

## RESIDENTIAL SALES DATA METHODOLOGY

CY2018

(Prepared August 2019)

The Sales data for calendar year (CY) 2018 are derived from the *MdProperty View*<sup>1</sup> Sales Databases created for Maryland's 23 counties and Baltimore City.

The Maryland Department of Planning (Planning) receives sales files from the State Department of Assessments and Taxation (Assessments). The Assessments files contain one complete year and are updated monthly (e.g. the December 2018 sales file contains sales with a trade date (TRADATE value YYYYMMDD) for December 1, 2017 - November 30, 2018).<sup>2</sup> Planning assigns X,Y mapping coordinates to the sales records based on the latest *MdProperty View* parcel X,Y values at the time of the sales download.

To create CY2018 Residential Sales database with X,Y mapping locations the following steps were taken:

**Step 1 Statewide Sales Database** - It is necessary to combine two separate (12 month) sales files received from Assessments to create a CY2018 database. The May 2019 sales file was used to obtain the records for June 2018 through December 2018 and the December 2018 Sales Database was used to obtain the sales for January 2018 through May 2018. The separate *MdProperty View* (12 month) sales files for Maryland's 23 counties and Baltimore City were combined into a Statewide (12 month) sales file. The May 2019 statewide file has 282,459 sales records and the December 2018 statewide file has 281,738 sales records.

**Step 2 Trade Date** – From Step 1, the subset of records from the December sales file where the sales trade date (TRADATE) is between January 1, 2018 (20180101) and May 31, 2018 (20180531) were extracted (94,196 of the 282,459 from Step 1). Similarly, the May sales file was used to extract the records where the sales trade date (TRADATE) is between June 1, 2018 (20180601) and December 31, 2018 (20181231), 194,099 of the 281,738 records. When combined these two extracts formed the initial CY2018 database of all sales, 288,295 records. This procedure of combining records from two sales files assures that no records are missed for the calendar year since there is a lag for some jurisdictions in recording and updating their sales records.

**Step 3 Conveyance Type** - From Step 2, only Sales Database records where the method of conveyance at the time of sale is an arms-length transfer of a single parcel (CONVEY1 field values of 0, 1, or 2) were included (94,481 of the 288,295 records from Step 2).

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<sup>1</sup> *MdProperty View*, first developed by the Maryland Department of Planning in 1996, is an electronic GIS (Geographic Information System) tool for accessing information on Maryland's 2.3 million parcel accounts referenced spatially via X,Y points to their location on property maps that can be viewed with other map layers such as State Highway Administration roads. For more information, go to <http://planning.maryland.gov/OurProducts/PropertyMapProducts/MDPropertyViewProducts.shtml>

<sup>2</sup> Since Assessments converted their data system to the Manatron, Inc. GRM custom CAMA Integrated Property Tax Software System in 2011, there have been delays in receiving an entire year of sales data. To ensure that all the records for CY 2018 were included in the residential sales dataset, it was necessary to include 2018 sales from the May 2019 sales download.

**Step 4 Improvement Value** – From Step 3, Sales Database records were included with an improvement value equal to or greater than \$10,000 (CURIMPVL field, current full market improvement value). Also included were records where CURIMPVL is less than \$10,000 and the sale improvement value (SALIMPVL field) is equal to or greater than \$10,000). This ensures that the properties included are those that are most likely to have a dwelling unit and that parcels are excluded where there is only land value with little or no improvement value (89,759 of the 94,481 records from Step 3). A new field, IMPVALUE, was created and is populated with the value in CURIMPVL where that field has a value of \$10,000 or more otherwise IMPVALUE was populated with the value in SALIMPVL which has a value of \$10,000 or more).

**Step 5 Residential Sales** - From Step 4, only residential sales records were included in the analysis, i.e. sales records with a LU (Land Use) code of “R” (Residential), “TH” (Townhouse) or “U” (Residential Condominium). (86,731 of the 89,759 records from Step 4).

**Step 6 Duplicate Sales** - The database was reviewed for “duplicate” sales database records, i.e. multiple records with the same parcel account number (ACCTID), Trade Date (TRADATE) and Consideration Value (CONSIDR1). Upon review, most of the “duplicate” sales reflected instances of transfers involving financial institutions or home builders in combination with individual owner purchases or sales. The “duplicates” were removed from the Sales Database records. For each group of duplicate records, the record with the highest transaction number (TRANSNO1) was retained. (86,565 of the 86,731 records from Step 5 are kept, removing 166 records.)

**Step 7 Current Total Values Versus Consideration Value** - For some sales database records the current total value (CURTTLVL) is considerably higher than the consideration or amount of money paid for the property at the time of the sale (CONSIDR1). To address this issue, the data retained after Step 6 were queried to identify those records where the current total value exceeded the consideration value by more than 1½ times. These properties were then deleted from the analysis. Also removed were a few records where the CONSIDR1 was less than \$10,000. Thus the residential sales records retained are those where the consideration is two-thirds or more of the improvement value and the consideration is greater than \$10,000. (81,995 of the 86,731 records from Step 6 are kept.)

**Step 8 CONSIDR1 Review** – Sales records where the consideration (CONSIDR1) is \$1 Million or more and the Improvement value (IMPVALUE) is 25% or less of the Consideration value (CONSIDR1) were reviewed to determine if the sale was to an owner that is a business entity (e.g. bank, LLC, home builder, mortgage company), trustee, or other organization. These are likely to be properties purchased for redevelopment or a use other than residential sale and occupancy.

Also, all sales where the CONSIDR1 is \$1 million or more and the Improvement Value is 10% or less of the Consideration Value are reviewed to determine if the consideration value is in fact correct. For sales meeting these criteria, the CONSIDR1 values from the sales download database matched the current posting of the sales data on the Assessments website and therefore were considered accurate. 81,934 of the 81,995 records from Step 7 are kept.)

**Step 9 Duplicate Account Numbers** - Records were reviewed again for duplicate occurrences of the same account numbers to eliminate any records where a business entity (e.g. bank, LLC, home builder, mortgage company), trustee, or other organization is listed as the new owner of the property rather than a private individual. Sales to business entities, trustees, or other organizations are likely interim transactions that do not represent final residential sales. Consecutive sales of the same account among private individuals may also include interim transactions.

The 2018 sales database contained 1,601 records with two or three instances of the same account number. The chart below summarizes how these records were removed or retained to eliminate likely interim transactions.

Sale Type	Action Taken			Records Kept	Records Deleted
	Kept All Transactions	Deleted All Transactions	Deleted Transaction with Earliest TRADATE		
Any sale to a business/trust/organization		✓			710
Any sale to private individual if next sale of same account is to a business/trustee/organization OR if previous sale of same account was to a business/trustee/ organization	✓			437	--
Consecutive sales of same account to private individuals:					
· <i>Sales share transaction date (TRADATE ) OR Sales share a consideration value (CONSIDR1)</i>			✓	18	18
· <i>Subsequent sale price decreased below first sale price</i>			✓	121	121
· <i>Subsequent sale price increased by 10 percent or more over the previous sale</i>			✓	61	61
· <i>Subsequent sale price increased by less than 10 percent over the previous sale and both transactions took place within 90 days</i>			✓	17	17
· <i>Subsequent sale price increased by less than 10 percent and transactions occurred beyond 90 days of each other</i>	✓			20	--
<b>Total Records with Multiple Instances of Same Account</b>					<b>1601</b>
<b>Records Deleted</b>					<b>927</b>
<b>Records Kept</b>					<b>674</b>

Finally, the records with multiple instances of the same account are identified for deletion if the consideration (CONSIDR1) is less than 60% of the current total value (CURTTLVL). Since none of the remaining 550 transactions met this criteria, no additional records were flagged for deletion. (70,600 of the 80,550 records from Step 8 are kept.)

**Step 10 Sales with X, Y Location** - When the sales records are extracted from Assessments they are assigned X, Y mapping locations based on the *MdProperty View* parcel account coordinates available at that time. To improve the mapping, the X,Y values are updated using the most recent *MdProperty View* X,Y mapping coordinates (2013/14 Edition for all counties).

2905 of the 80,550 sales records could not be assigned X, Y coordinates using *MdProperty View* data. These unlocated accounts were exported to separate file for further research and then deleted from the main file. (77,645 records from Step 9 are kept.)

**Step 11 Building Description Check** - When Assessments converted their data system to the Manatron, Inc. GRM custom CAMA Integrated Property Tax Software System in 2011, they took advantage of the opportunity to substantially reformat their core datasets. One of the changes they made was to redevelop the structure grade, type of construction, number of stories/style and building type codes used to identify the specific characteristics of buildings found on a given property. Structure codes and descriptions have changed significantly as compared to earlier Edition years of *MdProperty View*.

For this reason, a special statewide extract of all structure codes and their accompanying descriptions was created from the February 2012 Statewide Parcel extract downloaded from the Assessments website. This structure code extract was then matched to *MdProperty View* 2014 Edition, and the redeveloped structure codes were used to produce the 2015 Residential Sales extract, with the structure codes used in *MdProperty View* 2014 Edition only being used in the absence of matched structure codes and descriptions from the structure code extract.

A new field (HU) was added to the database and the residential sales records are grouped into six types based on the Land Use (LU) and dwelling description fields (DESCSTYL and DESCBLDG) from the new structure codes and descriptions in the sales database. The six residential sales housing types are:

Single Family (HU = SF) (45,151 records)

- One or more dwelling description fields includes single family, split foyer or split level, but LU is not TH and dwelling description fields do not contain townhouse (TH); and/or
- LU = U, property does not meet the townhouse or condominium criteria below, and DESCSTYLE indicates the unit has a basement; and/or
- LU = U, property does not meet the townhouse or condominium criteria below, DESCSTYLE indicates there is no basement, and research does not suggest the property contains multiple dwellings within the same building

Townhouse (HU = TH) (24,353 records)

- LU = TH, and/or
- One or more dwelling description fields includes townhouse (TH), and LU = R, U or TH

Condominium (HU = CON) (6,474 records)

- LU = U or R, and one or more dwelling description fields include condominium (garden, high-rise, penthouse, studio/efficiency) but none of the dwelling description fields contain condominium townhouse or condominium single family
- LU = U, DESCSTYLE indicates no basement, and research suggests the property contains multiple dwellings within the same building

Mobile Home (HU = MH) (213 records)

- One or more dwelling description fields contains mobile home

Unclassified Residential (HU = UNK or HU = RENT) (1,381 records)

- HU = UNK if dwelling description fields are blank or contain no data and LU = R (127 records)
- HU = RENT if one or more dwelling description fields contain rental dwelling and LU = R (1,254 records)

Deletes (HU = D) (46 records)

- Includes condominium storage units, parking spaces, churches, and boat slips with a sale (CONSIDR1) value of \$50,000 or less

A few properties that did not fit the above criteria were assigned a code based on readily available information (e.g. Google Street View, adjacent parcel data, etc). The 71 condominium storage units, parking spaces, and boat slips referenced above were removed from the dataset during this step. (77,574 records from Step 10 are kept.)

**Step 12 Small Geographic Area Assignments** – During this step each sale was assigned a jurisdiction identifier (one of the 23 Maryland counties or Baltimore City), municipality identifier (where applicable), USPS zip code, 2010 Census tract, and 2010 block group (block groups are subsets of Census tracts), and location relative to the Priority Funding Area (PFA) for the purposes of tabular analysis and map display.

The geographic area identifier fields included on the calendar year sales record files are: COUNTY (positions 1-2 are the State Code, 24, and positions 3-5 are the jurisdiction FIPS code), DESC TOWN (town name preceded by a four character County abbreviation), ZIPCODE1 (5 digit USPS zip code), ZIPCODE2 (5 digit USPS zip code preceded by 5 digit County Code), ZIPNAME (zip code description), CT2010 (2010 Census tract), and BG2010 (2010 block group), and PFA (location relative to PFA). For Census tract and block group data, the first 5 positions are the County code, and positions 6-11 are the Census tract. For block group data position 12 is the block group.

The source of the COUNTY identifier and DESC TOWN fields are the sales extract data and *MdProperty View* 2013/14 respectively. Additionally, *MdProperty View* contains boundary files (polygons map layers) for zip codes, Census tracts, and block groups. Using a spatial join, the zip code, Census tract and block group identifiers were assigned to each sales record based on the sale's X, Y location and its intersection with the respective polygon boundary file.

Finally, each sales record was tagged with its location relative to the PFA based on the PFA boundaries as of July 2019. A sales record is either inside the PFA (inPFA), in a PFA Comment Area (inPFAc) or outside the PFA (outPFA).

In a few cases the PFA, zip code, Census tract, and block group assignments needed manual adjustment. For example, sale points that were just offshore of the PFA were reassigned to the PFA, and minor adjustments to the zip code, Census Tract, and block group assignments were necessary for consistency with the COUNTY identifier.

**Step 13 Year Built** - The year built (YEARBLT field) was determined based on the values found in the year built field in the sales database records provided to MDP by Assessments. These values were supplemented with the year built field values from *MdProperty View*. Specifically, the YEARBLT field was given the value in *MdProperty View 2013/14* where the YEARBLT field was not specified (i.e. blank) in the sales record and was populated in *MdProperty View*. Where the *MdProperty View* and Sales YEARBLT fields were both populated and had different values the one with the more recent year built was used.

**Step 14 Final Residential Sales Database for CY2018** – Selected fields from Step 13 for the 77,574 records were written out to the final sales database as a shapefile, for example, talb\_sale15.shp, with the following field content:

Field	Value
FID	335
Shape	Point
ACCTID	2101116614
HU	SF
TRADATE	20100601
CONSIDR1	250000
IMPVALUE	124900
YEARBLT	2010
COUNTY	24041
DESCTOWN	
ZIPCODE1	21601
ZIPCODE2	2404121601
ZIPNAME	Easton
CT2010	24041960201
BG2010	240419602012
PFA	outPFA

This database is available for use with *MdProperty View* and *FINDER*. The database can also be used to generate aggregate statistical reports on residential sales for CY2016 for the State, 23 counties and Baltimore City, municipalities, zip codes, Census tracts and block groups as well as areas in and out of Priority Funding Areas.