Tarrant Appraisal District
Residential Department

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Residential Property Value Procedures:
How to calculate a value

Mass Appraisal:

The Residential Department is responsible for the annual valuation for over 590,000 properties. The Texas Property Tax Code requires properties to be appraised at market value as of Jan. 1. To complete the valuation of the large volume of properties in Tarrant County the Residential Department utilizes mass appraisal. As defined by the Appraisal Foundation mass appraisal is "the process of valuing a universe of properties as of a given date using standard methodology, employing common data, and allowing for statistical testing."

Notice of Appraised Value:

The Tarrant Appraisal District (TAD) Property Value Notice has three values. A **Market Value, Appraised (Capped) Value,** and a **Taxable Value**.

Market Value:

The Market Value on the Property Value Notice is the value TAD has calculated using mass appraisal standards that comply with the Uniform Standards of Professional Appraisal Practice to determine a Market Value as defined by the Texas Property Tax Code.

Market Value:
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 purchaser 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 purchaser seek to maximize their gains and neither is in a position to take advantage of the exigencies of the other.

Appraised (Capped) Value:

The Appraised Value also known as the "Capped" or "Limitation on Residence Homesteads" is the sum of 10 percent of the appraised value of the property for last year; the appraised value of the property last year; and the market value of all new improvements to the property. The appraisal limitation only applies to a residence homestead. It takes effect Jan. 1 of the tax year following the year in which the homeowner qualifies for the homestead exemption.

Taxable Value:

The Taxable Value on the Property Value Notice is the Appraised Value minus any exemption reductions allowed by individual taxing units.

Property Appraisal Protests Concerning Value:

Incorrect Appraised (market) value

All taxable property must be appraised at its market value unless the law provides for a different value.
"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 purchaser 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 purchaser seek to maximize their gains and neither is in a position to take advantage of the exigencies of the other.

Typically in a market value hearing, market sales data is used as evidence by the taxpayer and the district to support their opinions of the property value. A property owner may present other evidence to prove their opinion of value based on condition issues in the form of pictures and estimates/ bids for repairs. Additionally, documents from a recent purchase or fee appraisal serve as useful information in a hearing.

Value is unequal compared with other properties

All taxable property must be appraised equally and uniformly. If a property owner feels that the market value of their property is greater than the median appraised value of a reasonable number of comparable properties, a property owner can protest value unequal.

In a value unequal hearing market sales are typically not used as evidence. In this hearing the appraised value or equity of appropriately adjusted comparable properties are used to arrive at a median value. If the value of the subject property is greater than the median, the value of the property is unequal.

Approaches to Value:

As the law requires, the chief appraiser must consider the market data (sales), cost, and income methods of appraisal and use the most appropriate method. For the mass appraisal of residential properties the market data and cost approaches are typically used to determine market value.

Market Data (Sales) Comparison Approach:

The market data comparison approach to value is based on sales prices of similar properties. The Residential Department compares the property being appraised to similar properties that have recently sold and then adjusts the comparable properties differences between them and the property being appraised. This approach focuses directly on the actions of buyers and sellers in the marketplace and usually produces the most accurate results in determining market value. A sale is not considered comparable unless the sale occurred within 24 months of the appraisal date, unless there are too few comparable sales within that time span to constitute a representative sample.

Equity Data (Median) Comparison Approach:

The equity data (median) comparison approach is the median market value of a reasonable and representative sample of properties. Texas law requires property values used in determining taxes to be equal and uniform. The equity data (median) comparison approach ensures TAD is equally and uniformly valuing property.

The median value for a sample of properties is the market value in the middle of a numerically ordered list of market values. If the sample contains an even number of properties, the mean of the two middle values is figured to come to a median market value.

Income Approach:

The income approach is based on income and expense data and is used to determine the present worth of future benefits. It seeks to determine what an investor would pay now for a future revenue stream anticipated to be received from the property. The income approach is most suitable for types of properties frequently purchased and held for the purpose of producing income, such as apartments, retail properties and office buildings.

Other Reconciliation (Override):

An override is a value that originates from ARB, Arbitration, Litigation, Rendition, Late Motions, Appraiser, Other, etc.

Cost Approach:

As required by the Property Tax Code TAD uses cost data from generally accepted sources and makes appropriate adjustments for physical, functional and external obsolescence. TAD uses the Moore's Precision Cost Tables to develop the residential cost materials.

Basic Formula: **MV = LV + [RCNLD]**

MV = Market Value
LV = Land Value
LCM = Local Cost Modifier
RCN = Replacement Cost New
RCNLD = Replacement Cost New Less Depreciation

R = Rate
D = Square Feet
D = Depreciation
A = Age
U = Unit

RCNLD (Replacement Cost New Less Depreciation):

The sum of all Building and Feature Values with adjustments less the depreciation. Building Values include the building and any features that are attached to it. Feature Values are the features on a property that are not attached to a building.

There are three adjustments that are part of the RCNLD:

1. Local Cost Modifier (LCM):
   An adjustment applied to the entire universe of improved residential properties in Tarrant County. The adjustment is applied to the Moore's Precision Cost Table rates to reflect current market conditions in Tarrant County. The LCM is reviewed annually.
2. Quality Adjustment:
   An adjustment applied to the to the Moore's Precision Cost Table rates to recognize differences between quality of construction in Tarrant County. The Quality Adjustment is reviewed annually.
3. Neighborhood Adjustment:
   An adjustment determined by analyzing market conditions of individual neighborhoods in Tarrant County. The Neighborhood Adjustment is reviewed annually.

Eff. 1/1/2018

Residential Cost Approach for Buildings and Attached Features RCNLD Value Buildup:

RCNLD = [(R x Quality Adj. x Neighborhood Adj.) x ⌂] – D

Building Value Buildup

Section	Size Type	Size	Unit of Measure	Rate	Value	Total
Appraised Date	7/31/2018					
Calculated Date	3/2/2018					
Ground	Actual Area	1,883	Square Feet	$65.45		
Local Cost Modifier				1.00		
Quality Adjustment				1.19		
Neighborhood Adjustment				1.31		
Adjusted Base Rate	Actual Area	1,883	Square Feet	$102.03	$192,122	
Full Upper	Actual Area	160	Square Feet	$65.45		
Local Cost Modifier				1.00		
Quality Adjustment				1.19		
Neighborhood Adjustment				1.31		
Adjusted Base Rate	Actual Area	160	Square Feet	$102.03	$16,325	
Replacement Cost New						$208,447
Percent Complete				100.00%		
Normal Depreciation				18.75%		
RCNLD				18.75%		$169,363
Traditional						$169,363
Garage	Actual Area	651	Square Feet	$32.16		
Local Cost Modifier				1.00		
Quality Adjustment				1.19		
Neighborhood Adjustment				1.31		
Adjusted Base Rate	Actual Area	651	Square Feet	$50.13	$32,637	
Replacement Cost New						$32,637
Percent Complete				100.00%		
RCNLD				81.25%		$26,518
Garage						$26,518
Building Value						$195,881
Valuation Model	Residential Cost					
Calculated By	System					

1.) Find the RCN for the Building on the appraisal site:

RCN = (R x Quality Adj. x Neighborhood Adj.) x ⌂

- Base Rate per Square Foot for the Building:
  - The Base Rate per Square Foot is calculated by the system using the corresponding Base Model Rate table.
    Note: More than likely the buildings total square footage will fall between two of the square footages listed on the Base Model Rate table and a linear interpolation will have to be done to get the exact Rate per Square Foot for the Building. Buildings can have multiple floors (Ground, Upper, Lower Level, Basement) or additions to the original structure. In some cases the base rate for each could be different.

$$\text{R per} = R_1 + \frac{(⌂ - ⌂_2)\,(R_2 - R_1)}{⌂_2 - ⌂_1}$$

$56.99 is the Base Rate for both the Ground and Upper floors for this example.

- Adjusted Base Rate per Square Foot for Building:
  - Apply the **Local Cost Modifier**, **Quality Adjustment** and the **Neighborhood Adjustment** to the Base Rate:

Local Cost Modifier	→ 65.45	X	1.00	=	65.45
Quality Adjustment	→ 65.45	X	1.19	=	77.8855
Neighborhood Adjustment	→ 77.8855	X	1.31	=	102.03

$102.03 is the Adjusted Base Rate for both the Ground and Upper floors for this example.

- Calculate the RCN for the Building to get one total RCN value:
  - Apply the Adjusted Base Rate to the square footage of each Building floor:
    Note: Buildings can have multiple floors (Ground, Upper, Lower Level, Basement) or additions to the original structure. In some cases the base rate and the adjusted base rate for each floor or addition could be different, thus and adjusted base rate would have to be calculated for each.

	102.03 x 1883	= 192,122 (Ground)
+	102.03 x 160	= 16,325 (Upper)
	Total:	**208,447**

2.) Apply the Percent Complete and Find the RCNLD for the Building on the appraisal site to get the Final Building Value:

RCNLD = RCN – D

- Apply the Percent Complete:

100.00% x 208,447 = 208,447 or 1.00 x 208,447 = 208,447

- Find the Depreciation Rate for the building the value is being calculated for in the corresponding Depreciation by Condition table.
  Note: More than likely the improvements age will fall between two of the ages listed on the depreciation table and a linear interpolation will have to be done to get the exact depreciation.

$$\text{Depreciation R} = R_1 + \frac{(\text{Age} - \text{Age}_1)\,(R_1 - R_2)}{\text{Age}_1 - \text{Age}_2}$$

- Apply the Depreciation Rate to the RCN to get the Depreciation:

D = RCN x Depreciation Rate

208,447 x 18.75% = 39,083.81 or 208,447 x 0.1875 = 39,083.81

- Once the Depreciation is calculated subtract it from the RCN to arrive at the RCNLD for the Building:

208,447 – 39,084 = 169,363

Note: Due to the Property Value Buildup Report rates being rounded to only two decimal places, a hand calculated Property Value using information from the Property Value Buildup Report may differ from the system calculated value that goes out past two decimal places when calculating.

Building Value Buildup

Section	Size Type	Size	Unit of Measure	Rate	Value	Total
Appraised Date	7/31/2018					
Calculated Date	3/2/2018					
Ground	Actual Area	1,883	Square Feet	$65.45		
Local Cost Modifier				1.00		
Quality Adjustment				1.19		
Neighborhood Adjustment				1.31		
Adjusted Base Rate	Actual Area	1,883	Square Feet	$102.03	$192,122	
Full Upper	Actual Area	160	Square Feet	$65.45		
Local Cost Modifier				1.00		
Quality Adjustment				1.19		
Neighborhood Adjustment				1.31		
Adjusted Base Rate	Actual Area	160	Square Feet	$102.03	$16,325	
Replacement Cost New						$208,447
Percent Complete				100.00%		
Normal Depreciation				18.75%		
RCNLD				18.75%		$169,363
Traditional						$169,363
Garage	Actual Area	651	Square Feet	$32.16		
Local Cost Modifier				1.00		
Quality Adjustment				1.19		
Neighborhood Adjustment				1.31		
Adjusted Base Rate	Actual Area	651	Square Feet	$50.13	$32,637	
Replacement Cost New						$32,637
Percent Complete				100.00%		
RCNLD				81.25%		$26,518
Garage						$26,518
Building Value						$195,881
Valuation Model	Residential Cost					
Calculated By	System					

3.) Find the RCN for the Features attached to the Building on the appraisal site:

RCN = (R x Quality Adj.) x Unit (⌂ or Number of Units) - D

- Find the Base Rate per Unit for the Feature the value is being calculated for in the corresponding Base Model Rate table.
  Note: More than likely the features units will fall between two of the units listed on the cost table and a linear interpolation will have to be done to get the exact Rate per unit for the Feature.

$$\text{Rate per Unit} = R_1 + \frac{(\text{Unit} - \text{Unit}_2)\,(R_2 - R_1)}{\text{Unit}_2 - \text{Unit}_1}$$

$32.16 is the Base Rate for a Garage in this example.

- Find the Adjusted Base Rate per Square Foot for the Feature
  - Apply the **Local Cost Modifier**, **Quality Adjustment** and the **Neighborhood Adjustment** to the Base Rate:

Local Cost Modifier	→ 32.16	X	1.00	=	32.16
Quality Adjustment	→ 32.16	X	1.19	=	38.2704
Neighborhood Adjustment	→ 38.2704	X	1.31	=	50.134224

$50.13 is the Adjusted Base Rate for a Garage in this example

- Calculate the RCN for the Attached Feature:
  - Apply the Adjusted Base Rate to the square footage or unit count of the Feature:

Garage: 50.134224 x 651 = 32,637.38

4.) Apply the Percent Complete and find the RCNLD for the attached features to get the Final Attached Feature Values:

RCNLD = RCN – D

- Apply the Percent Complete:

Garage: 100.00% x 32,637 = 32,637 or 1.00 x 32,637 = 32,637

- Find the Depreciation Rate for the feature the value is being calculated for in the corresponding Depreciation by Condition table.
  Note: More than likely the Features age will fall between two of the ages listed on the depreciation table and a linear interpolation will have to be done to get the exact depreciation.

$$\text{Depreciation R} = R_1 + \frac{(\text{Age} - \text{Age}_1)\,(R_1 - R_2)}{\text{Age}_1 - \text{Age}_2}$$

- Apply the Depreciation Rate to the RCN to get the Depreciation:

D = RCN x Depreciation Rate

Garage: 32,637.38 x 81.25% = 26,517.87 or 32,637.38 x 0.8125 = 26,517.87
32,637.00 – 26,518.00 = 6,119

Note: Due to the Property Value Buildup Report rates being rounded to only two decimal places, a hand calculated Property Value using information from the Property Value Buildup Report may differ from the system calculated value that goes out past two decimal places when calculating.

- Once the Depreciation is calculated subtract it from the RCN to arrive at the RCNLD for the Attached Feature Values:

Garage: 32637.00 – 6,119.00 = 26,518.00

5.) Add the Building Improvement final RCNLD value to the Attached Feature final RCNLD values to arrive at the Final Residential Building and Attached Features Value:

169,363 + 26,518 = $195,881

$195,881.00 Final Building and Attached Feature Value

Note: Due to the Property Value Buildup Report rates being rounded to only two decimal places, a hand calculated Property Value using information from the Property Value Buildup Report may differ from the system calculated value that goes out past two decimal places when calculating.

Residential Cost Approach for Features Unattached to the Improvement RCNLD Value Buildup:

RCNLD = [(R x LCM) x #] – D

Section	Size Type	Size	Unit of Measure	Rate	Value	Total
Appraised Date	7/31/2018					
Calculated Date	3/2/2018					
Pool-Swimming	Number of Units	1	Units	$10,000.00		
Local Cost Modifier				1.00		
Quality Adjustment				2.00		
Adjusted Base Rate	Number of Units	1	Units	$20,000.00	$20,000	
Replacement Cost New						$20,000
Percent Complete				100.00%		
Normal Depreciation				0.00%		
RCNLD				0.00%		$20,000
Feature Value						$20,000
Valuation Model	Residential Cost					
Calculated By	System					

1.) Find the RCN for the Features Not Attached to the a Building on the appraisal site:

RCN = (R x Quality Adj.) x Unit (# or Number of Units) – D

- Find the Base Rate per Unit for the Feature the value is being calculated for in the corresponding Base Model Rate table.
  Note: More than likely the features units will fall between two of the units listed on the cost table and a linear interpolation will have to be done to get the exact Rate per unit for the Feature.

$$\text{Rate per Unit} = R_1 + \frac{(\text{Unit} - \text{Unit}_2)(R_2 - R_1)}{\text{Unit}_2 - \text{Unit}_1}$$

$10,000 is the Base Rate for a Pool in this example.

- Find the Adjusted Base Rate per Square Foot or Unit for the Feature
  - Apply the **Local Cost Modifier** and **Quality Adjustment** to the Base Rate:

Local Cost Modifier →10,000 x 1.00 = 10,000
Quality Adjustment →10,000 x 2.00 = 20,000

$20,000 is the Adjusted Base Rate for a Pool in this example.

- Calculate the RCN for the Feature:
  - Apply the Adjusted Base Rate to the square footage or unit count of the Feature:

Pool: 20,000 x $1_{(unit)}$ = 20,000

2.) Apply the Percent Complete and find the RCNLD for the features on the appraisal site to get the Final Unattached Feature Values:

RCNLD = RCN – D

- Apply the Percent Complete:

Pool: 100.00% x 20,000 = 20,000 or 1.00 x 20,000 = 20,000

- Find the Depreciation Rate for the feature the value is being calculated for in the corresponding Depreciation by Condition table.
  Note: More than likely the Features age will fall between two of the ages listed on the depreciation table and a linear interpolation will have to be done to get the exact depreciation.

$$\text{Depreciation R} = R_1 + \frac{(\text{Age} - \text{Age}_1)(R_1 - R_2)}{\text{Age}_1 - \text{Age}_2}$$

- Apply the Depreciation Rate to the RCN to get the Depreciation:

D = RCN x Depreciation Rate

Pool: 20,000 x 0.00% = 0.00 or 20,000 x .0000 = 0

- Once the Depreciation is calculated subtract it from the RCN to arrive at the RCNLD for the Feature:

Pool: 20,000 - 0.00 = 20,000

$20,000.00 Final Unattached Feature Value

Residential Cost Approach for Land Line Value Buildup:

LV = (Rating x Size) +/- [(Rating x Size) x Adjustments]

Section	Size Type	Size	Size Type	Rate	Value	Total
Appraised Date	7/31/2018					
Calculated Date	3/2/2018					
Land Calc Method	Per Unit By Attribute Data		$35,000			
Base Rate	Residential By Flat Value	1	Units	$35,000	$35,000	
Size				50.00%		
Adjusted Base Rate	Residential By Flat Value	1	Units	$52,500.00	$52,500.00	
Land Value	Residential By Flat Value					$52,500.00
Valuation Model	Residential Cost					
Calculated By	System					

For residential Land Types without a Land Use (Ag) one of the following will be used:

Land Type				Size Type
Residential By Acre	=	Site Rating	x	Acres
Residential By Acre A1	=	Site Rating	x	Acres
Residential By Acre 2Y	=	Site Rating	x	Acres
Residential By Acre 2Z	=	Site Rating	x	Acres
Residential By Acre 3C	=	Site Rating	x	Acres
Residential By Acre 3S	=	Site Rating	x	Acres
Residential By Acre Westlake	=	Site Rating	x	Acres
Residential By Flat Value	=	Site Rating	x	Units
Residential By Flat Value +	=	Site Rating	x	Units
Residential-Mira Vista	=	Site Rating	x	Units
Residential-Ridglea Hills	=	Site Rating	x	Units
Residential By Frontage	=	Site Rating	x	Frontage Feet
Residential By Square Foot	=	Site Rating	x	Square Footage
Residential EML Azle Open Water	=	Site Rating	x	Units
Residential EML Azle Slough	=	Site Rating	x	Units
Residential EML Boat Club	=	Site Rating	x	Units
Residential EML East Open Water	=	Site Rating	x	Units
Residential EML East Slough	=	Site Rating	x	Units
Residential EML Lake Country	=	Site Rating	x	Units
Residential EML Oak Harbor	=	Site Rating	x	Units
Residential EML Resort	=	Site Rating	x	Units
Residential Lake Arlington	=	Site Rating	x	Units
Residential By Lease	=	Site Rating	x	Units
Common Area Land	=	Site Rating	x	Units

- If the residential property has a Land Use (Agricultural Use) the land value will need to be calculated using the Land Use Rating. The Land Use Rating trumps the Site Rating and the Land Use Rating is used in the appraised value calculation.

Land Type		Size Type
Barren/Wasteland	x	Acres
C2 Dry Cropland	x	Acres
C2B Non Prime	x	Acres
Orchard	x	Acres
Orchard B Non Prime	x	Acres
Other Ag Use	x	Acres
Other B Non Prime	x	Acres
P1 Improved Pasture	x	Acres
P1B Non Prime	x	Acres

Land Type		Size Type
P2 Native Pasture	x	Acres
P2B Non Prime	x	Acres
Wildlife /C2 Cropland	x	Acres
Wildlife/Orchard	x	Acres
Wildlife/Other	x	Acres
Wildlife/P1 Pasture	x	Acres
Wildlife/P2 Pasture	x	Acres
Wildlife/P2B Pasture	x	Acres
Wildlife/Wasteland	x	Acres

Note: The system will calculate the land value with the Site Rating and the Land Use Rating. Both land values are recorded in the system (the law imposes a "rollback" tax on 1-D-1 land when it is taken out of agricultural use. The rollback tax equals the difference between the taxes the owner actually paid in the five years preceding the change in use and the taxes the owner would have paid on his property's market value going 5 years back).

3.) Find the Base Rate for the Land:

$35,000 is the Base Rate for the Site in this example.

4.) Find the adjusted Base Rate for the Land:

- Apply any Land Adjustments to the Base Rate:
  - In this example there is a 50.00% size adjustment:

35,000 x 50.00% = 17,500 or 35,000 x .5000 = 17,500

  - Apply the size adjustment to the Base Rate:

35,000 + 17,500 = 52,500

$52,500 is the Adjusted Base Rate for the Site in this example

5.) Find the Land Size or Number of Land Units:

1.0000 is the Land Units for the site in this example.

6.) Use the Base Rate, any Land Adjustments, and Size to calculate the Land Value.

52,500 x 1.0000 = 52,500

$52,500.00 Final Land Value

Total Site Value:

Once the value for all Building Value Buildups, Feature Value Buildups for all features unattached to a building and Land Line Value Buildups have been calculated add all of the final values together to get the total site cost value:

195,881.00 + 20,000.00 + 52,500.00 = 268,381.00

Round to the nearest whole number.

268,381.00 Final Site Value

Note: Due to the Property Value Buildup Report rates being rounded to only two decimal places, a hand calculated Property Value using information from the Property Value Buildup Report may differ from the system calculated value that goes out past two decimal places when calculating.

Residential Market Data (Sales) Comparison Approach:

STEP 1 - Residential Sales Comparable Selection

A three-step process is used to select three (3) to six (6) sales comparables with the most like characteristics of the subject property to indicate the property's value.

- 1st **Neighborhood** is selected in the **Initial Model Selection Filter**.
- 2nd all sales comparables must meet the following **Selection Parameters:**
  - Improvement Style **=** Subject Improvement Style
  - Improvement Quality = Subject Improvement Quality
  - Sale Date **>** January 1
  - Sale Price **>** 1
- 3rd the system ranks the sales comparables by **Index Value** in ascending order. The most comparable property sales will have a lower index value and the least comparable property sales will have a higher index value. Index values are calculated using the following **Weighting Parameters**:

SUBJECT PROPERTY	WEIGHTING METHOD	SALES COMP	INDEX WEIGHT
Neighborhood	Match	Neighborhood	+400
Sub Market Area	Match	Sub Market Area	+400
Market Area	Match	Market Area	+1000
Quality	Match	Quality	+500
Condition	Match	Condition	+200
Year Built	Difference	Year Built	+Difference x 4.00
Res Actual Area	Difference	Res Actual Area	+Difference x 0.20
Land Value	Difference	Land Value	+Difference x 0.01
Feature Value	Difference	Feature Value	+Difference x 0.01
Effective Year	Difference	Effective Year	+Difference x 4.00

- **Escalations:**
  If the initial search does not return 3 sales comparables the **Model Selection Filter** will then escalate to the following:
  - 1st the **Selection Parameters** will escalate to include the following:
    - Comp Neighborhood
    - Submarket Area
    - Market Area
    - Sale Date > January 1
  - 2nd the system ranks the sales comparables by Index Value in ascending order using the same Weighting Parameters above and includes all styles.

Example:

SALES COMP 3		INDEX WEIGHT
Neighborhood	Match	+ 0 = 0
Sub Market Area	Match	+ 0 = 0
Market Area	Match	+ 0 = 0
Quality	Match	+ 0 = 0
Condition	Match	+ 0 = 0
Year Built	1 Year Difference	+ (1 x 4.00) = 4
Res Actual Area	115 ft² Difference	+ (115 x 0.20) = 23
Land Value	No Difference	+ 0 = 0
Feature Value	$20,000.00 Difference	+ (20000 x 0.01) = 200
Effective Year	1 Year Difference	+ (1 x 4.00) = 4
		INDEX VALUE: 231

	Subject	Comp 1			Comp 2			Comp 3		
PIN	00000000	00000000			00000000			00000000		
Neighborhood	0R000A	0R000A			0R000A			0R000A		
Site Name	ABC ESTATES-12-1	ABC ESTATES-11-6			ABC ESTATES-8-7			ABC ESTATES-1-61		
Address	1533 ABC LN	1313 ABC BLVD			412 ABC CIR			417 ABC DR		
Improvement Type	ResSingFam	ResSingFam			ResSingFam			ResSingFam		
Improvement Style	Traditional	Traditional			Traditional			Traditional		
Quality	AboveAvg	AboveAvg			AboveAvg			AboveAvg		
Condition	Average	Average			Average			Average		
Year Built	1987	1988			1988			1986		
		Value	Rate	Adj.	Value	Rate	Adj.	Value	Rate	Adj.
Actual Area	2043	1811	$50.00	$11,600.00	1950	$50.00	($4,650.00)	2158	$50.00	($5,750.00)
Land Value	35000	35000	$1.00	$0.00	35000	$1.00	$0.00	35000	$1.00	$0.00
Feature Value	20000	16038	$1.00	$3,962.00	0	$1.00	$20,000.00	0	$1.00	$20,000.00
Effective Year	1987	1988	0.50%	($1,092.00)	1988	0.50%	($1,137.50)	1986	0.50%	$1,299.50
Sale Date	0	7/28/2017			8/11/2017			2/10/2017		
Sale Price	$0.00	$218,400.00 <Private Data>			$227,500.00 <Private Data>			$259,900.00 <Private Data>		
Comp Object Index Value	0	93			226			231		
Value/										
Net Adj				$14,470.00			$23,512.50			$15,549.50
Gross Adj				$16,654.00			$25,787.50			$27,049.50
Indicated Value	$249,831.00			$232870.00			$251012.50			$275449.50

STEP 2 - Sales Comparable Grid Adjustments

The sales grids adjust for **Actual Area**, **Land & Feature Values, and Effective Year.**

Actual Area Adjustment:

- Rate for Actual Area adjustments is price per ft² by quality:

Quality	$ per ft²
Highest	$120.00
Excellent	$ 80.00
Good	$ 60.00
Above Average	$ 50.00
Average	$ 40.00
Low	$ 35.00

Land Value Adjustment:

- Adjusted for the difference in value.

Feature Value Adjustment:

- Adjusted for the difference in value.
- Pool adjustments, as well ancillary structures, are included in the Feature Value.

Effective Year Adjustment:

- Adjusted 0.50% for each year difference in effective year.

Example:

Comp 2

Adjustment	Difference	Value		
Actual Area	93 ft² smaller	+ 93 x 50.00	=	+ 4,650.00
Land Value	Same	+ 0	=	+ 0.00
Feature Value	+20,000	+ 20,000	=	+ 20,000.00
Effective Year	1 year older	- (227,500 x 0.0050)	=	- 1,137.50
			NET ADJUSTMENT:	**$ 23,512.50**
			GROSS ADJUSTMENT:	**$ 25,787.50**

STEP 3 - Indicated Value Calculation

An Inversely Proportional Index Weighting is used to calculate the indicated value for a property. Inversely Proportional Index Weighting is the weighting of a comparable' s contribution to the subject property is inversely proportional to its index value relative to the other comps used in the value calculation. Simply speaking, the better the comparable, the lower the Index value and conversely, the poorer the comparable the higher the Index value.

Indicated Value Calculation:

	Subject	Comp 1			Comp 2			Comp 3		
PIN	00000000	00000000			00000000			00000000		
Neighborhood	0R000A	0R000A			0R000A			0R000A		
Site Name	ABC ESTATES-12-1	ABC ESTATES-11-6			ABC ESTATES-8-7			ABC ESTATES-1-61		
Address	1533 ABC LN	1313 ABC BLVD			412 ABC CIR			417 ABC DR		
Improvement Type	ResSingFam	ResSingFam			ResSingFam			ResSingFam		
Improvement Style	Traditional	Traditional			Traditional			Traditional		
Quality	AboveAvg	AboveAvg			AboveAvg			AboveAvg		
Condition	Average	Average			Average			Average		
Year Built	1987	1988			1988			1986		
		Value	Rate	Adj.	Value	Rate	Adj.	Value	Rate	Adj.
Actual Area	2043	1811	$50.00	$11,600.00	1950	$50.00	($4,650.00)	2158	$50.00	($5,750.00)
Land Value	35000	35000	$1.00	$0.00	35000	$1.00	$0.00	35000	$1.00	$0.00
Feature Value	20000	16038	$1.00	$3,962.00	0	$1.00	$20,000.00	0	$1.00	$20,000.00
Effective Year	1987	1988	0.50%	($1,092.00)	1988	0.50%	($1,137.50)	1986	0.50%	$1,299.50
Sale Date	0	7/28/2017			8/11/2017			2/10/2017		
Sale Price	$0.00	$218,400.00 <Private Data>			$227,500.00 <Private Data>			$259,900.00 <Private Data>		
Comp Object Index Value	0	93			226			231		
Value/										
Net Adj				$14,470.00			$23,512.50			$15,549.50
Gross Adj				$16,654.00			$25,787.50			$27,049.50
Indicated Value	$249,831.00			$232870.00			$251012.50			$275449.50

	Subject	Comp 4			Comp 5			Comp 6		
PIN	00000000	00000000			00000000			00000000		
Neighborhood	0R000A	0R000A			0R000A			0R000A		
Site Name	ABC ESTATES-12-1	ABC ESTATES-1-38			ABC ESTATES-13-4			ABC ESTATES-1-5		
Address	1533 ABC LN	1616 ABC WAY			1457 ABC LN			1340 ABC LN		
Improvement Type	ResSingFam	ResSingFam			ResSingFam			ResSingFam		
Improvement Style	Traditional	Traditional			Traditional			Traditional		
Quality	AboveAvg	AboveAvg			AboveAvg			AboveAvg		
Condition	Average	Good			Average			Average		
Year Built	1987	1988			1997			1999		
		Value	Rate	Adj.	Value	Rate	Adj.	Value	Rate	Adj.
Actual Area	2043	2428	$50.00	($19,250.00)	1836	$50.00	$10,350.00	2339	$50.00	($14,800.00)
Land Value	35000	35000	$1.00	$0.00	35000	$1.00	$0.00	35000	$1.00	$0.00
Feature Value	20000	20000	$1.00	$0.00	0	$1.00	$20,000.00	0	$1.00	$20,000.00
Effective Year	1987	1988	0.50%	($1,425.00)	1988	0.50%	($11,400.00)	1999	0.50%	($16,167.00)
Sale Date	0	3/15/2017			9/22/2017			8/31/2017		
Sale Price	$0.00	$285,000.00 <Private Data>			$228,000.00 <Private Data>			$269,450.00 <Private Data>		
Comp Object Index Value	0	285			321			355		
Value/										
Net Adj				($20,675.00)			$18,950.00			($10,967.00)
Gross Adj				$20,675.00			$41,750.00			$50,967.00
Indicated Value	$249,831.00			$264325.00			$246950.00			$258483.00

Step 1 Add the **Index Value** of all of the comparables together:

93
226
231
285
321
+ 355
1511

Step 2 Divide the **Sum** of the **Index Values** by each comparables **Index Value** to get the reciprocal for each comparable:

1511/93 or 16.2473118%
1511/226 or 6.6858407%
1511/231 or 6.5411255%
1511/285 or 5.3017543%
1511/321 or 4.7071651%
1511/355 or 4.2563380%

Step 3 Add the reciprocals of all the comparable Index Values together:

16.2473118
6.6858407
6.5411255
5.3017543
4.7071651
+ 4.2563380
43.7395354

Step 4 Divide each reciprocal by the sum of all the reciprocals to generate a proportional weighting appropriate for the index methodology:

16.2473118 ÷ 43.7395354 = 0.371456%
6.6858407 ÷ 43.7395354 = 0.152856%
6.5411255 ÷ 43.7395354 = 0.149547%
5.3017543 ÷ 43.7395354 = 0.121212%
4.7071651 ÷ 43.7395354 = 0.107618%
4.2563380 ÷ 43.7395354 = 0.097311%

Step 5 Multiply the **Calibrated Value** (adjusted value) of each comparable by the weighting calculated in **Step 4** :

232,870.00 x 0.371456 = 86,500.96
251,012.50 x 0.152856 = 38,368.77
275,449.50 x 0.149547 = 41,192.65
264,325.00 x 0.121212 = 32,039.36
246,950.00 x 0.107618 = 26,576.27
258,483.00 x 0.097311 = 25,153.24

Step 6 Add the weighted value amount from each comparable together to reach the Indicated Value:

86,500.96
38,368.77
41,192.65
32,039.36
26,576.27
+ 25,153.24
249,831.25

Residential Equity Data (Median) Comparison Approach:

STEP 1 - Residential Equity Comparable Selection

A three-step process is used to select three (3) to nine (9) equity comparables with the most like characteristics of the subject property to indicate the property's value.

- 1st **Neighborhood** is selected in the **Initial Model Selection Filter**.
- 2nd all comparables must meet the following **Selection Parameters:**
  - Building Quality **=** Subject Building Quality
- 3rd the system ranks the equity comparables by **Index Value** in ascending order. The most comparable properties will have a lower index value and the least comparable property sales will have a higher index value. Index values are calculated using the following **Weighting Parameters:**

SUBJECT PROPERTY	WEIGHTING METHOD	SALES COMP	INDEX WEIGHT
Neighborhood	Match	Neighborhood	+400
Sub Market Area	Match	Sub Market Area	+400
Market Area	Match	Market Area	+1000
Quality	Match	Quality	+500
Condition	Match	Condition	+200
Year Built	Difference	Year Built	+Difference x 4.00
Res Actual Area	Difference	Res Actual Area	+Difference x 0.20
Land Value	Difference	Land Value	+Difference x 0.01
Feature Value	Difference	Feature Value	+Difference x 0.01
Effective Year	Difference	Effective Year	+Difference x 4.00

Example:

SALES COMP 1		INDEX WEIGHT		
Neighborhood	Match	+ 0	=	0
Sub Market Area	Match	+ 0	=	0
Market Area	Match	+ 0	=	0
Quality	Match	+ 0	=	0
Condition	Match	+ 0	=	0
Year Built	No Difference	+ (0 x 4.00)	=	0
Res Actual Area	45 ft² Difference	+ (45 x 0.20)	=	9
Land Value	No Difference	+ 0	=	0
Feature Value	No Difference	+ (0 x 0.01)	=	0
Effective Year	No Difference	+ (0 x 4.00)	=	0
		INDEX VALUE:		9

	Subject	Comp 1			Comp 2			Comp 3		
PIN	00000000	00000000			00000000			00000000		
Neighborhood	0R000A	0R000A			0R000A			0R000A		
Site Name	ABC ESTATES-12-1	ABC ESTATES-1-63			ABC ESTATES-1-148			ABC ESTATES-3-6		
Address	1533 ABC LN	409 ABC DR			405 ABC CIR			1613 ABC WAY		
Improvement Type	ResSingFam	ResSingFam			ResSingFam			ResSingFam		
Improvement Style	Traditional	Traditional			Traditional			Traditional		
Quality	AboveAvg	AboveAvg			AboveAvg			AboveAvg		
Condition	Average	Average			Average			Average		
Year Built	1987	1987			1988			1986		
		Value	Rate	Adj.	Value	Rate	Adj.	Value	Rate	Adj.
Actual Area	2043	2088	$50.00	($2,250.00)	2009	$50.00	$1,700.00	1938	$50.00	$5,250.00
Land Value	35000	35000	$1.00	$0.00	35000	$1.00	$0.00	35000	$1.00	$0.00
Feature Value	20000	20000	$1.00	$0.00	20000	$1.00	$0.00	20000	$1.00	$0.00
Effective Year	1987	1987	0.50%	$0.00	1988	0.50%	($1,234.09)	1986	0.50%	$1,189.38
Comp Object Index Value	0	9			14			29		
Notified Value	$0.00	$246,828.00			$246,818.00			$237,875.00		
Value/										
Net Adj				($2,250.00)			$465.91			$6,439.38
Gross Adj				$2,250.00			$2,934.09			$6,439.38
Indicated Value	$243,207.00			$249078.00			$247283.91			$244314.38

STEP 2 – Equity Comparable Grid Adjustments

The equity grids adjust for **Actual Area**, **Land & Feature Values, and Effective Year.**

Actual Area Adjustment:

- Rate for Actual Area adjustments is price per ft² by quality:

Quality	Price per ft²
Highest	$120.00
Excellent	$80.00
Good	$60.00
Above Average	$50.00
Average	$40.00
Low	$35.00

Land Value Adjustment:

- Adjusted for the difference in value.

Feature Value Adjustment:

- Adjusted for the difference in value.
- Pool adjustments, as well ancillary structures, are included in Feature Value.

Effective Year Adjustment:

- Adjusted 0.50% for each year difference in effective year.

Example:

Comp 2

Adjustment	Difference	Value		
Actual Area	34 ft² smaller	+ 34 x 50.00	=	+ 1,700.00
Land Value	Same	+ 0	=	+ 0.00
Feature Value	Same	+ 0	=	+ 0.00
Effective Year	1 year older	- (246,818 x 0.0050)	=	- 1,234.09
		NET ADJUSTMENT:		$ 465.91
		GROSS ADJUSTMENT:		$ 2,934.09

STEP 3 – Median Value Calculation

	Subject	Comp 4			Comp 5			Comp 6		
PIN	00000000	00000000			00000000			00000000		
Neighborhood	0R000A	0R000A			0R000A			0R000A		
Site Name	ABC ESTATES-12-1	ABC ESTATES-6-6			ABC ESTATES-4-19			ABC ESTATES-11-2		
Address	1533 ABC LN	1942 ABC LN			1409 ABC CT			1333 ABC BLVD		
Improvement Type	ResSingFam	ResSingFam			ResSingFam			ResSingFam		
Improvement Style	Traditional	Traditional			Traditional			Traditional		
Quality	AboveAvg	AboveAvg			AboveAvg			AboveAvg		
Condition	Average	Average			Average			Average		
Year Built	1987	1986			1986			1987		
		Value	Rate	Adj.	Value	Rate	Adj.	Value	Rate	Adj.
Actual Area	2043	2153	$50.00	($5,500.00)	2159	$50.00	($5,800.00)	1738	$50.00	$15,250.00
Land Value	35000	35000	$1.00	$0.00	35000	$1.00	$0.00	35000	$1.00	$0.00
Feature Value	20000	20000	$1.00	$0.00	20000	$1.00	$0.00	20000	$1.00	$0.00
Effective Year	1987	1986	0.50%	$1,237.35	1986	0.50%	$1,237.13	1987	0.50%	$0.00
Comp Object Index Value	0	30			31			61		
Notified Value	$0.00	$247,469.00			$247,426.00			$225,922.00		
Value/										
Net Adj				($4,266.66)			($4,562.87)			$15,250.00
Gross Adj				$6,737.35			$7,037.13			$15,250.00
Indicated Value	$243,207.00			$243206.35			$242863.13			$241172.00

	Subject	Comp 7			Comp 8			Comp 9		
PIN	00000000	00000000			00000000			00000000		
Neighborhood	0R000A	0R000A			0R000A			0R000A		
Site Name	ABC ESTATES-12-1	ABC ESTATES-11-6			ABC ESTATES-1-151			ABC ESTATES-2-4		
Address	1533 ABC LN	1313 ABC BLVD			1332 ABC BLVD			1508 ABC LN		
Improvement Type	ResSingFam	ResSingFam			ResSingFam			ResSingFam		
Improvement Style	Traditional	Traditional			Traditional			Traditional		
Quality	AboveAvg	AboveAvg			AboveAvg			AboveAvg		
Condition	Average	Average			Average			Average		
Year Built	1987	1988			1988			1987		
		Value	Rate	Adj.	Value	Rate	Adj.	Value	Rate	Adj.
Actual Area	2043	1811	$50.00	$11,600.00	1741	$50.00	$15,100.00	1652	$50.00	$19,550.00
Land Value	35000	35000	$1.00	$0.00	35000	$1.00	$0.00	35000	$1.00	$0.00
Feature Value	20000	20000	$1.00	$0.00	20000	$1.00	$0.00	20000	$1.00	$0.00
Effective Year	1987	1988	0.50%	($1,164.39)	1988	0.50%	($1,136.94)	1987	0.50%	$0.00
Comp Object Index Value	0	54			68			78		
Notified Value	$0.00	$232,878.00			$227,387.00			$214,324.00		
Value/										
Net Adj				$10,435.61			$13,963.07			$19,550.00
Gross Adj				$12,764.39			$16,236.94			$19,550.00
Indicated Value	$243,207.00			$243313.61			$241350.07			$233874.00

Step 1 Place the values in numerical order from lowest to highest value:

$233,874.00
$241,172.00
$241,350.07
$242,863.13
$243,206.35
$243,313.61
$244,314.38
$247,283.91
$249,078.00

Step 2 The median will be the number at the middle of the list.

If there is an even number of values the median will be the mean of the two middle values.

Example: If there are only 8 comparables and the middle two values are $242,863.13 an $243,206.35 the median would be determined as follows:

$242,863.13
+ $243,206.35
$486,069.48

$486,069.48 / 2 = $243,037.74

The median would then be $243,037.74