APPRAISER'S REFERENCE MATERIALS
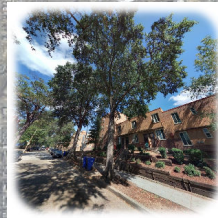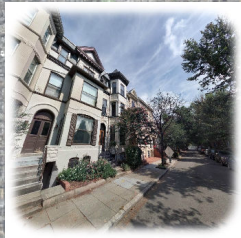
Real Property Assessment Division
2019 General Reassessment Program

Office of the Chief Financial Officer
Office of Tax and Revenue
Real Property Tax Administration

Disclaimer:

Τhis publication represents a selected compilation of materials developed and used by the Real Property Assessment Division of the Office of Tax and Revenue during the 2019 revaluation of real property in the District of Columbia.   As such, it does not purport to be an exhaustive collection of all assessment administration documents and materials. Its primary purpose is designed to be a quick reference guide for the real property assessor in his/her day-to-day work activities.
Please feel free to call or fax your comments or suggestions to the contact numbers below. Thank you.

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2019 ARM

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OFFICE OF TAX AND REVENUE
REAL PROPERTY TAX ADMINISTRATION
INTER OFFICE MEMORANDUM

TO: Real Property Assessment Division

FROM: Olufemi A. Omotoso, Chief Appraiser

SUBJECT: Tax Year 2019 Reassessment

DATE: 2/28/2018

Dear Colleagues:

It is with a sense of gratitude to you my colleagues that I can report that we have once again successfully completed annual reassessment of all taxable and exempt real properties in the District of Columbia for TY 2019 *ad valorem* taxes.

A total of 200,443 taxable and exempt properties have been reassessed at their fair and equitable market value as of January 1, 2018. In the second-half of TY 2018 we also re-assess more than 700 parcels that added $2.56 billion assessed value to the roll.

The result of TY 2109 reassessment is summarized in the table below which compares the values to TY 2018 assessment:

Property Type	TY 2018 Value	TY 2019 Value*	Base Increase ($)	% Change
Residential [Class 1]	$123,386,114,197	$127,496,829,394	$4,110,715,197	3.33%
Commecrial [class 2]	$101,001,641,129	$104,328,468,727	$3,326,827,598	3.29%
Total Taxable	$224,387,755,326	$231,825,298,121	$7,437,542,795	3.31%
Exempt	$27,000,091,984	$27,321,379,014	$321,287,030	1.19%
All Properties	$251,387,847,310	$259,146,677,135	$7,758,829,825	3.09%

The base increase in real estate value from the re-assessment exercises indicate that the District of Columbia real estate market continues to show modest growth. The District assessed value increase is consistent with similar increase experienced in neighboring counties; Prince Georges' County residential property value rose 21.4% and commercial property value increased by 10.6%. In Fairfax County residential real estate assessment are up by average of 2.17% while commercial (which include rental apartment) has average increase of 3.79%. Overall, property value in Maryland-District of Columbia Statistical Metropolitan Area continue to rise.

The base change report captures your good work over the last year. Works such as comprehensive property and site inspections; sales verifications; improving model specifications and calibrations, just to mention a few.

It is important to highlight our not so obvious successes, never-the-less important and significant improvements to our operations. We have dispatch more than one thousand backlog of superior court cases settlement memos, resulting in faster refund payments. Affordable housing valuation model is improved to further recognize limitations imposed by government restrictions. We have back-filled most positions and created Appeals and Litigation Program Analyst- a position that support our litigation works with Office of Attorney General. The Appraiser Education & Certification Program continues to be a success. More than two-thirds of our staff are participating in the program.

Looking forward to years ahead, we must consciously provide the District of Columbia Taxpayers the services that reflects OCFO core values. We must daily earn the trust and respect of the community we serve, and be devoted to working together as a team of professionals by working SMARTER!

As we seek to implement new initiatives that are designed for continuous improvements within Real Property Tax Administration under the leadership of our Director, Vladimir Jadrijevic, we shall work collaboratively as a team, because our motivation come from desire to be the best assessment office in the nation.

In closing, I want to emphasize that I am honored to work in Real Property Assessment Division and with all of you. What we have accomplished in the last few years is a testament to your dedication and commitment to excellence; for that you have my deepest gratitude – Thank You.

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Explanation of Residential Market-oriented Cost Method

Note: The market-oriented cost approach to valuation is further explained and illustrated in the document, _Vision Residential Valuation Process_.

The market-oriented cost approach involved the following:
1. Extracting the CAMA data from approximately 11,290 qualified sales and importing it into SPSS.
2. Building a preliminary regression model that reflects the variables of the CAMA cost approach.
3. Reviewing the results of the preliminary regression to identify candidate market areas where the data was such to allow for successful regression analysis.
4. Eliminating outliers in the candidate areas to better ensure accuracy of the regression results.
5. Establishing time adjustment factors in order to analyze sale prices as of a specific point in time. The city was divided into 4 major market areas for time adjusting sale prices. Market data indicated monthly time adjustment factors over 32+ months (1/1/2015 through 9/28/2017) as follows:

	1/1/15 – 12/31/15	1/1/16 – 12/31/16	1/1/17 – 9/30/17
"Southeast" Neighborhoods (2, 3, 16, 18, 22, 28, 32, 33, 43)	0.90% /mo	0.50% /mo	0.50% /mo
"Northeast" Neighborhoods (5, 6, 7, 12, 14, 15, 17, 19, 31, 35, 36, 42, 47, 48, 49, 51, 52, 56, 66)	0.70% /mo	0.50% /mo	0.50% /mo
"Northwest" Neighborhoods (1, 4, 8, 11, 13, 21, 23, 24, 25, 26, 27, 29, 30, 34, 37, 38, 41, 50, 53, 54, 55)	0.30% /mo	0.20% /mo	0.30% /mo
"Downtown" Neighborhoods (9, 10, 20, 39, 40, 46)	0.50% /mo	0.20% /mo	0.50% /mo

6. Building a final regression model, using the time-adjusted sale price as the dependant variable.
7. Calibrating that model using non-linear multiple regression. Variables were included to extract land values from the market.
8. Reviewing the regression predicted values and removing extreme outliers.
9. Examining the predicted-values-to-time-adjusted-sale-price ratios for equitability with respect to lot size, building area, age, use, grade, and location.
10. Entering the coefficients indicated by the regression analysis back into the CAMA program's cost model.
11. Applying the cost model in CAMA and reviewing the resulting values to ensure they agreed with the predicted values produced by the regression.
12. Performing sales analysis to determine if acceptable levels of assessment were achieved and adjusting rates as necessary.
13. Applying model to inventory and producing old-to-new (outlier) reports and percent change detail analysis reports for appraiser review.
14. Incorporating oversight of the computer aided procedure by our professional staff cited in the _2019 Valuation Review Process_. All projected market value changes are submitted to the staff for their review, refinement, and adjustments.

Explanation of Residential Condominium Valuation Methods

Regression:

The sales comparison approach using multiple regression analysis involved the following:

1. Extracting the CAMA data of qualified sales and importing it into SPSS.
2. Reviewing data to determine what regimes were candidates for regression analysis. As a rule, regimes could be valued using regression where the physical data attributes were complete and adequate sales data existed. Regimes without adequate sales, but with complete data, could be clustered with regimes having similar profiles to allow regression to be used.
3. Exploring the data to determine what variables would likely contribute to the model.
4. Building a base model.
5. Reviewing the results of the base model and eliminating outliers in the candidate regimes to better ensure the accuracy of the regression results.
6. Establishing time adjustment factors in order to analyze sale prices as of a specific point in time.
7. Building a final regression model, using the time-adjusted sale price as the dependant variable.
8. Calibrating that model using multiple regression analysis.
9. Applying the model to the sales, reviewing the predicted values and removing extreme outliers.
10. Performing sales analysis to determine if acceptable levels of assessment were achieved and adjusting rates as necessary.
11. Extracting condominium inventory data and importing into SPSS.
12. Applying model to inventory, and exporting the values back to CAMA, allocating 30% of predicted value to land and 70% of predicted values to improvements.
13. Producing percent change reports for appraiser review.
14. Identifying necessary corrections to data and location adjustments.
15. Repeating process of extracting data, applying model, and exporting back to CAMA to include corrections.

Final Appraiser Review:

At the conclusion of the valuation, several reports are produced showing the results of the reassessment. These reports, reflecting proposed market value changes, are submitted to the assessment staff for their review, refinement and adjustment in accordance with the processes outlined in the _2019 Valuation Review Process_ document.

The Condominium Regression Model:

ESP= (365.03 * 800 * SIZE_ADJ * EFFIC_ADJ * COND_ADJ * VIEW_ADJ * BATH_ADJ + PARK_ADJ) * LOC_ADJ.

Estimated Sale Price (ESP) – the value predicted by the model for the parcel, given the variables in the model, the coefficients of those variables and the attributes of the subject unit.

Base Rate (365.03) – base size rate (constant)

Base Size (800) – base unit size (constant)

Size Adj. – the adjustment for the unit's size being larger or smaller than the base size

> The base unit size is 800 sf. The formula for calculating the size adjustment is:
> Unit size up to 2000 sf: $(SIZE/800)^{.670946}$
> Unit size larger than 2000 sf: $(2000/800)^{.670946} * (SIZE/2000)^{.928349}$
> See graph titled *Condominium Size Curve*.

Efficiency Adj. – if the unit is an efficiency unit, a 0.93 adjustment is applied.

Condition – adjustment for the unit's physical condition

> (1) Poor   .75
> (2) Fair   .90
> (3) Average   1.00
> (4) Good   1.08
> (5) Very Good   1.17
> (6) Excellent   1.26

View – adjustment for the unit's view

> (1) Poor   .85
> (2) Fair   .93
> (3) Average   1.00
> (4) Good   1.05
> (5) Very Good   1.10
> (6) Excellent   1.15

Bath Adj. – adjustment for the unit's number of baths more than one.

> BATH_ADJ = 1 + (((FULLBATH - 1) + (.5 * HALFBATH)) * .08)
>
> *Example: 2 ½ baths: 1 + (((2 − 1) + (.5 * 1)) * .08) = 1.12*
> *3 baths: 1 + (((3 − 1) + (.5 * 0)) * .08) = 1.16*

Parking – adjustment for Limited Common Element parking

Outdoor	Covered	Indoor	
14,600	16,050	21,900	subject to location adjustment

Location – adjustment for unit's geographic location

Location adjustments were made for neighborhood, sub-neighborhood, cluster of regimes, or unique regime. The actual location adjustment for any unit may be the combination of one or more of those location factors.

Explanation of Cooperative Valuation Method

Cooperatives are a type of residential property. In a cooperative, a corporation owns the property and the shareholders can use the unit or units represented by their shares. In Washington, DC, cooperatives are assessed according to statue by one of three methods. The first method is by calculating the cumulative value of the leasehold interests (by sales). The second method is to treat the project as if it was a condominium project and reduce the value by 30%. After arriving at either of these values, we further reduce the value an additional 35% according to the statue. The third method is available only to Limited Equity Cooperatives.

Limited-equity cooperatives (LEC) are defined in the DC official Code in § 47-802 (11) as, "one required by a government agency or non-profit to limit the resale price of membership shares to keep the housing affordable for low and moderate income buyers." The assessed value of the improved real property owned by an LEC is the lesser previously described approaches or the annual amount residents pay in carrying charges (excluding subsidies), divided by an appropriate capitalization rate as determined by the Office of Tax and Revenue (OTR).

For tax year 2019, we reviewed all the complexes with sales information and calculated the sales prices per square foot taking into consideration remodeling and renovations from building permits and information from listings. Sale information is collected from the Recorder of Deeds (Transfer of Economic Interest Tax Return Cooperative Only forms and the Multiple Listing Service). Only minor time adjustments were deemed necessary for this period. For previous years matched pairs sales were used to calculate the typical percentage increase per month. Multiplying the square footage of the units by the adjusted rates (occasionally they were adjusted for view or parking as sales indicated) would result in the aggregate values which were further reduced for personal property and the result multiplied by 65% to arrive at the assessment.

In complexes where there were no sales, we treated them as if they were condominiums. To do this we would find a condominium as similar as possible to the subject and use the square foot rate that seemed to be appropriate to the square foot of the units or the estimated square footage. We would adjust the square foot rate if the complexes weren't in similar condition or location. We would multiply the rate times the square footage and reduce the result by 30% and then by 35%. The complexes without sales were typically limited equity coops or very small complexes.

2019 Valuation Review Process

As part of the valuation process, initial assessments for all properties will be estimated and preliminary reports will be generated summarizing the results of the valuation effort. Your review, modification and approval of the proposed assessments indicate that they are representative of the estimated market value.

The Valuation Review Process is designed to allow for a thorough review of the new values for the upcoming tax year before notices are sent to property owners.

The purpose of this review is two-fold. First, it allows us the opportunity to correct any errors that may have occurred in the valuation process before they cause administrative difficulties (i.e. public relations problems, unnecessary appeal activity, and the like). Second, the process provides feedback to the CAMA modeling and calibration process.

The process involves examining all assessments with particular attention given to the outliers in a relatively short period of time. As such, the appraiser is primarily concerned with arriving at a reasonable final value estimate for all accounts by focusing attention to the properties on the outlier list, known as the Old-to-New Report. Briefly, the process involves the appraiser of record reviewing a selected group of properties in their neighborhood that, on first inspection, appear to be over or under appraised based on previously determined criteria such as sales price, percent change reports, etc. When this review indicates correct values, no records are changed; however, if the value requires modification, the appraiser will make changes in the CAMA record and on the PRC to correct the situation. If he/she discovers minor discrepancies in the data, it should be noted and corrected or revisited during another inspection program at the discretion of the appraiser. The purpose of this program is not to engage in a detailed analysis of accounts but rather to expeditiously review outlier accounts to improve our estimate of market value.

> **NOTE**: It is advisable that the appraiser has a solid knowledge of CAMA valuation before proceeding with the review process. Please refer to the most current version of the "*CAMA Residential Construction Valuation Guideline.*" Along with the report entitled "VISION CAMA Valuation," the guideline will serve as a tutorial for the methodology employed within CAMA for valuing residential property.

Following are some general guidelines to consider while conducting review activity.

1.   The valuation review process begins with CAMA producing two reports for each (sub) neighborhood. The first report is the "Old to New" report that shows the old value, new value, percent and dollar change in value from the current assessment to the proposed assessment for specific properties that constitute outliers in the (sub) neighborhood. Included are the individual PRCs for each corresponding account listed in the report where the proposed value increased 10 percentage points or more above the median percent change for the (sub)

neighborhood or decreased 10 percentage points or more below the median percent change. The second report, Percent Change Detail Analysis, contains more specific detail about all of the accounts in the selected (sub) neighborhood.

2.   The appraiser will be provided these two individual reports for each of the assigned (sub) neighborhoods, along with individual PRCs from the Old-to-New report.

3.   Before individual reviews of the Old-to-New report begins, the appraiser will examine the Percent Change Detail Analysis report for signs of irregularities or general discrepancies based on their knowledge of their neighborhoods. The review entails several tasks as follows:

    A. Review the "A/S Ratio", when present. The ratios are calculated based on sales over a long period of time. Pay particular attention to sales that occurred during calendar year 2015. These sales will give a better picture of the most recent assessment/sales ratio reflective of the current market conditions. Where the assessed values are not close to the sales prices, fully examine the record, and consider making appropriate changes. The "VC" flag can be used to indicate that a sale has been previously disqualified, possibly rendering an unusual ratio less meaningful. Additionally the review of the "VC" code with an unusual ratio may indicate that a previously qualified sale needs to be now disqualified.

    B. Examine the "Grade" of the accounts. If there is a two or more departure of grade between the account and the typical grade in the (sub) neighborhood, the appraiser may be concerned.

    C. Look for extremes in the "Cond" and "% Good" data. Again, on average, these should be relatively consistent throughout the (sub)neighborhood.

The preferred process to follow when conducting individual reviews of accounts contained on the Old-to-New report (residential only) is as follows:

1.   The appraiser will examine each record that appears on the "Old to New" report. Each record has been selected for inclusion because the proposed value decreased 3 percentage points or more below the median percent change for the (sub) neighborhood or increased 10 percentage points or more above the median percent change for the (sub) neighborhood. However, PRCs were printed for records where the proposed value decreased 10 percentage points or more below the median percent change for the (sub) neighborhood or increased 10 percentage points or more above the median percent change for the (sub) neighborhood. As a result, there will probably be more accounts listed on the "Old to New" report than printed PRCs. These records constitute the "outliers" of

the (sub) neighborhood. The values may be correct or erroneous, and the purpose of this process is to make that determination.

2.   The appraiser, exercising his or her professional skill and judgment, first will conduct a "desk review" of each account appearing on the report. If the value does not seem reasonable perform the following actions:

A. Examine the PRC for any missing or incorrectly coded data contained in the Construction Detail section.

B. In the Building Summary Section, check the sq. ft. sizes of the areas listed for accuracy and reasonableness.

C. Check the Building Cost Section for correct Effective Area, Special Feature RCN and % Good. If any are erroneous, examine their respective sections for details.

D. Examine the Special Features/Amenities and Detached Structures sections for accuracy.

E. On the front of the PRC, check the Land Line Valuation Section for proper size and value.

F. Make use of the Pictometry tool available in the Mobile Video Viewer or the Mapping Apps folder.

3.   Several results may occur from the desk review:

A. The desk review indicates the value is correct. In this case, note in the column adjacent to the account "OK", your initials and the date.

B. The desk review indicates an erroneous value discovered by examining various reports and records (i.e. Percent Change, CAMA record, etc). In this case, the appraiser makes the correction in the CAMA record, notes the changes made on the PRC in red, notes on the Old-to-New report the new amount, your initials and the date.

C. The desk review is inconclusive and a field inspection is in order.

An example may help illustrate scenario "A", the first situation. Let's say the Old-to-New report indicates an account has jumped 400%, from $300,000 to $1,200,000! That amount of increase seems absolutely erroneous. To determine a possible explanation, the appraiser begins the review by locating the account on the Percent Change Detail Analysis report. After finding the account, the appraiser notices that the properties close to the account have only increased by approximately 20%, the median for the neighborhood. They are approximately similar to the account in size, grade, and condition, but their prior year's value was $900,000, while the outlier was only $300,000. The appraiser would be safe to conclude that the account was grossly under-assessed last year. The low "old" value caused the large increase in value, not an over-assessed new value. To complete the desk review, the appraiser notes on the Old-to-New report, "OK", his/her initials and the date.

Scenario "B", the second situation, may find the appraiser reviewing an account that also appears to be over-assessed based on the large increase from old to new value. The appraiser again locates the account on the Percent Change Detail Analysis report and reviews the account in context to other (sub)neighborhood properties. The appraiser discovers that most of the data about the account is similar to the other properties – same use code, similar size, percent good, etc. However, where most of the properties are listed at Grade 4, the account is Grade 7. This would help explain the likelihood that the account is over-assessed. The appraiser would make the change to the grade in the CAMA system, note the new value, make the change on the PRC in red, and document the change on the Old-to-New report by writing the new value, his/her initials and the date in the far right column of the report next to the account.

The last scenario, "C", results when the appraiser can not immediately explain the reason an account appears on the Old-to-New report. He/she should set aside accounts that will require field inspection and at a point, go to the field for inspection. Upon conclusion of the inspection, the appraiser will document the results in a similar manner to the desk reviews. The actual schedule for field- work will vary and will be coordinated by the appraiser and his/her supervisor.

Records Retention , Old-to-New Reports (residential only) and Percent Change Detail Analysis Reports (residential, residential condominium, commercial) are to be retained for two years, so that the current and proposed years are readily available for review. The retained reports will reflect all necessary dates and initials, indicating the required review and approval. The supervisor for each unit will be responsible for ensuring compliance with the review process within their unit, and for the retention of their unit's reports for the appropriate period of time. Reports may be discarded when they are no longer the current or proposed year. For example, upon the completion of the tax year (TY) 2017 revaluation, the TY 2015 reports may be discarded, and the reports from TY 2015 (current) and TY 2017 (proposed) must be on file.

Assessment Roll and Property Owner Notification

Upon completion of the annual reassessment and following the detailed final edit by appraisers, the CAMA manager runs a series of edit programs that makes final edits and consistency checks of all accounts. Any problems are returned to appraisers for review or correction. Following corrections, the CAMA Manager completes a final edit and uploads the required information via CAMA extract to the Integrated Tax System.

Annual Assessment Notices to notify property owners may be printed from ITS in batch mode or an extract may be produced for an outside vendor to produce assessment notices.

Market Approach to Land Valuation in Costed Neighborhoods

A non-linear regression model was used to calibrate the residential cost model. It was developed from citywide market analysis of qualified sales. One of the variables calibrated by the model was the land rate. Base land rates were adjusted for location in each sub-neighborhood. Regression analysis calibrated the land and building components of the model at the same time using the same market data. Additionally, the analysis established four size curves for land area. The four size curves indicate that as lot sizes increase, values also increase. However, with land size curve "3" values increase more rapidly with size as compared to land size curve "2". Land size curve "1" increases at the smallest rate. In all three cases, land rates decrease as land area increases. Market data supports both curves up to approximately 5 times the standard lot size. However, in application, rates are assumed to continue similar decreases beyond that point. Each sub-neighborhood was assigned to one of the three land size curve groups based upon analysis of the qualified sales data. It is important to keep in mind, that land value is only one component of a number of variables that contribute to a property's sale price and/or estimated market value. In practical terms, it is the combination of all of a property's attributes, nuances in the market, and buyer preference that contribute to the final market value of a property. It is difficult to isolate some of the contributory elements and value them separately with certainty. Nevertheless, it is required in the District of Columbia that land and building values be separated for assessment purposes. Because of this requirement, it is necessary to create land rate tables for use in the District's CAMA product. These rates were developed in the regression analysis referred to above. The results of the analysis are applied to the market-oriented cost model in the Vision CAMA system.

Land is calculated in Vision using the following algorithm:

Area * ((Base Rate * Size Adj) + $ Special Adj 1 + $ Special Adj 2) * % Special Adj 1 * % Special Adj 2

Where:

Area is the lot size expressed in square feet.

Base Rate is the market-derived rate for each sub-neighborhood.

Size Adj is the market-derived adjustment made for the lot size as it relates to the standard size lot for the sub-neighborhood. The look-up along the size curve is based on the ratio of the subject lot size to the standard lot size.

% Special Adj is any adjustment present that is expressed and applied as a percentage adjustment to the rate.

$ Special Adj is any adjustment present that is expressed and applied as a dollar adjustment to the rate.

Land Rate Development Example

A hypothetical example may help illustrate how regression analysis develops the base land rates and subsequent adjustments to the rates. Suppose two properties in a neighborhood were recently sold. The first, comprised of just a house without land, sold for $400,000. The second property had the identical house but with a lot of 2,000 square feet (sf.), the typical size for that neighborhood. It sold for $600,000. In a process similar to adjusting comparables in the sales comparison approach to value, regression analysis identifies the contributory value of the lot to the second property and sets its value to $200,000. The base land rate of $100 per sf ($200,000/2,000 sf) will be the basis for lot values for all other properties in that (sub)neighborhood.

Sold for $ 400,000
(no lot)

Sold for $600,000
w/ 2,000 SF Lot
(Land = $200,000)

Next, let us assume another house sells. On this occasion, the house is identical to the previous sale in all respects, except the lot size was 4,000 sf instead of the "standard" (base lot) size of 2,000 sf. This house recently sold for $700,000, $100,000 more than a property with the standard lot size. The land component of this sale is $300,000.

Sold for $600,000
w/ 2,000 SF Lot
(Land = $200,000)

Sold for $700,000 w/ 4,000 SF Lot
(Land = $300,000)

This sale helps develop size adjustments for non-standard lots in the neighborhood. If no adjustment was made to the land rate, the land component of this sale would be $400,000 (4,000 sf * $100). The appraisal would overstate the value of the property by $100,000. An adjustment to the base land rate is necessary to recognize the market response to the departure from the standard lot size. Regression analysis would calculate the appropriate land size adjustment necessary to properly determine the contributory value of the larger lot. Dividing the market-indicated value of the lot by the unadjusted appraised value of the lot ($300,000/$400,000) yields a factor of 0.75. In this example, CAMA would follow the model:

Appraised land value = Area * (Base Rate * Size Adj)

or

$300,000 = 4000sf * ($100 * .75)

Residential Base Land Rates By Neighborhood

NBHD	Base Lot Size	Base Rate	Base Lot Value	Size Curve
1A	4000 sf	$118.22	$472,880	LG1
1B	5000 sf	$103.19	$515,950	LG1
1C	5000 sf	$106.14	$530,700	LG1
2A	2000 sf	$64.65	$129,300	LG1
2B	2000 sf	$63.05	$126,100	LG1
3	2000 sf	$61.85	$123,700	LG1
4A	6700 sf	$109.31	$732,380	LG3
4B	10000 sf	$94.93	$949,300	LG4
4C	8000 sf	$112.69	$901,520	LG4
5A	1700 sf	$129.04	$219,370	LG1
5B	1700 sf	$134.15	$228,060	LG1
6A	4000 sf	$77.35	$309,400	LG1
6B	4000 sf	$76.02	$304,080	LG1
6C	2000 sf	$130.67	$261,340	LG1
6D	4000 sf	$76.16	$304,640	LG1
6E	3000 sf	$93.32	$279,960	LG1
7A	2000 sf	$123.31	$246,620	LG1
7B	3000 sf	$87.69	$263,070	LG1
7C	3000 sf	$97.15	$291,450	LG1
7D	5000 sf	$64.01	$320,050	LG1
7E	2000 sf	$152.82	$305,640	LG1
8A	2000 sf	$252.24	$504,480	LG1
8B	2000 sf	$256.12	$512,240	LG1
9A	1400 sf	$374.89	$524,850	LG2
9B	1400 sf	$392.12	$548,970	LG2
9C	1400 sf	$409.83	$573,760	LG2
10	1400 sf	$519.35	$727,090	LG1
11A	5000 sf	$103.01	$515,050	LG1
11B	5000 sf	$103.04	$515,200	LG1
11C	5000 sf	$101.97	$509,850	LG1
11D	5000 sf	$92.26	$461,300	LG1
11E	5000 sf	$90.01	$450,050	LG1
12	4000 sf	$69.21	$276,840	LG1
13	5000 sf	$171.42	$857,100	LG4
14	9000 sf	$49.48	$445,320	LG1
15A	1800 sf	$239.87	$431,770	LG1
15B	1800 sf	$221.58	$398,840	LG1
15C	1800 sf	$212.84	$383,110	LG1
15D	1800 sf	$235.70	$424,260	LG1
15E	1800 sf	$244.87	$440,770	LG3
16A	2400 sf	$47.56	$114,140	LG1
16B	2400 sf	$49.16	$117,980	LG1
16C	2400 sf	$44.44	$106,660	LG1
17	6000 sf	$78.12	$468,720	LG1
18A	3000 sf	$44.10	$132,300	LG1
18B	3000 sf	$41.61	$124,830	LG1
18C	3000 sf	$41.34	$124,020	LG1
18D	3000 sf	$38.34	$115,020	LG1
18E	3000 sf	$44.67	$134,010	LG1
19A	1800 sf	$248.26	$446,870	LG1
19B	1800 sf	$197.27	$355,090	LG1
20	1000 sf	$555.62	$555,620	LG1
21	9000 sf	$86.05	$774,450	LG3
22A	3000 sf	$44.82	$134,460	LG1
22B	2400 sf	$49.93	$119,830	LG1
22C	3000 sf	$42.29	$126,870	LG1
22D	2400 sf	$55.73	$133,750	LG1
23	2500 sf	$194.03	$485,080	LG1
24	2400 sf	$253.88	$609,310	LG1
25A	1800 sf	$328.82	$591,880	LG3
25B	1800 sf	$412.47	$742,450	LG3
25C	1800 sf	$369.35	$664,830	LG3
25D	1800 sf	$363.02	$653,440	LG3
25E	1800 sf	$444.05	$799,290	LG4
25F	2000 sf	$411.06	$822,120	LG4
25G	2000 sf	$403.19	$806,380	LG3
25H	2000 sf	$378.21	$756,420	LG4
25I	800 sf	$606.92	$485,540	LG3
25J	1200 sf	$522.63	$627,160	LG4
26	1700 sf	$302.23	$513,790	LG1
27	9000 sf	$51.99	$467,910	LG1
28A	2400 sf	$52.74	$126,580	LG2
28B	5000 sf	$32.93	$164,650	LG1
28C	5000 sf	$34.35	$171,750	LG1
29A	2000 sf	$312.13	$624,260	LG4
29B	2000 sf	$322.76	$645,520	LG4
29C	2000 sf	$343.92	$687,840	LG3
30A	5000 sf	$126.14	$630,700	LG4
30B	5000 sf	$131.18	$655,900	LG4
30C	7000 sf	$108.76	$761,320	LG4
31A	1800 sf	$259.73	$467,510	LG1
31B	1800 sf	$254.21	$457,580	LG1
32A	5000 sf	$27.74	$138,700	LG1
32B	2000 sf	$58.67	$117,340	LG1
32C	2000 sf	$66.96	$133,920	LG1
33A	2000 sf	$60.12	$120,240	LG1
33B	2000 sf	$55.21	$110,420	LG1
34	9000 sf	$124.36	$1,119,240	LG4
35	5000 sf	$57.61	$288,050	LG1
36A	2000 sf	$248.58	$497,160	LG1
36B	2000 sf	$268.28	$536,560	LG3
36C	1600 sf	$278.84	$446,140	LG1
37	3000 sf	$185.62	$556,860	LG3
38	5000 sf	$159.34	$796,700	LG4
39A	1500 sf	$257.04	$385,560	LG1
39B	1500 sf	$278.35	$417,530	LG1
39C	1500 sf	$320.46	$480,690	LG1
39D	1500 sf	$246.66	$369,990	LG1
39E	1200 sf	$336.38	$403,660	LG1
39F	1200 sf	$326.89	$392,270	LG1
39G	1500 sf	$222.11	$333,170	LG1
39H	1500 sf	$195.93	$293,900	LG1
39J	1500 sf	$294.21	$441,320	LG1
39K	1500 sf	$322.60	$483,900	LG1
39L	1200 sf	$341.36	$409,630	LG1
39M	1500 sf	$328.08	$492,120	LG1
40A	1400 sf	$295.15	$413,210	LG1
40B	1400 sf	$352.94	$494,120	LG1
40C	1600 sf	$372.33	$595,730	LG2
40D	1600 sf	$434.84	$695,740	LG2
40E	1600 sf	$433.21	$693,140	LG2
40F	1200 sf	$422.68	$507,220	LG2
40G	1600 sf	$342.42	$547,870	LG1
41	5000 sf	$122.06	$610,300	LG2
42A	1800 sf	$210.79	$379,420	LG1
42B	1800 sf	$181.85	$327,330	LG1
42C	1800 sf	$182.23	$328,010	LG1
43A	2000 sf	$64.35	$128,700	LG1
43B	2000 sf	$60.30	$120,600	LG1
43C	2000 sf	$66.20	$132,400	LG1
43D	2000 sf	$59.32	$118,640	LG1
46	1200 sf	$393.14	$471,770	LG1
47	3000 sf	$87.56	$262,680	LG1
48	5000 sf	$74.95	$374,750	LG1
49A	3000 sf	$131.33	$393,990	LG1
49B	3000 sf	$122.10	$366,300	LG1
49C	3000 sf	$120.55	$361,650	LG1
50A	10000 sf	$80.76	$807,600	LG3
50B	6000 sf	$105.44	$632,640	LG2
50C	14000 sf	$68.61	$960,540	LG3
50D	15000 sf	$86.49	$1,297,350	LG3
51	3000 sf	$95.22	$285,660	LG2
52A	1800 sf	$185.16	$333,290	LG1
52B	1600 sf	$199.27	$318,830	LG1
52C	1600 sf	$169.29	$270,860	LG1
53	5000 sf	$116.54	$582,700	LG1
54A	6000 sf	$142.42	$854,520	LG4
54B	1000 sf	$389.25	$389,250	LG1
55	6000 sf	$130.29	$781,740	LG2
56A	5000 sf	$56.88	$284,400	LG1
56B	5000 sf	$53.92	$269,600	LG1
56C	5000 sf	$53.24	$266,200	LG1
56D	5000 sf	$49.10	$245,500	LG1
66	5000 sf	$55.66	$278,300	LG1

Residential Land Size Curves

Legend:
- Group 1
- Group 2
- Group 3
- Group 4

X-axis: Size Ratio (0.20 to 10.00)
Y-axis: Value Ratio (0.00 to 4.50)

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Condominium Size Curve

Chart: Condominium Size Curve — Rate per SF plotted against Unit Size.

X-axis (Unit Size): 200, 300, 400, 500, 600, 700, 800, 900, 1000, 1100, 1200, 1300, 1400, 1500, 1600, 1700, 1800, 1900, 2000, 2100, 2200, 2300, 2400, 2500

Y-axis (Rate): $200, $250, $300, $350, $400, $450, $500, $550

Legend: Rate per SF
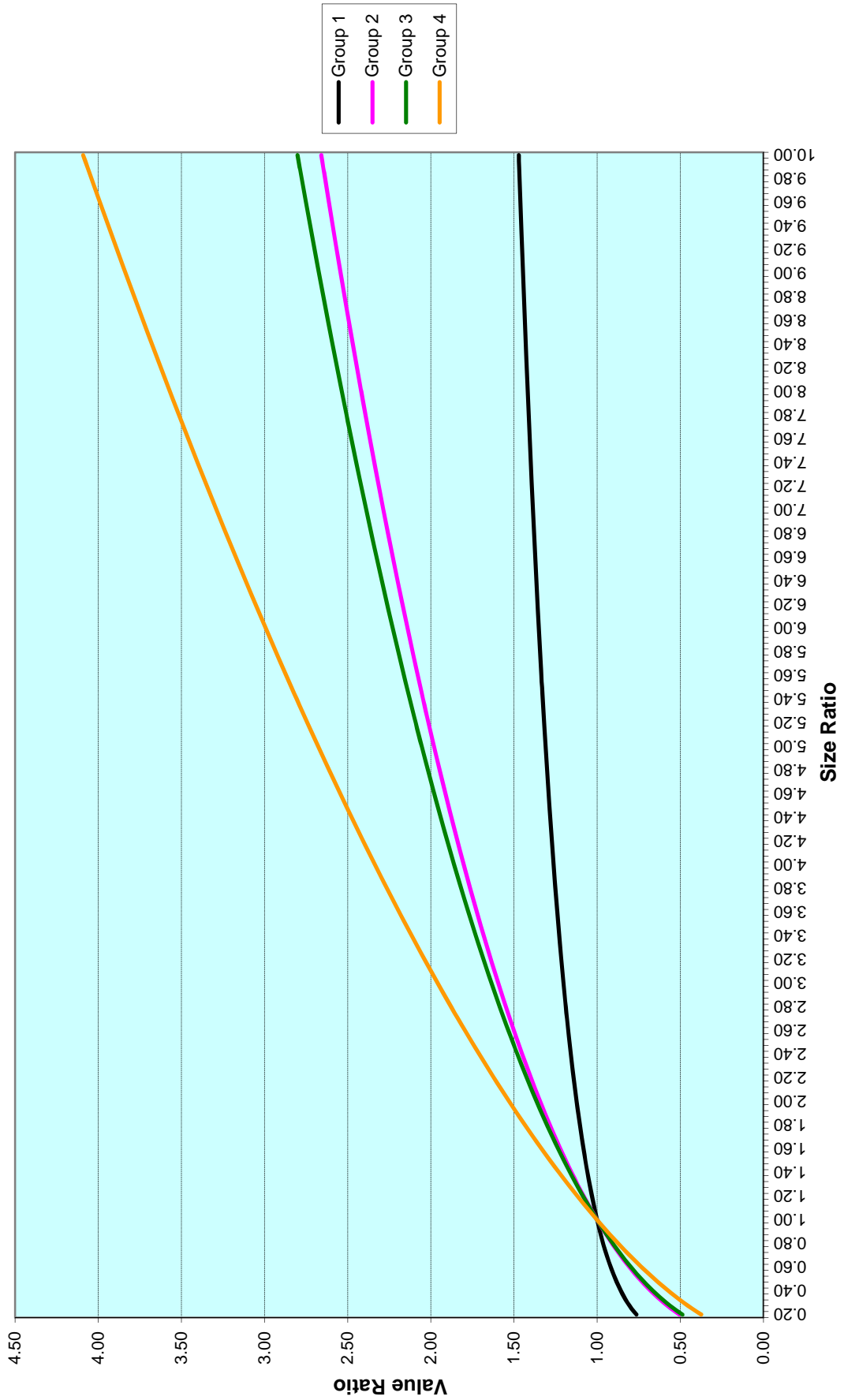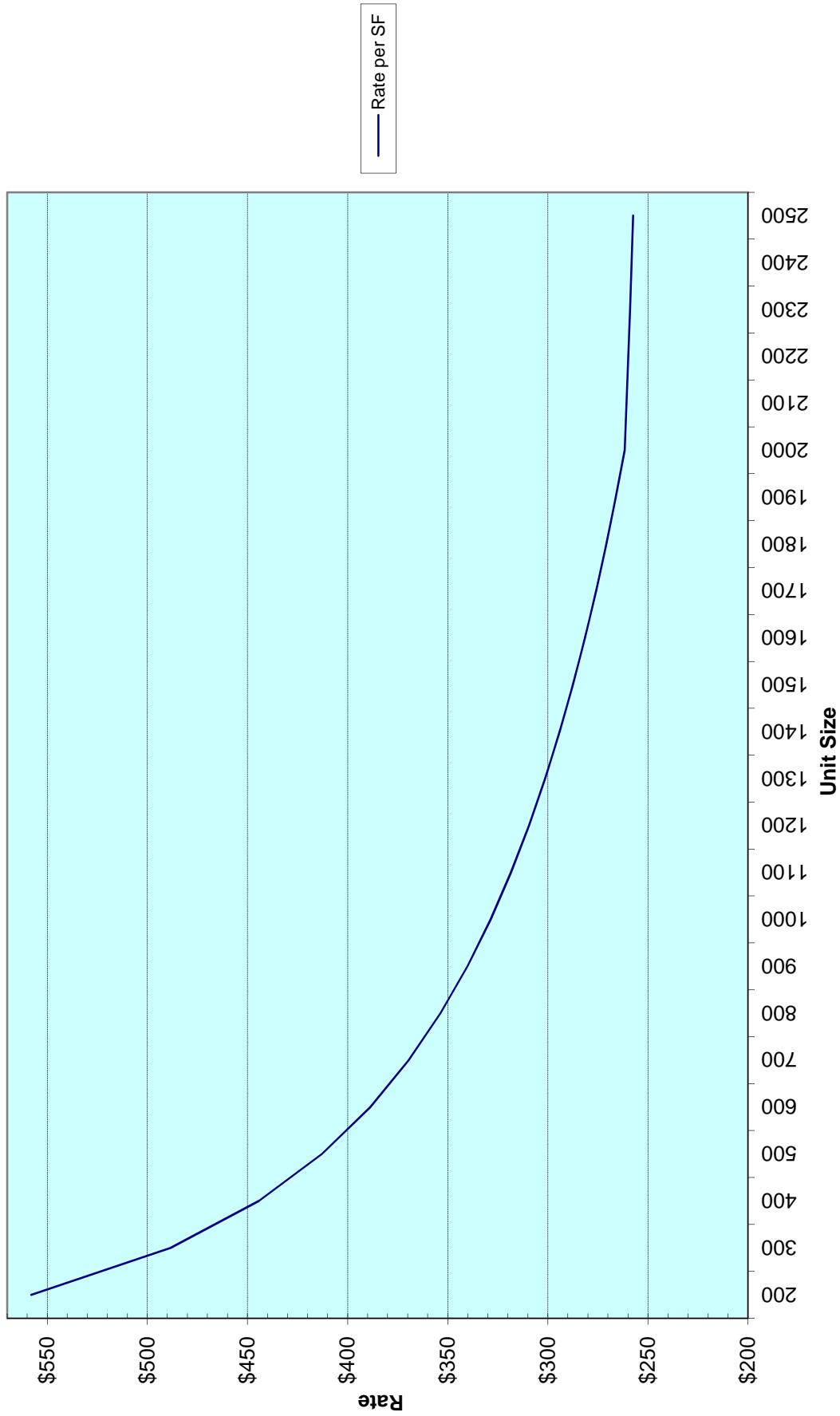
2019 Vision CAMA Residential Valuation Process

The market-derived cost approach to the valuation of real estate follows the generic formula of **Market Value = ((RCN-LD) + land value)**, where **RCN** is Replacement Cost New of the improvements and **LD** means Less Depreciation. When properly developed and calibrated, this approach is a reliable indicator of market value especially suited to mass-appraisal CAMA systems.

The following exercise will attempt to illustrate how the Vision$^{©}$ CAMA system utilized by the District of Columbia, calculates values using the above model. The first section will illustrate the development of the Replacement Cost New of a typical residence, the second will show the steps involved in determining the amount of depreciation that has accrued to the residence, and the last section will illustrate land or lot valuation.

Replacement Cost New

The Vision$^{©}$ CAMA system arrives at a RCN value for residential properties based on a market-calibrated hybrid cost model. The hybrid nature of the model simply means that the model employs both additive and multiplicative variables in its design and specification. The nature of the model will become clearer as we proceed through this exercise. Please also be aware that a model is dynamic in both its specifications and calibration. The specifications, those cost elements that comprise the model, may change from time to time based upon research and market conditions. As you may discover, the dollar rates, or calibrations, contained here most likely are different from the current model in use. The model used in this exercise is as follows:

$$\text{Building RCN} = [(\text{Base Rate} + \sum \text{ABRV}_n) * \text{Effective Area} * \text{Size Adjustment} + \sum \text{AFRV}_n] * (\text{MV}_0 * \text{MV}_2 * \ldots * \text{MV}_n)$$

Where:
RCN = Replacement Cost New
Base Rate = $ rate based on use code
ABRV = Additive Base Rate Variables
Effective Area = Adjusted SF area of improvement
Size Adjustment = Adjustment factor for deviation from base size
AFRV = Additive Flat Rate Variables
MV = Multiplicative Variables

Several items will be helpful while examining the features of the cost model and they are collected as Appendix "A" of this document. You will need to refer to them often during this exercise. They include the following:

- Sample home's Property Record Card (PRC)
- Cost.dat printout of the sample home
- 2007 CAMA Residential Construction Valuation Guideline

Rev 4.00

1. First, let's illustrate the calculation of the Effective Area of our sample home.

> **Building RCN = [(Base Rate + $\sum$ ABRV$_n$) * Effective Area * Size Adjustment + $\sum$ AFRV$_n$] * (MV$_0$ * MV$_2$ * … * MV$_n$)**

Illustration 1 shows the CAMA sketch of the sample home we'll be using throughout this exercise.
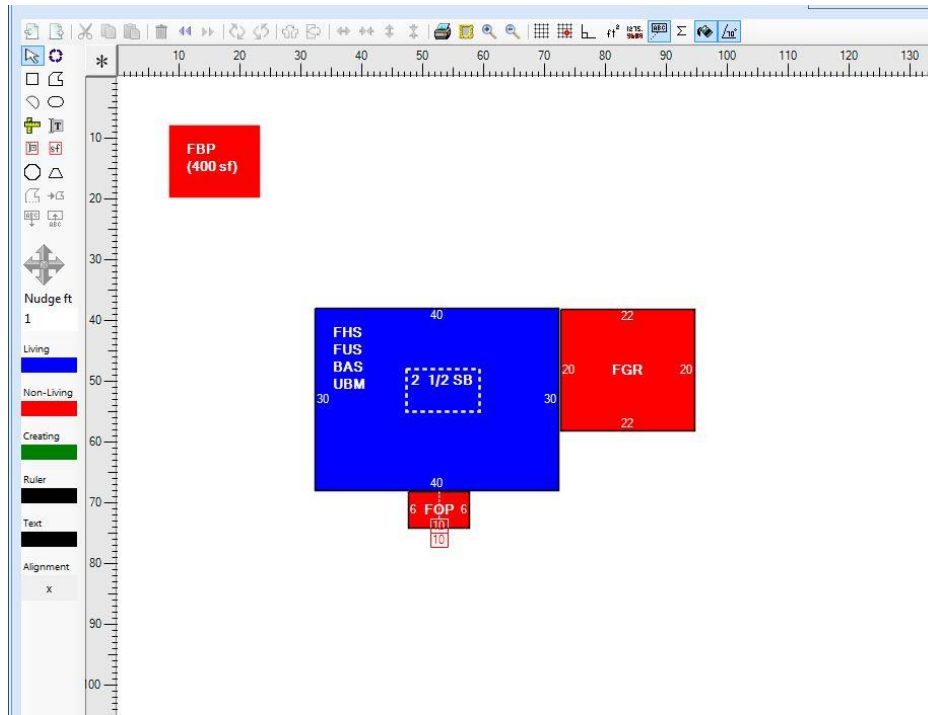
Illustration 1

It is described as a 2½ story single-family detached residence, with basement. It is brick veneer, frame construction with a two-car garage and small porch across the front. CAMA provides the information about the sizes of the various areas of the house in the depreciation section.

Section Summary

Group	R11	Effective Area	3498
Base Rate	133.84	RCN	$1,881,638
Eff Base Rate	$474.10	Bldg % Good	91
Net Other Adj	$223,227.29	RCNLD	$500
Living Area/GBA	3000		

Code	Description	Gross	Living	Eff Area
FHS		1200	600	600
FUS		1200	1200	1200
BAS		1200	1200	1200
UBM		1200	0	300
FGR		440	0	198
FBP		400	0	0

Illustration 2

The Effective Area is comprised of the totals of the base area (Main Building Area @ 1,200 SF), the finished second floor area (Upper Story, Finished @ 1,200 SF), the adjusted area of the finished half story (Half Story, Finished @ 50% of 1200 SF), the adjusted area of the garage (Garage, Attached @ 45% of 440 SF), and the adjusted area of the unfinished basement (Basement, Unfinished @ 25% of 1,200 SF).

The adjustments to the finished half story, garage and unfinished basement take into account these areas are not as expensive as the finished main building area. For example, if the base rate for the finished main building area is $100/SF, the rate for the garage area may only be $45/SF. The RCN value of the garage would be calculated as follows:

RCN of Garage = $19,800 or (440 SF * $45)

Another way to state the same situation is to adjust the size of the garage to 40% of its measured size and then multiply the resulting, *or effective*, size by the base rate of $100/SF:

RCN of Garage = $19,800 or [(440 * .45) * $100]

Both methods arrive at the same value for the garage. The first method is more intuitive and easier to explain to taxpayers as it adjusts for the differences in costs for the various areas. The second method again provides the same results but is much easier to model and calculate within a CAMA system, thus the effective area calculations shown here represent the methodology employed in the Vision© CAMA system.

Let's take a moment to examine the treatment of the basement in this house. The house has a full-sized basement comprised of 1,200 SF. In addition, the basement contains a finished area (400 SF), and the balance as unfinished. Illustration 3 shows the contribution of the unfinished portion to the effective area calculation. However, notice that the finished portion of the basement is not included in the effective area calculations. The value attributed to this finished area is accounted for as an Additive Flat Rate Variable later in the valuation model. The reason for this methodology is to ensure that the effective area is not erroneously overstated by the amount of any finished area in the basement.

Code	Description	Gross	Living	Eff Area
FHS		1200	600	600
FUS		1200	1200	1200
BAS		1200	1200	1200
UBM		1200	0	300
FGR		440	0	198
FBP		400	0	0
FOP		60	0	0

Illustration 3

Finally, the Gross Area shown in Illustration 3 is the total unadjusted size of all the areas that are a part of, and attached to, the home. The Living Area is the unadjusted size of the actual finished living area of the home.

With the inclusion of the Effective Area calculation, our cost model now looks like this:

> **Building RCN = [(Base Rate + $\sum$ ABRV$_n$) * *3,498* * Size Adjustment**
>   **Effective Area**
> **+ $\sum$ AFRV$_n$] * (MV$_0$ * MV$_2$ * … * MV$_n$)**

2. Next, let's look at the selection of the Base Rate for the sample home.

> **Building RCN = [(Base Rate + $\sum$ ABRV$_n$) * Effective Area * Size Adjustment + $\sum$ AFRV$_n$] * (MV$_0$ * MV$_2$ * … * MV$_n$)**

The Base Rate is the dollar rate per square foot used in the valuation model that is derived from market analysis and selected based on the Use Code of the building. Our sample home is a "Use Code 012 - Detached", corresponding to a Residential-Detached–Single Family residence. The Base Rate is automatically selected by the CAMA system and the appropriate base rate for the sample home is $ 149.27. Now the cost model looks like this:

> **Building RCN = [(*$157.85* + $\sum$ ABRV$_n$) * *3,498* * Size Adjustment**
>   **Base Rate**   **Effective Area**
> **+ $\sum$ AFRV$_n$] * (MV$_0$ * MV$_2$ * … * MV$_n$)**

3. The Base Rate of the home is just the start of the valuation process and it will be further modified as more specific features about the home are taken into consideration. Let's look at the first of two types of modifications that will affect the Base Rate, the Additive Base Rate Variables (ABRV).

> **Building RCN = [(Base Rate + $\sum$ ABRV$_n$) * Effective Area * Size Adjustment + $\sum$ AFRV$_n$] * (MV$_0$ * MV$_2$ * … * MV$_n$)**

Additive Base Rate Variables represent a variety of features found in residential improvements. For example, the value for air conditioning and floor covering are such features. The typical characteristic of these ABRVs is that the features are usually an integral part, and therefore an integral cost, of the whole house. As such, the value of the particular ABRV is added to the Base Rate. Each ABRV incrementally increases the Base Rate by its own square foot rate. So therefore, the $\sum$ ABRV$_n$ literally means the sum of all the rates for individual features are added to the Base Rate.

Highlighted in Illustration 4 are all the fields in the Construction Detail CAMA screen that can modify the selected Base Rate as ABRVs.

Illustration 4

The Cost.dat sheet of our sample home lists each ABRV under the heading Base Rate Adjustments as follows:

```
***************Base Rate Adjustments********************
         AIR CONDITIONING Y (Yes) = 1.8 + BaseRate
         EXTERIOR WALL 15 (Face Brick) = 3.95 + BaseRate
         FLOOR COVER 11 (Hardwood/Carp) = 4.67 + BaseRate
         ROOF COVER 3 (Shingle) = .68 + BaseRate
```

The sum, Σ, is \$11.10 (1.80+3.95+4.67+0.68). This will be added to the Base Rate of \$157.85 to give a modified Base Rate of \$168.95.

Our model now looks like this:

Building RCN = [(*\$157.85* **+** **\$11.10**) ***** *3,498* ***** **Size Adjustment**
Base Rate Σ **ABRV$_n$** **Effective Area**
+ Σ AFRV$_n$] * (MV$_0$ * MV$_2$ * … * MV$_n$)

4. Next, let us turn our attention to the second type of modification to the Base Rate - the Size Adjustment.

Building RCN = [(Base Rate + $\sum$ ABRV$_n$) * Effective Area * <mark>Size Adjustment</mark> + $\sum$ AFRV$_n$] * (MV$_0$ * MV$_2$ * … * MV$_n$)

The Size Adjustment modifies the Base Rate to account for the size difference between the "standard size" for the "typical" house in the model and the actual size of the sample house. The "standard" size of 1,800 SF for the "typical" house, consisting of a 2-story frame residence, is used as the basis for establishing the initial Base Rates used in CAMA. The adjustment in the Base Rate allows the proper square foot rate to be applied to a house based on its size. It is reasonable to expect that as a house becomes larger than typical, the rate per square foot would decrease and conversely, if the house were smaller than typical, the rate would be higher. This Size Adjustment variable is the component in the model that adjusts for this situation. Our sample home's Size Adjustment is 0.89128 as listed on the Cost.dat sheet. Now our Base Rate is calculated to be $150.58 ((157.85+11.10) * 0.89128).

Because the adjustment is less than 1.00, it would be proper to conclude that our sample home is larger than the typical 2-story home in the District of Columbia. Had the sample home been smaller than 1,800 SF, the Size Adjustment would have been greater than 1.00. The use of size adjustments eliminates the need for the traditional cost tables based on size.

The cost model continues to grow, and now looks like this:

Building RCN = [(*$157.85* + *$11.10*) * *3,498* * *0.89128*
                      Base Rate $\sum$ ABRV$_n$ Effective Area   Size Adjustment
   + $\sum$ AFRV$_n$] * (MV$_0$ * MV$_2$ * … * MV$_n$)

---

5. We are finished establishing the Base Rate for our sample home and now turn to the Additive Flat Rate Variables (AFRV). This portion of the cost model is relatively straightforward. The individual Additive Flat Rate Variables are summed and the added to the product of the previous calculations.

Building RCN = [(Base Rate + $\sum$ ABRV$_n$) * Effective Area * Size Adjustment + <mark>$\sum$ AFRV$_n$</mark>] * (MV$_0$ * MV$_2$ * … * MV$_n$)

Here is where we make allowances for individual extra features contained in the sample house. Illustration 5 shows some of those features that constitute Additive Flat Rate Variables in the cost model:

Illustration 5

Unlike the Additive Base Rate Variables (ABRV) described earlier, most of these features are not an integral portion of the whole house, but stand alone, so to speak. Examples include such items as fireplaces, extra bathrooms, and extra kitchens. Again, as with other variables in the cost model, the values of these features are derived from market analysis.

Our sample home has several Additive Flat Rate Variables (AFRVs), including additional bathrooms and a fireplace. The cost for one full bath and one kitchen is always included in the original base rate. Any bathrooms or kitchens over and above the first are accounted for as AFRVs.

The value of an additive flat rate variable is calculated by multiplying the number of "units" by the dollar rate per unit. For example, illustration 5 shows our sample home also has two half baths. The AFRV for the half baths is $16,250 (2 "units" X $8,125 per unit) as shown in a portion of the Cost.dat file below.

Also included in the AFRVs are the partitioned finished basement and the small open porch on the front of the house. Recall that in illustration 3, neither of these

areas was included in the calculation of the effective area of the house, therefore, their valuations are included here, as AFRVs.

The partitioned finished basement is calculated to be $22,000. In this case, "units", the gross square footage of 400 SF (shown in the sketch area of the record), are multiplied by the rate of $55 per SF. The open porch is calculated in a similar manner.

<div align="center">

**************Flat Value Additions********************

FULL BATHS OVER 1 = 12500 + RCN
HALF BATHS = 16250 + RCN
FIREPLACES = 8000 + RCN
PARTITIONED FINISHED BASEMENT = 22000 + RCN
OPEN PORCH = 1320 + RCN

</div>

The sum, Σ, is $60,070 (16,000+22,000+7,100+18,000+801) that will be added to the product of the previous portions of the cost formula.

The cost model is almost finished for our sample home, and now looks like this:

> **Building RCN = [($157.85 + $11.10) * 3,498 * 0.89128**
> $\quad\quad\quad\quad\quad$ **Base Rate $\quad$ Σ ABRV$_n$ $\;$ Effective Area $\;$ Size Adjustment**
> **+ $60,070] * (MV$_0$ * MV$_2$ * … * MV$_n$)**
> $\quad$ **Σ AFRV$_n$**

6. The last portion of the cost model used to calculate the RCN are the multiplicative variables (MV).

> **Building RCN = [(Base Rate + Σ ABRV$_n$) * Effective Area * Size Adjustment + Σ AFRV$_n$] * (MV$_0$ * MV$_2$ * … * MV$_n$)**

This portion of the formula can have the largest influence on the cost model. Each multiplicative variable modifies *all* of the cost data that has preceded it. These variables modify the Base Rate, the sum of all the increases to the Base Rate (Σ ABRV$_n$), the Size Adjustment, and the sum of all the Flat Rate Variables (Σ AFRV$_n$). This is where such important characteristics as the building grade, building condition, remodeling, and location factors have their impact.

The sample home is graded "Above Average - 4", and consequently has a 1.091 multiplicative factor. This one variable, grade, is going to increase the RCN value of the sample home by 10%. Grade can have a sizable impact on the final value of the building. For example, a "Superior - 8" increases the final rate by 48% over that of an "Average Quality - 3" house.

The condition of the building is also accounted for by the multiplicative variables. The interior, exterior and overall conditions of our sample home are each "Good" and the corresponding multiplicative variable for each is 4.8%. The level of condition may be different for each of the three variables and therefore the coefficients may be different. Please refer to the *2007 CAMA Residential Construction Valuation Guideline --RPAD* for these and all other coefficients used in the valuation model.

Just as construction grade has a significant impact on the final value of a house, so does condition. For example, a house in overall "Poor" condition throughout will have its value <u>reduced</u> by 20.6%, whereas a house in excellent condition throughout will have its value <u>increased</u> by 10.5%. That's a range of over 31%.

Illustration "6" shows a portion of the features that constitute the multiplicative variables in the cost model:

Illustration 6

Another important multiplicative variable, Remodel Type, takes into account whether or not the house has been remodeled and to what extent. In addition, the age of the remodel factors into the amount of adjustment applied by this multiplicative variable.

Our sample home was remodeled in 2001. The portion of the CAMA record that captures this information is shown in Illustration 7 below.

Illustration 7

Obviously, a "Gut Rehab" would increase the value of property more than "Cosmetic" changes, and the coefficients listed in the above illustration demonstrate this. Our sample home was remodeled in 2001, indicating that the MV should be five percent. Five percent would be the correct amount if the remodel occurred in 2005, but it actually occurred in 2001, four years earlier. The CAMA model takes into consideration how long ago a remodel occurred and reduces its impact, as it becomes older. The rate of reduction of the MV is five percent per year. After twenty years, a remodel has no affect on value. In this example, our sample home's remodel occurred four years ago and thus the MV is reduced by twenty percent to 4.0% (5%*.80).

The last multiplicative variable, "Sub-Neighborhood Adj A", is the local neighborhood multiplier established within the particular neighborhood where the sample home is located. This variable is going to lower the RCN value of the sample home by 6.3%. The "Sub-Neighborhood Adj" reflects the market-derived fact that location is a very significant factor in the value of real estate. Two otherwise identical homes can have a substantial difference in value based on their locations.

The variables for our sample home are summarized in the Cost.dat file as follows:

```
**************Factor Adjustments*********************
        OVERALL CONDITION 4 (GOOD) = 1.091 x RCN
        EXTERIOR CONDITION 4 (GOOD) = 1.091 x RCN
        GRADE 40 (Above Average) = 1.090 x RCN
        INTERIOR CONDITION 4 (GOOD) = 1.091 x RCN
```

REMODEL FACTOR 4 = 1.03500 x RCN
SUB-NEIGHBORHOOD ADJ A = .878 x RCN

Each MV is multiplied together to determine the combined, or overall, MV. The sample home's MV is 1.2338132 (1.091*1.091*1.090*1.091*1.035*.878).

7. Finally, the Building RCN model is complete and contains the specific data of the sample home used in this demonstration. The market-derived cost model for the sample home is as follow:

Building RCN = [(Base Rate + $\sum$ ABRV$_n$) * Effective Area * Size
   $ 754,788 = [($157.85 + $11.10   ) *   3,498   * .89128
Adjustment + $\sum$ AFRV$_n$] * (MV$_0$ * MV$_2$ * … * MV$_n$)
            + $60,070] * (1.2862809)

The Cost.dat file shows a summary of the same information.

```
***************Building #1 Calc Start******************
        Cost Calculation for pid, bid = 182803,173587
        Account Number = 9999    9999
        Use Code = 012
        Cost Rate Group = R12
        Model ID: R16

        Section #1
        Base Rate: 157.85
        Size Adjustment: 0.89128
        Effective Area: 3498
        Adjusted Base Rate = (157.85 + 11.1) * 0.89128
        Adjusted Base Rate: 150.58
        RCN = ((150.58 * 3498) + 60070) * 1.2862802915416647
        RCN: 754788
```

The replacement cost new for our sample home is $754,188. There is still one thing left to address before we turn our attention to depreciation. Our sample home has a built-in sauna in the basement. This item was not costed as a component of the sample home, but rather as a Special Building Feature, with its own unit price of $ 13,250. Also, note that the depreciation applied to the Special Building Features is identical to the amount applied to the main building. See illustration 6 below.

Illustration 8

We now know the total replacement cost new (RCN) of our sample home, including the sauna, is $ 768,038 ($754,788 + $13,250).

If the sample home were brand new, we'd be finished, but it was actually built in 1937.

Next, we need to address accrued depreciation . . .

Depreciation

Depreciation is defined as a loss in the upper limits of value from all sources. Typically, three types of depreciation can affect real estate - physical deterioration, functional obsolescence and economic obsolescence.   This next portion of the demonstration will illustrate how Vision$^{©}$ calculates the amount of depreciation accrued to our sample home.

Several terms come into use when discussing depreciation in CAMA. They are defined as follows:

- Actual Age: The mathematical difference between the Base Year and the actual year the improvement was built to completion.

- Actual Year Built (AYB): The earliest time the main portion of the building was built. It is not affected by subsequent construction.

- Base Year: The year, usually the current year, that the depreciation table is calibrated, such that the age of a building built during the base year would be 0 years old.

- Depreciation Table: A market-driven table that lists the amount of depreciation corresponding to an Effective Year Built and the Base Year predicated upon a specific economic life.

- Effective Age: The mathematical difference, in years, between the Base Year and the Effective Year Built.

- Effective Year Built (EYB): The calculated or apparent year, that an improvement was built that is most often more recent than AYB. The EYB is determined by the condition and quality of the improvement. Subsequent renovation, additions, upgrades and the like, extend an improvements remaining economic life and therefore cause the EYB to be closer to the Base Year than the AYB.

- Percent Good: The mathematical difference between 100 percent and the percent of depreciation. (100% - depreciation %) = percent good

The RCN model used above indicated that our sample home has an RNC of $768,038. As stated earlier, the home was built in 1937 so there should be some depreciation to deduct from the RCN. We'll uses a five-step process to depreciate improvements:

1. Calculate the Actual Age of the improvement
2. Determine the Effective Age of the improvement
3. Determine the improvement's Effective Year Built
4. Look-up Percent Good corresponding to EYB on depreciation table
5. Apply selected depreciation to RCN to determine RCNLD

1.   Our first step is to calculate the Actual Age of our sample home. As you are aware, a valuation is always qualified as of a specific date. For ad valorem purposes in the District of Columbia, the valuation date is January 1 immediately preceding the tax year. In our example, the tax year is 2007; therefore, the valuation date is January 1, 2006. This date is also significant in terms of the depreciation accrued to improvements. In the past, the nature of triennial assessments required that base years within a Tri-Group remain unchanged for a period of three years. Now, however, with the return to annual assessments, the base year coincides with the valuation date. The Base Year is used to determine the Actual Age of the sample home. In this case, the sample home's Actual Age is 69 years (2006-1937).

2.   The next step is to determine the sample home's Effective Age. Effective Age may or may not represent actual or chronological age. The premise is simple but the application can be confusing. If a home is built and never maintained (painting, re-roof, etc.) or remodeled, the home would quickly depreciate from physical deterioration. The CAMA system would depreciate the home at the fastest rate possible based on the selected Depreciation Table. For example, CAMA uses a 75-year Economic Life Depreciation Table for residential property. If the home were left to rot, the Effective Age would most likely be the same as the Actual Age.

Let's say the owners of our sample home have completely neglected their property from the time it was built in 1937 to the present. Their home would have an effective age of 78 years as indicated on the Depreciation Table below:

Depreciation Table
Base Year
2015

Effective Age of Building	% Depr.	% Good	Effective Year Built				
0	0	100	2015	54	13	87	1961
1	1	99	2014	55	13	87	1960
2	2	98	2013	56	13	87	1959
3	2	98	2012	57	13	87	1958
4	3	97	2011	58	13	87	1957
5	3	97	2010	59	13	87	1956
6	4	96	2009	60	14	86	1955
7	4	96	2008	61	14	86	1954
8	4	96	2007	62	14	86	1953
9	4	96	2006	63	14	86	1952
10	5	95	2005	64	14	86	1951
11	5	95	2004	65	14	86	1950
12	5	95	2003	70	15	85	1945
13	5	95	2002	75	16	84	1940
14	6	94	2001	78	16	84	1937
15	6	94	2000				

Illustration 1

The Actual Year Built (1937) and the Effective Year Built (1937) would be the same and consequently the Effective Age is 70 years. Moving across the table, we see that a home with an EYB of 1937 has 15 percent depreciation and therefore is 85 Percent Good (100%-15%). If the RCN of our sample home is $ 754,788, the depreciated value, RCNLD, is only $ 641,570 (754,788* 0.85).

Note: The depreciation table moves in 5-year periods towards its end; this explains the apparent inconsistencies in 70 years v. 69 years. The Cost.dat file represents the actual numbers used in calculations.

The situation described above rarely, if ever, occurs in the market. People do maintain and renovate their homes and in doing so, extend the home's useful or remaining economic life. As homeowners repair roofs, paint siding, replace windows and furnaces, they *prolong* the life of the home and consequently *decrease* its Effective Age.

Along with the actual age of the sample home, the illustration below shows which variables within CAMA affect the calculation of effective year built.

Illustration 2

All of the features or variables dealing with depreciation, highlighted in Illustration 2 are multiplicative variables. As such, they are multiplied one by the other and then the Actual Age is multiplied by the product of the MVs. Below is the portion of the Cost.dat file that summaries these MV for our sample home.

```
**************Effective Age Adjustments****************
    BATH STYLE 2 (Semi-Modern) = .95 * Age
    EFF AGE GRADE 40 (Good Quality) = .95 * Age
    KITCHEN STYLE 2 (Semi-Modern) = .9 * Age
```

The product of each of these MV adjustments is calculated to be 0.81225 (0.95 * * 0.95 * 0.9). This product is then multiplied by the Actual Age to calculate the Effective Age. Recall our sample home's Actual Age is 78 years. The Effective Age is calculated to be 61 years (75 max * 0.81225). Instead of CAMA using 78 chronological years to calculated depreciation, it will use 61 years. Below is a portion of the Cost.dat file that shows these calculations.

```
*******************************************************
    Actual Year Built:  1937
    Effective Age = 75 * .81225
    Effective Age:   61
    Percent Good = 86
    RCNLD: 649120
```

3.   We're almost finished. Knowing the Effective Age makes the calculation of the Effective Year Built for our sample home very simple. The Effective Year Built is 1950 (2006 – 56).

4.   Having established the Effective Year Built, we look up 1950 on the *75-Year Economic Life Depreciation Table* and find that the Percent Good is 87% for that year. See Illustration 3 below.

Depreciation Table

Base Year							
2015							

Effective Age of Building	% Depr.	% Good	Effective Year Built				
0	0	100	2015	46	11	89	1969
1	1	99	2014	47	12	88	1968
2	2	98	2013	48	12	88	1967
3	2	98	2012	49	12	88	1966
4	3	97	2011	50	12	88	1965
5	3	97	2010	51	12	88	1964
6	4	96	2009	52	12	88	1963
7	4	96	2008	53	12	88	1962
8	4	96	2007	54	13	87	1961
9	4	96	2006	55	13	87	1960
10	5	95	2005	56	13	87	1959
11	5	95	2004	57	13	87	1958
12	5	95	2003	58	13	87	1957
13	5	95	2002	59	13	87	1956
14	6	94	2001	60	14	86	
15	6	94	2000	61	14	86	1954
16	6	94	1999				
17	6	94	1998	63	14	86	1952
18	6	94	1997				

Illustration 3

5. The last step in the process is to simply multiple the RCN by 0.87 and we have RCN LD. The depreciated, market-derived cost approach value of the sample home used in this demonstration is $ 641,570.

Some closing comments regarding depreciation are in order. Recall from the outset that we defined depreciation as a loss in value resulting from physical deterioration, functional and/or economic obsolescence. The demonstration above dealt only with depreciation attributed to the physical deterioration of the sample home. This, by far, is the most common type of depreciation that exists in residential property. However, occasions may require additional depreciation because of excessive physical deterioration, functional and/or economic obsolescence. One must use caution when invoking these types of depreciation. The market must support any decision regarding the extent of these adjustments. Below illustrates our sample home with an additional ten percent economic obsolescence. A gas station was built across the street from the home, and a recent sale of the next-door neighbor's house showed the impact of this situation.

Illustration 4

The actual mechanics of adjusting depreciation for functional or economic obsolescence within CAMA are briefly discussed below. If the situation occurs, seek guidance from your supervisor and/or CAMA manager.

Illustration 5 shows the portion of the CAMA screen used to allow for additional depreciation. It is not necessary to make adjustments in the "CDU" field or to override the EYB field. The "Status" and "Percent Complete" fields are the only two fields that are utilized to account for additional depreciation.

Illustration 5

The "Condition" field's pick-list is similar to Illustration 6 shows items that have a direct affect on depreciation and the nature of the affect. Notice that a reduced number of Condition Codes are functional within CAMA and their affect on depreciation is either to *replace* the existing amount in the "% Good" field or *decrease* the "% Good." The corresponding numeric amount that will affect the "% Good" is entered in the field called "Percent Complete." Please note that the field name "Percent Complete" is somewhat erroneous because the word "Complete" has no meaning in this context. This is the field that you will enter the

amount to either decrease the existing "% Good" or replace the existing "% Good," based on the Status Code selected.

Status

	Code	Description	Affect on % Good
	0	Default	NONE
	A	Abandoned/Boarded	NONE
	B	Burned Out	NONE
	C	Commercial New Const	REPLACE
	E	Economic Dep	DECREASE
	F	Functional Dep	DECREASE
	G	Gut Rehab	NONE
▶	H	Data Change	NONE
	L	Limited Equity	NONE
	M	Demolition	NONE
	N	N/A	NONE
	NO	Normal	NONE
	OV	Overall Depreciation	REPLACE
	P	Physical Depr	DECREASE
	PA	Partial Abandon	NONE
	R	Renovation	NONE
	T	Order of Taking	NONE
	V	Vacant	NONE

Illustration 6

Recall our example of the gas station. The Percent Complete field has "10" as it's value. Based on the "E" Status Code, we know that the original depreciation will increase by ten percent resulting in a decrease in Percent Good to 77% (87-10).

Another comment regarding depreciation concerns the impact that the quality of design, material and workmanship have on depreciation. The grade assigned to a home obviously makes a considerable difference in the final RCN, but it also plays a substantial part in determining the amount of depreciation accrued to the home. It is easy to understand that if all other things were equal, a home built with better material and workmanship would age better than one with poorer materials and workmanship. The higher quality the home the more slowly it will deteriorate. Conversely, a shoddily built home will age more quickly than the average home.

Lot Valuation

Now that we've calculated RCN in the first section and the amount of depreciation in the second section, we know the value of our improvements from the formula RCN-LD to be $639,030.

Next let's turn our attention to the final portion of the process – land or lot valuation. There are several aspects or characteristics to land that affect its value. Needless to say the old adage "Location, Location, Location!" is certainly true, but beyond that there are considerations for such things as lot size, shape, frontage, topography, view, restrictions and the like that influence the final value of land.

Let's once again return to our sample home and examine the details on the PRC to get our first look at the lot valuation.

Illustration 1

Notice that the detail tells us the lot size, the price per unit, and any adjustments that affect the lot. The model used to calculate the value of lots in CAMA is as follows:

Lot Value = [Lot Size *((Base Rate * Size Adjustment) + ∑ Dollar Adjustments) * ∑ Percent Adjustments]

The formula represents the following steps:

1. *Determine the base rate for the particular neighborhood where the lot is located and multiply that rate by the 'size adjustment factor';*
2. *Next, add the adjusted rate in step one to the sum of all dollar amount adjustments;*
3. *Next, multiply the results by the lot size;*
4. *Lastly, multiply that result by the product of all percentage adjustments.*

Most of this activity can be seen in the Land.Dat file in Appendix A of this document. You may wish to refer to it as we go through this exercise.

Let's expand the discussion and follow the steps of the process to explain the lot valuation of our sample home in more detail.

1. "*Determine the base rate for the particular neighborhood where the lot is located and multiply that rate by the 'size adjustment factor'.*"

The residential base land rates are different for each (sub)neighborhood in the District. Each year, the current base rates are updated in CAMA and published in the *Assessor Reference Materials.* In addition to the base rates, the base lot sizes and size curves are included. Our property is located in Chevy Chase, and below shows the portion of the land rate table for that neighborhood:

NBHD	Base Lot Size	Base Rate	Base Lot Value	Size Curve
11 A	5,000 sf	$89.00	$445,000	LG 1

Illustration 2

The base rate for our property is $ 89.00 per sf.

The size adjustment factors are also incorporated in CAMA. These factors make allowances for lots whose sizes differ from the standard "base" size for the lots in that particular (sub)neighborhood. Recall that as the size or area of a building or lot increases, the dollar rate per unit typically goes down from the base rate, and conversely, the dollar rate typically increases over the base rate when the area or size is smaller than the standard base rate.

Recall that our lot is 6,000 sf in size. The table states that the Base Lot Size is 5,000, so a size adjustment will be necessary. Intuitively, one would expect that the size adjustment would be less than 100% because the actual lot is larger than the base size lot. CAMA contains the algorithms to calculate the proper size adjustment. Essentially, it determines which "land size curve" is to be used as the basis for determining the adjustment, then it mathematically interpolates and extrapolates the factor from the particular size table associated with the curve based on the amount of difference between the standard size and the actual size.

In the case of our sample home, the size curve is LG 1. This curve is one of the four curves existing in CAMA and it is effect on rates is the lowest of the curves.

Based on the difference between the base size and the actual size of the lot, CAMA has selected a factor of 0.8585 as the adjustment. If the lot were smaller, say 4,000, sf the selected factor would have been 1.198.

So, to finish step 1, we multiply the (sub)neighborhood base land rate by the calculated size adjustment factor to arrive at a size adjusted rate of $ 76.41 ($89.00 * 0.8585).

2. "*Next, add the adjusted rate in step one to the sum of all dollar amount adjustments.*"

If there are any dollar-amount adjustments to the rate, this is the time to make the them. For example, you may choose to lower the rate by $10 per sf on a particular lot in a neighborhood because it is on a busy street corner. In our example, the rate is increased by $15 per sf because the property has an excellent view of the river not enjoyed by the other lots in the neighborhood. This adjustment increases the rate to $91.41 ($76.41 + $15.00).

Use caution when making any adjustments to the calculated rates. If adjustments are warranted, seek guidance from your supervisor or CAMA manager.

3. *"Next, multiply the resulting rate by the lot size."*

This is an easy step. The land value at this point is $458,460 ($76.41 * 6,000).

4. *"Lastly, multiply that result by the product of all percentage adjustments."*

As before, here's where we can reflect adjustment to the lot for such things as topography, view, shape irregularity, and the like. There may be an easement across the back of the lot that affects value. Again be certain that the adjustment is peculiar to just the subject or a few lots in the (sub)neighborhood, otherwise the condition would have been already accounted for in the calculations done by the multiple regression analysis process that generated the original base rates, size curves and standard lot sizes.

Our sample lot had a steep drop-off across the back that the assessor accounted for by adjusting the final rate by 80 percent. This is the last calculation to determine the subject property's lot value. The final value of our lot is $ 366,768 (458,460 * 0.80).

The illustrations below summarize much of the information discussed in this land valuation exercise. Illustration 3 shows a portion of the data entry screen in Vision© CAMA and the second, illustration 4, is the Land.dat file with selected information highlighted.

Illustration 3

REPORT GENERATED ON 26-Feb-2015 AT 08:36
Account Number = 9999   9999
Use Code = 012
****
Recalc Land for PID 182803
Recalc Land for Bldg Num 1 on land line 1
▪▪
Check for any special use value overrides
Land Use Code = 012
Special Use Value = 0.00
Special Use Percent = 80.00
Base District = 11   Neighborhood 11A
****
Find the region for a group and district
Land Group = R   From Land Rate Table
Region = District, Region not defined
Base Sub District = A
Z Contour =
District Standard Size = 5000
District Base Price Size = 89.00
District Size Adjustment = LG1   Internal calculations to arrive at
Land group based Value Source = C   adjustments for non-standard base size
Size Ratio = 6000.000 / 5000 * 10000
Size Ratio = 12000.000
Interpolate/Extrapolate from size adj curve table
High Unit Size = 120.00   Base rate multiplied by size adjustment
High Factor = 0.8585   (89.00 *.8585)
District pricing based unit_type value = 76.41
Total ajustment a = 1 * 1.000 * 1.00 * 1 * 1
Total ajustment a = 1.00000
Land Value = 76.41 * 6000.000   Final adjusted rate * lot size =
Land Value Rounded = 458460   land Value

Illustration 4

39

Some Final Thoughts

We have introduced you to some of the most elementary aspects of property valuation using the District's Vision® CAMA system. We have developed the RCN of a fictitious home, reduced its value by the accrued depreciation and finally added the land value component to complete the appraisal. This guideline is merely a small window, a first step, in the complex field of CAMA mass appraisal. A CAMA system robust enough to appraise 180,000 different properties will necessarily be comprehensive and complex. As you explore and utilize the program make certain that you fully understand the ramifications and results of your actions. Your supervisor and/or CAMA manager will always be available to assist you.

Appendix A

1. Property Record Card, SSL 9999 9999
2. Cost.dat print-out, SSL 9999 9999
3. Land.dat print-out, SSL 9999 9999
4. 2007 CAMA Construction Valuation Guideline – Residential

Account # 9999 9999
Internal ID 182803

Property Location 9999 9TH ST NW #999999999
WASHINGTON, DC

Bldg # 1 of 1

Card # 1 of 1
Sec # 1 of 1

Use Code 012
Print Date 2/27/2015 8:31:11 AM

RES

District of Columbia
Real Property
Assessment Division

CURRENT OWNER

JANEY TAXREP

9999 9TH ST

Washington DC 12345

ACCOUNT INFORMATION

Use Type	Use Code	Lot SF	Status Code
R1	012	6,000	A

CURRENT ASSESSMENT

Description	Code	Assessed Val
RES LAND	012	366,770
RESIDNTL	012	661,540
RESIDNTL	012	169,620

Value Src:	C	Total:	1,197,930

	Value Date	Value Status
Reg		
Cost	02-27-2015	C

VISIT / CHANGE HISTORY

Date	Type	ID	Inf. Source	Code	Description
11-13-2014	C	203	O	R	Revaluation
06-18-2014	O	203	B	B	Sale Verification & Permit
03-04-2013	C	203	O	B	Sale Verification & Permit
09-14-2012	O	203	O	R	Revaluation
01-01-2012	P	379	N	R	Revaluation
09-12-2006	M	203	O	B	Sale Verification & Permit

PREVIOUS ASSESSMENTS (HISTORY)

Year	Use	Type	Val Source	Land Value	Building Value	Assess Value
2016	012	R1	C	366,770	831,160	1,197,930
2015	011		O	82,120	2,296,630	2,378,750
2014	011	R1	C	67,480	2,340,370	2,407,850
2013	024	R3	C	287,330	1,632,500	1,919,830
2012	012	R1	C	278,210	693,980	972,190
2011						

OWNERSHIP HISTORY

	INSTRUMENT #	SALE DATE	q/u	v/i	SALE PRICE	AC
JANEY TAXREP	1111/2222	12-31-2011	Q	I	575,000	01
JOSEPH TAXPAYER	123456	02-29-2000	Q	I	654,321	01

APPEALS

Appeal #	Decision	Amount	Revised AV

PROPERTY FACTORS

TOPOGRAPHY	MLT FRONT	ALLEY ACCESS	LANDSCAPE
1 Level	0 Default	2 No	0 Default

COMMENTS

THIS IS A NOTE ABOUT THIS HOUSE

SUPPLEMENTAL DATA

Type	Description
	CHEVY CHASE
Neighborhood	0
Part Part	0
Mixed Use	12
Vcnt Lnd Use	0
Model Type	
Restr Resale	0
Abbutt Lot	
Zone Overlay	

VALUE SUMMARY

	Regress (L&B)	Cost (L&B)
	0	1,289,620

Factor/Value	Type	Reason	Date	ID

Value Adjust.	V	80.00	Poor topo in back; River vi
Override			
Comment			

DATA ENTRY

Entry Date: _____ Entry ID: _____

TAX TYPE

Year	Type	Description
2007	TX	TAXABLE

PARCEL LOCATION SUMMARY

SSL	NBHD	SUB-NBHD	ZONING	WARD	GROUP	ARN
9999 9999	11	A	R-5-E	6	1	260

BUILDING PERMIT INFORMATION

Permit ID	Issue Date	Type	Amount	Description	Insp Date
999999	01-01-2011	NW	500,000	Renovations to Basement	12-31-2011
1234	05-21-2008	AD	50,000		06-13-2008
121212		GR	20,000		
000001					

LAND LINE VALUATION SECTION

B #	Occ	Description	Zone	Frontage	Depth	Units	SI	LT	Price	I. Factor	Size Adj	Site Rating	Adjustments/Special Use	Notes	Land Value
1	012	Residential Detached Single F	R-5-E	40	150	6000.0 SF	P	0	76.41	1.000000	1.0000		V	80.00 Poor topo in back; River vi	458,460

Total Land Units 6,000 SF

Total Land Value 458,460

41

Account # 9999 9999
Internal ID 182803

Property Location 9999 9TH ST NW #999999999
WASHINGTON, DC

Bldg # 1 of 1

Card # 1 of 1
Sec # 1 of 1

Use Code 012
Print Date 2/27/2015 8:31:11 AM

CONSTRUCTION DETAIL

Element	Cd	Chng	Description
Prim Bldg Use	012		Residential Detached
Model	01		Single Family
Grade	4		Above Average
Style	6		2.5 Story Fin
Stories:	2.5		
Building Type:	1		Single
Roof Cover:	3		Shingle
Foundation	2		Average
Exterior Wall	15		Face Brick
Exterior Condt	4		Good
Heat Type	1		Forced Air
AC Type	Y		Yes
Floor Cover	11		Hardwood/Carp
Interior Conditi	8		Good
Total Rooms	8		
Fireplaces	1		
Bedrooms	4		
Bathrooms	2		
Half Baths	2		
Bath Style	2		Semi-Modern
Kitchens	1		
Kitchen Style	2		Semi-Modern
Eat in Kith	0		Default
Overall Cndtn	4		Good
View	3		Average
Park Spaces	0		
No. Units	1		

SKETCH

BUILDING SUMMARY SECTION

Code	Description	Gross	Eff Area	Living
BAS	Main Building Ar	1,200	1,200	1,200
FBP	Basement, Finis	400	0	0
FGR	Garage, Attache	440	198	0
FHS	Half Story, Finis	1,200	600	600
FOP	Porch, Open	60	0	0
FUS	Upper Story, Fin	1,200	1,200	1,200
UBM	Basement, Unfin	1,200	300	0
	Total:	5,700	3,498	3,000

BUILDING COST

Effective Area	3,498
Building RCN	754,788
Spec. Feature RCN	14,443
Total RCN	769,231
% Good	86
Building Cost	661,538

DEPRECIATION

	Current	Change
Primary OCC	012	
Actual Year Built	1937	
Year Remodeled	2001	
Effective Year Built	1954	
Status		
% Complete		
%GD Override (Cost)		
Type		
Reason Code		
Date		
ID		
Comment		

SPECIAL FEATURES/AMENITIES

Code	Description	Units	SF	Unit Price	Quality	RCN
SN	SAUNA	1	Count	13250.0	4	14,443

DETACHED STRUCTURES

Code	Description	Units	Unit Type	Unit Price	Grade	Cndtn	RCN	% Gd	Ass. Val
DG	Detached Garage	200	SF	63.50	5	5	16,791	85	14,270
PH	POOL HOUSE	1,500	SF	150.07	6	4	194,19	80	155,350
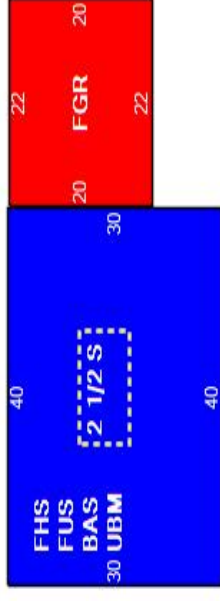
OUTPUT FROM NEW COST MODELING ENGINE

REPORT GENERATED ON 27-Feb-2015 AT 08:28

1

****************Building #1 Calc Start****************

Cost Calculation for pid, bid = 182803, 173587

Account Number = 9999   9999

Use Code = 012

Cost Rate Group = R12

Model ID: = R16

Section #1

Section Use: Residential Detached Single Fa

Base Rate: 157.85

Size Adjustment: 0.89128

Effective Area: 3498

Adjusted Base Rate = (157.85 + 11.100000) * 0.89128

Adjusted Base Rate: 150.58

RCN = ((150.58 * 3498 + 60070.000000000) * 1.2862802915416647000000000000) + 0

RCN: 754788

******************Base Rate Adjustments*************

EXTERIOR WALL 15 = 3.950 + BaseRate

ROOF COVER 3 = 0.680000 + BaseRate

FLOOR COVER 11 = 4.670 + BaseRate

AIR CONDITIONING Y = 1.800 + BaseRate

******************Units Value Additions*****************

FULL BATHS OVER 1 = 12500.000 + RCN

HALF BATHS = 16250.000 + RCN

FIREPLACES = 8000.000 + RCN

PARTITIONED FINISHED BASEMENT = 22000.000 + RCN

OPEN PORCH = 1320.000 + RCN

******************Factor Adjustments******************

GRADE 4 = 1.090 x RCN

INTERIOR CONDITION 4 = 1.091 x RCN

EXTERIOR CONDITION 4 = 1.091 x RCN

OVERALL CONDITION 4 = 1.091 x RCN

REMODEL FACTOR 4 = 1.035000000000 x RCN

SUB-NEIGHBORHOOD ADJ A = 0.878000 x RCN

******************Effective Age Adjustments******************

EFF AGE GRADE 4 = 0.950 x Age

BATH STYLE 2 = 0.950 x Age

KITCHEN STYLE 2 = 0.900 x Age

Actual Year Built: 1937

Effective Age = 61

Percent Good = 86

RCNLD: 649120

****

REPORT GENERATED ON 27-Feb-2015 AT 08:29

Account Number = 9999   9999

Use Code = 012

****

Recalc Land for PID 182803

Recalc Land for Bldg Num 1 on land line 1

****

Check for any special use value overrides

Land Use Code = 012

Special Use Value = 0.00

Special Use Percent = 80.00

Base District = 11

****

Find the region for a group and district

Land Group = R

Region = District, Region not defined

Base Sub District = A

Z Contour =

District Standard Size = 5000

District Base Price Size = 89.00

District Size Adjustment = LG1

Land group based Value Source = C

Size Ratio = 6000.000 / 5000 * 10000

Size Ratio = 12000.000

Interpolate/Extrapolate from size adj curve table

High Unit Size = 120.00

High Factor = 0.8585

District pricing based unit_type value = 76.41

Total ajustment a = 1 * 1.000 * 1.00 * 1 * 1

Total ajustment a = 1.00000

Land Value = 76.41 * 6000.000

Land Value Rounded = 458460

USECODE

(Selects Base Rate)

No.	Description	Value
011	Row	$145.92
012	Detached	$161.27
013	Semi-Detached	$148.50
015	Mixed Use	$145.92
019	Miscellaneous	$145.92
023	Small Apt. Bldg.	$126.35
024	Conversion	$153.54

CONSTRUCTION DETAIL

No.	Description	Value

Style (Descriptive)

1	1 Story
2	1.5 Story Unfin
3	1.5 Story Fin
4	2 Story
5	2.5 Story Unfin
6	2.5 Story Fin
7	3 Story
8	3.5 Story Unfin
9	3.5 Story Fin
10	4 Story
11	4.5 Story Unfin
12	4.5 Story Fin
13	Bi-Level
14	Split Level
15	Split Foyer

Foundation (Descriptive)

0	No Data
4	Pier
5	Wood
6	Concrete

View (Descriptive)

0	Typical
1	Poor
2	Fair
3	Average
4	Good
5	Very Good
6	Excellent

Building Type (Descriptive)

0	Default	
1	Single	
2	Multi	
6	Row End	$2.50
7	Row Inside	
8	Semi-Detached	

Roof (Add to Base Rate)

0	Typical	
1	Comp Shingle	
2	Built Up	
3	Shingle	$0.68
4	Shake	$0.79
5	Metal-Pre	$0.50
6	Metal Sms	$0.50
7	Metal-Cpr	$0.50
8	Composition Roll	-$0.43
9	Concrete Tile	$1.88
10	Clay Tile	$2.93
11	Slate	$2.86
12	Concrete	$1.88
13	Neoprene	$0.00
15	Wood- FS	$0.68

Exterior Finish (Add to Base Rate)

0	Default	
1	Plywood	
2	Hardboard Lap	
3	Metal Siding	
4	Vinyl Siding	
5	Stucco	
6	Wood Siding	
7	Shingle	
8	SPlaster	
9	Rustic Log	
10	Brick Veneer	$3.95
11	Stone Veneer	$9.38
12	Concrete Block	
13	Stucco Block	
14	Common Brick	$3.95
15	Face Brick	$3.95
16	Adobe	
17	Stone	$9.38
18	Concrete	$3.95
19	Aluminum	
20	Brick/Stone	$6.67
21	Brick/Stucco	$1.98
22	Brick/Siding	$1.98
23	Stone/Stucco	$4.69
24	Stone/Siding	$4.69

Heat Type (Add to Base Rate)

0	No Data	
1	Forced Air	
2	Air-Oil	$0.55
3	Wall Furnace	-$1.27
4	Electric Rad	-$0.29
5	Elec Base Brd	-$0.20
6	Water Base Brd	$1.42
7	Warm Cool	
8	Ht Pump	
9	Evp Cool	
10	Air Exchng	
11	Gravity Furnace	
12	Ind Unit	
13	Hot Water Rad	

AC Type (Add to Base Rate)

0	Default	
N	No	
Y	Yes	$1.80

Floor Covering (Add to Base Rate)

0	Default	$2.50
1	Resilient	$2.63
2	Carpet	$2.17
3	Wood Floor	$6.06
4	Ceramic Tile	$8.53
5	Terrazzo	$8.30
6	Hardwood	$7.17
7	Parquet	$8.15
8	Vinyl Comp	$1.64
9	Vinyl Sheet	$2.86
10	Lt Concrete	$0.75
11	Hardwood/Carp	$4.67

Per Unit Adjustment (Flat Rate Add)

Full Bath (over 1)	$12,500
Half Bath	$ 7,500
Fireplace	$ 8,500
Kitchen	$11,500
Finished Basement (Basic)	$24.00/sf
Finished Basement (Partition)	$62.00/sf
Basement Garage	$55.00/sf
Carport	$36.00/sf
Stoop	$24.00/sf
Open Porch	$24.00/sf
Covered Open Porch	$42.00/sf

Screen Enclosed Porch	$45.00/sf
Glass Enclosed Porch	$51.00/sf
Fully Enclosed Porch	$60.00/sf
Deck	$27.00/sf
Patio	$ 9.00/sf

Grade (Multiplies Base, Add & Flat)

0	Default	
1	Low Quality	0.50
2	Fair Quality	0.75
3	Average Quality	1.00
4	Above Average Quality	1.07
5	Good Quality	1.16
6	Very Good Quality	1.29
7	Excellent Quality	1.46
8	Superior Quality	1.66
9	Extraordinary – A	1.96
10	Extraordinary – B	2.20
11	Extraordinary – C	2.55
12	Extraordinary – D	2.90

Interior Condition (Multiplies Base, Add & Flat)

0	Typical	
1	Poor	.794
2	Fair	.843
3	Average	1.000
4	Good	1.086
5	Very Good	1.182
6	Excellent	1.239

Exterior Condition (Multiplies Base, Add & Flat)

0	Default	
1	Poor	.794
2	Fair	.843
3	Average	1.000
4	Good	1.086
5	Very Good	1.182
6	Excellent	1.239

Overall Condition (Multiplies Base, Add & Flat)

0	Default	
1	Poor	.794
2	Fair	.843
3	Average	1.000
4	Good	1.086
5	Very Good	1.182
6	Excellent	1.239

Remodel Type (Multiplies Base, Add & Flat)

0	Default	
1	Unknown	
2	Gut Rehab	1.43
3	Major Renov	1.28
4	Remodel	1.08
5	Addition	
6	Cosmetic	1.03

The effect of this multiplier diminishes at a rate of 5% per year based on the **Remodel Year**.

DEPRECIATION DETAIL

No.	Description	Value
Grade	**(Adjust EYB)**	
0	Default	
1	Low Quality	20%
2	Fair Quality	10%
3	Average Quality	--
4	Above Average	-05%
5	Good Quality	-10%
6	Very Good Quality	-15%
7	Excellent Quality	-25%
8	Superior Quality	-35%
9	Extraordinary – A	-45%
10	Extraordinary – B	-50%
11	Extraordinary – C	-50%
12	Extraordinary – D	-50%

Bath Style (Adjust EYB)

0	Default	
1	No Remodeling	
2	Semi-Modern	- 05%
3	Modern	- 10%
4	Luxury	- 20%

Kitchen Style (Adjust EYB)

0	Default	
1	No Remodeling	
2	Semi-Modern	- 10%
3	Modern	- 20%
4	Luxury	- 40%

Building RCN = [(Base Rate + $\sum$ ABRV$_n$) * Effective Area * Size Adjustment + $\sum$ AFRV$_n$] * (MV$_0$ * MV$_2$ * … * MV$_N$)

Where:
RCN = Replacement Cost New
Base Rate = $ rate based on use and style
ABRV = Additive Base Rate Variables
Effective Area = Adjusted SF area of improvement
Size Adjustment = Adjustment factor for deviation from base size
AFRV = Additive Flat Rate Variables
MV = Multiplicative Variables

Depreciation Table

Base Year 2018

Effective Age of Building	% Depr.	% Good	Effective Year Built
0	0	100	2018
1	1	99	2017
2	2	98	2016
3	2	98	2015
4	3	97	2014
5	3	97	2013
6	4	96	2012
7	4	96	2011
8	4	96	2010
9	4	96	2009
10	5	95	2008
11	5	95	2007
12	5	95	2006
13	5	95	2005
14	6	94	2004
15	6	94	2003
16	6	94	2002
17	6	94	2001
18	6	94	2000
19	7	93	1999
20	7	93	1998
21	7	93	1997
22	7	93	1996
23	7	93	1995
24	8	92	1994
25	8	92	1993
26	8	92	1992
27	8	92	1991
28	8	92	1990
29	9	91	1989
30	9	91	1988
31	9	91	1987
32	9	91	1986
33	9	91	1985
34	9	91	1984
35	10	90	1983
36	10	90	1982
37	10	90	1981
38	10	90	1980
39	10	90	1979
40	10	90	1978
41	11	89	1977
42	11	89	1976
43	11	89	1975
44	11	89	1974
45	11	89	1973
46	11	89	1972
47	12	88	1971
48	12	88	1970
49	12	88	1969
50	12	88	1968
51	12	88	1967
52	12	88	1966
53	12	88	1965
54	13	87	1964
55	13	87	1963
56	13	87	1962
57	13	87	1961
58	13	87	1960
59	13	87	1959
60	14	86	1958
61	14	86	1957
62	14	86	1956
63	14	86	1955
64	14	86	1954
65	14	86	1953
70	15	85	1948
75	16	84	1943

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Vision Commercial CAMA Valuation Process

The market-derived cost approach to the valuation of real estate follows the generic formula of **Market Value = ((RCN LD) + land value)**, where **RCN** is Replacement Cost New of the improvements and **LD** means Less Depreciation. When properly developed and calibrated, this approach is a reliable indicator of market value especially suited to mass-appraisal CAMA systems.

The following exercise will attempt to illustrate how the Vision[©] CAMA system utilized by the District of Columbia, calculates values using the above model. The first portion will illustrate the development of the Replacement Cost New of a small commercial building, and the last portion will show the steps involved in determining the amount of depreciation that has accrued to the building. Land valuation is not discussed in this exercise.

Replacement Cost New

The Vision© CAMA system arrives at a RCN value for commercial properties based on a market-calibrated hybrid cost model. The hybrid nature of the model simply means that the model employs both additive and multiplicative variables in its design and specification. The nature of the model will become clearer as we proceed through this exercise. Please also be aware that a model is dynamic in both its specifications and calibration. The specifications, those cost elements that comprise the model, may change from time to time based upon research and market conditions. The calibration of the model is primarily derived from information provided by the Marshall and Swift Valuation Service, a company that provides building cost data necessary for real estate cost valuations and is widely considered the authority on the cost approach to valuation. *As you may discover, the dollar rates, or calibrations, contained here most likely are different from the current model in use.* The model used in this exercise is as follows:

Building RCN = [Section$_1$ (Base Rate * Effective Area * Size Adjustment) *
$\qquad$ **(MV$_1$ * MV$_2$ * … * MV$_n$)] +**
$\qquad$ **[Section$_n$ (Base Rate * Effective Area * Size Adjustment) ***
$\qquad$ **(MV$_1$ * MV$_2$ * … * MV$_n$)] +**
$\qquad$ **[$\sum$ Special Building Features]**

Where:
RCN = Replacement Cost New
Base Rate = $ rate based on occupancy (use) code and construction class
Section$_n$ = Each separate building or section of building
Effective Area = Adjusted SF area of improvement
Size Adjustment = Adjustment factor for deviation from base size
MV = Multiplicative Variables

Several items will be helpful while examining the features of the cost model and they are collected as Appendix "A" of this document. You will need to refer to them often during this exercise. They include the following:

- Sample building's Property Record Card (PRC)
- Cost.dat printout of the sample building
- Depreciation Schedule
- 2016 CAMA Construction Valuation Guideline – Commercial

The commercial building designed for this exercise is typical of a small commercial property in the District. It consists of a one-story full service restaurant and an adjoining two-story building. The two-story section consists of a package goods store and a small apartment on the second floor. The building is of good quality and is constructed of brick veneer over concrete block. For this exercise, the building has been logically sectioned into two sections. Section 1 covers the restaurant and Section 2 covers the package goods/apartment portion.

Below shows the Construction Detail in the CAMA record of the building. The first illustration depicts Section 1 – the restaurant and the second represents Section 2 – the package goods store and apartment.

Base Rate Values			
Value Source	C	Living Area/GBA	5,400
Prim Bldg Use	45	Effective Area	8,460
Style		size Adjustment	1.2386

Style	C: Brick/Concr
Model:	94: Commercial
Grade	40: Good
Stories	2
# Units	1.00
Shape/Peri	2: Rectangular
CDU	VG: Very Good
1st Floor Occ	045
Prim Bldg Use	045
Exterior Finish	C: Concrete
Wall Height	12.00
Structure Class	C: Brick/Concr

Illustration 1

Illustration 2

Illustration 3 shows the CAMA sketch of the sample building we'll be using throughout this exercise.
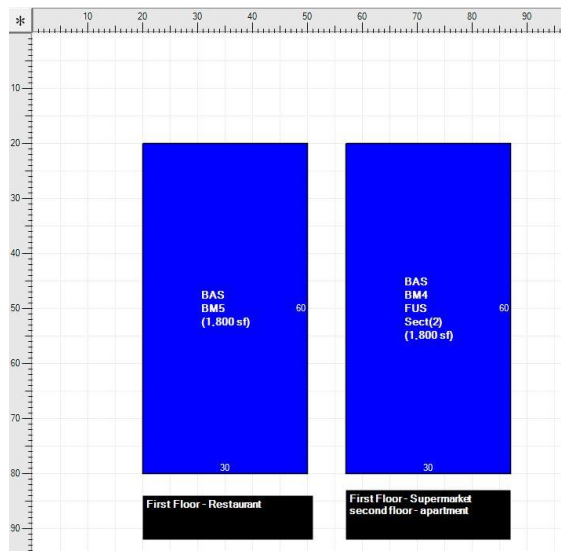
Illustration 3

.
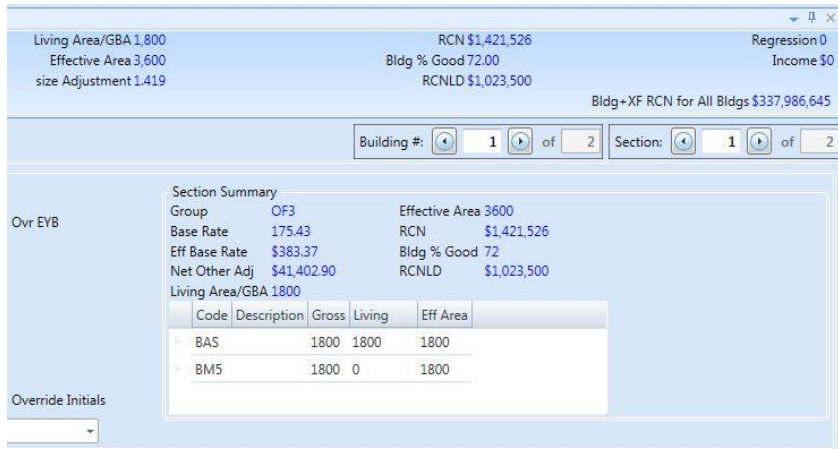
Illustration 4

1. First, let's illustrate the calculation of the Effective Area of our sample building's first section, the restaurant.

Building RCN = [Section$_1$ (Base Rate * Effective Area * Size Adjustment) *
(MV$_0$ * MV$_2$ * … * MV$_n$)] +
[Section$_n$ (Base Rate * Effective Area * Size Adjustment) *
(MV$_0$ * MV$_2$ * … * MV$_n$)] +
[$\sum$ Special Building Features]
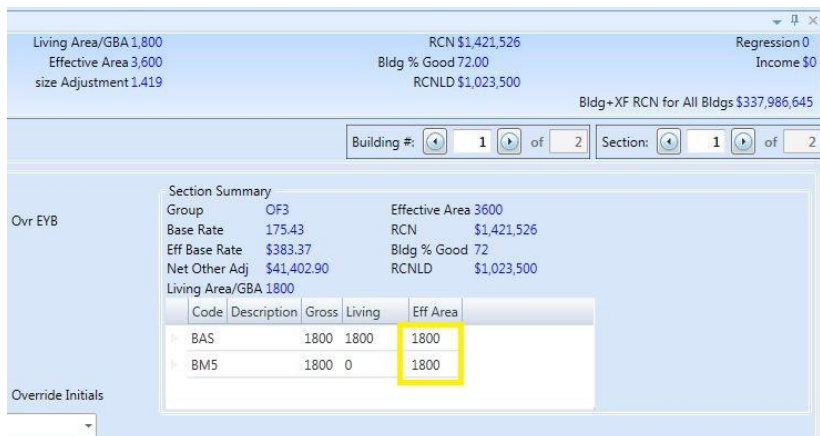
Illustration 5

The Effective Area is comprised of the totals of the Bas(1) Main Building Area @ 1,800 SF and the BM5(1) Basement, Full Finish @ 1,800 SF for a total of 3,600 SF.

The second section's Effective Area is calculated in the same manner.

Illustration 6

BAS(2) Main Building Area, BM4 (2)Basement Semi-finished, and FUS (2) Upper Story, Finished total 4,860 SF. The adjustment to the semi-finished basement takes into account this area is not as expensive as the finished main building area. For example, if the base rate for the finished main building area is $100/SF, the rate for the semi-finished basement area may only be $70/SF. The RCN value of the basement would be calculated as follows:

RCN of Basement = $126,000 or (1800 SF * $70)

Another way to state the same situation is to adjust the size of the basement to 70% of its measured size and then multiply the resulting, *or effective*, size by the base rate of $100/SF:

RCN of Basement = $126,000 or [(1800 * .70) * $100]

Both methods arrive at the same value for the basement. The first method is more intuitive and easier to explain to taxpayers as it adjusts for the differences in costs for the various areas. The second method again provides the same results but is much easier to model and calculate within a CAMA system, thus the effective area calculations shown here represent the methodology employed in the Vision© CAMA system.

The Gross Area shown in Illustration 2 is the total unadjusted size of all the areas that are a part of the building. The Living Area is more properly called "Gross Floor Area" and is the unadjusted size of the actual finished floor area above grade in the building.

With the inclusion of the Effective Area calculation, our cost model now looks like this:

Building RCN = [Section$_1$ (Base Rate * 3600 * Size Adjustment) *
                                    Effective Area
        (MV$_0$ * MV$_2$ * … * MV$_n$)] +
        [Section$_n$ (Base Rate * 4860 * Size Adjustment) *
                                    Effective Area
        (MV$_0$ * MV$_2$ * … * MV$_n$)] +
        [$\sum$ Special Building Features]

2. Next, let's look at the selection of the Base Rate for the sample building. There will be two rates because there are two different sections. Each section's RCN will be independently calculated.

Building RCN = [Section$_1$ (Base Rate * Effective Area * Size Adjustment) *
(MV$_0$ * MV$_2$ * … * MV$_n$)] +
[Section$_n$ (Base Rate * Effective Area * Size Adjustment) *
(MV$_0$ * MV$_2$ * … * MV$_n$)] +
[$\sum$ Special Building Features]

The Base Rate is the dollar rate per square foot used in the valuation model that is derived from tables within the CAMA system. It is selected based on the building's Building Occupancy (Use) Code and Construction Class. Our sample's first section is a "45-Store-Restaurant" constructed as a Class "C", concrete block/brick building. Based on this information, the Base Rate of $ 180.25 is automatically selected.
The second section, "47-Store-Super Market", also constructed as a Class "C", concrete block/brick building, has a Base Rate of $103.14.

With the inclusion of the selected Base Rates, our model now looks like this:

Building RCN = [Section$_1$ ($180.25 *   3600 * Size Adjustment) *
                          Base Rate   Effective Area
              (MV$_0$ * MV$_2$ * … * MV$_n$)] +
              [Section$_n$ ($103.14 *   4860 * Size Adjustment) *
                          Base Rate   Effective Area
              (MV$_0$ * MV$_2$ * … * MV$_n$)] +
              [$\sum$ Special Building Features]

---

3. Next, let us turn our attention to a modification to the Base Rate - the Size Adjustment.

Building RCN = [Section$_1$ (Base Rate * Effective Area * Size Adjustment) *
              (MV$_0$ * MV$_2$ * … * MV$_n$)] +
              [Section$_n$ (Base Rate * Effective Area * Size Adjustment) *
              (MV$_0$ * MV$_2$ * … * MV$_n$)] +
              [$\sum$ Special Building Features]

The Size Adjustment modifies the Base Rate to account for the size difference between the "standard size" for the "typical" building of a particular occupancy type and the actual size of the sample building. The comparison is based on the building's "gross floor area." The "standard" size of 5,000 square feet for the "typical" restaurant is used as the basis for establishing the initial Base Rates used in Section 1 of this appraisal.

The "standard" size of 4,000 square feet for the "typical" retail-misc. is used as the basis for establishing the initial Base Rates used in Section 2.

The adjustment in the Base Rate allows the proper square foot rate to be applied to a building based on its size. It is reasonable to expect that as a building becomes larger than typical, the rate per square foot would decrease and conversely, if the building were smaller than typical, the rate would be higher. The Size Adjustment variable is the component in the model that adjusts for this situation. Our sample building's size, the "gross floor area," is the total area of both sections, 5,400 square feet. Our building is only slightly larger than the standard size of 5,000 square feet. The Size Adjustment is 1.16763. Now our Adjusted Base Rate is calculated to be $223.26 (180.25 *1.23860) for Section 1 and $ 127.75 (103.14 *1.23860) for Section 2 of our example.

Because the adjustment is larger than 1.00, it would be proper to conclude that our sample building is smaller than the typical building of its type in the District of Columbia. Our sample building was compared to the larger of the two "standard" sizes, 5,000 square feet. Had the sample building been smaller than 5,000 square feet, the Size Adjustment would have been greater than 1.00. The use of size adjustments eliminates the need for the traditional cost tables based on size.

The cost model continues to grow, and now looks like this:

Building RCN = [Section$_1$ (\$180.25 * 3600 * 1.23860) *
$~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~$ **Base Rate** $~~~~~$ **Effective Area** $~~$ **Size Adjustment**
$~~~~~~~~~~~~~~~~~~~~$ **(MV$_0$ * MV$_2$ * … * MV$_n$)] +**
$~~~~~~~~~~~~~~~~~~~~$ **[Section$_n$ (\$103.14 * 4860 * 1.23860) ***
$~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~$ **Base Rate** $~~~~~$ **Effective Area** $~~$ **Size Adjustment**
$~~~~~~~~~~~~~~~~~~~~$ **(MV$_0$ * MV$_2$ * … * MV$_n$)] +**
$~~~~~~~~~~~~~~~~~~~~$ **[$\sum$ Special Building Features]**

4. The next portion of the cost model used to calculate the RCN are the multiplicative variables (MV).

Building RCN = [Section$_1$ (Base Rate * Effective Area * Size Adjustment) *
$~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~$ **(MV$_0$ * MV$_2$ * … * MV$_n$)] +**
$~~~~~~~~~~~~~~~~~~~~$ **[Section$_n$ (Base Rate * Effective Area * Size Adjustment) ***
$~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~$ **(MV$_0$ * MV$_2$ * … * MV$_n$)] +**
$~~~~~~~~~~~~~~~~~~~~$ **[$\sum$ Special Building Features]**

This portion of the formula can have the largest influence on the cost model. Each multiplicative variable modifies *all* of the cost data that has preceded it. These variables modify the Base Rate and Size Adjustment. This is where such important characteristics as the CDU (condition, desirability, utility), building grade, local cost multipliers, Neighborhood and Sub Neighborhood location factors have their impact.

The CDU, or Condition Desirability Utility, is the first of our multiplicative variables. This variable is used to account for a property's general overall physical condition and to a lesser extent the desirability and the utility of the property. Our sample building has been listed as "Good" and the appropriate multiplicative variable is 1.15. Stated a different way, the "Good" CDU will increase the RCN of our building by 15%. This one variable, CDU, can have a profound impact on the RCN of a building. The range can increase the RCN for an "Excellent" building by 35% all the way down to a 90% reduction in RNC for an "Unsound" building.

The sample building is graded "Good Quality - 4", and consequently has a 1.12 multiplicative variable. This one variable, grade, is going to increase the RCN value of the sample building by 12%. Another MV, "DC Local Multiplier C" modifies costs to account for the small additional costs incurred in construction of "C" class buildings in the in the DC area. The other multiplicative variable, "COMM NBHD 9", is the local neighborhood multiplier established for the particular neighborhood where the sample building is located. This variable is going to increase the RCN value of the sample building by 10%. The "COMM NBHD" adjustment reflects the market-derived fact that location is a very significant factor in the value of real estate. Two otherwise identical buildings can have a substantial difference in value based on their locations.

These four variables are summarized in the Cost.dat file as follows:

**************Factor Adjustments**********************
CONDITION DESIRABILITY UTILITY G = 1.150 X RCN
GRADE 40 (Good) = 1.120 x RCN
COMM NBHD 9 = 1.1 x RCN

Each MV is multiplied together to determine the combined, or overall, MV. The sample building's MV is 1.4168 (1.15 * 1.12 * 1.1).

5. Except for the Special Building Features, our RCN model is complete and contains the specific data for the sample building used in this demonstration. The RCN cost model for the sample building is as follow:

Building RCN = [Section$_1$ (\$180.25 * 3600 * 1.23860) *
              Base Rate   Effective Area Size Adjustment
              (1.4168)] +
              Multiplicative Variables
         [Section$_n$ (\$103.14 * 4860 * 1.23860) *
              Base Rate   Effective Area Size Adjustment
              (1.4168)] +
              Multiplicative Variables
         [$\sum$ Special Building Features]

The RCN for Section 1, the restaurant is $ 1,138,733 ($180.25 * 3600 + 0) * 1.23860 * 1.41680). The package goods store's RCN is $879,642 ($103.14 * 4860 * 1.23860 * 1.41680).

The Cost.dat file shows a summary of the same information as follows:

Section #1
Base Rate: 180.25
Size Adjustment: 1.23860
Effective Area: 5400
Adjusted Base Rate = (180.25 + 0) * 1.23860
Adjusted Base Rate: 223.26
RCN = ((223.26 * (3600 + 0) + 0) * 1.4168
RCN: 1138733
Section #2
Base Rate: 103.14
Size Adjustment: 1.23860
Effective Area: 5400
Adjusted Base Rate = (103.14 + 0) * 1.23860
Adjusted Base Rate: 127.75
RCN = ((127.75 * 4860) + 0) * 1.41680
RCN: 879642

So far, the RCN of the building is $ 2,018,375 (1,138,733+879,642). We still have Special Features to add to complete the cost model.

6. The Special Features component is the last portion of the cost model. This is the place where such things as sprinklers and HVAC systems are accounted for and valued in the building.

Building RCN = [Section$_1$ (Base Rate * Effective Area * Size Adjustment) *
(MV$_0$ * MV$_2$ * … * MV$_n$)] +
[Section$_n$ (Base Rate * Effective Area * Size Adjustment) *
(MV$_0$ * MV$_2$ * … * MV$_n$)] +
[$\sum$Special Building Features]

Take a look at illustration 7. Here we see that both sections are sprinklered and heated and cooled with a complete HVAC system. Both of these Special Building features are calculated based on the size, in square feet, of the area affected. Their value is determined by the size, dollar rate and quality grade for each feature. Finally, the Special Building Features are depreciated at the same rate as the main buildings.

Building #: ◄ 1 ► of 1

Special Building Features

Section	Code	Description	Sub Typ	Sub Type desc	Unit Type	Units	Unit Price	Year	Deprec Rate	Pct Good	Quality	RCN
1	HVAC	(HVAC) Heating	617	Cmplt HVAC	SF	1800	$9.19	1978	0	72	3	$16,542.00
1	SPRK	Sprinklers	683	Wet	SF	1800	$4.90	1978	0	72	3	$8,820.00
1	HVAC	(HVAC) Heating	617	Cmplt HVAC	SF	3600	$9.19	1978	0	72	3	$33,084.00
2	SPRK	Sprinklers	683	Wet	SF	1800	$4.90	1978	0	100	3	$8,820.00

Illustration 7

Illustration 8 shows the data-entry screen, as it would look if we were to add an elevator to the building.

Illustration 8

Note that this extra feature's UOM (unit of measurement) is by count and not SF. For each count, the unit price is $35,250. Be sure that the UOM is proper for the individual special feature included in the building.

The total RCN of the Special Feature in this sample is $ 67,266 (ΣSpecial Building Features =16,542 + 8,820 +33,084 + 8,820).

We now know the total replacement cost new (RCN) of our sample building, including Special Features, is $ 2,085,641 ($2,018,375 + $67,266).

$2,778,884 = [Section$_1$ ($180.25 * 3600 * 1.23860) *
Building RCN   Base Rate   Effective Area   Size Adjustment
(1.4168)] +
   Multiplicative Variables
[Section$_n$ ($103.14 * 4860 * 1.23860) *
          Base Rate   Effective Area   Size Adjustment
(1.4168)] +
   Multiplicative Variables
[$67,266]
[Σ Special Building Features]

If the sample building were brand new, we'd be finished, but it was actually built in 1953.

Next, we need to address accrued depreciation . . .

Depreciation

Depreciation is defined as a loss in the upper limits of value from all sources. Typically, three types of depreciation can affect real estate - physical deterioration, functional obsolescence and economic obsolescence. This next portion of the demonstration will illustrate how Vision$^{©}$ calculates the amount of depreciation accrued to our sample building.

Several terms come into use when discussing depreciation in CAMA. They are defined as follows:

- Actual Age: The mathematical difference between the Base Year and the actual year the improvement was built to completion.

- Actual Year Built (AYB): The earliest time the main portion of the building was built. It is not affected by subsequent construction.

- Base Year: The year, usually the current year, that the depreciation table is calibrated, such that the age of a building built during the base year would be 0 years old.

- Depreciation Table: A market-driven table that lists the amount of depreciation corresponding to an Effective Year Built and the Base Year predicated upon a specific economic life.

- Economic Life: The useful life span for a structure based on its occupancy (use) code and its construction class.

- Effective Age: The mathematical difference, in years, between the Base Year and the Effective Year Built.

- Effective Year Built (EYB): The calculated or apparent year, that an improvement was built that is most often more recent than AYB. The EYB is determined by the condition and quality of the improvement. Subsequent renovation, additions, upgrades and the like, extend an improvements remaining economic life and therefore cause the EYB to be closer to the Base Year than the AYB.

- Percent Good: The mathematical difference between 100 percent and the percent of depreciation. (100% - depreciation %) = percent good

The RCN model used above indicated that our sample building has an RNC of $2,778,884. As stated earlier, the building was built in 1953, so there should be some depreciation to deduct from the RCN. We'll use a seven-step process to depreciate the improvements:

1. Calculate the Actual Age of the improvement.
2. Determine the Effective Age of the improvement.
3. Determine the improvement's Effective Year Built.
4. Look-up Depreciation corresponding to EYB on depreciation table.
5. If required, modify the depreciation by the amount given for obsolescence.
6. Apply final depreciation to RCN to determine RCN-LD.

1. Our first step is to calculate the Actual Age of our sample building. As you are aware, a valuation is always qualified as of a specific date. For ad valorem purposes in the District of Columbia, the valuation date is January 1 immediately preceding the tax year. In our example, the tax year is 2016, therefore the valuation date is January 1, 2015. This date is also significant in terms of the depreciation accrued to improvements. In the past, the nature of triennial assessments required that base years within a Tri-Group remain unchanged for a period of three years. Now, however, with the return to annual assessments, the base year coincides with the valuation date. The base year is used to determine the Actual Age of the sample building. In this case, the Actual Age of the sample building is 62 years (2015-1953).

2. The next step is to determine the sample building's Effective Age. Effective Age may or may not represent actual or chronological age. The premise is simple but the application can be confusing. If a building is built and never maintained (painting, re-roof, etc.) or remodeled, the building would quickly depreciate from physical deterioration. The CAMA system would depreciate the building at the fastest rate possible based on the selected Depreciation Table. For example, our building has an economic life of sixty years. If the building were left to rot, the Effective Age would most likely be the same as the Actual Age.

Let's say the owners of our sample building have completely neglected their property from the time it was built in 1953 to the present. Their building would have an effective age of 62 years as indicated on the Depreciation Table below:

Base Year 2015		70 Year Economic Life		60 Year Economic Life		50 Year Economic Life	
Age of Building	Effective Year Built	Percent of Depreciation	Percent Good	Percent of Depreciation	Percent Good	Percent of Depreciation	Percent Good
0	2015	0	100	0	100	0	100
1	2014	0	100	0	100	0	100
35	1980	16	84	23	77	36	64
36	1979	17	83	25	75	38	62
37	1978	18	82	26	74	42	58
38	1977	19	81	28	72	44	56
39	1976	20	80	31	69	48	52
40	1975	21	79	32	68	50	50
41	1974	23	77	34	66	52	48
42	1973	25	75	36	64	56	44
43	1972	26	74	38	62	57	43
44	1971	28	72	40	60	61	39
45	1970	29	71	44	56	63	37
46	1969	31	69	46	54	64	36
47	1968	32	68	48	52	66	34
48	1967	34	66	50	50	67	33
49	1966	36	64	52	48	70	30
50	1965	38	62	54	46	71	29
51	1964	40	60	57	43		
52	1963	42	58	59	41		
53	1962	44	56	61	39		
54	1961	46	54	63	37		
55	1960	48	52	64	36		
56	1959	50	50	65	35		
57	1958	52	48	67	33		
58	1957	54	46	69	31		
59	1956	56	44	70	30		
60	1955	57	43	71	29		
61	1954	59	41	72	28		
62	1953	61	39	73	27		
63	1952	63	37				
64	1951	64	36				
65	1950	65	35				
70	1949	71	29				

Illustration 9

The Actual Year Built (1953) and the Effective Year Built (1977) the Effective Age would be 38 years.   Moving across the table, we see that a building with an EYB of 1977 has 28 percent depreciation and therefore is 72 Percent Good (100%-28%).   If the RCN of our sample building is $2,085,641 the depreciated value, RCN-LD, is only $ 2,000,796 (2,778,884 * 0.72).

The situation described above rarely, if ever, occurs in the market. People do maintain and renovate their buildings and in doing so, extend the building's useful or remaining economic life.   As building owners repair roofs, paint siding, replace windows and furnaces, they *prolong* the life of the building and consequently *decrease* its Effective Age.

A recent building remodel, renovation or rehabilitation will go a long way to extend its useful life. As the useful life is extended, the Effective Age is reduced and therefore the Effective Year Built is more recent than the building's Actual Year Built.

Our sample building had a major renovation done in 1998. The portion of the CAMA record that captures this information is shown in Illustration 10 below.

Illustration 10

Two factors come together to determine the impact a remodel has on the amount of depreciation calculated for the building – the Remodel Rating and the Year Remodeled. How extensive the remodel is and how recently it has occurred combines to determine its overall affect on its effective year built, and in turn, the building's depreciation. A brand-new gut rehab would substantially decrease the effective age of a building much more so than an older remodel. Conversely, an older remodel may have little or no affect on the depreciation.

We'll see the significance of that renovation in a moment, but first, back to our sample building's Effective Age calculation.

The construction class of the building also affects the calculation of Effective Age. It is only natural that an "A" class structure would have a longer economic life than a "D" class building (recall the story of the three little pigs). The Structure Class Age Factor makes allowance for this situation by reducing the effective age of an "A" class building by more than, say, a "D" building. As an example, CAMA reduces the effective age by 20% for "A" buildings, 15% for "B" structures, 10% on "C" buildings, and no adjustment for the "D" class buildings.

The features or variables dealing with the effective age calculation are multiplicative variables. As such, they are multiplied one by the other and then the Actual Age is multiplied by the product of the MVs. Below is the portion of the Cost.dat file that summaries these MV for our sample building.

***************Effective Age Adjustments****************

REHAB FACTOR 3 = .45 * Age
STRUCTURE CLASS AGE FACTOR C = .9 * Age
REHAB YEAR = 1.5 * Age

The product of each of these MV adjustments is calculated to be 0.46575 (0.45 * 0.90 * 1.5). This product is then multiplied by the Actual Age to calculate the Effective Age. Recall our sample building's Actual Age is 62 years. The Effective Age is calculated to be 38 years (62 * 0.6075). Instead of CAMA using 62 chronological years to calculated depreciation, it will use 38 years, based on the building's quality and renovation. The portion of the Cost.dat file that illustrates this information is below:

```
***********************************************************
            Actual Year Built:  1953
            Effective Age = 62 * .6075
            Effective Age:  38
            Percent Good = 72
            RCNLD:819890
```

Back to our renovation, the 1998 major renovation done to the building reduced the effective age to 60.75% (Rehab Factor 3 = .45 * Rehab Year = 1.5) of the 62 years of actual age, resulting in an effective age of 38 years old. What impact on the effective age would there be if just a small remodel occurred in 1990? We would expect the effective age not to shorten, or decrease, as much. Let's see what happens.

As you know, CAMA has many calibrated variables associated with all of the calculations it makes to determine the RCN and calculate depreciation. Again, the two variables that come into play here are the Rehab Factor and the Rehab Year. We've just seen the values of those variables were with regard to the recent major renovation example. For the 1990 remodel the values are: Rehab Factor 4= 0.55 and Rehab Year = 1.5. This combination will reduce the effective age to 82.5% (0.55 * 1.5) of the 62 years of actual age, as a result, making the effective age now 31 years old.

The difference between the two scenarios is seven years. Without doing all math, the difference in the appraised value as a result an effective age of 38 years verses 31 years is about $200,000 on a building with a RCN of $2,085,641. The proper documentation of remodel activity is significant when arriving at proper appraised values.

3.   We're almost finished. Knowing the Effective Age makes the calculation of the Effective Year Built for our sample building very simple. The Effective Year Built is 1977 (2015 – 38).

4.   Having established the Effective Year Built, we look up 1977 on the *60 Year Economic Life Depreciation Table* and find that the Depreciation is 28% for that year. See Illustration 11.

Base Year 2015		70 Year Economic Life		60 Year Economic Life		50 Year Economic Life	
Age of Building	Effective Year Built	Percent of Depreciation	Percent Good	Percent of Depreciation	Percent Good	Percent of Depreciation	Percent Good
0	2015	0	100	0	100	0	100
1	2014	0	100	0	100	0	100
20	1995	5	95	6	94	9	91
21	1994	5	95	7	93	10	90
22	1993	6	94	8	92	12	88
23	1992	6	94	9	91	13	87
24	1991	7	93	9	91	15	85
25	1990	7	93	10	90	16	84
26	1989	8	92	11	89	17	83
27	1988	9	91	13	87	19	81
28	1987	9	91	14	86	20	80
29	1986	10	90	15	85	23	77
30	1985	11	89	16	84	25	75
31	1984	12	88	17	83	26	74
32	1983	13	87	18	82	29	71

Illustration 11

You may notice that there is a conflict between the Cost.dat file and the depreciation table with regards to "Percent Good." The Cost.dat file report that our building's percent good is 74, whereas the depreciation table says it's 83. The explanation is addressed in step 5, dealing with obsolescence and direct adjustments to depreciation, not effective year built calculations.

5. If the assessor notes any obsolesce, this is where it is addressed. Recall from the outset that we defined depreciation as a loss in value resulting from physical deterioration, functional and/or economic obsolescence. The demonstration up to this point has dealt only with depreciation attributed to the physical deterioration of the sample building. This, by far, is the most common type of depreciation that exists in commercial property. However, occasions may require additional depreciation because of excessive physical deterioration, functional and/or economic obsolescence. One must use caution when invoking these types of depreciation. The market must support any decision regarding the extent of these adjustments.

Our sample building is suffering from a small amount of functional obsolescence. The assessor has noted that the interior design of the building contains many support columns interrupting the efficient use of the floor space. As a result, the restaurant has a few less tables and the package goods store does not have a good aisle layout. Consequently, it is appropriate to allow for a small amount of functional obsolescence – five percent.

Illustration 12 shows the results of this additional allowance for functional obsolescence. Whereas the depreciation table in illustration 3 shows the percent good for 31 years at 83%, by subtracting the 11% attributed to functional obsolescence, we are left with 72% (rounding error) as the percent good for our building. This matches the figure shown in the Cost.dat file.

Illustration 12

The actual mechanics of adjusting depreciation for functional or economic obsolescence within CAMA are briefly discussed below. If the situation occurs, seek guidance from your supervisor and/or CAMA manager.

The "Status" field's pick-list is expanded in Illustration 13 to show only those types of items that have a direct affect on depreciation and the nature of the affect. Notice that only a limited number of Status Codes are functional within CAMA and their affect on depreciation is either to *replace* the existing amount in the "% Good" field or *decrease* the "% Good." The corresponding numeric amount that will affect the "% Good" is entered in the field called "Percent Complete." Please note that the field name "Percent Complete" is somewhat erroneous because the word "Complete" has no meaning in this context. This is the field that you will enter the amount to either decrease the existing "% Good" or replace the existing "% Good", based on the Status Code selected.

Illustration 13

6. The last step in the process is to simply multiple the RCN by 0.72 and we have RCN LD of the building. Knowing the total RCN of our sample building is $$ 2,085,641 , the RCN LD is $1,501,662 ($ 2,085,641 * 0.72).

Conclusion

This exercise has been prepared to assist the commercial assessor understand some of the concepts, features and techniques employed by the Vision© CAMA system in arriving at a cost approach to valuation of commercial properties in the District of Columbia. It does not serve as an exhaustive training manual. Any specific questions regarding the features and operations of this CAMA should be directed to your supervisor or the CAMA manager.

Appendix "A"

1. Property Record Card, SSL 9999 8888

2. Cost.dat print-out, SSL 9999 8888

3. Land.dat print-out, SSL 9999 8888

4. 2007 CAMA Construction Valuation Guideline

Account # 9999 8888
Internal ID 183145

Property Location 9999 9TH ST NW
WASHINGTON, DC

Bldg # 1 of 1

Card # 1 of 2
Sec # 1 of 2

Use Code 045
Print Date 2/27/2015 9:41:37 AM

District of Columbia
Real Property
Assessment Division

COMM

CURRENT OWNER		
TEST OWNER		
9999 9TH ST		
Washington	DC	20002

CURRENT ASSESSMENT

Description	Code	Assessed Val
COM LAND	045	2,364,000
COMMERCL	045	1,513,780
	Total:	3,877,780

Value Src: C

DATA ENTRY

Entry ID: _____ Entry Date: / /

ACCOUNT INFORMATION

Use Type	Use Code	Lot SF	Status Code
C	045	999,999	A

VISIT / CHANGE HISTORY

Date	ID	Type	Inf. Source	Code	Description

PREVIOUS ASSESSMENTS (HISTORY)

Year	Use	Type	Val Source	Land Value	Building Value	Assessed Value
2016	045	C	C	2,364,000	1,513,780	3,877,780
2015	052	C	C	2,999,970	111,224,440	114,224,410
2014	021	A	C	13,995,970	1,433,000	15,428,970
2013	021	A	I	13,995,970	1,679,030	15,675,000
2012	021	A	C	13,995,970	1,328,140	15,324,110
2011	045	C	C	13,995,970	1,250,920	15,246,890
2010	045	C	C	13,995,970	1,274,640	15,270,610

ASSOCIATED PARCELS

Primary SSL	USE	SSL	Lot Size	%	Total Value
9999 8888			999,999		3,877,780

OWNERSHIP HISTORY

TEST OWNER	INSTRUMENT #	SALE DATE	q/u	v/i	SALE PRICE	AC
	123456	10-28-2013	Q	I	120,000,000	01

APPEALS

Appeal #	Decision	Amount	Revised AV

MIXED USE

Code	Description	%
045	Store-Restaurant	100
		0
		0

TAX TYPE

Year	Type	Description
2006	TX	TAXABLE
2005	TX	TAXABLE
2004	TX	TAXABLE
2003	TX	TAXABLE
2002	TX	TAXABLE
2001	TX	TAXABLE
2000	TX	TAXABLE

SUPPLEMENTAL DATA

Type	Description
Part Part	0
Mixed Use	0
Vcnt Lnd Use	045
Model Type	0
Restr Resale	
Abbut Lot	0
Zone Overlay	
PUD	

COMMENTS

PARCEL LOCATION SUMMARY

SSL	NBHD	SUB-NBHD	ZONING	WARD	GROUP	ARN
9999 8888	9	0	CR	6	1	408

BUILDING PERMIT RECORD

Permit ID	Issue Date	Type	Amount	Description	Insp Date

LAND LINE VALUATION SECTION

B #	Occ	Description	Zone	Frontage	Depth	Units	SI	I. Factor	LT	Price	Size Adj	Site Rating	Adjustments/Special Use	Notes	Land Value
1	045	Store-Restaurant	CR	100	200	12000.000 SF	0	1.000000	1	197.00	0.0000			100.00	2,364,000

Total Land Units 12,000 SF

Total Land Value 2,364,000

67

SKETCH

First Floor – Restaurant

BAS
BM5
(1.800 sf)

30   60

First Floor – Supermarket
second floor – apartment

BAS
BM4
FUS
Sect(2)
(1.800.01 sf)

30   60

CONSTRUCTION DETAIL

Element	Cd	Ch.	Description	Element	Cd	Ch.	Description
Style	C		Brick/Concr	CDU	G		Good
Model	94		Commercial				
Grade	40		Good				
Stories	1						
# Units	1.00						
Shape/Peri	2		Rectangular				
Structure Cla	C		Brick/Concr				
Wall Height	12.00						
Occupancy	045		Store-Restaurant				

BUILDING SUMMARY SECTION

Sect #	Code	Description	GBA	Eff Area	SFLA
1	BAS	Main Building Area	1,800	1,800	1,800
1	BM5	Basement, Full Finish	1,800	1,800	0
2	BAS	Main Building Area	1,800	1,800	1,800
2	BM4	Basement Semi-finishe	1,800	1,260	0
2	FUS	Upper Story, Finished	1,800	1,800	1,800
		Total:	9,000	8,460	8,460

BUILDING COST SUMMARY

Effective Area	8,460
Building RCN	1,138,733
Spec. Feat RCN	31,703
Total RCN	1,170,436
% Good	72
Building Cost	842,714

BUILDING INFORMATION & DEPRECIATION

Total Bldg Stories	1
Primary OCC	045
Structure Class	C
Actual Year Built	1953
Year Renovated	1998
Remodel Rating	3
Effective Year Built	1977
CDU	G
Status	NO
% Complete	0
% Good Override	
Type	
Reason	
Comment	

COST VALUE SUMMARY

Land Value	2,364,000	Type	
Building Value	1,453,230	Reason	
Detached Structures	0	Date	
Misc. Improvements		ID	
Cost to Cure (-)		Comment	
Final Cost Value	3,877,780		

BUILDING SPECIAL FEATURES/AMENITIES

Code	Description	Units	UOM	Unit Price	Grade	RCN
HVAC	(HVAC) Heating	1,800	SF	9.19	4	20,678
SPRK	Sprinklers	1,800	SF	4.90	4	11,025
ELEV	Elevators	0	Coun	67030.00	3	0

DETACHED STRUCTURES

Code	Description	Units	UOM	Unit Price	Grade	Cdntn	RCN	Assessed Val

68

Account # 9999 8888
Internal ID 183145

Property Location 9999 9TH ST NW
WASHINGTON, DC

Card # 2 of 2
Sec # 2 of 2
Bldg # 1 of 1

Use Code 045
Print Date 2/27/2015 9:41:37 AM

District of Columbia
Real Property
Assessment Division

COMM

CURRENT OWNER

TEST OWNER

9999 9TH ST

Washington   DC   20002

ACCOUNT INFORMATION

Use Type	Use Code	Lot SF	Status Code
C	045	999,999	A

CURRENT ASSESSMENT

Description	Code	Assessed Val
COM LAND	045	2,364,000
COMMERCL	045	1,513,780

Total: 3,877,780

Value Src: C

DATA ENTRY

Entry ID: _____   Entry Date: / /

VISIT / CHANGE HISTORY

Date	Type	ID	Inf. Source	Code	Description

OWNERSHIP HISTORY

TEST OWNER

PREVIOUS ASSESSMENTS (HISTORY)

Year	Use	Val Source	Type	Land Value	Building Value	Assessed Value
2016	045	C	C	2,364,000	1,513,780	3,877,780
2015	052	C	C	2,999,970	111,224,440	114,224,410
2014	021	C	A	13,995,970	1,433,000	15,428,970
2013	021	–	A	13,995,970	1,679,030	15,675,000
2012	021	C	A	13,995,970	1,328,140	15,324,110
2011	045	C	C	13,995,970	1,250,920	15,246,890
2010	045	C	C	13,995,970	1,274,640	15,270,610

INSTRUMENT

123456

SALE DATE

10-28-2013

q/u	v/i	SALE PRICE	AC
Q	I	120,000,000	01

ASSOCIATED PARCELS

SSL	USE	Lot Size	%	Total Value
		999,999		3,877,780

Primary SSL   9999   8888

MIXED USE

Code	Description	%
045	Store-Restaurant	100
		0
		0

APPEALS

Appeal #	Decision	Amount	Revised AV

TAX TYPE

Year	Type	Description
2006	TX	TAXABLE
2005	TX	TAXABLE
2004	TX	TAXABLE
2003	TX	TAXABLE
2002	TX	TAXABLE
2001	TX	TAXABLE
2000	TX	TAXABLE

SUPPLEMENTAL DATA

Type	Description
Part Part	0
Mixed Use	0
Vcnt Lnd Use	045
Model Type	0
Restr Resale	
Abbutt Lot	0
Zone Overlay	
PUD	

COMMENTS

PARCEL LOCATION SUMMARY

SSL	NBHD	SUB-NBHD	ZONING	WARD	GROUP	ARN
9999 8888	9	0	CR	6	1	408

BUILDING PERMIT RECORD

Permit ID	Issue Date	Type	Amount	Description	Insp Date

LAND LINE VALUATION SECTION

B #	Occ	Description	Zone	Frontage	Depth	Units	SI	I. Factor	LT	Price	Size Adj	Site Rating	Adjustments/Special Use	Notes	Land Value
1	045	Store-Restaurant	CR	100	200	12000.000 SF	0	1.000000	1	197.00	0.0000			100.00	2,364,000

69

Total Land Units   12,000   SF

Total Land Value   2,364,000

SKETCH

First Floor – Restaurant

BAS
BM5
(1.800 sf)

First Floor – Supermarket
second floor – apartment

BAS
BM4
FUS
Sect(2)
(1.800.01 sf)

CONSTRUCTION DETAIL

Element	Cd	Ch.	Description	Element	Cd	Ch.	Description
Style	C		Brick/Concr	CDU	G		Good
Model	94		Commercial				
Grade	40		Good				
Stories	2						
# Units	2.00						
Shape/Peri	2		Rectangular				
Structure Cla	C		Brick/Concr				
Wall Height	14.00						
Occupancy	047		Store-Super Market				

BUILDING SUMMARY SECTION

Sect #	Code	Description	GBA	Eff Area	SFLA
1	BAS	Main Building Area	1,800	1,800	1,800
1	BM5	Basement, Full Finish	1,800	1,800	0
2	BAS	Main Building Area	1,800	1,800	1,800
2	BM4	Basement Semi-finishe	1,800	1,260	0
2	FUS	Upper Story, Finished	1,800	1,800	1,800
		Total:	9,000	8,460	8,460

BUILDING COST SUMMARY

Effective Area	8,460
Building RCN	879,642
Spec. Feat RCN	52,380
Total RCN	932,022
% Good	72
Building Cost	671,056

BUILDING INFORMATION & DEPRECIATION

Total Bldg Stories	2
Primary OCC	045
Structure Class	C
Actual Year Built	1953
Year Renovated	1997
Remodel Rating	3
Effective Year Built	1977
CDU	G
Status	OV
% Complete	72
% Good Override	
Type	
Reason	
Comment	

COST VALUE SUMMARY

Land Value	2,364,000	Type	
Building Value	1,453,230	Reason	
Detached Structures	0	Date	
Misc. Improvements		ID	
Cost to Cure (-)		Comment	
Final Cost Value	3,877,780		

BUILDING SPECIAL FEATURES/AMENITIES

Code	Description	Units	UOM	Unit Price	Grade	Cdntn	RCN
SPRK	Sprinklers	1,800	SF	4.90	4		11,025
HVAC	(HVAC) Heating	3,600	SF	9.19	4		41,355

DETACHED STRUCTURES

Code	Description	Units	UOM	Unit Price	Grade	Cdntn	RCN	Assessed Val

70

OUTPUT FROM NEW COST MODELING ENGINE

REPORT GENERATED ON 27-Feb-2015 AT 09:39

1

****************Building #1 Calc Start****************

Cost Calculation for pid, bid = 183145, 173784

Account Number = 9999   8888

Use Code = 045

Cost Rate Group = RS1

Model ID: = DCC

Section #2

Section Use: Store-Super Market

Base Rate: 103.14

Size Adjustment: 1.23860

Effective Area: 5400

Adjusted Base Rate = (103.14 + 0) * 1.23860

Adjusted Base Rate: 127.75

RCN = ((127.75 * 4860 + 0.0000000000000000000) * 1.416800000000000) + 0

RCN: 879642

******************Factor Adjustments*******************

GRADE 40 = 1.120 x RCN

COMM NBHD 9 = 1.100 x RCN

CONDITION DESIRABILITY UTILITY G = 1.150 x RCN

******************Effective Age Adjustments*******************

STRUCTURE CLASS AGE FACTOR C = 0.900 x Age

CDU AGE FACTOR G = 1.000 x Age

REHAB FACTOR 3 = 0.450000 x Age

REHAB YEAR 1997 = 1.500 x Age

Actual Year Built: 1953

Effective Age = 38

******************Depreciation Adjustments*******************

CDU DEPREC FACTOR G = 1.000 x Depreciation

Percent Good = 72

RCNLD: 633340

****

Section #1

Section Use: Store-Restaurant

Base Rate: 180.25

71

1

Size Adjustment: 1.23860

Effective Area: 5400

Adjusted Base Rate = (180.25 + 0) * 1.23860

Adjusted Base Rate: 223.26

RCN = ((223.26 * 3600 + 0.0000000000000000000) * 1.416800000000000) + 0

RCN: 1138733

******************Factor Adjustments*******************

GRADE 40 = 1.120 x RCN

COMM NBHD 9 = 1.100 x RCN

CONDITION DESIRABILITY UTILITY G = 1.150 x RCN

******************Effective Age Adjustments*******************

STRUCTURE CLASS AGE FACTOR C = 0.900 x Age

CDU AGE FACTOR G = 1.000 x Age

REHAB FACTOR 3 = 0.450000 x Age

REHAB YEAR 1998 = 1.500 x Age

Actual Year Built: 1953

Effective Age = 38

******************Depreciation Adjustments*******************

CDU DEPREC FACTOR G = 1.000 x Depreciation

Percent Good = 72

RCNLD: 819890

****

2019 Economic Life Depreciation Tables

Base Year 2018

Age of Building	Effective Year Built	70 Year Economic Life Percent of Depreciation	70 Year Economic Life Percent Good	60 Year Economic Life Percent of Depreciation	60 Year Economic Life Percent Good	50 Year Economic Life Percent of Depreciation	50 Year Economic Life Percent Good
0	2018	0	100	0	100	0	100
1	2017	0	100	0	100	0	100
2	2016	0	100	0	100	0	100
3	2015	0	100	1	99	1	99
4	2014	1	99	1	99	1	99
5	2013	1	99	1	99	1	99
6	2012	1	99	1	99	1	99
7	2011	1	99	1	99	2	98
8	2010	1	99	2	98	2	98
9	2009	2	98	2	98	2	98
10	2008	2	98	2	98	3	97
11	2007	2	98	2	98	3	97
12	2006	2	98	3	97	4	96
13	2005	2	98	3	97	4	96
14	2004	3	97	3	97	5	95
15	2003	3	97	4	96	5	95
16	2002	3	97	4	96	6	94
17	2001	4	96	5	95	7	93
18	2000	4	96	5	95	7	93
19	1999	4	96	6	94	9	91
20	1998	5	95	6	94	9	91
21	1997	5	95	7	93	10	90
22	1996	6	94	8	92	12	88
23	1995	6	94	9	91	13	87
24	1994	7	93	9	91	15	85
25	1993	7	93	10	90	16	84
26	1992	8	92	11	89	17	83
27	1991	9	91	13	87	19	81
28	1990	9	91	14	86	20	80
29	1989	10	90	15	85	23	77
30	1988	11	89	16	84	25	75
31	1987	12	88	17	83	26	74
32	1986	13	87	18	82	29	71
33	1985	14	86	20	80	31	69
34	1984	15	85	21	79	34	66
35	1983	16	84	23	77	36	64
36	1982	17	83	25	75	38	62
37	1981	18	82	26	74	42	58
38	1980	19	81	28	72	44	56
39	1979	20	80	31	69	48	52
40	1978	21	79	32	68	50	50
41	1977	23	77	34	66	52	48
42	1976	25	75	36	64	56	44
43	1975	26	74	38	62	57	43
44	1974	28	72	40	60	61	39
45	1973	29	71	44	56	63	37
46	1972	31	69	46	54	64	36
47	1971	32	68	48	52	66	34
48	1970	34	66	50	50	67	33
49	1969	36	64	52	48	70	30
50	1968	38	62	54	46	71	29
51	1967	40	60	57	43		
52	1966	42	58	59	41		
53	1965	44	56	61	39		
54	1964	46	54	63	37		
55	1963	48	52	64	36		
56	1962	50	50	65	35		
57	1961	52	48	67	33		
58	1960	54	46	69	31		
59	1959	56	44	70	30		
60	1958	57	43	71	29		
61	1957	59	41				
62	1956	61	39				
63	1955	63	37				
64	1954	64	36				
65	1953	65	35				
70	1952	71	29				

Real Property Assessment Division

CONSTRUCTION DETAIL

Section Detail

No.	Description	Value

Building Stories
As Indicated.

Occupancy
As Indicated.
Select from list.

Stories and #Units
As Indicated.

Structure Class

0	Default
A	Fireproof Steel
B	Reinforced Concrete
C	Con. Block/Solid Brick
D	Wood Frame
P	Wood Pole
S	Steel/Sheet Metal

Exterior Finish

0	Typical
AS	Asphalt Siding
BR	Brick (Solid)
BV	Brick Veneer
C	Concrete
CB	Concrete Block
MS	Metal Siding
S	Stone
SU	Stucco
SV	Stone Veneer
WS	Wood Siding

Grade (Multiplies Base, Features)

0	Default	--
0	Poor Quality	-30%
15	Poor+ Quality	-20%
20	Fair Quality	-10%
25	Fair+ Quality	-05%
30	Average Quality	--
35	Average+ Quality	06%
40	Good Quality	12%
45	Good+ Quality	21%
50	Very Good Quality	30%
55	Very Good + Quality	38%
60	Excellent	45%

Story Height (Multiplies Base)
Currently not in use

Wall Height (Adds to Base Rate)
Currently not in use

CDU Condition, Desirability, Utility (Multiplies Base, Features)

EX	Excellent	35%
VG	Very Good	30%
G	Good	15%
AV	Average	--
F	Fair	-25%
P	Poor	-50%
VP	Very Poor	-70%
US	Unsound	-90%

DEPRECIATION DETAIL

No.	Description	Value

Structure Class (Adjust EYB)

0	Default	0
A	Fireproof Steel	-20%
B	Reinforced Conc.	-15%
C	Con. Block/Brick	-10%
D	Wood Frame	0
S	Steel/Sheet Metal	0

Remodel Rating (Adjusts EYB)

0	Default	--
1	Unknown	-10%
2	Gut Rehab	-70%
3	Major Renovation	-55%
4	Remodel	-45%
5	Addition	-30%
6	Cosmetic	-10%

Year Remodeled (Adjust EYB)

2014-2017	0%
2012-2013	5%
2007-2011	15%
2002-2006	25%
Earlier-2001	50%

Extra Features (Flat and Sq Ft Add)

BL	Balcony	Flat
ELEV	Elevators	Flat
HVAC	Heat & Cool	Sq. Ft.
MZ	Mezzanines	Sq. Ft.
SPRK	Sprinklers	Sq. Ft.

Building RCN = [Section$_1$ (Base Rate * Effective Area * Size Adjustment) * (MV$_0$ * MV$_2$ * … * MV$_N$)] + [Section$_n$ (Base Rate * Effective Area * Size Adjustment) * (MV$_0$ * MV$_2$ * … * MV$_N$)] + [∑Special Building Features]

Where:
RCN = Replacement Cost New
Base Rate = $ rate based on occupancy (use) code and construction class
Section$_n$ = Each separate building or section of building
Effective Area = Adjusted SF area of improvement
Size Adjustment = Adjustment factor for deviation from base size
MV = Multiplicative Variables

The income approach to the valuation of real property follows the generic formula of **Market Value = NOI/Capitalization Rate** , where **NOI** is the net operating income of the property and the **Capitalization Rate** is a market-derived overall direct capitalization rate. When properly developed and calibrated, this approach is a reliable indicator of market value of income producing properties within a mass-appraisal CAMA system.

The following exercise will illustrate how the Vision© CAMA system utilized by the District of Columbia calculates values using the above model. The first section will illustrate the traditional development of a market value estimate for a typical apartment building. This example will serve to provide a practical foundation for understanding the concepts of the income approach to valuation as well as an understanding of the major components of the Vision© CAMA methodology. The second section will illustrate the actual CAMA valuation of the apartment building described in the first section.

Income Approach to Value

An understanding of the income capitalization approach to value is essential in order to utilize the Vision© CAMA system's income model. Of the three traditional approaches to value (cost, market, income), the income approach is most often the appropriate approach when appraising property owned for it's ability to produce income to the owner. An owner anticipates future income production and the income approach quantifies the present value of the income derived from the ownership of the property. There are several varieties or forms of the income approach used to quantify or convert income into an estimate of value. The most widely used approach is direct capitalization. Direct capitalization involves converting one year's stabilized net operating income into an estimate of value in one direct step using an appropriate rate. The direct capitalization method is rooted in the market. The rate used to convert income into value represents the relationship between value and income through the following formula:

Where: I = Income
R = Rate
V = Value

Formula 1

To determine an estimate of value, divide the income by the rate. The income is the net operating income (NOI) and the rate is the direct capitalization rate. For example, if a property generates an NOI of $500,000 per year and the market-derived capitalization rate is 5 percent, the indicated value would be $10,000,000 ($500,000/.05).

Where do these two numbers come from? The first number, NOI, is determined by a combination of things. First, the income and expenses of the particular property are analyzed and "re-constructed" to produce the NOI. Re-constructing simply means that we analyze the income and more particularly the expenses to ensure that we have a true understanding and estimate of the amount of net operating income annually produced by the property. Oftentimes an income report will detail some expenses not directly associated with the property. For example, the debt service of a loan on the property may be subtracted from the gross income. This is not a proper expense as it is a function of the owner's financing and not an operating expense of the property. Another example may be a large "expense" taken against gross income that should be more properly spread over several years, or capitalized. Expense ratios are calculated for the various categories of expenses.

Another source for determining the NOI of a property is the analysis of many other similar properties for their income levels and expense levels or ratios. If the subject property's income and expenses are typical for similar properties, the actual NOI of the property becomes the amount to be capitalized by the rate. If, on the other hand, the property exhibits unusual income or expenses based on comparison of the ratios, some actual amounts of income or expenses may be substituted with the amounts represented by more typical ratios. The goal is to establish the typical level of NOI that a prudent investor would anticipate deriving from the property each year.

Where does the rate come from? The rate is the overall direct capitalization rate. This is the rate for the overall property used to convert a single year's income into an indication of value of the overall property using the IRV formula shown above. The rate is derived through sales analysis. Ideally, where arms-length sales of similar properties occur and the income and expense data are well known, a direct capitalization rate can be derived using the IRV formula. For example, suppose the subject property is an office building and a similar office building recently sold for $750,000. The reconstructed income and expense analysis indicated that at the time of sale the property was producing an annual net operating income of $60,000. Using the IRV formula, the capitalization rate of the property was 8 percent ($60,000/$750,000). Reliable capitalization rates are the result of the analysis of many sales of income producing properties.

The following illustration is an example of an income and expense statement for our sample property. The property, Breakaway Northwest, is a high-rise apartment complex consisting of a one eight story concrete block building. The building has 164 rental units, a management office, laundry facility and on-site surface parking. It is located close to the Convention Center in NW Washington,

DC. We'll use this property both here and in the example within Vision© CAMA in the second part of this tutorial.

```
                    Breakaway Northwest Apartments
                          - December 31, 2010-

Potential Gross Income                                $3,820,680
  Vacancy & Collection Loss (7%)                        -267,448
  Miscellaneous Income (laundry) (2%)                  + 62,600
Effective Gross Income                                $3,615,832

Expenses
  Operating:
      Management (9%)              $321,200
      R.E. Taxes (7%)               262,000
      Insurance (7%)               245,800
      Utilities (7%)               238,700
      Salaries (6%)                220,250
      Marketing (4%)               130,400
      Yard and Snow (2%)            89,500
            Sub-total (42%)      $1,507,850

  Reserves for Replacements:
      Roof (4%)                    $150,400
      Parking (3%)                  121,000
      Redecorating (3%)             115,948
      Appliances (3%)               102,400
            Sub-total (13%)        $489,748

Total Expenses (55%)                                  $1,997,598

Net Operating Income (45%)                            $1,618,234


Capitalization Rate                                      5.25%

Indicated Market Value                                $30,823,500
```

Illustration 1

As you examine the statement, you'll notice a few terms we have not discussed. The **potential gross income** is defined as the maximum amount of income the property can produce if fully rented at market rent before any expenses are deducted. There will always be some amount to deduct from the potential gross income in the form of **vacancy** and **collection loss.** Even if the property is fully

leased, the appraiser must take some vacancy allowance to acknowledge tenant turn-over and inevitable vacancies. It is unrealistic not to allow for some vacancy. Collection loss is that amount deducted from the potential gross income for nonpayment of rent.

In addition to rent, a property may have other sources of income. This **miscellaneous income** can come from such sources as an on-site laundry facility, furniture rental, community room rentals, vending machines, and the like.

When an amount for vacancy and collection loss is subtracted, and an amount for miscellaneous income is added to the gross potential income, the result is the **effective gross income** of the property. Expenses are subtracted from, and expense ratios are calculated based upon, the effective gross income.

Expenses usually fall into two categories: **operating expenses** and **reserves for replacements**. Sometimes operating expenses may be further divided between variable and fixed expenses. Operating expenses are those legitimate expenses necessary to support the property's ability to produce income. The sample shows some of the more typical expenses incurred by an apartment building. Notice the calculation of the expense ratios mentioned earlier. As an example, the expense ratio for management is nine percent of the effective gross income ($321,200/$3,615,832). These actual ratios are compared to typical ratios to see if any expenses are out of the ordinary. If they are out-of-line and no adequate explanation can be identified, it is appropriate to substitute that category of expense with an amount that would be more normal as indicated by market research. This is an aspect of "re-constructing" the income/expense statement to more properly reflect a stable, normalized net operating income.

Reserves for replacements are a category of expenses that are designed to set aside funds for long lived items that periodically need to be replaced. The amount of the expense is based on the item's economic life and the estimated cost to replace it in the future. Let's say that appliances must be replaced every five years at an estimated cost of $3,122 per unit. With 164 units, we need to accumulate $ 512,000 over a five year period. Charging $102,400 per year to the reserves for replacements expense allows us to set aside enough money to replace the appliances according to the five year schedule. It is always appropriate to set aside reserves for replacements, even though in practice a property may not have done so. This is another aspect to "re-constructing" the traditional income/expense statement.

Subtracting the total expenses from the effective gross income leaves us with the net operating income of the property. The NOI of the property is the "I" in the IRV formula that will be converted to an indication of value using a capitalization rate.

As mentioned earlier, we employ the direct capitalization of income to produce an estimate of value. The capitalization rates are determined by the analysis of sales of similar properties where the NOI is known. Capitalization rates vary between and within different categories of income-producing properties. Analysis

of the market is necessary to determine the proper rate to apply to the different properties. For example, a capitalization rate for a high quality office building in a prime location will be lower than a capitalization rate for a lower quality office in a less desirable location. With all other things remaining equal and no unusual externalities, capitalization rates for offices are generally less than rates for motels or shopping centers. It all harkens back to the level of return the buyers expect to receive on their investment in commercial real estate. One of their considerations is that the more risk involved with the property, the more return they require thereby raising the capitalization rate resulting in a lower valuation.

In our example, a market-derived capitalization rate for apartments of similar size and location indicate a direct capitalization rate of 5.25 percent. We now know the NOI and the cap rate and by following the IRV formula, we derive the value of Breakaway Northwest to be $30,823,500 ($1,618,234/0.0525).

The above discussion accurately represents the typical application of the income approach to valuation. However, determining valuations for ad-valorem purposes requires one significant modification to the process. Whereas in the above example we considered real estate taxes a legitimate expense, they are not expensed in ad-valorem appraisals. They are removed in our approach to account for the fact that the tax expense is directly determined by the very value we are trying to obtain. To avoid this circular situation whereby taxes affect value (lower NOI, if expensed) and value affects taxes, we remove the item from the NOI. Our tax-adjusted NOI will now be $1,880,232 ($1,618,234 + $262,000). This is another aspect to reconstructing the income/expense statement illustrated earlier.

As a consequence of removing real estate taxes from the expenses and thereby increasing the NOI by a corresponding amount, we compensate by modifying the capitalization rate. The modification to the market cap rate allows us to remove real estate taxes from the net operating expenses and replace the loss by increasing the cap rate by the effective tax rate.

The cap rate we utilize for ad-valorem appraisals is a 'loaded' cap rate, meaning that it is comprised of both the market cap rate and the District's effective tax rate for apartments. Apartments are taxed at the residential tax rate. For this exercise the tax rate is $0.85 per $100 of assessed value, therefore the effective tax rate is 0.0085 (0.85/100). If the market cap rate is 5.25 percent and the effective tax rate is 0.85 percent, then our 'loaded' cap rate is 6.10 percent (0.0525+0.0085).

Based on the information we now have, we can estimate the market value of the subject apartment to be $30,823,500 ($1,880,232/0.061), the same as determined just a moment ago.

The above discussion has been presented as a review of the income approach to valuation, more specifically the direct capitalization technique. Included was an example of the valuation of an apartment building. In the next section, we'll again value the same apartment building but conduct the valuation from within

the District's CAMA system. Although the work flow may appear different, the underlying IRV formula should generate the same results.

Vision's® CAMA Income Approach to Value

In addition to the market-calibrated cost approach utilized by CAMA to value the residential property in the District, CAMA also has the capability to value commercial property using the more appropriate approach – the income capitalization approach. The discussion in this section will serve to illustrate the manner in which a commercial property, an apartment building, is valued based on the income approach.

To effectively value property, complete and accurate property characteristics must be known. Although the physical characteristics such as wall type, roof type, building style and the like are important, the most important information regarding commercial property subject to the income approach are characteristics of the property dealing with its ability to produce income. In an office building, for example, the gross building area or net leaseable area are important. In hotels and motels the significant measure is the number of rooms available. And in apartment buildings it would be the number and style of the units for rent.

We'll begin our appraisal of Breakaway Northwest by identifying the "mix" of units in the building. The table below represents this information.

The mix of units is as follows:

No. of Bedrooms	1 Bed	2 Bed	3 Bed
No. of Bathrooms	1 Bath	1 Bath	2 Bath
No. of Units	62	76	26

Table 1

From our previous discussion of the income approach, we know that there are four "key" areas having to do with the income approach to value:

- Gross Income (Rent)
- Vacancy & Expenses
- Net Operating Income
- Capitalization Rate

The illustration below highlights the location of these key areas on the data entry screen within CAMA.

Illustration 2

Gross Rent

Recall we will be appraising the same apartment property from the example in the first section. Let's first turn our attention to the Gross Rent. We'll be entering information for each section, using one line for each *style* of apartments. By style, we mean the unit of comparison designated for apartment buildings – 1 bed-1 bath, 2 bed w/den-1 bath, 3 bed-2 bath, and the like.

Let's look at the first line of the table:

Illustration3

Our first line will account for the 1 bedroom-1 bath units in the complex. The style code "1101" is selected from a pick-list that describes the different styles available for apartments. Please refer to the illustration below for a partial list of Income Style for apartments.

Illustration 4

0000	JR. EFFICIENCY
0101	EFFICIENCY
0102	EFFICIENCY, SM
0103	EFFICIENCY, LG
1101	1BR, 1BA
1102	1BR, 1BA, SM
1103	1BR, 1BA, LG
1111	1BR+DEN, 1BA
1113	1BR+DEN 1BA, LG
2101	2BR, 1BA
2102	2BR, 1BA, SM
2103	2BR, 1BA, LG
2111	2BR+DEN, 1BA
2113	2BR+DEN 1BA, LG
2201	2BR, 2BA
2202	2BR, 2BA, SM

There are sixty-two 1BR, 1BA units and that number is recorded in the "SF/Unit" column of the table. In addition to recording the style and number of units, the appraiser may choose to modify the Gross Rent by taking into consideration both the tenant desirability and the location of the apartment. The two columns labeled "Use" and "Loc" account for these adjustments, respectively. The adjustments are percentage increases or decreases to the Gross Income from the default value of "average." Both the "Use" and "Loc" allow for the same percent adjustment each, as shown in the illustration below.

Illustration 5

The amount of adjustment is based on the table below:

Rating	Description	Location	Use
1	POOR	0.80	0.80
2	FAIR	0.90	0.90
3	AVERAGE	1.00	1.00
4	GOOD	1.10	1.10
5	EXCELLENT	1.25	1.25
A	AVERAGE	1.00	1.00
S	NON-MARKET	1.00	0.90

Table 2

In our example, we chose not to make any adjustments for location or desirability to any of the apartment units in this property.

The Base Rate shows the annual rent for each unit of the particular style "1101" – 1BR, 1BA. In this example the rent is $1,620 per month or $19,440 on an annual basis as shown in the base rate column. This value has been selected from a table in CAMA. The table has been calibrated based upon market analysis of current rents segmented by location and style, throughout the District. Below is an excerpt of a table that illustrates the rents for our particular property.

Code	Description	OLD CITY #2 Monthly Rent
0000	JR. EFFICIENCY	1255
0101	EFFICIENCY	1330
0102	EFFICIENCY, SM	1255
0103	EFFICIENCY, LG	1465
1101	**1BR, 1BA**	**1620**
1102	1BR, 1BA, SM	1475
1103	1BR, 1BA, LG	1800
1111	1BR+DEN, 1BA	1885
1113	1BR+DEN 1BA, LG	2075
2101	**2BR, 1BA**	**2380**
2102	2BR, 1BA, SM	2145
2103	2BR, 1BA, LG	2610
2111	2BR+DEN, 1BA	2740
2113	2BR+DEN 1BA, LG	3010
2201	2BR, 2BA	2740
2202	2BR, 2BA, SM	2465
2203	2BR, 2BA, LG	3010

2211	2BR+DEN, 2BA	3285
2213	2BR+DEN 2BA, LG	3620
3101	3BR, 1BA	2550
3102	3BR, 1BA, SM	2290
3103	3BR, 1BA, LG	2805
3111	3BR+DEN, 1BA	2940
3113	3R+DEN 1BA, LG	3220
3201	**3BR, 2BA**	**2940**
3202	3BR, 2BA, SM	2635

Table 3

Notice that our subject property is located in the Old City #2 market. The District of Columbia is divided into nine separate markets for income modeling purposes. The market influences within Old City #2 are, for example, different from the influences within Southwest or Georgetown markets. Separate rent rate and vacancy and expense ratio schedules exist for each separate market.

As we continue with our example, we account for the other two styles of units in a similar manner. At this point, the gross rent has been calculated to be $4,293,120. But, if you recall from the income and expense statement, the property generated an additional $62,600 in non-rental income. We need to include this amount to determine to total gross income.

To account for the miscellaneous income, select "5000 APT MISC INCOME" as the style and enter the actual amount directly into the Gross Rent column. We want to be sure to set the "OV?"(override), column to "Yes." By doing so, we ensure that the amount does not get adjusted for vacancy and collection loss discussed in the next section. Typically, only rental income is subjected to vacancy and collection loss. See the illustration below:

Bldg	Section	Style	DescriptionXX	Use	Locati	Tenants	Area		Floor		Gross Rent	Vacancy	Vac %	Vac Am	Expense	Exp %	Exp Amount
1	1	1101	1BR, 1BA	3	3	0	62	19440.	0	19440.	1,205,280.00	3	0.0500	60,264	3	0.4800	549608
1	1	2101	2BR, 1BA	3	3	0	76	28560.	0	28560.	2,170,560.00	3	0.0500	108,528	3	0.4800	989775
1	1	3201	3BR, 2BA	3	3	0	26	35280.	0	35280.	$917,280.00	3	0.0500	45,864	3	0.4800	418280
1	1	5000	APT MISC INCOME	3	3	0	0	0	0	0.00	$62,600.00	3	0.0000		3	0.4800	30048

Illustration 6

This concludes our discussion of the Gross Rent tab in the CAMA system. We have accounted for all of the rent attributable to the property and concluded that the Gross Rent is the sum of $ 4,355,720, the same amount as shown on the income and expense sheet from section one. Next, we'll turn to the Vacancy & Expenses portion of the record.

Vacancy and Expenses

Our work in the Vacancy and Expenses will be similar to what we did in the Gross Income. However, in this table we'll account for four items:
- Vacancy amount
- EGI (Effective Gross Income) calculation

- Expense amount
- NOI (Net Operating Income) calculation

The value of the NOI calculated here will be the basis for the final valuation using the IRV formula, after selecting a rate. See below:

Parcel Information								
SSL: 9999/ / // 7777//	Primary Use: 021	Use Type: A	Internal ID: 201605	Work In Prog 0	Living Area: 201000

SSL: 9999/ / // 7777// Primary Use: 021 Use Type: A Internal ID: 201605 Work In Prog 0 Living Area: 201000

Location: 9999 7TH ST NW Total Assess $39,151,870 Land Acres: 99,999 $SF/ Liv/GBA 194.79

Economic Income Valuation   ☐ Select Economic Account   ☐ Exclude from Land Residual Rep   Year: 2016 ▾

Land Use: 021 Residential Apartment-V Neighborhood 40

022   009   Apply Value ☐

Year Built 1980   Cap Code HR2 : HIGH RISE 2 ▾ GIM Code

Cost $30,080,490   Cap Adj 3 : AVERAGE ▾ GIM Adj

Value/Bldg SF: $183,418   Cap Rate 0.0550 ☐   GIM Factor ☐ GIM

Leasable Area/Units   Notes Breakaway Northwest, elevator apartment, 8

AREA GL 164

AREA UL 0

AREA LL 0

Gross Area 164

GROSS RENT $4,355,720
Vacancy $214,656
EXP $1,987,711
NOI $2,153,353
BLDG VALUE $39,151,870
Other Adjustment 0
INCOME $39,151,870
Per SF/Unit $238,730.91

Bldg	Section	Style	DescriptionXX	Use	Locati	Tenants	Area		Floor		Gross Rent	Vacancy	Vac %	Vac Amc	Expense	Exp %	Exp Amount
1	1	1101	1BR, 1BA	3	3	0	62	19440.	0	19440.	1,205,280.00	3	0.0500	60,264	3	0.4800	549608
1	1	2101	2BR, 1BA	3	3	0	76	28560.	0	28560.	2,170,560.00	3	0.0500	108,528	3	0.4800	989775
1	1	3201	3BR, 2BA	3	3	0	26	35280.	0	35280.	$917,280.00	3	0.0500	45,864	3	0.4800	418280
1	1	5000	APT MISC INCOME	3	3	0	0	0	0	0.00	$62,600.00	3	0.0000		3	0.4800	30048

Illustration 7

A Vacancy and Expenses line is automatically created for each style shown on the Gross Rent. The values are based on the market area of the property and are derived from market analysis. Recall that our apartments are located in the Old City #2 market. CAMA populates the Vac% column and the Exp% column with the market rates appropriate for Old City #2; in this case it would be based on this table:

	GEORGETOWN	NORTHEAST	OLD CITY #2	SOUTHEAST
Vacancy Ratio	4%	7%	5%	8%
Expense Ratio	42%	60%	48%	60%

Table 4

We have inspected the property and concur that the vacancy rate should be five percent, to coincide with typical vacancies for properties in Old City #2.

Illustration 8

If, however, we found the property to have less than typical vacancy we could have selected "4 Good." Whereas the typical vacancy for the Old City #2 market area is 5 percent, had we selected "Good", the vacancy rate would have been modified by appropriate multiplier in the adjustment table. The adjusted amount would have been 2.5 percent (0.05 * 0.50). The amount of adjustment for both vacancy and expense are shown in the table below.

Rating	Description	Vacancy	Expense
1	POOR	2.00	1.25
2	FAIR	1.50	1.10
3	AVERAGE	1.00	1.00
4	GOOD	0.50	0.90
5	EXCELLENT	0.25	0.75
A	AVERAGE	1.00	1.00
S	NON-MARKET	0.25	1.00

Table 5

.

The Expense % may be adjusted in a similar manner, but we'll leave it set to the typical percent associated with the Old City #2 market of forty-eight percent. By subtracting the Exp. Amount from the EGI, we get the NOI of the property. CAMA has calculated the NOI to be $2,153,353, identical to our earlier income and expense report modified for real estate taxes discussed earlier.

Illustration 9

We're almost finished. The last piece of the valuation process is the capitalization rate.

Capitalization Rate

Capitalization rates will vary across the District based on the class of property (office, retail, apartments, etc.) and its location (market area). Capitalization rates are assigned to apartments based on their market location and type of apartment complex. The District is divided into three submarkets. Each of these submarkets provides a separate cap rate for high-rise and low-rise apartments. Neighborhood 40/E, Old City II, is located in the Northwest market area and our subject is a high-rise type complex.

The assigned capitalization rate for high-rise apartments in the Northwest market area is 0.055 or 5.5 percent. Remember, this is the 'loaded' cap rate. See the illustration below.

Illustration 10

Upon analysis of the property and its income and expenses, an adjustment to the cap rate is not warranted and therefore the cap rate adjustment is set to "Average". Had the property been located closer to the Mt. Vernon Metro station, there may have been a reason to adjust the cap rate down to reflect the property's good performance based on its proximity to the station. In that situation, instead of 'average', we would want to adjust the rate to "Good" thereby lowering the rate. This adjustment is accomplished by the Cap Adjustment dialog box. See below.

.

Illustration 11

Had we agreed that the performance was "Good", our original cap rate of 5.5 percent would have been modified to 4.95 percent (0.061 * 0.90). Remember IRV tells us that, all other things being equal, the lower the cap rate the higher the property value and vise versa.

Cap Rating	Description	Adjustment
0	VERY POOR	1.30
1	POOR	1.20
2	FAIR	1.10
3	AVERAGE	1.00
4	GOOD	0.90
5	EXCELLENT	0.80
A	AVERAGE	1.00

Table 6

Valuation

We have almost come to the end of our example and exercise. One simple division remains. Knowing that the NOI is $2,153,353 and that the overall direct capitalization rate is 0.055, we can calculate the estimated value of Breakaway Northwest to be $39,151,870 ($2,153,353/0.055). Again, this is identical to the amount estimated in the first section of the exercise. The final results are highlighted below.

Illustration 12

Some Final Thoughts

We have introduced you to some of the most elementary aspects of property valuation using the District's Vision® CAMA system. We have developed the estimated market value of a fictitious apartment complex, utilizing the direct capitalization income approach to value. This guideline is merely a small window, a first step, in the complex field of mass appraisal. A CAMA system robust enough to appraise almost 200,000 different properties will necessarily be comprehensive and complex. Additionally, an initial valuation generated by CAMA is always subject to the review and approval of a qualified, professional appraiser before it becomes a final value. As you explore and utilize the program make certain that you fully understand the ramifications and results of your actions. Your supervisor and/or CAMA manager will always be available to assist you.

Version 1.50

Guidelines for Non-Market Multifamily (Apartment) Assessment

Various affordable multi-family residential properties benefit from some public funding programs. The funding programs mostly impose restrictions that run with the land for a determined period in exchange for some restricted rent or other subsidy.

There are many categories of low-income multifamily housing with many or different complex capital financial structures, which makes its valuation a challenge. Examples of low-income (affordable) housing development includes, Section 202 housing, Section 221, Section 8 certificate and voucher program, Hope VI program, Low Income Housing Tax Credit (LIHTC) etc.

In simplifying the valuation/assessment process of low-income housing, and for OTR purposes, apartment units in low-income multifamily development under any kind of government program are referred to as **"non-market"** unit; denoted by **"S: NON-MARKET"** in Vision CAMA program under all adjustments categories except the capitalization rate.
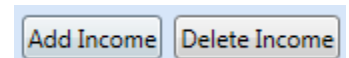
Valuation Methodology

Income approach is generally accepted as the most reliable valuation method of appraising low-income multifamily housing developments. The sales comparison approach is less applicable due to limited or total lack of truly comparable sales, because of different income characteristics and government restrictions imposed on these properties. Also, these developments are sometimes too old, to make conclusion of market value via cost approach reliable.

The objective of this guide line is to focus on estimating market value of "non-market" apartments using Vision CAMA income model for consistency and consideration to existing restrictions by the government program in the housing development.

When the unit-mix consists of market and non-market units – Use   to populate the unit-mix in the income model table.

Sample Apartment Units-Mix.   S = Non-Market Units

Bldg	Section	Style	DescriptionXX	Use	Locati	Tenants	Area
1	1	1101	1BR, 1BA	3	3	0	45
1	1	2101	2BR, 1BA	3	3	0	20
1	1	3201	3BR, 2BA	3	3	0	15
1	1	5000	APT MISC INCOME	3	3	0	0
1	1	1101	1BR, 1BA	S	3	0	15
1	1	2101	2BR, 1BA	S	S	0	5

Market = 80 units
Non-Market = 20 units
Total = 100

Style 2101 : 2BR, 1BA

Use Quality Adjustment S : NON-MARKET

The income model automatically adjusts market rent when "S: NON-MARKET" is selected under Use Quality Adjustment.

Market Rent   **Adjusted**

Rent

Bldg	Section	Style	DescriptionXX	Use	Locati	Tenants	Area		Floor		Gross Rent
1	1	1101	1BR, 1BA	S	3	0	15	19440.	UL	17496.	$262,440.00

When the I&E report have the actual (received) rent for any non-market unit, check the box in front of Gross Rent and override it with the actual rent.

Style 2101 : 2BR, 1BA

Use Quality Adjustment S : NON-MARKET

Sub Areas 0

Gross Rent 125000 ☑

Actual Rent (override)

Actual Rent (override)

Bldg	Section	Style	DescriptionXX	Use	Locati	Tenants	Area		Floor		Gross Rent
1	1	2101	2BR, 1BA	S	S	0	5	28560.	UL	25000	$125,000.00

Select or apply non-market vacancy adjustment to all non-market units

Debt/Vac Adjustment S : NON-MARKET ▼ Debt/Vac Amount 1563 ☐ Ovr

Bldg	Section	Style	DescriptionXX	Use	Locati	Tenant	Area	Floor		Gross Rent	Vacancy	Vac %	Vac Am
1	1	1101	1BR, 1BA	3	3	0	45	19440. 0	19440.	$874,800.00	3	0.0500	43,740
1	1	2101	2BR, 1BA	3	3	0	20	28560. 0	28560.	$571,200.00	3	0.0500	28,560
1	1	3201	3BR, 2BA	3	3	0	15	35280. 0	35280.	$529,200.00	3	0.0500	26,460
1	1	5000	APT MISC INCOME	3	3	0	0	0 0	0.00	$62,600.00	3	0.0000	
1	1	1101	1BR, 1BA	S	3	0	15	19440. UL	17496.	$262,440.00	S	0.0125	3,281
1	1	2101	2BR, 1BA	S	S	0	5	28560. UL	25000	$125,000.00	S	0.0125	1,563

Expenses and cap rate should be consistent for all the units except otherwise determined by the appraiser based on verifiable data.

Expense Adjustment 3 : AVERAGE ▼ Expense Amount 59250 ☐ Ovr

Bldg	Section	Style	DescriptionXX	Use	Locati	Tenants	Area	Floor		Gross Rent	Vacancy	Vac %	Vac Am	Expense	Exp %	Exp Amount
1	1	1101	1BR, 1BA	3	3	0	45	19440. 0	19440.	$874,800.00	3	0.0500	43,740	3	0.4800	398909
1	1	2101	2BR, 1BA	3	3	0	20	28560. 0	28560.	$571,200.00	3	0.0500	28,560	3	0.4800	60467
1	1	3201	3BR, 2BA	3	3	0	15	35280. 0	35280.	$529,200.00	3	0.0500	26,460	3	0.4800	41315
1	1	5000	APT MISC INCOME	3	3	0	0	0 0	0.00	$62,600.00	3	0.0000		5	0.4800	0048
1	1	1101	1BR, 1BA	S	3	0	15	19440. UL	17496.	$262,440.00	S	0.0125	3,281	3	0.4800	124397
1	1	2101	2BR, 1BA	S	S	0	5	28560. UL	25000	$125,000.00	S	0.0125	1,563	3	0.4800	59250

Cap Code HR2 : HIGH RISE 2 ▼
Cap Adj 3 : AVERAGE ▼
Cap Rate 0.0550 ☐ Ovr

Finally, check your analysis for accuracy and value conclusion.

GROSS RENT	$2,425,240
Vacancy	$103,603
EXP	$1,114,386
NOI	$1,207,252
BLDG VALUE	$21,950,040
Other Adjustment	0
INCOME	$21,950,040
Per SF/Unit	$219,500.40

APPENDIX:

Sample PRC

SSL	9999 7777	Internal ID	201605		Commercial Data Elements	

INCOME VALUATION
2016
Washington, DC
2/27/2015 10:40:37 AM

Location: 9999 7TH ST NW

Current Owner: BREAKAWAY NORTHWEST APTS INC
9999 7TH ST

Exterior Finish | BR Brick

WASHINGTON DC 20001-999
Additional Owners:

Year Built: 1980
Total Appraised Parcel Value: 36,358,180

9.0 1.6421

Sales Information

Sale Date	Q/U	V/I	Sale Price
01-01-2006	Q	–	41,472,000
01-01-2005	Q	–	39,000,000
01-01-2004	Q	–	35,000,000
01-01-2003	U	–	0
01-01-2002	Q	–	30,000,000

ECONOMIC INCOME VALUATION

Leaseable Area Summary

Ground Level	148
Lower level	0
Upper Level	0
Total Leaseable Area	148

Cap Rate

Cap Code	HR2
Cap Adjust	3
Cap Rate	0.0550

Rent ID: 009
NBHD: 40

Income

Gross Income	4,044,680
Vacancy Allowance	199,104
Expense Allowance	1,845,876
Net Income	1,999,700

Income Value

Income Value	4,044,680
Other Adjust	199,104
	1,845,876
Total Income Value	36,358,180
Value per SF/Unit	245,663

Notes: Breakaway Northwest, elevator apartment, 8 story building. NW corner of 6th and M St., NW. Recently remodeled. Close to Mt. Vernon Sq. Metro.

#	Bldg #	Sect #	Style	Adj Table	OCC	SF/Unit	Flr Lev	Base Rate	Use Adj	Loc Adj	Rent SF/Unit	Gross Rent	Vac	Vac %	Vacancy Allowance	EGI	EXP	EXP %	EXP /SF	Expenses	NOI
1	1	1	110 1BR, 1BA	1	0	46	0	19440.00	3	3	19440.00	894,240	3	0.05	44,712	849,528	3	0.48		407,773	441,755
2	1	1	210 2BR, 1BA	1	0	76	0	28560.00	3	3	28560.00	2,170,560	3	0.05	108,528	2,062,032	3	0.48		989,775	1,072,257
3	1	1	320 3BR, 2BA	1	0	26	0	35280.00	3	3	35280.00	917,280	3	0.05	45,864	871,416	3	0.48		418,280	453,136
4	1	1	500 APT MISC I	6	0	0	0	0.00	3	3	0.00	62,600	3	0.00	0	62,600	3	0.48		30,048	32,552
						148						4,044,680			199,104	3,845,576				1,845,876	1,999,700

INCOME VALUATION

2016

Washington, DC

2/27/2015 10:40:37 AM

SSL	9999	7777	Internal ID	201605

Location   9999 7TH ST NW

Current Owner
BREAKAWAY NORTHWEST APTS INC
9999 7TH ST

WASHINGTON   DC   20001-9999

Additional Owners:

Commercial Data Elements

		Sales Information		
	Sale Date	Q/U	V/I	Sale Price
	01-01-2006	Q	–	41,472,000
	01-01-2005	Q	–	39,000,000
	01-01-2004	Q	–	35,000,000
	01-01-2003	U	–	0
	01-01-2002	Q	–	30,000,000

Exterior Finish   BR   Brick

Year Built	1980	9.0	1.6421
Appraised Value	36,358,180		

ACTUAL INCOME VALUATION

Income

Cap Rate

Gross Income
Vacancy Allowance
Expense Allowance
Other Income

Net Income

Cap Code

Cap Adjust

Cap Rate

Income Value

Income Value:
Excess Land:

Total Income Value:
Value Per SF/Unit:

Expense Breakdown

Heat, Maintenance, Accounting, Electric, Insurance, Management, Water, Trash Removal, Reserves, Sewer, Snow Removal, Other

#	Bld #	Sec #	Style	Adj Table	OCC	SF/Unit	Flr Lev	Loc Adj	Use Adj	Rent SF/Unit	Gross Rent	Vac Adj	Exp Adj	Other Income	Val Code	Notes	Lease Type	Tenant	Lease Begin	Yrs

0

0

CBD, INC. Office Building

December 31, 2015

Potential Gross Income

Office: 198,000 sq. ft. X $52		$10,296,000
Retail: 7,500 sq. ft. X $65		487,500
Parking		500,000
Antenna Lease		30,000

1.	**Total Potential Gross Income**		$ 11,313,500
2.	*less* Vacancy & Collection Loss (7%)		- 754,845
3.	**Effective Gross Income**		$ 10,558,655
	Expenses		
	Operating:		
4	Office Area (24%, rounded)		$ 2,345,944
5.	Retail Area (25%, rounded)		113,344
6.	Parking & Antenna (25%, rounded)		132,500
7.	Reserves for Replacements (2% of PGI)		226,270
8.	**Total Expenses**		- $ 2,818,058
9.	**Net Operating Income**		$7,740,597
10.	**Class 'A' Property Capitalization Rate**	6.00 %	
11.	**Indicated Market Value**		$129,009,950

SSL	9999	8888	Internal ID	183145

Location   9999 9TH ST NW

Current Owner
CDB. INC
9999 9TH ST

Washington   DC   20002
Additional Owners:

Sales Information				
Sale Date	Q/U	V/I	Sale Price	
10-28-2013	Q	I	125.000.000	
Year Built			2005	
Total Appraised Parcel Value			129,009,950	

Commercial Data Elements

Exterior Finish	0	Typical
Wall Height	12.	7.6098

2017
INCOME VALUATION
Washington, DC
12/31/2015 10:00:17 AM

ECONOMIC INCOME VALUATION

Leaseable Area Summary		Cap Rate		Income		Income Value		Notes
Ground Level	7,500	Cap Code	OA1	Gross Income	11,313,500	Income Value 11	129,009,950	
Lower level	0	Cap Adjust	A	Vacancy Allowance	754,845	Other Adjust	0	
Upper Level	198,000	Cap Rate 10	0.0600	Expense Allowance	2,818,057			
		Rent ID	NBHD			Total Income Value	129,009,950	
Total Leaseable Area	205,500	001	10	Net Income	7,740,597	Value per SF/Unit	628	

#	Bldg #	Sect #	Style	Adj Table	OCC	SF/Unit	Flr Lev	Base Rate	Use Adj	Loc Adj	Rent SF/Unit	Gross Rent	Vac	Vac %	Vacancy Allowance	EGI	EXP	EXP %	EXP /SF	Expenses	NOI
1	1	1	OF OFFICE CL	3	0	198000	UL	52.00	3	3	52.00	10,296,000	3	0.07	720,720	9,575,280	3	0.24		2,345,944	7,229,336
2	1	1	O_ OFF RETAI	3	7500	7500	GL	65.00	3	3	65.00	487,500	3	0.07	34,125	453,375	3	0.25		113,344	340,031
3	1	1	O_ OFF PARKI	6	0	0	LL	0.00	3	3	500000.0	500,000	3	0.00	0	500,000	3	0.25		125,000	375,000
4	1	1	O_ OFF MISC I	6	0	0	UL	0.00		3	30000.00	30,000	3	0.00	0	30,000	3	0.25		7,500	22,500
5	1	1	O_ OFF RESE	6	0	0	GL	0.00		3	0.00	0	3	0.00	0	0	3	0.00		226,270	-226,270
						205,500						11,313,500			754,845	10,558,655				2,818,058	7,740,597

USECODE

(Selects Base Rate)

No.	Description	Value
011	Row	$145.92
012	Detached	$161.27
013	Semi-Detached	$148.50
015	Mixed Use	$145.92
019	Miscellaneous	$145.92
023	Small Apt. Bldg.	$126.35
024	Conversion	$153.54

CONSTRUCTION DETAIL

No.	Description	Value

Style (Descriptive)

1	1 Story
2	1.5 Story Unfin
3	1.5 Story Fin
4	2 Story
5	2.5 Story Unfin
6	2.5 Story Fin
7	3 Story
8	3.5 Story Unfin
9	3.5 Story Fin
10	4 Story
11	4.5 Story Unfin
12	4.5 Story Fin
13	Bi-Level
14	Split Level
15	Split Foyer

Foundation (Descriptive)

0	No Data
4	Pier
5	Wood
6	Concrete

View (Descriptive)

0	Typical
1	Poor
2	Fair
3	Average
4	Good
5	Very Good
6	Excellent

Building Type (Descriptive)

0	Default	
1	Single	
2	Multi	
6	Row End	$2.50
7	Row Inside	
8	Semi-Detached	

Roof (Add to Base Rate)

0	Typical	
1	Comp Shingle	
2	Built Up	
3	Shingle	$0.68
4	Shake	$0.79
5	Metal-Pre	$0.50
6	Metal Sms	$0.50
7	Metal-Cpr	$0.50
8	Composition Roll	-$0.43
9	Concrete Tile	$1.88
10	Clay Tile	$2.93
11	Slate	$2.86
12	Concrete	$1.88
13	Neoprene	$0.00
15	Wood- FS	$0.68

Exterior Finish (Add to Base Rate)

0	Default	
1	Plywood	
2	Hardboard Lap	
3	Metal Siding	
4	Vinyl Siding	
5	Stucco	
6	Wood Siding	
7	Shingle	
8	SPlaster	
9	Rustic Log	
10	Brick Veneer	$3.95
11	Stone Veneer	$9.38
12	Concrete Block	
13	Stucco Block	
14	Common Brick	$3.95
15	Face Brick	$3.95
16	Adobe	
17	Stone	$9.38
18	Concrete	$3.95
19	Aluminum	
20	Brick/Stone	$6.67
21	Brick/Stucco	$1.98
22	Brick/Siding	$1.98
23	Stone/Stucco	$4.69
24	Stone/Siding	$4.69

Heat Type (Add to Base Rate)

0	No Data	
1	Forced Air	
2	Air-Oil	$0.55
3	Wall Furnace	-$1.27
4	Electric Rad	-$0.29
5	Elec Base Brd	-$0.20
6	Water Base Brd	$1.42
7	Warm Cool	
8	Ht Pump	
9	Evp Cool	
10	Air Exchng	
11	Gravity Furnace	
12	Ind Unit	
13	Hot Water Rad	

AC Type (Add to Base Rate)

0	Default	
N	No	
Y	Yes	$1.80

Floor Covering (Add to Base Rate)

0	Default	$2.50
1	Resilient	$2.63
2	Carpet	$2.17
3	Wood Floor	$6.06
4	Ceramic Tile	$8.53
5	Terrazzo	$8.30
6	Hardwood	$7.17
7	Parquet	$8.15
8	Vinyl Comp	$1.64
9	Vinyl Sheet	$2.86
10	Lt Concrete	$0.75
11	Hardwood/Carp	$4.67

Per Unit Adjustment (Flat Rate Add)

Full Bath (over 1)	$12,500
Half Bath	$ 7,500
Fireplace	$ 8,500
Kitchen	$11,500
Finished Basement (Basic)	$24.00/sf
Finished Basement (Partition)	$62.00/sf
Basement Garage	$55.00/sf
Carport	$36.00/sf
Stoop	$24.00/sf
Open Porch	$24.00/sf
Covered Open Porch	$42.00/sf

Screen Enclosed Porch	$45.00/sf
Glass Enclosed Porch	$51.00/sf
Fully Enclosed Porch	$60.00/sf
Deck	$27.00/sf
Patio	$ 9.00/sf

Grade (Multiplies Base, Add & Flat)

0	Default	
1	Low Quality	0.50
2	Fair Quality	0.75
3	Average Quality	1.00
4	Above Average Quality	1.07
5	Good Quality	1.16
6	Very Good Quality	1.29
7	Excellent Quality	1.46
8	Superior Quality	1.66
9	Extraordinary – A	1.96
10	Extraordinary – B	2.20
11	Extraordinary – C	2.55
12	Extraordinary – D	2.90

Interior Condition (Multiplies Base, Add & Flat)

0	Typical	
1	Poor	.794
2	Fair	.843
3	Average	1.000
4	Good	1.086
5	Very Good	1.182
6	Excellent	1.239

Exterior Condition (Multiplies Base, Add & Flat)

0	Default	
1	Poor	.794
2	Fair	.843
3	Average	1.000
4	Good	1.086
5	Very Good	1.182
6	Excellent	1.239

Overall Condition (Multiplies Base, Add & Flat)

0	Default	
1	Poor	.794
2	Fair	.843
3	Average	1.000
4	Good	1.086
5	Very Good	1.182
6	Excellent	1.239

Remodel Type (Multiplies Base, Add & Flat)

0	Default	
1	Unknown	
2	Gut Rehab	1.43
3	Major Renov	1.28
4	Remodel	1.08
5	Addition	
6	Cosmetic	1.03

The effect of this multiplier diminishes at a rate of 5% per year based on the **Remodel Year**.

DEPRECIATION DETAIL

No.	Description	Value
Grade	**(Adjust EYB)**	
0	Default	
1	Low Quality	20%
2	Fair Quality	10%
3	Average Quality	--
4	Above Average	-05%
5	Good Quality	-10%
6	Very Good Quality	-15%
7	Excellent Quality	-25%
8	Superior Quality	-35%
9	Extraordinary – A	-45%
10	Extraordinary – B	-50%
11	Extraordinary – C	-50%
12	Extraordinary – D	-50%

No.	Description	Value
Bath Style (Adjust EYB)		
0	Default	
1	No Remodeling	
2	Semi-Modern	- 05%
3	Modern	- 10%
4	Luxury	- 20%

No.	Description	Value
Kitchen Style (Adjust EYB)		
0	Default	
1	No Remodeling	
2	Semi-Modern	- 10%
3	Modern	- 20%
4	Luxury	- 40%

Building RCN = [(Base Rate + $\sum$ ABRV$_n$) * Effective Area * Size Adjustment + $\sum$ AFRV$_n$] * (MV$_0$ * MV$_2$ * … * MV$_N$)

Where:
RCN = Replacement Cost New
Base Rate = $ rate based on use and style
ABRV = Additive Base Rate Variables
Effective Area = Adjusted SF area of improvement
Size Adjustment = Adjustment factor for deviation from base size
AFRV = Additive Flat Rate Variables
MV = Multiplicative Variables

Depreciation Table

Base Year 2018

Effective Age of Building	% Depr.	% Good	Effective Year Built
0	0	100	2018
1	1	99	2017
2	2	98	2016
3	2	98	2015
4	3	97	2014
5	3	97	2013
6	4	96	2012
7	4	96	2011
8	4	96	2010
9	4	96	2009
10	5	95	2008
11	5	95	2007
12	5	95	2006
13	5	95	2005
14	6	94	2004
15	6	94	2003
16	6	94	2002
17	6	94	2001
18	6	94	2000
19	7	93	1999
20	7	93	1998
21	7	93	1997
22	7	93	1996
23	7	93	1995
24	8	92	1994
25	8	92	1993
26	8	92	1992
27	8	92	1991
28	8	92	1990
29	9	91	1989
30	9	91	1988
31	9	91	1987
32	9	91	1986
33	9	91	1985
34	9	91	1984
35	10	90	1983
36	10	90	1982
37	10	90	1981
38	10	90	1980
39	10	90	1979
40	10	90	1978
41	11	89	1977
42	11	89	1976
43	11	89	1975
44	11	89	1974
45	11	89	1973
46	11	89	1972
47	12	88	1971
48	12	88	1970
49	12	88	1969
50	12	88	1968
51	12	88	1967
52	12	88	1966
53	12	88	1965
54	13	87	1964
55	13	87	1963
56	13	87	1962
57	13	87	1961
58	13	87	1960
59	13	87	1959
60	14	86	1958
61	14	86	1957
62	14	86	1956
63	14	86	1955
64	14	86	1954
65	14	86	1953
70	15	85	1948
75	16	84	1943

2019 Economic Life Depreciation Tables

Base Year 2018

Age of Building	Effective Year Built	70 Year Economic Life Percent of Depreciation	70 Year Economic Life Percent Good	60 Year Economic Life Percent of Depreciation	60 Year Economic Life Percent Good	50 Year Economic Life Percent of Depreciation	50 Year Economic Life Percent Good
0	2018	0	100	0	100	0	100
1	2017	0	100	0	100	0	100
2	2016	0	100	0	100	0	100
3	2015	0	100	1	99	1	99
4	2014	1	99	1	99	1	99
5	2013	1	99	1	99	1	99
6	2012	1	99	1	99	1	99
7	2011	1	99	1	99	2	98
8	2010	1	99	2	98	2	98
9	2009	2	98	2	98	2	98
10	2008	2	98	2	98	3	97
11	2007	2	98	2	98	3	97
12	2006	2	98	3	97	4	96
13	2005	2	98	3	97	4	96
14	2004	3	97	3	97	5	95
15	2003	3	97	4	96	5	95
16	2002	3	97	4	96	6	94
17	2001	4	96	5	95	7	93
18	2000	4	96	5	95	7	93
19	1999	4	96	6	94	9	91
20	1998	5	95	6	94	9	91
21	1997	5	95	7	93	10	90
22	1996	6	94	8	92	12	88
23	1995	6	94	9	91	13	87
24	1994	7	93	9	91	15	85
25	1993	7	93	10	90	16	84
26	1992	8	92	11	89	17	83
27	1991	9	91	13	87	19	81
28	1990	9	91	14	86	20	80
29	1989	10	90	15	85	23	77
30	1988	11	89	16	84	25	75
31	1987	12	88	17	83	26	74
32	1986	13	87	18	82	29	71
33	1985	14	86	20	80	31	69
34	1984	15	85	21	79	34	66
35	1983	16	84	23	77	36	64
36	1982	17	83	25	75	38	62
37	1981	18	82	26	74	42	58
38	1980	19	81	28	72	44	56
39	1979	20	80	31	69	48	52
40	1978	21	79	32	68	50	50
41	1977	23	77	34	66	52	48
42	1976	25	75	36	64	56	44
43	1975	26	74	38	62	57	43
44	1974	28	72	40	60	61	39
45	1973	29	71	44	56	63	37
46	1972	31	69	46	54	64	36
47	1971	32	68	48	52	66	34
48	1970	34	66	50	50	67	33
49	1969	36	64	52	48	70	30
50	1968	38	62	54	46	71	29
51	1967	40	60	57	43		
52	1966	42	58	59	41		
53	1965	44	56	61	39		
54	1964	46	54	63	37		
55	1963	48	52	64	36		
56	1962	50	50	65	35		
57	1961	52	48	67	33		
58	1960	54	46	69	31		
59	1959	56	44	70	30		
60	1958	57	43	71	29		
61	1957	59	41				
62	1956	61	39				
63	1955	63	37				
64	1954	64	36				
65	1953	65	35				
70	1952	71	29				

Real Property Assessment Division

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2019 Cost Occupancy / Use Codes

Occ. Code	Land Class	Description	Bldg. Model	Bldg. Occ.	Cost Group	Cost Adjustment	Size Adj. Table	Standard Size	Standard Wall Height	Wall Height Adjustment	Run Cost?
001	C	Non-conform residential-single	94	001	RH1	1	S90	2000	8	0.015	1
002	R	Non-conform residential-multi-	03	002	AP1	1	S90	1500	8	0.02	1
003	R	Residential Transient	05	003	RH1	1	S90	8000	10	0.015	1
004	C	Commercial-Retail (NC)	94	004	RT1	1	S90	5000	12	0.01	1
005	C	Commercial-Office (NC)	94	005	OF1	1	S90	6000	10	0.015	1
006	C	Commercial-Spec Purpose (NC)	94	006	GS1	1	S90	6000	8	0.015	1
007	C	Industrial (NC)	96	007	MN2	1	S90	20000	8	0.015	1
008	C	Special Purpose (NC)	94	008	GS1	1	S90	8000	8	0.015	1
011	R	Residential Row Single Family	01	011	R11	1	SG3	1800	8	0.015	1
012	R	Residential Detached Single Fa	01	012	R12	1	SG3	1800	8	0.015	1
013	R	Residential-Semi-Detached Sing	01	013	R13	1	SG3	1800	8	0.015	1
014	R	Residential Garage	00	014		1	S90	10000	0	0.015	1
015	R	Residential-Mixed Use	01	015	R15	1	SG3	1800	8	0.02	1
016	R	Residential-Condo-Horizontal	05	016	CND	1	S90	1000	8	0.015	1
017	R	Residential-Condo-Vertical	05	017	CON	1	CDU	800	8	0.015	1
018	R	Residential-Condo-Parking	00	018		1	S90	10000	8	0.015	1
019	R	Residential-Single Family-Misc	01	019	R19	1	SG3	1800	8	0.015	1
021	C	Residential Apartment-Walk-Up	94	021	AP1	1	S90	10000	8	0.02	1
022	C	Residential-Apartment-Elevator	94	022	AP2	1	S90	50000	8	0.015	1
023	R	Res Flats-Less than 5 Units	03	023	R23	1	SG4	3000	8	0.015	1
024	R	Res-Coversions less than 5 Uni	02	024	R24	1	SG3	1800	8	0.015	1
025	C	Res-Coversions 5 Units	94	025	MRC	1	S90	10000	8	0.02	1
026	C	Res-Cooperative-Horizo	94	026	AP2	1	S90	10000	8	0.015	1
027	C	Res-Cooperative-Verical	94	027	AP2	1	S90	50000	8	0.015	1
028	C	Res-Conversions-mr than 5	94	028	MRC	1	S90	20000	8	0.015	1
029	C	Res-Multi-family Misc	94	029	AP2	1	S90	50000	8	0.015	1
031	C	Hotel-Small	94	031	HT1	1	S90	20000	9	0.01	1
032	C	Hotel-Large	94	032	HT2	1	S90	135000	9	0.01	1
033	C	Motel	94	033	HT1	0.8	S90	20000	9	0.01	1
034	C	Private Club	94	034	GS1	1	S90	4000	14	0.015	1
035	C	Tourist Homes	94	035	RH1	1	S90	8000	10	0.015	1
036	C	Dormitory	94	036	RH2	1	S90	8000	8	0.015	1
037	C	Inn	94	037	MRC	1	S90	12000	10	0.01	1
038	C	Fraternity/Sorority House	94	038	RH2	1	S90	8000	10	0.015	1
039	C	Res-Transient Misc	94	039	RH1	1	S90	5000	8	0.015	1
041	C	Store-Small 1 Story	94	041	RT1	1	S90	10000	14	0.01	1
042	C	Store-Misc	94	042	RT1	1	S90	4000	14	0.01	1
043	C	Store-Department	94	043	RT3	1	S90	40000	14	0.01	1
044	C	Store-Shopping Center/Mall	94	044	RT2	1	S90	60000	18	0.01	1
045	C	Store-Restaurant	94	045	RS1	1	S90	5000	12	0.01	1
046	C	Store-Barber/Beauty Shop	94	046	RT4	1	S90	4000	14	0.01	1
047	C	Store-Super Market	94	047	RT2	0.88	S90	22000	14	0.01	1
048	C	Commer-Retail-Condo	94	048	RT1	1	S90	3000	14	0.01	1
049	C	Commer-Retail-Misc	94	049	RT1	1	S90	4000	14	0.01	1
051	C	Commercial-Office-Small	94	051	OF1	1	S90	6000	10	0.015	1
052	C	Commercial-Office-Large	94	052	OF3	1	S90	60000	10	0.015	1
053	C	Commercial-Planned-Development	94	053	OF3	1	S90	300000	10	0.015	1
056	C	Office-Condo-Horizontal	94	056	OF1	1	S90	3000	10	0.015	1
057	C	Office-Condo-Vertical	94	057	OF1	1	S90	3000	10	0.015	1
058	C	Commercial-Office-Condo	94	058	OF3	1	S90	6000	10	0.015	1
059	C	Commercial-Office-Misc	94	059	OF2	1	S90	6000	10	0.015	1
061	C	Commercial-Banks_Financial Svc	94	061	BN1	1	S90	3000	14	0.015	1
062	C	Commercial-Garage_ Vehicle Sal	94	062	PK1	1	S90	5000	8	0.015	1
063	C	Commercial-Parking Garage	94	063	PK2	1	S90	55000	8	0.015	1
064	C	Parking Lot Special Purpose	00	064		1	S90	25000	0	0	1
065	C	Vehicle Svc Station_ Vintage	94	065	SV1	1	S90	5000	12	0.01	1
066	C	Theaters_ Entertainment	94	066	GS2	1	S90	20000	22	0.01	1
067	C	Commercial-Restaurant	94	067	RS1	1	S90	5000	12	0.01	1
068	C	Commercial-Restaurant-Fast Foo	94	068	RS2	1.1	S90	3000	12	0.01	1
069	C	Commercial-Specific Purpose	94	069	RT1	1	S90	10000	14	0.01	1
071	C	Industrial-Raw Material	94	071	MN1	1	S90	15000	14	0.015	1

2019 Cost Occupancy / Use Codes

Occ. Code	Land Class	Description	Bldg. Model	Bldg. Occ.	Cost Group	Cost Adjustment	Size Adj. Table	Standard Size	Standard Wall Height	Wall Height Adjustment	Run Cost?
072	C	Industrial-Heavy Manufacturing	94	072	MN2	1	S90	30000	12	0.015	1
073	C	Industrial-Light	94	073	MN1	1	S90	22000	12	0.015	1
074	C	Industrial-Warehouse-1-story	94	074	WH2	1	S90	25000	16	0.01	1
075	C	Industrial-Warehouse-Multistor	94	075	WH1	1	S90	20000	16	0.01	1
076	C	Industrial-Truck Teminal	94	076	WH3	1	S90	20000	16	0.01	1
078	C	Warehouse-Condo	94	078	WH2	1	S90	5000	16	0.01	1
079	C	Industrial -Misc	94	079	MN1	1	S90	22000	12	0.015	1
081	C	Religious	94	081	PS1	1	S90	15000	24	0.01	1
082	C	Medical	94	082	MC1	1	S90	15000	10	0.01	1
083	C	Educational	94	083	ED1	1	S90	80000	12	0.01	1
084	C	Public Service	94	084	PS1	1	S90	12000	12	0.01	1
085	C	Embassy_ Chancery	94	085	PS2	1	S90	12000	12	0.01	1
086	C	Museum_ Library_ Gallery	94	086	GS3	1	S90	14000	14	0.01	1
087	C	Recreational	94	087	RB1	1	S90	20000	24	0.01	1
088	C	Healthcare Facility	94	088	MC2	1	S90	8000	12	0.01	1
089	C	Special Purpose	94	089	GS2	1	S90	2000	8	0.01	1
091	R	Vacant	00	091		1	S90		0	0.015	1
092	R	Vacant-with permit	00	092		1	S90		0		1
093	R	Vacant-zoning limits	00	093		1			0		1
094	R	Vacant-false abutting	00	094		1			0		1
095	R	Vacant-Commercial Use	00	095		1			0		1
096	R	Vacant-Unimproved Parking	00	096		1			0		1
116	R	Condo-Horizontal Combined	05	116	CND	1	S90	3000	8	0.015	1
117	R	Condo-Vertictal Combined	05	117	CND	1	S90	2000	8	0.015	1
126	C	Coop-Horizontal-Mixed Use	94	126	AP2	1	S90	10000	8	0.01	1
127	C	Coop-Vertical-Mixed Use	94	127	AP2	1	S90	10000	8	0.01	1
165	C	Vehicle Svc Station_ Kiosk	94	165	SS1	1	S90	5000	14	0.01	1
189	C	Special Purpose-Memorial	00	189		1	S90	10000	0	0.01	1
191	C	Vacant	00	191		1					1
192	C	Vacant-with permit	00	192		1					1
193	C	Vacant-zoning limits	00	193		1					1
194	C	Vacant-false abutting	00	194		1					1
195	C	Vacant-Commercial Use	00	195		1					1
196	C	Vacant-Unimproved Parking	00	196		1					1
214	C	Garage-Multi-family	00	214		1	S90	10000	0	0.015	1
216	C	Condo-Investment-Horizontal	94	216	CND	1	S90	10000	8	0.015	1
217	C	Condo-Investment-Vertical	94	217	CND	1	S90	50000	8	0.015	1
265	C	Vehicle Svc Station_ Kiosk	94	265	SS1	1	S90	5000	12	0.01	1
316	R	Condo-Duplex	05	316	CND	1	S90	5000	8	0.015	1
365	C	Vehicle Svc Station_ Market	94	365	SS2	1	S90	5000	12	0.01	1
417	R	Condo-Vertical-Parking-Unid	00	417		1		2000	0		1
465	C	Vehicle Svc Station_ Market	94	465	SS2	1	S90	5000	14	0.01	1
516	R	Condo-Detached	01	516	SIN	1	S90	2000	8	0.015	1

Use Codes

Code Description

Long Description

001 Residential-Single Family (NC) — (CLASS 1): Single-family residential property which normally would receive a use code, 11-19, 23-24 but has non-conforming use. (Assigned to Commercial)

002 Residential-Multi-Family (NC) — (CLASS 1): Multi-family residential property which normally would receive a use code, 21-22 or 25-29, but has a non-conforming use. (Assigned to Residential)

003 Residential-Transient (NC) — (CLASS 1): Transient residential property which normally would receive a use code, 31-39, but has a non-conforming use. (Assigned to Residential)

004 Commercial-Retail (NC) — (CLASS 2): Retail commercial property which normally would receive a use code, 41-49, but has non-conforming use. (Assigned to Residential)

005 Commercial-Office (NC) — (CLASS 2): Commercial office property which normally would receive a use code, 51-53,57-59, but has non-conforming use. (Assigned to Residential)

006 Commercial-Specific Purpose (NC) — (CLASS 2): Commercial property which normally would receive a specific purpose use code, 61-69, but has non-conforming use. (Assigned to Residential)

007 Industrial (NC) — (CLASS 2): Industrial property which normally would receive a use code, 71-79, but has non-conforming use. (Assigned to Residential)

008 Special Purpose (NC) — (CLASS 2): Special purpose property which normally would receive a use code, 81-89, but has non-conforming use. (Assigned to Residential)

011 Residential-Row-Single-Family — (CLASS 1): Single-family dwelling with 2 walls built as common walls with another structure, 2 exposed walls; primarily used as place of abode.

012 Residential-Detached-Single-Fa — (CLASS 1): Free-standing dwelling with open space around it and in all exterior walls; primarily used as abode.

013 Residential-Semi-Detached-Sing — (CLASS 1): Structure with 1 dwelling place, 1 wall built as common wall with another structure, 3 exposed walls; primarily used as abode.

014 Residential-Garage — (CLASS 1): Structure used primarily as accessory to single-family residence; no living quarters; on an individual lot. Garages, pools, tennis courts, pads, etc.

015 Residential-Mixed Use — (CLASS 1 or 2): Single-family property with commercial (usually office) space in part of house. If use is mostly single-family, lot may be eligible for a Homestead Deduction. Mixed-use eligible.

016 Residential-Condo-Horizontal — (CLASS 1): Enclosed space of 1 or more rooms, occupying all or part of 1 or more floors; entrance no higher than 3 floors; single-family use; may/may not have parking, laundry, patio, etc.

017 Residential-Condo-Vertical — (CLASS 1): Enclosed space of 1 or more rooms, occupying all/part of 1 or more floors; in structure with elevator; more than 3 floors. Original primary use single-family. May have parking, laundry, patio, etc.

018 Residential-Condo-Garage — (CLASS 1): Specific space, enclosed or not, for vehicle parking or storage; use is accessory to single-family residential; no living quarters; individually located to be freely exchanged independently of another unit.

019 Residential-Single-Family-Misc — (CLASS 1) : All other residential-single family uses not otherwise coded.

021 Residential-Apartment-Walk-Up — (CLASS 1): Structure of 6 or more units; 1 owner; owner's motivation is to earn net investment income; no units higher than 3rd floor; no elevator; may have accessory uses.

022 Residential-Apartment-Elevator — (CLASS 1): Structure with 12 or more units; 1 owner; elevator, more than 3 floors; may have accessory uses (parking, laundry, etc.). Owner's motivation is investment income.

023 Residential Flats-Less than 5 — (CLASS 1): Structure with more than 1 single family unit, less than 5; usually self-contained, under 1 roof; few accessory uses; in some cases, owner occupies 1 unit; built for this use.

024 Residential-Conversions-Less t — (CLASS 1): Structure with more than 1 single-family unit, but less than 5; usually self-contained, under 1 roof; few accessory uses; 1 unit may be owner-occupied; original primary use not multi-family.

025 Residential-Conversion-5 Units — (CLASS 1): Structure with 5 units, usually not self-contained but under 1 roof; with few accessory uses; 1 unit may be owner-occupied; original primary use not multi-family.

026 Residential-Cooperative-Horizontal — (Class 1) : Structure with more than 1 unit, of 1 or more rooms; 1 corporate ownership accounts for benefit of all tenant-shareholders, or lease from shareholders; entrance no higher than 3 floors; may have accessory uses.

027 Residential-Cooperative-Vertical — (Class 1): Structure with more than 1 unit, each with 1 or more rooms; 1 corporate ownership accounts for benefit of all tenant-shareholders; lease from shareholders; elevator; more than 3 floors; may have accessory uses.

029 Residential-Multifamily, Misc — (CLASS 1 or 2): All other residential multi-family uses not otherwise noted. Mixed-use eligible.

031 Hotel-Small — (CLASS 2): Structure providing a temporary or semi-permanent residence; sleep accommodations, personal services, usually eating/drinking facilities; may include entertainment; 150 rooms or less.

Use Codes

Code Description

Long Description

032 Hotel-Large
(CLASS 2): Structure providing temporary or semi-permanent residences; full personal services; eating/drinking facilities, entertainment, retail, banquet /conference capabilities; more than 150 rooms.

033 Motel
(CLASS 2): Structure used primarily as temporary residence; may include personal services, restaurant facilities, adequate parking; sleep accommodations may be open to building's exterior.

034 Club-Private
(CLASS 2): Structure used primarily as meeting place for members of an association organized for promotion of a common social/other objective; limited to members/guests. May include meals, residential suites. Mixed-use eligible.

035 Tourist Homes
(CLASS 2): Structure or part-structure used primarily for temporary sleep accommodations; no other services; may provide limited parking.

036 Dormitory
(CLASS 2): Structure or part-structure used as resident hall with sleep accommodations; may provide other services, such as food/beverage facilities.

037 Inn
(CLASS 2): Structure used primarily as a temporary residence. Rooms/suites may include kitchens; no guest central dining other than continental breakfast. No commercial adjuncts, function rooms.

038 Fraternity/Sorority House
(CLASS 1): Resident hall with sleep accommodations; may provide other services, such as food/beverage facilities. Mixed-use eligible.

039 Residential-Transient, Misc
(CLASS 2): All other residential transient not otherwise coded.

041 Store-Small 1-Story
(CLASS 2): Structure used primarily for retail sales; row, attached, or detached; with/without accessory uses; with/without living quarters.

042 Store-Misc
(CLASS 2): Structure used primarily for ground-level retail sales; row, attached, or detached; with/without other uses; with/without living quarters. Mixed-use eligible.

043 Store-Department
(CLASS 2): Structure used primarily for sales of combination of retail products; no living quarters; except custodial staff. Mixed-use eligible.

044 Store-Shopping Center/Mall
(CLASS 2): Structure/combination of structures, enclosed/not; with combination of retail businesses located to present a unified cluster of similar uses with common elements: parking, entrances, pedestrian areas.

045 Store-Restaurant
(CLASS 2): Structure used primarily for retail sales of food/drink prepared for carry-out or on-site consumption; in row; with/without other uses. Mixed-use eligible.

046 Store-Barber/Beauty Shop
(CLASS 2): Structure used primarily for retail sales/individual grooming services; on ground level; row, attached, or detached; other uses may occupy parts. Mixed-use eligible.

047 Store-Super Market
(CLASS 2): Structure used primarily for retail grocery sales; ground level; row, attached, or detached; with/without accessory uses. Mixed-use eligible.

048 Commercial-Retail-Condo
(CLASS 2): Unit in a predominately residential condo complex used for retail sales/service business.

049 Commercial-Retail-Misc
(CLASS 2): All other retail commercial land uses not otherwise coded. Mixed-use eligible.

051 Commercial-Office-Small
(CLASS 2: Structure without elevators used primarily for offices; secondary use may be retail sales, services, parking.

052 Commercial-Office-Large
(CLASS 2): Structure with elevator; used predominantly for offices, secondarily for retail sales, services, parking.

053 Commercial-Planned Development
(CLASS 2): Structure/combination of structures designed to incorporate several coordinated commercial endeavors into 1 closely-grouped unit; may include mall, offices, theaters, hotels, etc. Mixed-use eligible.

056 Office-Condo-Horizontal
(CLASS 2): Structure with more than 1 unit; entrance no higher than 3 floors above ground level; designed primarily for office use; may have accessory uses such as parking, etc.

057 Office-Condo-Vertical
(CLASS 2): Structure with more than 1 unit, elevator, and more than 3 floors; designed primarily for office use; accessory uses such as parking, etc.

058 Commercial-Office-Condo
(CLASS 2): Unit in a predominantly residential condo complex used as a commercial office. Mixed-use eligible.

059 Commercial-Office-Misc.
(CLASS 2): All other commercial office uses which have not been otherwise coded. Mixed-use eligible.

061 Commercial-Banks, Financial
(CLASS 2): Structure with service facility devoted to transactions dealing with money as a commodity.

062 Commercial-Garage, Vehicle Sale
(CLASS 2): Structure with facility for motor vehicle repairs; devoted to retail/ wholesale motor vehicle sales.

063 Commercial-Parking Garage
(CLASS 2): Structure used primarily for public storage of motor vehicles; repair, greasing, washing, or similar services incidental uses.

064 Parking Lot-Special Purpose
(CLASS 2): Lot used primarily for public storage of motor vehicles; any repair is incidental use; may have attendance booth, storage lifts, residential parking space if on separate lot/paved.

Use Codes

Code	Description	Long Description
065	Vehicle Service Station-Vintage	(CLASS 2): Structure used for retail sale of motor fuel, lubricants. Incidental services such as lubrication, hand-car washing; sale, installation, minor repair of tires, batteries, other auto accessories.
066	Theaters, Entertainment	(CLASS 2): Structure with primary use for live, on-screen, or audience-participation entertainment.
067	Commercial-Restaurant	(CLASS 2): Structure used primarily as public eating place for retail sale of food/drink prepared/consumed on-site; secondary accessory uses.
068	Commercial-Restaurant-Fast Food	(CLASS 2): Structure used for retail sale of food/drink (non-alcoholic), cooked/heated in-structure for carry-out or on-site, usually specializing in a particular food.
069	Commercial-Specific Purpose, Misc	(CLASS 2): All other specific purpose commercial uses not otherwise coded. Mixed-use eligible.
071	Industrial-Raw Material Handling	(CLASS 2) : Property used primarily to receive, store, handle, ship industrial bulk raw material, normally processed/used at another location.
072	Industrial-Heavy Manufacturing	(CLASS 2): Structure containing processing/manufacturing equipment which handles raw material; may change the material into a finished product for public use or for assembly operation; use limited to structure.
073	Industrial-Light	(CLASS 2): Structure used to process, assemble, or manufacture raw, semi-finished, or finished materials, and/or completed components; use not limited to structure.
074	Industrial-Warehouse-1-Story	(CLASS 2): Structure used primarily to store materials/finished products; unlimited story height; accessory uses: office and/or retail-wholesale display area, parking.
075	Industrial-Warehouse-Multi-Story	(CLASS 2): Structure used primarily to store materials/finished products; 2 or more floors devoted to structure's primary use; accessory office and retail-wholesale display area.
076	Industrial-Truck Terminal	(CLASS 2): Structure used primarily to store (short-term) and transfer (turn-around) materials/finished products shipped by truck; raised truck level bays for receiving/shipping; accessory office.
078	Warehouse-Condo	(CLASS 2): Structure used primarily to store materials/finished products; unlimited story height, 2 or more floors; accessory office and/or retail/wholesale display area.
079	Industrial-Misc	(CLASS 2): All other industrial uses not otherwise coded. Mixed-use eligible.
081	Religious	(CLASS 2): Structure devoted to public worship; housing for and/or education of clergy/officials connected to religious activity; religious communities.
082	Medical	(CLASS 2): Structure devoted to public/private medical or surgical care to the sick or injured; outpatient diagnosis/treatment; education of medical personnel/officials.
083	Educational	(CLASS 2): Structure devoted to any level of public/private instruction. May include administrative, accessory functions; parking, retail sales, secondary use.
084	Public Service	(CLASS 2): Structure used primarily to serve public to protect people or property; utility service; other public service. Accessory uses are secondary.
085	Embassy, Chancery, etc.	(CLASS 2): Structure used primarily as offices of an ambassador or foreign government. Accessory uses secondary.
086	Museum, Library, Gallery	(CLASS 2): Structure for exhibition, display, storage of art works, other displayable chattels; usually open for public enjoyment;accessory uses (parking, retail sales).
087	Recreational	(CLASS 2): Facility primarily used for public viewing of sporting events, training/participation in recreational activities, or any other special sporting or leisure activity.
088	Health Care Facility	(CLASS 2): Structure devoted to public/private medical care/treatment of the sick or injured; may include other medically connected activities, other uses (retail sales, parking).
089	Special Purpose-Misc	(CLASS 2): All other special purpose uses not otherwise coded. Mixed-use eligible.
091	Vacant-True	(Class 1): Lot not improved with a structure and Residential vacant land (formerly Class 3).
092	Vacant-with Permit	(CLASS 1): Lot for which an unexpired building permit has been issued.
093	Vacant-Zoning Limits	(CLASS 1): Lot on which DC Zoning regulations prohibit an owner to build as a matter of right or lot with deed or covenant restrictions precluding buildings.
094	Vacant-False-Abutting	(CLASS 1): Lot assigned no real estate improvement value, but having part of a structure whose value is assigned to another lot. Mixed-use eligible.
095	Vacant-Residential Use	(CLASS 1): Lot with relatively permanent structures (storage tanks, railroad tracks), but not buildings, used for residential purposes, making the lot unbuildable.

Use Codes

Code Description	Long Description
096 Vacant-Unimproved Parking	(CLASS 1): Unimproved, graveled parking lot with approved parking permit.
097 Vacant-Improved and Abandoned	(CLASS 3): Residential and commercial improved vacant and abandoned properties (formerly Class 3). **No longer in use.**
116 Condo-Horizontal-Combined-	(CLASS 1): Unit in a structure with entrance no higher than 3 floors; designed primarily for single family residential use; accessory uses. Abuts primary unit; owner entitled to lower (Class 1) tax rate, but not Homestead Deduction.
117 Condo-Vertical-Combined	(CLASS 1): Unit in structure with entrance no higher than 3 floors, designed primarily for single family residential use; accessory uses. Abuts primary unit; owner entitled to lower (Class 1) tax rate, but not Homestead Deduction.
126 Coop-Horizontal-Mixed Use	(Class 1 or 2): Structure with more than 1 unit, an elevator, more than 3 floors; under 1 corporate ownership which acts to benefit all shareholders-tenants. Additional uses: retail sales, restaurants, offices. Mixed-use eligible.
127 Coop-Vertical-Mixed Use	(Class 1 or 2): Structure with more than 1 unit, elevator, more than 3 floors; under 1 corporate ownership which acts to benefit all shareholders-tenants. Additional uses: retail sales, restaurants, offices. Mixed-use eligible.
165 Vehicle Service Station-Kiosk	(CLASS 2): Small cashier booth used for to sell motor oil, lubricants, small miscellaneous items (candy, gum, cigarettes).
189 Special Purpose-Memorial	(CLASS 2): Permanent structure other than a building devoted to or available for public use: statues, fountains, pools, etc.
191 Vacant-True	(CLASS 2): Lot not improved with a structure and commercial vacant land (formerly Class 3).
192 Vacant-With Permit	(CLASS 2): Lot for which an unexpired building permit has been issued.
193 Vacant-Zoning limits	(CLASS 2): Lot on which DC Zoning regulations prohibit an owner to build as a matter of right or lot with deed or covenant restrictions precluding buildings.
194 Vacant-False-Abutting	(CLASS 2): Lot assigned no real estate improvement value, but having part of a structure whose value is assigned to another lot. Mixed-use eligible.
195 Vacant-Commercial Use	(CLASS 2): Lot with relatively permanent structures (storage tanks, railroad tracks), but not buildings, used for commercial purpose, making the lot unbuildable.
196 Vacant-Unimproved Parking	(CLASS 2): Unimproved, graveled parking lot with approved parking permit.
197 Vacant-Improved and Abandoned	(CLASS 3): Residential and commercial improved vacant and abandoned properties (formerly Class 3). **No longer in use.**
214 Garage-Multi-Family	(CLASS 1): Structure used primarily as accessory to multi-family residence; no living quarters; on individual lot.
216 Condo-Investment-Horizontal	(CLASS 1): Unit with entrance no higher than 3 floors above ground level, designed for single- family primary use; accessory uses. Fee owner's presumptive motivation is net investment income.
217 Condo-Investment-Vertical	(CLASS 1): Unit with entrance no higher than 3 floors above ground level; designed for single- family primary use; accessory uses. Fee owner's presumptive motivation is net investment income.
265 Vehicle Service Station-Kiosk	(CLASS 2): Small cashier booth used for retail of motor oil, small miscellaneous items (candy, gum); and provides non-incidental services like car washing.
316 Condo-Duplex	(CLASS 1): Enclosed space with 2 piggy-backed units; designed primarily for single-family use; accessory uses: parking, laundry, storage, balcony, etc.
365 Vehicle Service Station-Market	(CLASS 2): Structure used for retail of motor oil, lubricants, incidental items (edibles, household products).
416 Condo-Horizontal-Parking-Unid	(CLASS 1): Condo in regime where ownership of an associated parking space, following condo's sale, is unclear. (Assessor must determine space's status.)
417 Condo-Vertical-Parking-Unid	(CLASS 1): Condo in regime where ownership of an associated parking space, following condo's sale, is unclear. (Assessor must determine space's status.)
465 Vehicle Service Station-Market	(CLASS 2): Structure used to sell motor oil, lubricants, incidental items (edibles, household products); and to provide non-incidental services such as car washing.
516 Condo-Detached	(CLASS 1): Enclosed space of one unit of 1 or more rooms in a structure designed primarily for single- family residential use; accessory uses (parking, laundry, storage space, balcony, etc.)
995 Condo Main (class 1):	

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2019 Base Cost Rates

Cost Group	Class	Base Rate	Depr. Table	Econ. Life	Max. Depr.	Max. Age
AP1	0	$123.44	5	60	80	99
AP1	A	$125.77	5	70	80	99
AP1	B	$129.36	5	70	80	99
AP1	C	$123.44	5	60	80	99
AP1	D	$121.44	5	50	80	99
AP1	S	$115.66	5	50	80	99
AP2	0	$148.65	5	60	80	99
AP2	A	$198.16	5	70	80	99
AP2	B	$192.88	5	70	80	99
AP2	C	$148.65	5	60	80	99
AP2	D	$138.57	5	50	80	99
BN1	0	$359.98	5	60	80	99
BN1	A	$436.73	5	70	80	99
BN1	B	$417.13	5	70	80	99
BN1	C	$359.98	5	60	80	99
BN1	D	$331.57	5	50	80	99
BN1	S	$308.82	5	50	80	99
BS1	0	$197.31	5	60	80	99
BS1	A	$257.22	5	70	80	99
BS1	B	$229.03	5	70	80	99
BS1	C	$197.31	5	60	80	99
BS1	D	$179.70	5	50	80	99
BS1	S	$70.47	5	50	80	99
CD	R	$132.13	5	99	80	99
CND	0	$294.88	5	50	80	99
CND	A	$294.88	5	50	80	99
CND	B	$294.88	5	50	80	99
CND	C	$294.88	5	50	80	99
CND	D	$294.88	5	50	80	99
CND	R	$294.88	5	50	80	99
CND	S	$294.88	5	50	80	99
CW1	0	$162.08	5	60	80	99
CW1	A	$192.04	5	70	80	99
CW1	B	$183.22	5	70	80	99
CW1	C	$162.08	5	60	80	99
CW1	D	$144.47	5	50	80	99
CW1	S	$144.47	5	50	80	99
ED1	0	$196.89	5	60	80	99
ED1	A	$266.28	5	70	80	99
ED1	B	$261.03	5	70	80	99
ED1	C	$196.89	5	60	80	99
ED1	D	$186.61	5	50	80	99
ED1	S	$188.06	5	50	80	99
GEN	0	$169.13	5	60	80	99
GEN	A	$234.47	5	70	80	99
GEN	B	$215.25	5	70	80	99
GEN	C	$169.13	5	60	80	99
GEN	D	$144.14	5	50	80	99
GEN	S	$144.14	5	50	80	99
GS1	0	$252.51	5	60	80	99
GS1	A	$262.09	5	70	80	99
GS1	B	$264.58	5	70	80	99
GS1	C	$252.51	5	60	80	99
GS1	D	$240.48	5	50	80	99
GS1	S	$168.25	5	50	80	99
GS2	0	$227.12	5	60	80	99

2019 Base Cost Rates

Cost Group	Class	Base Rate	Depr. Table	Econ. Life	Max. Depr.	Max. Age
GS2	A	$360.66	5	70	80	99
GS2	B	$340.53	5	70	80	99
GS2	C	$227.12	5	60	80	99
GS2	D	$212.28	5	50	80	99
GS2	S	$206.76	5	50	80	99
GS3	0	$225.70	5	60	80	99
GS3	A	$318.09	5	70	80	99
GS3	B	$310.36	5	70	80	99
GS3	C	$225.70	5	60	80	99
GS3	D	$209.92	5	50	80	99
GS3	S	$203.24	5	50	80	99
HT1	0	$153.61	5	60	80	99
HT1	A	$181.75	5	70	80	99
HT1	B	$178.73	5	70	80	99
HT1	C	$153.61	5	60	80	99
HT1	D	$144.65	5	50	80	99
HT1	S	$113.37	5	50	80	99
HT2	0	$244.31	5	60	80	99
HT2	A	$247.38	5	70	80	99
HT2	B	$244.31	5	70	80	99
HT2	C	$192.01	5	60	80	99
HT2	D	$179.89	5	50	80	99
HT2	S	$242.03	5	50	80	99
MC1	0	$346.92	5	60	80	99
MC1	A	$452.96	5	70	80	99
MC1	B	$447.24	5	70	80	99
MC1	C	$346.92	5	60	80	99
MC1	D	$319.76	5	50	80	99
MC1	S	$181.64	5	50	80	99
MC2	0	$224.84	5	60	80	99
MC2	A	$284.13	5	70	80	99
MC2	B	$277.67	5	70	80	99
MC2	C	$224.84	5	60	80	99
MC2	D	$208.39	5	50	80	99
MC2	S	$224.84	5	50	80	99
MLT	R	$96.34	5	70	80	70
MN1	0	$85.09	5	60	80	99
MN1	A	$96.48	5	70	80	99
MN1	B	$94.20	5	70	80	99
MN1	C	$85.09	5	60	80	99
MN1	D	$77.11	5	50	80	99
MN1	S	$76.57	5	50	80	99
MN2	0	$184.17	5	60	80	99
MN2	A	$239.37	5	70	80	99
MN2	B	$238.92	5	70	80	99
MN2	C	$184.17	5	60	80	99
MN2	D	$120.62	5	50	80	99
MN2	S	$172.15	5	50	80	99
MN4	0	$186.75	5	60	80	99
MN4	A	$237.84	5	70	80	99
MN4	B	$204.36	5	70	80	99
MN4	C	$186.75	5	60	80	99
MN4	D	$172.65	5	50	80	99
MN4	S	$172.65	5	50	80	99
MRC	0	$153.54	5	75	40	75
MRC	A	$153.54	5	75	40	75

2019 Base Cost Rates

Cost Group	Class	Base Rate	Depr. Table	Econ. Life	Max. Depr.	Max. Age
MRC	B	$153.54	5	75	40	75
MRC	C	$153.54	5	75	40	75
MRC	D	$153.54	5	75	40	75
MRC	S	$153.54	5	75	40	75
OF1	0	$244.48	5	60	80	99
OF1	A	$336.73	5	70	80	99
OF1	B	$323.00	5	70	80	99
OF1	C	$244.48	5	60	80	99
OF1	D	$226.48	5	50	80	99
OF1	S	$217.87	5	50	80	99
OF2	0	$244.48	5	60	80	99
OF2	A	$336.73	5	70	80	99
OF2	B	$323.00	5	70	80	99
OF2	C	$244.48	5	60	80	99
OF2	D	$225.90	5	50	80	99
OF2	S	$217.87	5	50	80	99
OF3	0	$252.40	5	60	80	99
OF3	A	$258.95	5	70	80	99
OF3	B	$252.40	5	70	80	99
OF3	C	$190.81	5	60	80	99
OF3	D	$175.75	5	50	80	99
OF3	S	$171.26	5	50	80	99
OFF	0	$128.93	5	60	80	99
OFF	A	$169.46	5	70	80	99
OFF	B	$158.39	5	70	80	99
OFF	C	$128.93	5	60	80	99
OFF	D	$117.88	5	50	80	99
OFF	S	$117.88	5	50	80	99
PK1	0	$141.94	5	60	80	99
PK1	A	$143.12	5	70	80	99
PK1	B	$147.30	5	70	80	99
PK1	C	$141.94	5	60	80	99
PK1	D	$130.04	5	50	80	99
PK1	S	$102.30	5	50	80	99
PK2	0	$84.91	5	60	80	99
PK2	A	$86.35	5	70	80	99
PK2	B	$84.91	5	70	80	99
PK2	C	$81.80	5	60	80	99
PK2	D	$74.45	5	50	80	99
PK2	S	$45.89	5	50	80	90
PS1	0	$228.49	5	60	80	99
PS1	A	$312.74	5	70	80	99
PS1	B	$300.31	5	70	80	99
PS1	C	$228.49	5	60	80	99
PS1	D	$213.43	5	50	80	99
PS1	S	$196.20	5	50	80	99
PS2	0	$235.18	5	60	80	99
PS2	A	$304.88	5	70	80	99
PS2	B	$297.06	5	70	80	99
PS2	C	$235.18	5	60	80	99
PS2	D	$219.67	5	50	80	99
PS2	S	$155.58	5	50	80	99
R11	R	$145.92	6	75	80	75
R12	R	$161.27	6	75	80	75
R13	R	$148.50	6	75	80	75
R15	R	$145.92	6	75	80	75

2019 Base Cost Rates

Cost Group	Class	Base Rate	Depr. Table	Econ. Life	Max. Depr.	Max. Age
R19	R	$145.92	6	75	80	75
R23	R	$126.35	6	75	80	75
R24	R	$153.54	6	75	80	75
RB1	0	$204.19	5	60	80	99
RB1	A	$264.91	5	70	80	99
RB1	B	$264.76	5	70	80	99
RB1	C	$204.19	5	60	80	99
RB1	D	$193.16	5	50	80	99
RB1	S	$187.78	5	50	80	99
RES	R	$96.10	5	70	80	70
RH1	0	$165.32	5	70	80	99
RH1	A	$165.32	5	70	80	99
RH1	B	$165.32	5	70	80	99
RH1	C	$165.32	5	70	80	99
RH1	D	$165.32	5	70	80	99
RH1	S	$165.32	5	70	80	99
RH2	0	$230.18	5	60	80	99
RH2	A	$301.50	5	70	80	99
RH2	B	$292.78	5	70	80	99
RH2	C	$230.18	5	60	80	99
RH2	D	$212.52	5	50	80	99
RH2	S	$158.04	5	50	80	99
RS1	0	$248.84	5	60	80	99
RS1	A	$329.27	5	70	80	99
RS1	B	$329.27	5	70	80	99
RS1	C	$248.84	5	60	80	99
RS1	D	$229.53	5	50	80	99
RS1	S	$229.49	5	50	80	99
RS2	0	$268.40	5	60	80	99
RS2	A	$363.39	5	70	80	99
RS2	B	$363.39	5	70	80	99
RS2	C	$268.40	5	60	80	99
RS2	D	$247.22	5	50	80	99
RS2	S	$248.43	5	50	80	99
RT1	0	$167.42	5	60	80	99
RT1	A	$213.15	5	70	80	99
RT1	B	$204.38	5	70	80	99
RT1	C	$167.42	5	60	80	99
RT1	D	$155.73	5	50	80	99
RT1	S	$154.96	5	50	80	99
RT2	0	$161.80	5	60	80	99
RT2	A	$188.74	5	70	80	99
RT2	B	$188.74	5	70	80	99
RT2	C	$161.80	5	60	80	99
RT2	D	$149.00	5	50	80	99
RT2	S	$148.18	5	50	80	99
RT3	0	$256.68	5	60	80	99
RT3	A	$267.18	5	70	80	99
RT3	B	$256.68	5	70	80	99
RT3	C	$209.82	5	60	80	99
RT3	D	$247.33	5	50	80	99
RT3	S	$252.06	5	50	80	99
RT4	0	$159.86	5	60	80	99
RT4	A	$159.68	5	70	80	99
RT4	B	$159.68	5	70	80	99
RT4	C	$159.86	5	60	80	99

2019 Base Cost Rates

Cost Group	Class	Base Rate	Depr. Table	Econ. Life	Max. Depr.	Max. Age
RT4	D	$146.24	5	50	80	99
RT4	S	$143.45	5	50	80	99
SIN	R	$154.17	5	70	80	70
SS1	0	$327.63	5	70	80	99
SS1	A	$330.57	5	70	80	99
SS1	B	$333.46	5	70	80	99
SS1	C	$327.63	5	70	80	99
SS1	D	$321.32	5	70	80	99
SS1	S	$327.63	5	70	80	99
SS2	0	$265.49	5	60	80	99
SS2	A	$270.34	5	70	80	99
SS2	B	$270.34	5	70	80	99
SS2	C	$265.49	5	60	80	99
SS2	D	$250.87	5	50	80	99
SS2	S	$260.31	5	50	80	99
SV1	0	$118.90	5	60	80	99
SV1	A	$128.69	5	70	80	99
SV1	B	$132.43	5	70	80	99
SV1	C	$118.90	5	60	80	99
SV1	D	$102.70	5	50	80	99
SV1	S	$99.01	5	50	80	99
TM1	0	$91.61	5	60	80	99
TM1	A	$112.75	5	70	80	99
TM1	B	$102.18	5	70	80	99
TM1	C	$91.61	5	60	80	99
TM1	D	$84.57	5	50	80	99
TM1	S	$84.57	5	50	80	99
UT1	0	$160.32	5	60	80	99
UT1	A	$181.47	5	70	80	99
UT1	B	$169.13	5	70	80	99
UT1	C	$160.32	5	60	80	99
UT1	D	$137.42	5	50	80	99
UT1	S	$137.42	5	50	80	99
WH1	0	$87.41	5	60	80	99
WH1	A	$127.57	5	70	80	99
WH1	B	$125.94	5	70	80	99
WH1	C	$87.41	5	60	80	99
WH1	D	$77.24	5	50	80	99
WH1	S	$77.49	5	50	80	99
WH2	0	$73.61	5	60	80	99
WH2	A	$108.77	5	70	80	99
WH2	B	$106.42	5	70	80	99
WH2	C	$73.61	5	60	80	99
WH2	D	$65.30	5	50	80	99
WH2	S	$65.40	5	50	80	99
WH3	0	$101.66	5	60	80	99
WH3	A	$101.61	5	70	80	99
WH3	B	$105.54	5	70	80	99
WH3	C	$115.39	5	60	80	99
WH3	D	$71.48	5	50	80	99
WH3	S	$101.66	5	50	80	99

Real Property Assessment Division
2019 Base Change
RESIDENTIAL (Class 1)

Neighborhood	Name	Total Base			
		2018	2019	Difference	% Change
001	American University Park	$2,470,116,768	$2,544,956,350	$74,839,582	3.03%
002	Anacostia	$594,379,585	$624,607,720	$30,228,135	5.09%
003	Barry Farms	$283,484,970	$297,555,670	$14,070,700	4.96%
004	Berkley	$1,341,115,730	$1,365,063,500	$23,947,770	1.79%
005	Brentwood	$588,568,938	$624,477,190	$35,908,252	6.10%
006	Brightwood	$2,450,313,637	$2,530,431,554	$80,117,917	3.27%
007	Brookland	$3,817,662,959	$3,968,884,147	$151,221,188	3.96%
008	Burleith	$861,725,080	$892,941,110	$31,216,030	3.62%
009	Capitol Hill	$3,653,581,199	$3,850,195,280	$196,614,081	5.38%
010	Central	$6,150,432,571	$6,118,567,614	-$31,864,957	-0.52%
011	Chevy Chase	$5,634,041,985	$5,738,739,210	$104,697,225	1.86%
012	Chillum	$450,801,160	$475,106,810	$24,305,650	5.39%
013	Cleveland Park	$2,846,970,471	$2,905,602,690	$58,632,219	2.06%
014	Colonial Village	$581,733,090	$589,262,780	$7,529,690	1.29%
015	Columbia Heights	$6,695,112,893	$6,942,189,329	$247,076,436	3.69%
016	Congress Heights	$1,463,345,730	$1,536,608,360	$73,262,630	5.01%
017	Crestwood	$785,102,340	$827,582,950	$42,480,610	5.41%
018	Deanwood	$1,615,113,570	$1,733,247,920	$118,134,350	7.31%
019	Eckington	$1,671,051,830	$1,708,986,670	$37,934,840	2.27%
020	Foggy Bottom	$1,702,781,900	$1,754,138,725	$51,356,825	3.02%
021	Forest Hills	$3,041,235,780	$3,082,642,350	$41,406,570	1.36%
022	Fort Dupont Park	$970,217,181	$1,040,726,110	$70,508,929	7.27%
023	Foxhall	$328,367,310	$347,242,320	$18,875,010	5.75%
024	Garfield	$1,765,841,990	$1,797,977,800	$32,135,810	1.82%
025	Georgetown	$5,713,877,026	$5,908,094,880	$194,217,854	3.40%
026	Glover Park	$1,475,819,150	$1,500,123,380	$24,304,230	1.65%
027	Hawthorne	$300,926,460	$303,266,070	$2,339,610	0.78%
028	Hillcrest	$1,262,344,539	$1,334,045,569	$71,701,030	5.68%
029	Kalorama	$3,649,463,700	$3,773,333,467	$123,869,767	3.39%
030	Kent	$1,356,356,520	$1,409,180,540	$52,824,020	3.89%
031	LeDroit Park	$1,357,182,120	$1,381,209,840	$24,027,720	1.77%
032	Lily Ponds	$417,455,070	$456,742,180	$39,287,110	9.41%
033	Marshall Heights	$438,898,204	$487,370,080	$48,471,876	11.04%
034	Massachusetts Av Heights	$685,929,900	$718,120,770	$32,190,870	4.69%
035	Michigan Park	$423,307,430	$441,724,160	$18,416,730	4.35%
036	Mount Pleasant	$3,886,434,125	$3,988,734,732	$102,300,607	2.63%
037	North Cleveland Park	$1,011,572,710	$1,050,447,010	$38,874,300	3.84%
038	Observatory Circle	$1,642,520,795	$1,668,575,674	$26,054,879	1.59%
039	Old City I	$11,599,770,077	$12,187,260,698	$587,490,621	5.06%
040	Old City II	$15,466,893,210	$15,611,136,957	$144,243,747	0.93%
041	Palisades	$1,226,443,760	$1,255,734,950	$29,291,190	2.39%
042	Petworth	$3,416,732,062	$3,619,099,440	$202,367,378	5.92%
043	Randle Heights	$1,203,455,695	$1,285,651,635	$82,195,940	6.83%
044	NoMa	$895,321,380	$932,012,640	$36,691,260	4.10%
046	SW Waterfront	$2,256,936,440	$2,383,692,349	$126,755,909	5.62%
047	Riggs Park	$1,165,414,683	$1,223,355,650	$57,940,967	4.97%
048	Shepherd Park	$730,433,730	$754,040,190	$23,606,460	3.23%
049	Sixteenth Street Heights	$1,535,168,053	$1,599,876,590	$64,708,537	4.22%
050	Spring Valley	$1,581,633,090	$1,614,835,440	$33,202,350	2.10%
051	Takoma	$424,038,250	$446,091,160	$22,052,910	5.20%
052	Trinidad	$1,443,457,559	$1,619,084,680	$175,627,121	12.17%
053	Wakefield	$806,452,010	$819,823,800	$13,371,790	1.66%
054	Wesley Heights	$1,726,332,880	$1,798,215,530	$71,882,650	4.16%
055	Woodley	$318,273,220	$329,507,760	$11,234,540	3.53%
056	Woodridge	$1,299,872,954	$1,351,606,520	$51,733,566	3.98%
059	Rail Road Tracks	$0	$0	$0	0.00%
063	North Anacostia Park	$0	$0	$0	0.00%
064	Anacostia Park	$0	$0	$0	0.00%
066	Fort Lincoln	$583,921,350	$596,619,690	$12,698,340	2.17%
068	Bolling AFB & Naval Research	$11,492,390	$11,983,170	$490,780	4.27%
069	D.C. Village	$0	$0	$0	0.00%
073	Washington Navy Yard	$308,884,988	$338,498,034	$29,613,046	9.59%
	Totals:	$123,386,114,197	$127,496,829,394	$4,110,715,197	3.33%

Real Property Assessment Division
2019 Base Change
COMMERCIAL (Class 2)

Neighborhood	Name	Total Base 2018	2019	Difference	% Change
001	American University Park	$624,361,450	$652,294,515	$27,933,065	4.47%
002	Anacostia	$217,231,677	$223,127,581	$5,895,904	2.71%
003	Barry Farms	$32,913,979	$34,391,934	$1,477,955	4.49%
004	Berkley	$19,132,580	$20,757,330	$1,624,750	8.49%
005	Brentwood	$826,490,286	$871,716,964	$45,226,678	5.47%
006	Brightwood	$210,856,694	$227,751,124	$16,894,430	8.01%
007	Brookland	$846,147,615	$871,054,201	$24,906,586	2.94%
008	Burleith	$0	$0	$0	0.00%
009	Capitol Hill	$880,533,230	$937,168,927	$56,635,697	6.43%
010	Central	$55,703,231,444	$57,332,512,141	$1,629,280,697	2.92%
011	Chevy Chase	$765,393,797	$780,608,740	$15,214,943	1.99%
012	Chillum	$134,609,839	$145,125,252	$10,515,413	7.81%
013	Cleveland Park	$583,400,020	$551,954,047	-$31,445,973	-5.39%
014	Colonial Village	$0	$0	$0	0.00%
015	Columbia Heights	$1,290,410,617	$1,368,956,567	$78,545,950	6.09%
016	Congress Heights	$441,059,105	$445,317,625	$4,258,520	0.97%
017	Crestwood	$847,560	$889,760	$42,200	4.98%
018	Deanwood	$261,039,146	$271,954,036	$10,914,890	4.18%
019	Eckington	$606,538,571	$617,468,774	$10,930,203	1.80%
020	Foggy Bottom	$4,099,160,774	$4,254,031,740	$154,870,966	3.78%
021	Forest Hills	$603,853,410	$617,380,720	$13,527,310	2.24%
022	Fort Dupont Park	$37,161,110	$38,475,610	$1,314,500	3.54%
023	Foxhall	$3,187,670	$3,494,760	$307,090	9.63%
024	Garfield	$277,528,662	$298,023,335	$20,494,673	7.38%
025	Georgetown	$3,581,099,643	$3,754,641,943	$173,542,300	4.85%
026	Glover Park	$84,342,490	$90,869,360	$6,526,870	7.74%
027	Hawthorne	$0	$0	$0	0.00%
028	Hillcrest	$94,564,396	$96,392,996	$1,828,600	1.93%
029	Kalorama	$828,451,083	$864,032,497	$35,581,414	4.29%
030	Kent	$97,432,250	$99,929,140	$2,496,890	2.56%
031	LeDroit Park	$25,279,220	$27,227,180	$1,947,960	7.71%
032	Lily Ponds	$153,866,440	$151,465,607	-$2,400,833	-1.56%
033	Marshall Heights	$13,211,460	$14,097,990	$886,530	6.71%
034	Massachusetts Av Heights	$120,989,702	$128,874,700	$7,884,998	6.52%
035	Michigan Park	$8,304,020	$8,635,820	$331,800	4.00%
036	Mount Pleasant	$567,079,820	$593,359,320	$26,279,500	4.63%
037	North Cleveland Park	$289,862,511	$295,945,920	$6,083,409	2.10%
038	Observatory Circle	$431,538,260	$437,202,950	$5,664,690	1.31%
039	Old City I	$5,489,086,121	$5,713,822,482	$224,736,361	4.09%
040	Old City II	$6,965,663,232	$7,126,691,677	$161,028,445	2.31%
041	Palisades	$49,651,210	$53,412,930	$3,761,720	7.58%
042	Petworth	$138,537,310	$153,992,380	$15,455,070	11.16%
043	Randle Heights	$110,982,160	$114,514,445	$3,532,285	3.18%
044	NoMa	$4,152,142,054	$4,529,249,249	$377,107,195	9.08%
046	SW Waterfront	$7,151,268,774	$7,254,904,715	$103,635,941	1.45%
047	Riggs Park	$74,481,605	$75,287,245	$805,640	1.08%
048	Shepherd Park	$35,004,780	$37,091,020	$2,086,240	5.96%
049	Sixteenth Street Heights	$88,879,572	$95,615,392	$6,735,820	7.58%
050	Spring Valley	$94,327,908	$93,731,210	-$596,698	-0.63%
051	Takoma	$170,931,561	$177,704,020	$6,772,459	3.96%
052	Trinidad	$170,258,590	$181,079,894	$10,821,304	6.36%
053	Wakefield	$12,861,320	$13,681,830	$820,510	6.38%
054	Wesley Heights	$94,468,953	$95,505,830	$1,036,877	1.10%
055	Woodley	$11,250	$11,250	$0	0.00%
056	Woodridge	$545,286,218	$567,820,308	$22,534,090	4.13%
059	Rail Road Tracks	$1,617,394	$1,617,394	$0	0.00%
063	North Anacostia Park	$1,919,290	$2,001,350	$82,060	4.28%
064	Anacostia Park	$219,000	$1,190,400	$971,400	443.56%
066	Fort Lincoln	$92,144,456	$91,338,500	-$805,956	-0.87%
068	Bolling AFB & Naval Research	$17,880,350	$17,880,350	$0	0.00%
069	D.C. Village	$451,910	$440,300	-$11,610	-2.57%
073	Washington Navy Yard	$782,455,580	$802,753,450	$20,297,870	2.59%
	Totals:	$101,001,641,129	$104,328,468,727	$3,326,827,598	3.29%

Real Property Assessment Division
2019 Base Change
RESIDENTIAL/COMMERCIAL (Classes 1 and 2)

Neighborhood	Name	Total Base			
		2018	2019	Difference	% Change
001	American University Park	$3,094,478,218	$3,197,250,865	$102,772,647	3.32%
002	Anacostia	$811,611,262	$847,735,301	$36,124,039	4.45%
003	Barry Farms	$316,398,949	$331,947,604	$15,548,655	4.91%
004	Berkley	$1,360,248,310	$1,385,820,830	$25,572,520	1.88%
005	Brentwood	$1,415,059,224	$1,496,194,154	$81,134,930	5.73%
006	Brightwood	$2,661,170,331	$2,758,182,678	$97,012,347	3.65%
007	Brookland	$4,663,810,574	$4,839,938,348	$176,127,774	3.78%
008	Burleith	$861,725,080	$892,941,110	$31,216,030	3.62%
009	Capitol Hill	$4,534,114,429	$4,787,364,207	$253,249,778	5.59%
010	Central	$61,853,664,015	$63,451,079,755	$1,597,415,740	2.58%
011	Chevy Chase	$6,399,435,782	$6,519,347,950	$119,912,168	1.87%
012	Chillum	$585,410,999	$620,232,062	$34,821,063	5.95%
013	Cleveland Park	$3,430,370,491	$3,457,556,737	$27,186,246	0.79%
014	Colonial Village	$581,733,090	$589,262,780	$7,529,690	1.29%
015	Columbia Heights	$7,985,523,510	$8,311,145,896	$325,622,386	4.08%
016	Congress Heights	$1,904,404,835	$1,981,925,985	$77,521,150	4.07%
017	Crestwood	$785,949,900	$828,472,710	$42,522,810	5.41%
018	Deanwood	$1,876,152,716	$2,005,201,956	$129,049,240	6.88%
019	Eckington	$2,277,590,401	$2,326,455,444	$48,865,043	2.15%
020	Foggy Bottom	$5,801,942,674	$6,008,170,465	$206,227,791	3.55%
021	Forest Hills	$3,645,089,190	$3,700,023,070	$54,933,880	1.51%
022	Fort Dupont Park	$1,007,378,291	$1,079,201,720	$71,823,429	7.13%
023	Foxhall	$331,554,980	$350,737,080	$19,182,100	5.79%
024	Garfield	$2,043,370,652	$2,096,001,135	$52,630,483	2.58%
025	Georgetown	$9,294,976,669	$9,662,736,823	$367,760,154	3.96%
026	Glover Park	$1,560,161,640	$1,590,992,740	$30,831,100	1.98%
027	Hawthorne	$300,926,460	$303,266,070	$2,339,610	0.78%
028	Hillcrest	$1,356,908,935	$1,430,438,565	$73,529,630	5.42%
029	Kalorama	$4,477,914,783	$4,637,365,964	$159,451,181	3.56%
030	Kent	$1,453,788,770	$1,509,109,680	$55,320,910	3.81%
031	LeDroit Park	$1,382,461,340	$1,408,437,020	$25,975,680	1.88%
032	Lily Ponds	$571,321,510	$608,207,787	$36,886,277	6.46%
033	Marshall Heights	$452,109,664	$501,468,070	$49,358,406	10.92%
034	Massachusetts Av Heights	$806,919,602	$846,995,470	$40,075,868	4.97%
035	Michigan Park	$431,611,450	$450,359,980	$18,748,530	4.34%
036	Mount Pleasant	$4,453,513,945	$4,582,094,052	$128,580,107	2.89%
037	North Cleveland Park	$1,301,435,221	$1,346,392,930	$44,957,709	3.45%
038	Observatory Circle	$2,074,059,055	$2,105,778,624	$31,719,569	1.53%
039	Old City I	$17,088,856,198	$17,901,083,180	$812,226,982	4.75%
040	Old City II	$22,432,556,442	$22,737,828,634	$305,272,192	1.36%
041	Palisades	$1,276,094,970	$1,309,147,880	$33,052,910	2.59%
042	Petworth	$3,555,269,372	$3,773,091,820	$217,822,448	6.13%
043	Randle Heights	$1,314,437,855	$1,400,166,080	$85,728,225	6.52%
044	NoMa	$5,047,463,434	$5,461,261,889	$413,798,455	8.20%
046	SW Waterfront	$9,408,205,214	$9,638,597,064	$230,391,850	2.45%
047	Riggs Park	$1,239,896,288	$1,298,642,895	$58,746,607	4.74%
048	Shepherd Park	$765,438,510	$791,131,210	$25,692,700	3.36%
049	Sixteenth Street Heights	$1,624,047,625	$1,695,491,982	$71,444,357	4.40%
050	Spring Valley	$1,675,960,998	$1,708,566,650	$32,605,652	1.95%
051	Takoma	$594,969,811	$623,795,180	$28,825,369	4.84%
052	Trinidad	$1,613,716,149	$1,800,164,574	$186,448,425	11.55%
053	Wakefield	$819,313,330	$833,505,630	$14,192,300	1.73%
054	Wesley Heights	$1,820,801,833	$1,893,721,360	$72,919,527	4.00%
055	Woodley	$318,284,470	$329,519,010	$11,234,540	3.53%
056	Woodridge	$1,845,159,172	$1,919,426,828	$74,267,656	4.02%
059	Rail Road Tracks	$1,617,394	$1,617,394	$0	0.00%
063	North Anacostia Park	$1,919,290	$2,001,350	$82,060	4.28%
064	Anacostia Park	$219,000	$1,190,400	$971,400	443.56%
066	Fort Lincoln	$676,065,806	$687,958,190	$11,892,384	1.76%
068	Bolling AFB & Naval Research	$29,372,740	$29,863,520	$490,780	1.67%
069	D.C. Village	$451,910	$440,300	-$11,610	-2.57%
073	Washington Navy Yard	$1,091,340,568	$1,141,251,484	$49,910,916	4.57%
	Totals:	$224,387,755,326	$231,825,298,121	$7,437,542,795	3.31%

Real Property Assessment Division
2019 Base Change
EXEMPT

Neighborhood	Name	Total Base			
		2018	2019	Difference	% Change
001	American University Park	$519,166,090	$523,163,310	$3,997,220	0.77%
002	Anacostia	$80,789,620	$82,607,360	$1,817,740	2.25%
003	Barry Farms	$157,530,880	$159,191,290	$1,660,410	1.05%
004	Berkley	$316,981,487	$319,569,827	$2,588,340	0.82%
005	Brentwood	$251,703,476	$259,857,816	$8,154,340	3.24%
006	Brightwood	$115,680,210	$116,835,190	$1,154,980	1.00%
007	Brookland	$2,558,926,984	$2,558,564,694	-$362,290	-0.01%
008	Burleith	$89,861,390	$89,774,540	-$86,850	-0.10%
009	Capitol Hill	$211,664,610	$217,316,770	$5,652,160	2.67%
010	Central	$4,374,451,553	$4,479,033,415	$104,581,862	2.39%
011	Chevy Chase	$456,660,453	$458,542,153	$1,881,700	0.41%
012	Chillum	$42,841,040	$43,729,470	$888,430	2.07%
013	Cleveland Park	$205,795,490	$208,577,580	$2,782,090	1.35%
014	Colonial Village	$57,878,650	$57,905,630	$26,980	0.05%
015	Columbia Heights	$1,364,437,937	$1,385,733,607	$21,295,670	1.56%
016	Congress Heights	$572,755,814	$582,679,704	$9,923,890	1.73%
017	Crestwood	$56,465,452	$57,393,292	$927,840	1.64%
018	Deanwood	$372,041,520	$383,151,610	$11,110,090	2.99%
019	Eckington	$114,281,424	$115,213,374	$931,950	0.82%
020	Foggy Bottom	$4,209,690,590	$4,287,011,780	$77,321,190	1.84%
021	Forest Hills	$619,544,666	$628,525,236	$8,980,570	1.45%
022	Fort Dupont Park	$159,726,320	$164,440,390	$4,714,070	2.95%
023	Foxhall	$467,870	$495,170	$27,300	5.83%
024	Garfield	$228,148,190	$167,800,870	-$60,347,320	-26.45%
025	Georgetown	$844,299,596	$856,926,726	$12,627,130	1.50%
026	Glover Park	$29,121,500	$29,174,890	$53,390	0.18%
027	Hawthorne	$873,960	$880,800	$6,840	0.78%
028	Hillcrest	$70,143,840	$72,451,310	$2,307,470	3.29%
029	Kalorama	$1,103,365,155	$1,115,257,085	$11,891,930	1.08%
030	Kent	$89,096,350	$90,390,550	$1,294,200	1.45%
031	LeDroit Park	$639,989,610	$654,283,370	$14,293,760	2.23%
032	Lily Ponds	$163,886,640	$156,733,980	-$7,152,660	-4.36%
033	Marshall Heights	$99,207,400	$104,076,830	$4,869,430	4.91%
034	Massachusetts Av Heights	$790,766,450	$801,796,160	$11,029,710	1.39%
035	Michigan Park	$58,070,260	$57,940,090	-$130,170	-0.22%
036	Mount Pleasant	$279,083,730	$283,166,470	$4,082,740	1.46%
037	North Cleveland Park	$109,954,110	$110,575,050	$620,940	0.56%
038	Observatory Circle	$586,660,575	$589,496,679	$2,836,104	0.48%
039	Old City I	$668,145,745	$688,796,055	$20,650,310	3.09%
040	Old City II	$2,222,481,336	$2,210,567,259	-$11,914,077	-0.54%
041	Palisades	$37,155,530	$37,651,981	$496,451	1.34%
042	Petworth	$113,597,130	$115,806,820	$2,209,690	1.95%
043	Randle Heights	$170,636,390	$160,195,600	-$10,440,790	-6.12%
044	NoMa	$169,174,870	$182,230,080	$13,055,210	7.72%
046	SW Waterfront	$339,567,680	$363,633,440	$24,065,760	7.09%
047	Riggs Park	$81,795,520	$82,562,960	$767,440	0.94%
048	Shepherd Park	$41,870,840	$42,069,880	$199,040	0.48%
049	Sixteenth Street Heights	$157,146,797	$160,209,717	$3,062,920	1.95%
050	Spring Valley	$414,843,920	$416,181,390	$1,337,470	0.32%
051	Takoma	$35,745,680	$36,036,740	$291,060	0.81%
052	Trinidad	$62,639,540	$64,714,490	$2,074,950	3.31%
053	Wakefield	$8,696,310	$8,791,610	$95,300	1.10%
054	Wesley Heights	$83,901,394	$84,311,694	$410,300	0.49%
055	Woodley	$106,863,887	$106,909,507	$45,620	0.04%
056	Woodridge	$230,150,619	$235,514,609	$5,363,990	2.33%
059	Rail Road Tracks	$960,544	$960,544	$0	0.00%
063	North Anacostia Park	$1,594,160	$1,594,160	$0	0.00%
064	Anacostia Park	$0	$0	$0	0.00%
066	Fort Lincoln	$8,629,560	$8,932,900	$303,340	3.52%
068	Bolling AFB & Naval Research	$0	$0	$0	0.00%
069	D.C. Village	$42,483,640	$43,443,510	$959,870	2.26%
073	Washington Navy Yard	$0	$0	$0	0.00%
	Totals:	$27,000,091,984	$27,321,379,014	$321,287,030	1.19%

Real Property Assessment Division
2019 Base Change
ALL PROPERTIES

Neighborhood	Name	Total Base			
		2018	2019	Difference	% Change
001	American University Park	$3,613,644,308	$3,720,414,175	$106,769,867	2.95%
002	Anacostia	$892,400,882	$930,342,661	$37,941,779	4.25%
003	Barry Farms	$473,929,829	$491,138,894	$17,209,065	3.63%
004	Berkley	$1,677,229,797	$1,705,390,657	$28,160,860	1.68%
005	Brentwood	$1,666,762,700	$1,756,051,970	$89,289,270	5.36%
006	Brightwood	$2,776,850,541	$2,875,017,868	$98,167,327	3.54%
007	Brookland	$7,222,737,558	$7,398,503,042	$175,765,484	2.43%
008	Burleith	$951,586,470	$982,715,650	$31,129,180	3.27%
009	Capitol Hill	$4,745,779,039	$5,004,680,977	$258,901,938	5.46%
010	Central	$66,228,115,568	$67,930,113,170	$1,701,997,602	2.57%
011	Chevy Chase	$6,856,096,235	$6,977,890,103	$121,793,868	1.78%
012	Chillum	$628,252,039	$663,961,532	$35,709,493	5.68%
013	Cleveland Park	$3,636,165,981	$3,666,134,317	$29,968,336	0.82%
014	Colonial Village	$639,611,740	$647,168,410	$7,556,670	1.18%
015	Columbia Heights	$9,349,961,447	$9,696,879,503	$346,918,056	3.71%
016	Congress Heights	$2,477,160,649	$2,564,605,689	$87,445,040	3.53%
017	Crestwood	$842,415,352	$885,866,002	$43,450,650	5.16%
018	Deanwood	$2,248,194,236	$2,388,353,566	$140,159,330	6.23%
019	Eckington	$2,391,871,825	$2,441,668,818	$49,796,993	2.08%
020	Foggy Bottom	$10,011,633,264	$10,295,182,245	$283,548,981	2.83%
021	Forest Hills	$4,264,633,856	$4,328,548,306	$63,914,450	1.50%
022	Fort Dupont Park	$1,167,104,611	$1,243,642,110	$76,537,499	6.56%
023	Foxhall	$332,022,850	$351,232,250	$19,209,400	5.79%
024	Garfield	$2,271,518,842	$2,263,802,005	-$7,716,837	-0.34%
025	Georgetown	$10,139,276,265	$10,519,663,549	$380,387,284	3.75%
026	Glover Park	$1,589,283,140	$1,620,167,630	$30,884,490	1.94%
027	Hawthorne	$301,800,420	$304,146,870	$2,346,450	0.78%
028	Hillcrest	$1,427,052,775	$1,502,889,875	$75,837,100	5.31%
029	Kalorama	$5,581,279,938	$5,752,623,049	$171,343,111	3.07%
030	Kent	$1,542,885,120	$1,599,500,230	$56,615,110	3.67%
031	LeDroit Park	$2,022,450,950	$2,062,720,390	$40,269,440	1.99%
032	Lily Ponds	$735,208,150	$764,941,767	$29,733,617	4.04%
033	Marshall Heights	$551,317,064	$605,544,900	$54,227,836	9.84%
034	Massachusetts Av Heights	$1,597,686,052	$1,648,791,630	$51,105,578	3.20%
035	Michigan Park	$489,681,710	$508,300,070	$18,618,360	3.80%
036	Mount Pleasant	$4,732,597,675	$4,865,260,522	$132,662,847	2.80%
037	North Cleveland Park	$1,411,389,331	$1,456,967,980	$45,578,649	3.23%
038	Observatory Circle	$2,660,719,630	$2,695,275,303	$34,555,673	1.30%
039	Old City I	$17,757,001,943	$18,589,879,235	$832,877,292	4.69%
040	Old City II	$24,655,037,778	$24,948,395,893	$293,358,115	1.19%
041	Palisades	$1,313,250,500	$1,346,799,861	$33,549,361	2.55%
042	Petworth	$3,668,866,502	$3,888,898,640	$220,032,138	6.00%
043	Randle Heights	$1,485,074,245	$1,560,361,680	$75,287,435	5.07%
044	NoMa	$5,216,638,304	$5,643,491,969	$426,853,665	8.18%
046	SW Waterfront	$9,747,772,894	$10,002,230,504	$254,457,610	2.61%
047	Riggs Park	$1,321,691,808	$1,381,205,855	$59,514,047	4.50%
048	Shepherd Park	$807,309,350	$833,201,090	$25,891,740	3.21%
049	Sixteenth Street Heights	$1,781,194,422	$1,855,701,699	$74,507,277	4.18%
050	Spring Valley	$2,090,804,918	$2,124,748,040	$33,943,122	1.62%
051	Takoma	$630,715,491	$659,831,920	$29,116,429	4.62%
052	Trinidad	$1,676,355,689	$1,864,879,064	$188,523,375	11.25%
053	Wakefield	$828,009,640	$842,297,240	$14,287,600	1.73%
054	Wesley Heights	$1,904,703,227	$1,978,033,054	$73,329,827	3.85%
055	Woodley	$425,148,357	$436,428,517	$11,280,160	2.65%
056	Woodridge	$2,075,309,791	$2,154,941,437	$79,631,646	3.84%
059	Rail Road Tracks	$2,577,938	$2,577,938	$0	0.00%
063	North Anacostia Park	$3,513,450	$3,595,510	$82,060	2.34%
064	Anacostia Park	$219,000	$1,190,400	$971,400	443.56%
066	Fort Lincoln	$684,695,366	$696,891,090	$12,195,724	1.78%
068	Bolling AFB & Naval Research	$29,372,740	$29,863,520	$490,780	1.67%
069	D.C. Village	$42,935,550	$43,883,810	$948,260	2.21%
073	Washington Navy Yard	$1,091,340,568	$1,141,251,484	$49,910,916	4.57%
	Totals:	$251,387,847,310	$259,146,677,135	$7,758,829,825	3.09%

NBHD	NAME	Residential	Commercial	Exempt	Total
001	AMERICAN UNIV. PARK	2,696	89	35	2,820
002	ANACOSTIA	2,109	181	100	2,390
003	BARRY FARMS	904	44	95	1,043
004	BERKLEY	813	7	42	862
005	BRENTWOOD	997	381	111	1,489
006	BRIGHTWOOD	4,419	143	96	4,658
007	BROOKLAND	7,903	276	368	8,547
008	BURLEITH	856		5	861
009	CAPITOL HILL	4,149	335	63	4,547
010	CENTRAL	6,988	1,260	192	8,440
011	CHEVY CHASE	5,778	147	62	5,987
012	CHILLUM	1,037	67	56	1,160
013	CLEVELAND PARK	3,387	42	43	3,472
014	COLONIAL VILLAGE	648		19	667
015	COLUMBIA HEIGHTS	11,017	520	316	11,853
016	CONGRESS HEIGHTS	5,483	165	244	5,892
017	CRESTWOOD	819	1	25	845
018	DEANWOOD	6,980	292	448	7,720
019	ECKINGTON	2,473	142	41	2,656
020	FOGGY BOTTOM	2,183	144	116	2,443
021	FOREST HILLS	3,333	61	50	3,444
022	FORT DUPONT PARK	3,615	55	109	3,779
023	FOXHALL	370	1	1	372
024	GARFIELD	1,407	53	225	1,685
025	GEORGETOWN	4,635	609	191	5,435
026	GLOVER PARK	2,638	58	30	2,726
027	HAWTHORNE	313		1	314
028	HILLCREST	4,501	99	88	4,688
029	KALORAMA	3,768	130	210	4,108
030	KENT	909	30	21	960
031	LEDROIT PARK	1,917	32	40	1,989
032	LILY PONDS	1,607	55	81	1,743
033	MARSHALL HEIGHTS	1,980	18	142	2,140
034	MASS. AVE. HEIGHTS	192	2	55	249
035	MICHIGAN PARK	941	12	9	962
036	MOUNT PLEASANT	4,754	216	122	5,092
037	N. CLEVELAND PARK	881	43	8	932
038	OBSERVATORY CIRCLE	1,777	39	78	1,894
039	OLD CITY I	16,922	913	194	18,029
040	OLD CITY II	20,810	1,149	368	22,327
041	PALISADES	1,411	54	25	1,490
042	PETWORTH	6,688	250	65	7,003
043	RANDLE HEIGHTS	3,837	67	190	4,094
044	NOMA	933	179	20	1,132
046	SW WATERFRONT	3,955	186	30	4,171
047	RIGGS PARK	2,863	36	30	2,929
048	SHEPHERD PARK	1,001	35	14	1,050
049	16TH ST. HEIGHTS	2,375	115	73	2,563
050	SPRING VALLEY	936	8	36	980
051	TAKOMA	910	55	73	1,038
052	TRINIDAD	3,329	108	43	3,480
053	WAKEFIELD	969	15	4	988
054	WESLEY HEIGHTS	3,030	4	23	3,057
055	WOODLEY	209	1	3	213
056	WOODRIDGE	3,057	384	73	3,514
059	RAIL ROAD TRACKS		3	4	7
060	N. ROCK CREEK PARK				
061	NATL. ZOO				
062	S. ROCK CREEK PARK				
063	N. ANACOSTIA PARK		4	10	14
064	S. ANACOSTIA PARK		1		1
065	NATIONAL ARBORETUM				
066	FORT LINCOLN	1,397	9	20	1,426
067	ST. ELIZABETHS HOSPITAL				
068	BOLLING AFB & NAVAL RES	9	20		29
069	D.C. VILLAGE		1	1	2
070	FORT DRIVE				
071	GLOVER-ARCHBOLD PWY				
072	MALL				
073	WASHINGTON NAVY YARD	27	15		42
	TOTALS:	185,845	9,361	5,237	200,443

*DC and US (5,291) not included in Base Report Statistics
**PI accounts (308) not included in Base Report Statistics

Preliminary 2019 Performance Report

2017 SALES RATIOS CITY-WIDE

PROPERTY TYPE	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
All	8,087	1,065,169	585,000	97.6	97.0	96.0	7.3	6,904	1,183	1.01

2017 SALES RATIOS BY PROPERTY TYPE: CITY-WIDE

PROPERTY TYPE	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
Residential	7,866	710,926	575,000	97.7	97.2	96.4	7.2	6,706	1,160	1.01
Commercial	221	13,673,677	1,402,475	90.3	89.3	95.2	12.7	198	23	.94

CITY-WIDE RESIDENTIAL

SALES RATIOS
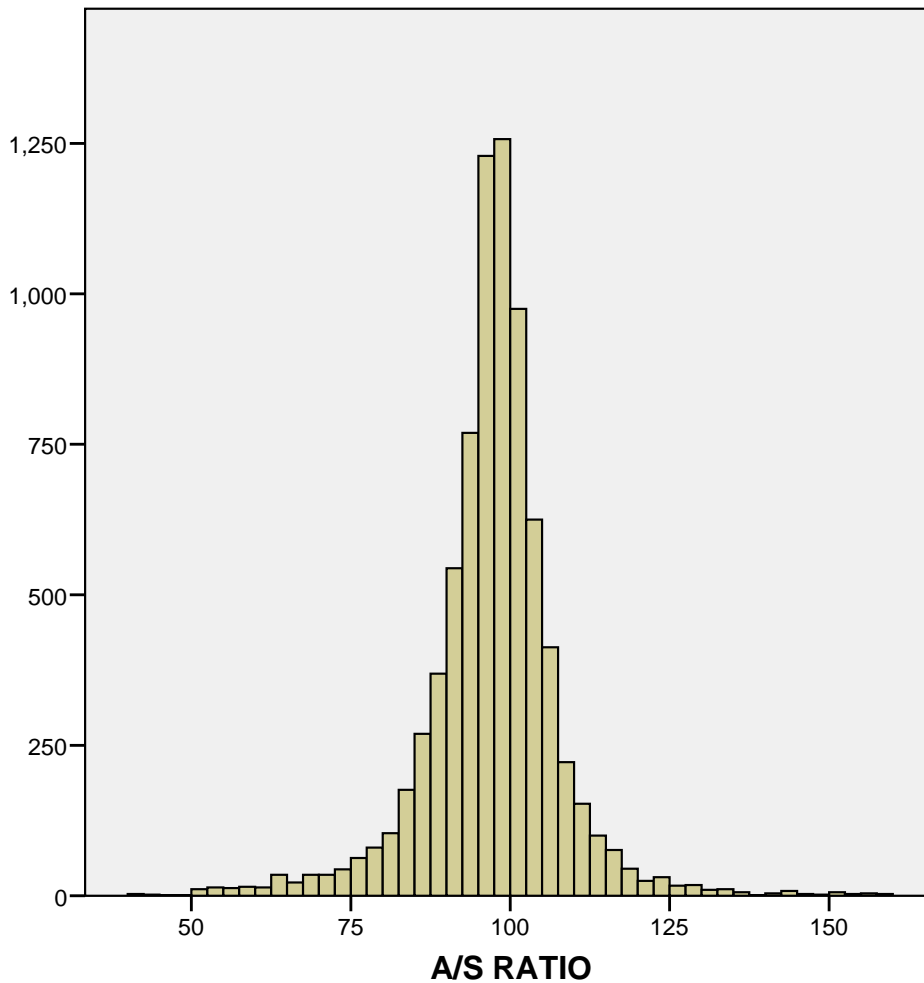
Mean =97.17
Std. Dev. =10.562
N =7,866

A/S RATIO

Sales Ratio Report Using Current 2018 Values

2017 SALES RATIOS BY NEIGHBORHOOD: SINGLE-FAMILY

NB	NAME	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
1	AMERICAN UNIVERSITY	94	1,112,891	1,045,000	91.2	90.3	89.4	8.4	91	3	1.01
2	ANACOSTIA	71	386,882	385,000	84.6	85.6	84.0	15.0	66	5	1.02
3	BARRY FARMS	9	284,538	305,000	97.4	92.9	90.4	14.2	7	2	1.03
4	BERKELEY	38	2,194,717	1,715,438	94.6	95.7	94.9	8.1	32	6	1.01
5	BRENTWOOD	35	436,492	398,600	87.5	88.0	86.6	10.1	33	2	1.02
6	BRIGHTWOOD	133	607,254	580,000	91.1	90.5	90.5	8.6	126	7	1.00
7	BROOKLAND	244	638,699	631,000	94.4	91.7	91.6	10.3	220	24	1.00
8	BURLEITH	35	1,199,376	1,020,000	90.4	91.2	90.7	9.5	33	2	1.01
9	CAPITOL HILL	101	1,223,963	1,150,000	89.3	88.0	85.6	10.4	96	5	1.03
10	CENTRAL	9	1,847,222	1,700,000	90.9	90.9	89.1	10.1	8	1	1.02
11	CHEVY CHASE	176	1,117,271	1,000,000	93.6	92.6	92.1	9.1	158	18	1.01
12	CHILLUM	27	618,769	622,200	85.9	86.2	86.1	10.7	27	0	1.00
13	CLEVELAND PARK	32	1,669,281	1,377,500	95.9	94.7	95.2	7.6	31	1	.99
14	COLONIAL VILLAGE	16	1,052,375	975,000	92.3	93.4	93.0	6.9	15	1	1.00
15	COLUMBIA HEIGHTS	169	791,961	750,000	90.1	89.7	89.3	9.0	162	7	1.01
16	CONGRESS HEIGHTS	158	344,046	340,000	91.5	88.0	86.8	15.0	141	17	1.01
17	CRESTWOOD	26	1,125,359	1,042,500	87.0	89.6	87.6	14.2	22	4	1.02
18	DEANWOOD	230	323,748	319,750	88.0	87.7	86.4	14.9	202	28	1.02
19	ECKINGTON	73	772,513	738,500	92.2	91.3	90.1	9.5	65	8	1.01
20	FOGGY BOTTOM	6	989,483	1,027,500	91.9	91.7	92.2	6.0	6	0	.99
21	FOREST HILLS	25	1,470,884	1,400,000	98.0	97.8	97.9	12.0	18	7	1.00
22	FORT DUPONT PARK	99	339,382	335,000	86.7	85.0	84.4	14.0	92	7	1.01
23	FOXHALL	12	1,030,046	934,500	82.9	82.4	81.4	9.2	12	0	1.01
24	GARFIELD	20	1,541,700	1,480,000	87.5	88.9	88.4	10.3	18	2	1.00
25	GEORGETOWN	142	1,902,077	1,600,000	90.4	90.2	86.9	11.1	129	13	1.04
26	GLOVER PARK	31	1,073,335	1,050,000	89.3	88.5	87.6	8.9	30	1	1.01
27	HAWTHORNE	7	909,500	909,000	98.9	96.3	96.5	4.0	7	0	1.00
28	HILLCREST	76	460,556	465,000	86.3	87.0	86.9	13.9	69	7	1.00
29	KALORAMA	28	2,808,268	2,137,500	87.1	88.9	87.5	12.3	25	3	1.02
30	KENT	46	1,836,525	1,405,000	89.3	89.8	87.3	11.0	41	5	1.03
31	LEDROIT PARK	77	1,022,547	925,172	95.8	94.1	93.0	7.4	70	7	1.01
32	LILY PONDS	74	351,788	370,720	91.7	86.6	87.9	12.2	73	1	.99
33	MARSHALL HEIGHTS	66	308,676	312,500	76.8	78.5	77.2	17.5	61	5	1.02
34	MASS. AVE. HEIGHTS	8	3,664,875	1,862,000	95.6	97.4	95.4	10.3	5	3	1.02
35	MICHIGAN PARK	31	612,777	550,000	92.8	90.1	89.2	9.2	29	2	1.01
36	MOUNT PLEASANT	61	1,170,032	1,160,000	87.1	87.7	87.8	12.8	55	6	1.00
37	N. CLEVELAND PARK	31	1,531,268	1,218,000	89.7	87.0	86.8	9.4	31	0	1.00
38	OBSERVATORY CIRCLE	12	1,458,750	1,276,250	96.2	93.3	93.0	8.6	11	1	1.00
39	OLD CITY #1	575	833,873	780,000	91.2	90.0	89.1	9.1	553	22	1.01
40	OLD CITY #2	249	1,230,545	1,140,000	93.3	92.0	90.0	11.3	217	32	1.02
41	PALISADES	46	1,285,697	1,050,000	93.7	94.9	94.4	9.1	39	7	1.01
42	PETWORTH	275	657,336	652,500	91.3	87.1	85.5	12.7	262	13	1.02
43	RANDLE HEIGHTS	137	356,319	330,000	87.2	87.1	86.3	15.0	121	16	1.01
46	SW WATERFRONT	7	921,357	920,000	97.2	94.3	94.1	7.7	7	0	1.00
47	RIGGS PARK	98	472,176	472,000	88.7	87.9	86.9	12.4	91	7	1.01
48	SHEPHERD PARK	21	865,003	830,000	89.1	88.7	86.6	9.2	20	1	1.02
49	16TH STREET HEIGHTS	70	834,993	790,000	90.2	89.4	87.9	11.0	62	8	1.02
50	SPRING VALLEY	44	1,893,351	1,675,000	94.0	96.5	96.3	10.5	34	10	1.00
51	TAKOMA PARK	27	599,631	585,000	86.4	85.8	86.4	12.3	26	1	.99
52	TRINIDAD	160	561,939	552,500	82.0	81.3	79.0	15.4	153	7	1.03
53	WAKEFIELD	11	1,307,045	1,400,000	97.8	99.6	97.7	8.5	7	4	1.02
54	WESLEY HEIGHTS	24	1,748,854	1,725,000	84.6	87.8	87.5	9.2	23	1	1.00
55	WOODLEY	4	1,884,500	1,931,500	85.5	89.2	88.7	10.9	3	1	1.01
56	WOODRIDGE	116	566,326	559,950	94.0	93.6	92.8	9.0	101	15	1.01
66	FORT LINCOLN	60	636,744	603,250	94.8	93.2	92.2	6.1	59	1	1.01

TOTALS:

PROPERTY TYPE	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
Single-Family	4,452	849,586	715,000	90.9	89.4	89.1	11.4	4,095	357	1.00

Sales Ratio Report Using Proposed 2019 Values

2017 SALES RATIOS BY NEIGHBORHOOD: SINGLE-FAMILY

NB	NAME	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
1	AMERICAN UNIVERSITY	94	1,112,891	1,045,000	98.1	97.3	96.5	4.6	86	8	1.01
2	ANACOSTIA	71	386,882	385,000	97.2	96.1	95.1	9.8	56	15	1.01
3	BARRY FARMS	9	284,538	305,000	98.9	97.9	94.7	15.3	7	2	1.03
4	BERKELEY	38	2,194,717	1,715,438	99.5	99.8	99.5	4.9	29	9	1.00
5	BRENTWOOD	35	436,492	398,600	96.8	97.6	96.1	9.0	28	7	1.02
6	BRIGHTWOOD	133	607,254	580,000	99.8	98.2	98.1	4.9	121	12	1.00
7	BROOKLAND	244	638,699	631,000	98.9	97.6	97.1	7.4	204	40	1.01
8	BURLEITH	35	1,199,376	1,020,000	97.9	97.9	97.0	6.8	30	5	1.01
9	CAPITOL HILL	101	1,223,963	1,150,000	98.5	97.8	96.4	6.4	86	15	1.01
10	CENTRAL	9	1,847,222	1,700,000	98.5	95.4	94.6	5.1	9	0	1.01
11	CHEVY CHASE	176	1,117,271	1,000,000	99.3	99.8	99.3	4.6	154	22	1.00
12	CHILLUM	27	618,769	622,200	99.0	98.2	98.2	5.1	24	3	1.00
13	CLEVELAND PARK	32	1,669,281	1,377,500	99.9	100	100.1	4.8	25	7	1.00
14	COLONIAL VILLAGE	16	1,052,375	975,000	99.7	99.7	99.4	3.1	15	1	1.00
15	COLUMBIA HEIGHTS	169	791,961	750,000	97.6	96.9	96.3	7.2	142	27	1.01
16	CONGRESS HEIGHTS	158	344,046	340,000	98.2	96.3	95.6	9.4	129	29	1.01
17	CRESTWOOD	26	1,125,359	1,042,500	95.8	97.9	95.7	11.2	20	6	1.02
18	DEANWOOD	230	323,748	319,750	97.2	97.6	96.1	11.0	178	52	1.02
19	ECKINGTON	73	772,513	738,500	97.5	95.7	94.5	8.8	60	13	1.01
20	FOGGY BOTTOM	6	989,483	1,027,500	98.0	98.5	99.1	4.3	5	1	.99
21	FOREST HILLS	25	1,470,884	1,400,000	100.8	101	101.0	9.4	18	7	1.00
22	FORT DUPONT PARK	99	339,382	335,000	97.3	96.5	95.8	8.1	83	16	1.01
23	FOXHALL	12	1,030,046	934,500	95.5	93.8	93.9	7.3	12	0	1.00
24	GARFIELD	20	1,541,700	1,480,000	97.4	96.3	95.8	5.9	18	2	1.00
25	GEORGETOWN	142	1,902,077	1,600,000	98.3	97.8	95.9	4.8	130	12	1.02
26	GLOVER PARK	31	1,073,335	1,050,000	96.2	96.5	96.1	5.1	29	2	1.00
27	HAWTHORNE	7	909,500	909,000	98.4	98.6	98.5	2.5	7	0	1.00
28	HILLCREST	76	460,556	465,000	97.9	97.5	97.5	9.4	62	14	1.00
29	KALORAMA	28	2,808,268	2,137,500	97.8	97.4	96.5	4.1	26	2	1.01
30	KENT	46	1,836,525	1,405,000	95.9	94.7	91.7	9.3	41	5	1.03
31	LEDROIT PARK	77	1,022,547	925,172	98.6	97.4	96.2	5.7	71	6	1.01
32	LILY PONDS	74	351,788	370,720	97.8	96.4	96.7	5.9	66	8	1.00
33	MARSHALL HEIGHTS	66	308,676	312,500	94.1	96.6	95.3	9.3	53	13	1.01
34	MASS. AVE. HEIGHTS	8	3,664,875	1,862,000	98.4	97.5	97.2	4.3	8	0	1.00
35	MICHIGAN PARK	31	612,777	550,000	98.5	96.0	94.9	7.1	28	3	1.01
36	MOUNT PLEASANT	61	1,170,032	1,160,000	96.9	96.6	96.8	8.1	49	12	1.00
37	N. CLEVELAND PARK	31	1,531,268	1,218,000	95.7	95.6	96.0	3.8	31	0	1.00
38	OBSERVATORY CIRCLE	12	1,458,750	1,276,250	99.1	98.7	98.8	2.1	12	0	1.00
39	OLD CITY #1	575	833,873	780,000	97.4	96.5	96.0	6.0	522	53	1.01
40	OLD CITY #2	249	1,230,545	1,140,000	98.3	96.8	95.3	8.1	212	37	1.02
41	PALISADES	46	1,285,697	1,050,000	97.6	99.0	98.5	7.5	34	12	1.01
42	PETWORTH	275	657,336	652,500	96.5	92.9	91.1	12.5	216	59	1.02
43	RANDLE HEIGHTS	137	356,319	330,000	97.7	97.6	96.4	10.3	104	33	1.01
46	SW WATERFRONT	7	921,357	920,000	100.2	99.9	100.0	3.8	5	2	1.00
47	RIGGS PARK	98	472,176	472,000	97.0	94.5	93.3	10.2	87	11	1.01
48	SHEPHERD PARK	21	865,003	830,000	100.0	98.8	97.3	5.3	19	2	1.02
49	16TH STREET HEIGHTS	70	834,993	790,000	96.3	95.8	94.4	8.6	55	15	1.01
50	SPRING VALLEY	44	1,893,351	1,675,000	99.6	100	99.5	5.7	35	9	1.01
51	TAKOMA PARK	27	599,631	585,000	99.2	97.5	97.3	5.8	25	2	1.00
52	TRINIDAD	160	561,939	552,500	94.4	92.9	90.2	15.3	113	47	1.03
53	WAKEFIELD	11	1,307,045	1,400,000	99.2	102	100.2	6.7	7	4	1.02
54	WESLEY HEIGHTS	24	1,748,854	1,725,000	96.1	95.2	95.5	7.1	22	2	1.00
55	WOODLEY	4	1,884,500	1,931,500	94.1	95.2	94.7	7.4	3	1	1.01
56	WOODRIDGE	116	566,326	559,950	98.3	98.4	97.5	7.3	98	18	1.01
66	FORT LINCOLN	60	636,744	603,250	99.5	98.9	98.6	3.3	55	5	1.00

TOTALS:

PROPERTY TYPE	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
Single-Family	4,452	849,586	715,000	97.9	96.8	96.2	7.9	3,764	688	1.01

Sales Ratio Report Using Current 2018 Values

2017 SALES RATIOS BY NEIGHBORHOOD: CONDOMINIUMS

NB	NAME	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
1	AMERICAN UNIVERSITY	22	604,737	527,500	92.7	93.4	91.2	7.0	20	2	1.02
2	ANACOSTIA	9	180,494	183,000	79.9	82.6	79.8	17.4	7	2	1.03
3	BARRY FARMS	12	270,515	281,000	83.7	87.0	85.8	19.9	11	1	1.01
4	BERKELEY	2	344,500	344,500	95.8	95.8	95.5	8.1	2	0	1.00
5	BRENTWOOD	12	277,992	284,950	94.9	92.6	92.4	7.1	11	1	1.00
6	BRIGHTWOOD	35	350,751	355,000	90.2	89.8	90.1	7.6	33	2	1.00
7	BROOKLAND	74	371,292	353,000	91.1	90.4	90.8	10.4	70	4	1.00
8	BURLEITH	2	1,274,500	1,274,500	97.1	97.1	97.0	3.8	2	0	1.00
9	CAPITOL HILL	34	405,371	351,000	89.3	89.0	86.9	7.3	33	1	1.02
10	CENTRAL	324	738,121	530,000	96.9	95.8	94.0	7.5	285	39	1.02
11	CHEVY CHASE	37	435,104	369,000	96.8	94.5	95.4	7.6	30	7	.99
13	CLEVELAND PARK	120	398,857	374,400	94.0	94.1	93.2	6.6	111	9	1.01
15	COLUMBIA HEIGHTS	309	520,936	500,000	96.1	95.2	96.2	7.9	269	40	.99
16	CONGRESS HEIGHTS	16	136,913	161,500	71.9	73.2	58.8	37.0	11	5	1.24
18	DEANWOOD	5	102,800	100,000	97.0	91.9	91.3	5.3	5	0	1.01
19	ECKINGTON	82	533,949	527,450	95.0	93.1	93.5	6.1	77	5	1.00
20	FOGGY BOTTOM	50	314,038	257,000	95.3	94.8	94.6	6.2	46	4	1.00
21	FOREST HILLS	48	334,050	290,000	91.2	92.2	92.3	9.3	43	5	1.00
22	FORT DUPONT PARK	3	69,833	73,000	126.9	124	122.9	3.3	0	3	1.01
24	GARFIELD	42	1,146,675	529,889	94.0	92.9	89.7	7.5	38	4	1.04
25	GEORGETOWN	67	779,987	620,000	96.6	95.6	97.4	10.0	59	8	.98
26	GLOVER PARK	44	395,371	333,750	94.9	96.2	95.4	6.2	36	8	1.01
28	HILLCREST	32	96,077	92,500	96.9	101	94.4	21.1	20	12	1.07
29	KALORAMA	146	579,689	486,950	93.1	93.5	91.3	8.6	132	14	1.02
31	LEDROIT PARK	40	518,550	452,250	95.5	92.8	93.9	9.5	37	3	.99
32	LILY PONDS	1	315,000	315,000	90.2	90.2	90.2	.0	1	0	1.00
33	MARSHALL HEIGHTS	2	75,500	75,500	112.9	113	100.5	32.7	1	1	1.12
36	MOUNT PLEASANT	161	519,335	507,500	95.5	97.3	95.9	7.8	137	24	1.01
37	N. CLEVELAND PARK	2	405,000	405,000	92.4	92.4	91.6	6.5	2	0	1.01
38	OBSERVATORY CIRCLE	48	475,474	420,950	94.3	93.1	91.8	9.7	41	7	1.01
39	OLD CITY #1	344	511,748	469,500	95.3	93.6	93.2	5.8	329	15	1.00
40	OLD CITY #2	813	568,788	515,000	95.0	94.5	93.7	7.3	719	94	1.01
41	PALISADES	13	239,446	246,000	100.8	101	100.6	7.4	9	4	1.00
42	PETWORTH	67	395,009	351,900	95.0	92.1	92.1	8.1	63	4	1.00
43	RANDLE HEIGHTS	11	84,107	77,500	101.6	128	103.9	35.3	7	4	1.23
46	SW WATERFRONT	187	620,336	409,900	94.7	92.5	91.9	6.5	177	10	1.01
49	16TH STREET HEIGHTS	39	369,713	364,900	95.0	92.6	93.3	4.0	39	0	.99
50	SPRING VALLEY	2	277,500	277,500	107.8	108	107.6	2.9	1	1	1.00
52	TRINIDAD	64	358,689	318,450	97.0	94.6	94.1	6.0	61	3	1.01
53	WAKEFIELD	16	352,250	317,000	98.5	98.5	95.9	7.4	13	3	1.03
54	WESLEY HEIGHTS	51	376,081	263,000	95.5	95.6	94.2	8.8	42	9	1.02
56	WOODRIDGE	2	332,450	332,450	101.1	101	98.5	19.8	1	1	1.03
66	FORT LINCOLN	24	275,890	272,500	93.6	97.0	96.6	13.2	17	7	1.00

TOTALS:

PROPERTY TYPE	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
Condominium	3,414	530,106	452,000	95.0	94.4	93.6	8.0	3,048	366	1.01

Sales Ratio Report Using Proposed 2019 Values

2017 SALES RATIOS BY NEIGHBORHOOD: CONDOMINIUMS

NB	NAME	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
1	AMERICAN UNIVERSITY	22	604,737	527,500	98.4	96.4	94.0	7.6	19	3	1.03
2	ANACOSTIA	9	180,494	183,000	94.2	90.5	88.7	10.5	8	1	1.02
3	BARRY FARMS	12	270,515	281,000	100.8	96.6	97.0	13.5	7	5	1.00
4	BERKELEY	2	344,500	344,500	94.2	94.2	94.0	4.2	2	0	1.00
5	BRENTWOOD	12	277,992	284,950	97.2	98.8	98.2	7.0	8	4	1.01
6	BRIGHTWOOD	35	350,751	355,000	95.0	94.7	95.5	6.7	33	2	.99
7	BROOKLAND	74	371,292	353,000	95.0	97.5	96.5	7.8	67	7	1.01
8	BURLEITH	2	1,274,500	1,274,500	99.5	99.5	99.4	2.0	2	0	1.00
9	CAPITOL HILL	34	405,371	351,000	95.3	95.5	93.4	6.4	31	3	1.02
10	CENTRAL	324	738,121	530,000	99.2	98.8	97.5	5.4	272	52	1.01
11	CHEVY CHASE	37	435,104	369,000	97.0	95.4	96.8	7.3	30	7	.99
13	CLEVELAND PARK	120	398,857	374,400	97.5	97.9	97.3	4.5	108	12	1.01
15	COLUMBIA HEIGHTS	309	520,936	500,000	98.4	98.0	98.6	6.1	258	51	.99
16	CONGRESS HEIGHTS	16	136,913	161,500	99.5	98.5	97.7	5.0	14	2	1.01
18	DEANWOOD	5	102,800	100,000	97.4	93.0	92.4	5.9	5	0	1.01
19	ECKINGTON	82	533,949	527,450	96.5	96.6	96.8	5.7	73	9	1.00
20	FOGGY BOTTOM	50	314,038	257,000	99.1	98.4	98.8	4.4	45	5	1.00
21	FOREST HILLS	48	334,050	290,000	96.3	96.5	97.2	6.5	43	5	.99
22	FORT DUPONT PARK	3	69,833	73,000	114.5	107	109.4	12.4	1	2	.98
24	GARFIELD	42	1,146,675	529,889	95.5	96.8	95.6	5.6	37	5	1.01
25	GEORGETOWN	67	779,987	620,000	98.6	98.0	96.4	5.9	59	8	1.02
26	GLOVER PARK	44	395,371	333,750	96.3	97.4	96.8	4.6	39	5	1.01
28	HILLCREST	32	96,077	92,500	101.7	105	97.7	19.1	18	14	1.07
29	KALORAMA	146	579,689	486,950	98.5	100	98.8	5.0	126	20	1.01
31	LEDROIT PARK	40	518,550	452,250	98.4	98.3	98.2	6.6	34	6	1.00
32	LILY PONDS	1	315,000	315,000	98.6	98.6	98.6	.0	1	0	1.00
33	MARSHALL HEIGHTS	2	75,500	75,500	119.6	120	107.7	29.6	1	1	1.11
36	MOUNT PLEASANT	161	519,335	507,500	98.8	98.6	98.3	5.2	140	21	1.00
37	N. CLEVELAND PARK	2	405,000	405,000	97.3	97.3	96.4	6.6	2	0	1.01
38	OBSERVATORY CIRCLE	48	475,474	420,950	98.9	98.5	97.7	6.3	38	10	1.01
39	OLD CITY #1	344	511,748	469,500	96.0	96.6	96.3	5.2	312	32	1.00
40	OLD CITY #2	813	568,788	515,000	97.0	97.1	96.6	6.0	707	106	1.01
41	PALISADES	13	239,446	246,000	100.9	102	102.1	5.7	9	4	1.00
42	PETWORTH	67	395,009	351,900	95.0	96.7	95.6	5.3	63	4	1.01
43	RANDLE HEIGHTS	11	84,107	77,500	99.0	97.7	94.8	10.9	8	3	1.03
46	SW WATERFRONT	187	620,336	409,900	95.0	96.2	94.5	6.8	157	30	1.02
49	16TH STREET HEIGHTS	39	369,713	364,900	95.0	94.7	94.8	2.4	39	0	1.00
50	SPRING VALLEY	2	277,500	277,500	93.8	93.8	93.9	1.0	2	0	1.00
52	TRINIDAD	64	358,689	318,450	97.0	97.7	96.7	5.3	57	7	1.01
53	WAKEFIELD	16	352,250	317,000	100.2	100	97.9	7.4	12	4	1.03
54	WESLEY HEIGHTS	51	376,081	263,000	98.2	97.9	96.5	8.5	40	11	1.01
56	WOODRIDGE	2	332,450	332,450	108.9	109	106.1	19.8	1	1	1.03
66	FORT LINCOLN	24	275,890	272,500	97.0	99.8	99.2	12.1	14	10	1.01

TOTALS:

PROPERTY TYPE	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
Condominium	3,414	530,106	452,000	97.4	97.6	96.9	6.2	2,942	472	1.01

Sales Ratio Report Using Current 2018 Values

2017 SALES RATIOS BY NEIGHBORHOOD: MULTI-FAMILY

NB	NAME	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
7	BROOKLAND	1	5,145,000	5,145,000	91.9	91.9	91.9	.0	1	0	1.00
9	CAPITOL HILL	2	4,100,000	4,100,000	95.4	95.4	92.0	12.0	1	1	1.04
15	COLUMBIA HEIGHTS	2	3,375,000	3,375,000	62.4	62.4	62.3	4.1	2	0	1.00
16	CONGRESS HEIGHTS	9	860,000	625,000	78.4	78.1	79.9	9.1	9	0	.98
18	DEANWOOD	5	891,930	850,000	82.8	85.3	84.3	6.0	5	0	1.01
22	FORT DUPONT PARK	3	757,992	858,975	90.3	83.9	87.1	9.2	3	0	.96
26	GLOVER PARK	1	980,000	980,000	99.9	99.9	99.9	.0	1	0	1.00
28	HILLCREST	7	847,000	615,000	92.3	91.1	91.0	6.6	7	0	1.00
29	KALORAMA	3	4,563,697	2,316,090	80.3	72.6	54.1	26.0	3	0	1.34
33	MARSHALL HEIGHTS	2	3,625,000	3,625,000	70.2	70.2	67.6	15.2	2	0	1.04
36	MOUNT PLEASANT	2	2,500,000	2,500,000	99.4	99.4	104.2	10.8	1	1	.95
39	OLD CITY #1	1	26,500,000	26500000	92.2	92.2	92.2	.0	1	0	1.00
40	OLD CITY #2	3	18,200,000	2,200,000	99.3	94.2	73.4	13.9	2	1	1.28
41	PALISADES	1	2,000,000	2,000,000	93.8	93.8	93.8	.0	1	0	1.00
42	PETWORTH	3	1,503,257	1,402,475	100.3	97.7	99.0	6.1	2	1	.99
43	RANDLE HEIGHTS	5	871,699	831,000	135.3	114	110.3	16.0	2	3	1.03
56	WOODRIDGE	2	1,355,000	1,355,000	101.9	102	102.0	.4	2	0	1.00

TOTALS:

PROPERTY TYPE	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
Multi-Family	52	3,117,250	1,173,215	89.5	88.8	80.6	15.7	45	7	1.10

Sales Ratio Report Using Proposed 2019 Values

2017 SALES RATIOS BY NEIGHBORHOOD: MULTI-FAMILY

NB	NAME	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
7	BROOKLAND	1	5,145,000	5,145,000	97.1	97.1	97.1	.0	1	0	1.00
9	CAPITOL HILL	2	4,100,000	4,100,000	99.0	99.0	95.6	11.9	1	1	1.04
15	COLUMBIA HEIGHTS	2	3,375,000	3,375,000	62.4	62.4	62.1	9.4	2	0	1.00
16	CONGRESS HEIGHTS	9	860,000	625,000	86.5	86.2	86.5	9.8	9	0	1.00
18	DEANWOOD	5	891,930	850,000	101.7	95.4	94.3	7.9	4	1	1.01
22	FORT DUPONT PARK	3	757,992	858,975	94.3	94.1	93.7	1.3	3	0	1.00
26	GLOVER PARK	1	980,000	980,000	101.3	101	101.3	.0	1	0	1.00
28	HILLCREST	7	847,000	615,000	98.1	98.3	97.0	3.1	7	0	1.01
29	KALORAMA	3	4,563,697	2,316,090	99.1	97.7	98.5	2.2	3	0	.99
33	MARSHALL HEIGHTS	2	3,625,000	3,625,000	73.6	73.6	70.8	15.8	2	0	1.04
36	MOUNT PLEASANT	2	2,500,000	2,500,000	104.6	105	110.0	11.8	1	1	.95
39	OLD CITY #1	1	26,500,000	26500000	103.4	103	103.4	.0	1	0	1.00
40	OLD CITY #2	3	18,200,000	2,200,000	99.3	101	94.2	6.0	2	1	1.08
41	PALISADES	1	2,000,000	2,000,000	94.1	94.1	94.1	.0	1	0	1.00
42	PETWORTH	3	1,503,257	1,402,475	105.6	102	100.3	3.8	1	2	1.02
43	RANDLE HEIGHTS	5	871,699	831,000	114.0	113	111.9	19.8	2	3	1.01
56	WOODRIDGE	2	1,355,000	1,355,000	91.2	91.2	88.9	9.5	2	0	1.03

TOTALS:

PROPERTY TYPE	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
Multi-Family	52	3,117,250	1,173,215	95.3	95.2	94.7	11.5	43	9	1.01

Sales Ratio Report Using Current 2018 Values

2017 SALES RATIOS BY NEIGHBORHOOD: COMMERCIAL

NB	NAME	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
2	ANACOSTIA	3	499,860	525,000	66.5	76.6	72.6	18.5	3	0	1.05
3	BARRY FARMS	2	861,235	861,235	79.8	79.8	62.7	54.5	1	1	1.27
5	BRENTWOOD	7	4,488,139	4,396,800	49.7	47.6	44.5	34.9	7	0	1.07
6	BRIGHTWOOD	3	626,667	600,000	87.6	76.6	75.5	14.9	3	0	1.01
7	BROOKLAND	8	1,440,981	794,810	57.6	62.2	59.0	24.8	8	0	1.05
9	CAPITOL HILL	4	3,496,250	3,000,000	63.2	66.6	63.8	13.2	4	0	1.04
10	CENTRAL	16	101718742	70250000	80.2	79.4	79.8	13.0	16	0	1.00
12	CHILLUM	4	1,349,128	749,500	88.9	93.6	108.1	13.4	3	1	.87
15	COLUMBIA HEIGHTS	10	1,142,500	1,222,500	45.4	53.5	46.8	30.4	10	0	1.14
16	CONGRESS HEIGHTS	2	525,000	525,000	56.0	56.0	52.3	19.9	2	0	1.07
18	DEANWOOD	9	1,822,222	975,000	50.8	54.6	49.7	37.9	9	0	1.10
19	ECKINGTON	6	5,570,833	5,350,000	41.4	52.3	62.7	40.8	6	0	.83
20	FOGGY BOTTOM	4	34,995,375	1,890,750	92.9	92.3	99.7	14.2	3	1	.93
22	FORT DUPONT PARK	1	510,000	510,000	70.4	70.4	70.4	.0	1	0	1.00
24	GARFIELD	1	2,450,000	2,450,000	60.0	60.0	60.0	.0	1	0	1.00
25	GEORGETOWN	3	1,355,208	1,270,000	74.0	68.7	67.4	15.3	3	0	1.02
26	GLOVER PARK	1	2,350,000	2,350,000	41.8	41.8	41.8	.0	1	0	1.00
28	HILLCREST	1	1,575,000	1,575,000	46.1	46.1	46.1	.0	1	0	1.00
29	KALORAMA	2	2,712,500	2,712,500	68.7	68.7	75.3	18.1	2	0	.91
36	MOUNT PLEASANT	4	1,718,750	1,600,000	64.8	59.3	52.9	15.6	4	0	1.12
38	OBSERVATORY CIRCLE	1	1,250,000	1,250,000	87.2	87.2	87.2	.0	1	0	1.00
39	OLD CITY #1	18	2,074,139	1,687,500	65.0	72.0	66.7	32.1	16	2	1.08
40	OLD CITY #2	22	2,992,112	2,005,000	72.8	77.2	74.0	29.4	20	2	1.04
41	PALISADES	1	2,300,000	2,300,000	53.1	53.1	53.1	.0	1	0	1.00
42	PETWORTH	13	1,257,885	850,000	52.8	51.7	45.1	24.1	13	0	1.15
43	RANDLE HEIGHTS	2	1,490,000	1,490,000	70.2	70.2	48.6	38.0	2	0	1.45
44	NOMA	4	29,210,000	26012500	97.4	94.3	109.0	20.9	3	1	.87
46	SW WATERFRONT	6	113606900	78470500	98.9	116	109.4	28.4	4	2	1.06
49	16TH STREET HEIGHTS	2	1,850,000	1,850,000	54.3	54.3	54.7	5.3	2	0	.99
51	TAKOMA PARK	1	1,900,000	1,900,000	63.6	63.6	63.6	.0	1	0	1.00
52	TRINIDAD	4	549,625	504,750	44.5	42.8	38.1	21.3	4	0	1.12
53	WAKEFIELD	1	1,350,000	1,350,000	52.8	52.8	52.8	.0	1	0	1.00
56	WOODRIDGE	3	1,883,970	1,224,910	89.7	81.9	68.9	17.7	3	0	1.19

TOTALS:

PROPERTY TYPE	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
Commercial	169	16,921,809	1,575,000	65.7	68.9	87.1	31.5	159	10	.79

Sales Ratio Report Using Proposed 2019 Values

2017 SALES RATIOS BY NEIGHBORHOOD: COMMERCIAL

NB	NAME	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
2	ANACOSTIA	3	499,860	525,000	90.3	85.2	83.6	12.9	3	0	1.02
3	BARRY FARMS	2	861,235	861,235	91.4	91.4	88.7	7.5	2	0	1.03
5	BRENTWOOD	7	4,488,139	4,396,800	82.8	83.5	85.9	12.1	6	1	.97
6	BRIGHTWOOD	3	626,667	600,000	95.4	95.6	95.7	3.0	3	0	1.00
7	BROOKLAND	8	1,440,981	794,810	84.9	80.9	84.7	11.5	8	0	.95
9	CAPITOL HILL	4	3,496,250	3,000,000	86.7	85.9	84.0	4.2	4	0	1.02
10	CENTRAL	16	101718742	70250000	89.5	91.6	91.1	8.6	14	2	1.01
12	CHILLUM	4	1,349,128	749,500	98.0	94.9	95.9	4.8	4	0	.99
15	COLUMBIA HEIGHTS	10	1,142,500	1,222,500	72.1	70.8	65.8	24.2	9	1	1.08
16	CONGRESS HEIGHTS	2	525,000	525,000	94.2	94.2	95.2	3.2	2	0	.99
18	DEANWOOD	9	1,822,222	975,000	86.7	89.9	91.0	9.1	8	1	.99
19	ECKINGTON	6	5,570,833	5,350,000	94.3	92.7	92.1	7.9	5	1	1.01
20	FOGGY BOTTOM	4	34,995,375	1,890,750	99.7	101	104.4	11.0	3	1	.97
22	FORT DUPONT PARK	1	510,000	510,000	84.9	84.9	84.9	.0	1	0	1.00
24	GARFIELD	1	2,450,000	2,450,000	61.9	61.9	61.9	.0	1	0	1.00
25	GEORGETOWN	3	1,355,208	1,270,000	82.8	84.2	84.1	3.4	3	0	1.00
26	GLOVER PARK	1	2,350,000	2,350,000	67.8	67.8	67.8	.0	1	0	1.00
28	HILLCREST	1	1,575,000	1,575,000	86.5	86.5	86.5	.0	1	0	1.00
29	KALORAMA	2	2,712,500	2,712,500	87.8	87.8	93.8	13.0	2	0	.94
36	MOUNT PLEASANT	4	1,718,750	1,600,000	91.2	90.6	90.5	2.8	4	0	1.00
38	OBSERVATORY CIRCLE	1	1,250,000	1,250,000	97.4	97.4	97.4	.0	1	0	1.00
39	OLD CITY #1	18	2,074,139	1,687,500	88.4	91.1	89.9	9.9	16	2	1.01
40	OLD CITY #2	22	2,992,112	2,005,000	88.3	84.2	80.1	16.9	20	2	1.05
41	PALISADES	1	2,300,000	2,300,000	58.8	58.8	58.8	.0	1	0	1.00
42	PETWORTH	13	1,257,885	850,000	86.3	83.1	79.2	10.1	13	0	1.05
43	RANDLE HEIGHTS	2	1,490,000	1,490,000	93.0	93.0	86.9	8.0	2	0	1.07
44	NOMA	4	29,210,000	26012500	104.3	103	101.3	9.3	2	2	1.01
46	SW WATERFRONT	6	113606900	78470500	100.1	105	106.9	9.0	5	1	.98
49	16TH STREET HEIGHTS	2	1,850,000	1,850,000	78.5	78.5	80.5	18.6	2	0	.98
51	TAKOMA PARK	1	1,900,000	1,900,000	90.4	90.4	90.4	.0	1	0	1.00
52	TRINIDAD	4	549,625	504,750	87.5	84.0	79.6	12.7	4	0	1.06
53	WAKEFIELD	1	1,350,000	1,350,000	57.2	57.2	57.2	.0	1	0	1.00
56	WOODRIDGE	3	1,883,970	1,224,910	99.0	97.5	94.5	3.9	3	0	1.03

TOTALS:

PROPERTY TYPE	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
Commercial	169	16,921,809	1,575,000	88.8	87.5	95.3	12.5	155	14	.92

Residential (UC 011, 012, 013, 023, 024)
Overall Change
by DC Ward

Ward 4
4.05%

Ward 3
2.84%

Ward 1
2.8%

Ward 5
5.59%

Ward 2
3.41%

Ward 6
4.3%

Ward 7
8.02%

Ward 8
5.83%
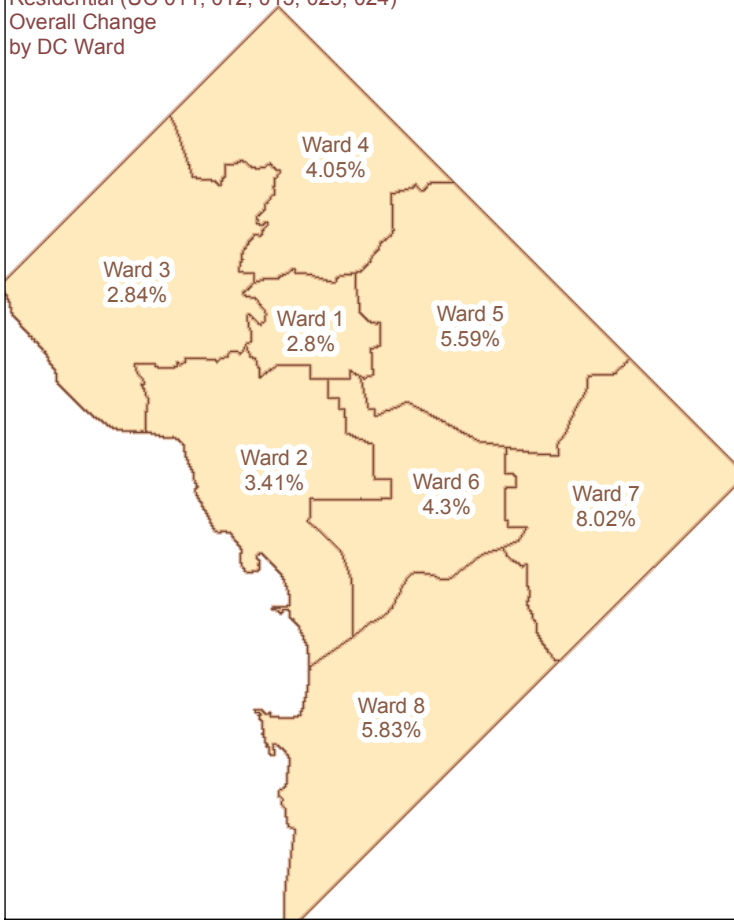
Condominium (UC 016, 017)
Overall Change
by DC Ward

Ward 4
5.13%

Ward 3
2.26%

Ward 1
2.81%

Ward 5
5.53%

Ward 2
2.3%

Ward 6
3.73%

Ward 7
2.75%

Ward 8
4.38%
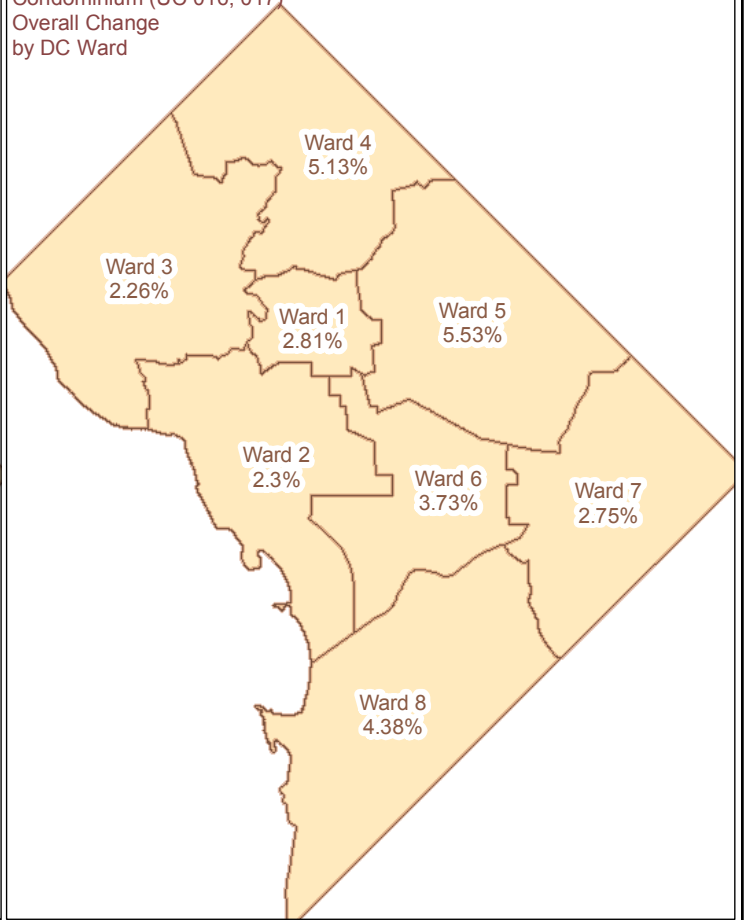
Residential and Condo
Overall Change
by DC Ward

Ward 4
4.1%

Ward 3
2.74%

Ward 1
2.8%

Ward 5
5.58%

Ward 2
2.86%

Ward 6
4.17%

Ward 7
7.74%

Ward 8
5.68%
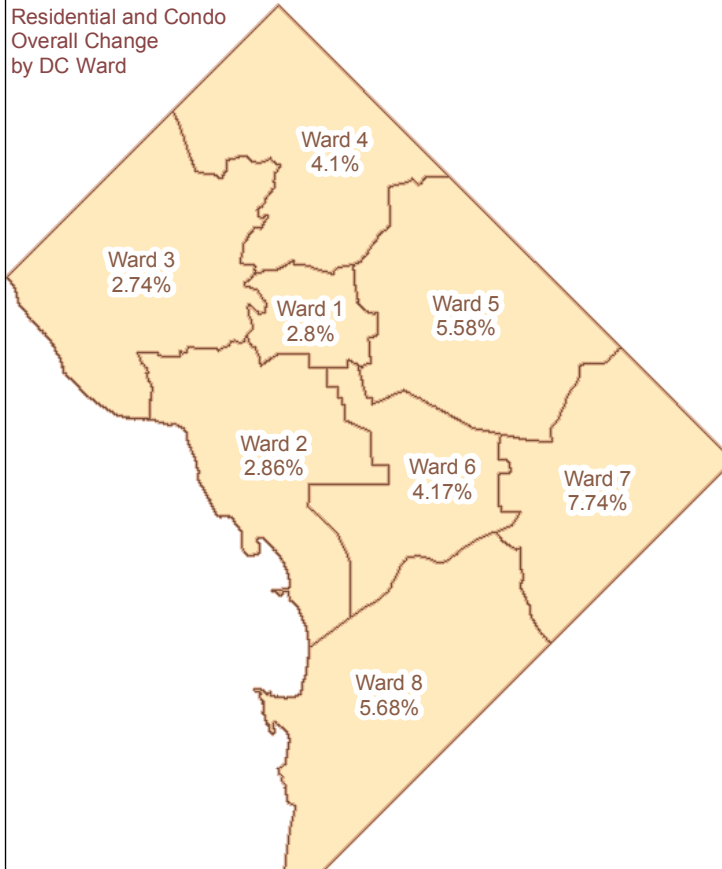
TY *2019 Residential Change by DC Ward

0 0.5 1   2
                   Miles

Office of Tax and Revenue
O T R Real Property Assessment Division
G I S Geographic Information Systems
Date: 2/23/2018

* Proposed 2019 Assessment Values

N
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TY *2019 Residential Single Family Overall Change
by Assessment Neighborhood

Assessment Neighborhoods

1, American University
2, Anacostia
3, Barry Farms
4, Berkley
5, Brentwood
6, Brightwood
7, Brookland
8, Burleith
9, Capitol Hill
10, Central
11, Chevy Chase
12, Chillum
13, Cleveland Park
14, Colonial Village
15, Columbia Heights
16, Congress Heights
17, Crestwood
18, Deanwood
19, Eckington
20, Foggy Bottom
21, Forest Hills
22, Fort Dupont Park
23, Foxhall
24, Garfield
25, Georgetown
26, Glover Park
27, Hawthorne
28, Hillcrest
29, Kalorama
30, Kent
31, Ledroit Park
32, Lily Ponds
33, Marshall Heights
34, Massachusetts Avenue Heights
35, Michigan Park

36, Mt. Pleasant
37, North Cleveland Park
38, Observatory Circle
39, Old City 1
40, Old City 2
41, Palisades
42, Petworth
43, Randle Heights
44, NoMa
46, Southwest Waterfront
47, Riggs Park
48, Shepherd Park
49, 16th Street Heights
50, Spring Valley
51, Takoma Park
52, Trinidad
53, Wakefield
54, Wesley Heights
55, Woodley
56, Woodridge
60, Rock Creek Park
61, National Zoological Park
62, Rock Creek Park
63, DC Stadium Area
64, Anacostia Park
65, National Arboretum
66, Fort Lincoln
67, St. Elizabeth's Hospital
68, Bolling Air Force Base
69, DC Village
70, Fort Drive
71, Glover - Archbold Parkway
72, Mall/East Potomac Park
73, Washington Navy Yard
74, Ft. McNair

Residential Single Family

Overall Change

- 0.78% - 2.06%
- 2.23% - 3.03%
- 3.38% - 4.70%
- 4.95% - 6.42%
- 7.61% - 10.68%
- 13.23% - 14.10%

Office of Tax and Revenue
Real Property Assessment Division
Geographic Information Systems

Date: 2/22/2018

* Proposed 2019 Assessment Values

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Residential (Class 1)
% Change

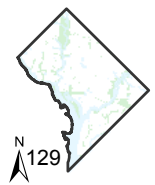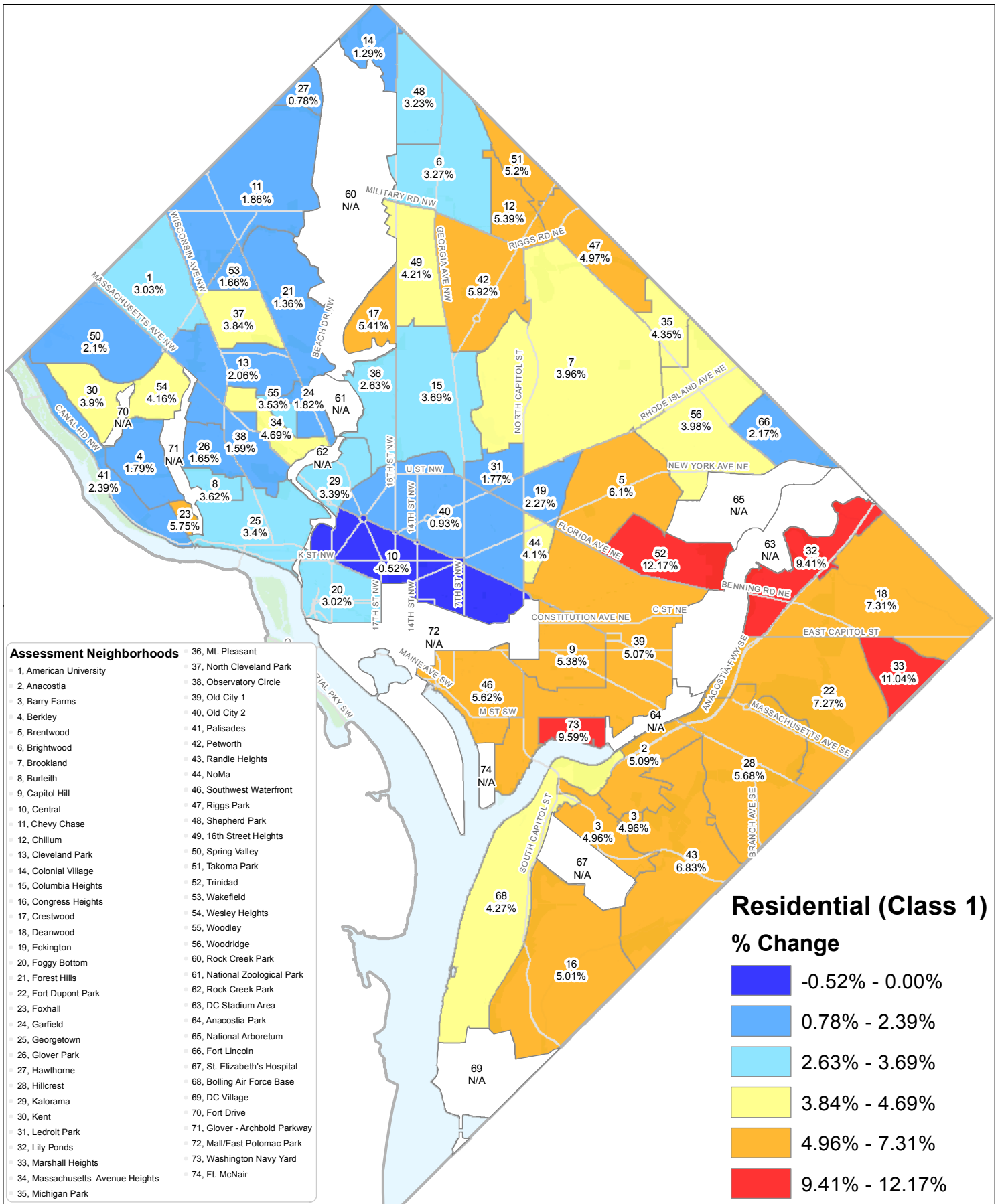| Color	Range
Dark blue	-0.52% - 0.00%
Blue	0.78% - 2.39%
Light blue	2.63% - 3.69%
Yellow	3.84% - 4.69%
Orange	4.96% - 7.31%
Red	9.41% - 12.17%

Assessment Neighborhoods

1, American University
2, Anacostia
3, Barry Farms
4, Berkley
5, Brentwood
6, Brightwood
7, Brookland
8, Burleith
9, Capitol Hill
10, Central
11, Chevy Chase
12, Chillum
13, Cleveland Park
14, Colonial Village
15, Columbia Heights
16, Congress Heights
17, Crestwood
18, Deanwood
19, Eckington
20, Foggy Bottom
21, Forest Hills
22, Fort Dupont Park
23, Foxhall
24, Garfield
25, Georgetown
26, Glover Park
27, Hawthorne
28, Hillcrest
29, Kalorama
30, Kent
31, Ledroit Park
32, Lily Ponds
33, Marshall Heights
34, Massachusetts Avenue Heights
35, Michigan Park

36, Mt. Pleasant
37, North Cleveland Park
38, Observatory Circle
39, Old City 1
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41, Palisades
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46, Southwest Waterfront
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50, Spring Valley
51, Takoma Park
52, Trinidad
53, Wakefield
54, Wesley Heights
55, Woodley
56, Woodridge
60, Rock Creek Park
61, National Zoological Park
62, Rock Creek Park
63, DC Stadium Area
64, Anacostia Park
65, National Arboretum
66, Fort Lincoln
67, St. Elizabeth's Hospital
68, Bolling Air Force Base
69, DC Village
70, Fort Drive
71, Glover - Archbold Parkway
72, Mall/East Potomac Park
73, Washington Navy Yard
74, Ft. McNair

Map labels

14 1.29%
27 0.78%
48 3.23%
11 1.86%
60 N/A
6 3.27%
51 5.2%
12 5.39%
1 3.03%
53 1.66%
21 1.36%
49 4.21%
42 5.92%
47 4.97%
37 3.84%
17 5.41%
35 4.35%
50 2.1%
13 2.06%
7 3.96%
30 3.9%
54 4.16%
70 N/A
55 3.53%
24 1.82%
61 N/A
36 2.63%
15 3.69%
56 3.98%
66 2.17%
34 4.69%
4 1.79%
26 1.65%
38 1.59%
62 N/A
31 1.77%
5 6.1%
65 N/A
63 N/A
32 9.41%
41 2.39%
8 3.62%
29 3.39%
40 0.93%
19 2.27%
44 4.1%
52 12.17%
18 7.31%
23 5.75%
25 3.4%
10 -0.52%
33 11.04%
20 3.02%
72 N/A
9 5.38%
39 5.07%
22 7.27%
46 5.62%
64 N/A
73 9.59%
2 5.09%
28 5.68%
74 N/A
3 4.96%
43 6.83%
67 N/A
68 4.27%
16 5.01%
69 N/A

TY *2019 Residential (Class 1) Base Change
by Assessment Neighborhood

0   0.5   1   2
Miles

* Proposed 2019 Assessment Values

N

District of Columbia Assessment Neighborhoods and Wards

OTR GIS

WARD 1
WARD 2
WARD 3
WARD 4
WARD 5
WARD 6
WARD 7
WARD 8

2012 Ward Boundaries

Assessment Neighborhoods

- 1, American University
- 2, Anacostia
- 3, Barry Farms
- 4, Berkley
- 5, Brentwood
- 6, Brightwood
- 7, Brookland
- 8, Burleith
- 9, Capitol Hill
- 10, Central-tri 1
- 10, Central-tri 3
- 11, Chevy Chase
- 12, Chillum
- 13, Cleveland Park
- 14, Colonial Village
- 15, Columbia Heights
- 16, Congress Heights
- 17, Crestwood
- 18, Deanwood
- 19, Eckington
- 20, Foggy Bottom
- 21, Forest Hills
- 22, Fort Dupont Park
- 23, Foxhall
- 24, Garfield
- 25, Georgetown
- 26, Glover Park
- 27, Hawthorne
- 28, Hillcrest
- 29, Kalorama
- 30, Kent
- 31, Ledroit Park
- 32, Lily Ponds
- 33, Marshall Heights
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- 35, Michigan Park
- 36, Mt. Pleasant
- 37, North Cleveland Park
- 38, Observatory Circle
- 39, Old City 1
- 40, Old City 2
- 41, Palisades
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- 48, Shepherd Park
- 49, 16th Street Heights
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- 53, Wakefield
- 54, Wesley Heights
- 55, Woodley
- 56, Woodridge
- 60, Rock Creek Park
- 61, National Zoological Park
- 62, Rock Creek Park
- 63, DC Stadium Area
- 64, Anacostia Park
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- 66, Fort Lincoln
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- 69, DC Village
- 70, Fort Drive
- 71, Glover - Archbold Parkway
- 72, Mall/East Potomac Park
- 73, Washington Navy Yard
- 74, Ft. McNair

0   0.5   1   2 Miles

District of Columbia
Office of Tax and Revenue
Real Property Assessment Division
Geographic Information Systems

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