RESIDENTIAL SALES DATA METHODOLOGY
CY2016
(Prepared July 2017)

The sales data for calendar year (CY) 2016 are derived from the *MdProperty View*[1] 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 2016 sales file contains sales with a transaction date (TRADATE) value YYYYMMDD for December 1, 2015 - November 30, 2016]. 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 the CY2016 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 CY2016 database. The May 2017 sales file was used to obtain the records for June 2016 through December 2016 and the December 2016 sales file was used to obtain the sales for January 2016 through May 2016. 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 2017 statewide file has 176,599 sales records and the December 2015 statewide file has 175,273 sales records.

Step 2 Transaction Date – From Step 1, the subset of records from the December sales file where the sale transaction date (TRADATE) is between January 1, 2016 (20160101) and May 31, 2016 (20160531) were extracted (73,515 of the 175,273 from Step 1). Similarly, the May sales file was used to extract the records where the TRADATE is between June 1, 2016 (20160601) and December 31, 2016 (20161231), 107,666 of the 176,599 records. When combined these two extracts formed the initial CY2016 database of all sales, 181,181 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 (CONVEY1) is an arms-length transfer of a single parcel (CONVEY1 field values of 0, 1, or 2) were included (81,922 of the 181,181 records from Step 2).

Step 4 Improvement Value – From Step 3, sales database records were included with a current full market improvement value (CURIMPVL) equal to or greater than $10,000 (field). Also included were records where CURIMPVL is less than $10,000 and the sale improvement value (SALIMPVL) is equal to or greater than $10,000. This ensures that the properties included are those that are most likely to have a

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[1] *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

dwelling unit and that parcels are excluded where there is only land value with little or no improvement value (78,010 of the 81,922 records from Step 3). A new field, IMPVALUE, was created and populated with the value in CURIMPVL where that field has a value of $10,000 or more otherwise IMPVALUE was populated with the values in SALIMPVL where SALIMPVL has a value of $10,000 or more.

Step 5 Residential Sales – From Step 4 forward, only residential sales records were included in the analysis, i.e. sales records with a land use code (LU) of "R" (Residential), "TH" (Townhouse) or "U" (Residential Condominium). (75,475 of the 78,010 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), TRADATE and consideration value or amount of money paid for the property at the time of the sale (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. (75,289 of the 75,475 records from Step 5 are kept, removing 186 records).

Step 7 Current Total Values Versus Consideration Value – For some sales database records the current total value (CURTTLVL) is considerably higher than CONSIDR1. To address this issue, the data retained after Step 6 were queried to identify those records where the current total value exceeded CONSIDR1 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 consideration is greater than $10,000. (71,227 of the 75,289 records from Step 6 are kept).

Step 8 CONSIDR1 Review – Sales records where CONSIDR1 is $1 Million or more and the IMPVALUE is 25% or less of 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. For CY2016, 66 such sales were identified and removed from the sales database.

Also, all sales where the CONSIDR1 is $1 million or more and the IMPVALUE is 10% or less of the CONSIDR1 were 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 sales data on the Assessments website and therefore were considered accurate. (71,161 of the 71,227 records from Step 7 are kept).

Step 9 Duplicate Account Numbers – Records were reviewed again for duplicate occurrences of the same ACCTID 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 2016 sales database contained 1,111 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		✓			379
Any sale to private individual if the next sale of same ACCTID is to a business/trustee/organization	✓			44	--
Any sale to private individual if a previous sale of same ACCTID was to a business/trustee/organization	✓			284	--
Consecutive sales of the same ACCTID to private individuals:					
• *Subsequent sale price increased by 10 percent or more over the previous sale*			✓	126	126
• *Subsequent sale price increased by less than 10 percent over the previous sale and both transactions took place within 90 days*			✓	7	7
• *Subsequent sale price increased by less than 10 percent and transactions occurred beyond 90 days of each other*	✓			40	--
• *Subsequent sale price decreased below first sale price*			✓	14	14
• *Two or more sales share a TRADATE*			✓	7	7
• *Two or more sales share a CONSIDR1 value*			✓	28	28
Total Records with Multiple Instances of Same ACCTID					**1,111**
Records Deleted					**561**
Records Kept					**550**

Finally, records with multiple instances of the same ACCTID were identified for deletion if the CONSIDR1 was less than 60% of the CURTTLVL. Since none of the remaining 550 transactions met this criteria, no additional records were flagged for deletion. (70,600 of the 71,161 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 mapping, the x,y values are updated using the most recent *MdProperty View* x,y mapping coordinates (2013/14 Edition for all counties and Baltimore City).

930 of the 71,161 sales records could not be assigned x,y coordinates using *MdProperty View* data. These unlocated accounts were geocoded using the Maryland iMap Composite Locator, Esri World Geocoding Service, or US Census Bureau Geocoder. Addresses that could not be located through geocoding were located by hand using Google Maps or Bing Maps. The x,y locations for addresses that

could not be geocoded were estimated using readily available information (e.g. subdivision plans, real estate websites, etc.). 907 of the 930 unlocated records were assigned x,y values using these methods.

15 of the remaining 23 unlocated records were deleted at this step, because the owner was a business entity (e.g. bank, LLC, home builder, mortgage company), trustee, or other organization. The eight remaining unlocated records were boat slips deleted in Step 11. (70,585 records from Step 9 are kept).

Step 11 Building Description Check – A new field for housing unit type (HU[2]) was added to the database, and the residential sales records were grouped into six types based on the LU and building descriptions obtained from the structure code and building type, and building style/number of stories (DESCBLDG and DESCSTYL) fields included in the sales database. The six residential sales housing types are:

Single Family (HU = SF) (42,399 records)
- One or more building description fields includes single family, split foyer or split level, but LU is not TH and the building 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 buildings within the same building

Townhouse (HU = TH) (21,342 records)
- LU = TH, and/or
- One or more building description fields includes townhouse (TH), and LU = R, U or TH

Condominium (HU = CON) (5,862 records)
- LU = U or R, and one or more building description fields include condominium (garden, high-rise, penthouse, studio/efficiency) but none of the building description fields contain condominium townhouse or condominium single family
- LU = U, DESCSTYL indicates no basement, and research suggests that the property contains multiple buildings within the same building
- Includes 67 condominium storage units, parking spaces, and boat slips with a sale (CONSIDR1) value of $50,000 or less

Mobile Home (HU = MH) (166 records)
- One or more building description fields contains mobile home

Unclassified Residential (HU = UNK or HU = RENT) (816 records)
- HU = UNK if building description fields are blank or contain no data and LU = R (111 records)
- HU = RENT if one or more building description fields contain rental building and LU = R (705 records)

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[2] In some versions of the CY 2016 sales database the building description field heading may be "HU_TYPE" instead of "HU", which indicates the abbreviations contained within the field are spelled out (e.g. "Single Family" instead of "SF").

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 67 condominium storage units, parking spaces, and boat slips referenced above were removed from the dataset during this step. (70,518 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, 2010 census block group (census block groups are subsets of census tracts), and x,y location relative to the Priority Funding Area (PFA) for the purposes of tabular analysis and map display.

The geographic area identifier fields included in the calendar year sales record files are: county [COUNTY (positions 1-2 are the State Code, 24, and positions 3-5 are the jurisdiction census FIPS code)], town name preceded by a four character county abbreviation (DESCTOWN), 5 digit USPS zip code (ZIPCODE1), 5 digit USPS zip code preceded by the 5 digit jurisdiction census FIPS code (ZIPCODE2), zip code description (ZIPNAME), 2010 census tract (CT2010), 2010 census block group (BG2010), and location relative to the Priority Funding Ares (PFA). For the CT2010 and BG2010 fields, the first 5 positions are the county or Baltimore City census FIPS code and positions 6-11 are the census tract. For the BG2010 field, position 12 is the block group.

The source of the COUNTY identifier and the DESCTOWN field 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 census block groups. Using a spatial join, the zip code, census tract and census 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 Priority Funding Area (PFA) based on the PFA boundaries as of July 2017. 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 small geographic area assignments needed manual adjustment. For example, sale points that were just offshore of the PFA were reassigned to the PFA. Other minor adjustments to the small geographic area 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 YEARBLT field in the sales database records provided to Planning by Assessments. These values were supplemented with the YEARBLT 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 YEARBLT was used.

Step 14 Final Residential Sales Database for CY2016 – Selected fields from Step 13 for the 65,919 records were written out to the final sales database as a shapefile, for example, talb_sale15.shp for Talbot County, with the following field content:

Identify

Identify from: ◈ talb_sale10

Location: 472,938.618 128,155.438 Meters

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

Identified 1 feature

This database is available for use with *MdProperty View* and *FINDER* Quantum. 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 census block groups as well as areas in and out of PFAs.