 2024 Residential and Commercial Reappraisal analysis will be conducted typically in January of 2023 and January 2024. Please see the Appraisal Divisions 2021 and 2022 Reappraisal Plans below for more specific details concerning the 2023 and 2024 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 2022/2023 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 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

2023 & 2024 Reappraisal Plan Timeline and Calendar of Key Appraisal Events .....Appendix G

The 2022/2023 & 2023/2024 Financial Budgets are adopted annually.

The 2022/2023 & 2023/2025 Management Plans are developed annually. The 2023/2024 Management Plan adopted in August 2023 will reflect any changes to the 2024 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. 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 Customer Service and Appeals and Support Departments. The Appraisal Division is responsible for the valuation of all real and personal property accounts. The property types appraised include commercial, residential, and business personal property. The Property Records Exemption Division and GIS Division are also operating divisions within the Appraisal Division. The Property Records Exemption 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.

- 39 - Administrative Services (Executive level administration and customer support functions)
- 186 - Appraisal Services (Appraisal ,Property Records/Exemption, and GIS related functions)
- 4 - Technical Services (Litigation functions)
- 13 – 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 849,793 real 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. Effective September 1, 2018, the Geographical Information System (GIS) Division has been consolidated into Appraisal Services. 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 and 2021. PTAD's Property Value Study (PVS) will occur in 2022 and 2024 with another MAP review in 2023.

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 102 appraisers and 14 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 drive entire neighborhoods to review 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 668,589 residential properties within Dallas County.

### **Appraisal Resources**

- **Personnel** - The Residential appraisal staff consists of 46 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, MLS, 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, 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.

### **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, 2020 through December 31, 2020 associated with an account will be inspected and reappraised for the 2021 Appraisal Year. All significant value related building permits issued from January 1, 2021 through December 31, 2021 associated with an account will be inspected and reappraised for the 2022 Appraisal Year. Also, those accounts that were partially complete as of January 1, 2020 and January 1, 2021 will be re-inspected for 2021 and 2022 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 2022/2023 and 2023/2024 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 2023 and 2024 will be available for review April 15, 2023, and April 15, 2024, 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 2023 and 2024 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 2023 and 2024 below are based on past historical permit and reappraisal activity.

**RESIDENTIAL DIVISION  
2023 REAPPRAISAL PLAN**

**FIXED TASKS:**

NEW CONSTRUCTION:	ACCOUNTS
Permit Inspection	45,000
Permit Remeasure	6,000
Permit Remeasure Complex	100
Permit Office Review	1,000

**VARIABLE TASKS:**

REAPPRAISAL:	
Reappraisal Office Review	300,000
Reappraisal Inspection	15,000
Reappraisal Remeasure	100
Mobile Home Reappraisal	13,300
Neighborhood Analysis	2,200

**ACCOUNT REVIEW:**

Account Office Review	28,000
Account Inspection	1,000
Account Remeasure	100

**RESIDENTIAL DIVISION  
2024 REAPPRAISAL PLAN**

**FIXED TASKS:**

NEW CONSTRUCTION:	ACCOUNTS
Permit Inspection	47,000
Permit Remeasure	6,500
Permit Remeasure Complex	100
Permit Office Review	1,800

**VARIABLE TASKS:**

REAPPRAISAL:	
Reappraisal Office Review	450,000
Reappraisal Inspection	10,000
Reappraisal Remeasure	100
Mobile Home Reappraisal	13,700
Neighborhood Analysis	3,400

**ACCOUNT REVIEW:**

Account Office Review	30,000
Account Inspection	1,000
Account Remeasure	100

### **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 77,590 commercial properties within Dallas County.

### **Appraisal Resources**

- **Personnel** - The Commercial appraisal staff consists of 20 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, MetroTex MLS database, 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 flatprice, 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 which are typically viewed by market participants as “income producing”, and for which the income methodology is considered a leading value indicator. The first step in the income approach pertains to the estimation of market rent on a per unit basis. This is derived primarily from actual rent data furnished by property owners and from local market study publications. This per unit rental rate multiplied by the number of units results in the estimate of potential gross rent.

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

Next a secondary income or 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, 2022, through December 31, 2022, associated with an account will be inspected and reappraised for the 2023 Appraisal Year. All significant value related building permits issued from January 1, 2023, through December 31, 2023, associated with an account will be inspected and reappraised for the 2024 Appraisal Year. Also, those accounts that were partially complete as of January 1, 2022, and January 1, 2023, will be re-inspected for 2023 and 2024 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 2023 and 2024 will be available for review April 15, 2023, and April 15, 2024, 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 weight 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, 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.

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

The following pages describe the Commercial Division's Reappraisal Plan. The Commercial Division's 2023 and 2024 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 2023 and 2024 below are based on past historical permit and reappraisal activity.

**COMMERCIAL DIVISION  
2023 REAPPRAISAL PLAN**

<b>FIXED TASKS:</b>	<b>ACCOUNTS</b>
NEW CONSTRUCTION:	
Average	400
Major	75
Complex	100
No Starts	150
Miscellaneous Permits	2,600
Partial Completion Permits	175
Miscellaneous Inspection	300
<b>VARIABLE TASKS:</b>	
LAND REAPPRAISAL:	
Land Pricing – Commercial	10,000
Land Pricing – Residential	1,000
Land Inspections	2,000
IMPROVED REAPPRAISAL:	<b>ACCOUNTS</b>
Improved Inspections	6,300
Improved Value Review	8,000
Re-measure	250
Security	300
Mineral Accounts	4,000
Shared CAD Accounts	75

Sold Properties

5,500

**2024 REAPPRAISAL PLAN  
COMMERCIAL DIVISION**

<b>FIXED TASKS:</b>	<b>ACCOUNTS</b>
<b>NEW CONSTRUCTION:</b>	
Average	430
Major	100
Complex	150
No Starts	150
Miscellaneous Permits	2,800
Partial Completion Permits	200
Miscellaneous Inspection	500
<b>VARIABLE TASKS:</b>	
<b>LAND REAPPRAISAL:</b>	
Land Pricing – Commercial	15,000
Land Pricing – Residential	1,000
Land Inspections	3,000
<b>IMPROVED REAPPRAISAL:</b>	<b>ACCOUNTS</b>
Improved Inspections	7,000
Improved Value Review	9,000
Re-measure	250
Security	300
Mineral Accounts	4,000
Shared CAD Accounts	75

Sold Properties

5,500

## **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.

**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.

**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.

**No Starts:** The actual field inspection of new construction permits where construction has yet to commence. Later inspection will be necessary.

**Miscellaneous Permits:** The actual field inspection of properties that involve remodel, finish-out, repair and demolition permits.

**Partial Completions:** The actual field inspection and on-site measuring, classification and collection of physical characteristics of improvements where construction commenced in a prior year, but had not been completed as of the last assessment date. This would also include the re-inspection of properties to determine the percent complete as of the current assessment date where construction was incomplete at the time of the first inspection during the current assessment year.

**Miscellaneous Inspection:** The actual field inspection of properties as needed based upon taxpayer or entity requests, or for various reasons determined by internal needs.

## **Commercial Division Variable Tasks Definitions**

### **Land Reappraisal**

**Land Pricing - COMMERCIAL:** The determination of land values for all properties on the Commercial file, vacant and improved, within a designated reappraisal area.

**Land Pricing - RESIDENTIAL:** The determination of land values for all properties on the Residential file, vacant and improved, within a designated reappraisal area.

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

### **Improved Reappraisal**

**Improved Inspections:** The actual field inspection of improved accounts in a designated reappraisal area. Classification, physical characteristics and sketches are verified.

**Improved 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.

**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.

**Sold Properties:** Accounts that are reviewed based on 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 114,000 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 31 appraisers and 9 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 114,000 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 approached 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 56,700 BPP accounts or 55% 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 CAPPA 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.

### Phone Verification Project

In January each year, BPP undertakes a phone verification project whereby businesses are called to insure they were still in operation as of January 1 of the appraisal year, and that the ownership and address information on file is correct. BPP accounts are then updated as needed.

### Rendition Review

The most significant office review task is the rendition processing period. The BPP division expects to receive in excess of 56,000 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 Commercial 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 2023 and 2024 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  
2023 REAPPRAISAL PLAN**

<b>FIXED TASKS:</b>	<b>ACCOUNTS</b>
---------------------	-----------------

Add / New Accounts	9,800
Business ID Type Reappraisal	7,000
Tenant Account Reappraisal	9,000
Re-inspection Account Reappraisal	75
Complex Account Reappraisal	1,200

**VARIABLE TASKS:**

Aircraft Accounts Reappraisal	650
Rendition Processing / Reappraisal	51,000

**BUSINESS PERSONAL PROPERTY DIVISION  
2024 REAPPRAISAL PLAN**

<b>FIXED TASKS:</b>	<b>ACCOUNTS</b>
---------------------	-----------------

Add / New Accounts	9,900
Business ID Type Reappraisal	7,000
Tenant Account Reappraisal	9,500
Re-inspection Account Reappraisal	75
Complex Account Reappraisal	1,200

**VARIABLE TASKS:**

Aircraft Account Reappraisal	660
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## **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, Kenneth Nolan, 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 2023 and 2024 tax years as required by law."



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W. Kenneth Nolan  
Chief Appraiser / Executive Director

## Appendix A

### Key Personnel on Reappraisal Plan Implementation

<b><u>Department</u></b>	<b><u>Employee</u></b>	<b><u>Position</u></b>
Administration	Ken Nolan	Executive Director/Chief Appraiser
	Shane Docherty	Director of Appraisal
Residential	Mike Robinson	Manager
	Adrian Jackson	Assistant Manager
	Chad Johnson	Supervisor
	Jered Kimmel	Supervisor
	Brad Ward	Supervisor
	Robert Newman	Supervisor
	William Chapman	Supervisor
	Jackie McKamy	Supervisor
Commercial	Jimmy Cox	Manager
	Greyson Johnson	Assistant Manager
	Richard Davis	Supervisor
	Stacy Woods	Supervisor
	Joe Flores	Supervisor
	Mason Massei	Supervisor
	Jeff Richardson	Supervisor
BPP	Robert Evans	Manager
	Raul Reyes	Assistant Manager
	Mel Sims	Supervisor
	Kathy Nora	Supervisor
	Tonya Gee	Supervisor
	Schantell Dearing	Supervisor
Quality Control	Steve Wise	Manager
	William Welles	Development Analyst
	Paul Nguyen	Development Analyst

## Appendix B

### Residential Neighborhoods

1DS02N	1DS132	1DS170	1DS303	1DS341	1DS380
1DS04N	1DS133	1DS171	1DS304	1DS342	1DS381
1DS05N	1DS134	1DS172	1DS305	1DS343	1DS382
1DS06N	1DS135	1DS173	1DS306	1DS344	1DS383
1DS07N	1DS136	1DS174	1DS307	1DS345	1DS384
1DS09N	1DS137	1DS175	1DS308	1DS346	1DS385
1DS100	1DS138	1DS176	1DS309	1DS347	1DS386
1DS101	1DS139	1DS177	1DS310	1DS348	1DS387
1DS102	1DS140	1DS178	1DS311	1DS349	1DS388
1DS103	1DS141	1DS179	1DS312	1DS350	1DS389
1DS104	1DS142	1DS180	1DS313	1DS351	1DS390
1DS105	1DS143	1DS181	1DS314	1DS352	1DS391
1DS106	1DS144	1DS182	1DS315	1DS353	1DS392
1DS107	1DS145	1DS183	1DS316	1DS354	1DS393
1DS108	1DS146	1DS184	1DS317	1DS355	1DS394
1DS109	1DS147	1DS185	1DS318	1DS356	1DS395
1DS110	1DS148	1DS186	1DS319	1DS357	1DS396
1DS111	1DS149	1DS187	1DS320	1DS358	1DS397
1DS112	1DS150	1DS188	1DS321	1DS359	1DS398
1DS113	1DS151	1DS189	1DS322	1DS360	1DS399
1DS114	1DS152	1DS190	1DS323	1DS361	1DS400
1DS115	1DS153	1DS191	1DS324	1DS362	1DS401
1DS116	1DS154	1DS192	1DS325	1DS363	1DS402
1DS117	1DS155	1DS193	1DS326	1DS364	1DS403
1DS118	1DS156	1DS194	1DS327	1DS365	1DS404
1DS119	1DS157	1DS195	1DS328	1DS366	1DS405
1DS11N	1DS158	1DS196	1DS329	1DS367	1DS406
1DS120	1DS159	1DS197	1DS330	1DS368	1DS407
1DS121	1DS15N	1DS198	1DS331	1DS369	1DS408
1DS122	1DS160	1DS199	1DS332	1DS370	1DS409
1DS123	1DS161	1DS201	1DS333	1DS371	1DS410
1DS124	1DS162	1DS204	1DS334	1DS372	1DS411
1DS125	1DS163	1DS206	1DS335	1DS373	1DS412
1DS126	1DS164	1DS212	1DS336	1DS374	1DS413
1DS127	1DS165	1DS213	1DS337	1DS375	1DS414
1DS128	1DS166	1DS214	1DS338	1DS376	1DS415
1DS129	1DS167	1DS300	1DS339	1DS377	1DS416
1DS130	1DS168	1DS301	1DS33N	1DS378	1DS417
1DS131	1DS169	1DS302	1DS340	1DS379	1DS418

1DS419	1DS463	1DS506	1DS550	1DS593	1DS636
1DS420	1DS464	1DS507	1DS551	1DS594	1DS637
1DS421	1DS465	1DS508	1DS552	1DS595	1DS638
1DS422	1DS466	1DS509	1DS553	1DS596	1DS639
1DS423	1DS467	1DS510	1DS554	1DS597	1DS640
1DS424	1DS468	1DS511	1DS555	1DS598	1DS641
1DS425	1DS469	1DS512	1DS556	1DS599	1DS642
1DS426	1DS470	1DS513	1DS557	1DS600	1DS643
1DS427	1DS471	1DS514	1DS558	1DS601	1DS644
1DS428	1DS472	1DS515	1DS559	1DS602	1DS645
1DS429	1DS473	1DS516	1DS560	1DS603	1DS646
1DS430	1DS474	1DS517	1DS561	1DS604	1DS647
1DS431	1DS475	1DS518	1DS562	1DS605	1DS648
1DS432	1DS476	1DS520	1DS563	1DS606	1DS649
1DS433	1DS477	1DS521	1DS564	1DS607	1DS650
1DS434	1DS478	1DS522	1DS565	1DS608	1DS651
1DS435	1DS479	1DS523	1DS566	1DS609	1DS652
1DS436	1DS480	1DS524	1DS567	1DS610	1DS653
1DS437	1DS481	1DS525	1DS568	1DS611	1DS654
1DS438	1DS482	1DS526	1DS569	1DS612	1DS655
1DS439	1DS483	1DS527	1DS570	1DS613	1DS656
1DS440	1DS484	1DS528	1DS571	1DS614	1DS657
1DS441	1DS485	1DS529	1DS572	1DS615	1DS658
1DS443	1DS486	1DS530	1DS573	1DS616	1DS659
1DS445	1DS487	1DS531	1DS574	1DS617	1DS660
1DS446	1DS488	1DS532	1DS575	1DS618	1DS661
1DS447	1DS489	1DS533	1DS576	1DS619	1DS662
1DS448	1DS490	1DS534	1DS577	1DS620	1DS663
1DS449	1DS491	1DS535	1DS578	1DS621	1DS664
1DS44N	1DS492	1DS536	1DS579	1DS622	1DS665
1DS450	1DS493	1DS537	1DS580	1DS623	1DS666
1DS451	1DS494	1DS538	1DS581	1DS624	1DS667
1DS452	1DS495	1DS539	1DS582	1DS625	1DS668
1DS453	1DS496	1DS540	1DS583	1DS626	1DS669
1DS454	1DS497	1DS541	1DS584	1DS627	1DS670
1DS455	1DS498	1DS542	1DS585	1DS628	1DS671
1DS456	1DS499	1DS543	1DS586	1DS629	1DS672
1DS457	1DS500	1DS544	1DS587	1DS630	1DS673
1DS458	1DS501	1DS545	1DS588	1DS631	1DS674
1DS459	1DS502	1DS546	1DS589	1DS632	1DS675
1DS460	1DS503	1DS547	1DS590	1DS633	1DS676
1DS461	1DS504	1DS548	1DS591	1DS634	1DS677
1DS462	1DS505	1DS549	1DS592	1DS635	1DS678

1DS679	1DS722	1DS766	1DS809	1DS852	1DS896
1DS680	1DS723	1DS767	1DS810	1DS853	1DS897
1DS681	1DS724	1DS768	1DS811	1DS854	1DS898
1DS682	1DS725	1DS769	1DS812	1DS855	1DS899
1DS683	1DS726	1DS770	1DS813	1DS856	1DS900
1DS684	1DS727	1DS771	1DS814	1DS857	1DS901
1DS685	1DS728	1DS772	1DS815	1DS858	1DS902
1DS686	1DS729	1DS773	1DS816	1DS859	1DS903
1DS687	1DS730	1DS774	1DS817	1DS860	1DS904
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1DS690	1DS733	1DS777	1DS820	1DS863	1DS907
1DS691	1DS734	1DS778	1DS821	1DS864	1DS908
1DS692	1DS735	1DS779	1DS822	1DS865	1DS909
1DS693	1DS736	1DS780	1DS823	1DS866	1DS910
1DS694	1DS737	1DS781	1DS824	1DS867	1DS911
1DS695	1DS738	1DS782	1DS825	1DS868	1DS912
1DS696	1DS739	1DS783	1DS826	1DS869	1DS913
1DS697	1DS741	1DS784	1DS827	1DS870	1DS914
1DS698	1DS742	1DS785	1DS828	1DS871	1DS915
1DS699	1DS743	1DS786	1DS829	1DS872	1DS916
1DS700	1DS744	1DS787	1DS830	1DS873	1DS917
1DS701	1DS745	1DS788	1DS831	1DS874	1DS918
1DS702	1DS746	1DS789	1DS832	1DS875	1DS919
1DS703	1DS747	1DS790	1DS833	1DS876	1DS920
1DS704	1DS748	1DS791	1DS834	1DS878	1DS921
1DS705	1DS749	1DS792	1DS835	1DS879	1DS922
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1DS707	1DS751	1DS794	1DS837	1DS881	1DS924
1DS708	1DS752	1DS795	1DS838	1DS882	1DS925
1DS709	1DS753	1DS796	1DS839	1DS883	1DS926
1DS710	1DS754	1DS797	1DS840	1DS884	1DS927
1DS711	1DS755	1DS798	1DS841	1DS885	1DS928
1DS712	1DS756	1DS799	1DS842	1DS886	1DS929
1DS713	1DS757	1DS800	1DS843	1DS887	1DS930
1DS714	1DS758	1DS801	1DS844	1DS888	1DS931
1DS715	1DS759	1DS802	1DS845	1DS889	1DS932
1DS716	1DS760	1DS803	1DS846	1DS890	1DS933
1DS717	1DS761	1DS804	1DS847	1DS891	1DS934
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1DS719	1DS763	1DS806	1DS849	1DS893	1DS936
1DS720	1DS764	1DS807	1DS850	1DS894	1DS937
1DS721	1DS765	1DS808	1DS851	1DS895	1DS938

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1DSA01	1DSI01	1DSM13	1DST02	1HS315	1HS358
1DSA02	1DSJ01	1DSM14	1DST03	1HS316	1HS359
1DSA03	1DSJ02	1DSM15	1DST06	1HS317	1HS360
1DSA04	1DSJ03	1DSM16	1DST07	1HS318	1HS361
1DSA05	1DSJ05	1DSM17	1DSV01	1HS319	1HS362
1DSA06	1DSJ06	1DSM18	1DSV02	1HS320	1HS363
1DSA07	1DSJ07	1DSM19	1DSV03	1HS321	1HS364
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1DSA09	1DSJ09	1DSM21	1DSV06	1HS323	1HS366
1DSA10	1DSJ10	1DSM22	1DSX02	1HS324	1HS367
1DSB01	1DSJ11	1DSM23	1DSY01	1HS325	1HS368
1DSC01	1DSJ12	1DSM24	1DSY10	1HS326	1HS369
1DSD01	1DSJ13	1DSM26	1DSZ01	1HS327	1HS370
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1DSD03	1DSJ15	1DSP02	1HS100	1HS329	1HS372
1DSD04	1DSJ16	1DSP05	1HS101	1HS330	1HS373
1DSD07	1DSJ17	1DSP06	1HS102	1HS331	1HS374
1DSD08	1DSJ18	1DSP09	1HS103	1HS332	1HS375
1DSD09	1DSJ19	1DSP10	1HS104	1HS333	1HS376
1DSD10	1DSJ1H	1DSP11	1HS105	1HS334	1HS377
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1DSD12	1DSJ21	1DSP13	1HS108	1HS336	1HS379
1DSD13	1DSJ22	1DSP15	1HS201	1HS337	1HS380
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1DSD15	1DSJ24	1DSP20	1HS203	1HS339	1HS382
1DSD16	1DSJ25	1DSQ01	1HS204	1HS340	1HS383
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1DSF01	1DSJ27	1DSR02	1HS206	1HS342	1HS385
1DSF02	1DSJ30	1DSR03	1HS222	1HS343	1HS386
1DSF03	1DSK01	1DSR04	1HS300	1HS344	1HS387
1DSG01	1DSK03	1DSR05	1HS301	1HS345	1HS388
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1DSG13	1DSM08	1DSS09	1HS310	1HS353	1HS396
1DSG15	1DSM09	1DSS10	1HS311	1HS354	1HS397
1DSG16	1DSM10	1DSS12	1HS312	1HS355	1HS398
1DSH01	1DSM11	1DSS13	1HS313	1HS356	1HS570

1HS900	1HSV13	2DS15N	2DS331	2DS387	2DS432
1HS901	1HSV14	2DS201	2DS333	2DS388	2DS433
1HS902	1HSV15	2DS203	2DS334	2DS389	2DS434
1HS912	1HSV16	2DS204	2DS335	2DS390	2DS900
1HSL01	1HSV17	2DS207	2DS337	2DS391	2DS901
1HSM01	1HSV18	2DS210	2DS340	2DS392	2DS902
1HSM02	1HSV19	2DS211	2DS346	2DS393	2DSM01
1HSM03	1HSV20	2DS212	2DS349	2DS394	2DSM02
1HSP03	1HSV21	2DS213	2DS350	2DS395	2DSM03
1HSP04	1HSV22	2DS214	2DS351	2DS396	2DSM04
1HSP05	1HSY01	2DS21N	2DS353	2DS398	2DSM05
1HSP07	1HSY02	2DS22N	2DS354	2DS399	2DSM06
1HSP08	1HSY03	2DS29N	2DS355	2DS400	2DSM10
1HSP09	1HSY04	2DS300	2DS356	2DS401	2DSM31
1HSP10	1HSY05	2DS301	2DS357	2DS402	2DSM32
1HSP11	1HSY09	2DS302	2DS358	2DS403	2DSN01
1HSP12	1HSY10	2DS303	2DS359	2DS404	2DSN02
1HSP13	1HSY11	2DS304	2DS360	2DS405	2DSN03
1HSP14	1HSY12	2DS305	2DS361	2DS406	2DSO02
1HSP15	1HSY13	2DS306	2DS362	2DS407	2DSO04
1HSP16	1HSY14	2DS307	2DS363	2DS408	2DSO05
1HSP17	1HSZ02	2DS308	2DS364	2DS409	2DSP01
1HSP18	1HSZ03	2DS309	2DS365	2DS410	2DSP02
1HSP20	2DS000	2DS310	2DS366	2DS411	2DSP03
1HSS01	2DS02N	2DS311	2DS367	2DS412	2DSP04
1HSS02	2DS03N	2DS312	2DS369	2DS413	2DSP05
1HSS03	2DS100	2DS313	2DS370	2DS414	2DSP06
1HSS04	2DS102	2DS314	2DS371	2DS415	2DSP07
1HSS05	2DS103	2DS315	2DS372	2DS416	2DSP08
1HSS06	2DS104	2DS316	2DS373	2DS417	2DSP09
1HSS07	2DS105	2DS317	2DS374	2DS418	2DSP10
1HSS09	2DS106	2DS318	2DS375	2DS419	2DSP11
1HSS10	2DS107	2DS319	2DS376	2DS420	2DSP12
1HSS11	2DS108	2DS320	2DS377	2DS422	2DSP14
1HSS13	2DS109	2DS321	2DS378	2DS423	2DSP15
1HST06	2DS110	2DS322	2DS379	2DS424	2DSP16
1HSV01	2DS111	2DS323	2DS380	2DS425	2DSP17
1HSV02	2DS112	2DS324	2DS381	2DS426	2DSP18
1HSV05	2DS113	2DS325	2DS382	2DS427	2DSP19
1HSV06	2DS114	2DS326	2DS383	2DS428	2DSP20
1HSV07	2DS115	2DS327	2DS384	2DS429	2DSR01
1HSV08	2DS120	2DS328	2DS385	2DS430	2DSR02
1HSV09	2DS122	2DS329	2DS386	2DS431	2DSR03



2DSR04	2DSV5S	2DSY03	2RS12N	2RS322	2RSI01
2DSS01	2DSW01	2DSY04	2RS200	2RS323	2RSJ01
2DSS02	2DSW02	2DSY05	2RS201	2RS324	2RSJ02
2DSS03	2DSW03	2DSY06	2RS202	2RS325	2RSJ03
2DSS04	2DSW04	2DSY07	2RS203	2RS326	2RSJ04
2DSS05	2DSW05	2DSY08	2RS204	2RS327	2RSJ05
2DSS07	2DSW06	2DSY09	2RS205	2RS328	2RSJ06
2DSS08	2DSW08	2DSY10	2RS206	2RS329	2RSJ07
2DSS09	2DSW09	2DSZ01	2RS207	2RS330	2RSJ08
2DSS10	2DSW10	2DSZ99	2RS209	2RS331	2RSJ09
2DSS11	2DSW11	2RS01N	2RS210	2RS332	2RSJ10
2DSS12	2DSW12	2RS02N	2RS211	2RS333	2RSJ11
2DSS13	2DSW13	2RS04N	2RS212	2RS334	2RSJ12
2DSS14	2DSW14	2RS09N	2RS213	2RS335	2RSJ13
2DSS15	2DSW15	2RS100	2RS215	2RS337	2RSJ14
2DST01	2DSX01	2RS101	2RS216	2RS338	2RSJ15
2DST02	2DSX02	2RS102	2RS217	2RS339	2RSJ16
2DST03	2DSX03	2RS103	2RS218	2RS340	2RSJ17
2DST04	2DSX04	2RS104	2RS219	2RS341	2RSJ18
2DST05	2DSX05	2RS105	2RS220	2RS342	2RSJ19
2DST08	2DSX06	2RS106	2RS221	2RS343	2RSJ20
2DST09	2DSX07	2RS107	2RS300	2RS344	2RSJ21
2DST10	2DSX08	2RS108	2RS301	2RS345	2RSJ22
2DST11	2DSX09	2RS109	2RS302	2RS346	2RSJ23
2DST12	2DSX10	2RS110	2RS303	2RS347	2RSJ24
2DST13	2DSX11	2RS111	2RS304	2RS348	2RSJ25
2DST14	2DSX13	2RS112	2RS305	2RS349	2RSJ26
2DST15	2DSX14	2RS113	2RS306	2RS350	2RSJ27
2DST16	2DSX16	2RS114	2RS307	2RS351	2RSJ29
2DSU01	2DSX17	2RS115	2RS308	2RS352	2RSJ30
2DSU03	2DSX19	2RS116	2RS309	2RS353	2RSJ31
2DSU06	2DSX20	2RS117	2RS310	2RS354	2RSK01
2DSU07	2DSX21	2RS118	2RS311	2RS355	2RSK03
2DSU08	2DSX22	2RS119	2RS312	2RS356	2RSK04
2DSV01	2DSX23	2RS11N	2RS313	2RS357	2RSK05
2DSV02	2DSX24	2RS120	2RS314	2RS420	2RSK06
2DSV03	2DSX25	2RS121	2RS315	2RS42N	2RSK07
2DSV04	2DSX26	2RS122	2RS316	2RS45N	2RSK08
2DSV06	2DSX27	2RS123	2RS317	2RS46N	2RSK09
2DSV07	2DSX28	2RS124	2RS318	2RSF01	2RSK10
2DSV08	2DSX29	2RS125	2RS319	2RSG01	2RSK11
2DSV09	2DSY01	2RS126	2RS320	2RSH01	2RSK12
2DSV5N	2DSY02	2RS127	2RS321	2RSH02	2RSK13

2RSK16	2RSN01	2RSQ02	2RSS21	2RSZ01	3DSJ04
2RSK17	2RSN02	2RSQ03	2RSS22	3DS03N	3DSJ05
2RSK18	2RSN03	2RSQ04	2RSS23	3DS04N	3DSJ06
2RSK19	2RSN05	2RSQ07	2RST01	3DS100	3DSJ07
2RSK20	2RSN06	2RSQ08	2RST02	3DS101	3DSJ08
2RSK21	2RSO01	2RSQ09	2RST03	3DS102	3DSJ09
2RSL01	2RSO02	2RSQ10	2RST04	3DS103	3DSJ11
2RSL02	2RSO04	2RSR01	2RST05	3DS104	3DSJ12
2RSL04	2RSO05	2RSR02	2RST06	3DS201	3DSJ13
2RSL08	2RSO06	2RSR03	2RST07	3DS202	3DSJ14
2RSL09	2RSO07	2RSR04	2RST08	3DS203	3DSJ15
2RSM01	2RSP01	2RSR05	2RST09	3DS204	3DSJ16
2RSM02	2RSP02	2RSR06	2RSU01	3DS205	3DSJ18
2RSM03	2RSP03	2RSR07	2RSU03	3DS207	3DSJ19
2RSM04	2RSP04	2RSR08	2RSU05	3DS209	3DSJ20
2RSM05	2RSP05	2RSR09	2RSU06	3DS302	3DSJ25
2RSM06	2RSP06	2RSR10	2RSV01	3DS304	3DSJ50
2RSM09	2RSP07	2RSR11	2RSV02	3DS305	3DSK01
2RSM11	2RSP08	2RSR12	2RSV03	3DSA04	3DSK02
2RSM12	2RSP09	2RSR13	2RSV04	3DSAB3	3DSK05
2RSM13	2RSP10	2RSR14	2RSV05	3DSG01	3DSK06
2RSM14	2RSP11	2RSR15	2RSV06	3DSG02	3DSK07
2RSM15	2RSP12	2RSR16	2RSV07	3DSG03	3DSK08
2RSM16	2RSP13	2RSS01	2RSW01	3DSG04	3DSK09
2RSM17	2RSP14	2RSS02	2RSW02	3DSG05	3DSL02
2RSM19	2RSP15	2RSS03	2RSW04	3DSG06	3DSL04
2RSM20	2RSP16	2RSS04	2RSW05	3DSG07	3DSL07
2RSM21	2RSP17	2RSS05	2RSW06	3DSG08	3DSL24
2RSM22	2RSP18	2RSS06	2RSX01	3DSG09	3DSM01
2RSM23	2RSP19	2RSS07	2RSX02	3DSG10	3DSM02
2RSM24	2RSP21	2RSS08	2RSX03	3DSG12	3DSM03
2RSM25	2RSP22	2RSS09	2RSX04	3DSG13	3DSM05
2RSM26	2RSP23	2RSS10	2RSX05	3DSG14	3DSM06
2RSM28	2RSP24	2RSS11	2RSX06	3DSG15	3DSM07
2RSM31	2RSP25	2RSS12	2RSX07	3DSG16	3DSM08
2RSM33	2RSP26	2RSS13	2RSX08	3DSG19	3DSM09
2RSM34	2RSP27	2RSS14	2RSX09	3DSG20	3DSM10
2RSM40	2RSP28	2RSS15	2RSX99	3DSG24	3DSM11
2RSM41	2RSP29	2RSS16	2RSY01	3DSH01	3DSM15
2RSM42	2RSP30	2RSS17	2RSY02	3DSH02	3DSM18
2RSM43	2RSP31	2RSS18	2RSY03	3DSJ01	3DSM19
2RSM44	2RSP36	2RSS19	2RSY06	3DSJ02	3DSM59
2RSM45	2RSQ01	2RSS20	2RSY07	3DSJ03	3DSO07

3DSP02	3GS117	3GS320	3GSD06	3GSH14	3GSJ34
3DSP04	3GS118	3GS321	3GSE01	3GSH16	3GSJ35
3DSP06	3GS119	3GS322	3GSE02	3GSH18	3GSJ36
3DSR01	3GS11M	3GS323	3GSG01	3GSH20	3GSJ37
3DSS01	3GS12M	3GS324	3GSG02	3GSH21	3GSJ38
3DSS02	3GS13M	3GS326	3GSG03	3GSH22	3GSJ39
3DSS03	3GS13N	3GS327	3GSG04	3GSI01	3GSJ40
3DSS04	3GS14M	3GS328	3GSG05	3GSI02	3GSJ41
3DSS06	3GS14N	3GS329	3GSG06	3GSI03	3GSJ42
3GS000	3GS15M	3GS330	3GSG08	3GSI04	3GSJ43
3GS01M	3GS18N	3GS331	3GSG09	3GSJ01	3GSJ44
3GS01N	3GS200	3GS332	3GSG10	3GSJ02	3GSJ45
3GS02M	3GS201	3GS335	3GSG11	3GSJ03	3GSJ46
3GS02N	3GS202	3GS336	3GSG12	3GSJ04	3GSJ48
3GS03M	3GS203	3GS337	3GSG13	3GSJ05	3GSJ49
3GS03N	3GS204	3GS338	3GSG14	3GSJ06	3GSJ51
3GS04M	3GS205	3GS339	3GSG15	3GSJ07	3GSJ52
3GS04N	3GS206	3GS36N	3GSG16	3GSJ08	3GSJ53
3GS05M	3GS207	3GS37N	3GSG17	3GSJ09	3GSJ54
3GS06M	3GS208	3GS40N	3GSG18	3GSJ10	3GSJ55
3GS06N	3GS209	3GS41N	3GSG19	3GSJ11	3GSJ58
3GS07M	3GS210	3GS42N	3GSG20	3GSJ12	3GSJ59
3GS08M	3GS211	3GS43N	3GSG21	3GSJ13	3GSJ61
3GS09M	3GS212	3GS44N	3GSG23	3GSJ14	3GSJ62
3GS09N	3GS21N	3GS45N	3GSG24	3GSJ15	3GSJ64
3GS100	3GS24N	3GS46N	3GSG26	3GSJ16	3GSJ65
3GS101	3GS26N	3GS47N	3GSG27	3GSJ17	3GSJ66
3GS102	3GS301	3GS48N	3GSG28	3GSJ18	3GSJ67
3GS103	3GS302	3GS49N	3GSG31	3GSJ19	3GSJ68
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3GS106	3GS307	3GS55N	3GSH01	3GSJ22	3GSJ71
3GS107	3GS308	3GS66N	3GSH02	3GSJ23	3GSJ72
3GS108	3GS309	3GS69N	3GSH03	3GSJ24	3GSJ74
3GS109	3GS30N	3GSAB1	3GSH04	3GSJ25	3GSJ75
3GS10M	3GS310	3GSAB3	3GSH05	3GSJ26	3GSJ76
3GS110	3GS311	3GSAB6	3GSH06	3GSJ27	3GSK02
3GS111	3GS312	3GSAB7	3GSH07	3GSJ28	3GSK03
3GS112	3GS313	3GSD01	3GSH08	3GSJ29	3GSK04
3GS113	3GS314	3GSD02	3GSH10	3GSJ30	3GSK05
3GS114	3GS315	3GSD03	3GSH11	3GSJ31	3GSK06
3GS115	3GS316	3GSD04	3GSH12	3GSJ32	3GSK07
3GS116	3GS317	3GSD05	3GSH13	3GSJ33	3GSK08

3GSK10	3GSL26	3GSM38	3GSO02	3GSP25	3GSR07
3GSK11	3GSL27	3GSM40	3GSO03	3GSP27	3GSR08
3GSK12	3GSL28	3GSM41	3GSO04	3GSP28	3GSR09
3GSK13	3GSL29	3GSM42	3GSO05	3GSP29	3GSR10
3GSK14	3GSL30	3GSM43	3GSO06	3GSP30	3GSR11
3GSK15	3GSL31	3GSM44	3GSO07	3GSP32	3GSR12
3GSK16	3GSL32	3GSM45	3GSO08	3GSP33	3GSR13
3GSK17	3GSL33	3GSM47	3GSO09	3GSP34	3GSR14
3GSK18	3GSL34	3GSM49	3GSO10	3GSP36	3GSR15
3GSK20	3GSM01	3GSM53	3GSO11	3GSP37	3GSR16
3GSK21	3GSM02	3GSM56	3GSO12	3GSP39	3GSR17
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3GSK27	3GSM04	3GSM64	3GSO15	3GSP41	3GSR19
3GSK28	3GSM05	3GSM65	3GSO18	3GSP42	3GSR20
3GSK29	3GSM06	3GSM67	3GSO19	3GSP43	3GSR21
3GSK30	3GSM07	3GSM68	3GSO20	3GSP44	3GSR22
3GSK31	3GSM08	3GSN01	3GSO21	3GSP45	3GSR23
3GSK33	3GSM09	3GSN02	3GSO22	3GSQ01	3GSR24
3GSK34	3GSM10	3GSN03	3GSO24	3GSQ02	3GSR25
3GSK35	3GSM11	3GSN04	3GSO25	3GSQ03	3GSR26
3GSL01	3GSM12	3GSN05	3GSP01	3GSQ04	3GSR27
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3GSL05	3GSM18	3GSN09	3GSP05	3GSQ08	3GSS01
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3GSL07	3GSM20	3GSN12	3GSP07	3GSQ10	3GSS03
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3GSL11	3GSM24	3GSN16	3GSP11	3GSQ15	3GSS07
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3GSL18	3GSM29	3GSN23	3GSP16	3GSQ20	3GSS12
3GSL19	3GSM30	3GSN24	3GSP17	3GSQ21	3GSS13
3GSL20	3GSM31	3GSN25	3GSP18	3GSR01	3GSS14
3GSL21	3GSM32	3GSN26	3GSP19	3GSR02	3GSS15
3GSL22	3GSM33	3GSN27	3GSP20	3GSR03	3GSS16
3GSL23	3GSM34	3GSN28	3GSP22	3GSR04	3GSS17
3GSL24	3GSM35	3GSN33	3GSP23	3GSR05	3GSS18
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3GSS23	3MS14M	3MSD13	3MSI06	3MSJ43	3MSL08
3GSS24	3MS15M	3MSD14	3MSJ01	3MSJ44	3MSL09
3GSS25	3MS16M	3MSD15	3MSJ02	3MSJ45	3MSL10
3GSS26	3MS17M	3MSD16	3MSJ03	3MSJ46	3MSL11
3GSS27	3MS18M	3MSD18	3MSJ04	3MSK01	3MSL12
3GSS28	3MS19M	3MSE02	3MSJ05	3MSK02	3MSL13
3GSS29	3MS201	3MSE03	3MSJ06	3MSK03	3MSL14
3GSS30	3MS202	3MSE04	3MSJ07	3MSK04	3MSL15
3GST01	3MS203	3MSE05	3MSJ08	3MSK05	3MSL16
3GST02	3MS204	3MSE06	3MSJ09	3MSK06	3MSL17
3GST03	3MS205	3MSE07	3MSJ10	3MSK07	3MSL18
3GST04	3MS206	3MSE08	3MSJ11	3MSK08	3MSL19
3GSU01	3MS207	3MSE09	3MSJ12	3MSK09	3MSL20
3GSU02	3MS208	3MSG01	3MSJ13	3MSK10	3MSM01
3GSU03	3MS209	3MSG02	3MSJ14	3MSK11	3MSM02
3MS01M	3MS20M	3MSG03	3MSJ15	3MSK12	3MSM03
3MS01N	3MS21M	3MSG04	3MSJ16	3MSK13	3MSM04
3MS02M	3MS22M	3MSG05	3MSJ17	3MSK14	3MSM05
3MS02N	3MS23M	3MSG06	3MSJ18	3MSK15	3MSM06
3MS03M	3MS24M	3MSG07	3MSJ19	3MSK16	3MSM07
3MS03N	3MS25M	3MSG08	3MSJ20	3MSK17	3MSM08
3MS04M	3MS26M	3MSG09	3MSJ21	3MSK18	3MSM09
3MS05M	3MS27M	3MSG10	3MSJ22	3MSK19	3MSM10
3MS06M	3MS28M	3MSG12	3MSJ23	3MSK20	3MSM11
3MS06N	3MS300	3MSG13	3MSJ24	3MSK21	3MSM12
3MS07M	3MS301	3MSG14	3MSJ25	3MSK22	3MSM13
3MS08M	3MS302	3MSG15	3MSJ26	3MSK24	3MSM14
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	3MSM24
3MS11M	3MSD05	3MSG67	3MSJ37	3MSL02	3MSM25
3MS11N	3MSD07	3MSH01	3MSJ38	3MSL03	3MSM26
3MS12M	3MSD09	3MSH02	3MSJ39	3MSL04	3MSM27
3MS12N	3MSD10	3MSH29	3MSJ40	3MSL05	3MSM28

3MSM29	3YS49N	4DS03N	4DS204	4DS31M	4DSA04
3MSM30	3YSM01	4DS04M	4DS206	4DS31N	4DSA05
3MSM91	3YSM02	4DS04N	4DS207	4DS320	4DSA07
3MSO01	3YSM04	4DS06M	4DS208	4DS321	4DSA08
3MSO03	3YSM05	4DS06N	4DS209	4DS322	4DSA10
3MSO04	3YSM06	4DS07M	4DS211	4DS323	4DSA11
3MSO05	3YSM07	4DS07N	4DS212	4DS324	4DSA14
3MSO06	3YSM08	4DS08N	4DS213	4DS326	4DSA17
3MSO07	3YSP01	4DS09M	4DS214	4DS327	4DSA5C
3MSO08	3YSR01	4DS09N	4DS215	4DS328	4DSA6C
3MSO09	3YSR02	4DS100	4DS216	4DS329	4DSA7C
3MSP01	3YSR03	4DS101	4DS21N	4DS32M	4DSA8C
3MSP02	3YSS01	4DS102	4DS220	4DS330	4DSA9C
3MSP03	3YSS02	4DS103	4DS221	4DS33M	4DSAB1
3MSP04	3YSS03	4DS104	4DS222	4DS34M	4DSAB2
3MSP05	3YSS04	4DS105	4DS223	4DS35N	4DSAB3
3MSP06	3YSS05	4DS106	4DS23M	4DS36M	4DSAB5
3MSP07	3YSS06	4DS107	4DS25N	4DS38M	4DSAB6
3MSP08	3YSS07	4DS108	4DS26M	4DS39M	4DSAB7
3MSP09	3YSS08	4DS109	4DS27M	4DS40M	4DSAB8
3MSP10	3YSS09	4DS10M	4DS28M	4DS43M	4DSAB9
3MSP11	3YSS10	4DS110	4DS29M	4DS44M	4DSB02
3MSP12	3YSS11	4DS111	4DS29N	4DS44N	4DSB03
3MSP13	3YSS12	4DS112	4DS300	4DS45M	4DSB04
3MSQ01	3YSS13	4DS113	4DS301	4DS46M	4DSB06
3MSQ02	3YSS14	4DS114	4DS302	4DS47M	4DSB07
3MSS01	3YSS15	4DS115	4DS303	4DS48M	4DSB08
3MSS02	3YSS16	4DS116	4DS304	4DS49M	4DSB09
3MSS03	3YSS17	4DS117	4DS305	4DS50M	4DSC01
3MSS04	3YSS18	4DS118	4DS306	4DS51M	4DSC03
3MSS05	3YSS19	4DS11M	4DS307	4DS52M	4DSC04
3MSS06	3YSS20	4DS12M	4DS308	4DS52N	4DSC05
3MSS07	3YSS21	4DS12N	4DS309	4DS53M	4DSD01
3MSS21	3YSS22	4DS13N	4DS30M	4DS54M	4DSD02
3YS10N	3YSS23	4DS14M	4DS310	4DS55M	4DSD03
3YS11N	3YSS25	4DS15M	4DS311	4DS56M	4DSD04
3YS13N	3YSS26	4DS15N	4DS312	4DS56N	4DSD05
3YS41N	3YSS27	4DS16M	4DS313	4DS57M	4DSD06
3YS42N	4DS000	4DS17M	4DS314	4DS58M	4DSD07
3YS44N	4DS01M	4DS18N	4DS315	4DS74N	4DSD08
3YS46N	4DS01N	4DS19N	4DS316	4DS900	4DSD09
3YS47N	4DS02M	4DS202	4DS318	4DSA02	4DSD10
3YS48N	4DS03M	4DS203	4DS319	4DSA03	4DSD11

4DSD12	4DSD56	4DSE01	4DSF06	4DSG38	4DSG85
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4DSD14	4DSD58	4DSE03	4DSF08	4DSG40	4DSH01
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4DSD16	4DSD60	4DSE05	4DSF10	4DSG42	4DSH03
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4DSD18	4DSD62	4DSE07	4DSG01	4DSG44	4DSH05
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4DSD28	4DSD73	4DSE17	4DSG11	4DSG54	4DSH15
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4DSD33	4DSD78	4DSE22	4DSG16	4DSG59	4DSH20
4DSD34	4DSD79	4DSE23	4DSG17	4DSG60	4DSH21
4DSD35	4DSD80	4DSE24	4DSG18	4DSG61	4DSH22
4DSD36	4DSD81	4DSE25	4DSG19	4DSG62	4DSH23
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4DSD38	4DSD83	4DSE27	4DSG21	4DSG64	4DSH25
4DSD39	4DSD84	4DSE28	4DSG22	4DSG65	4DSH26
4DSD40	4DSD85	4DSE29	4DSG23	4DSG66	4DSH27
4DSD41	4DSD86	4DSE30	4DSG24	4DSG67	4DSH28
4DSD42	4DSD87	4DSE31	4DSG25	4DSG68	4DSH29
4DSD43	4DSD88	4DSE32	4DSG26	4DSG70	4DSH30
4DSD44	4DSD89	4DSE33	4DSG27	4DSG71	4DSH31
4DSD45	4DSD90	4DSE34	4DSG28	4DSG72	4DSH32
4DSD46	4DSD91	4DSE35	4DSG29	4DSG73	4DSH33
4DSD47	4DSD92	4DSE36	4DSG30	4DSG74	4DSH34
4DSD48	4DSD93	4DSE37	4DSG31	4DSG75	4DSH35
4DSD50	4DSD94	4DSE54	4DSG32	4DSG77	4DSH37
4DSD51	4DSD95	4DSF01	4DSG33	4DSG78	4DSH38
4DSD52	4DSD96	4DSF02	4DSG34	4DSG80	4DSH40
4DSD53	4DSD97	4DSF03	4DSG35	4DSG82	4DSH42
4DSD54	4DSD98	4DSF04	4DSG36	4DSG83	4DSH43
4DSD55	4DSD99	4DSF05	4DSG37	4DSG84	4DSH44

4DSH45	4DSJ04	4DSJ51	4DSK12	4DSL22	4DSP03
4DSH46	4DSJ05	4DSJ52	4DSK13	4DSL24	4DSP04
4DSI01	4DSJ06	4DSJ53	4DSK14	4DSL25	4DSP05
4DSI02	4DSJ07	4DSJ54	4DSK15	4DSL27	4DSP06
4DSI03	4DSJ08	4DSJ55	4DSK16	4DSL29	4DSP08
4DSI04	4DSJ09	4DSJ56	4DSK17	4DSL30	4DSQ01
4DSI05	4DSJ11	4DSJ57	4DSK19	4DSL31	4DSQ02
4DSI06	4DSJ12	4DSJ58	4DSK20	4DSL32	4DSS01
4DSI07	4DSJ13	4DSJ59	4DSK21	4DSM01	4DSS02
4DSI08	4DSJ14	4DSJ60	4DSK22	4DSM02	4DSS03
4DSI09	4DSJ15	4DSJ61	4DSK23	4DSM03	4DST01
4DSI10	4DSJ16	4DSJ62	4DSK24	4DSM04	4DSV01
4DSI11	4DSJ18	4DSJ63	4DSK25	4DSM05	4DSV02
4DSI12	4DSJ19	4DSJ64	4DSK26	4DSM06	4DSX92
4DSI13	4DSJ20	4DSJ65	4DSK27	4DSM07	4DSZ04
4DSI14	4DSJ22	4DSJ66	4DSK28	4DSM08	4ES01N
4DSI15	4DSJ23	4DSJ67	4DSK29	4DSM09	4ES02M
4DSI16	4DSJ24	4DSJ68	4DSK30	4DSM11	4ES02N
4DSI17	4DSJ25	4DSJ69	4DSK32	4DSM12	4ES03N
4DSI18	4DSJ26	4DSJ70	4DSK33	4DSM13	4ES04N
4DSI19	4DSJ27	4DSJ71	4DSK34	4DSM14	4ES05N
4DSI20	4DSJ28	4DSJ72	4DSK35	4DSM15	4ES07N
4DSI21	4DSJ29	4DSJ73	4DSK36	4DSM16	4ES08N
4DSI22	4DSJ30	4DSJ74	4DSL01	4DSM17	4ES09N
4DSI23	4DSJ31	4DSJ75	4DSL02	4DSM18	4ES100
4DSI24	4DSJ32	4DSJ76	4DSL03	4DSM19	4ES101
4DSI25	4DSJ33	4DSJ77	4DSL04	4DSM20	4ES200
4DSI26	4DSJ34	4DSJ78	4DSL05	4DSM21	4ES201
4DSI27	4DSJ35	4DSJ79	4DSL06	4DSM22	4ES202
4DSI28	4DSJ36	4DSJ80	4DSL07	4DSM24	4ES203
4DSI29	4DSJ37	4DSJ81	4DSL08	4DSM25	4ES204
4DSI30	4DSJ38	4DSJ82	4DSL09	4DSM26	4ES300
4DSI31	4DSJ39	4DSJ83	4DSL10	4DSM27	4ES31C
4DSI32	4DSJ40	4DSK01	4DSL11	4DSM29	4ES33N
4DSI33	4DSJ41	4DSK02	4DSL12	4DSM30	4ES35N
4DSI34	4DSJ42	4DSK03	4DSL13	4DSM71	4ES47N
4DSI35	4DSJ43	4DSK04	4DSL14	4DSM72	4ES56N
4DSI36	4DSJ45	4DSK05	4DSL15	4DSM73	4ES59N
4DSI37	4DSJ46	4DSK07	4DSL16	4DSM92	4ESAB1
4DSI38	4DSJ47	4DSK08	4DSL17	4DSO02	4ESAB2
4DSJ01	4DSJ48	4DSK09	4DSL18	4DSO03	4ESD02
4DSJ02	4DSJ49	4DSK10	4DSL19	4DSP01	4ESD03
4DSJ03	4DSJ50	4DSK11	4DSL20	4DSP02	4ESD05



4ESF01	4ESM09	4LS01M	4LSJ06	4LSM04	4PS203
4ESG01	4ESM12	4LS02N	4LSJ07	4LSM05	4PS204
4ESG02	4ESM15	4LS03M	4LSJ08	4LSM06	4PS205
4ESG05	4ESM17	4LS04M	4LSJ09	4LSM07	4PS206
4ESG06	4ESM20	4LS04N	4LSJ10	4LSM08	4PS207
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4ESH01	4ESM23	4LS06M	4LSJ12	4LSMHP	4PS209
4ESH02	4ESN01	4LS07M	4LSJ13	4LSN01	4PS210
4ESJ01	4ESN02	4LS08M	4LSJ14	4LSO01	4PS211
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4ESJ03	4ESN04	4LS200	4LSJ17	4LSP02	4PS214
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4ESJ15	4ESS02	4LSD05	4LSK08	4PS06N	4PSAB2
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4ESK19	4ESS11	4LSG05	4LSK18	4PS107	4PSD06
4ESL01	4ESS12	4LSG06	4LSK19	4PS108	4PSD07
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4ESM01	4ESU02	4LSH01	4LSL02	4PS11M	4PSG02
4ESM02	4ESV01	4LSH02	4LSL03	4PS12M	4PSG03
4ESM03	4ESV02	4LSH03	4LSL04	4PS13M	4PSG05
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4ESM05	4ESW02	4LSJ02	4LSL06	4PS15M	4PSG07
4ESM06	4ESW03	4LSJ03	4LSM01	4PS200	4PSG08
4ESM07	4FSAB1	4LSJ04	4LSM02	4PS201	4PSG09
4ESM08	4FSD16	4LSJ05	4LSM03	4PS202	4PSG10

4PSG12	4PSK01	4PSM20	4SS201	4SSJ14	4SSM10
4PSG13	4PSK02	4PSM21	4SS202	4SSJ15	4SSM11
4PSG15	4PSK03	4PSM22	4SS203	4SSJ17	4SSM12
4PSG16	4PSK04	4PSM23	4SS204	4SSJ18	4SSM13
4PSG17	4PSK05	4PSN01	4SS205	4SSJ19	4SSM14
4PSH01	4PSK06	4PSN02	4SS206	4SSJ20	4SSM15
4PSH02	4PSK07	4PSN03	4SS207	4SSJ21	4SSM16
4PSH03	4PSK08	4PSN04	4SS21N	4SSK01	4SSM17
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4PSJ04	4PSL07	4PSP03	4SSAB4	4SSK09	4SSN03
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4PSJ16	4PSM04	4PSQ02	4SSG10	4SSL02	4SSO04
4PSJ17	4PSM05	4PSR01	4SSH02	4SSL03	4SSO05
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4PSJ24	4PSM12	4SS04M	4SSJ06	4SSM02	4SSO12
4PSJ25	4PSM13	4SS06M	4SSJ07	4SSM03	4SSP01
4PSJ26	4PSM14	4SS07M	4SSJ08	4SSM04	4SSP02
4PSJ27	4PSM15	4SS08M	4SSJ09	4SSM05	4SSP03
4PSJ60	4PSM16	4SS09N	4SSJ10	4SSM06	4SSP04
4PSJ61	4PSM17	4SS100	4SSJ11	4SSM07	4SSP05
4PSJ62	4PSM18	4SS16N	4SSJ12	4SSM08	4SSP06
4PSJ63	4PSM19	4SS200	4SSJ13	4SSM09	4SSP07

4SSP08	4USAB1	4USJ25	4USM22	4WS04M	5AS104
4SSP09	4USAB2	4USJ26	4USM23	4WS05M	5AS105
4SSP10	4USAB3	4USJ27	4USM24	4WS06M	5AS106
4SSPRN	4USAB4	4USJ28	4USN01	4WS200	5AS107
4SSQ01	4USD03	4USJ29	4USN06	4WSA01	5AS108
4SSR01	4USE02	4USJ30	4USO02	4WSA02	5AS109
4SSR02	4USE03	4USJ31	4USO03	4WSAB1	5AS110
4SSR03	4USE04	4USJ32	4USO07	4WSAB3	5AS111
4SSR04	4USG01	4USK02	4USO08	4WSAB4	5AS112
4SSR06	4USG02	4USK07	4USO09	4WSAB5	5AS113
4SSR07	4USG03	4USK09	4USO10	4WSB01	5AS114
4SSR08	4USG05	4USK11	4USP01	4WSB03	5AS115
4SSS02	4USG07	4USK12	4USP02	4WSB04	5AS116
4SSS07	4USG10	4USL01	4USP03	4WSB05	5AS117
4SSU01	4USH01	4USL02	4USP04	4WSD01	5AS118
4SSU02	4USH03	4USL03	4USP05	4WSD05	5AS119
4SSV01	4USH04	4USL04	4USP06	4WSD06	5AS120
4SSV02	4USH05	4USL05	4USP07	4WSD07	5AS121
4SSX01	4USH06	4USL06	4USP08	4WSD09	5AS122
4SSX02	4USH07	4USL07	4USP09	4WSD10	5AS123
4US01M	4USJ01	4USL08	4USP10	4WSD11	5AS124
4US02M	4USJ02	4USL10	4USP11	4WSD12	5AS125
4US03M	4USJ03	4USL20	4USP12	4WSD14	5AS15N
4US04M	4USJ04	4USM01	4USP13	4WSE01	5AS18N
4US05M	4USJ05	4USM02	4USP14	4WSG01	5AS201
4US100	4USJ06	4USM03	4USP15	4WSG02	5AS203
4US102	4USJ08	4USM04	4USP16	4WSG04	5AS204
4US103	4USJ09	4USM05	4USP17	4WSG07	5AS211
4US104	4USJ10	4USM06	4USP18	4WSG08	5AS212
4US105	4USJ11	4USM07	4USR02	4WSI01	5AS213
4US107	4USJ12	4USM08	4USR03	4WSI26	5AS214
4US108	4USJ13	4USM09	4USR04	4WSI28	5AS215
4US109	4USJ14	4USM10	4USS03	4WSL01	5AS216
4US13N	4USJ15	4USM11	4USS04	4WSMHP	5AS218
4US16N	4USJ16	4USM13	4USS05	5AS02M	5AS26N
4US200	4USJ17	4USM14	4USV01	5AS02N	5AS300
4US201	4USJ18	4USM15	4USV02	5AS03N	5AS301
4US202	4USJ19	4USM16	4USV03	5AS05N	5AS302
4US203	4USJ20	4USM17	4USX01	5AS06N	5AS303
4US204	4USJ21	4USM18	4WS01M	5AS100	5AS305
4US205	4USJ22	4USM19	4WS01N	5AS101	5AS306
4US300	4USJ23	4USM20	4WS02M	5AS102	5AS307
4US301	4USJ24	4USM21	4WS03M	5AS103	5AS308

5AS309	5ASL01	5ASP02	5ASS06	5DS03M	5DS208
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5AS310	5ASL03	5ASP04	5ASS11	5DS04M	5DS211
5AS312	5ASL04	5ASP05	5ASS13	5DS06N	5DS212
5AS31N	5ASL05	5ASP06	5AST01	5DS100	5DS300
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5ASG01	5ASM01	5ASP11	5AST06	5DS105	5DS305
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5ASG03	5ASM03	5ASP13	5AST08	5DS107	5DS307
5ASG04	5ASM04	5ASP15	5AST09	5DS108	5DS308
5ASG05	5ASM05	5ASP17	5AST10	5DS109	5DS309
5ASG06	5ASM06	5ASP18	5AST11	5DS110	5DS310
5ASH01	5ASM07	5ASP19	5AST12	5DS111	5DS311
5ASJ02	5ASM11	5ASP22	5AST13	5DS112	5DS312
5ASJ03	5ASM12	5ASP23	5AST14	5DS113	5DS313
5ASJ04	5ASM14	5ASP36	5AST15	5DS114	5DS314
5ASJ05	5ASM15	5ASP37	5AST16	5DS115	5DS315
5ASJ06	5ASM16	5ASP38	5AST17	5DS116	5DS316
5ASJ09	5ASM17	5ASP42	5AST18	5DS117	5DS317
5ASJ11	5ASM19	5ASP44	5AST19	5DS118	5DS318
5ASJ12	5ASM36	5ASQ01	5AST20	5DS119	5DS319
5ASJ13	5ASN01	5ASQ02	5ASU02	5DS11N	5DS320
5ASJ15	5ASN02	5ASQ04	5ASU03	5DS120	5DS321
5ASJ16	5ASN03	5ASR01	5ASU07	5DS121	5DS322
5ASJ17	5ASN04	5ASR02	5ASV01	5DS122	5DS323
5ASJ18	5ASN05	5ASR03	5ASV02	5DS123	5DS324
5ASJ29	5ASN06	5ASR04	5ASW01	5DS124	5DS325
5ASJ36	5ASN07	5ASR05	5ASW02	5DS125	5DS326
5ASJ39	5ASN32	5ASR06	5ASW03	5DS126	5DS327
5ASK01	5ASN36	5ASR07	5ASW04	5DS127	5DS328
5ASK02	5ASO01	5ASR08	5ASW05	5DS128	5DS329
5ASK05	5ASO02	5ASR09	5ASW06	5DS129	5DS330
5ASK06	5ASO03	5ASR10	5ASW07	5DS130	5DS331
5ASK08	5ASO04	5ASR11	5ASX01	5DS201	5DS332
5ASK10	5ASO06	5ASR12	5ASY01	5DS202	5DS333
5ASK11	5ASO07	5ASS01	5ASY03	5DS203	5DS334
5ASK21	5ASO08	5ASS02	5DS01M	5DS204	5DS335
5ASK23	5ASO09	5ASS03	5DS01N	5DS205	5DS336
5ASK24	5ASO31	5ASS04	5DS02M	5DS206	5DS337
5ASK25	5ASP01	5ASS05	5DS02N	5DS207	5DS338

5DS339	5DSH03	5DSM11	5DSP21	5DSV02	5IS09N
5DS340	5DSH04	5DSM12	5DSP22	5DSV03	5IS100
5DS341	5DSH05	5DSM13	5DSP23	5DSV04	5IS101
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5DS343	5DSH07	5DSM16	5DSQ01	5DSV06	5IS103
5DS344	5DSH09	5DSM19	5DSR01	5DSV07	5IS104
5DS345	5DSI02	5DSM20	5DSR02	5DSV08	5IS105
5DS346	5DSJ01	5DSM21	5DSR03	5DSV09	5IS106
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5DS349	5DSJ04	5DSM25	5DSR06	5DSV14	5IS109
5DS350	5DSJ05	5DSM27	5DSR07	5DSW02	5IS10M
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5DS354	5DSJ09	5DSN03	5DSS01	5DSX02	5IS112
5DS355	5DSJ10	5DSN04	5DSS02	5DSX03	5IS113
5DS356	5DSJ11	5DSN05	5DSS03	5DSY01	5IS114
5DS357	5DSJ13	5DSO01	5DSS04	5DSY02	5IS115
5DS358	5DSJ14	5DSO02	5DSS05	5DSY04	5IS116
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5DS40N	5DSJ16	5DSO04	5DSS07	5DSY06	5IS118
5DS41N	5DSK01	5DSO05	5DSS08	5DSY07	5IS119
5DS44N	5DSK02	5DSO06	5DSS09	5DSY08	5IS11M
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5DSG02	5DSM02	5DSP10	5DST05	5IS04N	5IS12M
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5IS201	5ISAB3	5ISG33	5ISJ14	5ISK09	5ISL12
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5IS204	5ISD02	5ISH01	5ISJ17	5ISK13	5ISL15
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5IS207	5ISD08	5ISH04	5ISJ20	5ISK17	5ISL19
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5IS24M	5ISE02	5ISH18	5ISJ28	5ISK29	5ISL29
5IS25M	5ISG01	5ISH19	5ISJ29	5ISK30	5ISL30
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5IS26M	5ISG03	5ISH21	5ISJ31	5ISK32	5ISL33
5IS26N	5ISG04	5ISH22	5ISJ32	5ISK33	5ISL34
5IS300	5ISG05	5ISH26	5ISJ33	5ISK34	5ISL35
5IS301	5ISG06	5ISH28	5ISJ34	5ISK35	5ISM01
5IS302	5ISG07	5ISH30	5ISJ35	5ISK36	5ISM02
5IS303	5ISG08	5ISH31	5ISJ36	5ISK37	5ISM03
5IS304	5ISG10	5ISH34	5ISJ37	5ISK38	5ISM04
5IS305	5ISG11	5ISH35	5ISJ39	5ISK39	5ISM05
5IS307	5ISG12	5ISI01	5ISJ40	5ISK40	5ISM06
5IS308	5ISG13	5ISI04	5ISJ41	5ISK41	5ISM07
5IS309	5ISG15	5ISI06	5ISJ42	5ISK42	5ISM08
5IS30N	5ISG16	5ISI09	5ISJ43	5ISK45	5ISM09
5IS310	5ISG17	5ISI10	5ISJ44	5ISK46	5ISM10
5IS311	5ISG18	5ISJ01	5ISJ46	5ISK47	5ISM11
5IS312	5ISG19	5ISJ02	5ISJ47	5ISK48	5ISM12
5IS313	5ISG20	5ISJ03	5ISJ48	5ISK49	5ISM13
5IS314	5ISG21	5ISJ04	5ISJ49	5ISL01	5ISM14
5IS315	5ISG22	5ISJ05	5ISJ50	5ISL03	5ISM15
5IS316	5ISG23	5ISJ06	5ISK01	5ISL04	5ISM16
5IS317	5ISG24	5ISJ07	5ISK02	5ISL05	5ISM17
5IS318	5ISG25	5ISJ08	5ISK03	5ISL06	5ISM18
5IS319	5ISG27	5ISJ09	5ISK04	5ISL07	5ISM19
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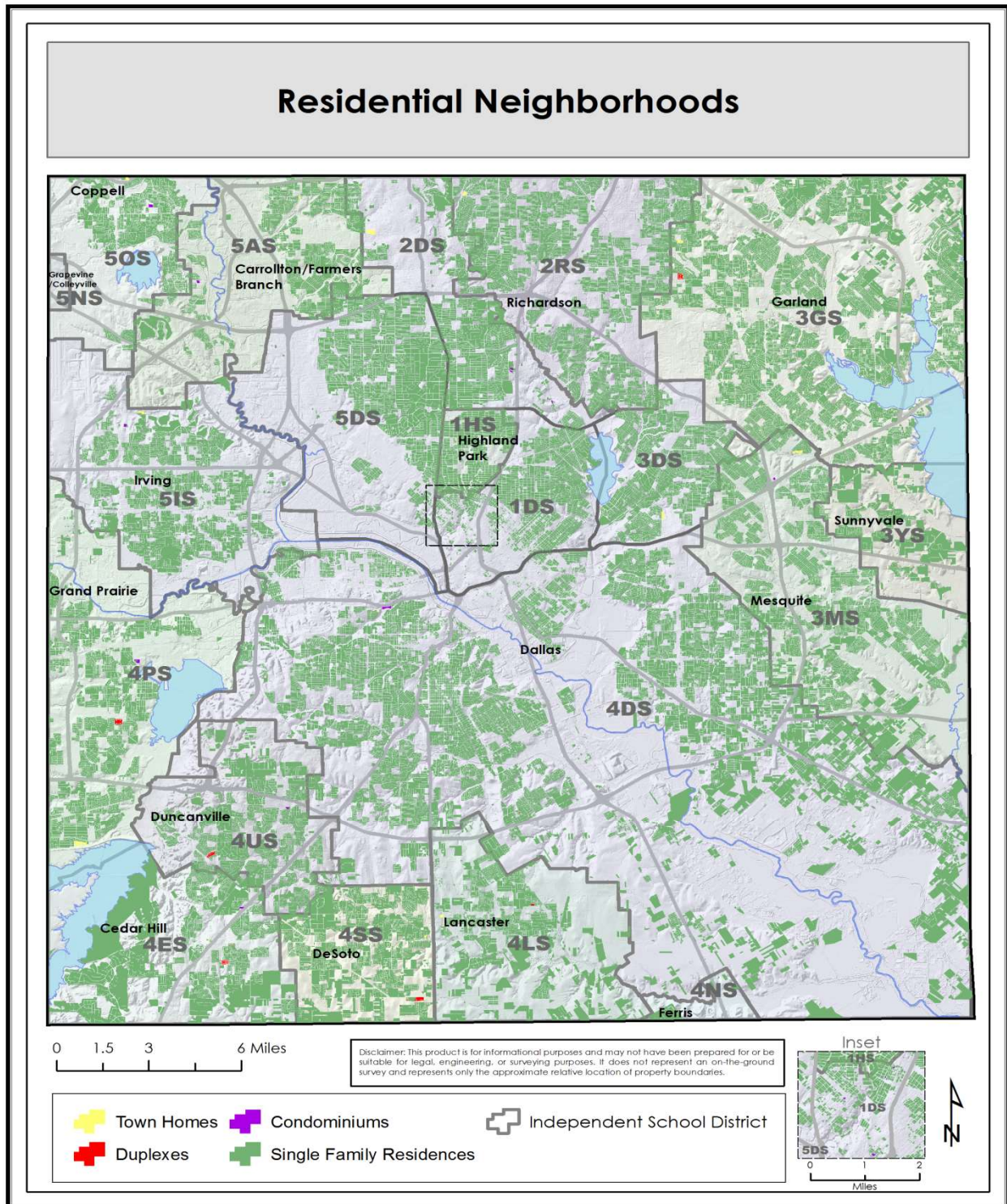
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5ISM25	5ISP22	5OS100	5OSM13	5OSR11	5OST13
5ISM26	5ISP23	5OS101	5OSM14	5OSR12	5OST14
5ISM27	5ISP24	5OS102	5OSM15	5OSR13	5OST15
5ISM28	5ISP25	5OS103	5OSM16	5OSS01	5OST16
5ISM29	5ISP26	5OS104	5OSN01	5OSS02	5OST17
5ISM30	5ISP27	5OS105	5OSN02	5OSS03	5OST18
5ISM31	5ISP28	5OS106	5OSN03	5OSS04	5OST19
5ISM32	5ISR01	5OS107	5OSN04	5OSS05	5OST20
5ISM33	5ISR02	5OS108	5OSO01	5OSS06	5OST21
5ISM34	5ISR03	5OS109	5OSO02	5OSS07	5OSU01
5ISM35	5ISR04	5OS201	5OSO03	5OSS08	5OSU02
5ISM36	5ISR05	5OS202	5OSO04	5OSS09	5OSU03
5ISN01	5ISR06	5OS203	5OSO05	5OSS10	5OSU04
5ISN02	5ISR07	5OS300	5OSO06	5OSS11	5OSU05
5ISN03	5ISS01	5OS301	5OSO07	5OSS12	5OSU06
5ISO01	5ISS02	5OS302	5OSP01	5OSS13	5OSU07
5ISO02	5ISS04	5OS303	5OSP02	5OSS14	5OSU08
5ISO03	5ISS05	5OS304	5OSP03	5OSS15	5OSU09
5ISO05	5ISS06	5OSAB1	5OSP04	5OSS16	5OSU10
5ISO06	5ISS09	5OSAB3	5OSP05	5OSS17	5OSU11
5ISO07	5ISS10	5OSG04	5OSP06	5OSS18	5OSU12
5ISO10	5IST01	5OSJ01	5OSP07	5OSS19	5OSU13
5ISP01	5ISU01	5OSJ02	5OSP08	5OSS20	5OSU14
5ISP02	5ISU03	5OSJ03	5OSP10	5OSS21	5OSU15
5ISP03	5ISV01	5OSJ08	5OSP11	5OSS22	5OSU16
5ISP04	5ISW01	5OSJ09	5OSP12	5OSS23	5OSU17
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5ISP08	5ISW05	5OSL03	5OSQ01	5OSS27	5OSW03
5ISP09	5ISW06	5OSL04	5OSQ02	5OSS28	6DS001
5ISP10	5ISY01	5OSL05	5OSQ03	5OST01	6DS002
5ISP11	5ISY02	5OSM01	5OSQ05	5OST02	6DS003
5ISP12	5ISY03	5OSM02	5OSR01	5OST03	6DS004
5ISP13	5ISY04	5OSM03	5OSR02	5OST04	6DS005
5ISP14	5OS01M	5OSM04	5OSR03	5OST05	6DS006
5ISP15	5OS01N	5OSM05	5OSR04	5OST06	6DS007
5ISP16	5OS02M	5OSM06	5OSR05	5OST07	6DS008
5ISP17	5OS03M	5OSM08	5OSR06	5OST08	6DS009
5ISP18	5OS03N	5OSM09	5OSR07	5OST09	6DS010

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6DS025	6DS042	6DS059	6DS076	6DS094	6DS111
6DS026	6DS043	6DS060	6DS077	6DS095	6DS112
6DS027	6DS044	6DS061	6DS078	6DS096	



## 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

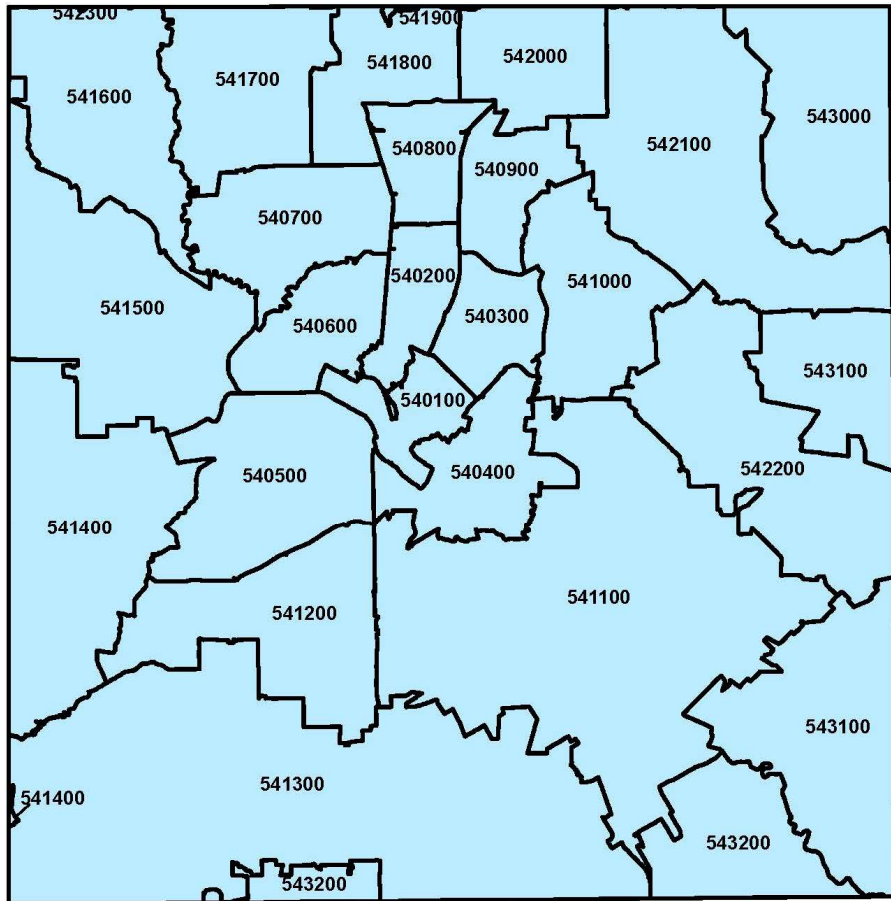
LMA's				
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1AS002	1DSE05	1DSH16	1DSJ7E	1ISD08
1AS003	1DSE06	1DSH17	1DSJ7F	1ISD09
1AS004	1DSE07	1DSH18	1DSJ7G	1OS001
1AS005	1DSE08	1DSH19	1DSK04	1OS002
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1AS008	1DSE11	1DSH5A	1DSK07	1OS005
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1ASVR1	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
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2DSM14	2DSR01	2OV001	3DSK03	3MSB02	3RSF03
2DSM5A	2DSR02	2PS001	3DSK04	3MSB03	3RSF04
2DSM6A	2DSR04	2PS002	3DSL01	3MSC01	3YSB04
2DSN05	2DSR05	2PS003	3DSL02	3MSC02	3YSB05
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2DSN12	2DSR12	2PS03A	3GSC01	3MSD05	
2DSN13	2DSR13	2PS04A	3GSC02	3MSE01	
2DSN14	2DSR14	2PS05A	3GSC03	3MSE02	
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## Appendix E

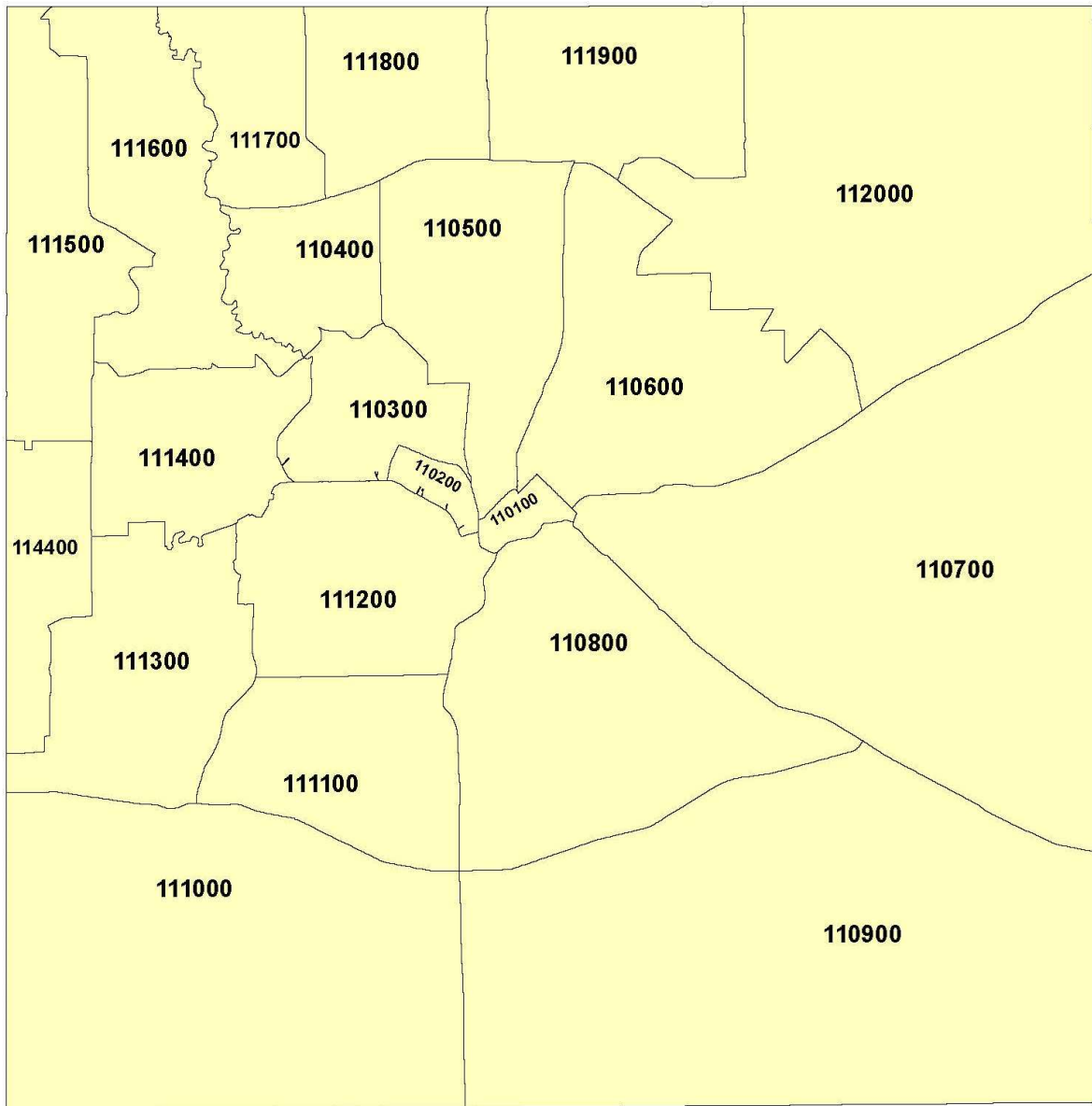
### Commercial IMA and LMA Maps

#### APARTMENT IMPROVEMENT SUBMARKETS



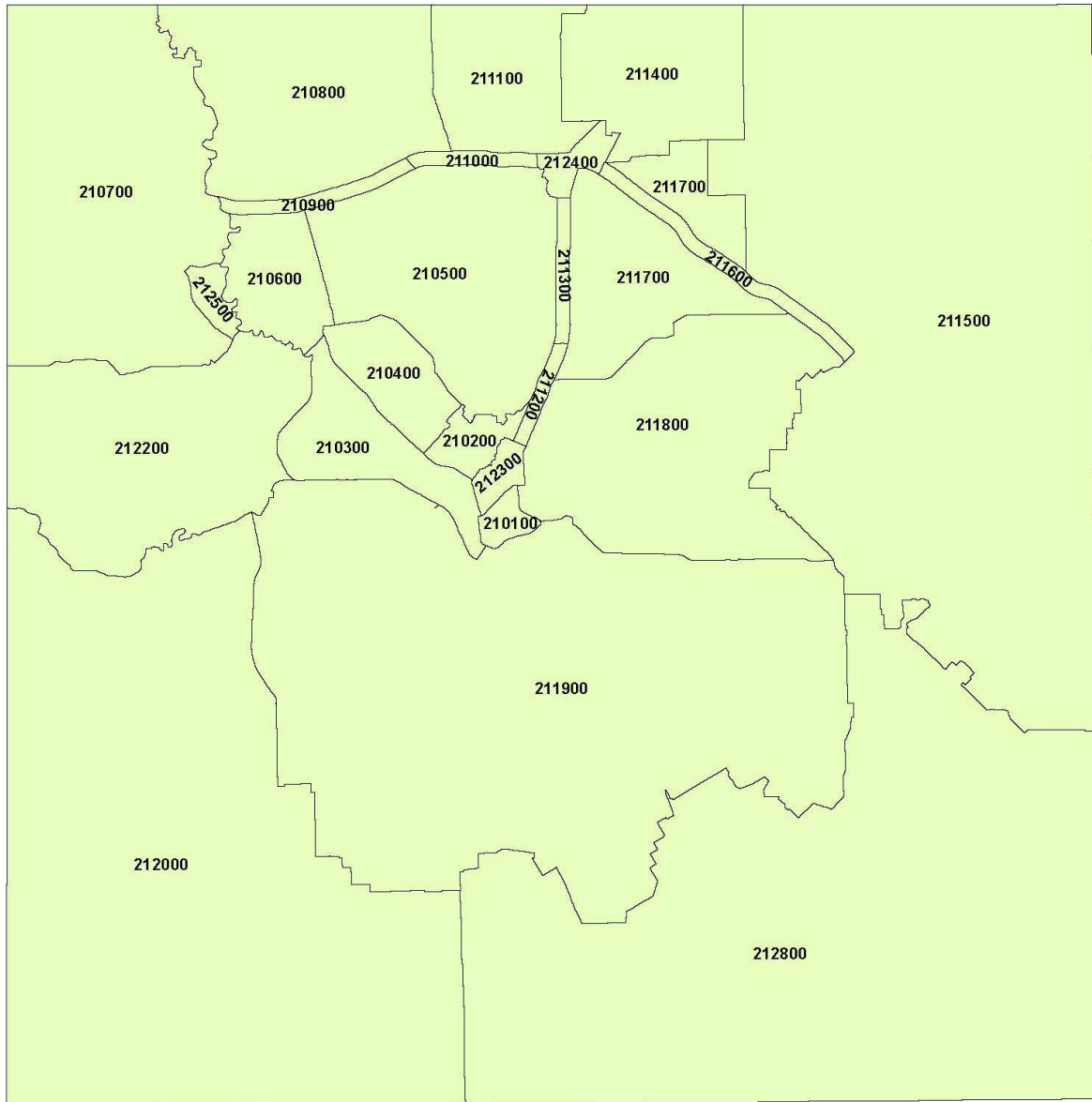


## INDUSTRIAL IMPROVEMENT SUBMARKETS

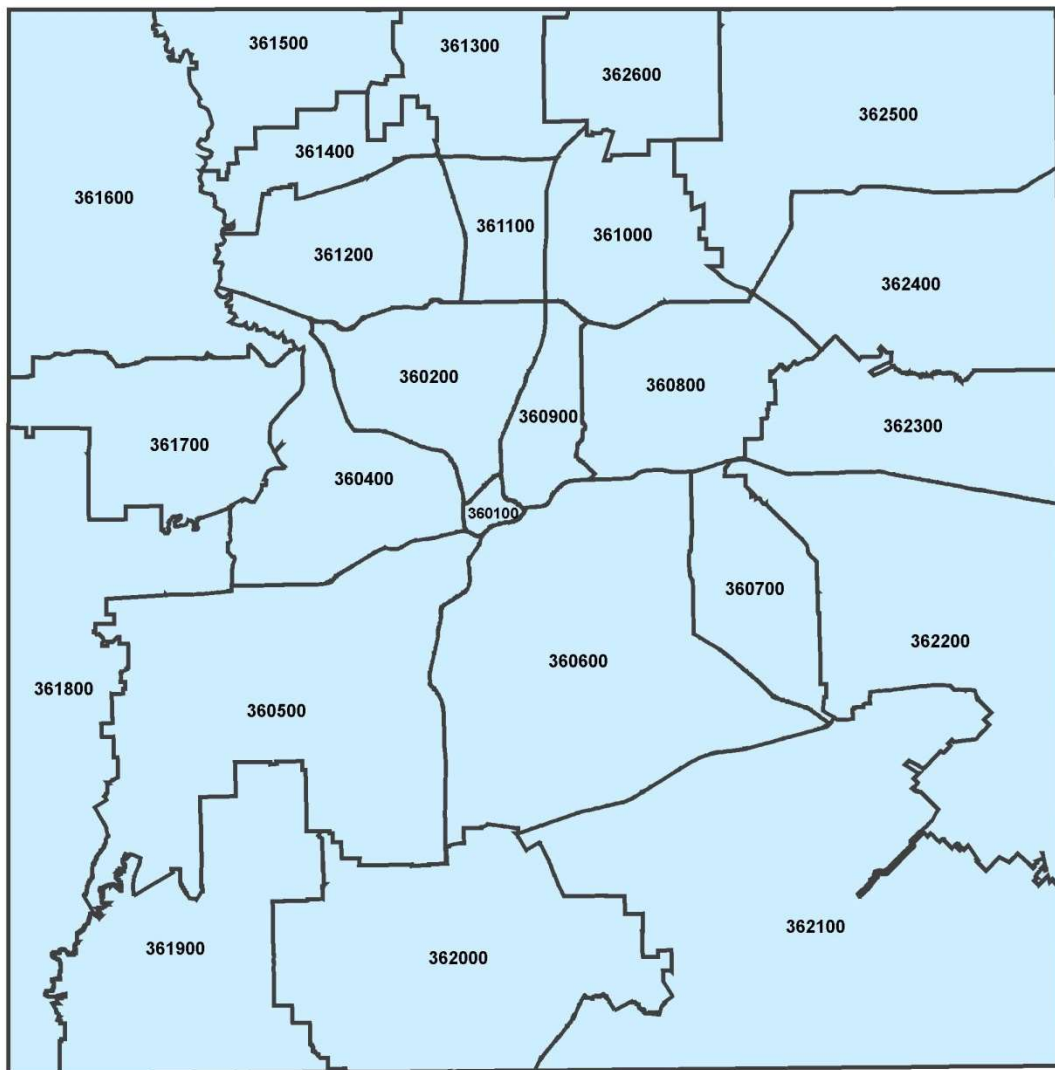




## OFFICE IMPROVEMENT SUBMARKETS



## RETAIL IMPROVEMENT SUBMARKETS









## **Appendix G**

### **DCAD 2023 and 2024 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**  
**2022 - 2023 APPRAISAL YEAR**

Mon	Aug 01, 2022	- Management Plan Year 2022-2023 begins.
Wed	Aug 10, 2022	- Board of Directors' meeting. Public hearing on 2023-2024 Reappraisal Plan.
Thu	Aug 18, 2022	- Data Entry Cutoff Supplemental #08-2022.
Wed	Aug 31, 2022	- ARB Full Board approves Supplemental #08-2022.
		- Fiscal Year 2022-2023 ends.
Thu	Sep 01, 2022	- Fiscal Year 2022-2023 begins.
		- Statutory appraisal date for certain BPP inventory properties (Sec. 23.12).
Mon	Sep 05, 2022	- Labor Day holiday.
Wed	Sep 14, 2022	- Data Entry Cutoff Supplemental #09-2022.
Thu	Sep 22, 2022	- ARB Full Board approves Supplemental #09-2022.
Fri	Sep 30, 2022	- 2022 Property Tax Bills are mailed to taxpayers (approximate date).
Wed	Oct 12, 2022	- Board of Directors' meeting.
Thu	Oct 13, 2022	- Data Entry Cutoff Supplemental #10-2022.
Thu	Oct 20, 2022	- ARB Full Board approves Supplemental #10-2022.
Sun	Nov 06, 2022	- Daylight Saving Ends.
Wed	Nov 09, 2022	- Board of Directors' meeting.
		- Data Entry Cutoff Supplemental #11-2022.
Wed	Nov 16, 2022	- Fall Taxing Entity Meeting.
Thu	Nov 17, 2022	- ARB Full Board approves Supplemental #11-2022.
Thu-Fri	Nov 24-25, 2022	- Thanksgiving Day holidays.
Wed	Dec 14, 2022	- Data Entry Cutoff Supplemental #12-2022.
Thu	Dec 22, 2022	- ARB Full Board approves Supplemental #12-2022.
Fri-Mon	Dec 23 - 26, 2022	- Christmas holidays (Observed).
Sun	Jan 01, 2023	- Assessment Date.
Mon	Jan 02, 2023	- New Year's Day (Observed)
Tue	Jan 03, 2023	- BPP Renditions and Freeport Exemption Applications are mailed.
Wed	Jan 11, 2023	- Data Entry Cutoff Supplemental # 01-2023.
		- Board of Directors' meeting. Board member election results announced.
Mon	Jan 16, 2023	- Martin Luther King, Jr. Day holiday.
Thu	Jan 19, 2023	- ARB Full Board approves Supplemental #01-2023.
Wed	Feb 01, 2023	- Unpaid 2022 Property Tax Bills become delinquent and subject to penalties and interest.

**DALLAS CENTRAL APPRAISAL DISTRICT**  
**KEY APPRAISAL DATES**  
**2022 - 2023 APPRAISAL YEAR**

Wed	Feb 08, 2023	- Homestead Exemption Applications are mailed.
Thu	Feb 16, 2023	- Data Entry Cutoff Supplemental #02-2023. - Board of Directors' meeting. - ARB Full Board approves Supplemental #02-2023.
Wed	Mar 15, 2023	- Data Entry Cutoff Supplemental #03-2023
Thu	Mar 23, 2023	- ARB Full Board approves Supplemental #03-2023.
Thu	Mar 30, 2023	- Data Entry Cutoff for Mail 1.
Mon	Apr 03, 2023	- Data Entry Cutoff Supplemental #04-2023.
Fri	Apr 07, 2023	- Good Friday Holiday.
Wed	Apr 12, 2023	- Board of Directors' meeting. Public hearing on proposed Fiscal Year 2023-2024 budget.
Thu	Apr 13, 2023	- Spring Taxing Entity Meeting.
Sat	Apr 15, 2023	- 1st Mailing Notices of Appraised Value are mailed. - Online 2023 notices for real property are available on DCAD Website at end of day. - Deadline for filing renditions and requests for BPP rendition extensions.
Mon	Apr 17, 2023	- ARB Period begins (4-1/2 day work week).
Tue	Apr 18, 2023	- Extended hours for Residential to 6:00 P.M.
Thu	Apr 20, 2023	- ARB Full Board receives 1st Mailing appraisal records (real property) and approves Supplemental #04-2023. - Preliminary Certification Estimates are released to the taxing entities.
Sat	Apr 22, 2023	- Extended hours for Residential (8:00 A.M. to Noon).
Tue	Apr 25, 2023	- Extended hours for Residential to 6:00 P.M.
Sat	Apr 29, 2023	- Extended hours for Residential (8:00 A.M. to Noon).
Tue	May 02, 2023	- Extended hours for Residential to 6:00 P.M. - Data entry cutoff for 2nd Mailing of Appraisal Notices (BPP accounts without rendition extensions). - Data entry cutoff for 1st Preliminary EVR. - Data Entry Cutoff Supplemental #05-2023
Sat	May 06, 2023	- Extended hours for Residential (8:00 A.M. to Noon).
Tue	May 09, 2023	- First Preliminary EVR is available to the taxing entities on the DCAD Website.
Tue	May 09, 2023	- 2nd Mailing Notices of Appraised Value are mailed. - 2023 proposed values for 2nd Mailing are available on DCAD Website at the end of the day. - Extended hours for Residential to 6:00 P.M.
Thu	May 11, 2023	- Board of Directors' meeting. Fiscal Year 2023-2024 budget adopted.



**DALLAS CENTRAL APPRAISAL DISTRICT**  
**KEY APPRAISAL DATES**  
**2022 - 2023 APPRAISAL YEAR**

Thu	May 11, 2023	- ARB Full Board accepts 2nd Mailing (BPP) appraisal records, and approves Supplemental #05-2023.
Mon	May 15, 2023	- Protest deadline for 1st Mailing Notices of Appraised Value. - Deadline for filing BPP renditions with timely extensions.
Wed	May 17, 2023	- Data Entry cutoff 2nd Preliminary EVR.
Fri	May 19, 2023	- Data Entry Cutoff for 3rd Mail of Appraisal Notices.
Mon	May 22, 2023	- ARB Hearings begin for Real Property (tentative date).
Fri	May 26, 2023	Second Preliminary EVR and Preliminary Certification output is available to taxing entities on DCAD Website. - 3rd Mail Notices of Appraised Value are mailed.  - 2023 proposed values for 3rd Mailing are available on DCAD Website at the end of the day.
Mon	May 29, 2023	- Memorial Day Holiday
Fri	Jun 02, 2023	- ARB Full Board receives 3rd Mailing (real property and BPP) appraisal records.
Sat	Jun 03, 2023	- Saturday ARB Hearings for Residential accounts (tentative date).
Wed	Jun 07, 2023	- Data Entry Cutoff Supplemental #06-2023.
Fri	Jun 09, 2023	- Protest deadline for 2nd Mailing Notices of Appraised Value.
Sat	Jun 10, 2023	- Saturday ARB Hearings for Residential accounts (tentative date).
Fri	Jun 16, 2023	- ARB Full Board approves Supplemental #06-2023, and accepts 3rd Mailing of Appraisal Notices.
Mon	Jun 19, 2023	- Juneteenth Holiday
Sat	Jun 24, 2023	- Saturday ARB Hearings for Residential accounts (tentative date).
Mon	Jun 26, 2023	- Protest deadline for 3rd Mailing Notices of Appraised Value.
Tue	Jul 04, 2023	- Independence Day
Wed	Jul 12, 2023	- Data Entry Cutoff Supplemental #07-2023.
Fri	Jul 14, 2023	- Last day of ARB Hearings (tentative date). - Data entry cutoff for Certification.
Thu	Jul 20, 2023	- ARB Full Board approves 2023 appraisal records and submits records to Chief Appraiser for Certification of Appraisal Rolls. ARB approves Supplemental #07-2023.
Fri	Jul 21, 2023	- Chief Appraiser certifies the 2023 Appraisal Rolls.
Tue	Jul 25, 2023	- 2023 Certified EVR's, Certified Appraisal Rolls and other Certification reports are available to the taxing entities on the DCAD Website.
Sun	Jul 30, 2023	- Management Plan Year 2022-2023 ends.
Mon	Jul 31, 2023	- Management Plan Year 2023-2024 begins.
Fri	Aug 04, 2023	- Tax Rate Information Postcards mailed to Taxpayers.
<b>Note: Most dates are subject to change if circumstances warrant.</b>		



**DALLAS CENTRAL APPRAISAL DISTRICT**  
**KEY APPRAISAL DATES**  
**2023 - 2024 APPRAISAL YEAR**

Wed	Aug 09, 2023	- Board of Directors' meeting. Public hearing on 2024-2025 Reappraisal Plan.
Thu	Aug 17, 2023	- Data Entry Cutoff Supplemental #08-2023.
Thu	Aug 31, 2023	- ARB Full Board approves Supplemental #08-2023.
		- Fiscal Year 2022-2023 ends.
Fri	Sep 01, 2023	- Fiscal Year 2023-2024 begins.
		- Statutory appraisal date for certain BPP inventory properties (Sec. 23.12).
Mon	Sep 04, 2023	- Labor Day holiday.
Wed	Sep 13, 2023	- Data Entry Cutoff Supplemental #09-2023.
Thu	Sep 21, 2023	- ARB Full Board approves Supplemental #09-2023.
Fri	Sep 29, 2023	- 2023 Property Tax Bills are mailed to taxpayers (approximate date).
Wed	Oct 11, 2023	- Board of Directors' meeting.
Thu	Oct 12, 2023	- Data Entry Cutoff Supplemental #10-2023.
Thu	Oct 19, 2023	- ARB Full Board approves Supplemental #10-2023.
Sun	Nov 05, 2023	- Daylight Saving Ends.
Wed	Nov 08, 2023	- Board of Directors' meeting.
		- Data Entry Cutoff Supplemental #11-2023.
Wed	Nov 15, 2023	- Fall Taxing Entity Meeting.
Thu	Nov 16, 2023	- ARB Full Board approves Supplemental #11-2023.
Thu-Fri	Nov 23-24, 2023	- Thanksgiving Day holidays.
Wed	Dec 13, 2023	- Data Entry Cutoff Supplemental #12-2023.
Thu	Dec 21, 2023	- ARB Full Board approves Supplemental #12-2023.
Mon - Tue	Dec 25 -26, 2023	- Christmas holidays (Observed).
Mon	Jan 01, 2024	- Assessment Date.
Mon	Jan 01, 2024	- New Year's Day Holiday
Tue	Jan 02, 2024	- BPP Renditions and Freeport Exemption Applications are mailed.
Wed	Jan 10, 2024	- Data Entry Cutoff Supplemental # 01-2024.
		- Board of Directors' meeting. Board member election results announced.
Mon	Jan 15, 2024	- Martin Luther King, Jr. Day holiday.
Thu	Jan 18, 2024	- ARB Full Board approves Supplemental #01-2024.

**DALLAS CENTRAL APPRAISAL DISTRICT**  
**KEY APPRAISAL DATES**  
**2023 - 2024 APPRAISAL YEAR**

Wed	Jan 31, 2024	- Unpaid 2023 Property Tax Bills become delinquent and subject to penalties and interest.
Wed	Feb 07, 2024	- Homestead Exemption Applications are mailed.
Thu	Feb 15, 2024	- Data Entry Cutoff Supplemental #02-2024.
		- Board of Directors' meeting.
Thu	Mar 14, 2024	- ARB Full Board approves Supplemental #02-2024.
Fri	Mar 22, 2024	- Data Entry Cutoff Supplemental #03-2024
Fri	Mar 29, 2024	- ARB Full Board approves Supplemental #03-2024.
		- Data Entry Cutoff for Mail 1.
Tue	Apr 02, 2024	- Data Entry Cutoff Supplemental #04-2024.
Sat	Apr 06, 2024	- Good Friday Holiday.
Thu	Apr 11, 2024	- Board of Directors' meeting. Public hearing on proposed Fiscal Year 2024-2025 budget.
Thu	Apr 11, 2024	- Spring Taxing Entity Meeting.
Mon	Apr 15, 2024	- 1st Mailing Notices of Appraised Value are mailed.
		- Online 2024 notices for real property are available on DCAD Website at end of day.
		- Deadline for filing renditions and requests for BPP rendition extensions.
Mon	Apr 15, 2024	- ARB Period begins (4-1/2 day work week).
Tue	Apr 16, 2024	- Extended hours for Residential to 6:00 P.M.
Fri	Apr 19, 2024	- ARB Full Board receives 1st Mailing appraisal records (real property) and approves Supplemental #04-2024.
		- Preliminary Certification Estimates are released to the taxing entities.
Sat	Apr 20, 2024	- Extended hours for Residential (8:00 A.M. to Noon).
Tue	Apr 23, 2024	- Extended hours for Residential to 6:00 P.M.
Sat	Apr 27, 2024	- Extended hours for Residential (8:00 A.M. to Noon).
Tue	Apr 30, 2024	- Extended hours for Residential to 6:00 P.M.
		- Data entry cutoff for 2nd Mailing of Appraisal Notices (BPP accounts without rendition extensions).
		- Data entry cutoff for 1st Preliminary EVR.
		- Data Entry Cutoff Supplemental #05-2024
Sat	May 04, 2024	- Extended hours for Residential (8:00 A.M. to Noon).
Mon	May 06, 2024	- First Preliminary EVR is available to the taxing entities on the DCAD Website.
Mon	May 06, 2024	- 2nd Mailing Notices of Appraised Value are mailed.

**DALLAS CENTRAL APPRAISAL DISTRICT**  
**KEY APPRAISAL DATES**  
**2023 - 2024 APPRAISAL YEAR**

		<ul style="list-style-type: none"> <li>- 2024 proposed values for 2nd Mailing are available on DCAD Website at the end of the day.</li> <li>- Extended hours for Residential to 6:00 P.M.</li> </ul>
Thu	May 09, 2024	- Board of Directors' meeting. Fiscal Year 2024-2025 budget adopted.
Thu	May 09, 2024	- ARB Full Board accepts 2nd Mailing (BPP) appraisal records, and approves Supplemental #05-2024.
Wed	May 15, 2024	<ul style="list-style-type: none"> <li>- Protest deadline for 1st Mailing Notices of Appraised Value.</li> <li>- Deadline for filing BPP renditions with timely extensions.</li> </ul>
Thu	May 16, 2024	- Data Entry cutoff 2nd Preliminary EVR.
Fri	May 17, 2024	- Data Entry Cutoff for 3rd Mail of Appraisal Notices.
Mon	May 20, 2024	- ARB Hearings begin for Real Property (tentative date).
Fri	May 24, 2024	<ul style="list-style-type: none"> <li>- Second Preliminary EVR and Preliminary Certification output is available to taxing entities on DCAD Website.</li> <li>- 3rd Mail Notices of Appraised Value are mailed.</li> </ul>
		<ul style="list-style-type: none"> <li>- 2024 proposed values for 3rd Mailing are available on DCAD Website at the end of the day.</li> </ul>
Mon	May 27, 2024	- Memorial Day Holiday
Fri	May 31, 2024	- ARB Full Board receives 3rd Mailing (real property and BPP) appraisal records.
Sat	Jun 01, 2024	- Saturday ARB Hearings for Residential accounts (tentative date).
Thu	Jun 06, 2024	- Data Entry Cutoff Supplemental #06-2024.
Sat	Jun 08, 2024	- Protest deadline for 2nd Mailing Notices of Appraised Value.
Sun	Jun 09, 2024	- Saturday ARB Hearings for Residential accounts (tentative date).
Sat	Jun 15, 2024	- ARB Full Board approves Supplemental #06-2024, and accepts 3rd Mailing of Appraisal Notices.
Tue	Jun 18, 2024	- Juneteenth Holiday
Mon	Jun 24, 2024	- Saturday ARB Hearings for Residential accounts (tentative date).
Wed	Jun 26, 2024	- Protest deadline for 3rd Mailing Notices of Appraised Value.
Thu	Jul 04, 2024	- Independence Day
Thu	Jul 11, 2024	- Data Entry Cutoff Supplemental #07-2024.
Sat	Jul 13, 2024	<ul style="list-style-type: none"> <li>- Last day of ARB Hearings (tentative date).</li> <li>- Data entry cutoff for Certification.</li> </ul>
Fri	Jul 19, 2024	- ARB Full Board approves 2024 appraisal records and submits records to Chief Appraiser for Certification of Appraisal Rolls. ARB approves Supplemental #07-2024.
Sat	Jul 20, 2024	- Chief Appraiser certifies the 2024 Appraisal Rolls.
Wed	Jul 24, 2024	- 2024 Certified EVR's, Certified Appraisal Rolls and other Certification reports are available to the taxing entities on the DCAD Website.

**DALLAS CENTRAL APPRAISAL DISTRICT**  
**KEY APPRAISAL DATES**  
**2023 - 2024 APPRAISAL YEAR**

Sun	Jul 28, 2024	- Management Plan Year 2023-2024 ends.
Mon	Jul 29, 2024	- Management Plan Year 2024-2025 begins.
Fri	Aug 02, 2024	- Tax Rate Information Postcards mailed to Taxpayers.
<b>Note: Most dates are subject to change if circumstances warrant.</b>		