

DALLAS CENTRAL APPRAISAL DISTRICT 2015 - 2016 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 10th 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 2015-2016 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 1st. Under the tax code, “market value” means the price at which a property would transfer for cash or its equivalent under prevailing market conditions if:

- exposed for sale in the open market with a reasonable time for the seller to find a purchaser;
- both the seller and the buyer know of all the uses and purposes to which the property is adapted and for which it is capable of being used and of the enforceable restrictions on its use, 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 are required to comply with the mass appraisal standards of USPAP (Standard Six) 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 2015 - 2016 Reappraisal Plan adopted by the Dallas Central Appraisal District Board of Directors will occur no later than September 15, 2014. The assessment dates for the 2015 and 2016 Reappraisal Plan is January 1, 2015 and January 1, 2016 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 2015 and 2016 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 2015-2016 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 30):

- 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. As of the date of this report, 7,107 Residential accounts and 1,022 Commercial accounts have been targeted for reappraisal in 2015 based on a Code 9 and Code Z permit code being established on the account as of January 1, 2014.
- 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 2015 and 2016 that has a last reappraisal of 2012 and 2013 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, 2015 and 2016 Residential and Commercial Reappraisal analysis will be conducted typically in January of 2015 and January 2016. Please see the Appraisal Divisions 2015 and 2016 Reappraisal Plans below for more specific details concerning the 2015 and 2016 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 2014/2015 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 MapAppendix C

Commercial Improved Market Areas and Land Market AreasAppendix D

Commercial LMA and IMA MapsAppendix E

Business Personal Property (BPP) RoutesAppendix F

2015 & 2016 Reappraisal Plan Timeline and Calendar of Key Appraisal EventsAppendix G

The 2014/2015 & 2015/2016 Financial Budgets are adopted annually.

The 2014/2015 & 2015/2016 Management Plans are developed annually. The 2015/2016 Management Plan adopted in August 2015 will reflect any changes to the 2016 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 is also an operating division 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)
- 171 - Appraisal Services (Appraisal & Property Records/Exemption related functions)
- 3 - Technical Services (Litigation functions)
- 15 – 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), 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 813,092 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, Internet website, and Geographical Information System (GIS). 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 10.1). 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, C, 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 another MAP review conducted in 2013. PTAD's Property Value Study (PVS) will occur in 2014 and 2016.

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 90 appraisers and 13 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, Customer Service will handle this request. Management staff updates the divisional manuals 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

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 645,408 residential properties within Dallas County.

Appraisal Resources

- **Personnel** - The Residential appraisal staff consists of 39 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, Condition/Desirability/Utility (CDU) rating, 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 sources such as continuing education in the form of IAAO and Property Tax Assistance Division (PTAD) approved classes and seminars.

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 4,800 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 1st 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, 2014 through December 31, 2014 associated with an account will be inspected and reappraised for the 2015 Appraisal Year. All significant value related building permits issued from January 1, 2015 through December 31, 2015 associated with an account will be inspected and reappraised for the 2016 Appraisal Year. Also, those accounts that were partially complete as of January 1, 2014 and January 1, 2015 will be re-inspected for 2015 and 2016 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, January, and March of 2015 and 2016, 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 2015 and 2016 will be available for review May 1, 2015, and May 1, 2016, 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 doesn't 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 doesn't, 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's 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.

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 2015 and 2016 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 2015 and 2016 below are based on past historical permit and reappraisal activity.

**RESIDENTIAL DIVISION
2015 REAPPRAISAL PLAN**

FIXED TASKS:

NEW CONSTRUCTION:

ACCOUNTS

Permit Inspection	28,850
Permit Remeasure	4,000
Permit Remeasure Complex	175
Permit Office Review	500

VARIABLE TASKS:

REAPPRAISAL:

Reappraisal Office Review	230,000
Reappraisal Inspection	60,000
Reappraisal Remeasure	100
Mobile Home Reappraisal	14,000
Neighborhood Analysis	1,800

ACCOUNT REVIEW:

Account Office Review	20,000
Account Inspection	8,000
Account Remeasure	100

**RESIDENTIAL DIVISION
2016 REAPPRAISAL PLAN**

FIXED TASKS:

NEW CONSTRUCTION:

ACCOUNTS

Permit Inspection	30,000
Permit Remeasure	4,200
Permit Remeasure Complex	175
Permit Office Review	500

VARIABLE TASKS:

REAPPRAISAL:

Reappraisal Office Review	240,000
Reappraisal Inspection	50,000
Reappraisal Remeasure	100
Mobile Home Reappraisal	14,000
Neighborhood Analysis	1,800

ACCOUNT REVIEW:

Account Office Review	20,000
Account Inspection	8,000
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 doesn't involve a building permit or isn't associated with the annual neighborhood reappraisal effort.

Account Review Inspect: Reappraising an account while physically at the site which doesn't involve a building permit or isn't 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 doesn't involve a building permit or isn't associated with the annual neighborhood reappraisal effort and a measurement is required and done.

COMMERCIAL VALUATION PROCESS

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 74,162 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, 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 data bases 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 sources such as continuing education in the form of IAAO and Property Tax Assistance Division (PTAD) approved classes and seminars.

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 data base 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 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. 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.

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, 2014, through December 31, 2014, associated with an account will be inspected and reappraised for the 2015 Appraisal Year. All significant value related building permits issued from January 1, 2015, through December 31, 2015, associated with an account will be inspected and reappraised for the 2016 Appraisal Year. Also, those accounts that were partially complete as of January 1, 2014, and January 1, 2015, will be re-inspected for 2015 and 2016 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 reviews 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, 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 25 office IMA's, 36 retail IMA's, 24 industrial IMA's, 26 apartment IMA's and 66 industrial IMA's identified within the appraisal district. 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 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 the LMA map has been provided in Appendix E. A complete listing of those IMA's and LMA's reappraised in 2015 and 2016 will be available for review May 1, 2015, and May 1, 2016, 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 owner or authorized agent 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 sale doesn't lend itself to the Income Approach to value.

Sales Approach

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

Income Approach

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

analyzes this data to determine market income models for properties based on their physical characteristics and improved market areas. Actual income components for a property are then compared to market indicators and an estimated market value is established via the Income Approach. The Income Approach is typically the preferred method when analyzing typical income producing Commercial properties (Retail, Office, Apartments, Industrial) not only during the reappraisal effort but during the informal meetings with property owner or authorized agent and at the formal Appraisal Review Board hearing.

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 area. 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 2015 and 2016 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 2015 and 2016 below are based on past historical permit and reappraisal activity.

**COMMERCIAL DIVISION
2015 REAPPRAISAL PLAN**

FIXED TASKS:	ACCOUNTS
NEW CONSTRUCTION:	
Average	400
Major	75
Complex	100
No Starts	275
Miscellaneous Permits	5000
Partial Completion Permits	300
Miscellaneous Inspection	300
VARIABLE TASKS:	
LAND REAPPRAISAL:	
Land Pricing – Commercial	23,519
Land Pricing – Residential	1000
Land Inspections	11,348
Land Market Area Analysis	164
Land Deed Research	2500

**COMMERCIAL DIVISION
2015 REAPPRAISAL PLAN**

IMPROVED REAPPRAISAL:	ACCOUNTS
Improved Inspections	12,171
Improved Value Review	12,171
Re-measure	500
Security	300
MISCELLANEOUS:	
Mineral Accounts	1,200
Shared CAD Accounts	50
Sold Properties	6,000

**COMMERCIAL DIVISION
2016 REAPPRAISAL PLAN**

FIXED TASKS:	ACCOUNTS
NEW CONSTRUCTION:	
Average	400
Major	75
Complex	100
No Starts	275
Miscellaneous Permits	5000
Partial Completion Permits	300
Miscellaneous Inspection	300
VARIABLE TASKS:	
LAND REAPPRAISAL:	
Land Pricing – Commercial	26,609
Land Pricing – Residential	1000
Land Inspections	11,501
Land Market Area Analysis	153
Land Deed Research	2,500

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 reinspection 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.

Land Market Area Analysis: The delineation of individual land market areas that will comprise an overall reappraisal area. This also includes the development of land pricing schedules that will be applied to the reappraisal area as well as an overall analysis of equity considerations. This task also includes working splits in order to keep the maps current.

Land Deed Research: The analysis and posting of land sales to the Land Market Area maps. This will

often include the retrieval of deeds for detailed analysis.

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.

Remeasure: The actual remeasure 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

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 93,522 business personal properties 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; Vehicles; and Multi-Location Assets.

Appraisal Resources

- **Personnel** - The personal property staff consists of 31 appraisers and 7 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 93,000 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 7 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.

Reappraisal of the BPP accounts is based on several processes that satisfy the Texas Property Tax Code requirement of reappraisal of all properties at least once every three years.

In order to reappraise all properties every three years, a portion of the BPP accounts are slated for reappraisal based on their business ID type. Business ID types sort businesses that have similar assets into categories that can be appraised using comparable price per square foot data. Grouping accounts for reappraisal in this manner assures that the BPP division reviews accounts across its jurisdiction, rather

than focusing on certain geographic areas.

The BPP Division also reviews 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. The accounts are flagged for reappraisal, and price per foot comparables are used to arrive at the appraised value.

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 typically 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 filed by taxpayers cover approximately 62,000 BPP accounts or approximately 62% of the total account file.

Valuation Approach (Model Specification)

SIC Code Analysis

The Dallas Appraisal District uses four digit numeric codes, originally based on the Standard Industrial Classification (SIC) codes. The derivative of the SIC code classification known as Business Type Codes are used by the Dallas CAD as a way to classify similar types of 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 approximately 403 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 2014.

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 Texas Business Report, trade journals, and other publications are also used to discover personal property. Tax assessors, city and local newspapers, and the public often provide the district information regarding new personal property and other useful facts related to property valuation.

Vehicles

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

Leased and Multi-Location Assets

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

Valuation and Model Development

Cost Schedules

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

Statistical Analysis

Summary statistics including, but not limited to, the median, weighted mean, and standard deviation provide the appraisers an analytical tool by which to determine both the level and uniformity of appraised value by Business Type Code. Review of the standard deviation can discern appraisal uniformity within the business type codes.

Depreciation Schedule and Trending Factors

Business Personal Property

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

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

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

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

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

Mass Appraisal Records System (MARS)

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

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

MARS model values are used in the general business personal property valuation program to estimate

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

Vehicles

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

Leased and Multi-Location Assets

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

Individual Value Review Procedures

Field Review

The Business Personal Property file as 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 there as of January 1 and to make any 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 an individual appraiser. Sub-routes that cover geographic areas with security concerns are worked by two person 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 2015 and 2016 appraisal years. The appraisers drive or walk all streets that are within their assigned geographic route during these time periods. Various sources such as Certificates of Occupancy, articles in local papers and business journals supplement the physical inspection process used to identify and set up the new Business Personal Property accounts.

Business ID Type: Specific groups of businesses are slated for reappraisal based on timing or analysis that indicates a market value adjustment is needed. This category will also include businesses that have not filed a rendition in the previous year, or the rendition filed was not used to arrive at the appraised value for the BPP account.

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

Leased and Multi-Location Assets

Leasing and multi-location accounts that have a high volume of vehicles or other assets are loaded programmatically if reported by the property owner electronically. Electronic renditions, usually on 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 the Dallas CAD.

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

Phone Verification Project

In January of every year, BPP undertakes a phone verification project whereby businesses are contacted via the phone to insure they are still in business as of January 1 of the appraisal year. Appropriate action and follow up is taken for any given BPP account based the results of this project.

Rendition Review

The most significant office review task is the 2015 and 2016 rendition processing period. The BPP division expects to receive in excess of 62,000 renditions each year. Between late March and when notices are mailed in late May of 2015 and 2016, BPP will receive and data enter the renditions for appraisal review. The Appraisal Staff will review the rendered data and incorporate the inventory and depreciated cost information into the 2015 and 2016 appraisals. Leased Equipment,

Telecommunications, and Utilities will be worked when 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 15th 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 Renditions forms to all existing BPP accounts in Dallas County in January of every year. DCAD also provides on its website (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 enough 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.

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 2015 and 2016 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
2015 REAPPRAISAL PLAN**

FIXED TASKS:	ACCOUNTS
Add / New Accounts	9,684
Business ID Type Reappraisal	22,500
Tenant Account Reappraisal	6,700
Re-inspection Accounts Reappraisal	250
Complex Account Reappraisal	650

VARIABLE TASKS:

Aircraft Accounts Reappraisal	625
Rendition Processing / Reappraisal	62,000

**BUSINESS PERSONAL PROPERTY DIVISION
2016 REAPPRAISAL PLAN**

FIXED TASKS:	ACCOUNTS
Add / New Accounts	10,000
Business ID Type Reappraisal	22,550
Tenant Account Reappraisal	6,700
Reinspection Account Reappraisal	250
Complex Account Reappraisal	700

VARIABLE TASKS:

Aircraft Account Reappraisal	630
Rendition Processing Reappraisal	62,600

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.

Tenant Accounts: The Tenant accounts are furnished by public warehouses, craft malls, storage garages, consignment stores, executive office suites, etc.

Re-inspection: 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 Accounts: Accounts with a value of \$10,000,000 or greater.

BUSINESS PERSONAL PROPERTY VARIABLE TASK DEFINITIONS

Aircraft Appraisal: Valuing and confirming ownership of aircraft.

Renditions: 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.
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. Validation of sales transactions is attempted through questionnaires to buyer and seller, telephone survey and field review. In the absence of such confirmation, sales data obtained from vendors is considered reliable.
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 2015 and 2016 tax years as required by law."

W. Kenneth Nolan
Chief Appraiser / Executive Director

Appendix A

Key Personnel on Reappraisal Plan Implementation

<u>Department</u>	<u>Employee</u>	<u>Position</u>
Administration	Ken Nolan	Executive Director/Chief Appraiser
	Shane Docherty	Director of Appraisal
Residential	Jimmy Cox	Manager
	Don Estes	Assistant Manager
	Adrian Jackson	Supervisor
	Connie Whisenhunt	Supervisor
	Steve Burton	Supervisor
	Mike Robinson	Supervisor
Commercial	Steve Brown	Manager
	James Schnitker	Assistant Manager
	Richard Davis	Supervisor
	Paul Nguyen	Supervisor
	Stacy Woods	Supervisor
	Joe Flores	Supervisor
BPP	Randy Scott	Manager
	Robert Evans	Assistant Manager
	Steve Wise	Supervisor
	Kathy Nora	Supervisor
	Tonya Gee	Supervisor
	Raul Reyes	Supervisor
Quality Control	Dan Reese	Manager

Appendix B

Residential Neighborhoods

1DS000	1DS126	1DS160	1DS198	1DS314	1DS351
1DS01N	1DS127	1DS161	1DS199	1DS315	1DS352
1DS02N	1DS128	1DS162	1DS19N	1DS316	1DS353
1DS03N	1DS129	1DS163	1DS201	1DS317	1DS354
1DS04N	1DS12N	1DS164	1DS202	1DS318	1DS355
1DS05N	1DS130	1DS165	1DS203	1DS319	1DS356
1DS06N	1DS131	1DS166	1DS204	1DS320	1DS357
1DS07N	1DS132	1DS167	1DS205	1DS321	1DS358
1DS08N	1DS133	1DS168	1DS206	1DS322	1DS359
1DS09N	1DS134	1DS169	1DS207	1DS323	1DS35N
1DS100	1DS135	1DS16N	1DS208	1DS324	1DS360
1DS101	1DS136	1DS170	1DS209	1DS325	1DS361
1DS102	1DS137	1DS171	1DS211	1DS326	1DS362
1DS103	1DS138	1DS173	1DS212	1DS327	1DS363
1DS104	1DS139	1DS174	1DS213	1DS328	1DS364
1DS105	1DS13N	1DS175	1DS214	1DS329	1DS365
1DS106	1DS140	1DS176	1DS215	1DS330	1DS366
1DS107	1DS141	1DS177	1DS217	1DS331	1DS367
1DS108	1DS142	1DS178	1DS21N	1DS332	1DS368
1DS109	1DS143	1DS179	1DS22N	1DS333	1DS369
1DS10N	1DS144	1DS17N	1DS23N	1DS334	1DS36N
1DS110	1DS145	1DS180	1DS25N	1DS335	1DS370
1DS111	1DS146	1DS182	1DS28N	1DS336	1DS371
1DS112	1DS147	1DS183	1DS300	1DS337	1DS372
1DS113	1DS148	1DS184	1DS301	1DS338	1DS373
1DS114	1DS149	1DS185	1DS302	1DS339	1DS374
1DS115	1DS14N	1DS186	1DS303	1DS340	1DS375
1DS116	1DS150	1DS187	1DS304	1DS341	1DS376
1DS117	1DS151	1DS188	1DS305	1DS342	1DS377
1DS118	1DS152	1DS189	1DS306	1DS343	1DS378
1DS119	1DS153	1DS18N	1DS307	1DS344	1DS379
1DS11N	1DS154	1DS190	1DS308	1DS345	1DS380
1DS120	1DS155	1DS191	1DS309	1DS346	1DS381
1DS121	1DS156	1DS193	1DS30N	1DS347	1DS382
1DS122	1DS157	1DS194	1DS310	1DS348	1DS383
1DS123	1DS158	1DS195	1DS311	1DS349	1DS384
1DS124	1DS159	1DS196	1DS312	1DS34N	1DS385
1DS125	1DS15N	1DS197	1DS313	1DS350	1DS386

1DS387	1DS425	1DS463	1DS501	1DS53N	1DS578
1DS388	1DS426	1DS464	1DS502	1DS540	1DS579
1DS389	1DS427	1DS465	1DS503	1DS541	1DS57N
1DS38N	1DS428	1DS466	1DS504	1DS542	1DS580
1DS390	1DS429	1DS467	1DS505	1DS543	1DS581
1DS391	1DS42N	1DS468	1DS506	1DS544	1DS582
1DS392	1DS430	1DS469	1DS507	1DS545	1DS583
1DS393	1DS431	1DS46N	1DS508	1DS546	1DS584
1DS394	1DS432	1DS470	1DS509	1DS547	1DS585
1DS395	1DS433	1DS471	1DS50N	1DS548	1DS586
1DS396	1DS434	1DS472	1DS510	1DS549	1DS587
1DS397	1DS435	1DS473	1DS511	1DS54N	1DS588
1DS398	1DS436	1DS474	1DS512	1DS550	1DS589
1DS399	1DS437	1DS475	1DS513	1DS551	1DS58N
1DS39N	1DS438	1DS476	1DS514	1DS552	1DS590
1DS400	1DS439	1DS477	1DS515	1DS553	1DS591
1DS401	1DS43N	1DS478	1DS516	1DS554	1DS592
1DS402	1DS440	1DS479	1DS517	1DS555	1DS593
1DS403	1DS441	1DS47N	1DS518	1DS556	1DS594
1DS404	1DS442	1DS480	1DS519	1DS557	1DS595
1DS405	1DS443	1DS481	1DS51N	1DS558	1DS596
1DS406	1DS444	1DS482	1DS520	1DS559	1DS597
1DS407	1DS445	1DS483	1DS521	1DS55N	1DS598
1DS408	1DS446	1DS484	1DS522	1DS560	1DS599
1DS409	1DS447	1DS485	1DS523	1DS561	1DS59N
1DS40N	1DS448	1DS486	1DS524	1DS562	1DS600
1DS410	1DS449	1DS487	1DS525	1DS563	1DS601
1DS411	1DS44N	1DS488	1DS526	1DS564	1DS602
1DS412	1DS450	1DS489	1DS527	1DS565	1DS603
1DS413	1DS451	1DS48N	1DS528	1DS566	1DS604
1DS414	1DS452	1DS490	1DS529	1DS567	1DS605
1DS415	1DS453	1DS491	1DS52N	1DS568	1DS606
1DS416	1DS454	1DS492	1DS530	1DS569	1DS607
1DS417	1DS455	1DS493	1DS531	1DS56N	1DS608
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1DS419	1DS457	1DS495	1DS533	1DS571	1DS60N
1DS41N	1DS458	1DS496	1DS534	1DS572	1DS610
1DS420	1DS459	1DS497	1DS535	1DS573	1DS611
1DS421	1DS45N	1DS498	1DS536	1DS574	1DS612
1DS422	1DS460	1DS499	1DS537	1DS575	1DS613
1DS423	1DS461	1DS49N	1DS538	1DS576	1DS614
1DS424	1DS462	1DS500	1DS539	1DS577	1DS615

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1DS617	1DS655	1DS693	1DS736	1DS774	1DS812
1DS618	1DS656	1DS694	1DS737	1DS775	1DS813
1DS619	1DS657	1DS69N	1DS738	1DS776	1DS814
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1DS620	1DS659	1DS701	1DS73N	1DS778	1DS816
1DS621	1DS65N	1DS702	1DS740	1DS779	1DS817
1DS622	1DS660	1DS703	1DS741	1DS77N	1DS818
1DS623	1DS661	1DS704	1DS742	1DS780	1DS819
1DS624	1DS662	1DS705	1DS743	1DS781	1DS81N
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1DS626	1DS664	1DS707	1DS745	1DS783	1DS821
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1DS629	1DS667	1DS70N	1DS748	1DS786	1DS824
1DS62N	1DS668	1DS710	1DS749	1DS787	1DS825
1DS630	1DS669	1DS711	1DS74N	1DS788	1DS826
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1DS635	1DS673	1DS716	1DS754	1DS792	1DS830
1DS636	1DS674	1DS717	1DS755	1DS793	1DS831
1DS637	1DS675	1DS718	1DS756	1DS794	1DS832
1DS638	1DS676	1DS719	1DS757	1DS795	1DS833
1DS639	1DS677	1DS71N	1DS758	1DS796	1DS834
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1DS640	1DS679	1DS721	1DS75N	1DS798	1DS836
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1DS647	1DS685	1DS728	1DS766	1DS804	1DS842
1DS648	1DS686	1DS729	1DS767	1DS805	1DS843
1DS649	1DS687	1DS72N	1DS768	1DS806	1DS844
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1DS650	1DS689	1DS731	1DS76N	1DS808	1DS846
1DS651	1DS68N	1DS732	1DS770	1DS809	1DS847
1DS652	1DS690	1DS733	1DS771	1DS80N	1DS848
1DS653	1DS691	1DS734	1DS772	1DS810	1DS849

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1DS850	1DSA03	1DSI01	1DSM14	1DSS11	1HS310
1DS851	1DSA04	1DSI03	1DSM15	1DSS12	1HS311
1DS852	1DSA05	1DSJ01	1DSM17	1DSS13	1HS312
1DS85N	1DSA06	1DSJ02	1DSM18	1DST01	1HS313
1DS86N	1DSA07	1DSJ03	1DSM19	1DST02	1HS314
1DS87N	1DSA08	1DSJ04	1DSM20	1DST06	1HS315
1DS900	1DSA09	1DSJ05	1DSM21	1DST07	1HS316
1DS901	1DSA10	1DSJ06	1DSM22	1DSV01	1HS317
1DS902	1DSALL	1DSJ07	1DSM23	1DSV02	1HS318
1DS903	1DSB01	1DSJ08	1DSM24	1DSV03	1HS319
1DS904	1DSC01	1DSJ09	1DSM25	1DSV04	1HS320
1DS905	1DSD01	1DSJ10	1DSM26	1DSV06	1HS321
1DS906	1DSD02	1DSJ11	1DSO01	1DSX01	1HS322
1DS907	1DSD03	1DSJ12	1DSP02	1DSX02	1HS323
1DS908	1DSD04	1DSJ13	1DSP05	1DSY01	1HS324
1DS909	1DSD07	1DSJ14	1DSP06	1DSY10	1HS325
1DS910	1DSD08	1DSJ15	1DSP09	1DSZ01	1HS326
1DS911	1DSD09	1DSJ16	1DSP10	1DSZ99	1HS327
1DS912	1DSD10	1DSJ17	1DSP11	1HS000	1HS328
1DS913	1DSD11	1DSJ18	1DSP12	1HS100	1HS329
1DS914	1DSD12	1DSJ19	1DSP13	1HS101	1HS330
1DS915	1DSD13	1DSJ20	1DSP15	1HS102	1HS331
1DS916	1DSD14	1DSJ21	1DSP17	1HS103	1HS332
1DS917	1DSD15	1DSJ22	1DSP20	1HS104	1HS333
1DS918	1DSD16	1DSJ23	1DSPRN	1HS105	1HS334
1DS919	1DSD17	1DSJ24	1DSQ01	1HS201	1HS335
1DS91N	1DSF01	1DSJ25	1DSR01	1HS202	1HS336
1DS920	1DSF02	1DSJ27	1DSR02	1HS203	1HS337
1DS921	1DSF03	1DSJ30	1DSR03	1HS204	1HS338
1DS922	1DSG01	1DSK01	1DSR04	1HS205	1HS339
1DS923	1DSG03	1DSK03	1DSR05	1HS206	1HS340
1DS924	1DSG06	1DSM01	1DSR06	1HS222	1HS341
1DS925	1DSG07	1DSM02	1DSR07	1HS300	1HS342
1DS926	1DSG08	1DSM04	1DSS01	1HS301	1HS343
1DS927	1DSG09	1DSM05	1DSS02	1HS302	1HS344
1DS928	1DSG10	1DSM06	1DSS03	1HS303	1HS345
1DS929	1DSG11	1DSM07	1DSS04	1HS304	1HS346
1DS930	1DSG13	1DSM08	1DSS05	1HS305	1HS347
1DS931	1DSG15	1DSM09	1DSS06	1HS306	1HS348
1DS98N	1DSG16	1DSM11	1DSS08	1HS307	1HS349
1DSA01	1DSH01	1DSM12	1DSS09	1HS308	1HS350

1HS351	1HS44N	1HSS09	2DS103	2DS315	2DS357
1HS352	1HS45N	1HSS10	2DS104	2DS316	2DS358
1HS353	1HS46N	1HSS11	2DS105	2DS317	2DS359
1HS354	1HS47N	1HSS13	2DS106	2DS318	2DS360
1HS355	1HS48N	1HST06	2DS107	2DS319	2DS361
1HS356	1HS49N	1HSV01	2DS108	2DS320	2DS362
1HS357	1HS50N	1HSV02	2DS109	2DS321	2DS363
1HS358	1HS570	1HSV05	2DS110	2DS322	2DS364
1HS359	1HS900	1HSV06	2DS111	2DS323	2DS365
1HS360	1HS901	1HSV07	2DS112	2DS324	2DS366
1HS361	1HS902	1HSV08	2DS113	2DS325	2DS367
1HS362	1HS912	1HSV09	2DS114	2DS326	2DS368
1HS363	1HSALL	1HSV13	2DS120	2DS327	2DS369
1HS364	1HSL01	1HSV14	2DS122	2DS328	2DS370
1HS365	1HSM01	1HSV15	2DS15N	2DS329	2DS371
1HS366	1HSM02	1HSV16	2DS201	2DS330	2DS372
1HS367	1HSM03	1HSV17	2DS203	2DS331	2DS373
1HS368	1HSP02	1HSV18	2DS204	2DS332	2DS374
1HS369	1HSP03	1HSV19	2DS207	2DS333	2DS375
1HS370	1HSP04	1HSV20	2DS210	2DS334	2DS376
1HS371	1HSP05	1HSV21	2DS211	2DS335	2DS377
1HS372	1HSP07	1HSV22	2DS212	2DS336	2DS378
1HS373	1HSP08	1HSY01	2DS213	2DS337	2DS379
1HS374	1HSP09	1HSY02	2DS214	2DS338	2DS380
1HS375	1HSP10	1HSY03	2DS21N	2DS339	2DS381
1HS376	1HSP11	1HSY04	2DS22N	2DS340	2DS382
1HS377	1HSP12	1HSY05	2DS29N	2DS341	2DS383
1HS378	1HSP13	1HSY08	2DS300	2DS342	2DS384
1HS379	1HSP14	1HSY09	2DS301	2DS343	2DS385
1HS380	1HSP15	1HSY10	2DS302	2DS344	2DS386
1HS381	1HSP16	1HSY11	2DS303	2DS345	2DS387
1HS382	1HSP17	1HSY12	2DS304	2DS346	2DS388
1HS383	1HSP18	1HSY13	2DS305	2DS347	2DS389
1HS384	1HSP20	1HSY14	2DS306	2DS348	2DS38N
1HS385	1HSPRN	1HSZ02	2DS307	2DS349	2DS390
1HS386	1HSS01	1HSZ03	2DS308	2DS350	2DS391
1HS387	1HSS02	2DS000	2DS309	2DS351	2DS392
1HS388	1HSS03	2DS02N	2DS310	2DS352	2DS393
1HS40N	1HSS04	2DS03N	2DS311	2DS353	2DS394
1HS41N	1HSS05	2DS100	2DS312	2DS354	2DS395
1HS42N	1HSS06	2DS101	2DS313	2DS355	2DS396
1HS43N	1HSS07	2DS102	2DS314	2DS356	2DS397

2DS398	2DS46N	2DSP18	2DSU07	2DSX20	2RS117
2DS399	2DS47N	2DSP19	2DSU08	2DSX21	2RS118
2DS400	2DS48N	2DSP20	2DSV01	2DSX22	2RS119
2DS401	2DS49N	2DSPRN	2DSV02	2DSX23	2RS11N
2DS402	2DS50N	2DSR01	2DSV03	2DSX24	2RS120
2DS403	2DS700	2DSR02	2DSV04	2DSX25	2RS121
2DS404	2DS900	2DSR03	2DSV06	2DSX26	2RS122
2DS405	2DS901	2DSR04	2DSV07	2DSX27	2RS123
2DS406	2DS902	2DSS01	2DSV08	2DSX28	2RS12N
2DS407	2DS99N	2DSS02	2DSV09	2DSX29	2RS202
2DS408	2DSAB1	2DSS03	2DSV5N	2DSY01	2RS205
2DS409	2DSALL	2DSS04	2DSV5S	2DSY02	2RS206
2DS40N	2DSM01	2DSS05	2DSW01	2DSY03	2RS207
2DS410	2DSM02	2DSS07	2DSW02	2DSY04	2RS209
2DS411	2DSM03	2DSS08	2DSW03	2DSY05	2RS210
2DS412	2DSM04	2DSS09	2DSW04	2DSY06	2RS211
2DS413	2DSM05	2DSS10	2DSW05	2DSY07	2RS212
2DS414	2DSM06	2DSS11	2DSW06	2DSZ01	2RS213
2DS415	2DSM10	2DSS12	2DSW08	2DSZ99	2RS215
2DS416	2DSM31	2DSS13	2DSW09	2RS000	2RS216
2DS417	2DSN01	2DSS14	2DSW10	2RS01N	2RS217
2DS418	2DSN02	2DSS15	2DSW11	2RS02N	2RS218
2DS419	2DSN03	2DST01	2DSW12	2RS04N	2RS219
2DS41N	2DSO02	2DST02	2DSW13	2RS06N	2RS220
2DS420	2DSO04	2DST03	2DSW14	2RS09N	2RS221
2DS421	2DSO05	2DST04	2DSW15	2RS100	2RS300
2DS422	2DSP01	2DST05	2DSX01	2RS101	2RS301
2DS423	2DSP02	2DST06	2DSX02	2RS102	2RS302
2DS424	2DSP03	2DST07	2DSX03	2RS103	2RS303
2DS425	2DSP04	2DST08	2DSX04	2RS104	2RS304
2DS426	2DSP05	2DST09	2DSX05	2RS105	2RS305
2DS427	2DSP06	2DST10	2DSX06	2RS106	2RS306
2DS428	2DSP07	2DST11	2DSX07	2RS107	2RS307
2DS429	2DSP08	2DST12	2DSX08	2RS108	2RS308
2DS42N	2DSP09	2DST14	2DSX09	2RS109	2RS309
2DS430	2DSP10	2DST15	2DSX10	2RS110	2RS310
2DS431	2DSP11	2DST16	2DSX11	2RS111	2RS311
2DS432	2DSP12	2DST17	2DSX13	2RS112	2RS312
2DS433	2DSP14	2DSU01	2DSX14	2RS113	2RS313
2DS43N	2DSP15	2DSU03	2DSX16	2RS114	2RS314
2DS44N	2DSP16	2DSU05	2DSX17	2RS115	2RS315
2DS45N	2DSP17	2DSU06	2DSX19	2RS116	2RS316

2RS317	2RS420	2RSJ27	2RSM20	2RSP16	2RSS02
2RS318	2RS42N	2RSJ29	2RSM21	2RSP17	2RSS03
2RS319	2RS43N	2RSJ30	2RSM22	2RSP18	2RSS04
2RS320	2RS44N	2RSJ31	2RSM23	2RSP19	2RSS05
2RS321	2RS45N	2RSK01	2RSM24	2RSP21	2RSS06
2RS322	2RS46N	2RSK03	2RSM25	2RSP22	2RSS07
2RS323	2RS47N	2RSK04	2RSM26	2RSP23	2RSS08
2RS324	2RS48N	2RSK05	2RSM28	2RSP24	2RSS09
2RS325	2RS49N	2RSK06	2RSM31	2RSP25	2RSS10
2RS326	2RS50N	2RSK07	2RSM33	2RSP26	2RSS11
2RS327	2RSALL	2RSK08	2RSM34	2RSP27	2RSS12
2RS328	2RSF01	2RSK09	2RSM40	2RSP28	2RSS13
2RS329	2RSG01	2RSK10	2RSM41	2RSP29	2RSS14
2RS330	2RSH01	2RSK11	2RSM42	2RSP30	2RSS15
2RS331	2RSH02	2RSK12	2RSM43	2RSP31	2RSS16
2RS332	2RSI01	2RSK13	2RSM44	2RSP36	2RSS17
2RS333	2RSJ01	2RSK16	2RSM45	2RSPRN	2RSS18
2RS334	2RSJ02	2RSK17	2RSN01	2RSQ01	2RST01
2RS335	2RSJ03	2RSK18	2RSN02	2RSQ02	2RST02
2RS337	2RSJ04	2RSK19	2RSN03	2RSQ03	2RST03
2RS338	2RSJ05	2RSK20	2RSN05	2RSQ04	2RST04
2RS339	2RSJ06	2RSK21	2RSN06	2RSQ07	2RST05
2RS340	2RSJ07	2RSL01	2RSO01	2RSQ08	2RST06
2RS341	2RSJ08	2RSL02	2RSO04	2RSQ09	2RSU01
2RS342	2RSJ09	2RSL04	2RSO05	2RSQ10	2RSU03
2RS343	2RSJ10	2RSL08	2RSO06	2RSR01	2RSU05
2RS344	2RSJ11	2RSL09	2RSO07	2RSR02	2RSU06
2RS345	2RSJ12	2RSM01	2RSP01	2RSR03	2RSV01
2RS346	2RSJ13	2RSM02	2RSP02	2RSR04	2RSV02
2RS347	2RSJ14	2RSM03	2RSP03	2RSR05	2RSV03
2RS348	2RSJ15	2RSM04	2RSP04	2RSR06	2RSV04
2RS349	2RSJ16	2RSM05	2RSP05	2RSR07	2RSV05
2RS350	2RSJ17	2RSM06	2RSP06	2RSR08	2RSV06
2RS351	2RSJ18	2RSM09	2RSP07	2RSR09	2RSV07
2RS352	2RSJ19	2RSM11	2RSP08	2RSR10	2RSW01
2RS353	2RSJ20	2RSM12	2RSP09	2RSR11	2RSW02
2RS354	2RSJ21	2RSM13	2RSP10	2RSR12	2RSW03
2RS355	2RSJ22	2RSM14	2RSP11	2RSR13	2RSW04
2RS356	2RSJ23	2RSM15	2RSP12	2RSR14	2RSW05
2RS357	2RSJ24	2RSM16	2RSP13	2RSR15	2RSX01
2RS40N	2RSJ25	2RSM17	2RSP14	2RSR16	2RSX02
2RS41N	2RSJ26	2RSM19	2RSP15	2RSS01	2RSX03

2RSX04	3DS14M	3DSD06	3DSJ50	3DSS01	3GS117
2RSX05	3DS14N	3DSD45	3DSK01	3DSS02	3GS118
2RSX06	3DS15M	3DSG01	3DSK02	3DSS03	3GS119
2RSX07	3DS15N	3DSG02	3DSK03	3DSS04	3GS11M
2RSX08	3DS16M	3DSG03	3DSK04	3DSS05	3GS12M
2RSX09	3DS17M	3DSG04	3DSK05	3DSS06	3GS12N
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2RSY01	3DS19M	3DSG06	3DSK07	3DSZ99	3GS13N
2RSY02	3DS201	3DSG07	3DSK08	3GS000	3GS14M
2RSY06	3DS202	3DSG08	3DSK09	3GS003	3GS14N
2RSY07	3DS203	3DSG09	3DSK10	3GS01M	3GS15N
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3DS000	3DS205	3DSG11	3DSL04	3GS02M	3GS18N
3DS01M	3DS207	3DSG12	3DSL07	3GS02N	3GS200
3DS01N	3DS208	3DSG13	3DSL24	3GS03M	3GS201
3DS02M	3DS209	3DSG14	3DSM01	3GS03N	3GS202
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3DS03M	3DS21M	3DSG16	3DSM03	3GS04N	3GS204
3DS03N	3DS22M	3DSG19	3DSM04	3GS05M	3GS205
3DS04M	3DS24M	3DSG20	3DSM05	3GS06M	3GS206
3DS04N	3DS301	3DSG24	3DSM07	3GS06N	3GS207
3DS05M	3DS302	3DSH01	3DSM08	3GS07M	3GS208
3DS05N	3DS303	3DSH02	3DSM09	3GS08M	3GS209
3DS06M	3DS304	3DSJ01	3DSM10	3GS09M	3GS210
3DS06N	3DS305	3DSJ02	3DSM11	3GS09N	3GS211
3DS07M	3DS40N	3DSJ03	3DSM14	3GS100	3GS212
3DS07N	3DS41N	3DSJ04	3DSM15	3GS101	3GS21N
3DS08M	3DS42N	3DSJ05	3DSM16	3GS102	3GS23N
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3DS09M	3DS44N	3DSJ07	3DSM19	3GS104	3GS26N
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3DS100	3DS46N	3DSJ09	3DSM59	3GS106	3GS29N
3DS101	3DS47N	3DSJ11	3DSMHP	3GS107	3GS300
3DS102	3DS48N	3DSJ12	3DSO01	3GS108	3GS301
3DS10M	3DS49N	3DSJ13	3DSO02	3GS109	3GS302
3DS10N	3DS50N	3DSJ14	3DSO07	3GS10M	3GS303
3DS11M	3DSA04	3DSJ15	3DSP02	3GS110	3GS304
3DS11N	3DSAB1	3DSJ16	3DSP04	3GS111	3GS305
3DS12M	3DSAB2	3DSJ18	3DSP05	3GS112	3GS306
3DS12N	3DSAB3	3DSJ20	3DSP06	3GS113	3GS307
3DS13M	3DSAB4	3DSJ25	3DSPRN	3GS114	3GS308
3DS13N	3DSALL	3DSJ27	3DSR01	3GS116	3GS309

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3GS311	3GS49N	3GS91N	3GSG17	3GSJ05	3GSJ47
3GS312	3GS50N	3GS92N	3GSG18	3GSJ06	3GSJ48
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3GS315	3GS53N	3GS95N	3GSG21	3GSJ09	3GSJ51
3GS316	3GS54N	3GS96N	3GSG22	3GSJ10	3GSJ52
3GS317	3GS55N	3GS97N	3GSG23	3GSJ11	3GSJ53
3GS318	3GS56N	3GS98N	3GSG24	3GSJ12	3GSJ54
3GS319	3GS57N	3GS99N	3GSG26	3GSJ13	3GSJ55
3GS320	3GS58N	3GSA16	3GSG27	3GSJ14	3GSJ58
3GS321	3GS59N	3GSAB1	3GSG28	3GSJ15	3GSJ59
3GS322	3GS60N	3GSAB2	3GSG31	3GSJ16	3GSJ61
3GS323	3GS61N	3GSAB3	3GSG32	3GSJ17	3GSJ62
3GS324	3GS62N	3GSAB5	3GSG33	3GSJ18	3GSJ64
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3GS326	3GS64N	3GSAB7	3GSH02	3GSJ20	3GSJ66
3GS327	3GS65N	3GSALL	3GSH03	3GSJ21	3GSJ67
3GS328	3GS66N	3GSC01	3GSH04	3GSJ22	3GSJ68
3GS329	3GS67N	3GSD01	3GSH05	3GSJ23	3GSJ69
3GS330	3GS68N	3GSD02	3GSH06	3GSJ24	3GSJ70
3GS331	3GS69N	3GSD03	3GSH07	3GSJ25	3GSJ71
3GS332	3GS70N	3GSD04	3GSH08	3GSJ26	3GSJ72
3GS334	3GS71N	3GSD05	3GSH09	3GSJ27	3GSJ74
3GS335	3GS72N	3GSD06	3GSH10	3GSJ28	3GSJ75
3GS336	3GS73N	3GSE01	3GSH11	3GSJ29	3GSJ76
3GS337	3GS74N	3GSE02	3GSH12	3GSJ30	3GSJ77
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3GS339	3GS76N	3GSG02	3GSH14	3GSJ32	3GSK02
3GS340	3GS77N	3GSG03	3GSH15	3GSJ33	3GSK03
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3GS36N	3GS80N	3GSG06	3GSH20	3GSJ36	3GSK06
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3GS43N	3GS85N	3GSG11	3GSI03	3GSJ41	3GSK12
3GS44N	3GS86N	3GSG12	3GSI04	3GSJ42	3GSK13
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3GSK21	3GSL33	3GSM42	3GSO01	3GSP20	3GSQ17
3GSK23	3GSL34	3GSM43	3GSO02	3GSP21	3GSQ18
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3GSK28	3GSM02	3GSM45	3GSO04	3GSP23	3GSR02
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3GSK33	3GSM06	3GSM49	3GSO08	3GSP27	3GSR06
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3GSL07	3GSM15	3GSMHP	3GSO19	3GSP36	3GSR15
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3GSL11	3GSM19	3GSN03	3GSO23	3GSP40	3GSR19
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3GSL26	3GSM34	3GSN18	3GSP13	3GSQ10	3GSS15
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3GSS18	3MS16M	3MS61N	3MSG08	3MSJ18	3MSK14
3GSS20	3MS17M	3MS62N	3MSG09	3MSJ19	3MSK15
3GSS21	3MS19M	3MS63N	3MSG10	3MSJ20	3MSK16
3GSS22	3MS201	3MS64N	3MSG11	3MSJ21	3MSK17
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3GST01	3MS203	3MSA01	3MSG13	3MSJ23	3MSK19
3GST02	3MS204	3MSA04	3MSG14	3MSJ24	3MSK20
3GST03	3MS205	3MSAB1	3MSG15	3MSJ25	3MSK21
3GSU01	3MS206	3MSAB2	3MSG16	3MSJ26	3MSK22
3GSU02	3MS207	3MSAB3	3MSG17	3MSJ27	3MSK23
3GSU03	3MS208	3MSAB4	3MSG18	3MSJ28	3MSK24
3GSZ99	3MS20M	3MSALL	3MSG19	3MSJ29	3MSK25
3MS000	3MS21M	3MSD01	3MSG20	3MSJ30	3MSK26
3MS01M	3MS22M	3MSD02	3MSG21	3MSJ31	3MSK27
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3MS02M	3MS24M	3MSD04	3MSG23	3MSJ33	3MSK29
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3MS03M	3MS26M	3MSD07	3MSG25	3MSJ35	3MSK31
3MS03N	3MS27M	3MSD09	3MSG67	3MSJ36	3MSK35
3MS04M	3MS300	3MSD10	3MSH01	3MSJ37	3MSK36
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3MS100	3MS46N	3MSE02	3MSJ03	3MSJ45	3MSL07
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3MS102	3MS48N	3MSE04	3MSJ05	3MSK01	3MSL09
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3MSM02	3MSP08	3YSS05	4DS110	4DS219	4DS317
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3MSM05	3MSPRN	3YSS08	4DS113	4DS220	4DS31M
3MSM06	3MSQ01	3YSS09	4DS11M	4DS221	4DS31N
3MSM07	3MSS01	3YSS10	4DS11N	4DS222	4DS320
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3MSM09	3MSS03	3YSS12	4DS12N	4DS22M	4DS322
3MSM10	3MSS21	3YSS13	4DS13M	4DS22N	4DS323
3MSM11	3MSZ97	3YSS14	4DS13N	4DS23M	4DS32M
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3MSM16	3YS12N	4DS02M	4DS16M	4DS25N	4DS34N
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3MSM26	3YS47N	4DS06N	4DS202	4DS300	4DS39N
3MSM28	3YS48N	4DS07M	4DS203	4DS301	4DS40M
3MSM91	3YS49N	4DS07N	4DS204	4DS302	4DS40N
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3MSO01	3YSALL	4DS08N	4DS206	4DS304	4DS41N
3MSO03	3YSM02	4DS09M	4DS207	4DS305	4DS42M
3MSO04	3YSM04	4DS09N	4DS208	4DS306	4DS42N
3MSO05	3YSM05	4DS100	4DS209	4DS307	4DS43M
3MSO06	3YSM06	4DS101	4DS20M	4DS308	4DS43N
3MSO07	3YSM07	4DS102	4DS20N	4DS309	4DS44M
3MSO08	3YSM08	4DS103	4DS210	4DS30M	4DS44N
3MSO09	3YSP01	4DS104	4DS211	4DS30N	4DS45M
3MSP01	3YSPRN	4DS105	4DS212	4DS310	4DS45N
3MSP02	3YSR01	4DS106	4DS213	4DS311	4DS46M
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4DS49M	4DS81N	4DSB08	4DSD36	4DSD81	4DSE24
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4DS50M	4DS83N	4DSC01	4DSD38	4DSD83	4DSE26
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4DS52M	4DS87N	4DSC05	4DSD42	4DSD87	4DSE30
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4DS58N	4DSA14	4DSD13	4DSD56	4DSE01	4DSF09
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4DS67N	4DSAB2	4DSD22	4DSD67	4DSE10	4DSG07
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4DS76N	4DSB02	4DSD31	4DSD76	4DSE19	4DSG16
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4DSG24	4DSG66	4DSH26	4DSI27	4DSJ32	4DSK07
4DSG25	4DSG67	4DSH27	4DSI28	4DSJ33	4DSK08
4DSG26	4DSG68	4DSH28	4DSI29	4DSJ34	4DSK09
4DSG27	4DSG70	4DSH29	4DSI31	4DSJ35	4DSK10
4DSG28	4DSG71	4DSH30	4DSI32	4DSJ36	4DSK11
4DSG29	4DSG72	4DSH31	4DSI33	4DSJ37	4DSK12
4DSG30	4DSG73	4DSH32	4DSI34	4DSJ38	4DSK13
4DSG31	4DSG74	4DSH33	4DSI35	4DSJ39	4DSK14
4DSG32	4DSG75	4DSH34	4DSI36	4DSJ40	4DSK15
4DSG33	4DSG77	4DSH35	4DSI37	4DSJ41	4DSK16
4DSG34	4DSG78	4DSH37	4DSI38	4DSJ42	4DSK17
4DSG35	4DSG80	4DSH38	4DSJ01	4DSJ43	4DSK18
4DSG36	4DSG82	4DSH40	4DSJ02	4DSJ44	4DSK19
4DSG37	4DSG83	4DSH42	4DSJ03	4DSJ45	4DSK20
4DSG38	4DSG84	4DSH43	4DSJ04	4DSJ46	4DSK21
4DSG39	4DSG85	4DSH44	4DSJ05	4DSJ47	4DSK22
4DSG40	4DSG86	4DSH45	4DSJ06	4DSJ48	4DSK23
4DSG41	4DSH01	4DSI01	4DSJ07	4DSJ49	4DSK24
4DSG42	4DSH02	4DSI02	4DSJ08	4DSJ50	4DSK25
4DSG43	4DSH03	4DSI03	4DSJ09	4DSJ51	4DSK26
4DSG44	4DSH04	4DSI04	4DSJ10	4DSJ52	4DSK27
4DSG45	4DSH05	4DSI05	4DSJ11	4DSJ53	4DSL01
4DSG46	4DSH06	4DSI06	4DSJ12	4DSJ54	4DSL02
4DSG47	4DSH07	4DSI07	4DSJ13	4DSJ55	4DSL03
4DSG48	4DSH08	4DSI08	4DSJ14	4DSJ56	4DSL04
4DSG49	4DSH09	4DSI09	4DSJ15	4DSJ57	4DSL05
4DSG50	4DSH10	4DSI10	4DSJ16	4DSJ58	4DSL06
4DSG51	4DSH11	4DSI11	4DSJ17	4DSJ59	4DSL07
4DSG52	4DSH12	4DSI12	4DSJ18	4DSJ60	4DSL08
4DSG53	4DSH13	4DSI13	4DSJ19	4DSJ61	4DSL09
4DSG54	4DSH14	4DSI14	4DSJ20	4DSJ62	4DSL10
4DSG55	4DSH15	4DSI15	4DSJ21	4DSJ63	4DSL11
4DSG56	4DSH16	4DSI16	4DSJ22	4DSJ64	4DSL13
4DSG57	4DSH17	4DSI17	4DSJ23	4DSJ65	4DSL14
4DSG58	4DSH18	4DSI18	4DSJ24	4DSJ66	4DSL15
4DSG59	4DSH19	4DSI19	4DSJ25	4DSJ74	4DSL16
4DSG60	4DSH20	4DSI20	4DSJ26	4DSK01	4DSL17
4DSG61	4DSH21	4DSI21	4DSJ27	4DSK02	4DSL18
4DSG62	4DSH22	4DSI22	4DSJ28	4DSK03	4DSL19

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4DSL24	4DSO03	4ES45N	4ESJ07	4ESN02	4LS02M
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4DSL29	4DSP03	4ES48N	4ESJ10	4ESN05	4LS04M
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4DSM12	4ES04N	4ES63N	4ESL01	4ESS05	4LS201
4DSM13	4ES05N	4ES64N	4ESL02	4ESS06	4LS202
4DSM14	4ES07N	4ES65N	4ESL03	4ESS07	4LS203
4DSM15	4ES08N	4ES66N	4ESM01	4ESS08	4LS204
4DSM16	4ES09N	4ESAB1	4ESM02	4ESS09	4LS40N
4DSM17	4ES100	4ESAB2	4ESM03	4ESS10	4LS41N
4DSM18	4ES200	4ESALL	4ESM04	4ESS11	4LS42N
4DSM19	4ES201	4ESD02	4ESM05	4ESS12	4LS43N
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4DSM21	4ES203	4ESD05	4ESM07	4EST01	4LS45N
4DSM22	4ES204	4ESF01	4ESM08	4EST02	4LS46N
4DSM23	4ES300	4ESG01	4ESM09	4ESU01	4LS47N
4DSM24	4ES31C	4ESG02	4ESM10	4ESU02	4LS48N
4DSM25	4ES32C	4ESG05	4ESM11	4ESV01	4LS49N
4DSM26	4ES33N	4ESG06	4ESM12	4ESV02	4LS50N
4DSM27	4ES35N	4ESG07	4ESM13	4ESV03	4LSA02
4DSM71	4ES37N	4ESH01	4ESM14	4ESW01	4LSAB1
4DSM72	4ES38N	4ESH02	4ESM15	4ESW02	4LSAB2
4DSM73	4ES39N	4ESJ01	4ESM16	4ESW03	4LSAB3
4DSM92	4ES40N	4ESJ02	4ESM17	4ESZ99	4LSAB4
4DSMH2	4ES41N	4ESJ03	4ESM18	4FSAB1	4LSALL
4DSMH3	4ES42N	4ESJ04	4ESM19	4FSD16	4LSD01
4DSMHP	4ES43N	4ESJ05	4ESMHP	4LS000	4LSD02

4LSD03	4LSK12	4PS05N	4PS216	4PSG03	4PSJ26
4LSD04	4LSK13	4PS06M	4PS217	4PSG05	4PSJ27
4LSD05	4LSK14	4PS06N	4PS218	4PSG06	4PSJ60
4LSD07	4LSK15	4PS07M	4PS219	4PSG07	4PSJ61
4LSD08	4LSK16	4PS07N	4PS25N	4PSG08	4PSJ62
4LSD10	4LSL01	4PS08M	4PS28N	4PSG09	4PSJ63
4LSD12	4LSL02	4PS08N	4PS29N	4PSG10	4PSK01
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4LSG02	4LSL05	4PS100	4PS30N	4PSG15	4PSK04
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4LSG05	4LSM03	4PS103	4PS40N	4PSH03	4PSK07
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4LSG07	4LSM05	4PS105	4PS42N	4PSI01	4PSK12
4LSG46	4LSM06	4PS106	4PS43N	4PSI02	4PSL01
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4LSH02	4LSM08	4PS108	4PS45N	4PSJ01	4PSL03
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4LSJ09	4LSS01	4PS201	4PSAB2	4PSJ11	4PSL13
4LSJ10	4LSS02	4PS202	4PSAB3	4PSJ12	4PSL14
4LSJ11	4LSV01	4PS203	4PSAB4	4PSJ13	4PSL15
4LSJ12	4LSZ90	4PS204	4PSALL	4PSJ14	4PSM01
4LSK01	4LSZ99	4PS205	4PSB06	4PSJ15	4PSM02
4LSK02	4PS000	4PS206	4PSB07	4PSJ16	4PSM03
4LSK03	4PS01M	4PS207	4PSD01	4PSJ17	4PSM04
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4LSK05	4PS02M	4PS209	4PSD03	4PSJ19	4PSM06
4LSK06	4PS02N	4PS210	4PSD04	4PSJ20	4PSM07
4LSK07	4PS03M	4PS211	4PSD05	4PSJ21	4PSM08
4LSK08	4PS03N	4PS212	4PSD06	4PSJ22	4PSM09
4LSK09	4PS04M	4PS213	4PSD10	4PSJ23	4PSM10
4LSK10	4PS04N	4PS214	4PSF03	4PSJ24	4PSM11
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4PSM13	4SS03N	4SS49N	4SSK04	4SSN03	4US01N
4PSM14	4SS04M	4SS50N	4SSK05	4SSN04	4US02M
4PSM15	4SS05M	4SS51N	4SSK06	4SSN05	4US02N
4PSM16	4SS06M	4SSAB1	4SSK07	4SSN06	4US03M
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4PSM19	4SS09N	4SSAB4	4SSK10	4SSN09	4US05M
4PSM20	4SS100	4SSALL	4SSK11	4SSO01	4US07N
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4PSMO3	4SS17N	4SSD03	4SSK14	4SSO04	4US103
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4PSN02	4SS200	4SSD10	4SSK16	4SSO06	4US105
4PSN03	4SS201	4SSG01	4SSK17	4SSO07	4US106
4PSN04	4SS202	4SSG04	4SSL01	4SSO08	4US107
4PSN05	4SS203	4SSG05	4SSL02	4SSO09	4US108
4PSN06	4SS204	4SSG06	4SSL03	4SSP01	4US11N
4PSN07	4SS205	4SSG07	4SSL04	4SSP02	4US12N
4PSN08	4SS206	4SSG08	4SSL05	4SSP03	4US13N
4PSN09	4SS207	4SSG10	4SSL06	4SSP04	4US14N
4PSO05	4SS21N	4SSH02	4SSL07	4SSP05	4US15N
4PSP01	4SS22N	4SSI01	4SSL08	4SSP06	4US16N
4PSP02	4SS23N	4SSJ01	4SSM01	4SSP07	4US17N
4PSP03	4SS24N	4SSJ02	4SSM02	4SSP08	4US200
4PSP04	4SS25N	4SSJ03	4SSM03	4SSP09	4US201
4PSP05	4SS26N	4SSJ04	4SSM04	4SSP10	4US202
4PSP06	4SS27N	4SSJ05	4SSM05	4SSPRN	4US203
4PSP07	4SS28N	4SSJ06	4SSM06	4SSQ01	4US204
4PSP08	4SS29N	4SSJ08	4SSM07	4SSR01	4US205
4PSP09	4SS30N	4SSJ09	4SSM08	4SSR02	4US300
4PSP10	4SS31N	4SSJ10	4SSM09	4SSR03	4US301
4PSP11	4SS32N	4SSJ11	4SSM10	4SSR04	4US40N
4PSPRN	4SS35N	4SSJ12	4SSM11	4SSS02	4US41N
4PSQ01	4SS40N	4SSJ14	4SSM12	4SSS07	4US42N
4PSQ02	4SS41N	4SSJ15	4SSM13	4SSU01	4US43N
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4SS01M	4SS45N	4SSJ21	4SSM17	4SSX01	4US47N
4SS02M	4SS46N	4SSK01	4SSMHP	4SSX02	4US48N
4SS02N	4SS47N	4SSK02	4SSN01	4US000	4US49N
4SS03M	4SS48N	4SSK03	4SSN02	4US01M	4US50N

4US51N	4USJ16	4USM11	4WS01M	4WSG01	5AS116
4US71N	4USJ17	4USM12	4WS01N	4WSG02	5AS117
4US72N	4USJ18	4USM13	4WS02M	4WSG04	5AS118
4USAB1	4USJ19	4USM14	4WS02N	4WSG07	5AS119
4USAB2	4USJ20	4USM15	4WS03M	4WSG08	5AS11N
4USAB3	4USJ21	4USM16	4WS04M	4WSI01	5AS120
4USAB4	4USJ22	4USM17	4WS05M	4WSI26	5AS121
4USALL	4USJ23	4USM18	4WS06M	4WSI28	5AS12N
4USD02	4USJ24	4USM19	4WS07M	4WSL01	5AS13N
4USD03	4USJ25	4USM20	4WS200	4WSMHP	5AS14N
4USE01	4USJ26	4USMHP	4WS40N	4WSPRN	5AS15N
4USE02	4USJ27	4USN06	4WS41N	4WSZ99	5AS18N
4USE03	4USJ28	4USO02	4WS42N	5AS000	5AS201
4USE04	4USJ29	4USO03	4WS43N	5AS01M	5AS202
4USG01	4USJ30	4USO05	4WS44N	5AS01N	5AS203
4USG02	4USK02	4USO07	4WS45N	5AS02M	5AS204
4USG03	4USK03	4USO08	4WS46N	5AS02N	5AS211
4USG05	4USK07	4USO09	4WS47N	5AS03M	5AS212
4USG07	4USK08	4USO10	4WS48N	5AS03N	5AS213
4USG10	4USK09	4USP01	4WS49N	5AS04N	5AS214
4USH01	4USK11	4USP02	4WS50N	5AS05N	5AS215
4USH02	4USK12	4USP03	4WSA01	5AS06N	5AS216
4USH03	4USL01	4USP04	4WSA02	5AS07N	5AS217
4USH04	4USL02	4USP05	4WSAB1	5AS08N	5AS218
4USH05	4USL03	4USP06	4WSAB3	5AS09N	5AS219
4USH06	4USL04	4USP07	4WSAB4	5AS100	5AS220
4USH07	4USL05	4USP08	4WSAB5	5AS101	5AS26N
4USJ01	4USL06	4USP09	4WSALL	5AS102	5AS27N
4USJ02	4USL07	4USP10	4WSB01	5AS103	5AS29N
4USJ03	4USL08	4USP11	4WSB03	5AS104	5AS300
4USJ04	4USL10	4USPRN	4WSB04	5AS105	5AS301
4USJ05	4USL20	4USR02	4WSB05	5AS106	5AS302
4USJ06	4USM01	4USR03	4WSD01	5AS107	5AS303
4USJ07	4USM02	4USR04	4WSD05	5AS108	5AS304
4USJ08	4USM03	4USS03	4WSD06	5AS109	5AS305
4USJ09	4USM04	4USS04	4WSD07	5AS10N	5AS306
4USJ10	4USM05	4USS05	4WSD09	5AS110	5AS307
4USJ11	4USM06	4USV01	4WSD10	5AS111	5AS308
4USJ12	4USM07	4USV02	4WSD11	5AS112	5AS309
4USJ13	4USM08	4USV03	4WSD12	5AS113	5AS30N
4USJ14	4USM09	4USX01	4WSD14	5AS114	5AS31N
4USJ15	4USM10	4WS000	4WSE01	5AS115	5AS40N

5AS41N	5ASJ34	5ASM07	5ASO07	5ASP38	5AST12
5AS42N	5ASJ35	5ASM08	5ASO08	5ASP39	5AST13
5AS43N	5ASJ36	5ASM11	5ASO09	5ASP40	5ASU01
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5AS45N	5ASJ38	5ASM14	5ASO31	5ASP42	5ASU07
5AS46N	5ASJ39	5ASM15	5ASO32	5ASP43	5ASV01
5AS47N	5ASJ40	5ASM16	5ASO33	5ASP44	5ASV02
5AS48N	5ASJ41	5ASM17	5ASO34	5ASPRN	5ASW01
5AS49N	5ASJ42	5ASM18	5ASO35	5ASQ01	5ASX01
5AS50N	5ASK01	5ASM19	5ASO36	5ASQ02	5ASY01
5ASA03	5ASK02	5ASM30	5ASO37	5ASQ03	5ASY03
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5ASG03	5ASK17	5ASM39	5ASP08	5ASR06	5DS04M
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5ASG05	5ASK19	5ASMHP	5ASP10	5ASR08	5DS100
5ASG06	5ASK20	5ASN01	5ASP11	5ASR09	5DS101
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5ASJ02	5ASK23	5ASN03	5ASP13	5ASS01	5DS103
5ASJ03	5ASK24	5ASN04	5ASP14	5ASS02	5DS104
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5ASJ06	5ASL02	5ASN07	5ASP17	5ASS05	5DS107
5ASJ07	5ASL03	5ASN08	5ASP18	5ASS06	5DS108
5ASJ09	5ASL04	5ASN30	5ASP19	5ASS07	5DS109
5ASJ11	5ASL05	5ASN31	5ASP20	5ASS11	5DS110
5ASJ12	5ASL06	5ASN32	5ASP21	5ASS12	5DS111
5ASJ13	5ASL07	5ASN33	5ASP22	5ASS13	5DS112
5ASJ15	5ASL08	5ASN34	5ASP23	5AST01	5DS113
5ASJ16	5ASL09	5ASN35	5ASP30	5AST02	5DS114
5ASJ17	5ASL30	5ASN36	5ASP31	5AST03	5DS115
5ASJ18	5ASM01	5ASO01	5ASP32	5AST04	5DS116
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5ASJ31	5ASM04	5ASO04	5ASP35	5AST07	5DS119
5ASJ32	5ASM05	5ASO05	5ASP36	5AST08	5DS11N
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5DS121	5DS322	5DSD07	5DSJ10	5DSN01	5DSS03
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5DS123	5DS324	5DSD09	5DSJ13	5DSN03	5DSS05
5DS124	5DS325	5DSD12	5DSJ14	5DSO01	5DSS06
5DS125	5DS326	5DSD14	5DSJ15	5DSO02	5DSS07
5DS126	5DS327	5DSD16	5DSJ16	5DSO03	5DSS08
5DS127	5DS328	5DSD17	5DSK01	5DSO04	5DSS09
5DS201	5DS329	5DSD18	5DSK02	5DSO05	5DSS10
5DS202	5DS330	5DSE01	5DSK03	5DSO06	5DSS11
5DS203	5DS331	5DSF01	5DSK04	5DSO08	5DSS12
5DS204	5DS332	5DSF02	5DSK05	5DSP01	5DSS13
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5DS207	5DS335	5DSG02	5DSL05	5DSP04	5DSS16
5DS208	5DS336	5DSG03	5DSL06	5DSP05	5DST01
5DS209	5DS337	5DSG04	5DSL08	5DSP06	5DST02
5DS210	5DS338	5DSG05	5DSL10	5DSP07	5DST03
5DS211	5DS339	5DSG06	5DSM01	5DSP08	5DST13
5DS212	5DS340	5DSG07	5DSM02	5DSP09	5DSU01
5DS299	5DS341	5DSG09	5DSM03	5DSP10	5DSU02
5DS300	5DS342	5DSG10	5DSM04	5DSP11	5DSU03
5DS301	5DS343	5DSG11	5DSM05	5DSP12	5DSU04
5DS302	5DS344	5DSG14	5DSM06	5DSP14	5DSU05
5DS303	5DS345	5DSH01	5DSM07	5DSP16	5DSU06
5DS304	5DS346	5DSH02	5DSM08	5DSP18	5DSV01
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5DS312	5DS45N	5DSI02	5DSM19	5DSQ01	5DSV09
5DS313	5DS46N	5DSJ01	5DSM20	5DSR01	5DSV11
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5DS316	5DS49N	5DSJ04	5DSM24	5DSR04	5DSW01
5DS317	5DS50N	5DSJ05	5DSM25	5DSR05	5DSW02
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5DSY04	5IS111	5IS22N	5IS607	5ISG20	5ISI09
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5DSY07	5IS114	5IS24M	5ISAB1	5ISG23	5ISJ02
5DSY08	5IS115	5IS24N	5ISAB2	5ISG24	5ISJ03
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5DSZ08	5IS119	5IS26N	5ISALL	5ISG29	5ISJ07
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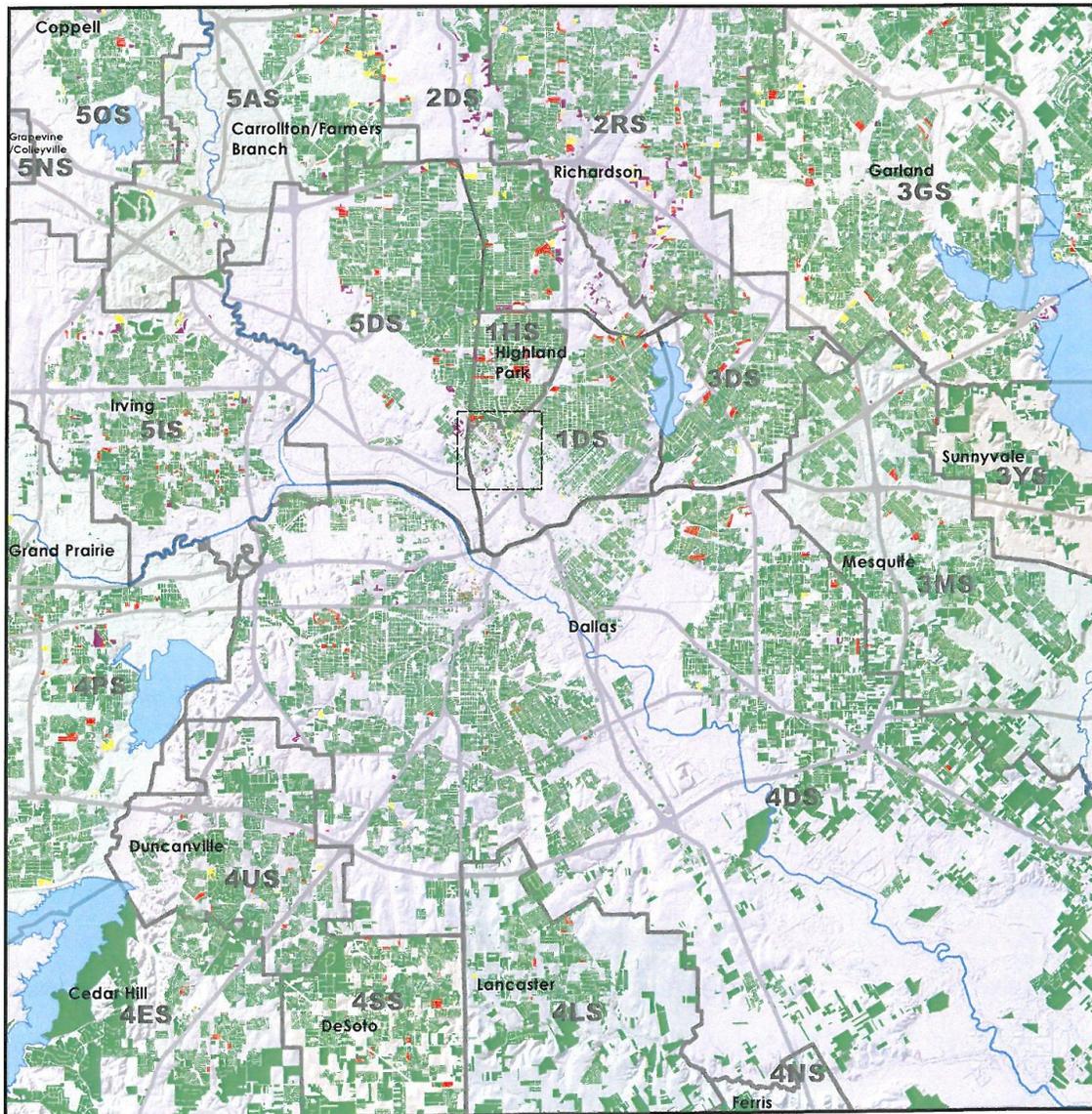
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5ISK08	5ISL10	5ISM20	5ISP16	5OS04M	5OSAB3
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5ISK10	5ISL12	5ISM22	5ISP18	5OS05N	5OSG04
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5ISK14	5ISL14	5ISM24	5ISP20	5OS07N	5OSJ02
5ISK15	5ISL15	5ISM25	5ISP21	5OS08N	5OSJ03
5ISK17	5ISL16	5ISM26	5ISP22	5OS09N	5OSJ08
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5OSP14	5OSS15	5OSU12	
5OSP15	5OSS16	5OSU13	
5OSPRN	5OSS17	5OSU14	
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5OSQ03	5OSS20	5OSU17	

Appendix C

Residential Neighborhood Map

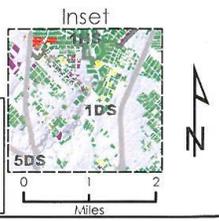
Residential Neighborhoods



0 1.5 3 6 Miles

Disclaimer: This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.

 Independent School District	 Duplexes	 Single Family Residences
 Town Homes	 Condominiums	Date: 3/25/2014



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

Apartment IMA's

540100	540500	540900	541300	541700
540200	540600	541000	541400	541800
540300	540700	541100	541500	542400
540400	540800	541200	541600	542500

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	
2104MO	210900	2114MO	212000	
210500	2109BK	211500	2120BK	
2105BK	211000	2115BK	2120MO	
2105MO	2110BK	2115MO	212200	

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	614400
610400				

Auto Display IMA's

640000	640700	641300	641900	642500
640200	640800	641400	642000	642600
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
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Country Club IMA's

4800MU
4800PR

Love Field Airport

DO1LFA

Commercial LMA's

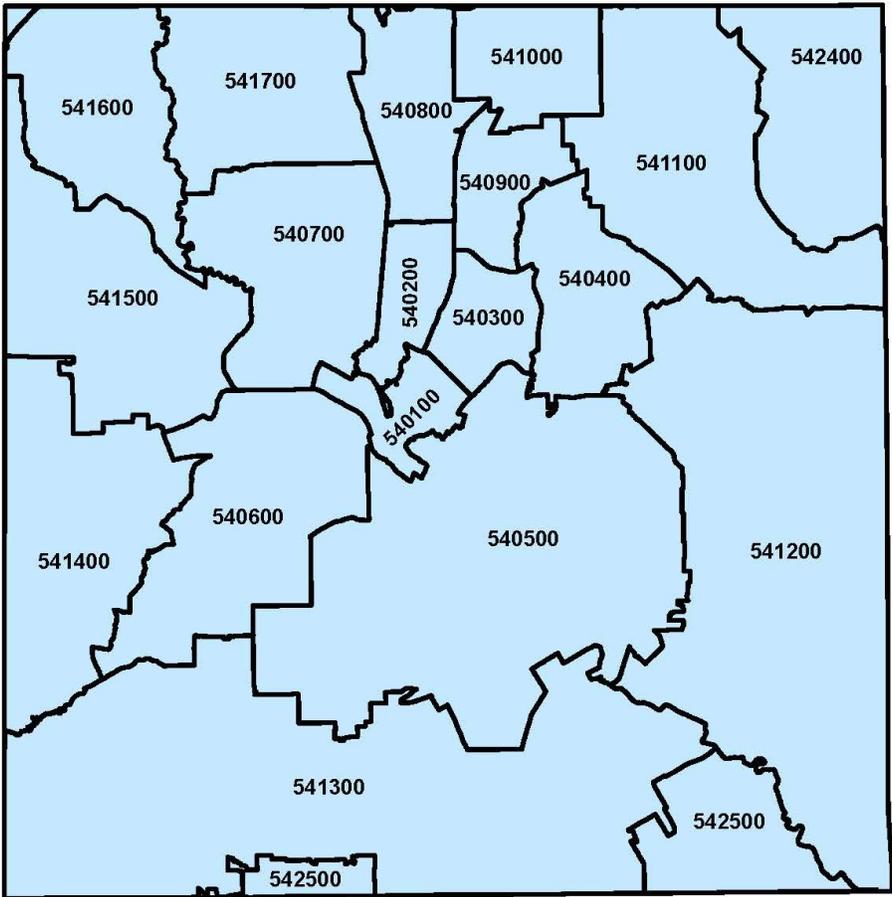
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1AS004	1DSE07	1DSH18	1DSJ7G	1OS001
1AS005	1DSE08	1DSH19	1DSK04	1OS002
1AS006	1DSE09	1DSH20	1DSK05	1OS003
1AS007	1DSE10	1DSH21	1DSK06	1OS004
1AS008	1DSE11	1DSH5A	1DSK07	1OS005
1AS009	1DSF04	1DSH5B	1DSK6A	2DSC11
1ASVR1	1DSF05	1DSH6A	1DSK7A	2DSK08
1CA001	1DSF06	1DSH6B	1DSOL1	2DSK09
1CA002	1DSF07	1DSH9A	1DSOL2	2DSK10
1CA003	1DSF08	1DSH9B	1DSOL3	2DSK11
1DSA08	1DSF09	1DSH9C	1DSOL4	2DSK12
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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
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1DSC03	1DSG11	1DSI13	1ISA04	2DSK20
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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
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1DSD07	1DSH13	1DSJ7B	1ISC09	2DSL13
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LMA's					
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2DSL18	2DSP11	2ES007	2US006	3GSE03	3MSI03
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2DSL22	2DSP15	2ES011	2WS002	3GSF01	3RSA02
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2DSL6B	2DSP4C	2LS002	2WS005	3GSF04	3RSC01
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2DSN14	2DSR14	2PS05A	3GSC03	3MSE02	
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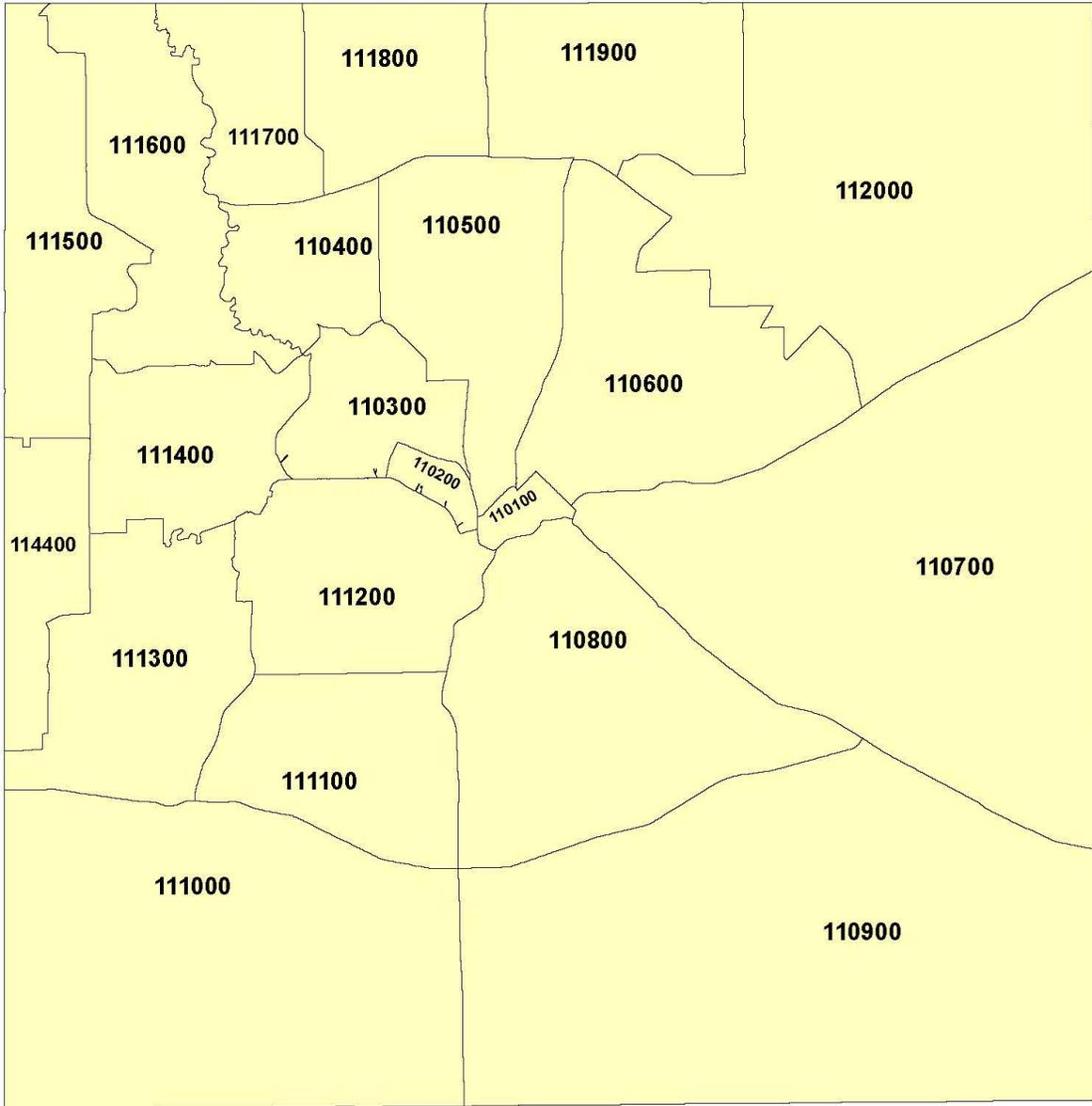
Appendix E

Commercial IMA and LMA Maps

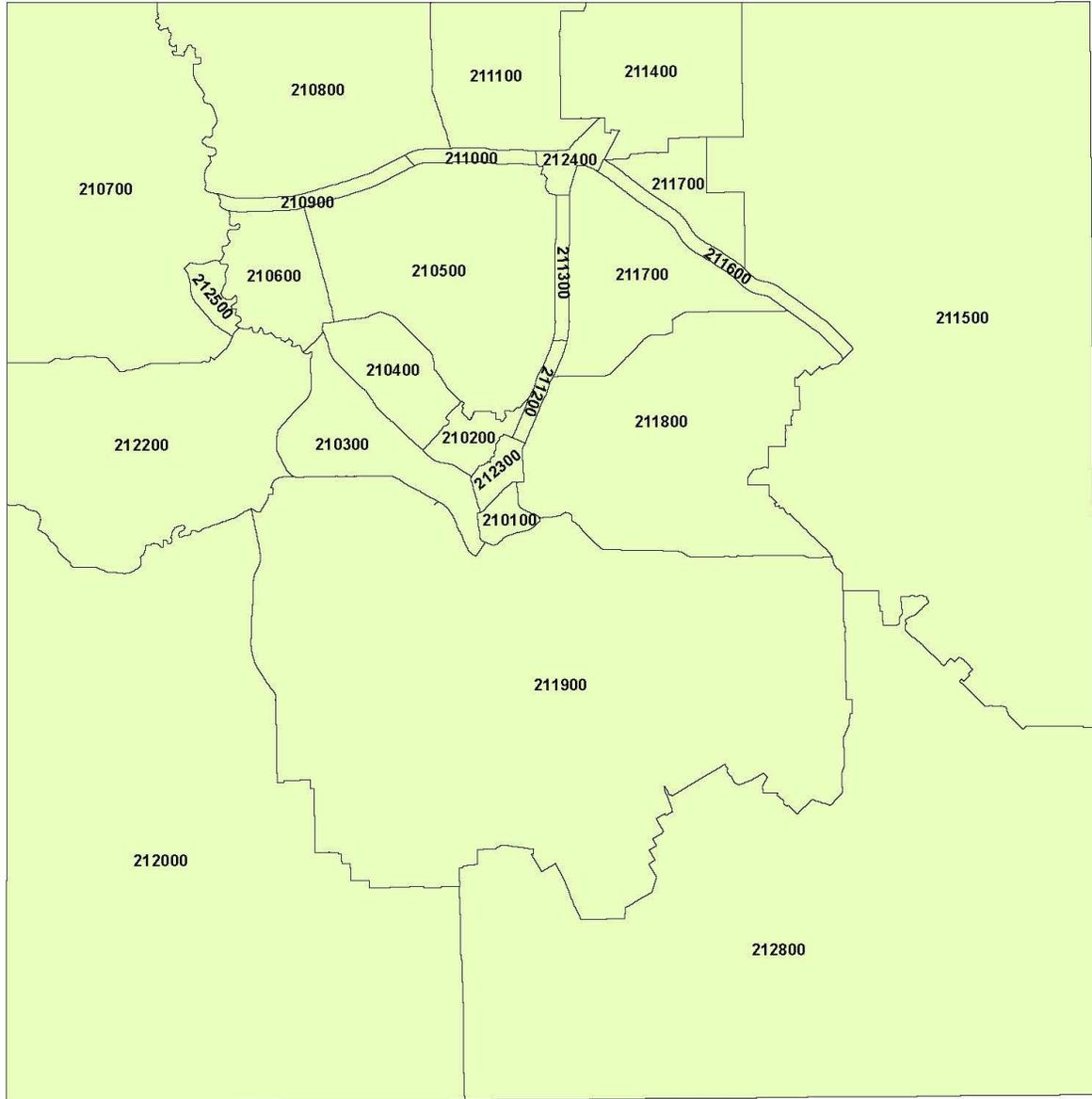
APARTMENT IMPROVEMENT SUBMARKETS



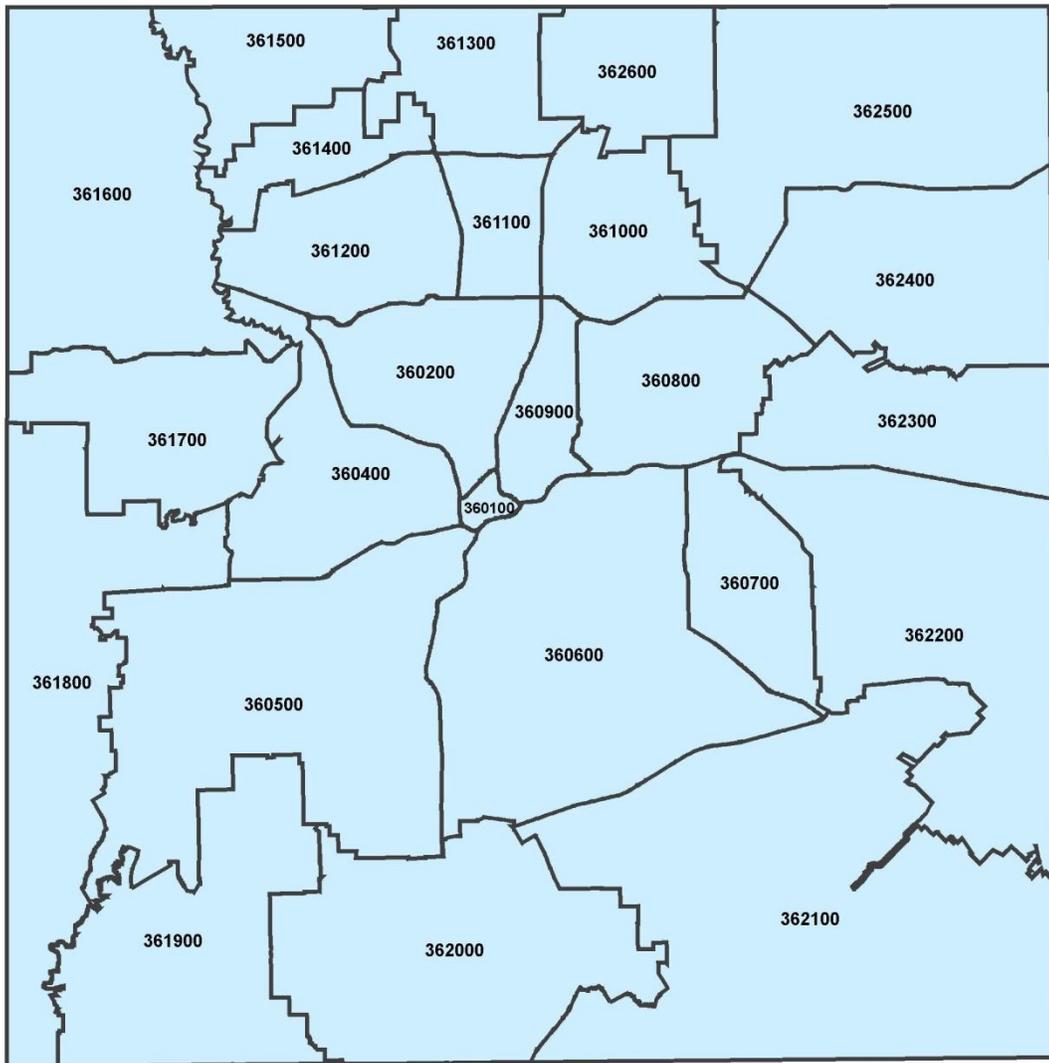
INDUSTRIAL IMPROVEMENT SUBMARKETS



OFFICE IMPROVEMENT SUBMARKETS

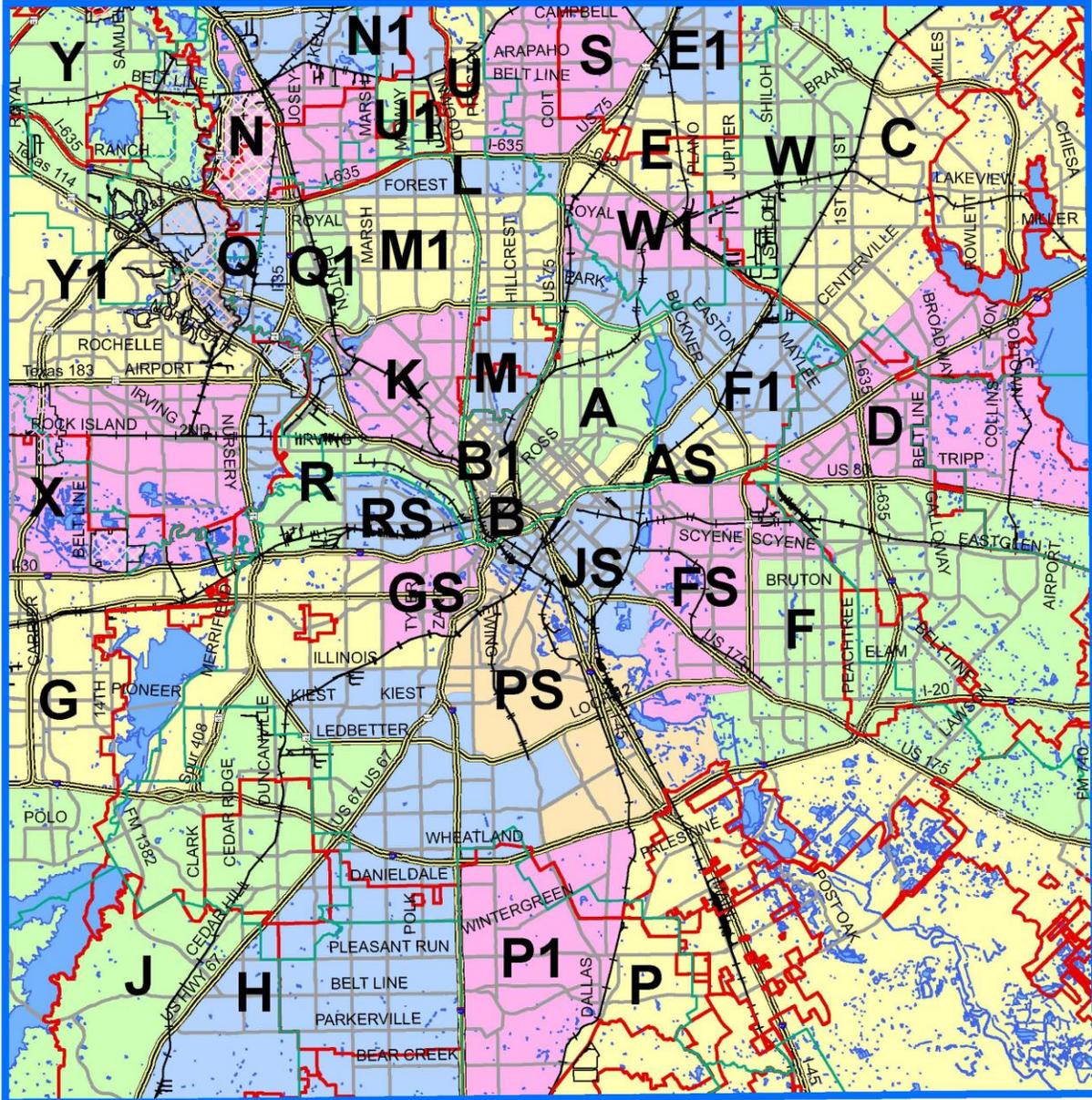


RETAIL IMPROVEMENT SUBMARKETS



Appendix G
Business Personal Property (BPP) Routes

Dallas Central Appraisal District Business Personal Property 2014 Routes



Legend

Special Districts

- | | |
|--|-------------------------------|
| DALLAS COUNTY FCD #1 | GRAND PRAIRIE METRO URD |
| DALLAS COUNTY URD | IRVING FCD SECTION 1 |
| DENTON COUNTY LEVEE IMPROVEMENT DISTRICT | IRVING FCD, SECTION III |
| DENTON COUNTY LID - RUD | LANCASTER MUD #1 |
| DENTON COUNTY ROAD UTILITY DISTRICT | N W DALLAS COUNTY FCD |
| | VALWOOD IMPROVEMENT AUTHORITY |

2014 Routes

- | | | | | |
|------------------|----------|----------|----------|----------|
| County | ROUTE E1 | ROUTE JS | ROUTE P1 | ROUTE U1 |
| School Districts | ROUTE A | ROUTE F | ROUTE K | ROUTE PS |
| Cities | ROUTE AS | ROUTE F1 | ROUTE L | ROUTE Q |
| Railroads | ROUTE B | ROUTE FS | ROUTE M | ROUTE Q1 |
| Freeway | ROUTE B1 | ROUTE G | ROUTE M1 | ROUTE R |
| Major Roads | ROUTE C | ROUTE GS | ROUTE N | ROUTE RS |
| Lakes | ROUTE D | ROUTE H | ROUTE N1 | ROUTE S |
| | ROUTE E | ROUTE J | ROUTE P | ROUTE U |



April 15, 2014

Appendix F

DCAD 2015 and 2016 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 – April 15

- Residential Neighborhood Reappraisal
- Commercial IMA and LMA Reappraisal

February 1 – May 15

- BPP Rendition Processing
- BPP Valuation
- Leased Equipment Project

April 1 – April 30

- Final Performance Analysis

May 1 – May 20

- Real Property Appraisal Notification
- BPP Appraisal Notification

May 1- July 25

- Appraisal Review Board Process

**DALLAS CENTRAL APPRAISAL DISTRICT
2015-2016 REAPPRAISAL PLAN
CALENDAR OF KEY APPRAISAL EVENTS**

Mon	July 28, 2014	- Management Plan Year 2014-2015 begins.
Wed	Aug. 6, 2014	- Board of Directors' meeting. Public hearing on 2015-2016 Reappraisal Plan.
Thu	Aug. 21, 2014	- ARB Full Board approves Supplemental #08-2014.
Sun	Aug. 31, 2014	- Fiscal Year 2013-2014 ends.
Mon	Sept. 1, 2014	- Fiscal Year 2014-2015 begins. - Statutory appraisal date for certain BPP inventory properties (Sec. 23.12). - Labor Day holiday.
Thu	Sept. 18, 2014	- ARB Full Board approves Supplemental #09-2014.
Wed	Oct. 1, 2014	- 2014 Property Tax Bills are mailed to taxpayers (approximate date).
Wed	Oct. 8, 2014	- Board of Directors' meeting.
Thu	Oct. 16, 2014	- ARB Full Board approves Supplemental #10-2014.
Thu	Nov. 6, 2014	- Fall Taxing Entity Meeting.
Thu	Nov. 20, 2014	- ARB Full Board approves Supplemental #11-2014.
	Nov. 27 - 28, 2014	- Thanksgiving Day holidays.
Wed	Dec. 10, 2014	- Board of Directors' meeting
Thu	Dec. 18, 2014	- ARB Full Board approves Supplemental #12-2014.
	Dec. 24 - 25, 2014	- Christmas holidays.
Wed	Jan. 1, 2015	- New Year's Day holiday. - Assessment Date.
Fri	Jan. 2, 2015	- BPP Renditions and Freeport Exemption Applications are mailed.
Wed	Jan. 7, 2015	- Board of Directors' meeting. Election of Board officers.
Thu	Jan. 15, 2015	- ARB Full Board approves Supplemental #01-2015.
Mon	Jan. 19, 2015	- Martin Luther King, Jr. Day holiday.
Fri	Jan. 30, 2015	- Homestead Exemption Applications are mailed.
Sun	Feb. 1, 2015	- Unpaid 2014 Property Tax Bills become delinquent and subject to penalties and interest.
Wed	Feb. 4, 2015	- Board of Directors' meeting.
Thu	Feb. 19, 2015	- ARB Full Board approves Supplemental #02-2015.
Thu	March 19, 2015	- ARB Full Board approves Supplemental #03-2015.
Fri	April 3, 2015	- Good Friday holiday.
Wed	April 8, 2015	- Board of Directors' meeting. Public hearing on proposed Fiscal Year 2015-2016 budget.
Thu	April 9, 2015	- Spring Taxing Entity Meeting (tentative date).

**DALLAS CENTRAL APPRAISAL DISTRICT
2015-2016 REAPPRAISAL PLAN
CALENDAR OF KEY APPRAISAL EVENTS**

Wed	April 15, 2015	- Deadline for filing renditions and requests for BPP rendition extensions.
Thu	April 16, 2015	- Data entry cutoff for 1st Mailing of Appraisal Notices (real property accounts). - ARB Full Board approves Supplemental #04-2015.
Fri	April 24, 2015	- 1st Mailing Notices of Appraised Value are mailed. - Online 2015 notices for real property are available on DCAD Website at end of day.
Mon	April 27, 2015	- ARB Period begins (4-1/2 day work week).
Tue	April 28, 2015	- Extended hours for Residential to 6:00 P.M.
Thu	April 30, 2015	- Preliminary Certification Estimates are released to the taxing entities.
Sat	May 2, 2015	- Extended hours for Residential (8:00 A.M. to Noon).
Tue	May 5, 2015	- Extended hours for Residential to 6:00 P.M.
Wed	May 6, 2015	- Board of Directors' meeting. Final Fiscal Year 2015-2016 budget adopted.
Thu	May 7, 2015	- Data entry cutoff for 2nd Mailing of Appraisal Notices (BPP accounts without rendition extensions).
Sat	May 9, 2015	- Extended hours for Residential (8:00 A.M. to Noon).
Tue	May 12, 2015	- 2nd Mailing Notices of Appraised Value are mailed. - 2015 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 14, 2015	- First Preliminary EVR is available to the taxing entities on the DCAD Website.
Fri	May 15, 2015	- Deadline for filing BPP renditions with timely extensions. - ARB Full Board accepts 1st Mailing appraisal records (real property) and approves Supplemental #05-2015.
Sat	May 16, 2015	- Extended hours for Residential (8:00 A.M. to Noon).
Mon	May 18, 2015	- ARB Hearings begin for Real Property (tentative date).
Tue	May 19, 2015	- Extended hours for Residential to 6:00 P.M.
Thu	May 21, 2015	- Data Entry cutoff for 3rd Mailing of Appraisal Notices (real property flagged notify, Ag, railroad corridor accounts, mineral interest accounts, BPP flagged notify, and BPP accounts without a 2nd Mailing flag).
Mon	May 25, 2015	- Memorial Day holiday.
Tue	May 26, 2015	- 3rd Mailing Notices of Appraised Value are mailed. - 2015 proposed values for 3rd Mailing are available on DCAD Website at the end of the day. - Extended hours for Residential to 6:00 P.M.
Fri	May 29, 2015	- Second Preliminary EVR and Preliminary Certification output is available to taxing entities on DCAD Website.
Mon	June 1, 2015	- Protest deadline for 1st Mailing Notices of Appraised Value.
Thu	June 11, 2015	- Protest deadline for 2nd Mailing Notices of Appraised Value.
Fri	June 12, 2015	- ARB Full Board accepts 2nd Mailing (BPP) and 3rd Mailing (real property and BPP) appraisal records.
Sat	June 20, 2015	- Saturday ARB Hearings for Residential accounts (tentative date).
Thu	June 25, 2015	- Protest deadline for 3rd Mailing Notices of Appraised Value.

**DALLAS CENTRAL APPRAISAL DISTRICT
2015-2016 REAPPRAISAL PLAN
CALENDAR OF KEY APPRAISAL EVENTS**

Fri	June 26, 2015	- ARB Full Board approves Supplemental #06-2015.
Fri	July 3, 2015	- Independence Day holiday (Observed).
Fri	July 17, 2015	- Last day of ARB Hearings (tentative date). - Data entry cutoff for Certification.
Mon	July 20, 2015	- ARB Full Board approves 2015 appraisal records and submits records to Chief Appraiser for Certification of Appraisal Rolls.
Fri	July 24, 2015	- Chief Appraiser certifies the 2015 Appraisal Rolls. - 2015 Certified EVR's, Certified Appraisal Rolls and other Certification reports are available to the taxing entities on the DCAD Website.
Sun	July 26, 2015	- Management Plan Year 2014-2015 ends.
Mon	July 27, 2015	- Management Plan Year 2015-2016 begins.
Wed	Aug. 5, 2015	- Board of Directors' meeting.
Thu	Aug. 20, 2015	- ARB Full Board approves Supplemental #08-2015.
Mon	Aug. 31, 2015	- Fiscal Year 2014-2015 ends.
Tue	Sept. 1, 2015	- Fiscal Year 2015-2016 begins. - Statutory appraisal date for certain BPP inventory properties (Sec. 23.12).
Mon	Sept. 7, 2015	- Labor Day holiday.
Thu	Sept. 17, 2015	- ARB Full Board approves Supplemental #09-2015.
Thu	Oct. 1, 2015	- 2015 Property Tax Bills are mailed to taxpayers (approximate date).
Wed	Oct. 14, 2015	- Board of Directors' meeting.
Thu	Oct. 15, 2015	- ARB Full Board approves Supplemental #10-2015.
Thu	Nov. 5, 2015	- Fall Taxing Entity Meeting.
Thu	Nov. 19, 2015	- ARB Full Board approves Supplemental #11-2015.
	Nov. 26 - 27, 2015	- Thanksgiving Day holidays.
Mon	Dec. 9, 2015	- Board of Directors' meeting
Thu	Dec. 17, 2015	- ARB Full Board approves Supplemental #12-2015.
	Dec. 24 - 25, 2015	- Christmas holidays.
Fri	Jan. 1, 2016	- New Year's Day holiday. - Assessment Date.
Mon	Jan. 4, 2016	- BPP Renditions and Freeport Exemption Applications are mailed.
Wed	Jan. 6, 2016	- Board of Directors' meeting. Election of Board officers.
Mon	Jan. 18, 2016	- Martin Luther King, Jr. Day holiday.
Thu	Jan. 21, 2016	- ARB Full Board approves Supplemental #01-2016.

**DALLAS CENTRAL APPRAISAL DISTRICT
2015-2016 REAPPRAISAL PLAN
CALENDAR OF KEY APPRAISAL EVENTS**

Fri	Jan. 29, 2016	- Homestead Exemption Applications are mailed.
Mon	Feb. 1, 2016	- Unpaid 2015 Property Tax Bills become delinquent and subject to penalties and interest.
Wed	Feb. 3, 2016	- Board of Directors' meeting.
Thu	Feb. 18, 2016	- ARB Full Board approves Supplemental #02-2016.
Thu	March 17, 2016	- ARB Full Board approves Supplemental #03-2016.
Fri	March 25, 2016	- Good Friday holiday.
Wed	April 13, 2016	- Board of Directors' meeting. Public hearing on proposed Fiscal Year 2016-2017 budget.
Thu	April 14, 2016	- Spring Taxing Entity Meeting (tentative date).
Fri	April 15, 2016	- Deadline for filing renditions and requests for BPP rendition extensions.
Thu	April 21, 2016	- Data entry cutoff for 1st Mailing of Appraisal Notices (real property accounts). - ARB Full Board approves Supplemental #04-2016.
Fri	April 29, 2016	- 1st Mailing Notices of Appraised Value are mailed. - Online 2016 notices for real property are available on DCAD Website at end of day. - Preliminary Certification Estimates are released to the taxing entities.
Mon	May 2, 2016	- ARB Period begins (4-1/2 day work week).
Tue	May 3, 2016	- Extended hours for Residential to 6:00 P.M.
Wed	May 4, 2016	- Board of Directors' meeting. Final Fiscal Year 2016-2017 budget adopted.
Sat	May 7, 2016	- Extended hours for Residential (8:00 A.M. to Noon).
Tue	May 10, 2016	- Extended hours for Residential to 6:00 P.M.
Thu	May 12, 2016	- Data entry cutoff for 2nd Mailing of Appraisal Notices (BPP accounts without rendition extensions).
Fri	May 13, 2016	- ARB Full Board accepts 1st Mailing appraisal records (real property) and approves Supplemental #05-2016.
Sat	May 14, 2016	- Extended hours for Residential (8:00 A.M. to Noon).
Mon	May 16, 2016	- Deadline for filing BPP renditions with timely extensions. - ARB Hearings begin for Real Property (tentative date).
Tue	May 17, 2016	- 2nd Mailing Notices of Appraised Value are mailed. - 2016 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 19, 2016	- First Preliminary EVR is available to the taxing entities on the DCAD Website.
Sat	May 21, 2016	- Extended hours for Residential (8:00 A.M. to Noon).
Tue	May 24, 2016	- Extended hours for Residential to 6:00 P.M.
Thu	May 26, 2016	- Data Entry cutoff for 3rd Mailing of Appraisal Notices (real property flagged notify, Ag, railroad corridor accounts, mineral interest accounts, BPP flagged notify, and BPP accounts without a 2nd Mailing flag).
Mon	May 30, 2016	- Memorial Day holiday.

**DALLAS CENTRAL APPRAISAL DISTRICT
2015-2016 REAPPRAISAL PLAN
CALENDAR OF KEY APPRAISAL EVENTS**

Fri	June 26, 2015	- ARB Full Board approves Supplemental #06-2015.
Fri	July 3, 2015	- Independence Day holiday (Observed).
Fri	July 17, 2015	- Last day of ARB Hearings (tentative date). - Data entry cutoff for Certification.
Mon	July 20, 2015	- ARB Full Board approves 2015 appraisal records and submits records to Chief Appraiser for Certification of Appraisal Rolls.
Fri	July 24, 2015	- Chief Appraiser certifies the 2015 Appraisal Rolls. - 2015 Certified EVR's, Certified Appraisal Rolls and other Certification reports are available to the taxing entities on the DCAD Website.
Sun	July 26, 2015	- Management Plan Year 2014-2015 ends.
Mon	July 27, 2015	- Management Plan Year 2015-2016 begins.
Wed	Aug. 5, 2015	- Board of Directors' meeting.
Thu	Aug. 20, 2015	- ARB Full Board approves Supplemental #08-2015.
Mon	Aug. 31, 2015	- Fiscal Year 2014-2015 ends.
Tue	Sept. 1, 2015	- Fiscal Year 2015-2016 begins. - Statutory appraisal date for certain BPP inventory properties (Sec. 23.12).
Mon	Sept. 7, 2015	- Labor Day holiday.
Thu	Sept. 17, 2015	- ARB Full Board approves Supplemental #09-2015.
Thu	Oct. 1, 2015	- 2015 Property Tax Bills are mailed to taxpayers (approximate date).
Wed	Oct. 14, 2015	- Board of Directors' meeting.
Thu	Oct. 15, 2015	- ARB Full Board approves Supplemental #10-2015.
Thu	Nov. 5, 2015	- Fall Taxing Entity Meeting.
Thu	Nov. 19, 2015	- ARB Full Board approves Supplemental #11-2015.
	Nov. 26 - 27, 2015	- Thanksgiving Day holidays.
Mon	Dec. 9, 2015	- Board of Directors' meeting
Thu	Dec. 17, 2015	- ARB Full Board approves Supplemental #12-2015.
	Dec. 24 - 25, 2015	- Christmas holidays.
Fri	Jan. 1, 2016	- New Year's Day holiday. - Assessment Date.
Mon	Jan. 4, 2016	- BPP Renditions and Freeport Exemption Applications are mailed.
Wed	Jan. 6, 2016	- Board of Directors' meeting. Election of Board officers.
Mon	Jan. 18, 2016	- Martin Luther King, Jr. Day holiday.
Thu	Jan. 21, 2016	- ARB Full Board approves Supplemental #01-2016.

**DALLAS CENTRAL APPRAISAL DISTRICT
2015-2016 REAPPRAISAL PLAN
CALENDAR OF KEY APPRAISAL EVENTS**

Tue	May 31, 2016	<ul style="list-style-type: none"> - 3rd Mailing Notices of Appraised Value are mailed. - 2016 proposed values for 3rd Mailing are available on DCAD Website at the end of the day. - Extended hours for Residential to 6:00 P.M. - Protest deadline for 1st Mailing Notices of Appraised Value.
Fri	June 3, 2016	<ul style="list-style-type: none"> - Second Preliminary EVR and Preliminary Certification output is available to taxing entities on DCAD Website.
Fri	June 10, 2016	<ul style="list-style-type: none"> - ARB Full Board accepts 2nd Mailing (BPP) and 3rd Mailing (real property and BPP) appraisal records.
Thu	June 16, 2016	<ul style="list-style-type: none"> - Protest deadline for 2nd Mailing Notices of Appraised Value.
Sat	June 18, 2016	<ul style="list-style-type: none"> - Saturday ARB Hearings for Residential accounts (tentative date).
Fri	June 24, 2016	<ul style="list-style-type: none"> - ARB Full Board approves Supplemental #06-2016.
Thu	June 30, 2016	<ul style="list-style-type: none"> - Protest deadline for 3rd Mailing Notices of Appraised Value.
Mon	July 4, 2016	<ul style="list-style-type: none"> - Independence Day holiday.
Tue	July 19, 2016	<ul style="list-style-type: none"> - Last day of ARB Hearings (tentative date). - Data entry cutoff for Certification.
Wed	July 20, 2016	<ul style="list-style-type: none"> - ARB Full Board approves 2016 appraisal records and submits records to Chief Appraiser for Certification of Appraisal Rolls. - ARB approves Supplemental #07-2016.
Sun	July 24, 2016	<ul style="list-style-type: none"> - Management Plan Year 2015-2016 ends.
Mon	July 25, 2016	<ul style="list-style-type: none"> - Chief Appraiser certifies the 2016 Appraisal Rolls. - 2016 Certified EVR's, Certified Appraisal Rolls and other Certification reports are available to the taxing entities on the DCAD Website. - Management Plan Year 2016-2017 begins.
Note: Most dates are subject to change if circumstances warrant.		