



**Office of Property Assessment  
Overview of Trending Methodology  
March 2019**

***Revised April 30, 2019***

## **Trending Valuation: Value Updates Through Trending in Tax Year 2020**

The City of Philadelphia is committed to maintaining and improving the quality of assessments. As part of this commitment, the Office of Property Assessment (OPA) will be implementing [10 substantive reforms](#) recommended by its mass appraisal and modeling consultant, Robert Gloudemans.

Mr. Gloudemans is a mass appraisal consultant with more than 40 years of experience advising municipalities and international governments on mass appraisal techniques and modeling. He has previously worked for the International Association of Assessing Officers (IAAO), the body which establishes international standards on property valuation, and more recently has developed courses for its members.

In order to devote sufficient staff to accomplish these reforms, OPA will, for tax year 2020, temporarily move from a mass assessment methodology to a less labor-intensive assessment methodology known as the “ratio trend method” (or trending). This document explains what trending is, why it is necessary, and what this may mean for property owners and taxpayers.

### **What is trending? How does trending differ from mass appraisal valuation?**

Mass appraisal valuation and trending valuation are both ways to systematically reassess or revalue all properties. Under both approaches, the goal is to ensure that assessments reflect current market conditions.

Under mass appraisal valuation, values are determined through a sophisticated modeling process that considers a number of variables and property characteristics.

Trending is a mass assessment valuation methodology where a factor is applied to a group of properties to reflect any changes – increases or decreases – in property values since the last revaluation. Properties are grouped by location, property type, and style (for example, single, twin, row home, or small multi-family within residential category). Market values are compared to sale prices to develop the market trend factor. For example, a 1.05 trend factor would indicate that property values in a particular group have increased by 5% since they were last valued. A 0.95 trend factor would indicate that property values in a group have decreased by 5% since they were last valued.

### **Will all properties be valued by trending?**

Yes, all parcels will be valued. Trending will be applied for all classes of property for which sufficient and reliable data is available.

### **Why doesn't OPA just do trending every year?**

Trending helps keep assessments closely tied to the market over limited periods of time. Using a combination of traditional revaluation methods with trending provides more consistent quality over time than trending alone. OPA will be implementing a computer assisted mass appraisal (CAMA) system while also enhancing the quality of its data and building staff capacity. Once these changes are completed, OPA will resume mass appraisal valuations.

### **How can the public measure the quality of assessments while the City is conducting a trending analysis?**

For an individual property, the quality of its assessment will be determined by how close that value is to what the owner would receive at an "arms' length" sale. The term "arm's length" refers to a real estate transaction in an open market arrived at through normal negotiations with an independent buyer and independent seller.

OPA will also continue to measure how citywide assessments compare to industry standards. OPA publishes its Coefficient of Dispersion (COD) which measures uniformity of assessments and its Price Related Differential (PRD) which measures equity between lower and higher value properties. Both of these measures are reported in the City's Five-Year Plan and will be posted on OPA's website.

OPA is committed to providing more detailed information to the public about every reassessment process. After OPA conducts the trending valuation, a ratio study will be posted online for review. Ratio studies help evaluate the quality of completed assessments by comparing assessed values to sale prices.

## How does OPA determine the value of my home using trending for tax year 2020 assessments?

1. **OPA starts with the current assessment in place for tax year 2019.**
2. **OPA examines all sale transactions that took place between July 1, 2017 and June 30, 2018 to create trends for property assessments.**

*(State law requires OPA to certify all property values by March 31 each year. In order to meet this state deadline for certification of all 580,000 properties in the city, it is necessary to stop examining sales approximately 9 months in advance of the deadline.)*

3. **OPA reviews sales transacted during this year period to determine if they are valid and removes outliers.**
  - Sales must be “arm’s length” transactions. The term arm’s length refers to a real estate transaction in an open market arrived at through normal negotiations with an independent buyer and independent seller. Non-arm’s length transactions are removed since they do not accurately reflect market values.
  - This process removes “blanket” transactions where multiple properties transact under one value since these transactions do not accurately reflect the value of individual properties within the transaction.
  - This process also identifies properties where the property characteristics at the time of sale no longer match the current condition. This helps ensure that value changes due to a significant change in property characteristic are not mistakenly attributed to a change in market value (e.g. vacant lot subsequently had dwelling erected). Including sales ratios for properties that have changed would be misleading and should not be used to calculate trending factors.
4. **OPA develops a trending model for each geographic zone to determine the trend factors for like properties. There are currently 16 major zones.**
  - Using these models, adjustment factors are developed for each combination of zone, style and condition (for residential: single, twin, row, or small multi-family).
  - Trending factor is the Adjustment Factor of AVERAGE condition property by Zone and Style
  - This methodology has the advantage of avoiding any large changes for properties that are less representative of their group for the lowest and highest condition codes (very poor condition to new construction).
  - For residential properties, this methodology produces 64 possible trending factors (16 zones, 4 style types within each zone = 64 trending factors).

- *Note: Zone Z contains special use properties such as Fairmount Park and the Northeast Airport.*

**5. OPA determines an overall trend factor using the following equation which multiplies zone, condition, and style factors. Below is the equation used for trending:**

General Equation of Adjustment Factor (y) =  $b_0 * b_1^{binary-1} * b_2^{binary-2}$

Adjustment Factor = Zone factor \* Style factor \* Condition factor

Trending Factor = Adjustment Factor of AVERAGE condition property by Zone and Style

The below table provides an example of residential trending factors for a sample zone:

	Multi-Family	Row	Single	Twin
Zone X	1.0680	1.0330	1.0330	1.1278

OPA reviews the lowest and highest trend factors generated by the model to determine if those factors require additional review. For example, a larger trending increase may be warranted if the area has experienced significant growth in sale prices that were not reflected in the prior assessment. Conversely, a larger decrease within a zone and style may be warranted if the most recent sales validation process indicates that values should be lower than previously assessed.

**6. The current OPA value is multiplied by the resulting trending factor to determine the new tax year 2020 assessment.**

Current 2019 value \* trend factor = 2020 value

**When will I receive my new 2020 value?**

OPA will certify all tax year 2020 values on March 31, 2019 as required by state law. All assessed values will be available online immediately after certification. OPA also mails assessment notices to any property owner whose property value changes (increases or decreases).

**Will I still have the right to a First Level Review (FLR) or a formal appeal?**

Yes. Property owners will still have the same ability to file First Level Reviews (FLRs) with OPA and appeals to the Board of Revision of Taxes (BRT). OPA will include instructions on how to file for first level reviews and appeals with the assessment notices.

**Examples of how trending adjustments are applied to sample properties:**

**Single Residential Home (Style S) in Example Zone X, with a Trending Factor 1.033**

The current OPA value is \$262,600. As a point of comparison, the most recent sale price on record for this property is \$279,000.

The current value multiplied by the trend factor results in a new OPA value of \$271,266. The trending model resulted in a new value that was closer to the sale price for this property, informed by current trends within this zone.

<b>Current Property Value</b>	<b>Trend Factor</b>	<b>New Value (Current Property Value x Trend)</b>	<b>% Change</b>
\$262,600	1.033	\$271,266	+3.3%

**Residential Row Home (Style R) in Example Zone Y, with a Trending Factor 0.958**

The current OPA value is \$129,800. For reference, the most recent sale price on record for this property is \$119,900.

The current value multiplied by the trend factor results in a new OPA value of \$124,348. The trending model resulted in a new value that was closer to the sale price for this property, informed by current trends within this zone.

<b>Current Property Value</b>	<b>Trend Factor</b>	<b>New Value (Current Property Value x Trend)</b>	<b>% Change</b>
\$129,800	0.958	\$124,348	-4.2%

Properties with significant characteristic changes since the 2019 valuation will be revalued by OPA before a trend factor is applied. This will correct for the significant characteristic change and allow all properties within a geographic group to be adjusted from the correct base value.

## Appendix: Trending Factors as of March 31, 2019

The below tables present the trending factors resulting from the tax year 2020 valuation. Across all property classes, approximately 40,000 or 6% of all city properties are under additional review by OPA to determine the appropriate trending factor. If a property owner appeals an assessment to the OPA or Board of Revision of Taxes (BRT) and an adjustment is made to the value, the rate of change may differ from the values listed in the tables below.

### Trending Factors for Residential Properties

Location Zone	Multi-Family	Row	Single	Twin
A	3.90%	3.90%	-8.78%	3.74%
B	0%*	8.43%	8.43%	8.43%
C	6.23%	6.23%	4.45%	6.23%
D	6.80%	3.30%	3.30%	9.87%
E	4.25%	4.25%	0.30%	4.25%
F	7.77%	7.77%	7.77%	7.77%
G KFT	0.0%*	-0.70%	0.0%*	0.0%*
G Other	-8.53%	-23.50%	-23.50%	-23.50%
H	3.46%	3.46%	3.46%	3.46%
J	8.38%	8.38%	8.38%	8.38%
K GRADHOSP	-2.26%	-2.26%	-2.26%	-2.26%
K OTHER	7.89%	7.89%	7.89%	7.89%
L	7.64%	7.64%	7.64%	0.49%
M	1.37%	-4.18%	-4.18%	-4.18%
N	13.07%	1.76%	1.76%	3.64%
P	3.34%	3.34%	3.34%	3.34%

*\*Note: Properties with trend of 0% indicated are currently under review by the OPA. If a trend adjustment is determined to be appropriate, property owners will receive a notice of the adjustment by June 2019.*

**Trending Factors for Other Property Classes - Continued**

<b>Property Class</b>	<b>Locale Code</b>	<b>Location Description</b>	<b># of Units</b>	<b>% Change Trend</b>
Small Retail	--	--	--	0.75%
Small Mixed-Use	--	--	--	1.00%
Apartments	2Q11	Center City (CC)	50+	1.50%
	2Q21	Center City (CC)	25-49	1.00%
	2P11	Center City (CC)	10-24	1.00%
	2P11	Center City (CC)	5-9	0.75%
	2R11	University City Area	50+	1.50%
	2R21	University City Area	25-49	1.00%
	2A41	University City Area	10-24	1.00%
	2A41	University City Area	5-9	0.75%
	2B21	Non-CC Surrounding	50+	1.00%
	2G31	Non-CC Surrounding	25-49	1.00%
	2G41	Non-CC Surrounding	10-24	1.00%
	2G51	Non-CC Surrounding	5-9	0.25%
	2G61	Non-CC Surrounding	5-9	0.25%
	2H11	Non-CC Surrounding	5-9	0.25%
	2H21	Non-CC Surrounding	5-9	0.25%
	2H31	Non-CC Surrounding	5-9	0.25%
	2H41	Non-CC Surrounding	5-9	0.25%
	2H51	Non-CC Surrounding	5-9	0.25%
	2J31	Non-CC Surrounding	5-9	0.25%
	2J41	Non-CC Surrounding	5-9	0.25%
	2P21	Non-CC Surrounding	5-9	0.25%
	2P31	Non-CC Surrounding	5-9	0.25%
	2P41	Non-CC Surrounding	5-9	0.25%
	2A11	Non-CC Stable	50+	0.75%
	2A21	Non-CC Stable	25-49	0.75%
	2C11	Non-CC Stable	10-24	0.50%
	2C21	Non-CC Stable	5-9	0.25%
	2C31	Non-CC Stable	5-9	0.25%
	2D11	Non-CC Stable	5-9	0.25%
	2D21	Non-CC Stable	5-9	0.25%
	2D22	Non-CC Stable	5-9	0.25%
	2D23	Non-CC Stable	5-9	0.25%
2F11	Non-CC Stable	5-9	0.25%	
2J11	Non-CC Stable	5-9	0.25%	
2J21	Non-CC Stable	5-9	0.25%	



### Trending Factors for Other Property Classes - Continued

Property Class	Locale Code	Location Description	Building Class	% Change Trend
Specialty Apartments	--	--	--	1.67%
Hotels	--	--	--	2.50%
Offices	7A11	City Line	B	0.50%
	7A11	City Line	C	0.50%
	7A21	West Philly	A	0.75%
	7A21	West Philly	B	0.50%
	7A21	West Philly	C	0.50%
	7B11	South West Upper	B	0.50%
	7B11	South West Upper	C	0.50%
	7C11	Northeast Upper	A	2.00%
	7C11	Northeast Upper	B	2.00%
	7C11	Northeast Upper	C	1.75%
	7D11	Northeast Middle	B	1.50%
	7D11	Northeast Middle	C	1.50%
	7.00E+11	Northeast Lower	B	1.50%
	7.00E+11	Northeast Lower	C	1.50%
	7F11	River Ward	C	2.00%
	7G11	North Philly	B	1.50%
	7G11	North Philly	C	1.50%
	7H11	N. Liberties/Fairmount Upper	A	2.00%
	7H11	N. Liberties/Fairmount Upper	B	2.00%
	7H11	N. Liberties/Fairmount Upper	C	2.00%
	7H21	Market West Upper	A	2.50%
	7H21	Market West Upper	B	2.50%
	7H21	Market West Upper	C	2.00%
	7J11	South Philly	B	1.75%
	7J11	South Philly	C	1.75%
	7K11	Stadium Area	B	1.75%
	7K11	Stadium Area	C	1.75%
	7L11	North Philly Upper	B	1.50%
	7L11	North Philly Upper	C	1.50%
	7M11	North West	B	1.50%
	7M11	North West	C	1.50%
	7M21	Chestnut Hill	B	2.00%
	7M21	Chestnut Hill	C	2.00%
	7M31	Mt. Airy	B	2.00%
	7M31	Mt. Airy	C	2.00%

**Trending Factors for Other Property Classes - Continued**

<b>Property Class</b>	<b>Locale Code</b>	<b>Location Description</b>	<b>Building Class</b>	<b>% Change Trend</b>
Offices (continued)	7P11	Market East	A	2.75%
	7P11	Market East	B	2.75%
	7P11	Market East	C	2.50%
	7P12	Independence Mall	A	3.00%
	7P12	Independence Mall	B	2.75%
	7P12	Independence Mall	C	2.50%
	7P21	N. Liberties/Fairmount Lower	B	2.25%
	7P21	N. Liberties/Fairmount Lower	C	2.25%
	7Q11	Market West Lower	A+	3.25%
	7Q11	Market West Lower	A	3.00%
	7Q11	Market West Lower	B	2.75%
	7Q11	Market West Lower	C	2.50%
	7R11	University City	A+	3.25%
	7R11	University City	A	3.25%
	7R11	University City	B	3.00%
	7R11	University City	C	2.50%
	7S11	Navy Yard	A	3.00%
	7S11	Navy Yard	B+	2.75%
	7S11	Navy Yard	B	2.75%
	7S11	Navy Yard	C	2.50%
7T11	South West Lower	A	0.75%	
7T11	South West Lower	B	0.50%	
7T11	South West Lower	C	0.50%	
Parking Garages	--	--	--	2.00%
Industrial	--	--	--	0.65%
Industrial/Small Garage	--	--	--	0.00%