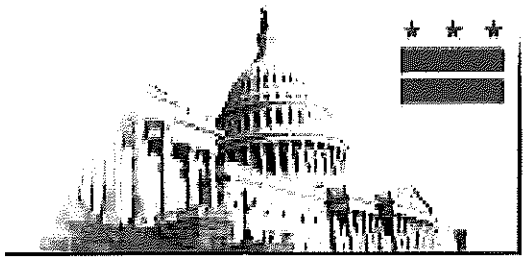
Appendix “1”



Real Property Tax Administration
Office of Tax and Revenue
1101 4th Street, SW, Suite W550
Washington, DC 20024

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

Real Property Assessment Division

2013 General Reassessment Program

Appraiser's Reference Materials

February 2012

Disclaimer:

This 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 2013 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.

Standards & Services Unit
Real Property Assessment Division
1101 4th Street, SW, Suite W550
Washington, DC 20024
Phone: (202) 442-6740
Fax: (202) 442-6796

2013 ARM

Table of Contents

OFFICE OF TAX AND REVENUE
REAL PROPERTY TAX ADMINISTRATION
INTEROFFICE MEMORANDUM

TO: REAL PROPERTY ASSESSMENT DIVISION

FROM: TONY L. GEORGE, CHIEF APPRAISER

SUBJECT: TAX YEAR 2012 REASSESSMENT EFFORT

DATE: 2/23/2012

It is good to be a District of Columbia taxpayer in Tax Year 2013, due to the economic downturn in real estate which is still affecting very much the rest of the country, where values have decreased between thirty to fifty percent over the last three years. The District has weathered the storm very well in the past year in residential and commercial real estate values. Tax Year 2013 valuations reflect an ever stable local, federal and Fortunate 500 job market that exists here in the District, which has cushioned the blow of the extremely high loss in value experienced by the majority of the country in residential and commercial real estate .

Residential values in Tax Year 2013 will be mostly flat with some slight decreases and increases in different sections of the city. This is actually very good news compared to the surrounding jurisdictions which are losing residential value overall up to fifteen percent this year alone.

Commercial real estate here in the District will trend toward a lower vacancy rate with rents rising modestly in the coming year for office and multi-family properties, with industrial properties vacancy rate and rents remaining flat. These factors, along with others, will increase most office and multi-family property values upward for Tax Year 2013.

The Real Property Assessment Division's (RPAD) goal is to make sure the tax burden is equally distributed amongst all District of Columbia taxpayers on an annual basis. While the overall economic picture is still cloudy, there is some sunshine peaking through the clouds for the coming year. We are not out of the woods yet, in regards to dealing with short sales and foreclosures here in the District. There has been a virtual halt to the vast sums of foreclosures which have transpired in 2008 through first half of 2010. I believe these foreclosures and short sales will increase sometime in 2012.

In Tax Year 2013, RPAD assessment notices will reflect an overall increase in District real property value from $ 158.5 billion in TY 2012 to $ 162.9 billion in TY 2013, a 2.8% increase. Commercial real estate (Class 2) will see an increase in the total commercial base from approximately $72.6 billion to $ 77.4 billion, an increase of 6.7%. Residential real estate (Class 1) will see the values go from $ 85.9 billion in TY 2012 to $ 85.5 in TY 2013, basically remaining flat.

Our highly specialized staff at the Real Property Assessment Division is consistently faced with different issues in preparing property values for the coming tax year. In the past three months we have had several retirements of upper management, which we are replacing with other qualified candidates along with a slight reorganization of the staff. Though we are still short some eight to ten appraisers, RPAD will continue to look for ways to be more efficient and productive with the dedicated employees presently on staff.

Since my arrival in November, we have put some procedural deadlines and policies in place that we believe will assist with the backlog of Superior Court appeals, the handling of an increased number of permits, and defense of appeals at the other two levels of appeal. On that note, we will be sending some of our dedicated staff to much needed training courses this year which will help them to become more productive and specialized in valuing the many complex properties located here in the District of Columbia.

Tax Year 2013Assessment notices will be sent out by March 1, 2012 and assessment appeals will be accepted up to and including Monday, April 2, 2012. We will be planning outreach programs with the neighborhood associations and City Council to help educate citizens on how and why their values are derived. Assessment Services-Homestead Unit will be invited to attend with us, which will help ensure that the residential taxpayers of the District are receiving their proper deductions as homeowners.

RPAD will have to once again multi-task in their research and analysis of producing and defending real estate values that are reflective of the current market which has an appraisal date every year on January 1st. Staff is looking forward to training and implementing new technology in the form of a new Computer Assisted Mass Appraisal (CAMA) system. This should be coming to us sometime in the first half of this year. This new system will help our staff to become more productive and efficient now and in the very near future in all aspects of their responsibilities.

With the total parcel count in the District of Columbia nearing the 200,000 mark, RPAD staff will continue to strive to improve servicing the taxpayers of the District of Columbia in any way possible along with performing their responsibilities at the highest level professionally possible.

The RPAD staff understands their essential role in producing accurate real estate values which produce an estimated $1.7 billion in property taxes annually. The work we perform is not always glamorous or popular with taxpayers and they don't always

understand how and why we place certain values on their properties, but let me be the first to say that I truly appreciate the effort, efficiency, production, compassion, teamwork and professionalism which our staff exemplifies everyday when they show up for work. I have the utmost confidence that RPAD is well on its way to becoming a shining example of precision in how an elite assessment office shall perform every day, along with being one of the best in the country.

Once again, thank you for all you do on a daily basis in serving the citizens and property owners of the District of Columbia.

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 9,000 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 (1/1/2009 through 9/8/2011) as follows:

	1/1/09 - 12/31/09	1/1/10 – 12/31/10	1/1/11 – 8/31/11
"Southeast" Neighborhoods (2, 3, 16, 18, 22, 28, 32, 33, 43)	- 0.70% /mo	- 0.70% /mo	- 0.30% /mo
"Northeast" Neighborhoods (5, 6, 7, 12, 14, 15, 17, 19, 31, 35, 36, 42, 47, 48, 49, 51, 52, 56, 66)	- 0.20% /mo	0.00% /mo	0.00% /mo
"Northwest" Neighborhoods (1, 4, 8, 11, 13, 21, 23, 24, 25, 26, 27, 29, 30, 34, 37, 38, 41, 50, 53, 54, 55)	- 0.10% /mo	0.00% /mo	0.00% /mo
"Downtown" Neighborhoods (9, 10, 20, 39, 40, 46)	0.00% /mo	0.01% /mo	0.00% /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 assessor review.
14. Incorporating oversight of the computer aided procedure by our professional staff cited in the *2013 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 assessor 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 Assessor 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 *2013 Valuation Review Process* document.

The Condominium Regression Model:

ESP= (327.56 * SIZE * 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 (327.56) – base size rate (constant)

Size – the square footage of the unit

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: $((SIZE^{.6861})/SIZE)/.12266$, where .12266 = $(800^{.6861})/800$). See graph titled *Condominium Size Curve*.

Efficiency Adj. – if the unit is an efficiency unit, a 0.94 adjustment is applied.

Condition – adjustment for the unit's physical condition

(1) Poor	.75
(2) Fair	.90
(3) Average	1.00
(4) Good	1.06
(5) Very Good	1.13
(6) Excellent	1.19

View – adjustment for the unit's view

(1) Poor	.86
(2) Fair	.94
(3) Average	1.00
(4) Good	1.05
(5) Very Good	1.09
(6) Excellent	1.16

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) = 1.112*
*3 baths: 1 + (((3 – 1) + (.5 * 0)) * .08) = 1.16*

Parking – adjustment for Limited Common Element parking

Outdoor	Covered	Indoor	
12,200	17,100	22,000	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 either 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 2013, we reviewed all the complexes with sales information and calculated the sales prices per square foot. No 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.

2013 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 2011. 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) 2013 revaluation, the TY 2011 reports may be discarded, and the reports from TY 2012 (current) and TY 2013 (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 "4" values increase most rapidly with size as compared to the other land size curves. Land size curve "1" increases values at the lowest rate as land size increases. The graph *Residential Land Size Curves* helps to illustrate this. In all four cases, land rates decrease as land area increases. Market data supports the 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 four 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) * % Special Adj

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.

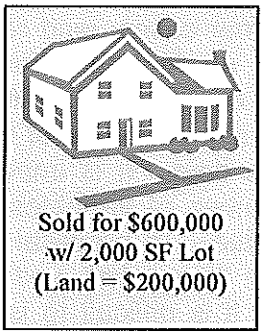
% Special Adj is any adjustment present that is expressed and applied as a percentage adjustment to the rate.

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

Land Rate Development Example

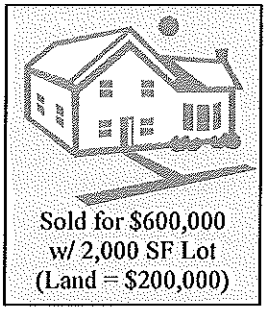
A hypothetical example may help illustrate how regression analysis develops the base land rates and subsequent adjustments to the rates. Suppose two properties in a neighborhood were recently sold. The first, comprised of just a house without land, sold for $400,000. The second property had the identical 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)

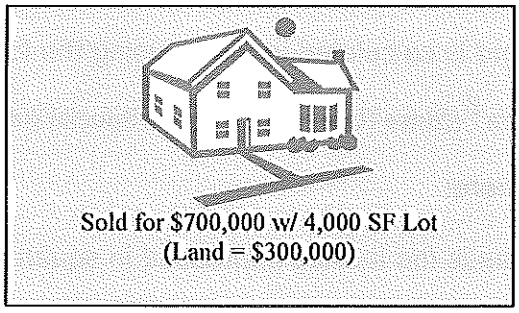


Sold for $600,000
w/ 2,000 SF Lot
(Land = $200,000)

Next, let us assume another house sells. In this instance, 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)

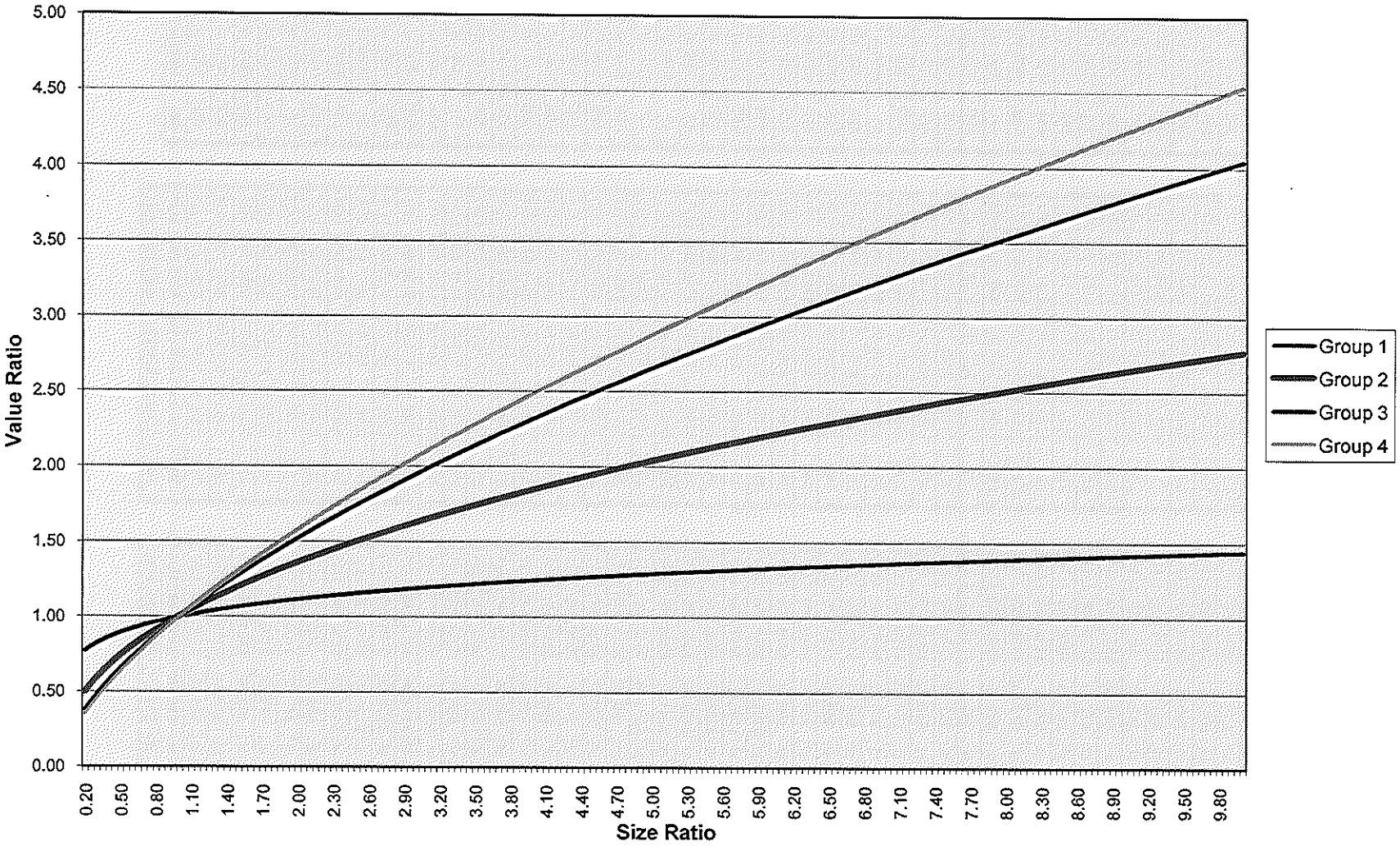
or

$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	$89.65	$358,600	LG1
1B	5000 sf	$73.47	$367,350	LG1
1C	5000 sf	$75.03	$375,150	LG1
2A	2000 sf	$50.09	$100,180	LG1
2B	2000 sf	$54.95	$109,900	LG1
3	2000 sf	$48.48	$96,960	LG1
4A	6700 sf	$86.24	$577,810	LG3
4B	10000 sf	$77.80	$778,000	LG4
4C	8000 sf	$86.23	$689,840	LG4
5A	1700 sf	$79.67	$135,440	LG1
5B	1700 sf	$72.53	$123,300	LG1
6A	4000 sf	$51.43	$205,720	LG1
6B	4000 sf	$48.97	$195,880	LG1
6C	2000 sf	$77.02	$154,040	LG1
6D	4000 sf	$50.12	$200,480	LG1
6E	3000 sf	$57.93	$173,790	LG1
7A	2000 sf	$73.22	$146,440	LG1
7B	3000 sf	$54.93	$164,790	LG1
7C	3000 sf	$60.39	$181,170	LG1
7D	5000 sf	$37.86	$189,300	LG1
7E	2000 sf	$88.36	$176,720	LG1
8A	2000 sf	$184.60	$369,200	LG1
8B	2000 sf	$193.65	$387,300	LG1
9A	1400 sf	$238.16	$333,420	LG2
9B	1400 sf	$237.92	$333,090	LG2
9C	1400 sf	$241.57	$338,200	LG2
10	1400 sf	$294.96	$412,940	LG1
11A	5000 sf	$69.78	$348,900	LG1
11B	5000 sf	$70.68	$353,400	LG1
11C	5000 sf	$70.04	$350,200	LG1
11D	5000 sf	$66.76	$333,800	LG1
11E	5000 sf	$61.68	$308,400	LG1
12	4000 sf	$43.56	$174,240	LG1
13	5000 sf	$121.58	$607,900	LG4
14	9000 sf	$29.34	$264,060	LG1
15A	1800 sf	$132.26	$238,070	LG1
15B	1800 sf	$114.58	$206,240	LG1
15C	1800 sf	$103.53	$186,350	LG1
15D	1800 sf	$120.40	$216,720	LG1
15E	1800 sf	$128.99	$232,180	LG3
16A	2400 sf	$39.59	$95,020	LG1
16B	2400 sf	$41.75	$100,200	LG1
16C	2400 sf	$41.99	$100,780	LG1
17	6000 sf	$50.29	$301,740	LG1
18A	3000 sf	$37.84	$113,520	LG1
18B	3000 sf	$35.39	$106,170	LG1
18C	3000 sf	$35.16	$105,480	LG1
18D	3000 sf	$39.41	$118,230	LG1
18E	3000 sf	$34.81	$104,430	LG1
19A	1800 sf	$114.21	$205,580	LG1
19B	1800 sf	$96.26	$173,270	LG1
20	1000 sf	$344.97	$344,970	LG1
21	9000 sf	$73.12	$658,080	LG3
22A	3000 sf	$36.76	$110,280	LG1
22B	2400 sf	$45.93	$110,230	LG1
22C	3000 sf	$37.25	$111,750	LG1
22D	2400 sf	$48.61	$116,660	LG1
23	2500 sf	$135.16	$337,900	LG1
24	2400 sf	$155.57	$373,370	LG1
25A	1800 sf	$200.90	$361,620	LG3
25B	1800 sf	$251.08	$451,940	LG3
25C	1800 sf	$225.70	$406,260	LG3
25D	1800 sf	$239.38	$430,880	LG3
25E	1800 sf	$271.44	$488,590	LG4
25F	2000 sf	$240.63	$481,260	LG4
25G	2000 sf	$250.77	$501,540	LG3
25H	2000 sf	$232.29	$464,580	LG4
25I	800 sf	$405.13	$324,100	LG3
25J	1200 sf	$300.54	$360,650	LG4
26	1700 sf	$212.73	$361,640	LG1
27	9000 sf	$33.17	$298,530	LG1
28A	2400 sf	$47.49	$113,980	LG1
28B	5000 sf	$28.41	$142,050	LG1
28C	5000 sf	$30.59	$152,950	LG1
29A	2000 sf	$197.16	$394,320	LG4
29B	2000 sf	$202.54	$405,080	LG4
29C	2000 sf	$190.00	$380,000	LG3
30A	5000 sf	$90.07	$450,350	LG4
30B	5000 sf	$98.37	$491,850	LG4
30C	7000 sf	$82.42	$576,940	LG4
31A	1800 sf	$121.27	$218,290	LG1
31B	1800 sf	$118.07	$212,530	LG1
32A	5000 sf	$23.87	$119,350	LG1
32B	2000 sf	$51.56	$103,120	LG1
33A	2000 sf	$51.74	$103,480	LG1
33B	2000 sf	$61.52	$123,040	LG1
34	9000 sf	$97.49	$877,410	LG4
35	5000 sf	$36.98	$184,900	LG1
36A	2000 sf	$147.31	$294,620	LG1
36B	2000 sf	$153.46	$306,920	LG3
36C	1600 sf	$185.77	$297,230	LG1
37	3000 sf	$126.72	$380,160	LG3
38	5000 sf	$113.55	$567,750	LG4
39A	1500 sf	$156.18	$234,270	LG1
39B	1500 sf	$180.63	$270,950	LG1
39C	1500 sf	$200.67	$301,010	LG1
39D	1500 sf	$163.56	$245,340	LG1
39E	1200 sf	$190.38	$228,460	LG1
39F	1200 sf	$196.32	$235,580	LG1
39G	1500 sf	$126.26	$189,390	LG1
39H	1500 sf	$100.48	$150,720	LG1
39J	1500 sf	$185.17	$277,760	LG1
39K	1500 sf	$204.97	$307,460	LG1
39L	1200 sf	$169.37	$203,240	LG1
39M	1500 sf	$208.25	$312,380	LG1
40A	1400 sf	$141.11	$197,550	LG1
40B	1400 sf	$169.23	$236,920	LG1
40C	1600 sf	$198.50	$317,600	LG2
40D	1600 sf	$256.43	$410,290	LG2
40E	1600 sf	$227.17	$363,470	LG2
40F	1200 sf	$246.92	$296,300	LG2
40G	1600 sf	$183.39	$293,420	LG1
41	5000 sf	$86.34	$431,700	LG2
42A	1800 sf	$101.53	$182,750	LG1
42B	1800 sf	$92.98	$167,360	LG1
42C	1800 sf	$88.56	$159,410	LG1
43A	2000 sf	$57.44	$114,880	LG1
43B	2000 sf	$55.60	$111,200	LG1
43C	2000 sf	$54.57	$109,140	LG1
43D	2000 sf	$60.83	$121,660	LG1
46	1200 sf	$228.46	$274,150	LG1
47	3000 sf	$50.04	$150,120	LG1
48	5000 sf	$43.89	$219,450	LG1
49A	3000 sf	$76.72	$230,160	LG1
49B	3000 sf	$67.63	$202,890	LG1
49C	3000 sf	$58.91	$176,730	LG1
50A	10000 sf	$66.87	$668,700	LG3
50B	6000 sf	$81.42	$488,520	LG2
50C	14000 sf	$61.65	$863,100	LG3
50D	15000 sf	$70.70	$1,060,500	LG3
51	3000 sf	$57.67	$173,010	LG3
52A	1800 sf	$74.34	$133,810	LG1
52B	1600 sf	$84.93	$135,890	LG1
52C	1600 sf	$71.12	$113,790	LG1
53	5000 sf	$74.25	$371,250	LG1
54A	6000 sf	$109.64	$657,840	LG4
54B	1000 sf	$277.82	$277,820	LG1
55	6000 sf	$84.37	$506,220	LG2
56A	5000 sf	$34.29	$171,450	LG1
56B	5000 sf	$31.98	$159,900	LG1
56C	5000 sf	$29.96	$149,800	LG1
56D	5000 sf	$27.96	$139,800	LG1
66	5000 sf	$34.60	$173,000	LG1

Residential Land Size Curves



Condominium Size Curve
Rate per SF
Rate
$550
$500
$450
$400
$350
$300
$250
$200
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

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:

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

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

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.

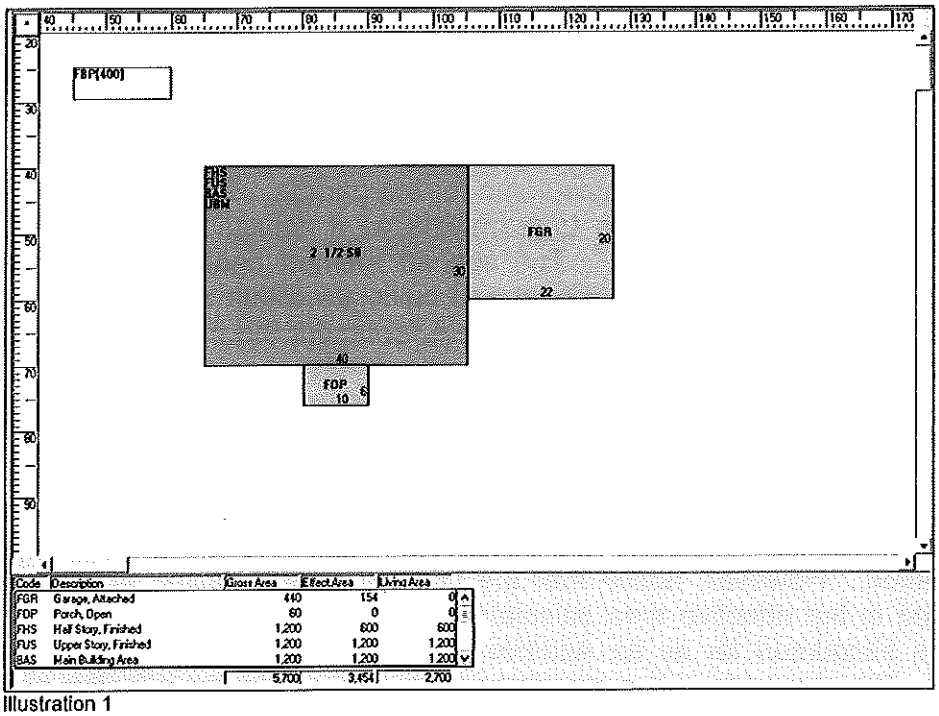
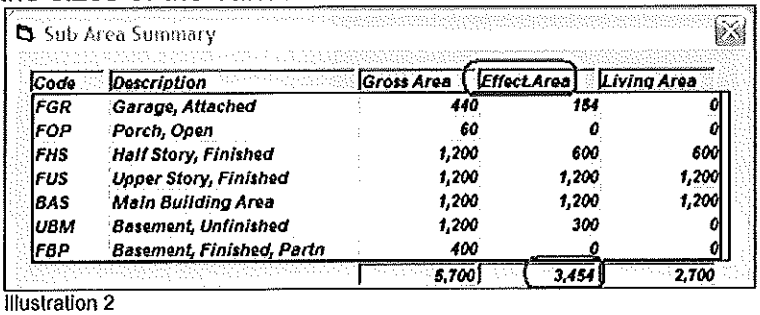


Illustration 1

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. The bottom of the sketch screen in CAMA provides the information about the sizes of the various areas of the house.


Sub Area Summary

Code	Description	Gross Area	Effect Area	Living Area
FGR	Garage, Attached	440	154	0
FOP	Porch, Open	60	0	0
FHS	Half Story, Finished	1,200	600	600
FUS	Upper Story, Finished	1,200	1,200	1,200
BAS	Main Building Area	1,200	1,200	1,200
UBM	Basement, Unfinished	1,200	300	0
FBP	Basement, Finished, Partn	400	0	0
		5,700	3,454	2,700

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 @ 35% of 440 SF), and the adjusted area of the unfinished basement (Basement, Unfinished @ 30% 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 $35/SF. The RCN value of the garage would be calculated as follows:

RCN of Garage = $15,400 or (440 SF * $35)

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 = $15,400 or [(440 * .35) * $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.

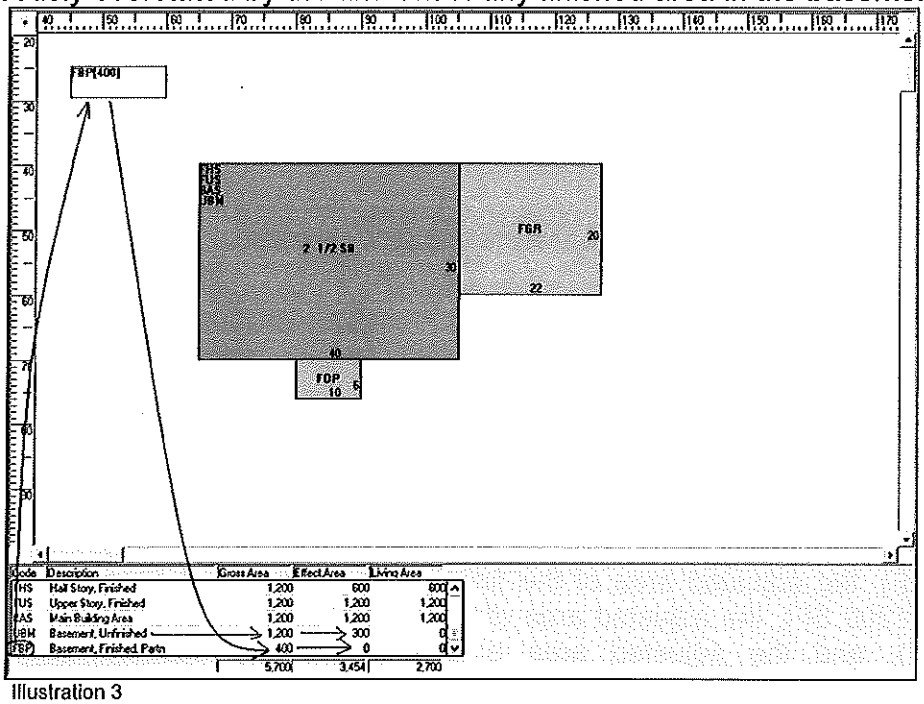


Illustration 3

Finally, the Gross Area shown in Illustration 2 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 + $\sum$ $ABRV_n$) * *3,454* * 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 = [(*$149.27* + $\sum$ $ABRV_n$) * *3,454* * 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.

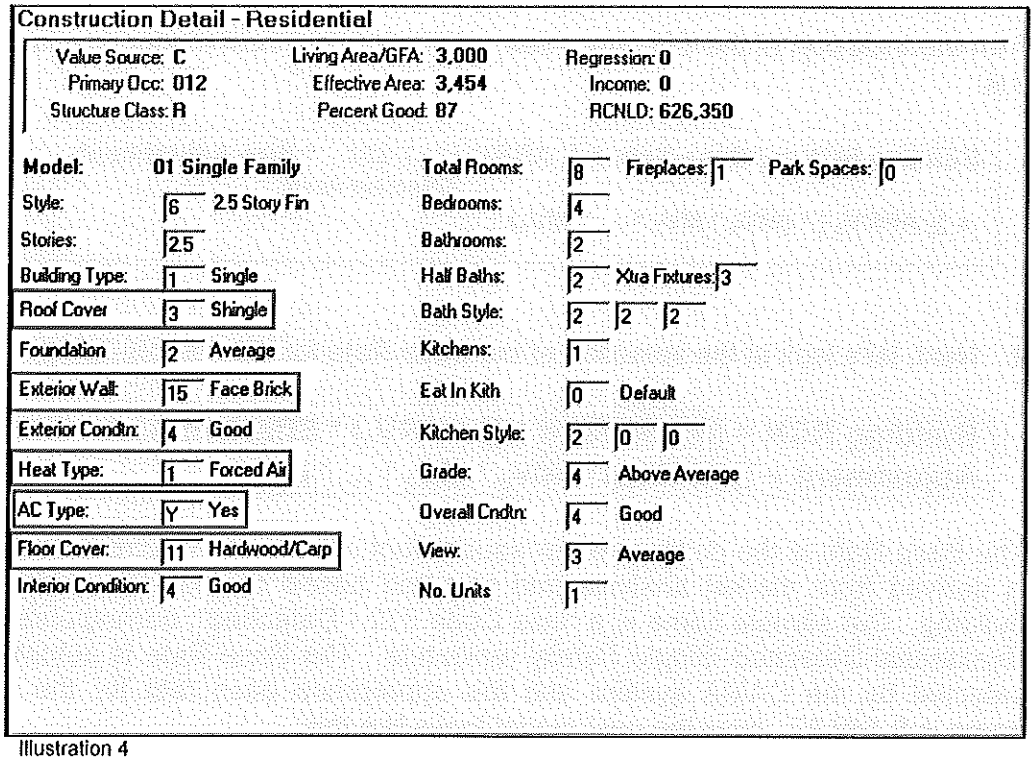


Illustration 4

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 $149.27 to give a modified Base Rate of $160.37.

Our model now looks like this:

$$\text{Building RCN} = [\,(\underbrace{\$149.27}_{\text{Base Rate}} + \underbrace{\$11.10}_{\Sigma\,\text{ABRV}_n}) * \underbrace{3{,}454}_{\text{Effective Area}} * \text{Size Adjustment} + \Sigma\,\text{AFRV}_n\,] * (\text{MV}_0 * \text{MV}_2 * \ldots * \text{MV}_n)$$

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 * Size Adjustment + $\sum$ $AFRV_n$] * (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 0.93906 as listed on the Cost.dat sheet. Now our Base Rate is calculated to be $150.60 ((149.27+11.10) * 0.93906).

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 = [(*$149.27* + *$11.10)* * *3,454* * *0.93906*
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 + $\sum$ $AFRV_n$] * (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:

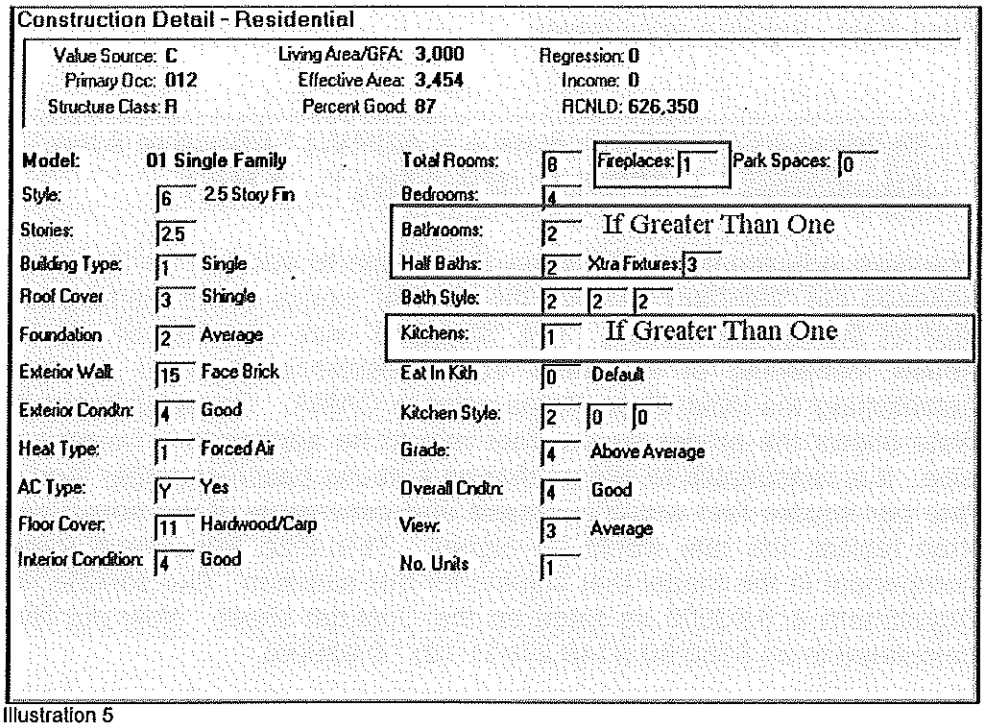


Illustration 5

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 $21,440 (2 "units" X $10,720 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 $18,000. 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 $45 per SF. The open porch is calculated in a similar manner.

**********Flat Value Additions**********
FULL BATHS OVER 1 = 16000 + RCN
HALF BATHS = 21440 + RCN
FIREPLACES = 7100 + RCN
PARTITIONED FINISHED BASEMENT = 18000 + RCN
OPEN PORCH = 801 + RCN

The sum, Σ, is $63,341 (16,000+21,440+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:

$$\text{Building RCN} = [\ (\underbrace{\$149.27}_{\text{Base Rate}} + \underbrace{\$11.10}_{\Sigma\,ABRV_n})\ *\ \underbrace{3{,}454}_{\text{Effective Area}}\ *\ \underbrace{0.93906}_{\text{Size Adjustment}} + \$63{,}341\ ]\ *\ (MV_0 * MV_2 * \ldots * MV_n)$$

$\Sigma\,AFRV_n$

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

$$\text{Building RCN} = [(\text{Base Rate} + \Sigma\,ABRV_n) * \text{Effective Area} * \text{Size Adjustment} + \Sigma\,AFRV_n] * (MV_0 * MV_2 * \ldots * MV_n)$$

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 1.10 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 reduced by 20.6%, whereas a house in excellent condition throughout will have its value increased 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:

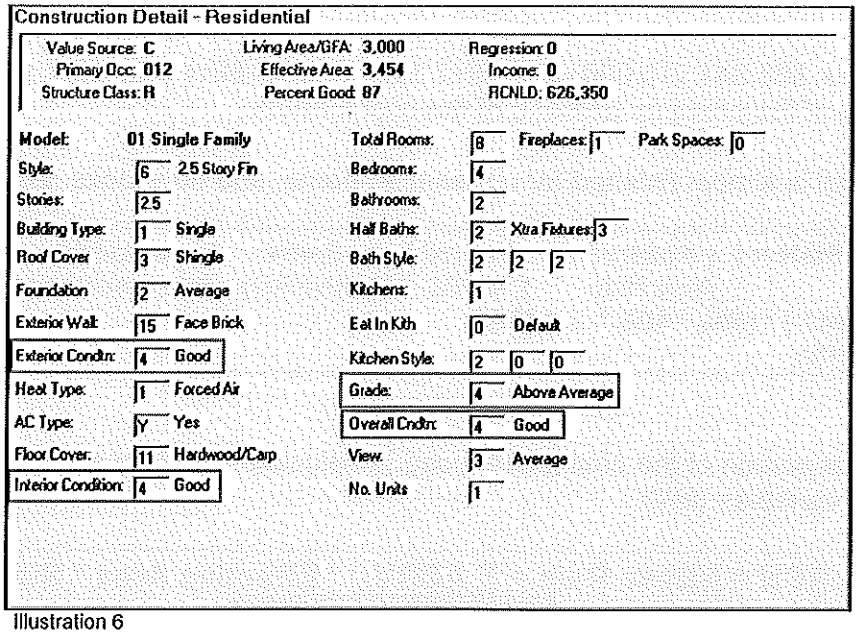


Illustration 6

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.

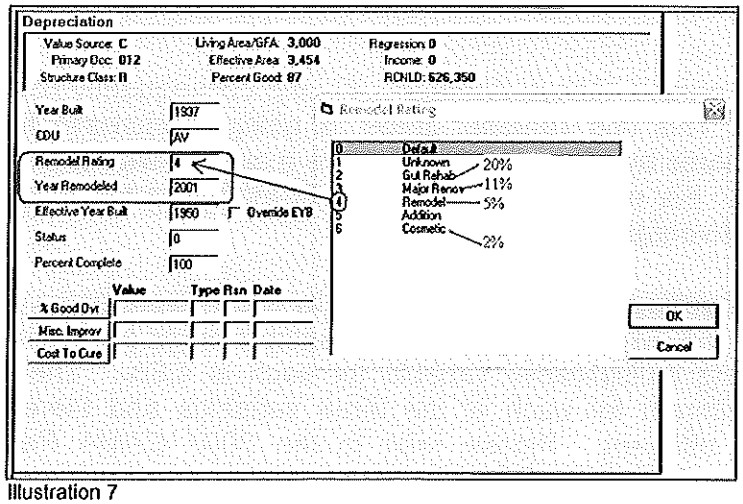


Illustration 7

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) = 1.048 x RCN
EXTERIOR CONDITION 4 (GOOD) = 1.048 x RCN
GRADE 40 (Above Average) = 1.1 x RCN
INTERIOR CONDITION 4 (GOOD) = 1.048 x RCN
REMODEL FACTOR 4 = 1.04 x RCN
SUB-NEIGHBORHOOD ADJ A = .937 x RCN

Each MV is multiplied together to determine the combined, or overall, MV. The sample home's MV is 1.2338132 (1.048*1.048*1.1*1.048*1.04*.937).

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 Adjustment + $\sum$ $AFRV_n$] * (MV_0 * MV_2 * ... * MV_n)

$ 719,947 = [($149.27 + $11.10) * 3,454 * .93906 + $63,341] * (1.2338132)

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: R06

Section #
Base Rate: 149.27
Size Adjustment: .93906
Effective Area: 3454
Adjusted Base Rate = (149.24 + 11.1) * .93906
Adjusted Base Rate: 150.6
RCN = ((150.6 * 3454) + 63341) * 1.23381334499738
RCN: 719947

The replacement cost new for our sample home is $719,947. 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 $ 12,680. 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.

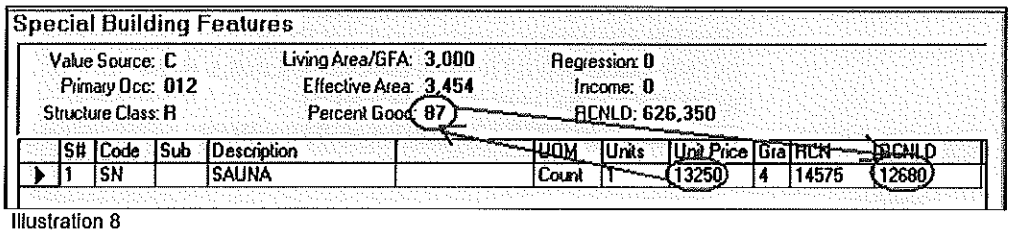


Illustration 8

We now know the total replacement cost new (RCN) of our sample home, including the sauna, is $ 733,197 ($719,947 + $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 $733,197. 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 69 years as indicated on the Depreciation Table below:

Depreciation Table

Base Year 2006

Effective Age of Building	% Depr.	% Good	Effective Year Built
0	0	100	2006
1	1	99	2005
2	2	98	2004
3	2	98	2003
4	3	97	2002
5	3	97	2001
6	4	96	2000
7	4	96	1999
8	4	96	1998
9	4	96	1997
10	5	95	1996
11	5	95	1995
12	5	95	1994
13	5	95	1993
14	6	94	1992
15	6	94	1991
16	6	94	1990
17	6	94	1989
18	6	94	1988
44	11	89	1962
45	11	89	1961
46	11	89	1960
47	11	89	1959
48	12	88	1958
49	12	88	1957
50	12	88	1956
51	12	88	1955
52	12	88	1954
53	12	88	1953
54	13	87	1952
55	13	87	1951
56	13	87	1950
57	13	87	1949
58	13	87	1948
59	13	87	1947
60	14	86	1946
61	14	86	1945
62	14	86	1944
63	14	86	1943
64	14	86	1942
65	14	86	1941
70	15	85	1936
75	16	84	1931

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 $ 733,197, the depreciated value, RCNLD, is only $ 623,217 (733,197* 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.

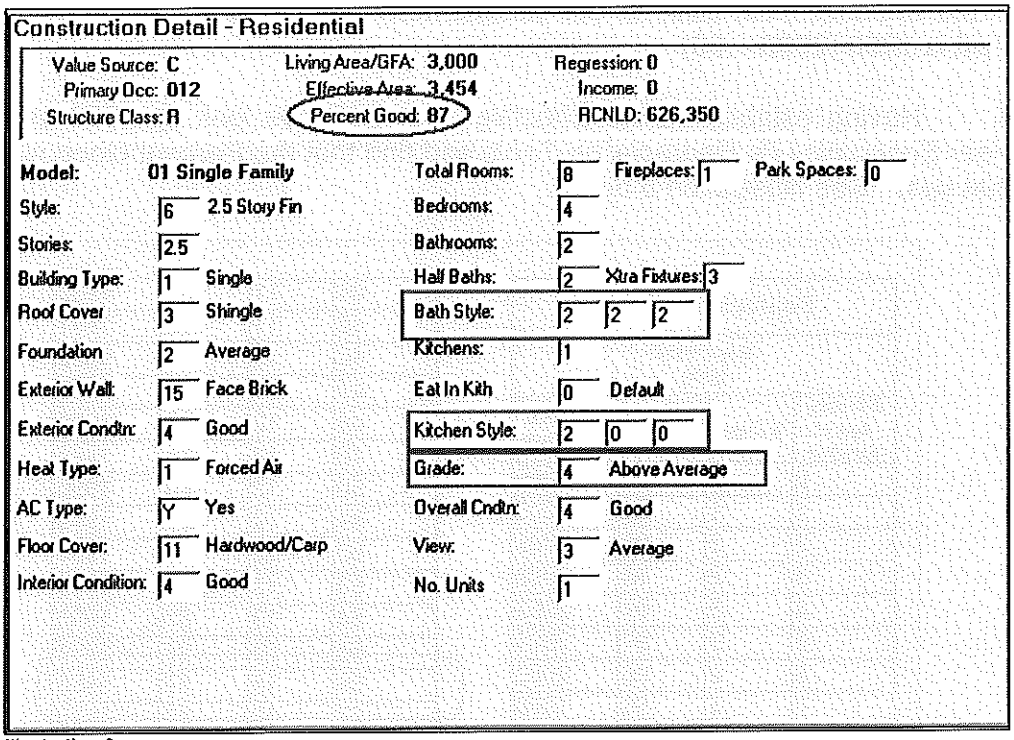


Illustration 2

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.

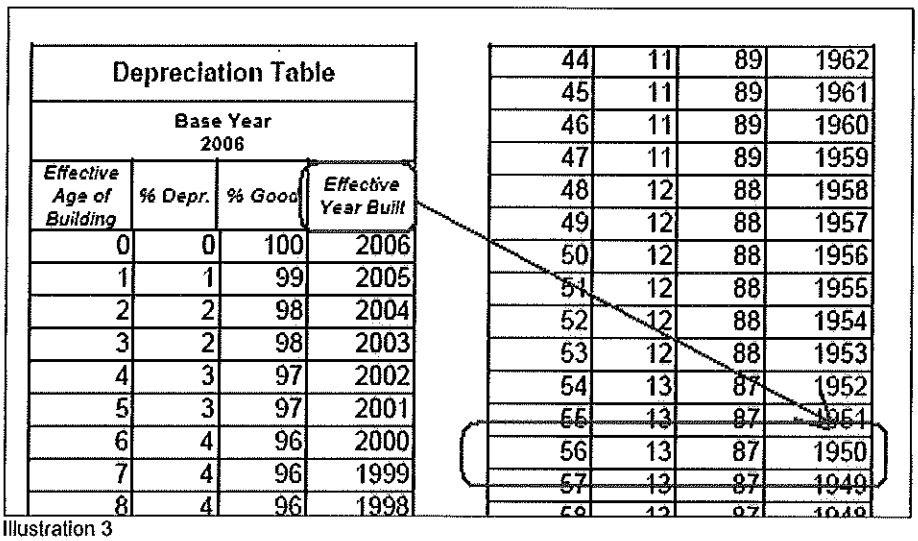
```
**************Effective Age Adjustments****************
      BATH STYLE 2 (Semi-Modern) = .95 * Age
      EFF AGE GRADE 40 (Good Quality) = .95 * Age
      KITCHEN STYLE 2 (Semi-Modern) = .9 * Age
```

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 69 years. The Effective Age is calculated to be 56 years (69 * 0.81225). Instead of CAMA using 69 chronological years to calculated depreciation, it will use 56 years. Below is a portion of the Cost.dat file that shows these calculations.

```
*******************************************************
      Actual Year Built:  1937
      Effective Age = 69 * .81225
      Effective Age:  56
      Percent Good = 87
      RCNLD: 626350
```

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 2006

Effective Age of Building	*% Depr.*	*% Good*	*Effective Year Built*
0	0	100	2006
1	1	99	2005
2	2	98	2004
3	2	98	2003
4	3	97	2002
5	3	97	2001
6	4	96	2000
7	4	96	1999
8	4	96	1998
44	11	89	1962
45	11	89	1961
46	11	89	1960
47	11	89	1959
48	12	88	1958
49	12	88	1957
50	12	88	1956
51	12	88	1955
52	12	88	1954
53	12	88	1953
54	13	87	1952
55	13	87	1951
56	13	87	1950
57	13	87	1949

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 $ 626,350.

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.

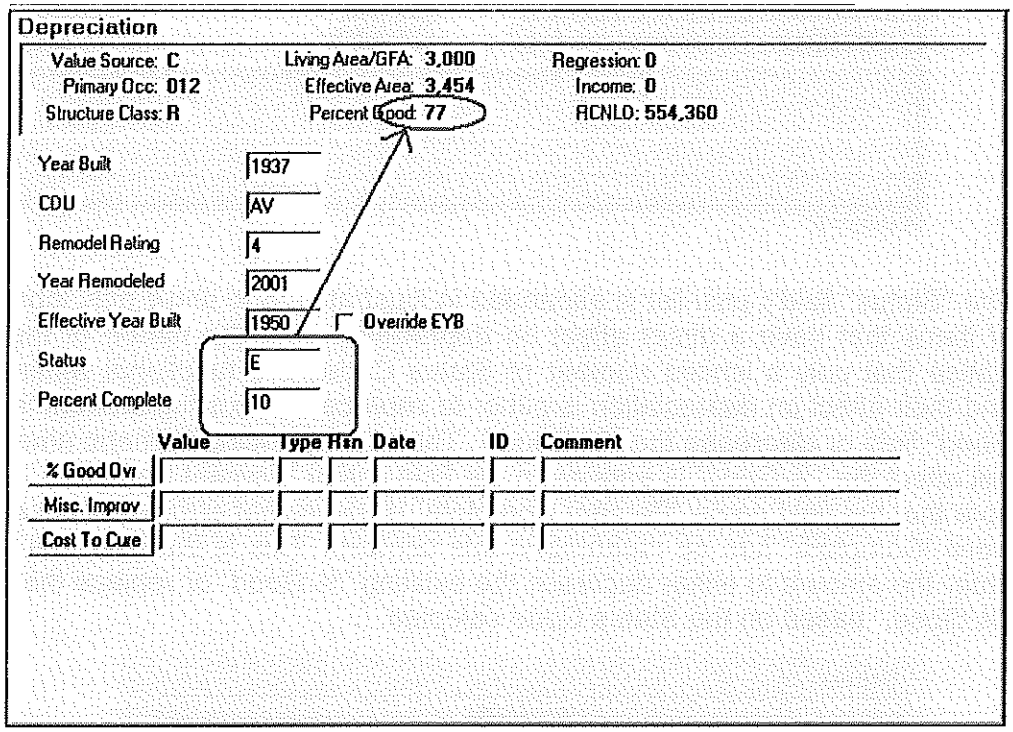


Illustration 4

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. Nor is it necessary to enter information on the lower 1/3 of the screen. The "Status" and "Percent Complete" fields are the only two fields that are utilized to account for additional depreciation.

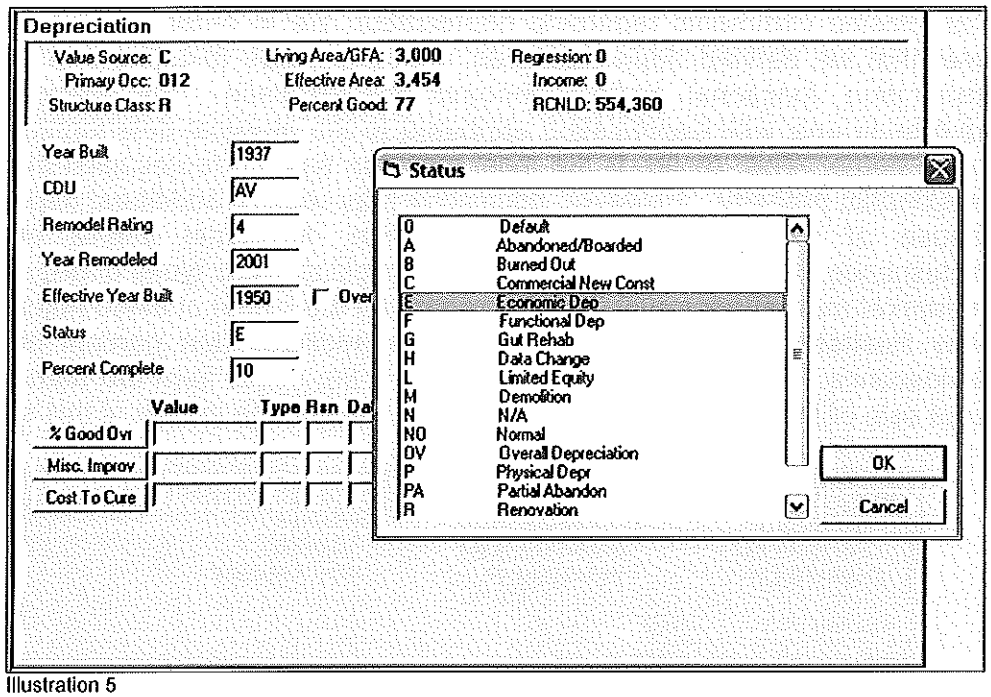


Illustration 5

The "Status" field's pick-list is expanded in Illustration 6 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.

Status

Status Codes

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.

LAND LINE VALUATION SECTION																		
B#	Occ	Description	Zone	Frontage	Depth	Units		ST	I Factor	IT	Price	Site Adj	Site Rating		Adjustments	Special Use	Notes	Land Value
1	411	Residential Detached Single Fa				6,000	SF	P	1.03		63.14	0.5630		1.00	T:-50%	V:0	Poor topo in back; River view	[illegible]

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 *Appraiser 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	$73.16	$365,800	LG 1

Illustration 2

The base rate for our property is $ 73.16 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 0.863 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 $ 63.14 ($73.16 * 0.863).

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 $78.14 ($63.14 + $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 $468,822 ($78.14 * 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 appraiser 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 $ 375,060 (468,822 * 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.

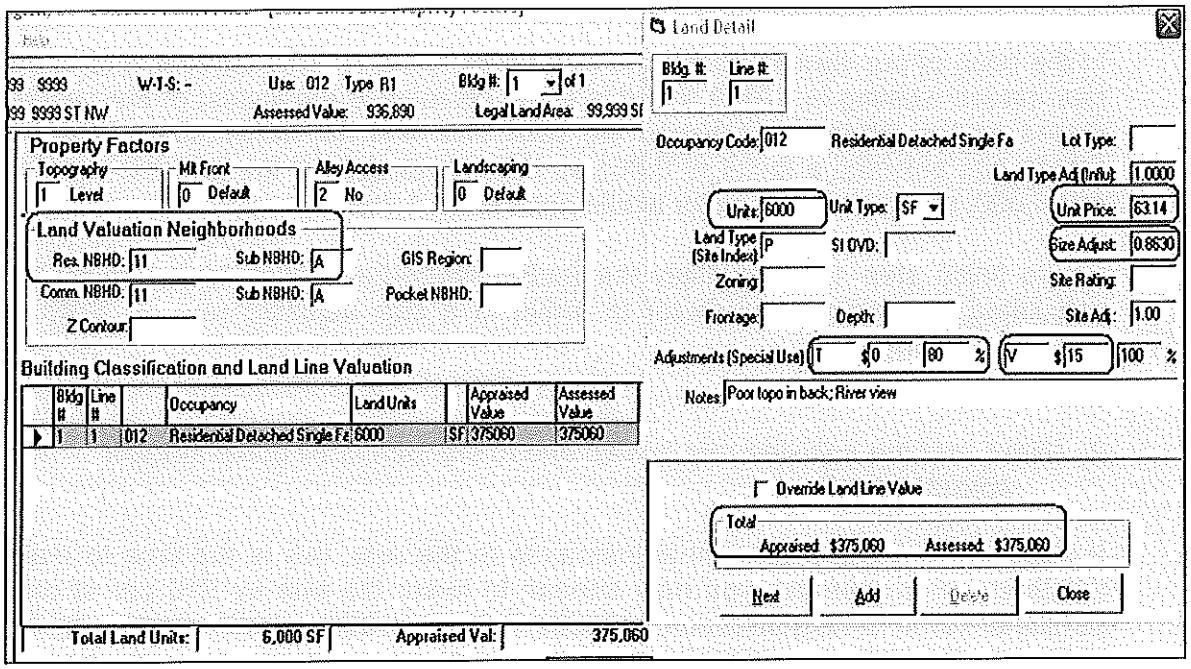


Illustration 3

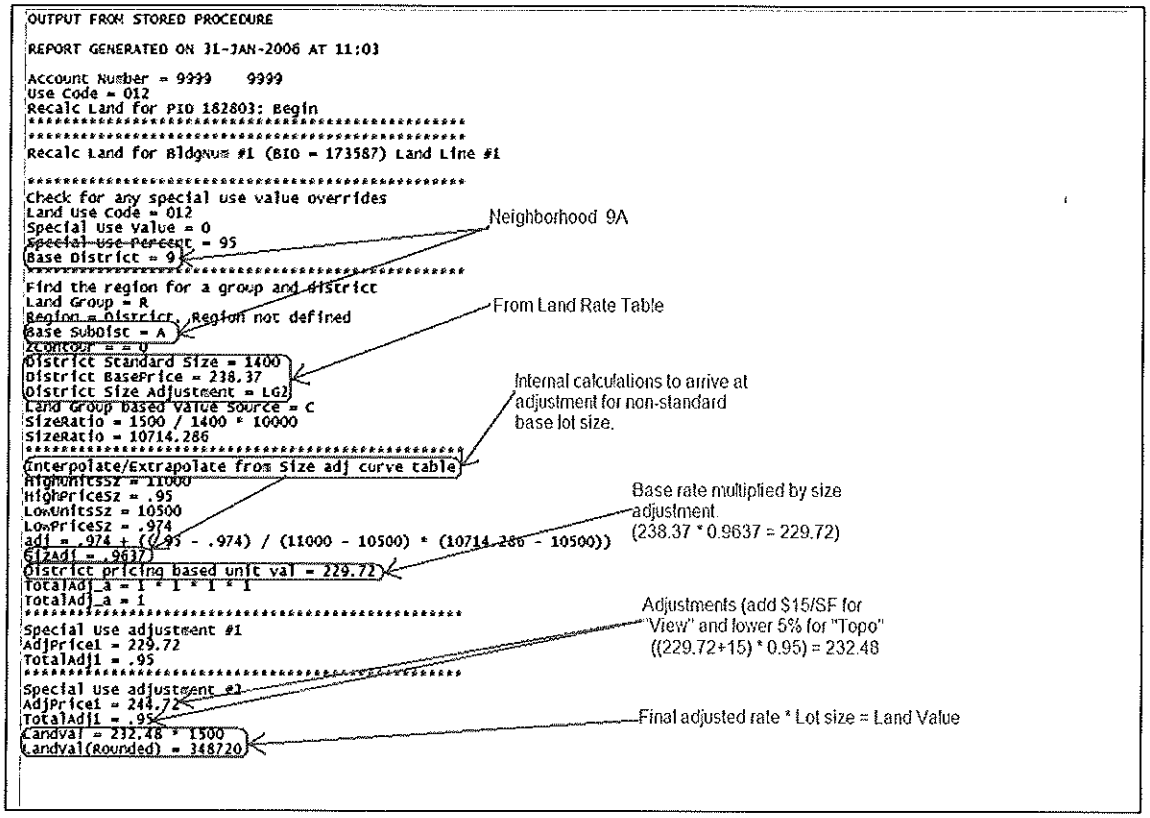


Illustration 4

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. 2008 CAMA Construction Valuation Guideline – Residential

ACCOUNT #: 9999 9999
Internal ID: 182803

Property Location: 9999 9999 ST NW
WASHINGTON, DC 99999

Bldg #: 1 of 1 Card 1 of 1

Batch #:
Print Date: 02/09/2006 14:45

CURRENT OWNER

JOSEPH TAXPAYER
JANE DOE-TAXPAYER
626 BREAKAWAY DR

WASHINGTON, DC 20000
Additional Owners:

ACCOUNT INFORMATION

Use Type	Use Code	Lot SF	Status Code
R1	012	99,999	E

VISIT/CHANGE HISTORY

Date	ID	Type	Inf. Source	Code	Description
8/8/2003	002	C	O	P	Permit Work
7/23/2003	002	E	N	P	Permit Work

CURRENT ASSESSMENT

Description	Use	Assessed Value
RESIDNTL	012	567,040
RES LAND	012	375,060
Value Source: C	Total:	942,100

	Value Date	Value Status
Reg	02/09/2006	
Cost	02/09/2006	C

RES

District of Columbia Real Property Assessment Division

OWNERSHIP HISTORY

	INSTRUMENT #	SALE DATE	q/u	v/i	SALE PRICE	A.C.
JOSEPH TAXPAYER	123456	02/29/2000	Q	I	654,321	01

PREVIOUS ASSESSMENTS (HISTORY)

Yr.	Use	Type	Val Source	Land Value	Building Value	Assessed Value
2007	012	R1	C	375,060	639,030	1,014,090
2006	012	R1	C	303,620	636,800	940,420
2005	012	R1	C	221,870	555,760	777,630
2004	012	R1	O	183,470	439,510	622,980

APPEALS

Appeal #	Decision	Amount	Revised AV

PROPERTY FACTORS

TOPO.	MLT FRONT	ALLEY ACCESS	LANDSCAPE
1 Level	0 Default	2 No	0 Default

TAX TYPE

Year	Type	Description

SUPPLEMENTAL DATA

Type	Description
Neighborhood	
Part Part	
Mixed Use	
Vcnt Lnd Use	12
Model Type	
Base Lot Val	
Abbutt Lot	
Sketch Flag	

COMMENTS

PARCEL LOCATION SUMMARY

SSL	NBHD	SUB-NBHD	ZONING	WARD	GROUP	ARN
	11	A				203

VALUE SUMMARY

	Regress (L&B)	Cost (L&B)
	387,740	942,100

	Factor/Value	Type	Reason	Date	ID
Value Adjust.					
Override					
Comment					

BUILDING PERMIT INFORMATION

Permit ID	Issue Date	Type	Amount	Description	Insp. Date
B654321	04/03/2003	NW	200,000	SFD - Construct a new single family dwelling and two-car gara	08/08/2003
B123456	04/02/2003	RZ	0	SFD - Raze existing building	07/23/2003

DATA ENTRY

Entry Date: _____ Entry ID: _____

LAND LINE VALUATION SECTION

B#	Occ	Description	Zone	Frontage	Depth	Units		S.I.	I. Factor	LT	Price	Size Adj	Site Rating	Adjustments/Special Use		Notes	Land Value
1	012	Residential Detached Single Fa				6,000	SF	P	1.00		63.14	0.8630	1.00	T:80%	V:0	Poor topo in back; River view	375,060
		Total Land Units				6,000	SF									Total Land Value:	375,060

ACCOUNT #: 9999 9999 | Property Location: 9999 9999 ST NW | Batch #:

Internal ID: 182803 | WASHINGTON, DC 99999 | Bldg #: 1 of 1 | Card 1 of 1 | Print Date: 02/09/2006 14:45

CONSTRUCTION DETAIL

Element	Cd.	Chng	Description
Occupancy	012		Residential Detached S
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 Cndtn	4		Good
Heat Type	1		Forced Air
AC	Y		Yes
Floor Cover	11		Hardwood/Carp
Interior Cndtn	4		Good
Total Rooms	8		
Fireplaces	1		
Bedrooms	4		
Full Baths	2		
Half Baths	2		
Extra Fixtures	3		
Bath Style	2		Semi-Modern
Kitchens	1		
Kitchen Style	2		Semi-Modern
Eat-In Kitchen	0		Default
Overall Cndtn	4		Good
View	3		Average
Off Street Parking	0		
No. Units	1		

BUILDING SUMMARY SECTION

Code	Description	Gross	Eff. Area	Living
BAS	Main Building Area	1,200	1,200	1,200
FBP	Basement, Finished	400	0	0
FGR	Garage, Attached	440	154	0
FHS	Half Story, Finished	1,200	600	600
FOP	Porch, Open	60	0	0
FUS	Upper Story, Finish	1,200	1,200	1,200
UBM	Basement, Unfinish	1,200	300	0
	Total:	5,700	3,454	3,000

BUILDING COST

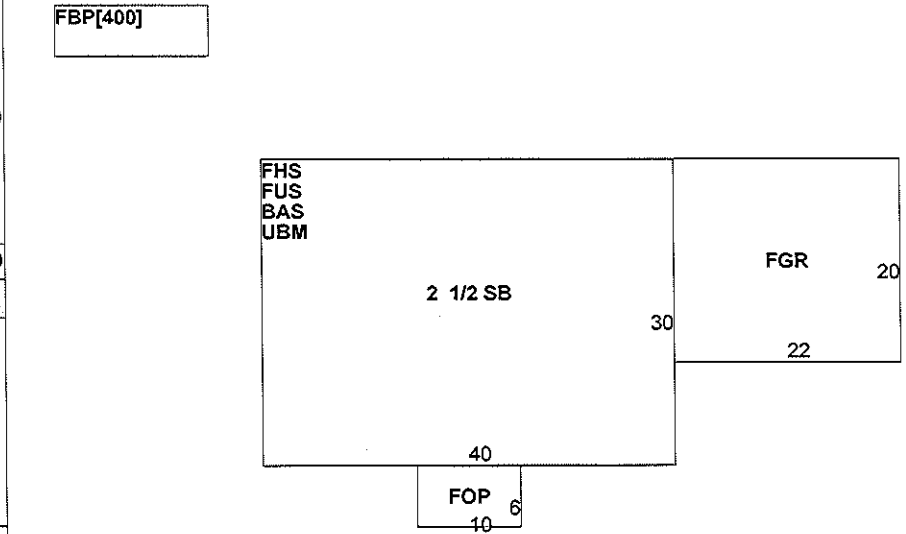
Effective Area	3,454
Building RCN	719,947
Spec.Feature RCN	14,575
Total RCN	734,522
% Good	77
Building Cost	567,040

DEPRECIATION

	Current	Change
Primary OCC	012	
Structure Class	R	
Actual Year Built	1937	
Year Remodeled	2001	
Effective Year Built	1950	
CDU	AV	
Status	E	
% Complete	10	

% GD Override (Cost)	
Type	
Reason	
Date	
ID	
Comment	

SKETCH



SPECIAL FEATURES/AMENITIES

Code	Description	Units	UOM	Unit Price	Grade	RCN
SN	SAUNA	1	Count	13,250.00	4	14,575

DETACHED STRUCTURES

Code	Description	Units	UOM	Unit Price	Grade	Cndtn	RCN	% Gd	Assessed Val

OUTPUT FROM STORED PROCEDURE
REPORT GENERATED ON 06-FEB-2006 AT 01:23

**********Building #1 Calc Start**********
Cost Calculation for pid, bid = 182803,173587
Account Number = 9999 9999
Use Code = 012
Cost Rate Group = R12
Model ID: R07

Section #
Base Rate: 149.27
Size Adjustment: .93906
Effective Area: 3454
Adjusted Base Rate = (149.27 + 11.1) * .93906
Adjusted Base Rate: 150.6
RCN = ((150.6 * 3454) + 63341) * 1.23381334499738
RCN: 719947

**********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

**********Flat Value Additions**********
FULL BATHS OVER 1 = 16000 + RCN
HALF BATHS = 21440 + RCN
FIREPLACES = 7100 + RCN
PARTITIONED FINISHED BASEMENT = 18000 + RCN
OPEN PORCH = 801 + RCN

**********Factor Adjustments**********
OVERALL CONDITION 4 (Good) = 1.048 x RCN
EXTERIOR CONDITION 4 (Good) = 1.048 x RCN
GRADE 4 (Above Average) = 1.1 x RCN
INTERIOR CONDITION 4 (Good) = 1.048 x RCN
REMODEL FACTOR 4 = 1.04 x RCN
SUB-NEIGHBORHOOD ADJ A = .937 x RCN

**********Effective Age Adjustments**********
BATH STYLE 2 (Semi-Modern) = .95 * Age
EFF AGE GRADE 4 (Above Average) = .95 * Age
KITCHEN STYLE 2 (Semi-Modern) = .9 * Age
****

Actual Year Built: 1937
Effective Age = 69 * .81225
Effective Age: 56
Percent Good = 87
RCNLD: 626350

```
OUTPUT FROM STORED PROCEDURE

REPORT GENERATED ON 06-FEB-2006 AT 10:37

Account Number = 9999    9999
Use Code = 012
Recalc Land for PID 182803: Begin
**************************************************
**************************************************
Recalc Land for BldgNum #1 (BID = 173587) Land Line #1

**************************************************
Check for any special use value overrides
Land Use Code = 012
Special Use Value = 0
Special Use Percent = 80
Base District = 11
**************************************************
Find the region for a group and district
Land Group = R
Region = District, Region not defined
Base SubDist = A
ZContour = = 0
District Standard Size = 5000
District BasePrice = 73.16
District Size Adjustment = LG1
Land Group based Value Source = C
SizeRatio = 6000 / 5000 * 10000
SizeRatio = 12000
**************************************************
Interpolate/Extrapolate from Size adj curve table
SizAdj = .863
District pricing based unit val = 63.14
TotalAdj_a = 1 * 1 * 1 * 1
TotalAdj_a = 1
**************************************************
Special Use adjustment #1
AdjPrice1 = 63.14
TotalAdj1 = .8
**************************************************
Special Use adjustment #2
AdjPrice1 = 78.14
TotalAdj1 = .8
LandVal = 62.51 * 6000
LandVal(Rounded) = 375060
```

USECODE

(Selects Base Rate)

No.	Description	Value
011	Row	$126.65
012	Detached	$149.27
013	Semi-Detached	$124.27
015	Mixed Use	$126.65
019	Miscellaneous	$126.65
023	Small Apt. Bldg.	$ 84.56
024	Conversion	$127.45
097	Vacant & Aban.	$126.65

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	$2.00
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)	$16,000
Half Bath	$10,720
Fireplace	$ 7,100
Kitchen	$10,440
Finished Basement (Basic)	$30.00/sf
Finished Basement (Partition)	$45.00/sf
Basement Garage	$30.00/sf
Carport	$26.71/sf
Stoop	$13.35/sf
Open Porch	$13.35/sf
Covered Open Porch	$28.93/sf
Screen Enclosed Porch	$35.61/sf
Glass Enclosed Porch	$40.06/sf
Fully Enclosed Porch	$44.51/sf
Deck	$17.80/sf
Patio	$ 5.97/sf

Grade (Multiplies Base, Add & Flat)		
0	Default	
1	Low Quality	0.50
2	Fair Quality	0.80
3	Average Quality	1.00
4	Above Average Quality	1.10
5	Good Quality	1.20
6	Very Good Quality	1.25
7	Excellent Quality	1.35
8	Superior Quality	1.48
9	Extraordinary – A	1.65
10	Extraordinary – B	2.00
11	Extraordinary – C	2.20
12	Extraordinary – D	2.50
Interior Condition (Multiplies Base, Add & Flat)		
0	Typical	
1	Poor	.794
2	Fair	.909
3	Average	1.000
4	Good	1.048
5	Very Good	1.091
6	Excellent	1.105
Exterior Condition (Multiplies Base, Add & Flat)		
0	Default	
1	Poor	.794
2	Fair	.909
3	Average	1.000
4	Good	1.048
5	Very Good	1.091
6	Excellent	1.105
Overall Condition (Multiplies Base, Add & Flat)		
0	Default	
1	Poor	.794
2	Fair	.909
3	Average	1.000
4	Good	1.048
5	Very Good	1.091
6	Excellent	1.105
Remodel Type (Multiplies Base, Add & Flat)		
0	Default	
1	Unknown	
2	Gut Rehab	1.20
3	Major Renov	1.11
4	Remodel	1.05
5	Addition	
6	Cosmetic	1.02

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 + Σ $ABRV_n$) * Effective Area * Size Adjustment + Σ $AFRV_n$] * (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 2006

Effective Age of Building	*% Depr.*	*% Good*	*Effective Year Built*
0	0	100	2006
1	1	99	2005
2	2	98	2004
3	2	98	2003
4	3	97	2002
5	3	97	2001
6	4	96	2000
7	4	96	1999
8	4	96	1998
9	4	96	1997
10	5	95	1996
11	5	95	1995
12	5	95	1994
13	5	95	1993
14	6	94	1992
15	6	94	1991
16	6	94	1990
17	6	94	1989
18	6	94	1988
19	7	93	1987
20	7	93	1986
21	7	93	1985
22	7	93	1984
23	7	93	1983
24	8	92	1982
25	8	92	1981
26	8	92	1980
27	8	92	1979
28	8	92	1978
29	9	91	1977
30	9	91	1976
31	9	91	1975
32	9	91	1974
33	9	91	1973
34	9	91	1972
35	10	90	1971
36	10	90	1970
37	10	90	1969
38	10	90	1968
39	10	90	1967
40	10	90	1966
41	11	89	1965
42	11	89	1964
43	11	89	1963
44	11	89	1962
45	11	89	1961
46	11	89	1960
47	11	89	1959
48	12	88	1958
49	12	88	1957
50	12	88	1956
51	12	88	1955
52	12	88	1954
53	12	88	1953
54	13	87	1952
55	13	87	1951
56	13	87	1950
57	13	87	1949
58	13	87	1948
59	13	87	1947
60	14	86	1946
61	14	86	1945
62	14	86	1944
63	14	86	1943
64	14	86	1942
65	14	86	1941
70	15	85	1936
75	16	84	1931

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:

$$\text{Building RCN} = [\text{Section}_1\ (\text{Base Rate} * \text{Effective Area} * \text{Size Adjustment}) * (MV_1 * MV_2 * \ldots * MV_n)] + [\text{Section}_n\ (\text{Base Rate} * \text{Effective Area} * \text{Size Adjustment}) * (MV_1 * MV_2 * \ldots * MV_n)] + [\Sigma\ \text{Special Building Features}]$$

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
- 2007 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.

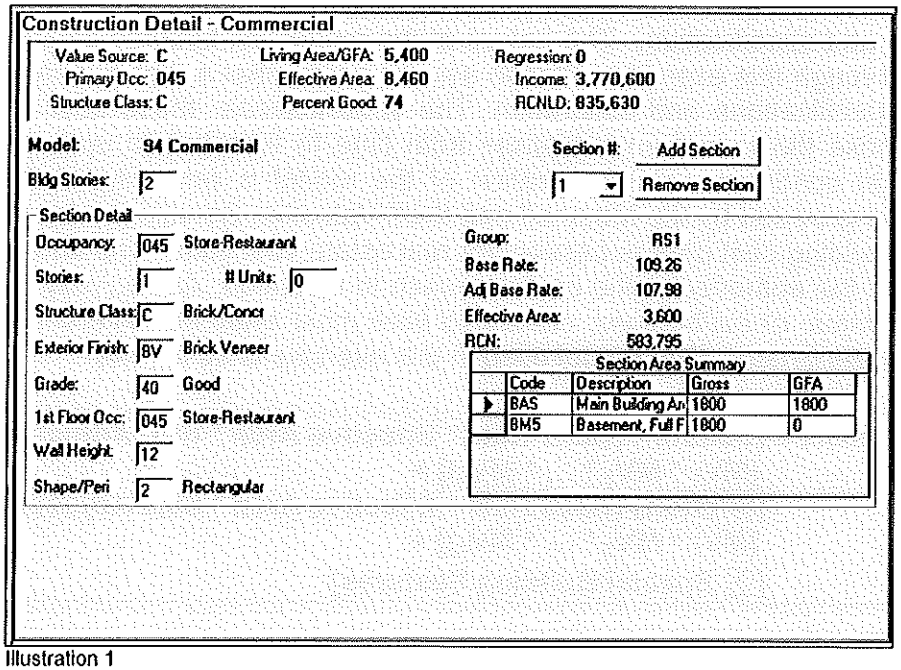


Illustration 1

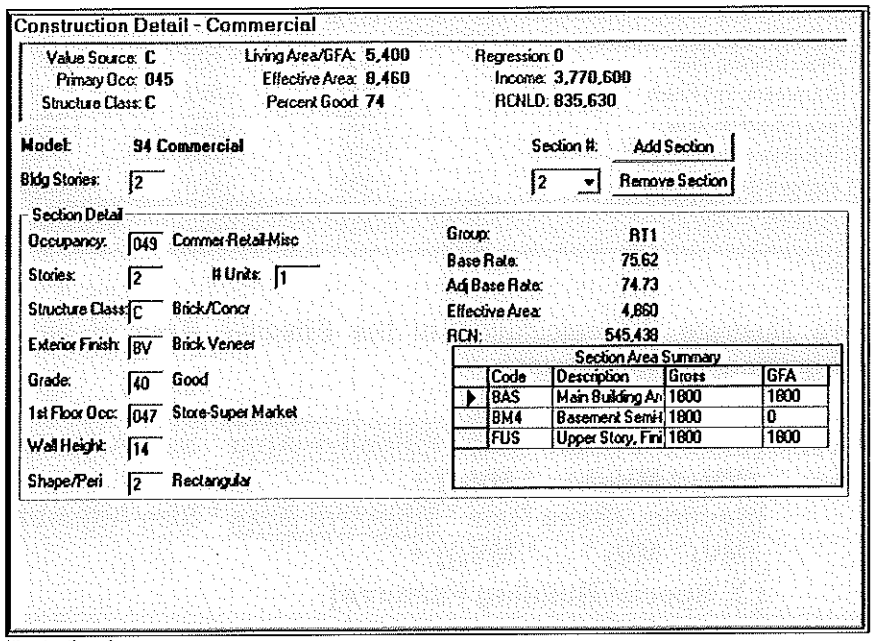


Illustration 2

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

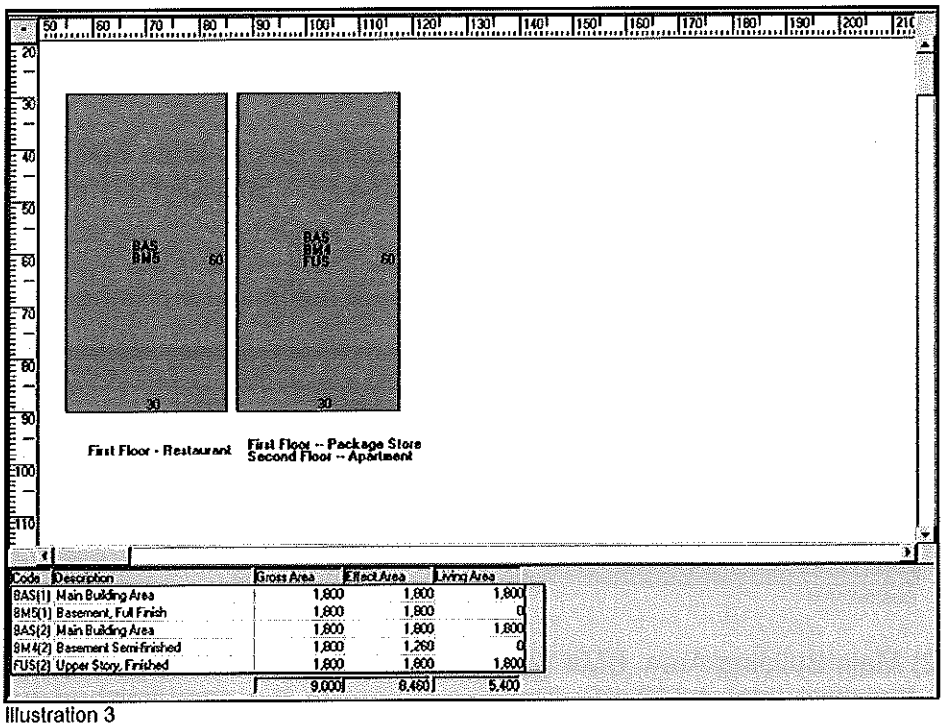


Illustration 3

The bottom of the sketch screen in CAMA provides the information about the sizes of the different areas that comprise the two sections of the building. Each section is denoted as (1) or (2) under the Code column.

Code	Description	Gross Area	Effect Area	Living Area
BAS(1)	Main Building Area	1,800	1,800	1,800
BM5(1)	Basement, Full Finish	1,800	1,800	0
BAS(2)	Main Building Area	1,800	1,800	1,800
BM4(2)	Basement Semi-finished	1,800	1,260	0
FUS(2)	Upper Story, Finished	1,800	1,800	1,800
		9,000	8,460	5,400

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]

Code	Description	Gross Area	Effect Area	Living Area
BAS(1)	Main Building Area	1,800	1,800	1,800
BM5(1)	Basement, Full Finish	1,800	1,800	0
BAS(2)	Main Building Area	1,800	1,800	1,800
BM4(2)	Basement Semi-finished	1,800	1,260	0
FUS(2)	Upper Story, Finished	1,800	1,800	1,800
		9,000	8,460	5,400

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.

Code	Description	Gross Area	Effect Area	Living Area
BAS(1)	Main Building Area	1,800	1,800	1,800
BM5(1)	Basement, Full Finish	1,800	1,800	0
BAS(2)	Main Building Area	1,800	1,800	1,800
BM4(2)	Basement Semi-finished	1,800	1,260	0
FUS(2)	Upper Story, Finished	1,800	1,800	1,800
		9,000	8,460	5,400

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 $ 109.26 is automatically selected.

The second section, "49-Commercial Retail-Misc.", also constructed as a Class "C", concrete block/brick building, has a Base Rate of $75.62.

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

Building RCN = [Section$_1$ (\$109.26 * 3600 * Size Adjustment) *
Base Rate Effective Area
(MV_0 * MV_2 * ... * MV_n)] +
[Section$_n$ (\$75.62 * 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 0.98825. Now our Adjusted Base Rate is calculated to be \$107.98(109.26 * 0.98825) for Section 1 and \$ 74.73 (75.62 * 0.98825) for Section 2 of our example.

Because the adjustment is less than 1.00, it would be proper to conclude that our sample building is larger 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$_1$ (\$109.26 * 3600 * 0.98825) *
Base Rate Effective Area Size Adjustment
(MV_0 * MV_2 * ... * MV_n)] +
[Section$_n$ (\$75.62 * 4860 * 0.98825) *
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 = 1.15 X RCN
GRADE 40 (Good) = 1.12 x RCN
DC LOCAL MULTIPLIER C = 1.06 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 1.501808 (1.15 * 1.12 * 1.06 * 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$_1$ (\$109.26 * 3600 * 0.98825) *
Base Rate Effective Area Size Adjustment
(1.501808)] +
Multiplicative Variables
[Section$_n$ (\$75.62 * 4860 * 0.98825) *
Base Rate Effective Area Size Adjustment
(1.501808)] +
Multiplicative Variables
[$\sum$ Special Building Features]

The RCN for Section 1, the restaurant is \$ 583,795 (\$109.26 * 3600 * 0.98825 * 1.501808). The package goods store's RCN is \$423,520 (\$75.62 * 4860 * 0.98825 * 1.501808).

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

Section #1
Base Rate: 109.265
Size Adjustment: .98825
Effective Area: 3600
Adjusted Base Rate = (109.26 + 0) * .98825
Adjusted Base Rate: 107.98
RCN = ((107.98 * 3600) + 0) * 1.501808
RCN: 583795
Section #2
Base Rate: 75.62
Size Adjustment: .98825
Effective Area: 4860
Adjusted Base Rate = (75.62 + 0) * .98825
Adjusted Base Rate: 74.73
RCN = ((74.73 * 4860) + 0) * 1.501808
RCN: 545438

So far, the RCN of the building is $ 1,129,233 (583,795+545,438). 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)] +
[∑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.

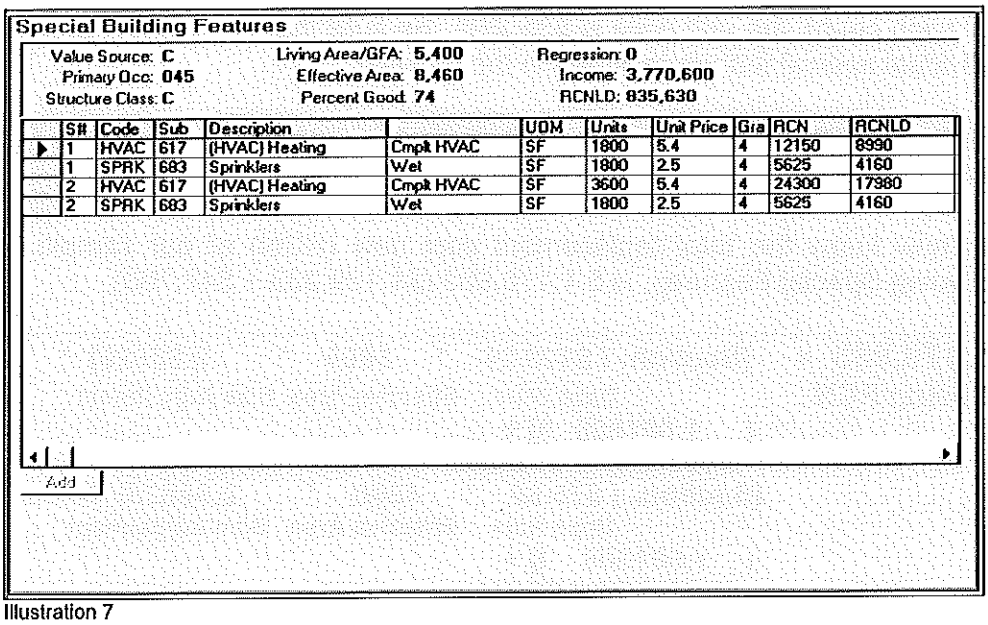


Illustration 7

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

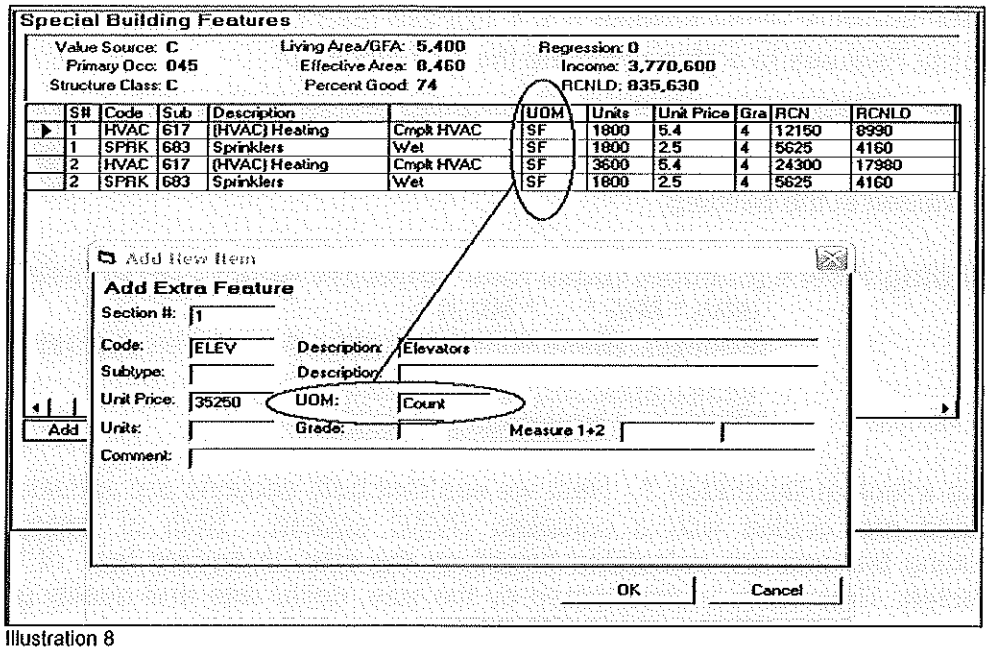


Illustration 8

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 $ 47,700 (∑Special Building Features =12,150 + 5,625 +24,300 + 5,625).

We now know the total replacement cost new (RCN) of our sample building, including Special Features, is $ 1,176,933 ($1,129,233 + $47,700).

$1,176,933 = Building RCN

$$[\text{Section}_1 (\underbrace{\$109.26}_{\text{Base Rate}} * \underbrace{3600}_{\text{Effective Area}} * \underbrace{0.98825}_{\text{Size Adjustment}}) * \underbrace{(1.501808)}_{\text{Multiplicative Variables}}] +$$

$$[\text{Section}_n (\underbrace{\$75.62}_{\text{Base Rate}} * \underbrace{4860}_{\text{Effective Area}} * \underbrace{0.98825}_{\text{Size Adjustment}}) * \underbrace{(1.501808)}_{\text{Multiplicative Variables}}] +$$

$$[\$47,700]$$

[∑ 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 $1,176,933. 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 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 building. In this case, the Actual Age of the sample building is 53 years (2006-1953).

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 53 years as indicated on the Depreciation Table below:

Economic Life Depreciation Tables

Base Year 2006

Age of Building	Effective Year Built	70 Year Economic Life		60 Year Economic Life		50 Year Economic Life	
		Percent of Depreciation	Percent Good	Percent of Depreciation	Percent Good	Percent of Depreciation	Percent Good
0	2006	0	100	0	100	0	100
1	2005	0	100	0	100	0	100
2	2004	1	99	1	99	2	98
3	2003	1	99	1	99	2	98
48	1958	46	54	58	43	77	23
49	1957	47	53	59	41	78	22
50	1956	49	51	61	39	82	18
51	1955	51	49	64	36		
52	1954	52	48	66	34		
53	1953	54	46	68	33		
54	1952	55	45	69	31		
55	1951	57	43	71	29		
56	1950	58	42	73	28		
57	1949	60	40	76	25		
58	1948	61	39	76	24		
59	1947	63	37	79	21		
60	1946	64	36	80	20		
61	1945	65	35				
62	1944	67	33				
63	1943	68	32				
64	1942	70	30				
65	1941	71	29				
70	1940	76	24				
75	1932	80	20				

Illustration 9

The Actual Year Built (1953) and the Effective Year Built (1953) would be the same and consequently the Effective Age would be 53 years. Moving across the table, we see that a building with an EYB of 1953 has 68 percent depreciation and therefore is 32 Percent Good (100%-68%). If the RCN of our sample building is $1,176,933, the depreciated value, RCN-LD, is only $ 376,619 (1,176,933* 0.32).

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.

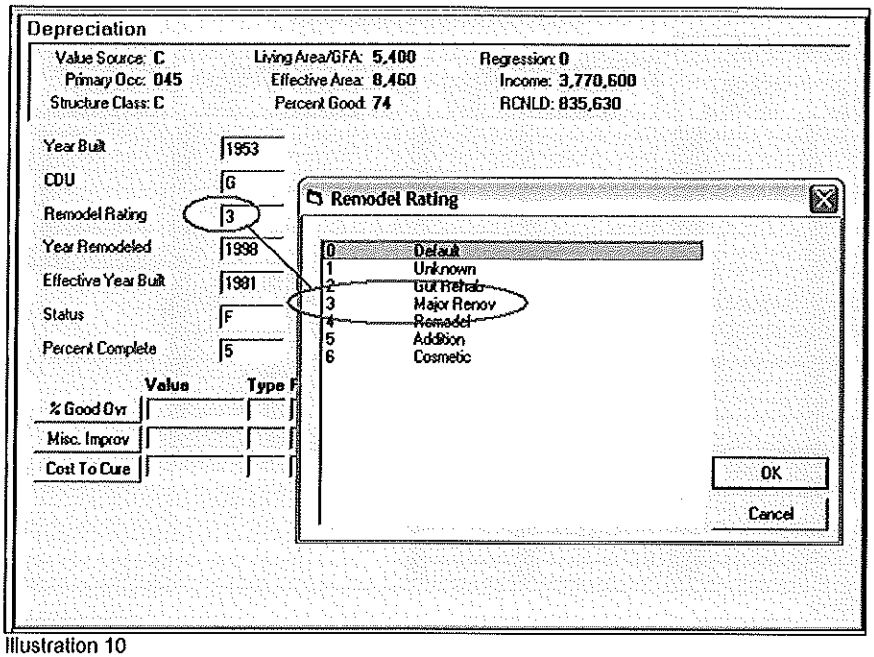


Illustration 10

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 = 1.15 * Age

The product of each of these MV adjustments is calculated to be 0.46575 (0.45 * 0.90 * 1.15). This product is then multiplied by the Actual Age to calculate the Effective Age. Recall our sample building's Actual Age is 53 years. The Effective Age is calculated to be 24 years (53 * 0.42525). Instead of CAMA using 53 chronological years to calculated depreciation, it will use 24 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 = 53 * .46575
Effective Age: 24
Percent Good = 74
RCNLD:835630

Back to our renovation, the 1998 major renovation done to the building reduced the effective age to 51.75% (Rehab Factor 3 = .45 * Rehab Year = 1.15) of the 53 years of actual age, resulting in an effective age of 27 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 = 1.15. This combination will reduce the effective age to 63.25% (0.55 * 1.15) of the 53 years of actual age, as a result, making the effective age now 34 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 31 years verses 24 years is about $100,000 on a building with a RCN of $1,769,933. 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 1982 (2006 – 24).

4. Having established the Effective Year Built, we look up 1982 on the *60 Year Economic Life Depreciation Table* and find that the Depreciation is 20% for that year. See Illustration 11.

Economic Life Depreciation Tables

Base Year 2008

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	2008	0	100	0	100	0	100
1	2007	0	100	0	100	0	100
20	1988	13	87	16	84	22	78
21	1987	13	87	16	84	22	78
22	1986	14	86	18	83	23	77
23	1985	15	85	19	81	25	75
24	1984	16	84	20	80	27	73
25	1983	17	83	21	79	28	72
26	1982	18	82	23	78	30	70
27	1981	19	81	24	76	32	68
28	1980	20	80	25	75	33	67
29	1979	21	79	26	74	35	65
30	1978	22	78	28	73	37	63
31	1977	23	77	29	71	38	62

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 80. 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 20 years at 80%, by subtracting the 5% attributed to functional obsolescence, we are left with 74% (rounding error) as the percent good for our building. This matches the figure shown in the Cost.dat file.

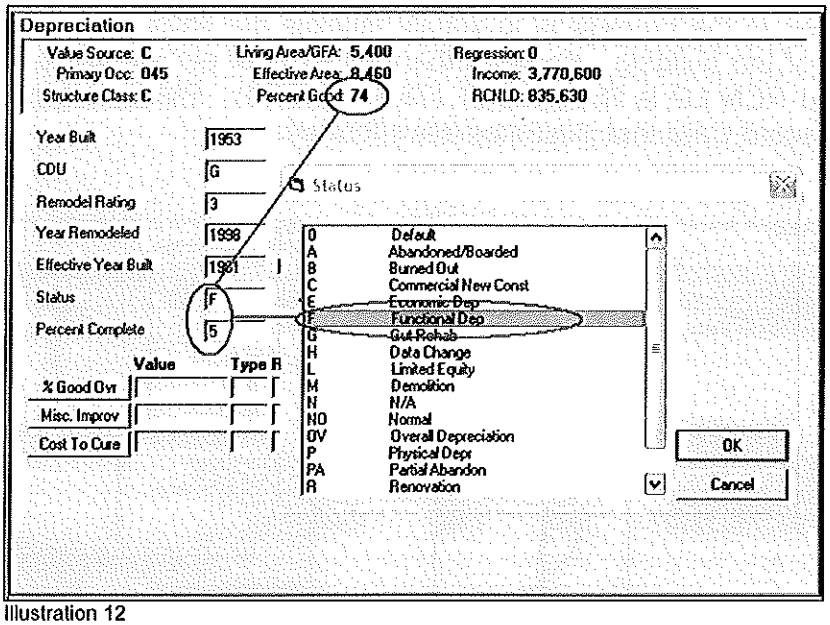


Illustration 12

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.

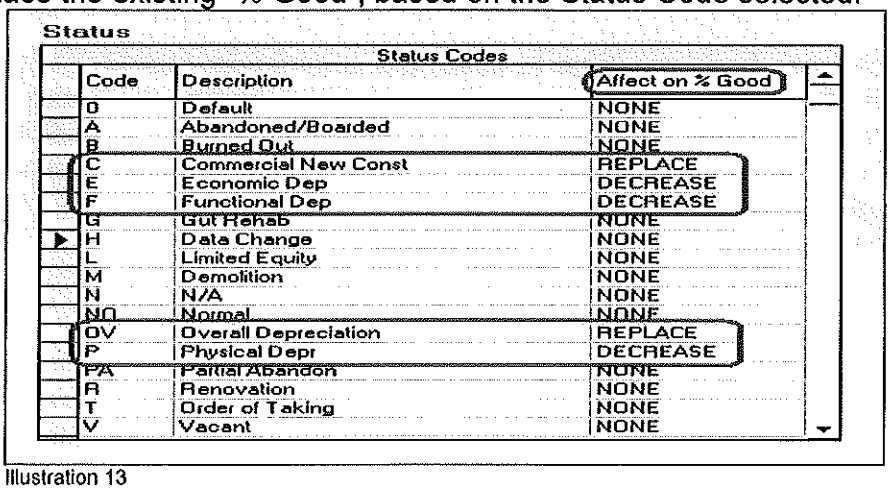
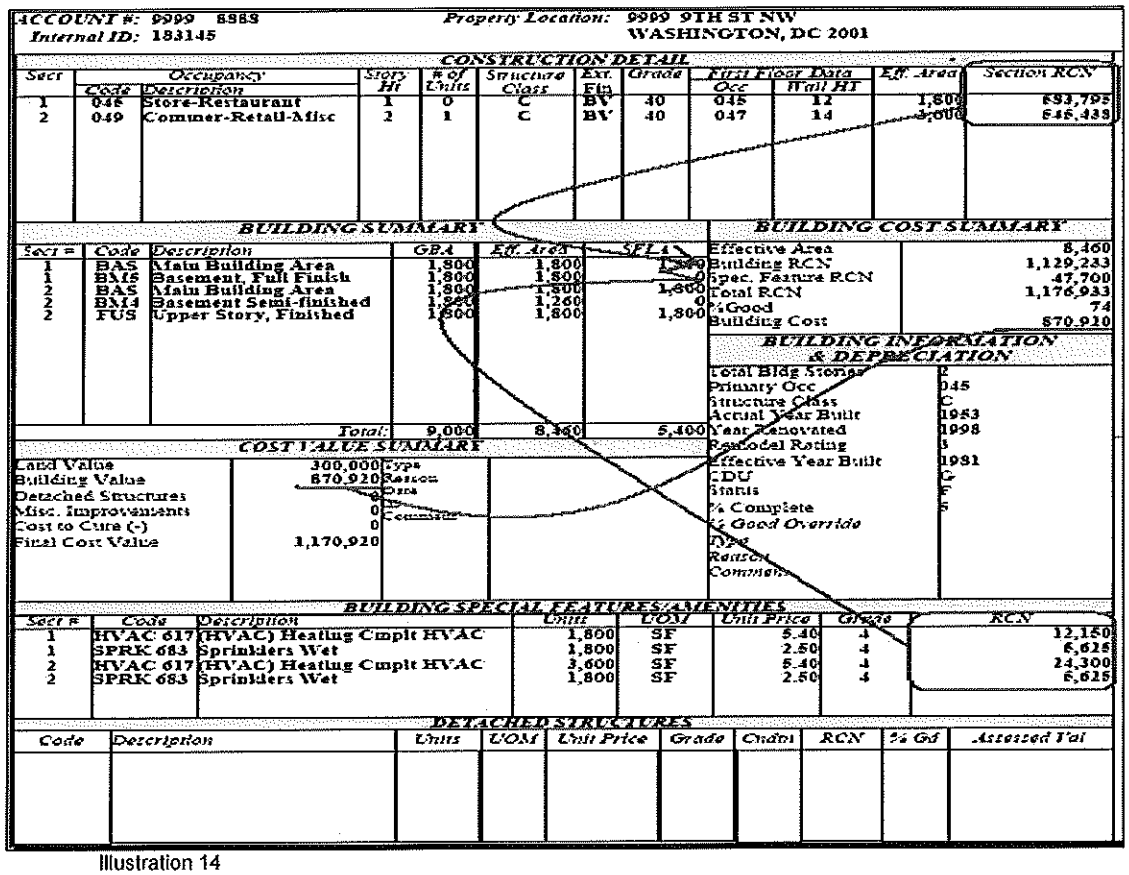


Illustration 13

6. The last step in the process is to simply multiple the RCN by 0.74 and we have RCN LD of the building. Knowing the total RCN of our sample building is $1,176,933, the RCN LD is $870,920 (1,176,933 * 0.74). Below is a portion of the Property Record Card that illustrates this information.



ACCOUNT #: 9999 8888 — Property Location: 9999 9TH ST NW
Internal ID: 183145 — WASHINGTON, DC 2001

CONSTRUCTION DETAIL

Sect	Occupancy Code	Occupancy Description	Story Ht	# of Units	Structure Class	Ext. Fin	Grade	First Floor Data Occ	First Floor Data Wall Ht	Eff. Area	Section RCN
1	048	Store-Restaurant	1	0	C	BV	40	045	12	1,800	693,795
2	049	Commer-Retail-Misc	2	1	C	BV	40	047	14	3,600	846,438

BUILDING SUMMARY

Sect #	Code	Description	GBA	Eff. Area	SFLA
1	BAS	Main Building Area	1,800	1,800	1,800
1	BMF	Basement, Full Finish	1,800	1,800	0
2	BAS	Main Building Area	1,800	1,800	1,800
2	BMF	Basement Semi-finished	1,200	1,260	0
2	FUS	Upper Story, Finished	1,800	1,800	1,800
		Total:	9,000	8,460	5,400

BUILDING COST SUMMARY

Effective Area	8,460
Building RCN	1,129,233
Spec. Feature RCN	47,700
Total RCN	1,176,933
%Good	74
Building Cost	870,910

BUILDING INFORMATION & DEPRECIATION

Total Bldg Stories	2
Primary Occ	045
Structure Class	C
Actual Year Built	1953
Year Renovated	1998
Remodel Rating	5
Effective Year Built	1981
CDU	G
Status	5
% Complete	
% Good Override	
Type	
Reason	
Comments	

COST VALUE SUMMARY

		Type	
Land Value	300,000	Reason	
Building Value	870,920	Date	
Detached Structures	0	By	
Misc. Improvements	0	Comments	
Cost to Cure (-)	0		
Final Cost Value	1,170,920		

BUILDING SPECIAL FEATURES/AMENITIES

Sect #	Code	Description	Units	UOM	Unit Price	Grade	RCN
1	HVAC 617	(HVAC) Heating Cmplt HVAC	1,800	SF	5.40	4	12,150
1	SPRK 683	Sprinklers Wet	1,800	SF	2.50	4	6,625
2	HVAC 617	(HVAC) Heating Cmplt HVAC	3,600	SF	5.40	4	24,300
2	SPRK 683	Sprinklers Wet	1,800	SF	2.50	4	6,625

DETACHED STRUCTURES

Code	Description	Units	UOM	Unit Price	Grade	Cndtn	RCN	% Gd	Assessed Val

Illustration 14

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. Vision© Property Record Card, SSL 9999 8888.
2. "Cost.dat" printout of sample building.
3. Economic Life Depreciation Tables, Base Year 2006.
4. 2007 CAMA Commercial Construction Valuation Guideline.

ACCOUNT #: 9999 8888 | Property Location: 9999 9TH ST NW | Batch #:

Internal ID: 183145 | WASHINGTON, DC 2001 | Bldg #: 1 of 1 | Card 1 of 1 | Print Date: 02/14/2006 07:53

CURRENT OWNER

ACCOUNT INFORMATION

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

VISIT/CHANGE HISTORY

Date	ID	Type	Inf. Source	Code	Description

CURRENT ASSESSMENT

Description	Use	Assessed Value
COMMERCL	045	870,920
COM LAND	045	300,000

Value Source: C | Total: 1,170,920

DATA ENTRY

Entry ID: _____ | Entry Date: / /

COMM

District of Columbia
Real Property
Assessment Division

OWNERSHIP HISTORY

INSTRUMENT #	SALE DATE	q/u	v/i	SALE PRICE	A.C.

PREVIOUS ASSESSMENTS (HISTORY)

Yr.	Use	Type	Val Source	Land Value	Building Value	Assessed Value
2007	045	C	C	300,000	870,920	1,170,920
2006	045	C	C	300,000	721,060	1,021,060
2005	047	C	C	300,000	658,710	958,710
2004	047	C	C	300,000	562,370	862,370

MIXED USE

Code	Description	%
	Res Land	%
	Res Building	%
	Cmrcl Land	%
	Cmrcl Building	%

APPEALS

Appeal #	Decision	Amount	Revised AV

ASSOCIATED PARCELS

Primary SSL	SSL	USE	Lot Size	%	Total Value

TAX TYPE

Year	Type	Description

SUPPLEMENTAL DATA

Type	Description
Neighborhood	
Part Part	
Mixed Use	
Vcnt Lnd Use	
Model Type	
Base Lot Val	
Abbutt Lot	
Sketch Flag	

COMMENTS

PARCEL LOCATION SUMMARY

SSL	NBHD	SUB NBHD	ZONING	WARD	GROUP	ARN
	9	0				457

BUILDING PERMIT INFORMATION

Permit ID	Issue Date	Type	Amount	Description	Insp. Date

Pocket NBHD: 0

LAND LINE VALUATION SECTION

B#	Occ	Description	Zone	Frontage	Depth	Units		S.I.	I. Factor	LT	Price	Size Adj	Site Rating	Adjustments/Special Use		Notes	Land Value
1	045	Store-Restaurant				10,000	SF	0	1.00		30.00	0.0000					300,000
					Total Land Units:	10,000	SF									Total Land Value:	300,000

99

ACCOUNT #: 9999 8888
Internal ID: 183145

Property Location: 9999 9TH ST NW
WASHINGTON, DC 2001

Bldg #: 1 of 1 Card 1 of 1

Batch #:
Print Date: 02/14/2006 07:53

CONSTRUCTION DETAIL

Sect	Occupancy Code	Occupancy Description	Story Ht	# of Units	Structure Class	Ext. Fin	Grade	First Floor Data Occ	First Floor Data Wall HT	Eff. Area	Section RCN
1	045	Store-Restaurant	1	0	C	BV	40	045	12	1,800	583,795
2	049	Commer-Retail-Misc	2	1	C	BV	40	047	14	3,600	545,438

SKETCH

BUILDING SUMMARY

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-finished	1,800	1,260	0
2	FUS	Upper Story, Finished	1,800	1,800	1,800
		Total:	9,000	8,460	5,400

BUILDING COST SUMMARY

Effective Area	8,460
Building RCN	1,129,233
Spec. Feature RCN	47,700
Total RCN	1,176,933
%Good	74
Building Cost	870,920

BUILDING INFORMATION & DEPRECIATION

Total Bldg Stories	2
Primary Occ	045
Structure Class	C
Actual Year Built	1953
Year Renovated	1998
Remodel Rating	3
Effective Year Built	1981
CDU	G
Status	F
% Complete	5
% Good Override	
Type	
Reason	
Comment	

COST VALUE SUMMARY

Land Value	300,000	Type	
Building Value	870,920	Reason	
Detached Structures	0	Date	
Misc. Improvements	0	ID	
Cost to Cure (-)	0	Comment	
Final Cost Value	1,170,920		

No Photo On Record

BUILDING SPECIAL FEATURES/AMENITIES

Sect #	Code	Description	Units	UOM	Unit Price	Grade	RCN
1	HVAC 617	(HVAC) Heating Cmplt HVAC	1,800	SF	5.40	4	12,150
1	SPRK 683	Sprinklers Wet	1,800	SF	2.50	4	5,625
2	HVAC 617	(HVAC) Heating Cmplt HVAC	3,600	SF	5.40	4	24,300
2	SPRK 683	Sprinklers Wet	1,800	SF	2.50	4	5,625

DETACHED STRUCTURES

Code	Description	Units	UOM	Unit Price	Grade	Cndtn	RCN	% Gd	Assessed Val

67

ACCOUNT #: 9999 8888
Internal ID: 183145

Property Location: 9999 9TH ST NW
WASHINGTON, DC 2001

Bldg #: 1 of 1 Card 1 of 1

Batch #:
Print Date: 02/14/2006 07:53

INCOME APPROACH

Bldg #	Style	Style Desc	FL	Tenants	# of Units	Use Adj	Loc Adj	Rent/Unit	Gross Income	Vac Adj	Vacancy %	Exp Adj	Expense %	NOI
1	3	Retail	GL	3	6,000	A	A	12.00	72,000	A	.15	A	0.08	56,304
1	1	1 BR	UL	1	10	A	A	18,000.00	180,000	A	.1	A	0.10	145,800
1	2	2 BR	UL	1	10	A	A	21,600.00	216,000	A	.1	A	0.10	174,960

INCOME NOTES

INCOME SUMMARY

Primary Occ	045
Total Rentable Units	468,000
Total Gross Income	468,000
Vacancy $	50,400
Expense $	40,536
Total NOI	377,064
Cap Code	001
Cap Adj.	A
Cap Rate	0.1000
Income Value	3,770,600
Excess Land	0
Total Income Value:	3,770,600

OUTPUT FROM STORED PROCEDURE
REPORT GENERATED ON 14-FEB-2006 AT 07:45

**********Building #1 Calc Start**********
Cost Calculation for pid, bid = 183145,173784
Account Number = 9999 8888
Use Code = 045
Cost Rate Group = RS1
Occupancy Type = 045 (Store-Restaurant)
Model ID: DCC

Section #1
Base Rate: 109.26
Size Adjustment: .98825
Effective Area: 3600
Adjusted Base Rate = (109.26 + 0) * .98825
Adjusted Base Rate: 107.98
RCN = ((107.98 * 3600) + 0) * 1.501808
RCN: 583795

**********Factor Adjustments**********
CONDITION DESIRABILITY UTILITY G = 1.15 x RCN
GRADE 40 (Good) = 1.12 x RCN
DC LOCAL MULTIPLIER C = 1.06 x RCN
COMM NBHD 9 = 1.1 x RCN

Section #2
Base Rate: 75.62
Size Adjustment: .98825
Effective Area: 4860
Adjusted Base Rate = (75.62 + 0) * .98825
Adjusted Base Rate: 74.73
RCN = ((74.73 * 4860) + 0) * 1.501808
RCN: 545438

**********Factor Adjustments**********
CONDITION DESIRABILITY UTILITY G = 1.15 x RCN
GRADE 40 (Good) = 1.12 x RCN
DC LOCAL MULTIPLIER C = 1.06 x RCN
COMM NBHD 9 = 1.1 x RCN

**********Effective Age Adjustments**********
REHAB FACTOR 3 = .45 * Age
STRUCTURE CLASS AGE FACTOR C = .9 * Age
REHAB YEAR = 1.15 * Age
****

Actual Year Built: 1953
Effective Age = 53 * .46575
Effective Age: 24
Percent Good = 74
RCNLD: 835630

Economic Life Depreciation Tables

Base Year 2006

Age of Building	Effective Year Built
0	2006
1	2005
2	2004
3	2003
4	2002
5	2001
6	2000
7	1999
8	1998
9	1997
10	1996
11	1995
12	1994
13	1993
14	1992
15	1991
16	1990
17	1989
18	1988
19	1987
20	1986
21	1985
22	1984
23	1983
24	1982
25	1981
26	1980
27	1979
28	1978
29	1977
30	1976
31	1975
32	1974
33	1973
34	1972
35	1971
36	1970
37	1969
38	196
39	196
40	196
41	1965
42	1964
43	1963
44	1962
45	1961
46	1960
47	1959
48	1958
49	1957
50	1956
51	1955
52	1954
53	1953
54	1952
55	1951
56	1950
57	1949
58	1948
59	1947
60	1946
61	1945
62	1944
63	1943
64	1942
65	1941
70	1940
75	1932

70 Year Economic Life

Percent of Depreciation	Percent Good
0	100
0	100
1	99
1	99
2	98
2	98
3	97
4	96
4	96
5	95
5	95
6	94
7	93
8	92
8	92
9	91
10	90
10	90
11	89
12	88
13	87
13	87
14	86
15	85
16	84
17	83
18	[illegible]
19	[illegible]
20	80
21	79
22	78
23	[illegible]
24	76
25	75
27	73
28	72
29	71
30	70
32	68
33	67
35	65
36	64
38	62
39	61
41	59
42	58
44	56
45	55
46	54
47	53
49	51
51	49
52	48
54	46
55	45
57	43
58	42
60	40
61	39
63	37
64	36
65	35
67	33
68	32
70	30
71	29
76	24
80	20

60 Year Economic Life

Percent of Depreciation	Percent Good
0	100
0	100
1	99
1	99
3	98
3	98
4	96
5	95
5	95
6	94
6	94
8	93
9	91
10	90
10	90
11	89
13	88
[illegible]	88
[illegible]	86
[illegible]	85
[illegible]	84
16	84
[illegible]	83
20	81
21	80
23	79
24	78
25	76
26	75
28	74
29	73
30	71
31	70
34	69
35	66
36	65
38	64
40	63
41	60
44	59
45	56
48	55
49	53
51	51
53	49
55	48
56	45
58	44
59	43
61	41
64	39
65	36
68	35
69	33
71	31
73	29
75	28
76	25
79	24
80	21

50 Year Econmic Life

Percent of Depreciation	Percent Good
0	100
0	100
2	98
2	98
3	97
3	97
5	95
7	93
7	93
8	92
8	92
10	90
12	88
13	87
13	87
15	85
17	83
17	83
18	82
20	80
22	78
22	78
23	77
25	75
27	73
28	72
30	70
32	68
33	67
35	65
37	63
38	62
40	60
42	58
45	55
47	53
48	52
50	50
53	47
55	45
58	42
60	40
63	37
65	35
68	32
70	30
73	27
75	25
77	23
78	22
82	18

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)

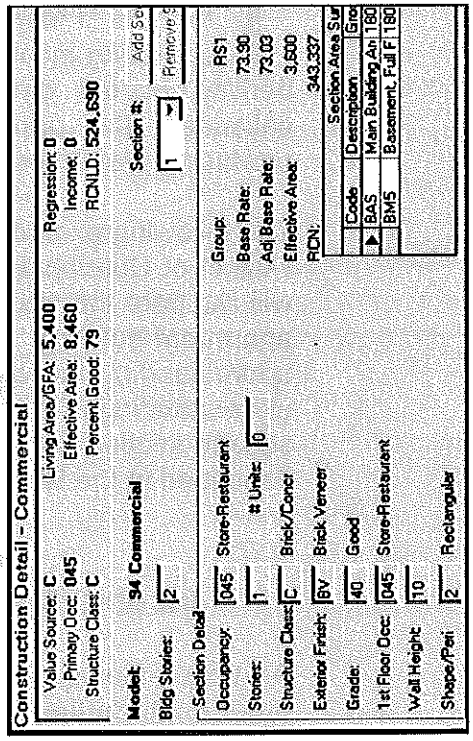
2002-2005	0%
2000-2001	5%
1995-1999	15%
1990-1994	25%
Earlier -1990	50%

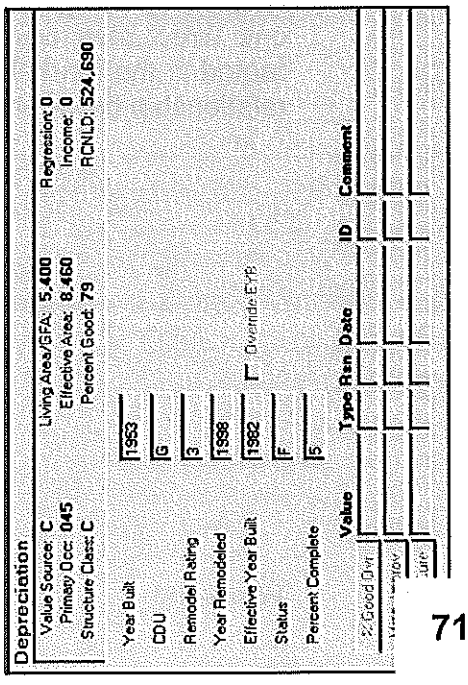
Extra Features (Flat and Sq Ft Add)

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





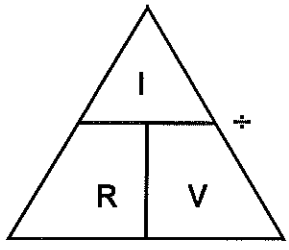
Vision® CAMA Income Approach Valuation Process

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.

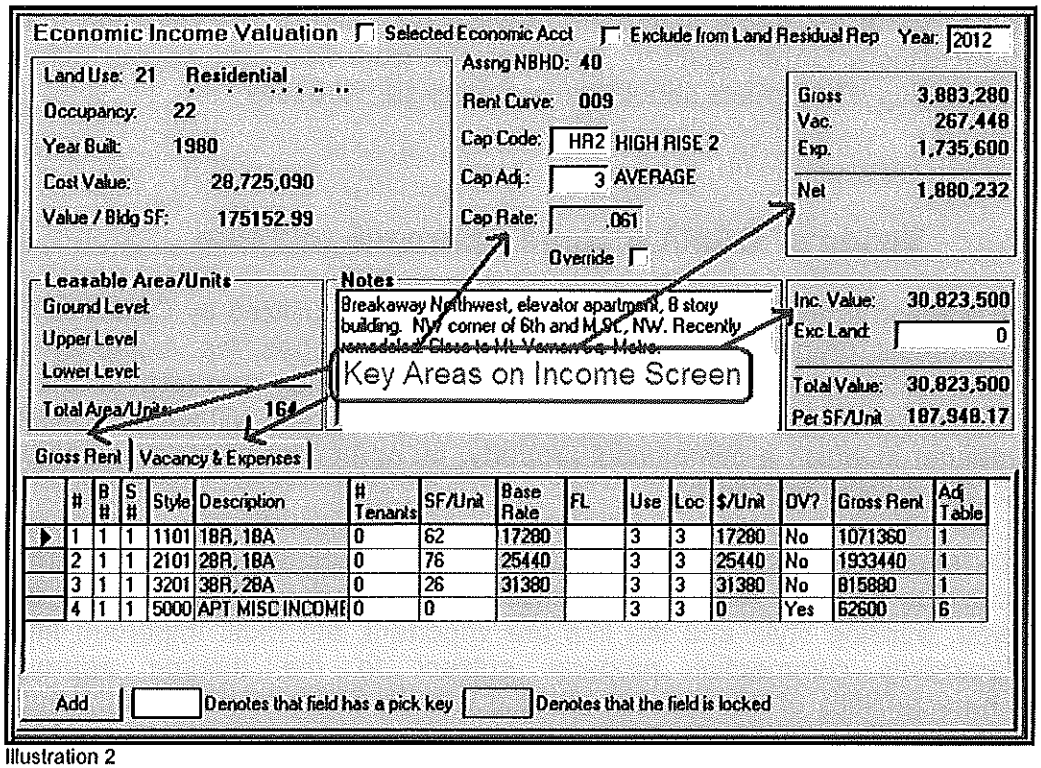


Illustration 2

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 tab on the data entry screen. We'll be entering information about the complex in the Gross Rent table, 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:

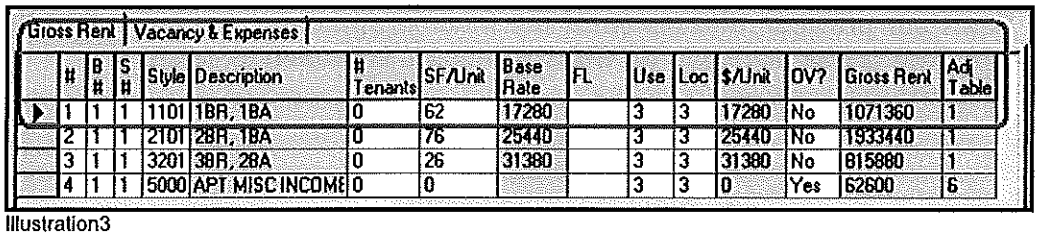


Illustration3

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.

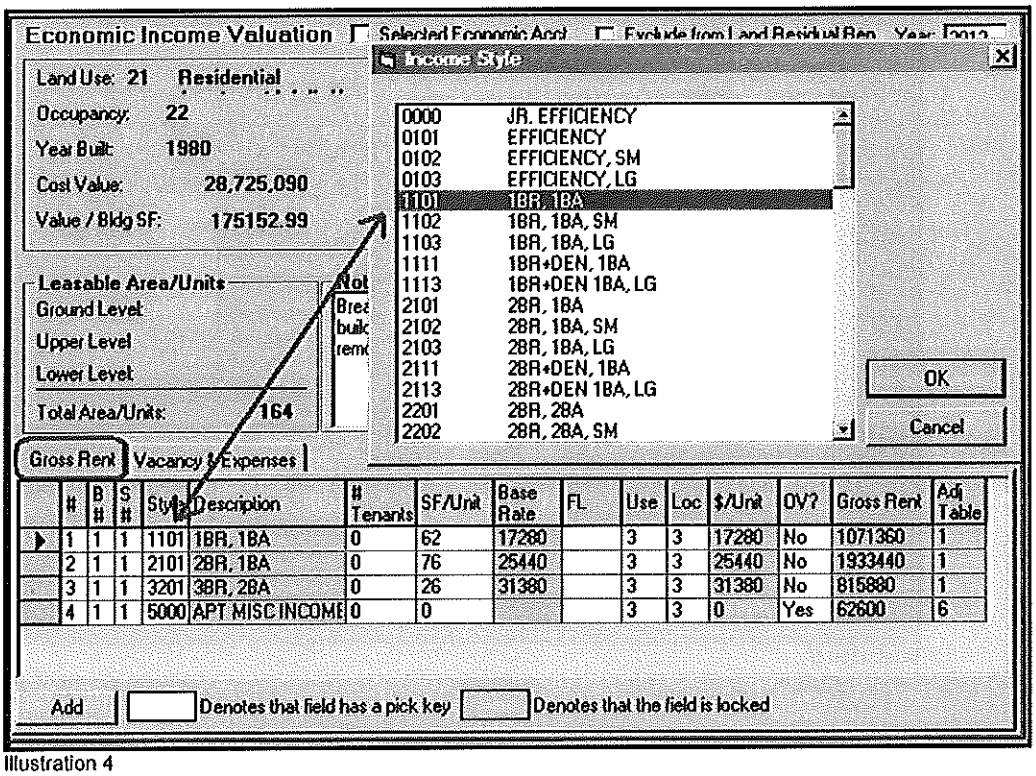


Illustration 4

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.

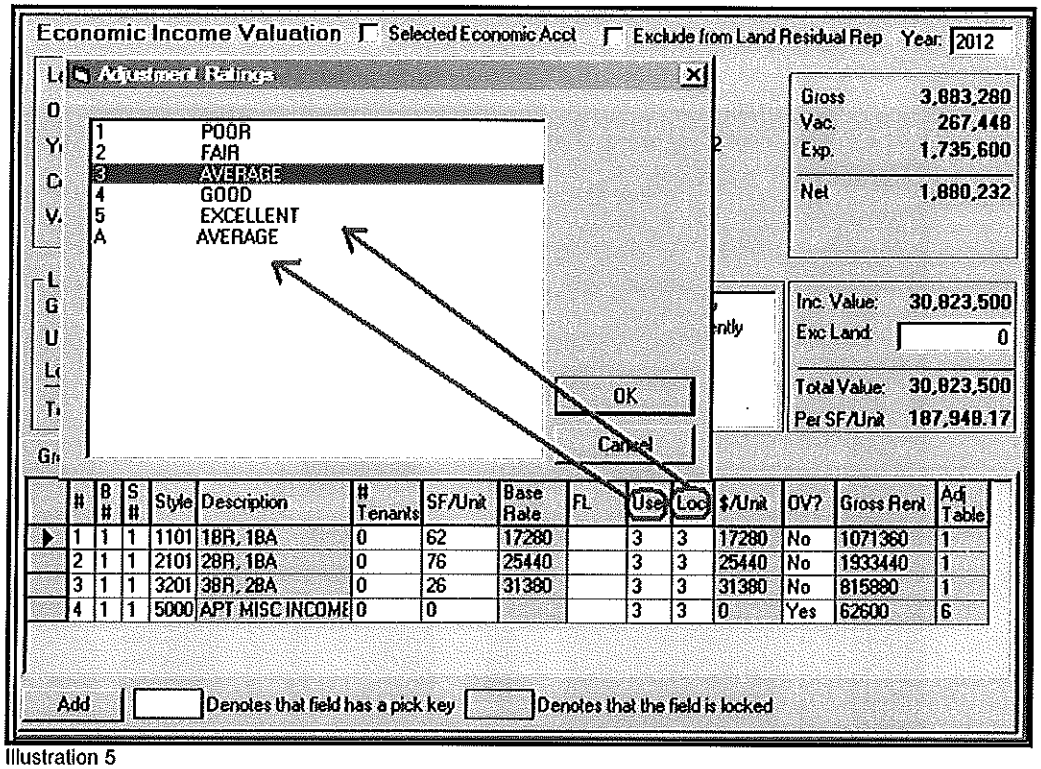


Illustration 5

The amount of adjustment is based on the table below:

Rating	Description	Location	Use
1	POOR	0.8	0.8
2	FAIR	0.9	0.9
3	AVERAGE	1	1
4	GOOD	1.1	1.1
5	EXCELLENT	1.25	1.25
A	AVERAGE	1	1

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 $1,440 per month or $17,280 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.

		OLD CITY #2
Code	Description	Monthly Rent
0000	JR. EFFICIENCY	1120
0101	EFFICIENCY	1185
0102	EFFICIENCY, SM	1120
0103	EFFICIENCY, LG	1305
1101	1BR, 1BA	1440
1102	1BR, 1BA, SM	1315
1103	1BR, 1BA, LG	1605
1111	1BR+DEN, 1BA	1680
1113	1BR+DEN 1BA, LG	1850
2101	2BR, 1BA	2120
2102	2BR, 1BA, SM	1910
2103	2BR, 1BA, LG	2325
3103	3BR, 1BA, LG	2495
3111	3BR+DEN, 1BA	2615
3113	3R+DEN 1BA, LG	2865
3201	3BR, 2BA	2615
3202	3BR, 2BA, SM	2350

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 $3,820,680. 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:

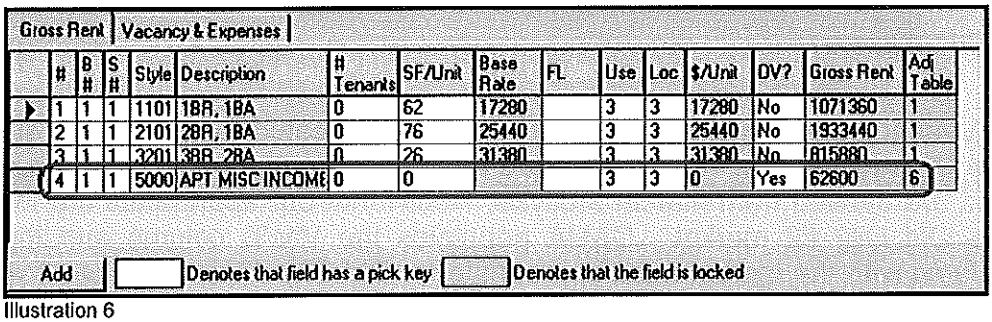


Illustration 6

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

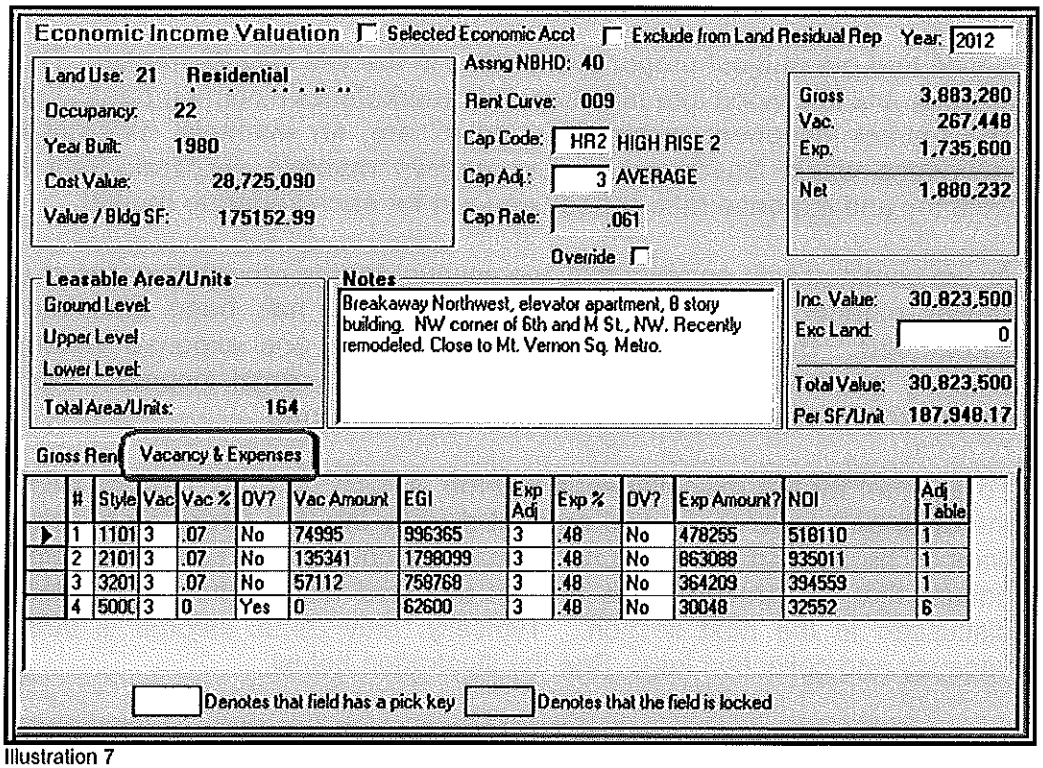
the Gross Rent is the sum of $ 3,883,280, the same amount as shown on the income and expense sheet from section one. Next, we'll turn to the Vacancy & Expenses portion of the record.

Vacancy and Expenses

Our work in the Vacancy and Expenses tab will be similar to what we did in the Gross Income tab. 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:



#	Style	Vac	Vac %	DV?	Vac Amount	EGI	Exp Adj	Exp %	DV?	Exp Amount?	NOI	Adj Table
1	1101	3	.07	No	74995	996365	3	.48	No	478255	518110	1
2	2101	3	.07	No	135341	1798099	3	.48	No	863088	935011	1
3	3201	3	.07	No	57112	758768	3	.48	No	364209	394559	1
4	5000	3	0	Yes	0	62600	3	.48	No	30048	32552	6

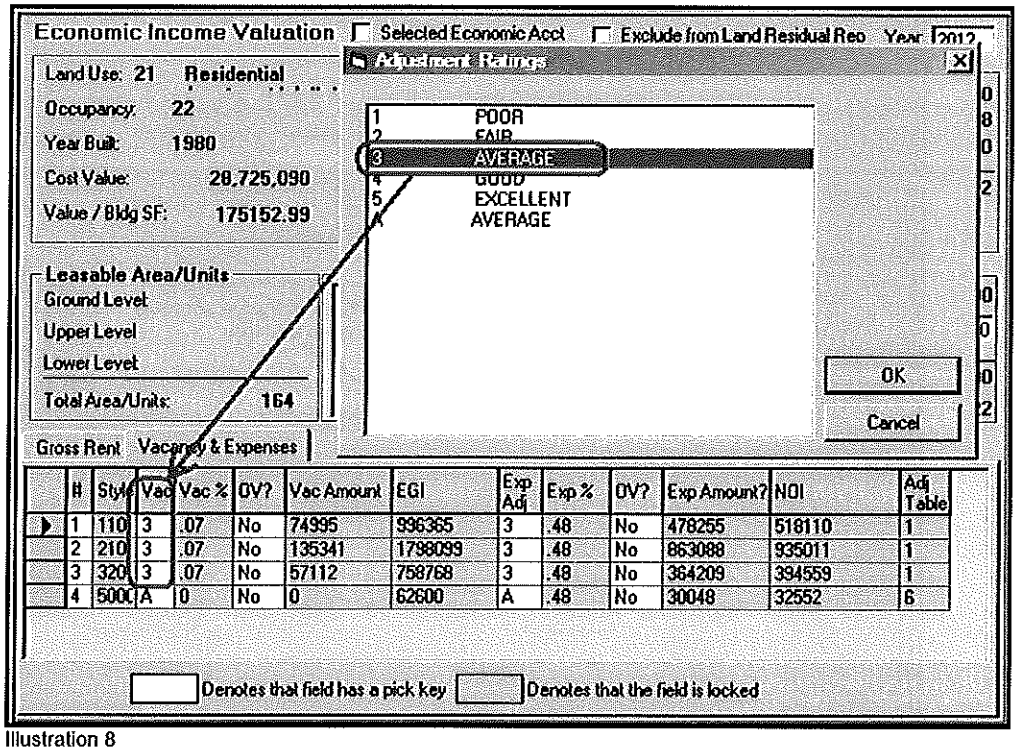
Illustration 7

A Vacancy and Expenses line is automatically created for each style shown on the Gross Rent tab. 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%	7%	8%
Expense Ratio	42%	60%	48%	60%

Table 4

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



#	Style	Vac	Vac %	OV?	Vac Amount	EGI	Exp Adj	Exp %	OV?	Exp Amount?	NOI	Adj Table
1	110	3	.07	No	74995	996365	3	.48	No	478255	518110	1
2	210	3	.07	No	135341	1798099	3	.48	No	863088	935011	1
3	320	3	.07	No	57112	758768	3	.48	No	364209	394559	1
4	5000	A	0	No	0	62600	A	.48	No	30048	32552	6

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 7 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 3.5 percent (0.07 * 0.50). The amount of adjustment for both vacancy and expense are shown in the table below.

Rating	Description	Vacancy	Expense
1	POOR	2	1.25
2	FAIR	1.5	1.1
3	AVERAGE	1	1
4	GOOD	0.5	0.9
5	EXCELLENT	0.25	0.75
A	AVERAGE	1	1

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 $1,880,232, identical to our earlier income and expense report modified for real estate taxes discussed earlier.

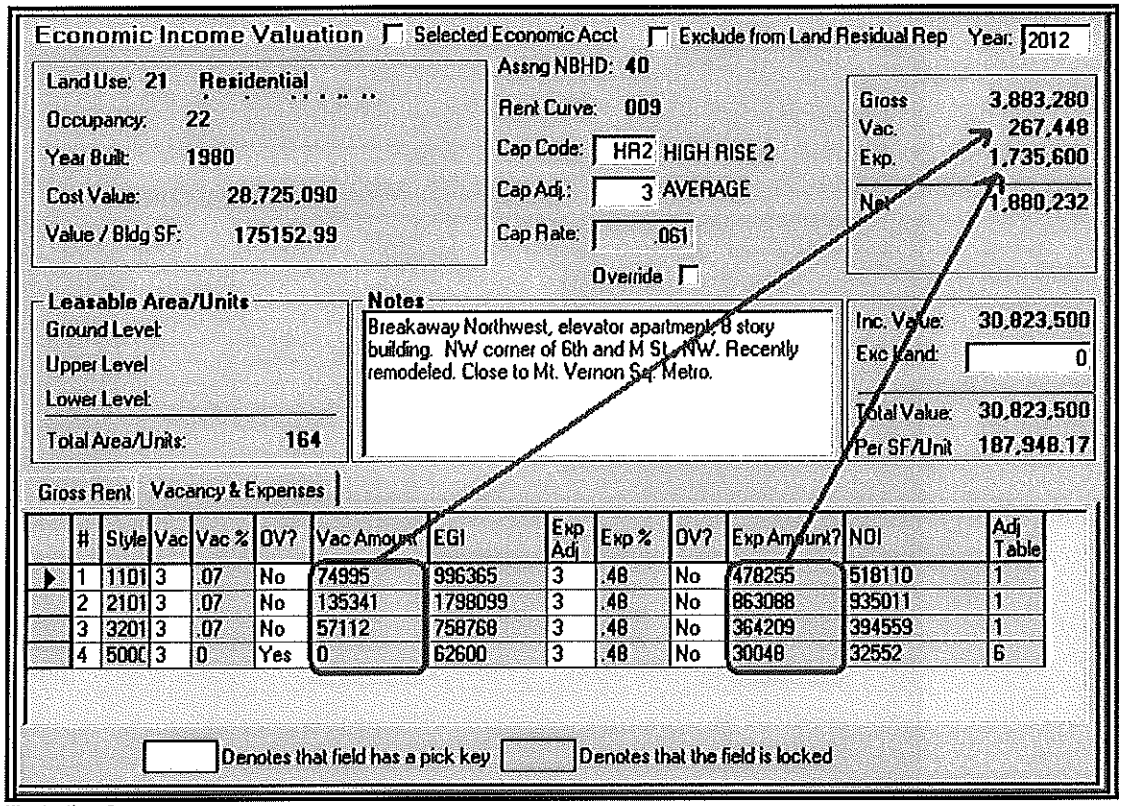


Illustration 9

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 0.061 or 6.1 percent. Remember, this is the 'loaded' cap rate. See the illustration below.

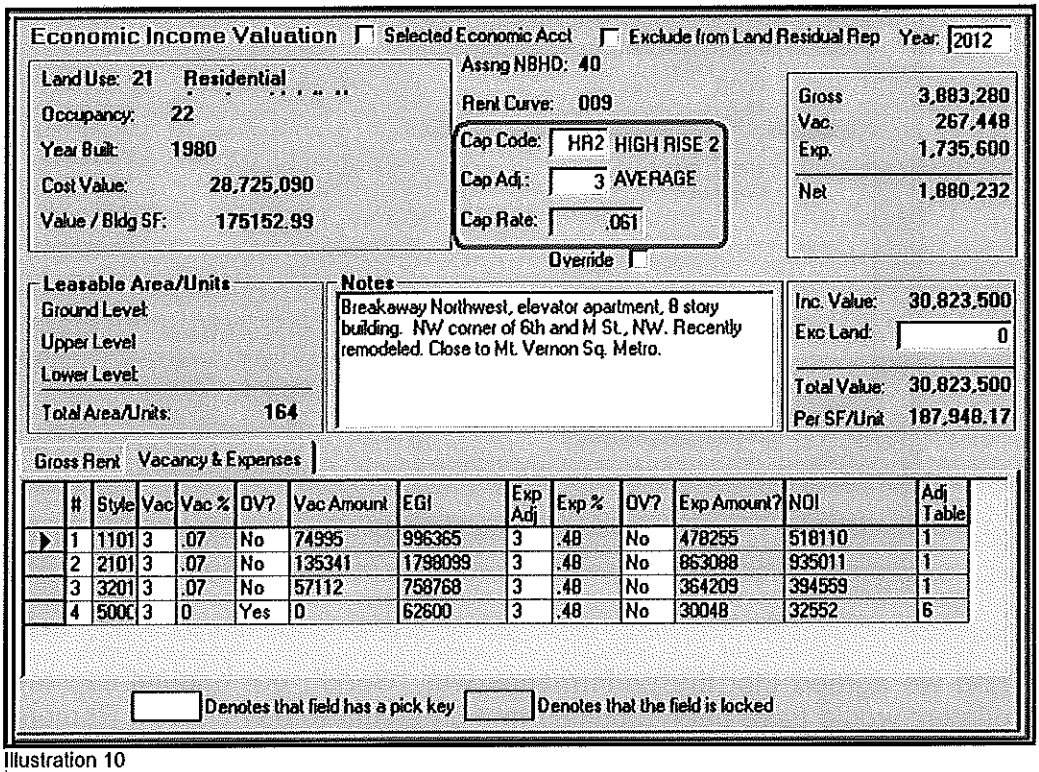


Illustration 10

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.

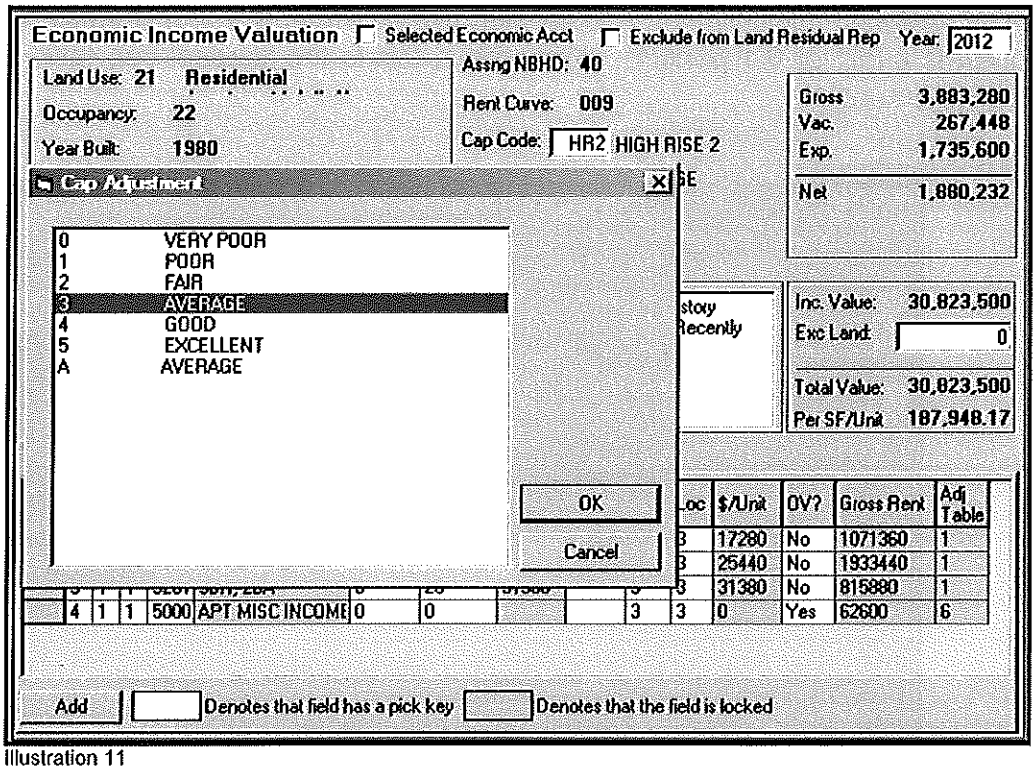


Illustration 11

Had we agreed that the performance was "Good", our original cap rate of 6.1 percent would have been modified to 5.5 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 $1,880,232 and that the overall direct capitalization rate is 0.061, we can calculate the estimated value of Breakaway Northwest to be $30,823,500 ($1,880,232/0.061). Again, this is identical to the

amount estimated in the first section of the exercise. The final results are highlighted below.

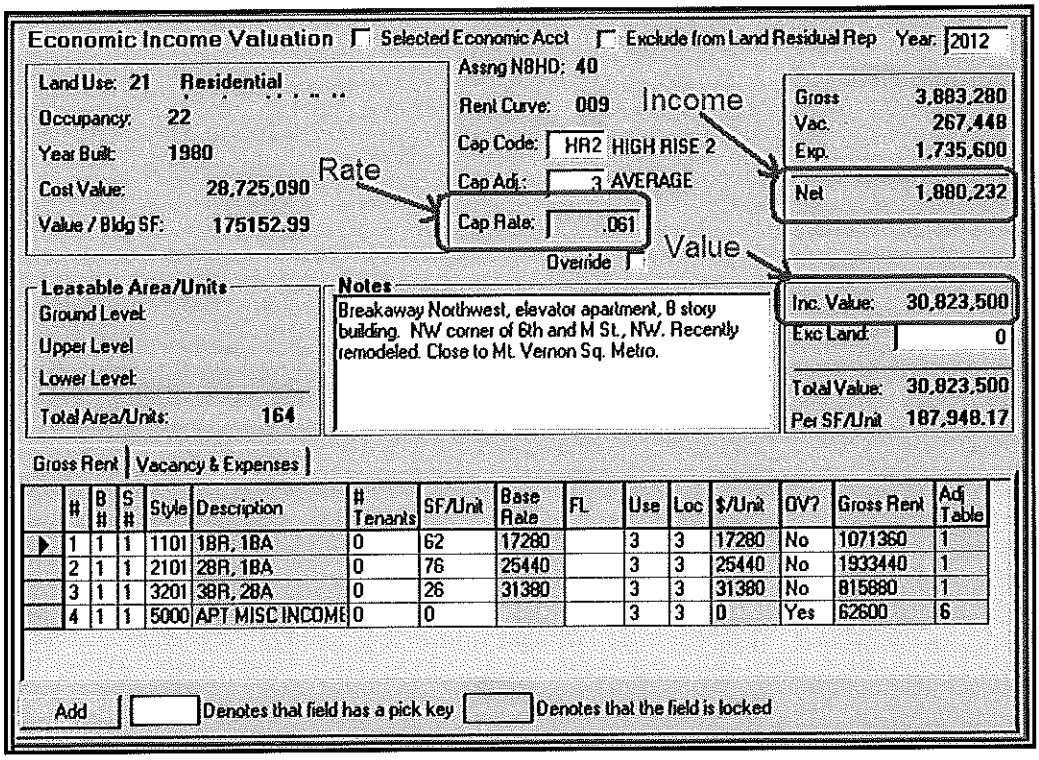


Illustration 12

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.

APPENDIX:

Sample PRC

SSL: 9999/ / 7777/ /

Location: 9999 7TH ST NW

Current Owner:

BREAKAWAY NORTHWEST APTS INC

9999 7TH ST

WASHINGTON, DC 20001-9999

Additional Owners:

Sales Information

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

Year Built: 1980

Appraised Value: 30,823,500

Commercial Data Elements

Exterior Finish	BR	Brick
Wall Height	9	Wall Height

INCOME VALUATION

Washington, DC

01/20/2011 07:46

ECONOMIC INCOME VALUATION

Leaseable Area Summary

Ground Level

Lower Level

Upper Level

Total Leaseable Area: 164

Cap Rate

Cap Code: HR2

Cap Adjust: 3

Cap Rate: 0.0610

Rent ID	NBHD
009	40/E

Income

Gross Income: 3,883,280

Vacancy Allowance: 267,448 7%

Expense Allowance: 1,735,600 48%

Net Income: 1,880,232

Income Value

Income Value: 30,823,500

Excess Land: 0

Total Income Value: 30,823,500

Value Per SF/Unit: 187,948.17

Notes

Breakaway Northwast. 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 %	Expenses	NOI
1	1	1	1101	1BR, 1BA	1	0	62		17,280.00	3	3	17,280.00	1,071,360	3.00	.07	74,995	996,365	3	0.48	478,255	518,110
2	1	1	2101	2BR, 1BA	1	0	76		25,440.00	3	3	25,440.00	1,933,440	3.00	.07	135,341	1,798,099	3	0.48	863,088	935,011
3	1	1	3201	3BR, 2BA	1	0	26		31,380.00	3	3	31,380.00	815,880	3.00	.07	57,112	758,768	3	0.48	364,209	394,559
4	1	1	5000	APT MISC INC	6	0	0			3	3	0.00	62,600	3.00	0	0	62,600	3	0.48	30,048	32,552
							164						3,883,280			267,448	3,615,832			1,735,600	1,880,232

ACTUAL INCOME VALUATION

Cap Rate

Cap Code:

Cap Adjust:

Cap Rate:

Income

Gross Income:

Vacancy Allowance:

Expense Allowance:

Other Income:

Net Income:

Income Value

Income Value:

Excess Land:

Total Income Value:

Value Per SF/Unit:

Expense Breakdown

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

#	Bldg #	Sect #	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

TY	2012	0	SSL	0	Address	0	
RET ER		L-T RETAIL	OFC ER	AREA	L-T OFFICE	VACANT/ST SPACE	
						OFFICE	RETAIL
0	0	$0	$ -	0	$0		
0	0	$0	$ -	0	$0	0	0
0	0	$0	$ -	0	$0	0	0
0	0	$0	$ -	0	$0	0	0
0	0	$0	$ -	0	$0	0	0
0	0	$0	$ -	0	$0	0	0
0	0	$0	$ -	0	$0	0	0
0	0	$0	$ -	0	$0	0	0
0	0	$0	$ -	0	$0	0	0 OFC-MKT RATE
0	0	$0	$ -	0	$0	0	0
0	0	$0	$ -	0	$0	0	0
0	0	$0	$ -	0	$0	0	0
0	0	$0	$ -	0	$0	0	0
0	0	$0	$ -	0	$0	0	0
0	0	$0	$ -	0	$0	0	0
0	0	$0	$ -	0	$0	0	0
	0	$0		0	$0	$0	$0
#DIV/0!			#DIV/0!			0	0 VACANT/ST LL
						$ -	$ -
						$0	$0 LL INCOME

NRA: 0 SF OF OFC/RETAIL

VALUE CALCULATION

PGI	$0
VAC	6%
SUBTOTAL	$0
PARKING	$0
ROOF	$0
STORAGE	$0
OTHER	$0
OP EXP	$0
NOI	$0
OAR	0.00%

#DIV/0! STAB VALUE
#DIV/0! PV OF LEASE UP COSTS
$0 PV OF REHAB COSTS
$0 Rent Overage/Shortfall
#DIV/0! MARKET VALUE AS IS
#DIV/0! VALUE PER SF

#DIV/0! SF

RETAIL-MKT RATE

THIS WORKPAPER IS CONFIDENTIAL

$ -

C:\Documents and Settings\stephenc.OCFO\My Documents\

OFFICE LEASE-UP COSTS

2011	2012	2013	2014	2015	
-	-	-	-	-	
-	-	-	-	-	
-	-	-	-	-	
-	-	-	-	-	
-	-	-	-	-	
-	-	-	-	-	
-	-	-	-	-	
0	0	0	0	0	
0	0	0	0	0	
$ -	$ -	$ -	$ -	$ -	
$0	$0	$0	$0	$0	PGI
$0	$0	$0	$0	$0	
#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	NOI Loss
#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
0.89286	0.79719	0.71178	0.63552	0.56743	
#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
$0	$0	$0	$0	$0	
$0	$0	$0	$0	$0	

ASSUMPTIONS

LEASE GROWTH RATE	0.0%
LEASE-UP ASSUMPTION:	
USE 50% IF 6 MO.	85%
USE 100% IF 12 MO.	
STANDARD TENANT IMP	$40.00
RENEWAL TENANT IMP	$20.00
NEW TENANT COMM	5.00%
RENEWAL COMM	2.50%
EGI-VAC RATE	6.0%
OP EXP SAVED PER SF	#DIV/0!
VACATE PROBABILITY:	50%
DISCOUNT FACTORS	12%

#DIV/0! PV OF EX. VAC.
$0 PV TI's
$0 PV COMM
#DIV/0! PV OF LEASE-UP

RETAIL LEASE UP COSTS

$0	$0	$0	$0	$0	PV OF COMMISSIONS
$0	$0	$0	$0	$0	EXCESS VACANCY
$ -	$ -	$ -	$ -	$ -	

RETAIL TOTALS

$0
$0
$0

VACANT AND S-T RETAIL LEASE UP

2011	2012	2013	2014	2015	
-	-	-	-	-	
-	-	-	-	-	
-	-	-	-	-	
-	-	-	-	-	
-	-	-	-	-	
-	-	-	-	-	
-	-	-	-	-	TOTAL VACANT AND S-T RETAIL
0	0	0	0	0	

ADDITIONAL L-T RETAIL REVENUE

RET ER	AREA	L-T RETAIL
0	0	$0
0	0	$0
0	0	$0
0	0	$0
0	0	$0
0	0	$0
0	0	$0
0	0	$0
0	0	$0
0	0	$0
0	0	$0
0	0	$0
0	0	$0
0	0	$0
0	0	$0
0	0	$0
0	0	$0
0	0	$0
0	0	$0
0	0	**$0**

ADDITIONAL L-T OFFICE REVENUE

OFC ER	AREA	L-T OFFICE
$ -	0	$0
$ -	0	$0
$ -	0	$0
$ -	0	$0
$ -	0	$0
$ -	0	$0
$ -	0	$0
$ -	0	$0
$ -	0	$0
$ -	0	$0
$ -	0	$0
$ -	0	$0
$ -	0	$0
$ -	0	$0
$ -	0	$0
$ -	0	$0
$ -	0	$0
$ -	0	$0
$ -	0	$0
0	0	**$0**

ADD'L VAC/SHORT TERM SPACE		LEASE-UP ANALYSIS ADD'L VAC/ST SPACE			
OFFICE	RETAIL	OFFICE	RETAIL	OFFICE	RETAIL
0	0	**2011**	**2011**	**2014**	**2014**
0	0	-	-	-	-
0	0	-	-	-	-
0	0	-	-	-	-
0	0	-	-	-	-
0	0	-	-	-	-
0	0	0	0	0	0
0	0	**2012**	**2012**	**2015**	**2015**
0	0	-	-	-	-
0	0	-	-	-	-
0	0	-	-	-	-
0	0	-	-	-	-
0	0	-	-	-	-
0	0	0	0	0	0
0	0				
0	0	**2013**	**2013**		
0	0	-	-		
0	0	-	-		
0	0	-	-		
0	0	-	-		
0	0	-	-		
0	**0**	0	0		

	Office	Rent Overage/Shortfall				
	Contract Rent	Sq Ft	Market	# of years	1 year Difference	Discounted Shortfall/Overage
2011	$ -	-	$ -	1	$ -	0
	$ -	-	$ -	1	$ -	0
	$ -	-	$ -	1	$ -	0
	$ -	-	$ -	1	$ -	0
	$ -	-	$ -	1	$ -	0
	$ -	-	$ -	1	$ -	0
	$ -	-	$ -	1	$ -	0
	$ -	-	$ -	1	$ -	0
	$ -	-	$ -	1	$ -	0
	$ -	-	$ -	1	$ -	0
	$ -	-	$ -	1	$ -	0
	$ -	-	$ -	1	$ -	0
2012	$ -	-	$ -	2	$ -	0
	$ -	-	$ -	2	$ -	0
	$ -	-	$ -	2	$ -	0
	$ -	-	$ -	2	$ -	0
	$ -	-	$ -	2	$ -	0
	$ -	-	$ -	2	$ -	0
	$ -	-	$ -	2	$ -	0
	$ -	-	$ -	2	$ -	0
	$ -	-	$ -	2	$ -	0
	$ -	-	$ -	2	$ -	0
	$ -	-	$ -	2	$ -	0
	$ -	-	$ -	2	$ -	0
2013	$ -	-	$ -	3	$ -	0
	$ -	-	$ -	3	$ -	0
	$ -	-	$ -	3	$ -	0
	$ -	-	$ -	3	$ -	0
	$ -	-	$ -	3	$ -	0
	$ -	-	$ -	3	$ -	0
	$ -	-	$ -	3	$ -	0
	$ -	-	$ -	3	$ -	0
	$ -	-	$ -	3	$ -	0
	$ -	-	$ -	3	$ -	0
	$ -	-	$ -	3	$ -	0
	$ -	-	$ -	3	$ -	0
2014	$ -	-	$ -	4	$ -	0
	$ -	-	$ -	4	$ -	0
	$ -	-	$ -	4	$ -	0
	$ -	-	$ -	4	$ -	0
	$ -	-	$ -	4	$ -	0
	$ -	-	$ -	4	$ -	0
	$ -	-	$ -	4	$ -	0
	$ -	-	$ -	4	$ -	0
	$ -	-	$ -	4	$ -	0
	$ -	-	$ -	4	$ -	0
	$ -	-	$ -	4	$ -	0
	$ -	-	$ -	4	$ -	0
2015	$ -	-	$ -	5	$ -	0
	$ -	-	$ -	5	$ -	0
	$ -	-	$ -	5	$ -	0
	$ -	-	$ -	5	$ -	0
	$ -	-	$ -	5	$ -	0
	$ -	-	$ -	5	$ -	0
	$ -	-	$ -	5	$ -	0
	$ -	-	$ -	5	$ -	0
	$ -	-	$ -	5	$ -	0
	$ -	-	$ -	5	$ -	0
	$ -	-	$ -	5	$ -	0
	$ -	-	$ -	5	$ -	0
Total						0

	Retail	Rent Overage/Shortfall				
	Contract Rent	Sq Ft	Market	# of years	1 year Difference	Discounted Shortfall/Overage
2011	$ -	-	$ -	1	$ -	0
	$ -	-	$ -	1	$ -	0
	$ -	-	$ -	1	$ -	0
	$ -	-	$ -	1	$ -	0
	$ -	-	$ -	1	$ -	0
	$ -	-	$ -	1	$ -	0
	$ -	-	$ -	1	$ -	0
	$ -	-	$ -	1	$ -	0
	$ -	-	$ -	1	$ -	0
	$ -	-	$ -	1	$ -	0
	$ -	-	$ -	1	$ -	0
	$ -	-	$ -	1	$ -	0
2012	$ -	-	$ -	2	$ -	0
	$ -	-	$ -	2	$ -	0
	$ -	-	$ -	2	$ -	0
	$ -	-	$ -	2	$ -	0
	$ -	-	$ -	2	$ -	0
	$ -	-	$ -	2	$ -	0
	$ -	-	$ -	2	$ -	0
	$ -	-	$ -	2	$ -	0
	$ -	-	$ -	2	$ -	0
	$ -	-	$ -	2	$ -	0
	$ -	-	$ -	2	$ -	0
	$ -	-	$ -	2	$ -	0
2013	$ -	-	$ -	3	$ -	0
	$ -	-	$ -	3	$ -	0
	$ -	-	$ -	3	$ -	0
	$ -	-	$ -	3	$ -	0
	$ -	-	$ -	3	$ -	0
	$ -	-	$ -	3	$ -	0
	$ -	-	$ -	3	$ -	0
	$ -	-	$ -	3	$ -	0
	$ -	-	$ -	3	$ -	0
	$ -	-	$ -	3	$ -	0
	$ -	-	$ -	3	$ -	0
	$ -	-	$ -	3	$ -	0
2014	$ -	-	$ -	4	$ -	0
	$ -	-	$ -	4	$ -	0
	$ -	-	$ -	4	$ -	0
	$ -	-	$ -	4	$ -	0
	$ -	-	$ -	4	$ -	0
	$ -	-	$ -	4	$ -	0
	$ -	-	$ -	4	$ -	0
	$ -	-	$ -	4	$ -	0
	$ -	-	$ -	4	$ -	0
	$ -	-	$ -	4	$ -	0
	$ -	-	$ -	4	$ -	0
	$ -	-	$ -	4	$ -	0
2015	$ -	-	$ -	5	$ -	0
	$ -	-	$ -	5	$ -	0
	$ -	-	$ -	5	$ -	0
	$ -	-	$ -	5	$ -	0
	$ -	-	$ -	5	$ -	0
	$ -	-	$ -	5	$ -	0
	$ -	-	$ -	5	$ -	0
	$ -	-	$ -	5	$ -	0
	$ -	-	$ -	5	$ -	0
	$ -	-	$ -	5	$ -	0
	$ -	-	$ -	5	$ -	0
	$ -	-	$ -	5	$ -	0
Total						0

Total Office Shortfall/Overage + Retail Shortfall/Overage	0

OFFICE MKT LEASE RATE- RECENT OFFICE LEASES SIGNED IN BLDG	RETAIL MKT LEASE RATE- RECENT LEASES SIGNED IN BLDG

LEASE DATE	RATE	AREA	LEASE REVENUE	COMP SQ/LOT
	$ -	0	$0	0
	$ -	0	$0	0
	$ -	0	$0	0
	$ -	0	$0	0
	$ -	0	$0	0
	$ -	0	$0	0
	$ -	0	$0	0
	$ -	0	$0	0
	$ -	0	$0	0
	$ -	0	$0	0
	$ -	0	$0	0
	$ -	0	$0	0
	$ -	0	$0	0
	$ -	0	$0	0
		0	$0	#DIV/0!
				WT AVG

LEASE DATE	RATE	AREA	LEASE REVENUE	COMP SQ/LOT
	$ -	0	$0	0
	$ -	0	$0	0
	$ -	0	$0	0
	$ -	0	$0	0
	$ -	0	$0	0
	$ -	0	$0	0
	$ -	0	$0	0
	$ -	0	$0	0
	$ -	0	$0	0
	$ -	0	$0	0
	$ -	0	$0	0
	$ -	0	$0	0
	$ -	0	$0	0
	$ -	0	$0	0
		0	$0	#DIV/0!
				WT AVG

FACTORS	12%		
Year	Estimated Los	PV Factor	PV of Loss(es)
1	$0	0.89286	$0
2	$0	0.79719	$0
3	$0	0.71178	$0
4	$0	0.63552	$0
5	$0	0.56743	$0
	$0		$0

USECODE

(Selects Base Rate)

No.	Description	Value
011	Row	$117.58
012	Detached	$140.35
013	Semi-Detached	$124.04
015	Mixed Use	$117.58
019	Miscellaneous	$117.58
023	Small Apt. Bldg.	$ 89.54
024	Conversion	$115.68

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	$1.50
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)	$14,500
Half Bath	$ 8,700
Fireplace	$ 8,530
Kitchen	$11,500
Finished Basement (Basic)	$20.00/sf
Finished Basement (Partition)	$45.00/sf
Basement Garage	$35.00/sf
Carport	$30.00/sf
Stoop	$17.50/sf
Open Porch	$17.50/sf
Covered Open Porch	$35.00/sf
Screen Enclosed Porch	$37.50/sf
Glass Enclosed Porch	$42.50/sf
Fully Enclosed Porch	$50.00/sf
Deck	$25.00/sf
Patio	$ 6.50/sf

Grade (Multiplies Base, Add & Flat)		
0	Default	
1	Low Quality	0.50
2	Fair Quality	0.80
3	Average Quality	1.00
4	Above Average Quality	1.14
5	Good Quality	1.22
6	Very Good Quality	1.33
7	Excellent Quality	1.50
8	Superior Quality	1.70
9	Extraordinary – A	1.95
10	Extraordinary – B	2.15
11	Extraordinary – C	2.45
12	Extraordinary – D	2.90
Interior Condition (Multiplies Base, Add & Flat)		
0	Typical	
1	Poor	.766
2	Fair	.866
3	Average	1.000
4	Good	1.105
5	Very Good	1.157
6	Excellent	1.205
Exterior Condition (Multiplies Base, Add & Flat)		
0	Default	
1	Poor	.766
2	Fair	.866
3	Average	1.000
4	Good	1.105
5	Very Good	1.157
6	Excellent	1.205
Overall Condition (Multiplies Base, Add & Flat)		
0	Default	
1	Poor	.766
2	Fair	.866
3	Average	1.000
4	Good	1.105
5	Very Good	1.157
6	Excellent	1.205
Remodel Type (Multiplies Base, Add & Flat)		
0	Default	
1	Unknown	
2	Gut Rehab	1.38
3	Major Renov	1.20
4	Remodel	1.05
5	Addition	
6	Cosmetic	1.02

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 + Σ $ABRV_n$) * Effective Area * Size Adjustment + Σ $AFRV_n$] * (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 2012

Effective Age of Building	*% Depr.*	*% Good*	*Effective Year Built*
0	0	100	2012
1	1	99	2011
2	2	98	2010
3	2	98	2009
4	3	97	2008
5	3	97	2007
6	4	96	2006
7	4	96	2005
8	4	96	2004
9	4	96	2003
10	5	95	2002
11	5	95	2001
12	5	95	2000
13	5	95	1999
14	6	94	1998
15	6	94	1997
16	6	94	1996
17	6	94	1995
18	6	94	1994
19	7	93	1993
20	7	93	1992
21	7	93	1991
22	7	93	1990
23	7	93	1989
24	8	92	1988
25	8	92	1987
26	8	92	1986
27	8	92	1985
28	8	92	1984
29	9	91	1983
30	9	91	1982
31	9	91	1981
32	9	91	1980
33	9	91	1979
34	9	91	1978
35	10	90	1977
36	10	90	1976
37	10	90	1975
38	10	90	1974
39	10	90	1973
40	10	90	1972
41	11	89	1971
42	11	89	1970
43	11	89	1969
44	11	89	1968
45	11	89	1967
46	11	89	1966
47	12	88	1965
48	12	88	1964
49	12	88	1963
50	12	88	1962
51	12	88	1961
52	12	88	1960
53	12	88	1959
54	13	87	1958
55	13	87	1957
56	13	87	1956
57	13	87	1955
58	13	87	1954
59	13	87	1953
60	14	86	1952
61	14	86	1951
62	14	86	1950
63	14	86	1949
64	14	86	1948
65	14	86	1947
70	15	85	1942
75	16	84	1937

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)

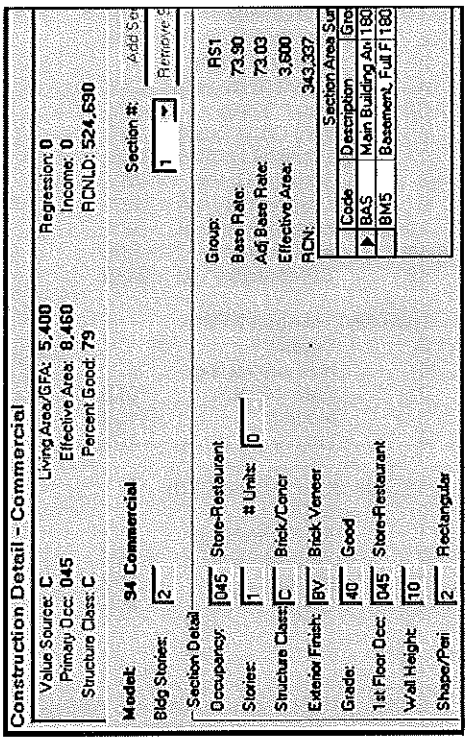
2009-2011	0%
2007-2008	5%
2002-2006	15%
1997-2001	25%
Earlier-1996	50%

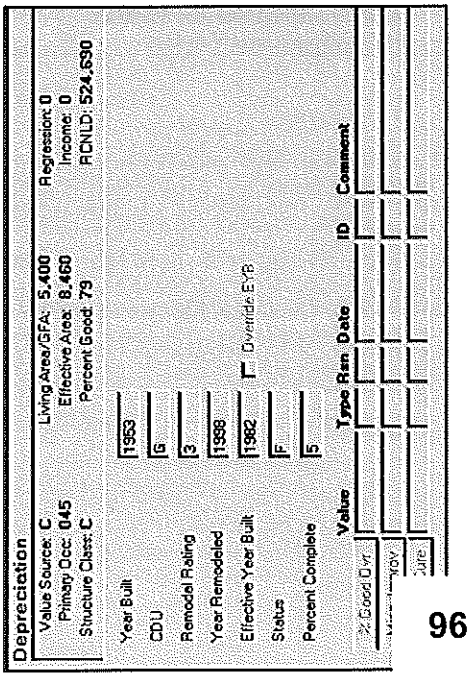
Extra Features (Flat and Sq Ft Add)

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





OBXF

Code	Description	Sub Description	2013 Rate
HVAC	(HVAC)Heating	Electric	$4.06
HVAC	(HVAC)Heating	Forced Air	$4.35
HVAC	(HVAC)Heating	Hot Water	$7.71
HVAC	(HVAC)Heating	Hw Radiant	$7.71
HVAC	(HVAC)Heating	Space Heater	$2.32
HVAC	(HVAC)Heating	Steam	$6.61
HVAC	(HVAC)Heating	Wall Furn	$2.03
HVAC	(HVAC)Heating	Pckg Unit	$8.12
HVAC	(HVAC)Heating	W/C Air	$11.08
HVAC	(HVAC)Heating	H/C Water	$17.98
HVAC	(HVAC)Heating	Heat Pump	$9.05
HVAC	(HVAC)Heating	Floor Furn	$2.03
HVAC	(HVAC)Heating	Ind Thru-Wall Ht Pmp	$4.18
HVAC	(HVAC)Heating	Cmplt HVAC	$8.12
HVAC	(HVAC)Heating	Evap Cooling	$17.98
HVAC	(HVAC)Heating	Refridg Cool	$7.54
HVAC	(HVAC)Heating	Rad Space Ht	$1.86
HVAC	(HVAC)Heating	Cntrl Atmosphere	$7.83
HVAC	(HVAC)Heating	No HVAC	$0.00
SPRK	Sprinklers	Sprinklers	$4.21
SPRK	Sprinklers	Sprinklers	$4.21
SPRK	Sprinklers	Dry	$5.35
SPRK	Sprinklers	Wet	$4.21
ELEV	Elevators	Elevators	$56,739.08
ELEV	Elevators	Passenger	$56,739.08
ELEV	Elevators	Power Freight	$55,042.00
ELEV	Elevators	Freight Mnl	$55,042.00
BL	Balcony	Commercial	$37.76
MZ	Mezzanines	Mezzanines	$45.87
MZ	Mezzanines	Display	$45.87
MZ	Mezzanines	Office	$80.89
MZ	Mezzanines	Open	$45.87
MZ	Mezzanines	Storage	$22.13

2013 Economic Life Depreciation Tables

Base Year 2012

Age of Building	Effective Year Built
0	2012
1	2011
2	2010
3	2009
4	2008
5	2007
6	2006
7	2005
8	2004
9	2003
10	2002
11	2001
12	2000
13	1999
14	1998
15	1997
16	1996
17	1995
18	1994
19	1993
20	1992
21	1991
22	1990
23	1989
24	1988
25	1987
26	1986
27	1985
28	1984
29	1983
30	1982
31	1981
32	1980
33	1979
34	1978
35	1977
36	1976
37	1975
38	1974
39	1973
40	1972
41	1971
42	1970
43	1969
44	1968
45	1967
46	1966
47	1965
48	1964
49	1963
50	1962
51	1961
52	1960
53	1959
54	1958
55	1957
56	1956
57	1955
58	1954
59	1953
60	1952
61	1951
62	1950
63	1949
64	1948
65	1947
70	1942

70 Year Economic Life

Percent of Depreciation	Percent Good
0	100
0	100
0	100
0	100
1	99
1	99
1	99
1	99
1	99
2	98
2	98
2	98
2	98
2	98
3	97
3	97
3	97
4	96
4	96
4	96
5	95
5	95
6	94
6	94
7	93
7	93
8	92
9	91
9	91
10	90
11	89
12	88
13	87
14	86
15	85
16	84
17	83
18	82
19	81
20	80
21	79
23	77
25	75
26	74
28	72
29	71
31	69
32	68
34	66
36	64
38	62
40	60
42	58
44	56
46	54
48	52
50	50
52	48
54	46
56	44
57	43
59	41
61	39
63	37
64	36
65	35
71	29

60 Year Economic Life

Percent of Depreciation	Percent Good
0	100
0	100
0	100
1	99
1	99
1	99
1	99
1	99
2	98
2	98
2	98
2	98
3	97
3	97
3	97
4	96
4	96
5	95
5	95
6	94
6	94
7	93
8	92
9	91
9	91
10	90
11	89
13	87
14	86
15	85
16	84
17	83
18	82
20	80
21	79
23	77
25	75
26	74
28	72
31	69
32	68
34	66
36	64
38	62
40	60
44	56
46	54
48	52
50	50
52	48
54	46
57	43
59	41
61	39
63	37
64	36
65	35
67	33
69	31
70	30
71	29

50 Year Economic Life

Percent of Depreciation	Percent Good
0	100
0	100
0	100
1	99
1	99
1	99
1	99
2	98
2	98
2	98
3	97
3	97
4	96
4	96
5	95
5	95
6	94
7	93
7	93
9	91
9	91
10	90
12	88
13	87
15	85
16	84
17	83
19	81
20	80
23	77
25	75
26	74
29	71
31	69
34	66
36	64
38	62
42	58
44	56
48	52
50	50
52	48
56	44
57	43
61	39
63	37
64	36
66	34
67	33
70	30
71	29

2013 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	0.8	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

2013 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	0.015	-1
127	C	Coop-Vertical-Mixed Use	94	127	AP2	1	S90	10000	8	0.015	-1
165	C	Vehicle Svc Station_ Kiosk	94	165	SS1	1	S90	5000	14	0.01	-1
189	C	Special Purpose-Memorial	94	189	GS1	1	S90	10000	8	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 lubricaton, 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 official residence and/or 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):	

2013 Base Cost Rates

Cost Group	Class	Base Rate	Depr. Table	Econ. Life	Max. Depr.	Max. Age
AP1	0	$103.33	5	60	80	99
AP1	A	$107.30	5	70	80	99
AP1	B	$109.27	5	70	80	99
AP1	C	$103.33	5	60	80	99
AP1	D	$99.26	5	50	80	99
AP1	S	$98.71	5	50	80	99
AP2	0	$122.79	5	60	80	99
AP2	A	$166.03	5	70	80	99
AP2	B	$159.69	5	70	80	99
AP2	C	$122.79	5	60	80	99
AP2	D	$112.01	5	50	80	99
BN1	0	$230.74	5	60	80	99
BN1	A	$284.89	5	70	80	99
BN1	B	$275.66	5	70	80	99
BN1	C	$230.74	5	60	80	99
BN1	D	$210.14	5	50	80	99
BN1	S	$208.23	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	$167.31	5	60	80	99
ED1	A	$224.37	5	70	80	99
ED1	B	$217.17	5	70	80	99
ED1	C	$164.75	5	60	80	99
ED1	D	$153.29	5	50	80	99
ED1	S	$160.58	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	$164.47	5	60	80	99
GS1	A	$169.20	5	70	80	99
GS1	B	$170.70	5	70	80	99
GS1	C	$164.47	5	60	80	99
GS1	D	$152.39	5	50	80	99
GS1	S	$112.73	5	50	80	99
GS2	0	$148.86	5	60	80	99

2013 Base Cost Rates

Cost Group	Class	Base Rate	Depr. Table	Econ. Life	Max. Depr.	Max. Age
GS2	A	$236.35	5	70	80	99
GS2	B	$223.84	5	70	80	99
GS2	C	$148.86	5	60	80	99
GS2	D	$137.25	5	50	80	99
GS2	S	$141.36	5	50	80	99
GS3	0	$185.50	5	60	80	99
GS3	A	$269.84	5	70	80	99
GS3	B	$262.48	5	70	80	99
GS3	C	$185.50	5	60	80	99
GS3	D	$171.12	5	50	80	99
GS3	S	$174.12	5	50	80	99
HT1	0	$127.20	5	60	80	99
HT1	A	$152.21	5	70	80	99
HT1	B	$148.61	5	70	80	99
HT1	C	$127.20	5	60	80	99
HT1	D	$116.58	5	50	80	99
HT1	S	$97.02	5	50	80	99
HT2	0	$202.80	5	60	80	99
HT2	A	$207.31	5	70	80	99
HT2	B	$202.80	5	70	80	99
HT2	C	$158.85	5	60	80	99
HT2	D	$145.04	5	50	80	99
HT2	S	$200.92	5	50	80	99
MC1	0	$285.29	5	60	80	99
MC1	A	$384.55	5	70	80	99
MC1	B	$378.56	5	70	80	99
MC1	C	$285.29	5	60	80	99
MC1	D	$260.96	5	50	80	99
MC1	S	$155.40	5	50	80	99
MC2	0	$184.73	5	60	80	99
MC2	A	$240.96	5	70	80	99
MC2	B	$234.79	5	70	80	99
MC2	C	$184.73	5	60	80	99
MC2	D	$169.86	5	50	80	99
MC2	S	$184.73	5	50	80	99
MLT	R	$96.34	5	70	80	70
MN1	0	$69.82	5	60	80	99
MN1	A	$83.04	5	70	80	99
MN1	B	$78.30	5	70	80	99
MN1	C	$69.82	5	60	80	99
MN1	D	$62.50	5	50	80	99
MN1	S	$66.43	5	50	80	99
MN2	0	$151.33	5	60	80	99
MN2	A	$206.21	5	70	80	99
MN2	B	$198.75	5	70	80	99
MN2	C	$151.33	5	60	80	99
MN2	D	$97.76	5	50	80	99
MN2	S	$149.40	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	$135.78	5	75	40	75
MRC	A	$135.78	5	75	40	75

2013 Base Cost Rates

Cost Group	Class	Base Rate	Depr. Table	Econ. Life	Max. Depr.	Max. Age
MRC	B	$135.78	5	75	40	75
MRC	C	$135.78	5	75	40	75
MRC	D	$135.78	5	75	40	75
MRC	S	$135.78	5	75	40	75
OF1	0	$156.56	5	60	80	99
OF1	A	$219.56	5	70	80	99
OF1	B	$213.40	5	70	80	99
OF1	C	$156.56	5	60	80	99
OF1	D	$143.01	5	50	80	99
OF1	S	$146.50	5	50	80	99
OF2	0	$156.56	5	60	80	99
OF2	A	$219.56	5	70	80	99
OF2	B	$213.40	5	70	80	99
OF2	C	$156.56	5	60	80	99
OF2	D	$143.01	5	50	80	99
OF2	S	$146.50	5	50	80	99
OF3	0	$213.40	5	60	80	99
OF3	A	$219.56	5	70	80	99
OF3	B	$213.40	5	70	80	99
OF3	C	$156.56	5	60	80	99
OF3	D	$143.01	5	50	80	99
OF3	S	$146.50	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	$91.24	5	60	80	99
PK1	A	$94.73	5	70	80	99
PK1	B	$95.58	5	70	80	99
PK1	C	$91.24	5	60	80	99
PK1	D	$82.53	5	50	80	99
PK1	S	$69.53	5	50	80	99
PK2	0	$67.37	5	60	80	99
PK2	A	$74.36	5	70	80	99
PK2	B	$70.57	5	70	80	99
PK2	C	$67.37	5	60	80	99
PK2	D	$66.07	5	50	80	99
PK2	S	$39.85	5	50	80	90
PS1	0	$190.23	5	60	80	99
PS1	A	$265.69	5	70	80	99
PS1	B	$253.07	5	70	80	99
PS1	C	$190.23	5	60	80	99
PS1	D	$176.73	5	50	80	99
PS1	S	$170.89	5	50	80	99
PS2	0	$193.26	5	60	80	99
PS2	A	$258.55	5	70	80	99
PS2	B	$251.18	5	70	80	99
PS2	C	$193.26	5	60	80	99
PS2	D	$179.05	5	50	80	99
PS2	S	$133.28	5	50	80	99
R11	R	$117.58	6	75	80	75
R12	R	$140.35	6	75	80	75
R13	R	$124.04	6	75	80	75
R15	R	$117.58	6	75	80	75

2013 Base Cost Rates

Cost Group	Class	Base Rate	Depr. Table	Econ. Life	Max. Depr.	Max. Age
R19	R	$117.58	6	75	80	75
R23	R	$89.54	6	75	80	75
R24	R	$115.68	6	75	80	75
RB1	0	$170.03	5	60	80	99
RB1	A	$224.09	5	70	80	99
RB1	B	$223.89	5	70	80	99
RB1	C	$170.03	5	60	80	99
RB1	D	$159.22	5	50	80	99
RB1	S	$163.69	5	50	80	99
RES	R	$96.10	5	70	80	70
RH1	0	$131.99	5	70	80	99
RH1	A	$131.99	5	70	80	99
RH1	B	$131.99	5	70	80	99
RH1	C	$131.99	5	70	80	99
RH1	D	$131.99	5	70	80	99
RH1	S	$131.99	5	70	80	99
RH2	0	$149.95	5	60	80	99
RH2	A	$194.66	5	70	80	99
RH2	B	$189.92	5	70	80	99
RH2	C	$149.95	5	60	80	99
RH2	D	$134.71	5	50	80	99
RH2	S	$105.94	5	50	80	99
RS1	0	$161.65	5	60	80	99
RS1	A	$215.24	5	70	80	99
RS1	B	$217.16	5	70	80	99
RS1	C	$161.65	5	60	80	99
RS1	D	$148.82	5	50	80	99
RS1	S	$155.51	5	50	80	99
RS2	0	$174.34	5	60	80	99
RS2	A	$237.54	5	70	80	99
RS2	B	$239.65	5	70	80	99
RS2	C	$174.34	5	60	80	99
RS2	D	$160.28	5	50	80	99
RS2	S	$168.38	5	50	80	99
RT1	0	$108.75	5	60	80	99
RT1	A	$139.32	5	70	80	99
RT1	B	$134.77	5	70	80	99
RT1	C	$108.75	5	60	80	99
RT1	D	$100.91	5	50	80	99
RT1	S	$105.18	5	50	80	99
RT2	0	$105.16	5	60	80	99
RT2	A	$123.36	5	70	80	99
RT2	B	$124.46	5	70	80	99
RT2	C	$105.16	5	60	80	99
RT2	D	$96.66	5	50	80	99
RT2	S	$100.53	5	50	80	99
RT3	0	$169.23	5	60	80	99
RT3	A	$174.59	5	70	80	99
RT3	B	$169.23	5	70	80	99
RT3	C	$136.40	5	60	80	99
RT3	D	$164.49	5	50	80	99
RT3	S	$167.65	5	50	80	99
RT4	0	$103.85	5	60	80	99
RT4	A	$104.37	5	70	80	99
RT4	B	$105.30	5	70	80	99
RT4	C	$103.85	5	60	80	99

2013 Base Cost Rates

Cost Group	Class	Base Rate	Depr. Table	Econ. Life	Max. Depr.	Max. Age
RT4	D	$94.77	5	50	80	99
RT4	S	$97.35	5	50	80	99
SIN	R	$154.17	5	70	80	70
SS1	0	$218.39	5	70	80	99
SS1	A	$220.49	5	70	80	99
SS1	B	$222.45	5	70	80	99
SS1	C	$218.39	5	70	80	99
SS1	D	$216.21	5	70	80	99
SS1	S	$220.37	5	70	80	99
SS2	0	$172.40	5	60	80	99
SS2	A	$174.05	5	70	80	99
SS2	B	$175.60	5	70	80	99
SS2	C	$172.40	5	60	80	99
SS2	D	$162.43	5	50	80	99
SS2	S	$176.82	5	50	80	99
SV1	0	$76.43	5	60	80	99
SV1	A	$85.44	5	70	80	99
SV1	B	$86.20	5	70	80	99
SV1	C	$76.43	5	60	80	99
SV1	D	$65.18	5	50	80	99
SV1	S	$67.29	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	$71.79	5	60	80	99
WH1	A	$109.82	5	70	80	99
WH1	B	$104.69	5	70	80	99
WH1	C	$71.79	5	60	80	99
WH1	D	$62.71	5	50	80	99
WH1	S	$67.23	5	50	80	99
WH2	0	$60.41	5	60	80	99
WH2	A	$93.63	5	70	80	99
WH2	B	$88.46	5	70	80	99
WH2	C	$60.41	5	60	80	99
WH2	D	$52.93	5	50	80	99
WH2	S	$56.74	5	50	80	99
WH3	0	$85.05	5	60	80	99
WH3	A	$88.30	5	70	80	99
WH3	B	$89.09	5	70	80	99
WH3	C	$94.77	5	60	80	99
WH3	D	$57.94	5	50	80	99
WH3	S	$88.25	5	50	80	99

Real Property Assessment Division
2013 Base Change
ALL PROPERTIES

Neighborhood	Name	Total Base			
		2012	2013	Difference	% Change
001	American University Park	$2,945,888,810	$3,002,451,810	$56,563,000	1.92%
002	Anacostia	$663,181,190	$626,524,370	-$36,656,820	-5.53%
003	Barry Farms	$371,592,010	$356,804,560	-$14,787,450	-3.98%
004	Berkley	$1,386,130,290	$1,386,951,970	$821,680	0.06%
005	Brentwood	$1,050,770,490	$1,030,759,590	-$20,010,900	-1.90%
006	Brightwood	$1,965,066,100	$1,912,116,350	-$52,949,750	-2.69%
007	Brookland	$5,073,376,529	$5,097,731,429	$24,354,900	0.48%
008	Burleith	$851,073,270	$835,206,240	-$15,867,030	-1.86%
009	Capitol Hill	$3,523,465,250	$3,530,733,660	$7,268,410	0.21%
010	Central	$48,928,421,269	$52,488,927,990	$3,560,506,721	7.28%
011	Chevy Chase	$5,592,785,710	$5,644,798,480	$52,012,770	0.93%
012	Chillum	$465,754,800	$446,505,720	-$19,249,080	-4.13%
013	Cleveland Park	$2,879,909,010	$2,903,987,330	$24,078,320	0.84%
014	Colonial Village	$536,695,190	$526,118,220	-$10,576,970	-1.97%
015	Columbia Heights	$5,797,351,070	$5,880,251,590	$82,900,520	1.43%
016	Congress Heights	$1,805,159,647	$1,733,041,527	-$72,118,120	-4.00%
017	Crestwood	$681,890,710	$683,665,630	$1,774,920	0.26%
018	Deanwood	$1,732,786,430	$1,630,695,780	-$102,090,650	-5.89%
019	Eckington	$1,259,109,670	$1,273,928,120	$14,818,450	1.18%
020	Foggy Bottom	$7,125,943,780	$7,518,347,320	$392,403,540	5.51%
021	Forest Hills	$3,311,264,192	$3,406,795,720	$95,531,528	2.89%
022	Fort Dupont Park	$959,498,780	$901,272,030	-$58,226,750	-6.07%
023	Foxhall	$283,628,160	$282,822,250	-$805,910	-0.28%
024	Garfield	$1,642,300,790	$1,734,458,710	$92,157,920	5.61%
025	Georgetown	$7,834,209,050	$7,953,004,500	$118,795,450	1.52%
026	Glover Park	$1,299,120,080	$1,305,339,350	$6,219,270	0.48%
027	Hawthorne	$246,071,750	$239,242,160	-$6,829,590	-2.78%
028	Hillcrest	$1,152,564,200	$1,103,196,390	-$49,367,810	-4.28%
029	Kalorama	$4,495,523,620	$4,525,156,860	$29,633,240	0.66%
030	Kent	$1,262,659,940	$1,261,350,700	-$1,309,240	-0.10%
031	LeDroit Park	$1,128,935,040	$1,141,146,940	$12,211,900	1.08%
032	Lily Ponds	$497,143,250	$484,668,530	-$12,474,720	-2.51%
033	Marshall Heights	$459,964,070	$428,670,710	-$31,293,360	-6.80%
034	Massachusetts Av Heights	$1,331,093,070	$1,351,178,860	$20,085,790	1.51%
035	Michigan Park	$366,185,660	$364,092,090	-$2,093,570	-0.57%
036	Mount Pleasant	$3,209,045,720	$3,240,738,660	$31,692,940	0.99%
037	North Cleveland Park	$1,222,798,680	$1,247,019,120	$24,220,440	1.98%
038	Observatory Circle	$2,196,305,210	$2,241,229,770	$44,924,560	2.05%
039	Old City I	$12,352,268,079	$12,107,895,410	-$244,372,669	-1.98%
040	Old City II	$14,946,665,745	$15,294,545,937	$347,880,192	2.33%
041	Palisades	$1,060,902,268	$1,060,647,380	-$254,888	-0.02%
042	Petworth	$2,219,554,350	$2,167,561,570	-$51,992,780	-2.34%
043	Randle Heights	$1,219,379,550	$1,197,732,270	-$21,647,280	-1.78%
044	R.L.A. NE	$3,172,529,220	$3,676,649,010	$504,119,790	15.89%
046	R.L.A. SW	$6,827,909,580	$7,233,001,760	$405,092,180	5.93%
047	Riggs Park	$828,411,430	$799,773,436	-$28,637,994	-3.46%
048	Shepherd Park	$642,555,500	$623,020,190	-$19,535,310	-3.04%
049	Sixteenth Street Heights	$1,276,692,030	$1,258,063,500	-$18,628,530	-1.46%
050	Spring Valley	$1,924,481,840	$1,937,582,060	$13,100,220	0.68%
051	Takoma	$411,589,200	$420,153,150	$8,563,950	2.08%
052	Trinidad	$880,599,180	$838,378,430	-$42,220,750	-4.79%
053	Wakefield	$666,440,360	$674,945,400	$8,505,040	1.28%
054	Wesley Heights	$1,687,320,110	$1,681,802,850	-$5,517,260	-0.33%
055	Woodley	$338,979,630	$347,678,360	$8,698,730	2.57%
056	Woodridge	$1,522,508,856	$1,506,341,360	-$16,167,496	-1.06%
059	Rail Road Tracks	$2,527,390	$2,527,390	$0	0.00%
063	North Anacostia Park	$3,347,480	$3,349,060	$1,580	0.05%
064	Anacostia Park	$219,000	$219,000	$0	0.00%
066	Fort Lincoln	$300,295,360	$287,129,590	-$13,165,770	-4.38%
068	Bolling AFB & Naval Research	$39,447,520	$39,224,450	-$223,070	-0.57%
069	D.C. Village	$5,776,690	$5,771,090	-$5,600	-0.10%
073	Washington Navy Yard	$684,382,350	$705,688,480	$21,306,130	3.11%
	Totals:	$180,549,445,205	$185,590,612,169	$5,041,166,964	2.79%

Real Property Assessment Division
2013 Base Change
RESIDENTIAL (Class 1)

Neighborhood	Name	Total Base			
		2012	2013	Difference	% Change
001	American University Park	$2,075,531,640	$2,093,115,700	$17,584,060	0.85%
002	Anacostia	$453,136,150	$404,341,290	-$48,794,860	-10.77%
003	Barry Farms	$239,807,090	$227,920,890	-$11,886,200	-4.96%
004	Berkley	$1,115,750,720	$1,112,565,630	-$3,185,090	-0.29%
005	Brentwood	$230,336,120	$224,521,000	-$5,815,120	-2.52%
006	Brightwood	$1,719,105,240	$1,669,129,420	-$49,975,820	-2.91%
007	Brookland	$2,146,647,820	$2,170,350,250	$23,702,430	1.10%
008	Burleith	$768,990,260	$751,727,780	-$17,262,480	-2.24%
009	Capitol Hill	$2,762,203,240	$2,765,143,490	$2,940,250	0.11%
010	Central	$4,054,202,839	$4,247,476,390	$193,273,551	4.77%
011	Chevy Chase	$4,546,099,110	$4,558,102,590	$12,003,480	0.26%
012	Chillum	$325,788,170	$305,994,190	-$19,793,980	-6.08%
013	Cleveland Park	$2,261,488,100	$2,264,177,080	$2,688,980	0.12%
014	Colonial Village	$487,481,360	$476,337,630	-$11,143,730	-2.29%
015	Columbia Heights	$3,923,089,950	$3,955,311,100	$32,221,150	0.82%
016	Congress Heights	$1,170,035,510	$1,087,819,290	-$82,216,220	-7.03%
017	Crestwood	$628,213,980	$629,174,560	$960,580	0.15%
018	Deanwood	$1,262,429,550	$1,166,032,760	-$96,396,790	-7.64%
019	Eckington	$770,349,250	$775,896,310	$5,547,060	0.72%
020	Foggy Bottom	$1,216,438,710	$1,220,203,940	$3,765,230	0.31%
021	Forest Hills	$2,463,878,182	$2,511,792,140	$47,913,958	1.94%
022	Fort Dupont Park	$786,211,510	$730,256,940	-$55,954,570	-7.12%
023	Foxhall	$280,616,850	$279,644,920	-$971,930	-0.35%
024	Garfield	$1,170,926,950	$1,207,514,010	$36,587,060	3.12%
025	Georgetown	$4,635,236,940	$4,579,874,150	-$55,362,790	-1.19%
026	Glover Park	$1,200,803,750	$1,202,674,680	$1,870,930	0.16%
027	Hawthorne	$245,337,160	$238,532,170	-$6,804,990	-2.77%
028	Hillcrest	$995,429,200	$948,625,370	-$46,803,830	-4.70%
029	Kalorama	$2,822,363,630	$2,798,791,040	-$23,572,590	-0.84%
030	Kent	$1,139,405,440	$1,135,342,470	-$4,062,970	-0.36%
031	LeDroit Park	$702,150,150	$710,936,990	$8,786,840	1.25%
032	Lily Ponds	$284,314,000	$260,339,990	-$23,974,010	-8.43%
033	Marshall Heights	$346,459,790	$319,431,640	-$27,028,150	-7.80%
034	Massachusetts Av Heights	$651,488,870	$640,684,420	-$10,804,450	-1.66%
035	Michigan Park	$320,883,160	$318,965,400	-$1,917,760	-0.60%
036	Mount Pleasant	$2,676,757,410	$2,693,783,210	$17,025,800	0.64%
037	North Cleveland Park	$817,568,700	$820,581,900	$3,013,200	0.37%
038	Observatory Circle	$1,309,239,030	$1,321,063,900	$11,824,870	0.90%
039	Old City I	$7,379,310,283	$7,356,573,420	-$22,736,863	-0.31%
040	Old City II	$9,588,487,922	$9,668,922,980	$80,435,058	0.84%
041	Palisades	$991,616,978	$989,749,490	-$1,867,488	-0.19%
042	Petworth	$1,995,738,700	$1,939,729,300	-$56,009,400	-2.81%
043	Randle Heights	$953,447,580	$934,047,500	-$19,400,080	-2.03%
044	R.L.A. NE	$229,808,680	$237,062,470	$7,253,790	3.16%
046	R.L.A. SW	$1,299,275,360	$1,272,906,070	-$26,369,290	-2.03%
047	Riggs Park	$700,447,130	$672,176,956	-$28,270,174	-4.04%
048	Shepherd Park	$568,839,690	$550,203,420	-$18,636,270	-3.28%
049	Sixteenth Street Heights	$1,074,305,130	$1,053,840,450	-$20,464,680	-1.90%
050	Spring Valley	$1,464,331,380	$1,447,027,820	-$17,303,560	-1.18%
051	Takoma	$265,531,600	$268,248,070	$2,716,470	1.02%
052	Trinidad	$735,434,070	$708,939,360	-$26,494,710	-3.60%
053	Wakefield	$645,920,670	$654,316,360	$8,395,690	1.30%
054	Wesley Heights	$1,544,776,500	$1,529,065,210	-$15,711,290	-1.02%
055	Woodley	$252,821,400	$259,186,590	$6,365,190	2.52%
056	Woodridge	$833,017,550	$811,285,600	-$21,731,950	-2.61%
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	$286,358,560	$273,147,780	-$13,210,780	-4.61%
068	Bolling AFB & Naval Research	$10,734,300	$10,511,230	-$223,070	-2.08%
069	D.C. Village	$0	$0	$0	0.00%
073	Washington Navy Yard	$65,555,000	$65,351,220	-$203,780	-0.31%
	Totals:	$85,891,954,014	$85,526,467,926	-$365,486,088	-0.43%

Real Property Assessment Division
2013 Base Change
COMMERCIAL (Class 2)

Neighborhood	Name	Total Base			
		2012	2013	Difference	% Change
001	American University Park	$498,560,310	$522,614,090	$24,053,780	4.82%
002	Anacostia	$157,424,870	$171,536,620	$14,111,750	8.96%
003	Barry Farms	$36,356,480	$36,586,250	$229,770	0.63%
004	Berkley	$16,057,740	$16,182,900	$125,160	0.78%
005	Brentwood	$542,459,900	$524,943,080	-$17,516,820	-3.23%
006	Brightwood	$132,826,740	$138,719,500	$5,892,760	4.44%
007	Brookland	$573,065,067	$570,804,197	-$2,260,870	-0.39%
008	Burleith	$0	$0	$0	0.00%
009	Capitol Hill	$588,873,090	$594,124,130	$5,251,040	0.89%
010	Central	$41,345,673,070	$44,611,637,100	$3,265,964,030	7.90%
011	Chevy Chase	$654,718,420	$684,467,790	$29,749,370	4.54%
012	Chillum	$83,057,630	$83,797,050	$739,420	0.89%
013	Cleveland Park	$444,042,340	$461,388,020	$17,345,680	3.91%
014	Colonial Village	$0	$0	$0	0.00%
015	Columbia Heights	$764,189,830	$796,779,030	$32,589,200	4.26%
016	Congress Heights	$93,834,027	$95,843,287	$2,009,260	2.14%
017	Crestwood	$725,850	$717,370	-$8,480	-1.17%
018	Deanwood	$191,671,390	$192,620,360	$948,970	0.50%
019	Eckington	$391,316,400	$400,199,900	$8,883,500	2.27%
020	Foggy Bottom	$2,538,299,350	$2,696,283,180	$157,983,830	6.22%
021	Forest Hills	$412,725,440	$431,794,840	$19,069,400	4.62%
022	Fort Dupont Park	$55,173,100	$55,158,230	-$14,870	-0.03%
023	Foxhall	$2,836,620	$2,836,620	$0	0.00%
024	Garfield	$318,040,640	$366,578,850	$48,538,210	15.26%
025	Georgetown	$2,511,538,530	$2,666,530,580	$154,992,050	6.17%
026	Glover Park	$67,431,260	$71,419,890	$3,988,630	5.92%
027	Hawthorne	$0	$0	$0	0.00%
028	Hillcrest	$93,133,770	$93,278,710	$144,940	0.16%
029	Kalorama	$696,213,760	$729,419,640	$33,205,880	4.77%
030	Kent	$38,525,880	$38,368,110	-$157,770	-0.41%
031	LeDroit Park	$20,960,030	$22,257,790	$1,297,760	6.19%
032	Lily Ponds	$114,241,900	$123,520,280	$9,278,380	8.12%
033	Marshall Heights	$17,311,550	$17,209,360	-$102,190	-0.59%
034	Massachusetts Av Heights	$128,446,430	$147,544,400	$19,097,970	14.87%
035	Michigan Park	$6,309,850	$6,328,440	$18,590	0.29%
036	Mount Pleasant	$328,396,970	$339,128,310	$10,731,340	3.27%
037	North Cleveland Park	$275,047,780	$292,731,890	$17,684,110	6.43%
038	Observatory Circle	$407,098,420	$423,588,860	$16,490,440	4.05%
039	Old City I	$4,424,459,136	$4,191,938,500	-$232,520,636	-5.26%
040	Old City II	$3,792,407,010	$4,026,095,780	$233,688,770	6.16%
041	Palisades	$37,409,240	$37,809,370	$400,130	1.07%
042	Petworth	$112,688,750	$114,259,700	$1,570,950	1.39%
043	Randle Heights	$93,562,170	$93,656,910	$94,740	0.10%
044	R.L.A. NE	$2,737,909,410	$3,250,152,220	$512,242,810	18.71%
046	R.L.A. SW	$5,217,317,830	$5,650,286,640	$432,968,810	8.30%
047	Riggs Park	$42,785,580	$42,909,740	$124,160	0.29%
048	Shepherd Park	$31,986,490	$31,198,640	-$787,850	-2.46%
049	Sixteenth Street Heights	$73,089,180	$74,158,320	$1,069,140	1.46%
050	Spring Valley	$56,586,990	$58,186,610	$1,599,620	2.83%
051	Takoma	$91,512,180	$96,604,410	$5,092,230	5.56%
052	Trinidad	$92,584,790	$77,144,200	-$15,440,590	-16.68%
053	Wakefield	$10,977,890	$11,075,340	$97,450	0.89%
054	Wesley Heights	$70,660,740	$77,008,650	$6,347,910	8.98%
055	Woodley	$11,250	$11,250	$0	0.00%
056	Woodridge	$471,119,816	$476,033,350	$4,913,534	1.04%
059	Rail Road Tracks	$1,585,680	$1,585,680	$0	0.00%
063	North Anacostia Park	$1,753,320	$1,754,900	$1,580	0.09%
064	Anacostia Park	$219,000	$219,000	$0	0.00%
066	Fort Lincoln	$12,008,980	$12,261,080	$252,100	2.10%
068	Bolling AFB & Naval Research	$28,713,220	$28,713,220	$0	0.00%
069	D.C. Village	$465,480	$459,880	-$5,600	-1.20%
073	Washington Navy Yard	$618,429,840	$639,939,750	$21,509,910	3.48%
	Totals:	$72,566,828,406	$77,420,401,794	$4,853,573,388	6.69%

Real Property Assessment Division
2013 Base Change
RESIDENTIAL/COMMERCIAL (Classes 1 and 2)

Neighborhood	Name	Total Base			
		2012	2013	Difference	% Change
001	American University Park	$2,574,091,950	$2,615,729,790	$41,637,840	1.62%
002	Anacostia	$610,561,020	$575,877,910	-$34,683,110	-5.68%
003	Barry Farms	$276,163,570	$264,507,140	-$11,656,430	-4.22%
004	Berkley	$1,131,808,460	$1,128,748,530	-$3,059,930	-0.27%
005	Brentwood	$772,796,020	$749,464,080	-$23,331,940	-3.02%
006	Brightwood	$1,851,931,980	$1,807,848,920	-$44,083,060	-2.38%
007	Brookland	$2,719,712,887	$2,741,154,447	$21,441,560	0.79%
008	Burleith	$768,990,260	$751,727,780	-$17,262,480	-2.24%
009	Capitol Hill	$3,351,076,330	$3,359,267,620	$8,191,290	0.24%
010	Central	$45,399,875,909	$48,859,113,490	$3,459,237,581	7.62%
011	Chevy Chase	$5,200,817,530	$5,242,570,380	$41,752,850	0.80%
012	Chillum	$408,845,800	$389,791,240	-$19,054,560	-4.66%
013	Cleveland Park	$2,705,530,440	$2,725,565,100	$20,034,660	0.74%
014	Colonial Village	$487,481,360	$476,337,630	-$11,143,730	-2.29%
015	Columbia Heights	$4,687,279,780	$4,752,090,130	$64,810,350	1.38%
016	Congress Heights	$1,263,869,537	$1,183,662,577	-$80,206,960	-6.35%
017	Crestwood	$628,939,830	$629,891,930	$952,100	0.15%
018	Deanwood	$1,454,100,940	$1,358,653,120	-$95,447,820	-6.56%
019	Eckington	$1,161,665,650	$1,176,096,210	$14,430,560	1.24%
020	Foggy Bottom	$3,754,738,060	$3,916,487,120	$161,749,060	4.31%
021	Forest Hills	$2,876,603,622	$2,943,586,980	$66,983,358	2.33%
022	Fort Dupont Park	$841,384,610	$785,415,170	-$55,969,440	-6.65%
023	Foxhall	$283,453,470	$282,481,540	-$971,930	-0.34%
024	Garfield	$1,488,967,590	$1,574,092,860	$85,125,270	5.72%
025	Georgetown	$7,146,775,470	$7,246,404,730	$99,629,260	1.39%
026	Glover Park	$1,268,235,010	$1,274,094,570	$5,859,560	0.46%
027	Hawthorne	$245,337,160	$238,532,170	-$6,804,990	-2.77%
028	Hillcrest	$1,088,562,970	$1,041,904,080	-$46,658,890	-4.29%
029	Kalorama	$3,518,577,390	$3,528,210,680	$9,633,290	0.27%
030	Kent	$1,177,931,320	$1,173,710,580	-$4,220,740	-0.36%
031	LeDroit Park	$723,110,180	$733,194,780	$10,084,600	1.39%
032	Lily Ponds	$398,555,900	$383,860,270	-$14,695,630	-3.69%
033	Marshall Heights	$363,771,340	$336,641,000	-$27,130,340	-7.46%
034	Massachusetts Av Heights	$779,935,300	$788,228,820	$8,293,520	1.06%
035	Michigan Park	$327,193,010	$325,293,840	-$1,899,170	-0.58%
036	Mount Pleasant	$3,005,154,380	$3,032,911,520	$27,757,140	0.92%
037	North Cleveland Park	$1,092,616,480	$1,113,313,790	$20,697,310	1.89%
038	Observatory Circle	$1,716,337,450	$1,744,652,760	$28,315,310	1.65%
039	Old City I	$11,803,769,419	$11,548,511,920	-$255,257,499	-2.16%
040	Old City II	$13,380,894,932	$13,695,018,760	$314,123,828	2.35%
041	Palisades	$1,029,026,218	$1,027,558,860	-$1,467,358	-0.14%
042	Petworth	$2,108,427,450	$2,053,989,000	-$54,438,450	-2.58%
043	Randle Heights	$1,047,009,750	$1,027,704,410	-$19,305,340	-1.84%
044	R.L.A. NE	$2,967,718,090	$3,487,214,690	$519,496,600	17.50%
046	R.L.A. SW	$6,516,593,190	$6,923,192,710	$406,599,520	6.24%
047	Riggs Park	$743,232,710	$715,086,696	-$28,146,014	-3.79%
048	Shepherd Park	$600,826,180	$581,402,060	-$19,424,120	-3.23%
049	Sixteenth Street Heights	$1,147,394,310	$1,127,998,770	-$19,395,540	-1.69%
050	Spring Valley	$1,520,918,370	$1,505,214,430	-$15,703,940	-1.03%
051	Takoma	$357,043,780	$364,852,480	$7,808,700	2.19%
052	Trinidad	$828,018,860	$786,083,560	-$41,935,300	-5.06%
053	Wakefield	$656,898,560	$665,391,700	$8,493,140	1.29%
054	Wesley Heights	$1,615,437,240	$1,606,073,860	-$9,363,380	-0.58%
055	Woodley	$252,832,650	$259,197,840	$6,365,190	2.52%
056	Woodridge	$1,304,137,366	$1,287,318,950	-$16,818,416	-1.29%
059	Rail Road Tracks	$1,585,680	$1,585,680	$0	0.00%
063	North Anacostia Park	$1,753,320	$1,754,900	$1,580	0.09%
064	Anacostia Park	$219,000	$219,000	$0	0.00%
066	Fort Lincoln	$298,367,540	$285,408,860	-$12,958,680	-4.34%
068	Bolling AFB & Naval Research	$39,447,520	$39,224,450	-$223,070	-0.57%
069	D.C. Village	$465,480	$459,880	-$5,600	-1.20%
073	Washington Navy Yard	$683,984,840	$705,290,970	$21,306,130	3.12%
	Totals:	$158,458,782,420	$162,946,869,720	$4,488,087,300	2.83%

Real Property Assessment Division
2013 Base Change
EXEMPT

Neighborhood	Name	Total Base			
		2012	2013	Difference	% Change
001	American University Park	$371,796,860	$386,722,020	$14,925,160	4.01%
002	Anacostia	$52,620,170	$50,646,460	-$1,973,710	-3.75%
003	Barry Farms	$95,428,440	$92,297,420	-$3,131,020	-3.28%
004	Berkley	$254,321,830	$258,203,440	$3,881,610	1.53%
005	Brentwood	$277,974,470	$281,295,510	$3,321,040	1.19%
006	Brightwood	$113,134,120	$104,267,430	-$8,866,690	-7.84%
007	Brookland	$2,353,663,642	$2,356,576,982	$2,913,340	0.12%
008	Burleith	$82,083,010	$83,478,460	$1,395,450	1.70%
009	Capitol Hill	$172,388,920	$171,466,040	-$922,880	-0.54%
010	Central	$3,528,545,360	$3,629,814,500	$101,269,140	2.87%
011	Chevy Chase	$391,968,180	$402,228,100	$10,259,920	2.62%
012	Chillum	$56,909,000	$56,714,480	-$194,520	-0.34%
013	Cleveland Park	$174,378,570	$178,422,230	$4,043,660	2.32%
014	Colonial Village	$49,213,830	$49,780,590	$566,760	1.15%
015	Columbia Heights	$1,110,071,290	$1,128,161,460	$18,090,170	1.63%
016	Congress Heights	$541,290,110	$549,378,950	$8,088,840	1.49%
017	Crestwood	$52,950,880	$53,773,700	$822,820	1.55%
018	Deanwood	$278,685,490	$272,042,660	-$6,642,830	-2.38%
019	Eckington	$97,444,020	$97,831,910	$387,890	0.40%
020	Foggy Bottom	$3,371,205,720	$3,601,860,200	$230,654,480	6.84%
021	Forest Hills	$434,660,570	$463,208,740	$28,548,170	6.57%
022	Fort Dupont Park	$118,114,170	$115,856,860	-$2,257,310	-1.91%
023	Foxhall	$174,690	$340,710	$166,020	95.04%
024	Garfield	$153,333,200	$160,365,850	$7,032,650	4.59%
025	Georgetown	$687,433,580	$706,599,770	$19,166,190	2.79%
026	Glover Park	$30,885,070	$31,244,780	$359,710	1.16%
027	Hawthorne	$734,590	$709,990	-$24,600	-3.35%
028	Hillcrest	$64,001,230	$61,292,310	-$2,708,920	-4.23%
029	Kalorama	$976,946,230	$996,946,180	$19,999,950	2.05%
030	Kent	$84,728,620	$87,640,120	$2,911,500	3.44%
031	LeDroit Park	$405,824,860	$407,952,160	$2,127,300	0.52%
032	Lily Ponds	$98,587,350	$100,808,260	$2,220,910	2.25%
033	Marshall Heights	$96,192,730	$92,029,710	-$4,163,020	-4.33%
034	Massachusetts Av Heights	$551,157,770	$562,950,040	$11,792,270	2.14%
035	Michigan Park	$38,992,650	$38,798,250	-$194,400	-0.50%
036	Mount Pleasant	$203,891,340	$207,827,140	$3,935,800	1.93%
037	North Cleveland Park	$130,182,200	$133,705,330	$3,523,130	2.71%
038	Observatory Circle	$479,967,760	$496,577,010	$16,609,250	3.46%
039	Old City I	$548,498,660	$559,383,490	$10,884,830	1.98%
040	Old City II	$1,565,770,813	$1,599,527,177	$33,756,364	2.16%
041	Palisades	$31,876,050	$33,088,520	$1,212,470	3.80%
042	Petworth	$111,126,900	$113,572,570	$2,445,670	2.20%
043	Randle Heights	$172,369,800	$170,027,860	-$2,341,940	-1.36%
044	R.L.A. NE	$204,811,130	$189,434,320	-$15,376,810	-7.51%
046	R.L.A. SW	$311,316,390	$309,809,050	-$1,507,340	-0.48%
047	Riggs Park	$85,178,720	$84,686,740	-$491,980	-0.58%
048	Shepherd Park	$41,729,320	$41,618,130	-$111,190	-0.27%
049	Sixteenth Street Heights	$129,297,720	$130,064,730	$767,010	0.59%
050	Spring Valley	$403,563,470	$432,367,630	$28,804,160	7.14%
051	Takoma	$54,545,420	$55,300,670	$755,250	1.38%
052	Trinidad	$52,580,320	$52,294,870	-$285,450	-0.54%
053	Wakefield	$9,541,800	$9,553,700	$11,900	0.12%
054	Wesley Heights	$71,882,870	$75,728,990	$3,846,120	5.35%
055	Woodley	$86,146,980	$88,480,520	$2,333,540	2.71%
056	Woodridge	$218,371,490	$219,022,410	$650,920	0.30%
059	Rail Road Tracks	$941,710	$941,710	$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	$1,927,820	$1,720,730	-$207,090	-10.74%
068	Bolling AFB & Naval Research	$0	$0	$0	0.00%
069	D.C. Village	$5,311,210	$5,311,210	$0	0.00%
073	Washington Navy Yard	$397,510	$397,510	$0	0.00%
	Totals:	$22,090,662,785	$22,643,742,449	$553,079,664	2.50%

Parcel Count per Neighborhood - 2013

NBHD	NAME	Residential	Commercial	Exempt	Total
001	AMERICAN UNIV. PARK	2,691	96	37	2,824
002	ANACOSTIA	2,044	182	100	2,326
003	BARRY FARMS	811	60	100	971
004	BERKLEY	822	8	33	863
005	BRENTWOOD	880	323	173	1,376
006	BRIGHTWOOD	4,310	145	131	4,586
007	BROOKLAND	6,871	311	442	7,624
008	BURLEITH	855		5	860
009	CAPITOL HILL	4,074	343	61	4,478
010	CENTRAL	7,018	1,203	208	8,429
011	CHEVY CHASE	5,756	147	69	5,972
012	CHILLUM	1,019	62	68	1,149
013	CLEVELAND PARK	3,187	36	47	3,270
014	COLONIAL VILLAGE	644		19	663
015	COLUMBIA HEIGHTS	9,515	535	467	10,517
016	CONGRESS HEIGHTS	5,046	203	512	5,761
017	CRESTWOOD	821	1	26	848
018	DEANWOOD	6,874	311	550	7,735
019	ECKINGTON	2,252	142	66	2,460
020	FOGGY BOTTOM	2,172	146	125	2,443
021	FOREST HILLS	3,318	56	69	3,443
022	FORT DUPONT PARK	3,532	52	197	3,781
023	FOXHALL	370	1	1	372
024	GARFIELD	1,354	64	228	1,646
025	GEORGETOWN	4,586	621	163	5,370
026	GLOVER PARK	2,510	59	48	2,617
027	HAWTHORNE	314		1	315
028	HILLCREST	4,414	105	134	4,653
029	KALORAMA	3,563	123	233	3,919
030	KENT	897	29	23	949
031	LEDROIT PARK	1,801	36	53	1,890
032	LILY PONDS	1,446	59	62	1,567
033	MARSHALL HEIGHTS	1,737	29	268	2,034
034	MASS. AVE. HEIGHTS	194	2	53	249
035	MICHIGAN PARK	938	11	12	961
036	MOUNT PLEASANT	4,366	228	84	4,678
037	N. CLEVELAND PARK	878	42	9	929
038	OBSERVATORY CIRCLE	1,729	37	84	1,850
039	OLD CITY I	15,482	1,080	332	16,894
040	OLD CITY II	19,319	1,346	529	21,194
041	PALISADES	1,404	54	38	1,496
042	PETWORTH	6,380	258	151	6,789
043	RANDLE HEIGHTS	3,687	84	399	4,170
044	R.L.A. NE	26	174	22	222
046	R.L.A. SW	3,104	115	100	3,319
047	RIGGS PARK	2,794	26	59	2,879
048	SHEPHERD PARK	1,002	34	14	1,050
049	16TH ST. HEIGHTS	2,272	118	88	2,478
050	SPRING VALLEY	935	10	41	986
051	TAKOMA	784	54	90	928
052	TRINIDAD	3,009	125	124	3,258
053	WAKEFIELD	964	17	9	990
054	WESLEY HEIGHTS	3,027	4	28	3,059
055	WOODLEY	209	1	3	213
056	WOODRIDGE	3,035	396	96	3,527
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	995	1	9	1,005
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	1	5	1	7
	TOTALS	174,047	9,739	7,109	190,895*

*DC and US (5,768) not included in Base Report Statistics
**PI accounts (275) not included in Base Report Statistics

Preliminary 2013 Performance Report

2011 SALES RATIOS CITY-WIDE

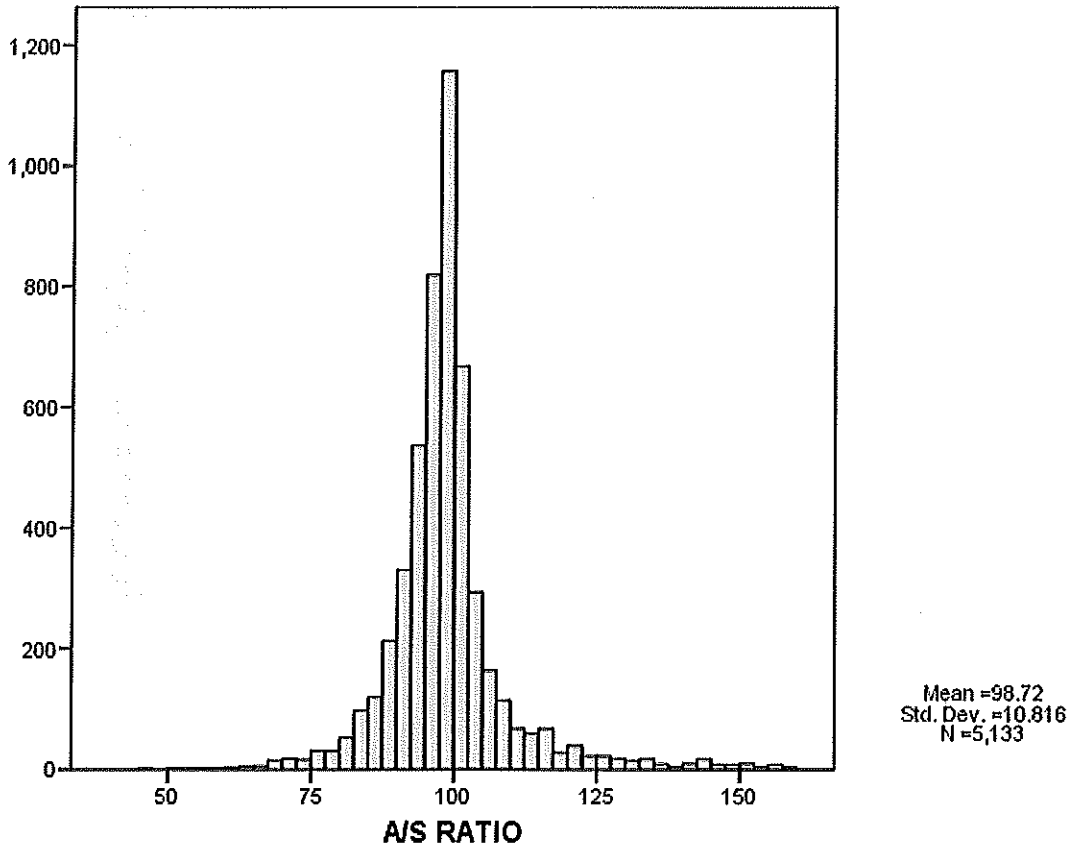
PROPERTY TYPE	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
All	5,354	913,477	450,500	98.2	98.7	95.9	7.0	4,563	791	1.03

2011 SALES RATIOS BY PROPERTY TYPE: CITY-WIDE

PROPERTY TYPE	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
Residential	5,133	562,594	445,000	98.2	98.7	97.8	6.7	4,418	715	1.01
Commercial	221	9,063,174	950,000	99.4	98.5	93.3	15.6	145	76	1.06

CITY-WIDE

RESIDENTIAL SALES RATIOS



Sales Ratio Report Using Current 2012 Values

2011 SALES RATIOS BY NEIGHBORHOOD: **SINGLE-FAMILY**

NB	NAME	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
1	AMERICAN UNIVERSITY	78	867,539	822,500	91.9	93.1	92.5	9.9	64	14	1.01
2	ANACOSTIA	26	221,702	201,500	102.5	107	101.8	16.4	15	11	1.05
3	BARRY FARMS	3	189,592	180,000	109.2	105	107.2	11.6	1	2	.98
4	BERKELEY	23	1,713,569	1,453,000	101.6	101	99.8	7.0	16	7	1.01
5	BRENTWOOD	18	262,056	248,500	104.8	107	103.0	16.4	9	9	1.04
6	BRIGHTWOOD	96	414,903	380,000	95.8	96.0	92.8	14.4	75	21	1.04
7	BROOKLAND	155	436,562	420,000	92.0	92.2	90.9	10.9	141	14	1.01
8	BURLEITH	35	1,036,754	830,000	100.0	100	101.2	9.5	23	12	.99
9	CAPITOL HILL	114	802,358	753,265	90.8	89.9	89.2	9.9	104	10	1.01
10	CENTRAL	4	889,350	854,950	105.3	107	106.6	5.0	2	2	1.00
11	CHEVY CHASE	153	888,028	829,000	95.7	96.1	96.1	9.7	126	27	1.00
12	CHILLUM	18	354,935	353,750	99.6	105	102.9	13.3	11	7	1.02
13	CLEVELAND PARK	35	1,375,517	1,190,000	94.3	98.4	97.1	11.5	27	8	1.01
14	COLONIAL VILLAGE	11	716,591	710,000	96.7	96.4	95.1	9.8	8	3	1.01
15	COLUMBIA HEIGHTS	188	497,768	466,310	89.2	89.9	87.8	13.1	166	22	1.02
16	CONGRESS HEIGHTS	56	193,409	192,500	98.0	101	99.0	16.0	37	19	1.02
17	CRESTWOOD	24	797,780	760,000	90.4	91.2	91.1	10.5	22	2	1.00
18	DEANWOOD	131	217,730	207,000	101.8	104	101.9	13.2	76	55	1.02
19	ECKINGTON	68	415,071	389,500	91.5	90.9	89.7	12.7	59	9	1.01
20	FOGGY BOTTOM	6	675,750	681,250	96.1	97.9	99.4	8.0	4	2	.98
21	FOREST HILLS	26	1,192,871	996,125	99.0	103	101.7	15.6	15	11	1.01
22	FORT DUPONT PARK	44	214,721	205,000	98.4	100	99.0	10.3	33	11	1.01
23	FOXHALL	20	803,020	769,500	96.4	97.3	96.8	6.9	17	3	1.01
24	GARFIELD	18	1,089,111	1,052,500	91.9	93.0	91.4	12.0	15	3	1.02
25	GEORGETOWN	116	1,563,417	1,155,000	99.7	99.6	96.6	11.5	79	37	1.03
26	GLOVER PARK	34	759,904	742,000	95.3	96.1	95.6	8.0	27	7	1.00
27	HAWTHORNE	5	783,800	790,000	96.3	98.7	98.3	7.8	3	2	1.00
28	HILLCREST	24	306,316	305,000	92.1	98.9	96.9	17.0	17	7	1.02
29	KALORAMA	34	2,117,515	1,797,500	101.3	100	97.2	11.8	24	10	1.03
30	KENT	34	1,578,065	1,367,500	98.6	98.9	97.9	6.6	27	7	1.01
31	LEDROIT PARK	54	556,593	542,000	94.3	93.5	92.0	11.8	45	9	1.02
32	LILY PONDS	12	191,408	175,250	103.5	106	99.3	15.3	8	4	1.06
33	MARSHALL HEIGHTS	21	233,976	248,500	103.8	110	108.0	11.4	11	10	1.02
34	MASS. AVE. HEIGHTS	3	1,224,667	1,139,000	106.1	116	112.4	11.1	1	2	1.03
35	MICHIGAN PARK	20	347,783	353,625	98.4	98.4	97.0	11.4	15	5	1.01
36	MOUNT PLEASANT	67	777,019	757,000	91.1	88.8	88.1	11.1	64	3	1.01
37	N. CLEVELAND PARK	30	1,012,423	822,750	96.8	97.0	95.5	7.5	22	8	1.02
38	OBSERVATORY CIRCLE	14	1,238,786	1,208,500	89.9	96.3	92.3	15.4	12	2	1.04
39	OLD CITY #1	560	554,031	530,000	93.8	93.9	92.6	11.8	478	82	1.01
40	OLD CITY #2	178	780,525	685,000	93.7	93.0	91.1	12.1	146	32	1.02
41	PALISADES	36	871,792	802,500	98.1	99.5	99.2	8.7	27	9	1.00
42	PETWORTH	177	386,324	383,000	99.3	100	98.0	11.0	132	45	1.02
43	RANDLE HEIGHTS	52	285,571	283,400	97.9	101	99.1	8.9	39	13	1.02
46	R.L.A. (S.W.)	4	637,750	622,000	102.4	101	100.9	10.6	2	2	1.00
47	RIGGS PARK	47	246,254	245,000	105.0	105	101.3	16.8	24	23	1.04
48	SHEPHERD PARK	23	605,061	575,000	97.8	96.5	96.8	7.8	20	3	1.00
49	16TH STREET HEIGHTS	59	505,786	475,000	96.7	97.4	95.9	14.7	40	19	1.02
50	SPRING VALLEY	38	1,489,635	1,380,000	97.9	97.4	97.2	9.0	32	6	1.00
51	TAKOMA PARK	6	298,667	250,000	93.8	93.7	93.8	6.6	6	0	1.00
52	TRINIDAD	68	260,318	248,950	98.5	100	97.0	14.8	44	24	1.03
53	WAKEFIELD	11	813,173	778,500	93.2	95.6	95.6	9.0	9	2	1.00
54	WESLEY HEIGHTS	32	1,362,016	1,045,000	98.3	98.4	97.7	6.7	27	5	1.01
55	WOODLEY	10	1,420,050	1,417,500	88.3	89.1	88.8	10.2	9	1	1.00
56	WOODRIDGE	67	304,029	302,000	99.7	107	101.1	19.6	43	24	1.06
66	FORT LINCOLN	3	563,333	399,999	94.1	78.0	67.0	17.1	3	0	1.17

TOTALS:

PROPERTY TYPE	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
Single-Family	3,189	656,655	545,070	95.7	96.4	94.6	12.4	2,502	687	1.02

Sales Ratio Report Using Current 2012 Values

2011 SALES RATIOS BY NEIGHBORHOOD: **CONDOMINIUMS**

NB	NAME	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
1	AMERICAN UNIVERSITY	8	517,225	429,500	98.3	96.3	95.0	4.6	8	0	1.01
2	ANACOSTIA	2	244,950	244,950	99.8	99.8	99.9	6.3	1	1	1.00
3	BARRY FARMS	1	176,500	176,500	123.5	123	123.5	.0	0	1	1.00
4	BERKELEY	5	455,855	516,000	92.0	91.8	91.5	4.4	5	0	1.00
5	BRENTWOOD	19	132,557	119,990	140.9	131	127.2	11.4	6	13	1.03
6	BRIGHTWOOD	14	248,019	234,000	101.8	103	102.7	5.6	10	4	1.00
7	BROOKLAND	23	187,024	189,878	104.5	112	108.8	20.7	12	11	1.03
9	CAPITOL HILL	33	378,665	341,800	96.4	93.4	90.7	12.3	25	8	1.03
10	CENTRAL	250	583,727	457,000	95.8	95.4	94.3	7.5	219	31	1.01
11	CHEVY CHASE	60	466,838	363,250	95.0	98.8	97.2	5.2	52	8	1.02
13	CLEVELAND PARK	55	362,354	324,000	98.9	101	96.7	10.2	42	13	1.04
15	COLUMBIA HEIGHTS	175	356,192	346,900	98.6	98.3	97.5	7.9	142	33	1.01
16	CONGRESS HEIGHTS	5	95,180	70,000	98.2	114	111.9	21.9	3	2	1.02
18	DEANWOOD	1	26,000	26,000	192.2	192	192.2	.0	0	1	1.00
19	ECKINGTON	16	329,253	314,875	94.9	93.9	91.2	17.1	11	5	1.03
20	FOGGY BOTTOM	27	251,527	230,000	97.0	99.5	100.6	7.8	19	8	.99
21	FOREST HILLS	32	280,069	289,100	96.4	97.5	97.3	14.2	20	12	1.00
22	FORT DUPONT PARK	7	146,386	157,000	116.6	128	123.9	10.5	0	7	1.03
24	GARFIELD	40	421,895	415,500	97.0	98.1	97.8	8.3	33	7	1.00
25	GEORGETOWN	38	870,913	547,500	100.3	101	94.0	12.1	26	12	1.07
26	GLOVER PARK	35	252,494	255,000	96.4	96.3	97.8	7.8	28	7	.98
28	HILLCREST	6	93,483	83,450	136.1	132	124.5	17.0	2	4	1.06
29	KALORAMA	94	459,599	440,000	97.7	97.4	96.1	8.8	77	17	1.01
31	LEDROIT PARK	27	313,031	303,000	95.0	96.2	94.9	7.7	22	5	1.01
33	MARSHALL HEIGHTS	6	176,817	195,700	99.0	98.4	98.7	5.2	5	1	1.00
36	MOUNT PLEASANT	100	426,450	421,750	96.8	98.0	97.0	8.3	77	23	1.01
37	N. CLEVELAND PARK	1	345,800	345,800	93.1	93.1	93.1	.0	1	0	1.00
38	OBSERVATORY CIRCLE	32	434,516	372,500	101.3	104	101.4	10.6	18	14	1.02
39	OLD CITY #1	140	412,139	385,450	95.1	93.8	92.5	9.3	124	16	1.01
40	OLD CITY #2	454	432,857	399,250	96.3	96.2	94.9	7.9	386	68	1.01
41	PALISADES	1	175,000	175,000	104.1	104	104.1	.0	1	0	1.00
42	PETWORTH	34	229,109	227,250	100.0	98.6	97.4	6.8	27	7	1.01
43	RANDLE HEIGHTS	2	118,215	118,215	92.6	92.6	88.1	13.8	1	1	1.05
46	R.L.A. (S.W.)	129	242,327	229,000	98.1	98.2	96.9	7.9	106	23	1.01
49	16TH STREET HEIGHTS	14	208,689	228,500	99.5	101	98.3	6.5	12	2	1.02
52	TRINIDAD	10	187,989	208,000	90.6	96.0	89.9	14.4	8	2	1.07
53	WAKEFIELD	15	315,367	350,000	97.9	101	100.6	8.1	11	4	1.00
54	WESLEY HEIGHTS	27	433,722	500,000	94.2	93.6	94.0	8.4	25	2	1.00
56	WOODRIDGE	3	191,800	200,000	104.8	109	109.5	5.2	2	1	1.00
66	FORT LINCOLN	3	208,191	209,574	125.6	125	124.8	9.5	0	3	1.00

TOTALS:

PROPERTY TYPE	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
Condominium	1,944	408,294	365,000	97.0	97.9	95.7	9.3	1,567	377	1.02

Sales Ratio Report Using Current 2012 Values

C

2011 SALES RATIOS BY NEIGHBORHOOD: **MULTI-FAMILY**

NB	NAME	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
2	ANACOSTIA	2	450,044	450,044	96.0	96.0	95.2	5.0	2	0	1.01
5	BRENTWOOD	2	380,000	380,000	151.2	151	148.5	3.5	0	2	1.02
6	BRIGHTWOOD	3	11,925,000	2,725,000	85.9	87.7	86.4	3.3	3	0	1.02
9	CAPITOL HILL	2	820,000	820,000	107.4	107	106.4	3.9	1	1	1.01
10	CENTRAL	2	49,500,000	49500000	82.5	82.5	79.6	3.8	2	0	1.04
11	CHEVY CHASE	1	17,125,000	17125000	69.0	69.0	69.0	.0	1	0	1.00
15	COLUMBIA HEIGHTS	9	15,857,923	3,700,000	100.0	96.0	81.0	20.9	5	4	1.19
16	CONGRESS HEIGHTS	4	457,575	467,650	124.7	129	138.0	22.0	2	2	.94
18	DEANWOOD	2	400,000	400,000	108.6	109	109.1	2.5	0	2	1.00
22	FORT DUPONT PARK	1	350,000	350,000	131.1	131	131.1	.0	0	1	1.00
25	GEORGETOWN	1	1,385,000	1,385,000	62.1	62.1	62.1	.0	1	0	1.00
26	GLOVER PARK	1	1,830,000	1,830,000	105.2	105	105.2	.0	0	1	1.00
28	HILLCREST	2	612,500	612,500	120.1	120	111.6	18.2	1	1	1.08
29	KALORAMA	3	2,441,667	1,700,000	89.1	97.2	91.1	25.3	2	1	1.07
33	MARSHALL HEIGHTS	1	460,000	460,000	135.7	136	135.7	.0	0	1	1.00
36	MOUNT PLEASANT	2	5,956,200	5,956,200	91.3	91.3	94.6	21.7	1	1	.97
39	OLD CITY #1	3	8,040,000	1,070,000	112.2	100	78.3	11.5	1	2	1.28
40	OLD CITY #2	2	54,675,000	54675000	85.5	85.5	72.0	19.0	2	0	1.19
42	PETWORTH	5	846,000	955,000	128.4	125	126.0	10.8	1	4	.99
43	RANDLE HEIGHTS	1	670,000	670,000	77.2	77.2	77.2	.0	1	0	1.00
44	R.L.A.(N.E.)	1	699,000	699,000	147.9	148	147.9	.0	0	1	1.00
46	R.L.A. (S.W.)	2	10,000,000	10000000	85.8	85.8	85.8	6.6	2	0	1.00
52	TRINIDAD	1	305,000	305,000	113.0	113	113.0	.0	0	1	1.00

TOTALS:

PROPERTY TYPE	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
Multi-Family	53	9,139,870	1,070,000	103.2	105	80.4	21.2	28	25	1.30

Sales Ratio Report Using Current 2012 Values

2011 SALES RATIOS BY NEIGHBORHOOD: **COMMERCIAL**

NB	NAME	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
2	ANACOSTIA	4	447,500	322,500	118.1	131	120.5	17.8	0	4	1.08
3	BARRY FARMS	2	317,501	317,501	110.4	110	107.6	9.9	1	1	1.03
5	BRENTWOOD	6	602,083	519,500	113.0	111	106.8	17.3	2	4	1.04
6	BRIGHTWOOD	3	2,386,667	3,100,000	79.9	79.7	76.7	6.5	3	0	1.04
7	BROOKLAND	5	2,265,380	893,100	129.5	115	125.4	16.1	2	3	.92
9	CAPITOL HILL	5	10,741,500	1,700,000	70.6	71.3	55.0	28.9	4	1	1.30
10	CENTRAL	16	44,193,125	14375000	90.4	87.2	76.5	21.2	12	4	1.14
12	CHILLUM	2	2,005,000	2,005,000	104.9	105	103.8	1.5	1	1	1.01
15	COLUMBIA HEIGHTS	12	522,375	460,000	106.7	102	107.5	17.0	5	7	.95
16	CONGRESS HEIGHTS	2	155,000	155,000	81.5	81.5	83.0	11.5	2	0	.98
18	DEANWOOD	4	548,750	557,500	103.7	96.6	88.0	15.7	2	2	1.10
19	ECKINGTON	2	1,037,500	1,037,500	76.2	76.2	70.7	10.6	2	0	1.08
20	FOGGY BOTTOM	2	53,250,000	53250000	91.0	91.0	97.9	17.8	1	1	.93
21	FOREST HILLS	1	1,600,000	1,600,000	78.3	78.3	78.3	.0	1	0	1.00
25	GEORGETOWN	13	2,295,462	1,150,000	85.8	83.8	86.1	19.8	12	1	.97
26	GLOVER PARK	1	1,150,000	1,150,000	59.8	59.8	59.8	.0	1	0	1.00
29	KALORAMA	1	1,100,000	1,100,000	97.7	97.7	97.7	.0	1	0	1.00
32	LILY PONDS	1	15,500,000	15500000	89.1	89.1	89.1	.0	1	0	1.00
33	MARSHALL HEIGHTS	1	550,000	550,000	115.4	115	115.4	.0	0	1	1.00
35	MICHIGAN PARK	1	135,000	135,000	100.4	100	100.4	.0	1	0	1.00
36	MOUNT PLEASANT	4	1,160,000	1,150,000	85.0	81.6	66.5	27.1	3	1	1.23
38	OBSERVATORY CIRCLE	2	33,250,000	33250000	119.0	119	119.6	1.4	0	2	.99
39	OLD CITY #1	24	4,185,191	640,000	95.2	93.2	71.2	22.8	18	6	1.31
40	OLD CITY #2	35	2,030,460	1,195,000	83.2	88.1	82.1	24.5	23	12	1.07
42	PETWORTH	5	318,800	300,000	110.5	119	120.6	14.7	2	3	.99
43	RANDLE HEIGHTS	1	285,000	285,000	88.6	88.6	88.6	.0	1	0	1.00
44	R.L.A.(N.E.)	3	100617066	90000000	68.1	76.2	76.9	22.2	3	0	.99
49	16TH STREET HEIGHTS	1	3,900,000	3,900,000	97.3	97.3	97.3	.0	1	0	1.00
52	TRINIDAD	4	1,778,750	412,500	90.2	98.2	85.6	23.9	3	1	1.15
56	WOODRIDGE	5	919,200	750,000	91.3	87.1	84.8	12.3	5	0	1.03

TOTALS:

PROPERTY TYPE	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
Commercial	168	9,038,978	884,050	95.2	93.1	80.3	21.8	113	55	1.16

Sales Ratio Report Using Proposed 2013 Values

2011 SALES RATIOS BY NEIGHBORHOOD: **SINGLE-FAMILY**

NB	NAME	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
1	AMERICAN UNIVERSITY	78	867,539	822,500	98.2	98.3	98.3	2.7	73	5	1.00
2	ANACOSTIA	26	221,702	201,500	102.2	103	99.1	11.3	13	13	1.04
3	BARRY FARMS	3	189,592	180,000	115.3	109	109.8	6.0	1	2	.99
4	BERKELEY	23	1,713,569	1,453,000	98.1	98.5	98.6	2.8	21	2	1.00
5	BRENTWOOD	18	262,056	248,500	100.0	106	103.5	6.3	14	4	1.02
6	BRIGHTWOOD	96	414,903	380,000	98.8	102	100.0	9.0	74	22	1.02
7	BROOKLAND	155	436,562	420,000	96.3	97.3	95.3	7.2	142	13	1.02
8	BURLEITH	35	1,036,754	830,000	98.5	98.9	99.4	4.7	31	4	1.00
9	CAPITOL HILL	114	802,358	753,265	97.3	95.8	95.8	6.8	107	7	1.00
10	CENTRAL	4	889,350	854,950	99.0	99.0	99.0	.9	4	0	1.00
11	CHEVY CHASE	153	888,028	829,000	98.5	98.1	98.1	5.6	140	13	1.00
12	CHILLUM	18	354,935	353,750	99.3	103	101.6	12.0	12	6	1.02
13	CLEVELAND PARK	35	1,375,517	1,190,000	100.1	102	101.4	6.6	25	10	1.01
14	COLONIAL VILLAGE	11	716,591	710,000	98.6	96.9	96.8	3.6	11	0	1.00
15	COLUMBIA HEIGHTS	188	497,768	466,310	97.7	97.8	96.3	8.6	161	27	1.02
16	CONGRESS HEIGHTS	56	193,409	192,500	97.4	100	98.8	10.4	44	12	1.02
17	CRESTWOOD	24	797,780	760,000	97.4	96.4	96.2	5.9	23	1	1.00
18	DEANWOOD	131	217,730	207,000	98.2	99.6	98.2	8.3	109	22	1.01
19	ECKINGTON	68	415,071	389,500	99.3	98.5	98.3	2.9	63	5	1.00
20	FOGGY BOTTOM	6	675,750	681,250	98.5	97.9	98.3	1.7	6	0	1.00
21	FOREST HILLS	26	1,192,871	996,125	98.7	102	100.7	11.2	18	8	1.01
22	FORT DUPONT PARK	44	214,721	205,000	98.0	101	99.0	8.0	33	11	1.02
23	FOXHALL	20	803,020	769,500	98.4	98.3	98.4	1.5	20	0	1.00
24	GARFIELD	18	1,089,111	1,052,500	96.5	98.5	97.3	5.2	17	1	1.01
25	GEORGETOWN	116	1,563,417	1,155,000	99.0	99.1	99.4	5.3	102	14	1.00
26	GLOVER PARK	34	759,904	742,000	97.8	97.4	97.2	3.6	30	4	1.00
27	HAWTHORNE	5	783,800	790,000	93.6	96.2	95.8	8.2	3	2	1.00
28	HILLCREST	24	306,316	305,000	101.8	104	102.6	7.8	16	8	1.01
29	KALORAMA	34	2,117,515	1,797,500	99.2	98.3	97.7	3.8	31	3	1.01
30	KENT	34	1,578,065	1,367,500	98.0	97.6	97.9	1.4	34	0	1.00
31	LEDROIT PARK	54	556,593	542,000	99.6	101	100.6	2.6	49	5	1.01
32	LILY PONDS	12	191,408	175,250	98.3	102	96.3	14.7	9	3	1.06
33	MARSHALL HEIGHTS	21	233,976	248,500	97.3	101	99.3	8.0	17	4	1.01
34	MASS. AVE. HEIGHTS	3	1,224,667	1,139,000	100.0	102	101.4	2.2	2	1	1.01
35	MICHIGAN PARK	20	347,783	353,625	98.3	101	99.8	4.7	17	3	1.01
36	MOUNT PLEASANT	67	777,019	757,000	99.5	99.2	98.9	3.2	64	3	1.00
37	N. CLEVELAND PARK	30	1,012,423	822,750	100.0	100	101.3	5.8	20	10	.99
38	OBSERVATORY CIRCLE	14	1,238,786	1,208,500	97.8	100	99.0	7.6	12	2	1.01
39	OLD CITY #1	560	554,031	530,000	98.8	98.9	97.9	5.9	503	57	1.01
40	OLD CITY #2	178	780,525	685,000	98.0	97.7	97.8	5.5	161	17	1.00
41	PALISADES	36	871,792	802,500	97.0	97.3	97.4	1.9	36	0	1.00
42	PETWORTH	177	386,324	383,000	99.3	100	98.9	7.7	139	38	1.01
43	RANDLE HEIGHTS	52	285,571	283,400	96.1	102	99.4	9.3	40	12	1.02
46	R.L.A. (S.W.)	4	637,750	622,000	100.4	104	103.5	4.5	3	1	1.01
47	RIGGS PARK	47	246,254	245,000	100.6	105	102.6	11.3	31	16	1.02
48	SHEPHERD PARK	23	605,061	575,000	99.6	100	100.4	4.4	20	3	1.00
49	16TH STREET HEIGHTS	59	505,786	475,000	99.2	100	99.3	8.3	43	16	1.01
50	SPRING VALLEY	38	1,489,635	1,380,000	97.4	97.4	97.5	1.5	38	0	1.00
51	TAKOMA PARK	6	298,667	250,000	99.8	100	100.1	2.6	5	1	1.00
52	TRINIDAD	68	260,318	248,950	100.5	103	100.5	9.9	41	27	1.02
53	WAKEFIELD	11	813,173	778,500	99.2	101	100.8	5.3	9	2	1.00
54	WESLEY HEIGHTS	32	1,362,016	1,045,000	98.0	98.1	98.0	2.0	31	1	1.00
55	WOODLEY	10	1,420,050	1,417,500	95.5	95.4	95.8	5.3	9	1	1.00
56	WOODRIDGE	67	304,029	302,000	99.6	106	102.1	9.3	52	15	1.03
66	FORT LINCOLN	3	563,333	399,999	95.4	80.5	68.7	18.8	3	0	1.17

TOTALS:

PROPERTY TYPE	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
Single-Family	3,189	656,655	545,070	98.6	99.3	98.3	6.6	2,732	457	1.01

Sales Ratio Report Using Proposed 2013 Values

2011 SALES RATIOS BY NEIGHBORHOOD: **CONDOMINIUMS**

NB	NAME	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
1	AMERICAN UNIVERSITY	8	517,225	429,500	96.9	95.1	93.9	4.2	8	0	1.01
2	ANACOSTIA	2	244,950	244,950	81.8	81.8	81.9	6.6	2	0	1.00
3	BARRY FARMS	1	176,500	176,500	98.8	98.8	98.8	.0	1	0	1.00
4	BERKELEY	5	455,855	516,000	91.8	91.9	91.6	4.3	5	0	1.00
5	BRENTWOOD	19	132,557	119,990	112.7	111	109.7	5.8	6	13	1.01
6	BRIGHTWOOD	14	248,019	234,000	96.5	97.6	97.6	4.8	12	2	1.00
7	BROOKLAND	23	187,024	189,878	101.8	106	104.0	11.0	16	7	1.02
9	CAPITOL HILL	33	378,665	341,800	95.6	95.0	94.0	7.0	30	3	1.01
10	CENTRAL	250	583,727	457,000	96.3	95.7	94.8	6.5	226	24	1.01
11	CHEVY CHASE	60	466,838	363,250	95.0	97.8	96.9	3.9	55	5	1.01
13	CLEVELAND PARK	55	362,354	324,000	98.0	99.8	98.5	7.1	45	10	1.01
15	COLUMBIA HEIGHTS	175	356,192	346,900	97.8	97.9	97.1	5.5	157	18	1.01
16	CONGRESS HEIGHTS	5	95,180	70,000	90.9	98.8	92.1	17.8	4	1	1.07
18	DEANWOOD	1	26,000	26,000	156.8	157	156.8	.0	0	1	1.00
19	ECKINGTON	16	329,253	314,875	98.0	97.4	96.1	8.1	14	2	1.01
20	FOGGY BOTTOM	27	251,527	230,000	96.5	99.1	101.0	6.8	22	5	.98
21	FOREST HILLS	32	280,069	289,100	96.6	95.6	96.6	9.6	26	6	.99
22	FORT DUPONT PARK	7	146,386	157,000	98.1	106	102.9	10.0	6	1	1.03
24	GARFIELD	40	421,895	415,500	98.5	99.1	99.0	6.7	33	7	1.00
25	GEORGETOWN	38	870,913	547,500	97.0	99.6	97.7	7.6	30	8	1.02
26	GLOVER PARK	35	252,494	255,000	96.4	95.2	97.1	6.3	32	3	.98
28	HILLCREST	6	93,483	83,450	108.9	108	102.7	15.2	3	3	1.05
29	KALORAMA	94	459,599	440,000	98.6	98.9	97.8	6.3	83	11	1.01
31	LEDROIT PARK	27	313,031	303,000	95.0	96.8	95.9	4.7	23	4	1.01
33	MARSHALL HEIGHTS	6	176,817	195,700	93.4	93.2	92.3	4.7	6	0	1.01
36	MOUNT PLEASANT	100	426,450	421,750	97.1	98.2	97.4	6.2	88	12	1.01
37	N. CLEVELAND PARK	1	345,800	345,800	97.5	97.5	97.5	.0	1	0	1.00
38	OBSERVATORY CIRCLE	32	434,516	372,500	104.0	104	102.7	9.2	20	12	1.01
39	OLD CITY #1	140	412,139	385,450	96.0	96.3	95.2	7.0	126	14	1.01
40	OLD CITY #2	454	432,857	399,250	97.2	97.1	96.3	6.2	402	52	1.01
41	PALISADES	1	175,000	175,000	103.5	103	103.5	.0	1	0	1.00
42	PETWORTH	34	229,109	227,250	95.0	95.9	94.8	8.1	28	6	1.01
43	RANDLE HEIGHTS	2	118,215	118,215	84.4	84.4	77.2	24.3	2	0	1.09
46	R.L.A. (S.W.)	129	242,327	229,000	98.1	97.7	97.0	6.3	112	17	1.01
49	16TH STREET HEIGHTS	14	208,689	228,500	99.2	101	100.0	3.2	12	2	1.01
52	TRINIDAD	10	187,989	208,000	97.4	102	97.7	9.6	8	2	1.05
53	WAKEFIELD	15	315,367	350,000	99.9	102	101.3	6.3	12	3	1.00
54	WESLEY HEIGHTS	27	433,722	500,000	94.4	94.5	95.8	6.0	26	1	.99
56	WOODRIDGE	3	191,800	200,000	100.4	101	101.5	5.4	2	1	1.00
66	FORT LINCOLN	3	208,191	209,574	115.7	115	114.4	10.2	1	2	1.00

TOTALS:

PROPERTY TYPE	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
Condominium	1,944	408,294	365,000	97.2	97.7	96.6	6.8	1,686	258	1.01

Sales Ratio Report Using Proposed 2013 Values

2011 SALES RATIOS BY NEIGHBORHOOD: **MULTI-FAMILY**

NB	NAME	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
2	ANACOSTIA	2	450,044	450,044	98.7	98.7	98.3	2.1	2	0	1.00
5	BRENTWOOD	2	380,000	380,000	153.5	153	150.8	3.5	0	2	1.02
6	BRIGHTWOOD	3	11,925,000	2,725,000	94.3	95.7	94.6	1.5	3	0	1.01
9	CAPITOL HILL	2	820,000	820,000	109.0	109	108.0	4.0	1	1	1.01
10	CENTRAL	2	49,500,000	49500000	89.6	89.6	94.1	5.4	2	0	.95
11	CHEVY CHASE	1	17,125,000	17125000	99.4	99.4	99.4	.0	1	0	1.00
15	COLUMBIA HEIGHTS	9	15,857,923	3,700,000	101.5	101	83.6	17.5	5	4	1.21
16	CONGRESS HEIGHTS	4	457,575	467,650	102.5	104	105.0	3.4	3	1	.99
18	DEANWOOD	2	400,000	400,000	108.6	109	109.1	2.4	0	2	1.00
22	FORT DUPONT PARK	1	350,000	350,000	131.1	131	131.1	.0	0	1	1.00
25	GEORGETOWN	1	1,385,000	1,385,000	75.9	75.9	75.9	.0	1	0	1.00
26	GLOVER PARK	1	1,830,000	1,830,000	107.2	107	107.2	.0	0	1	1.00
28	HILLCREST	2	612,500	612,500	120.1	120	111.6	18.2	1	1	1.08
29	KALORAMA	3	2,441,667	1,700,000	94.3	88.9	89.9	11.7	3	0	.99
33	MARSHALL HEIGHTS	1	460,000	460,000	135.7	136	135.7	.0	0	1	1.00
36	MOUNT PLEASANT	2	5,956,200	5,956,200	89.2	89.2	92.4	21.8	1	1	.96
39	OLD CITY #1	3	8,040,000	1,070,000	113.7	102	80.7	10.6	1	2	1.26
40	OLD CITY #2	2	54,675,000	54675000	88.4	88.4	74.5	19.0	1	1	1.19
42	PETWORTH	5	846,000	955,000	115.0	113	114.1	8.0	1	4	.99
43	RANDLE HEIGHTS	1	670,000	670,000	96.5	96.5	96.5	.0	1	0	1.00
44	R.L.A.(N.E.)	1	699,000	699,000	145.7	146	145.7	.0	0	1	1.00
46	R.L.A. (S.W.)	2	10,000,000	10000000	85.8	85.8	85.8	6.6	2	0	1.00
52	TRINIDAD	1	305,000	305,000	136.7	137	136.7	.0	0	1	1.00

TOTALS:

PROPERTY TYPE	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
Multi-Family	53	9,139,870	1,070,000	102.9	105	86.3	15.6	29	24	1.22

Sales Ratio Report Using Proposed 2013 Values

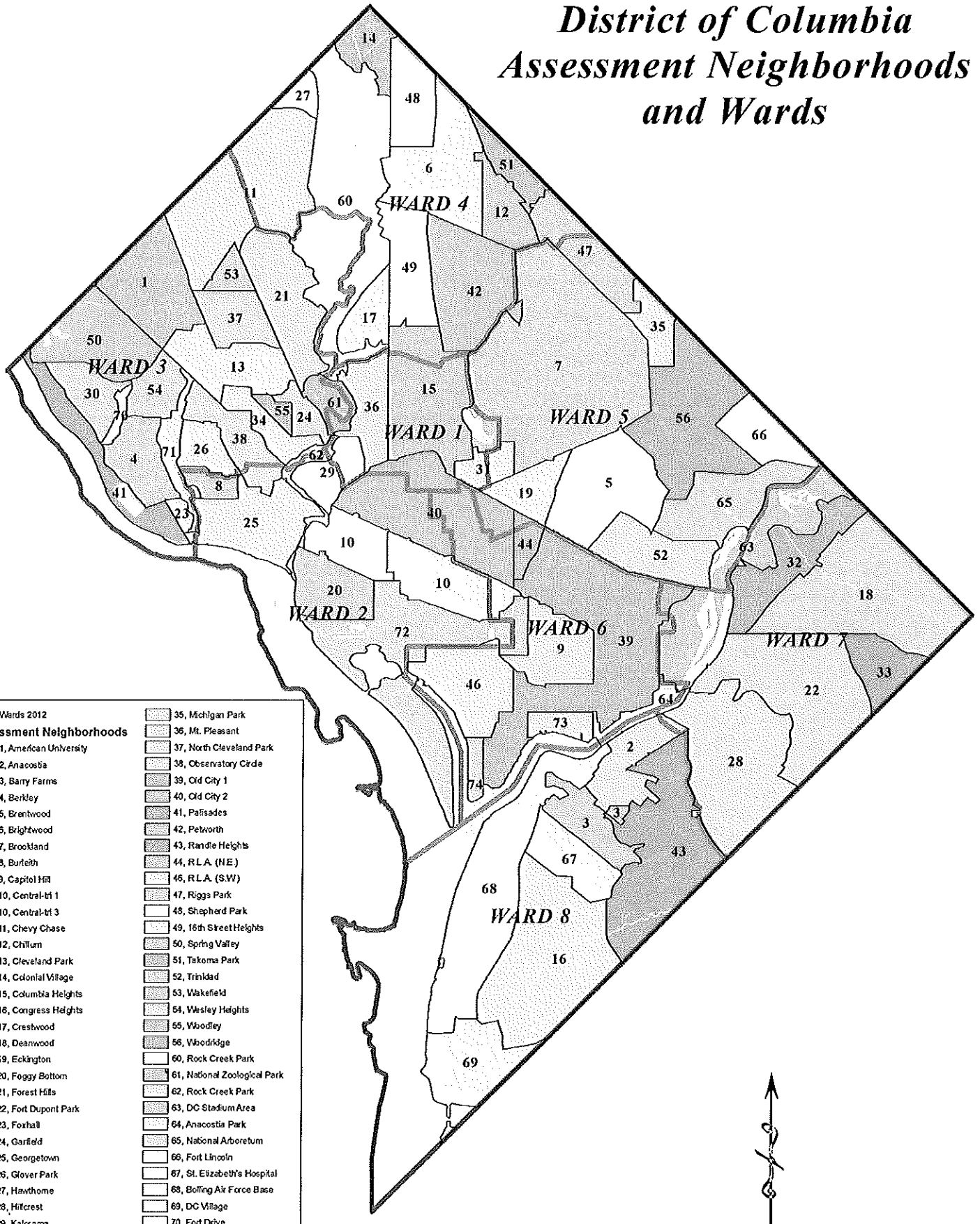
2011 SALES RATIOS BY NEIGHBORHOOD: **COMMERCIAL**

NB	NAME	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
2	ANACOSTIA	4	447,500	322,500	115.3	115	112.3	5.6	0	4	1.02
3	BARRY FARMS	2	317,501	317,501	114.3	114	112.1	7.5	0	2	1.02
5	BRENTWOOD	6	602,083	519,500	113.1	111	107.0	17.0	2	4	1.03
6	BRIGHTWOOD	3	2,386,667	3,100,000	81.6	86.0	80.0	9.8	3	0	1.08
7	BROOKLAND	5	2,265,380	893,100	104.3	110	123.6	20.3	3	2	.89
9	CAPITOL HILL	5	10,741,500	1,700,000	70.8	75.8	55.9	20.3	5	0	1.36
10	CENTRAL	16	44,193,125	14375000	100.0	102	95.1	10.2	11	5	1.07
12	CHILLUM	2	2,005,000	2,005,000	107.2	107	104.4	3.5	1	1	1.03
15	COLUMBIA HEIGHTS	12	522,375	460,000	106.2	103	108.4	15.9	6	6	.95
16	CONGRESS HEIGHTS	2	155,000	155,000	81.5	81.5	83.1	11.7	2	0	.98
18	DEANWOOD	4	548,750	557,500	104.3	96.0	87.8	14.7	2	2	1.09
19	ECKINGTON	2	1,037,500	1,037,500	77.5	77.5	71.4	11.4	2	0	1.08
20	FOGGY BOTTOM	2	53,250,000	53250000	96.5	96.5	102.4	14.3	1	1	.94
21	FOREST HILLS	1	1,600,000	1,600,000	86.2	86.2	86.2	.0	1	0	1.00
25	GEORGETOWN	13	2,295,462	1,150,000	91.5	94.2	93.4	7.2	12	1	1.01
26	GLOVER PARK	1	1,150,000	1,150,000	78.6	78.6	78.6	.0	1	0	1.00
29	KALORAMA	1	1,100,000	1,100,000	100.9	101	100.9	.0	1	0	1.00
32	LILY PONDS	1	15,500,000	15500000	89.1	89.1	89.1	.0	1	0	1.00
33	MARSHALL HEIGHTS	1	550,000	550,000	98.3	98.3	98.3	.0	1	0	1.00
35	MICHIGAN PARK	1	135,000	135,000	101.7	102	101.7	.0	1	0	1.00
36	MOUNT PLEASANT	4	1,160,000	1,150,000	88.4	84.4	69.1	26.3	2	2	1.22
38	OBSERVATORY CIRCLE	2	33,250,000	33250000	126.2	126	126.3	.2	0	2	1.00
39	OLD CITY #1	24	4,185,191	640,000	97.6	94.4	71.2	13.7	17	7	1.33
40	OLD CITY #2	35	2,030,460	1,195,000	93.1	91.0	86.4	18.3	26	9	1.05
42	PETWORTH	5	318,800	300,000	102.7	106	105.3	6.3	3	2	1.01
43	RANDLE HEIGHTS	1	285,000	285,000	88.4	88.4	88.4	.0	1	0	1.00
44	R.L.A.(N.E.)	3	100617066	90000000	101.8	104	104.6	6.2	2	1	.99
49	16TH STREET HEIGHTS	1	3,900,000	3,900,000	96.9	96.9	96.9	.0	1	0	1.00
52	TRINIDAD	4	1,778,750	412,500	91.9	99.1	88.3	23.7	3	1	1.12
56	WOODRIDGE	5	919,200	750,000	92.4	87.8	85.6	12.4	5	0	1.03

TOTALS:

PROPERTY TYPE	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	< 105	> 105	PRD
Commercial	168	9,038,978	884,050	98.7	96.4	95.5	15.4	116	52	1.01

District of Columbia Assessment Neighborhoods and Wards



Wards 2012

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
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, R.L.A. (N.E.)
46, R.L.A. (S.W.)
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

1 0.5 0 1 Miles

District of Columbia
Office of Tax and Revenue
Real Property Assessment Divisio

Appendix “2”

Government of the District of Columbia

Mayor Vincent C. Gray

Office of the Chief Financial Officer

Dr. Natwar M. Gandhi

Table of Contents

Office of Tax and Revenue

Real Property Tax Administration

FY 2013 Assessment Ratio Report

Real Property Tax Administration
1101 4th Street, SW
Washington, DC 20024
Phone (202) 442-6652
www.cfo.dc.gov

October 5, 2012

Government of the District of Columbia
Office of the Chief Financial Officer
Office of Tax and Revenue

October 5, 2012

The Honorable Vincent C. Gray
Mayor of the District of Columbia

and

The Honorable Phil Mendelson

Chairman of the Council of the District of Columbia

Dear Mayor Gray and Chairman Mendelson:

In accordance with D.C. Code § 47-823(c), I am pleased to submit the Office of Tax and Revenue's (OTR) Fiscal Year 2013 Assessment Ratio Report. This report measures the quality of real property assessments within the District of Columbia.

Uniform and accurate assessments for similar properties are the foundation of fair property taxation. District law and the Federal Constitution require that all real property subject to property taxation be assessed uniformly. District law also requires that assessments be based on the estimated market value (fair market value) of the property. Therefore, uniformity and market value are the standards used to measure the quality of the assessment work performed by the Real Property Tax Administration.

This report measures assessment quality by looking at the most recent reassessment program and comparing the results of that effort to actual market conditions. District law requires that all real property be assessed annually, and this reassessment resulted in approximately 195,000 reassessment notices being issued in February 2012 effective for Fiscal Year 2013. These reassessments reflected OTR's estimate of property values as of January 1, 2012. To provide an objective performance measure of that work, this report tests those reassessment results against actual property sales for the 12 months in calendar year 2011.

OTR is guided by national standards for measuring property assessment quality, as promulgated by the International Association of Assessing Officers. Those national standards and our compliance therewith are discussed in this report. The data show that the District has acceptable levels and uniformity of assessments.

I hope that you find this report useful and informative. Please feel free to contact me to share any suggestions that you may have to improve this report or the assessment process in the District of Columbia.

Sincerely,

Stephen M. Cordi
Deputy Chief Financial Officer
Office of Tax and Revenue

FY 2013 ASSESSMENT RATIO REPORT

Overview

The Office of Tax and Revenue's (OTR) Real Property Tax Administration (RPTA) assesses real property for purposes of property taxation. A portion of all properties will be physically reviewed each year. During the review, RPTA appraisers will visit properties to verify property characteristics existing in our current assessment records. The characteristics include property type, size, quality of construction, condition of structure and any new improvements.

For Fiscal Year (FY) 2013, the District assessed approximately 195,000 properties. The magnitude of the reassessment requires the use of mass appraisal techniques. While a private fee appraiser is concerned with valuing one property at a time, an RPTA appraiser values all properties in an entire neighborhood at a time. To accomplish this, special mass appraisal procedures are used. When real property is transferred, the deed and transfer documents are filed with the Recorder of Deeds of the District of Columbia. These documents are imaged, used as a record to change ownership on the assessment roll, and used to capture sales information. RPTA's Assessment Division reviews all deeds and property sales prices after the deed transferring the property is recorded. In the appraiser's review and analysis of the sales, the appraiser will develop land rates, depreciation tables, and sales analysis and/or market analysis reports. After completing the analysis, the appraiser applies the factors uniformly throughout the neighborhood to value all comparable properties.

Supervisory personnel carefully review each RPTA appraiser's work, and the RPTA appraiser's work is also scrutinized by individual property owners. We are continually striving for higher quality in assessment uniformity. Our quality control program begins with the individual appraiser and the appraiser's immediate supervisor. As work is completed, each supervisor reviews the analysis, making revisions or approving the work. When the appraiser completes the revaluation, the supervisor makes a random check using procedural and data editing reports. Following the completion of the revaluation, various computer edits are made to ensure good valuation quality.

A measurement of quality is the assessed value/sale price ratio. A ratio is the relationship between two numbers; in this case it is the relationship between the assessed value and sale price. The ratio measures how closely our values compare to the actual sales prices. The average assessed value/sale price ratio indicates the typical level of assessment. Because the marketplace is not perfect, there will always be properties that sell for more or less than what can be anticipated due to factors such as sales between people unfamiliar with the market or buyers willing to pay extra for a unique property, among other reasons.

In mass appraisal and assessment ratio studies, we are not only concerned with the typical level of assessment as indicated by the average assessed value/sale price levels (ratios), but also the degree of spread, or variation, from the typical ratio. One such

statistical measurement of variation is called the coefficient of dispersion (COD). The lower the COD, the more uniform the assessments.

In the balance of this report, we will give a more detailed explanation of the statistical terms as applied to assessment administration and quality control, and we will explain the International Association of Assessing Officers' (IAAO) Standard of Performance for ratio studies.

RATIO STATISTICS

The purpose of this ratio study is to test the quality of the assessment product of the properties most recently valued. From our most recent valuation, we have performed many ratio studies examining neighborhoods, types of structures, age of structures, etc. We use ratio studies as a performance gauge that includes several measures of central tendency. A measure of central tendency indicates the typical level of assessments to actual selling prices of real estate. These may be the average of the assessed value/sale price ratios, the weighted average of the assessed value/sale price ratios or the median of the assessed value/sale price ratios. The average assessed value/sale price ratio is simply the average of all the ratios in the sample. The weighted assessed value/sale price ratio is the result of dividing the total of the assessments by the total of the sale prices. The median assessed value/sale price ratio is the midpoint ratio of all ratios after the ratios are arrayed from highest to lowest.

In addition to the general level of assessments, we are also concerned with the relative spread or variation that individual ratios depart from the typical ratio. This is measured by the coefficient of dispersion. The coefficient of dispersion is calculated by dividing the average absolute deviation by the median ratio. To calculate the average absolute deviation, subtract the median ratio from the individual ratios and add all the results, ignoring positive or negative signs, and then divide the sum by the number of ratios. The acceptable level for the coefficient of dispersion depends upon the type of properties being reviewed. According to IAAO, coefficients of dispersion should typically be 20% or less, depending on the types of properties being valued.

Another statistical measure used to gauge assessment uniformity is the Price-Related Differential (PRD). The PRD tests to see if higher and lower valued properties are assessed at the same level. It is calculated by dividing the mean ratio by the weighted mean ratio. PRDs should range between 0.98 and 1.03, except for very small samples. For example, a PRD of 1.03 indicates an under-valuation of high-priced properties, while a PRD of .98 shows an under-valuation of low-priced properties. Table 1 of this report illustrates a sample computation of these statistics.

Table 1

Illustration of Ratio Study Statistics

Sample Jurisdiction

(1) Property Number	(2) Sale Price	(3) Assessed Value	(4) Ratio A/S%	(5) Deviation From Average
1	$280,000	$224,000	80%	20%
2	$220,000	$192,500	88%	12%
3	$635,000	$555,750	88%	12%
4	$559,000	$517,000	92%	7%
5	$200,000	$190,000	95%	5%
6	$210,000	$204,750	98%	2%
7	$800,000	$800,000	100%	0%
8	$400,000	$400,000	100%	0%
9	$330,000	$333,000	101%	1%
10	$450,000	$461,250	103%	3%
11	$240,000	$252,000	105%	5%
12	$390,000	$419,250	108%	8%
13	$370,000	$416,250	113%	13%
14	$403,000	$458,000	114%	14%
15	$510,000	$599,250	118%	18%
TOTAL	**$5,997,000**	**$6,023,000**	**1500%**	**120%**

Average Ratio	=	Total of Ratios (4)	÷	Number of Sales (1)	=	**100%**
		1500%		**15**		
Weighted Ratio	=	Total of Assessed Values (3)	÷	Total of Sale Prices (2)	=	**100%**
		$6,023,000		**$5,997,000**		
Average Absolute Deviation	=	Total Deviations (5)	÷	Number of Sales (1)	=	**8%**
		120%		**15**		
Median Ratio	=	Middle Value of Data Array	=		=	**100%**
		(i.e. property #8)				
Coefficient of Dispersion	=	Average Deviation (5)	÷	Median Ratio (4)	=	**8%**
		8%		**100%**		
Price-Related Differential	=	Average Ratio (4)	÷	Weighted Ratio	=	**1.00**
		100%		**100%**		

Other descriptive statistical methods that may be used to analyze the assessment product are frequency distributions, scatter diagrams and coefficients of variation. Due to the scope of this report, we have not fully examined these methods here. For further information on statistics relating to assessments, IAAO's publication, "Property Assessment Valuation," is recommended.

RATIO STUDY STANDARDS - VALUES TO SALE PRICES

The IAAO is a professional organization of assessing officials that provides educational programs, assessment administration standards and research on assessment and tax policy issues. The IAAO has developed numerous standards and texts on assessments and assessment administration. Additionally, the organization is a founding member of the Appraisal Foundation that developed the Uniform Standards of Professional Appraisal Practice (USPAP).

The IAAO's Standard on Ratio Studies was first published in September 1990 and was revised in January, 2010. The IAAO standards are advisory in nature and provide guidance to those performing ratio studies in the mass appraisal field regarding design, statistics, performance measures and related issues in conducting ratio studies. The RPTA uses the fundamental ratio statistical measures of IAAO standards, and is guided by the criteria of IAAO's Assessment Ratio Performance Standards, to judge the performance of the District's reassessments. See Table 2 below.

Table 2

IAAO's Ratio Study Performance Standards

Type of property—General	Type of property—Specific	COD Range**
Single-family residential (including residential condominiums)	Newer or more homogeneous areas	5.0 to 10.0
Single-family residential	Older or more heterogeneous areas	5.0 to 15.0
Other residential	Rural, seasonal, recreational, manufactured housing, 2–4 unit family housing	5.0 to 20.0
Income-producing properties	Larger areas represented by large samples	5.0 to 15.0
Income-producing properties	Smaller areas represented by smaller samples	5.0 to 20.0
Vacant land		5.0 to 25.0
Other real and personal property		Varies with local conditions

These types of property are provided for guidance only and may not represent jurisdictional requirements.
** Appraisal level for each type of property shown should be between 0.90 and 1.10, unless stricter local standards are required.*
PRD's for each type of property should be between 0.98 and 1.03 to demonstrate vertical equity.
PRD standards are not absolute and may be less meaningful when samples are small or when wide variation in prices exist. In such cases, statistical tests of vertical equity hypotheses should be substituted (see table 1-2).
*** CODs lower than 5.0 may indicate sales chasing or non-representative samples.*

Source: Standard on Ratio Studies; International Association of Assessing Officers; Kansas City, Mo; January, 2010; pp.18, 19.

Ratio studies may be performed for various reasons, including assessment accuracy and equity studies, to judge the need for and management of a reassessment, to

identify problems with assessment procedures, to assist in market analysis, and to adjust assessed values. Many ratio study design issues must be considered depending on the purpose of the ratio study.

This study considers unadjusted sales price data during calendar year 2011 before the valuation date of January 1, 2012, which is the date for the FY 2013 assessments. Generally, only sales that are arms-length transactions between a buyer and seller are included in the study. Sales between related parties, to or from financial institutions or government agencies, or sales with extreme ratios (which indicate abnormal transactions) have not been used in this study. An attempt was made to contact the property owner and physically inspect all sales. Where property owners were not at home or failed to respond to the "Sales Verification Questionnaire" mailed to them, an exterior inspection was performed. Thus, some of these transactions may have had conditions that could have warranted their exclusion from the study; but the transactions were included notwithstanding. Generally, RPTA's ratio performance is good and conforms to IAAO standards.

While several measures of central tendency may be calculated (average, median, and weighted average), the median is less affected by extreme ratios. Therefore, IAAO observes in its standards that the median is generally the preferred measure of central tendency for monitoring assessment performance. For this reason, median ratios are used in this study to measure compliance with IAAO standards.

In circumstances where property values are rapidly changing, ratio statistics will be adversely affected. Where real estate prices have been increasing (decreasing), ratio statistics will indicate a lower (higher) assessed value/sale price ratio. However, one should review the average deviation, coefficient of dispersion, and standard deviation to ensure that assessments are uniform.

COMPARISON OF RPTA's VALUES TO SALE PRICES

Quality is the degree of excellence of a product or service. Also, quality is the extent to which a product measures up to certain standards. In this case, a measure of quality is the ratio study measuring whether the RPTA appraiser assessed properties uniformly and at estimated market value. Assuming the appraiser applied the mass appraisal model uniformly to all properties, this ratio study should show uniformity of assessment. The ratio study is a cross-check by the RPTA management to ensure quality of the mass appraisal. The ratio study was conducted on 4,771 sales of improved residential property and 207 sales of improved commercial property from January 1, 2011 to December 31, 2011, and it compares such sales to the administration's valuations on the tax roll for FY 2013.

Table 3 summarizes the FY 2013 Real Property Assessment/Sale Ratio by neighborhood within the District of Columbia for residential properties. Table 4 displays similar information for commercial properties. Table 5 illustrates the frequency of assessment sale ratios, in the form of a histogram, for residential properties; the sales used in this study were calendar year 2011 real estate sales. Table 6 provides a

summary of the compliance with standards, by property type, for the FY 2013 assessment program.

The histogram in Table 5 graphically represents the frequency distribution of individual residential ratios in the study. The general shape of the graph helps to illustrate the amount of dispersion existing in the data. A tall, narrow shape usually indicates less dispersion from the measure of central tendency, whereas a more flat and broad shape illustrates more dispersion and less desirable uniformity. The histogram of RPTA's results illustrates both good central tendency and reasonable dispersion. The measures of central tendency indicate that properties, on average, have been valued for FY 2013 at approximately 98% of their respective sale prices and that on average all other properties have very similar ratios as indicated by the 6% coefficient of dispersion.

The analysis from Table 6 and the following descriptive statistics indicate that values determined by appraisers for the most recent valuation attained a uniform and appropriate level of value. Table 6 shows that of the fifty-six residential neighborhoods that were valued for FY 2013, forty-four had a sufficient number of sales to be statistically relevant. All forty-four neighborhoods met all applicable IAAO standards for assessment performance. In the case of commercial property, more weight is given to the income approach to valuation; additionally, there are fewer sales thereby impeding a more thorough investigation.

The summary data presented in Table 7 indicate that District-wide, for the category of all property types, the sales ratio statistics are in full compliance with IAAO's standards.

TABLE 3

FY 2013

Residential Real Property Assessment Ratio by Neighborhood

This table shows the real property assessment ratio data for residential properties. The ratios concern arms-length sales of properties. The sales used were sold between January 1, 2011 and December 31, 2011, and such sales are compared with RPTA's FY 2013 reassessment effective January 1, 2012. In neighborhoods with fewer than 20 sales, the statistics may not represent actual market conditions due to the small sample size.

Type of Property: Residential

Number	Neighborhood Name	Number of Sales	Average Sale Price	Median Sale Price	Median Ratio	Mean Ratio	Weighted Mean Ratio	Coefficient of Dispersion	Price-Related Differential
1	AMERICAN UNIVERSITY	84	$845,719	$817,000	97.9	97.6	97.6	3	1.00
2	ANACOSTIA	23	$238,597	$232,000	97.5	95.7	93.9	9	1.02
3	BARRY FARMS	4	$186,319	$178,250	107.0	106.0	107.2	9	0.99
4	BERKELEY	27	$1,515,420	$1,400,000	97.5	97.1	98.2	4	0.99
5	BRENTWOOD	35	$194,445	$175,000	100.0	107.0	104.5	7	1.03
6	BRIGHTWOOD	98	$412,067	$378,500	97.9	98.6	98.3	6	1.00
7	BROOKLAND	178	$422,979	$413,634	96.1	96.2	94.8	6	1.01
8	BURLEITH	31	$1,055,655	$840,000	98.5	98.7	98.8	3	1.00
9	CAPITOL HILL	141	$707,806	$700,000	96.8	96.1	95.9	7	1.00
10	CENTRAL	247	$590,174	$464,000	96.1	95.5	94.6	6	1.01
11	CHEVY CHASE	207	$764,225	$783,000	97.0	97.7	97.4	5	1.00
12	CHILLUM	16	$359,621	$353,750	96.2	99.4	98.4	9	1.01
13	CLEVELAND PARK	86	$755,134	$400,000	98.3	99.8	99.7	6	1.00
14	COLONIAL VILLAGE	11	$716,591	$710,000	98.6	96.9	96.8	4	1.00
15	COLUMBIA HEIGHTS	339	$433,443	$413,000	97.3	97.5	96.4	7	1.01
16	CONGRESS HEIGHTS	52	$200,153	$199,509	96.1	96.4	96.1	8	1.00
17	CRESTWOOD	23	$810,945	$760,000	98.2	98.1	98.2	2	1.00
18	DEANWOOD	118	$225,627	$222,750	97.7	96.9	96.4	6	1.01
19	ECKINGTON	73	$407,601	$379,600	99.3	101.0	99.9	4	1.01
20	FOGGY BOTTOM	32	$326,461	$235,000	97.2	97.5	98.3	5	0.99
21	FOREST HILLS	54	$710,312	$509,500	96.8	96.3	98.2	9	0.98
22	FORT DUPONT PARK	44	$212,146	$202,350	97.7	99.4	98.1	7	1.01
23	FOXHALL	18	$795,911	$768,750	98.4	98.3	98.3	2	1.00
24	GARFIELD	57	$627,575	$542,000	98.0	98.6	98.1	6	1.00
25	GEORGETOWN	144	$1,377,891	$979,000	99.0	99.4	100.0	6	0.99
26	GLOVER PARK	67	$498,568	$385,000	97.6	96.1	97.0	5	0.99
27	HAWTHORNE	5	$783,800	$790,000	93.6	96.2	95.8	8	1.00
28	HILLCREST	20	$280,180	$305,000	99.2	98.8	98.8	7	1.00
29	KALORAMA	122	$913,753	$494,000	98.7	98.3	97.9	5	1.00
30	KENT	31	$1,587,716	$1,360,000	98.0	97.6	97.9	1	1.00
31	LEDROIT PARK	76	$490,039	$467,500	99.3	98.6	98.8	3	1.00

32	LILY PONDS	11	$198,809	$180,000	97.1	97.8	93.9	12	1.04
33	MARSHALL HEIGHTS	26	$229,361	$240,000	96.8	96.8	96.6	5	1.00
34	MASS. AVE. HEIGHTS	3	$1,224,667	$1,139,000	100.0	102.0	101.4	2	1.01
35	MICHIGAN PARK	19	$353,718	$355,000	97.9	98.9	98.6	3	1.00
36	MOUNT PLEASANT	156	$569,977	$529,950	97.9	97.5	97.3	4	1.00
37	N. CLEVELAND PARK	31	$990,919	$812,500	100.0	99.2	100.5	5	0.99
38	OBSERVATORY CIRCLE	43	$708,895	$612,000	99.4	103.0	100.6	10	1.02
39	OLD CITY #1	651	$538,177	$510,000	98.1	97.5	97.1	5	1.00
40	OLD CITY #2	601	$533,808	$459,000	97.2	96.8	96.5	6	1.00
41	PALISADES	37	$852,959	$800,000	97.1	97.5	97.4	2	1.00
42	PETWORTH	182	$377,534	$379,000	98.4	97.7	97.5	6	1.00
43	RANDLE HEIGHTS	48	$287,376	$283,400	95.8	99.4	98.4	9	1.01
44	NOMA	0	$0	$0	0.0	0.0	0.0	0	0.00
46	SW WATERFRONT.	127	$255,435	$231,000	98.3	97.8	97.4	6	1.00
47	RIGGS PARK	33	$271,542	$270,000	98.1	96.7	96.8	6	1.00
48	SHEPHERD PARK	20	$605,320	$585,000	99.9	102.0	101.4	5	1.00
49	16TH STREET HEIGHTS	63	$466,842	$469,000	98.8	97.9	97.7	5	1.00
50	SPRING VALLEY	38	$1,489,635	$1,380,000	97.4	97.4	97.5	1	1.00
51	TAKOMA PARK	6	$298,667	$250,000	99.8	100.0	100.1	3	1.00
52	TRINIDAD	72	$256,104	$247,500	99.6	101.0	98.8	9	1.02
53	WAKEFIELD	24	$525,225	$453,750	99.3	99.3	99.1	4	1.00
54	WESLEY HEIGHTS	57	$935,175	$673,000	97.3	96.4	97.6	4	0.99
55	WOODLEY	10	$1,420,050	$1,417,500	95.5	94.4	94.5	4	1.00
56	WOODRIDGE	46	$347,175	$347,450	99.5	98.8	98.5	2	1.00
66	FORT LINCOLN	4	$287,393	$274,787	107.8	111.0	106.9	12	1.04

TABLE 4

FY 2013

Commercial Real Property Assessment Ratio by Neighborhood

This table shows the real property assessment ratio data for commercial properties. The ratios concern arms-length sales of properties. The sales used were sold between January 1, 2011 and December 31, 2011, and such sales are compared with RPTA's FY 2013 reassessment effective January 1, 2012. In neighborhoods with fewer than 20 sales, the statistics may not represent actual market conditions due to the small sample size.

Type of Property: Commercial

Number	Neighborhood Name	Number of Sales	Average Sale Price	Median Sale Price	Median Ratio	Mean Ratio	Weighted Mean Ratio	Coefficient of Dispersion	Price-Related Differential
2	ANACOSTIA	6	$448,348	$387,500	108.3	109.0	107.6	8	1.02
3	BARRY FARMS	2	$317,501	$317,501	114.3	114.0	112.1	7	1.02
5	BRENTWOOD	9	$544,167	$525,000	116.4	119.0	112.1	20	1.06
6	BRIGHTWOOD	5	$7,967,000	$2,725,000	94.3	93.8	93.4	5	1.00
7	BROOKLAND	5	$2,265,380	$893,100	104.3	110.0	123.6	20	0.89
9	CAPITOL HILL	7	$7,906,786	$1,250,000	94.1	85.3	57.4	19	1.49
10	CENTRAL	22	$49,676,104	$20,250,000	99.4	97.0	95.5	10	1.01
11	CHEVY CHASE	1	$17,125,000	$17,125,000	99.4	99.4	99.4	0	1.00
12	CHILLUM	1	$3,475,000	$3,475,000	103.4	103.0	103.4	0	1.00
15	COLUMBIA HEIGHTS	21	$7,138,167	$650,000	107.1	103.0	84.8	16	1.21
16	CONGRESS HEIGHTS	6	$356,717	$315,150	100.6	96.6	101.8	9	0.95
18	DEANWOOD	6	$499,167	$400,000	106.7	100.0	93.4	10	1.07
19	ECKINGTON	2	$1,037,500	$1,037,500	77.5	77.5	71.4	11	1.08
20	FOGGY BOTTOM	1	$76,000,000	$76,000,000	105.4	105.0	105.4	0	1.00
21	FOREST HILLS	1	$1,600,000	$1,600,000	86.2	86.2	86.2	0	1.00
22	FORT DUPONT PARK	1	$350,000	$350,000	131.1	131.0	131.1	0	1.00
25	GEORGETOWN	14	$2,230,429	$1,267,500	91.2	91.1	91.7	6	0.99
26	GLOVER PARK	1	$1,150,000	$1,150,000	78.6	78.6	78.6	0	1.00
28	HILLCREST	2	$612,500	$612,500	120.1	120.0	111.6	18	1.08
29	KALORAMA	4	$2,106,250	$1,412,500	97.6	91.9	91.3	10	1.01
32	LILY PONDS	1	$15,500,000	$15,500,000	89.1	89.1	89.1	0	1.00
33	MARSHALL HEIGHTS	2	$505,000	$505,000	99.0	99.0	99.0	1	1.00
35	MICHIGAN PARK	1	$135,000	$135,000	101.7	102.0	101.7	0	1.00
36	MOUNT PLEASANT	5	$2,900,480	$1,700,000	105.1	93.0	90.8	15	1.02
38	OBSERVATORY CIRCLE	2	$33,250,000	$33,250,000	119.1	119.0	119.2	0	1.00
39	OLD CITY #1	24	$5,141,233	$812,500	98.6	95.0	72.8	15	1.30
40	OLD CITY #2	31	$5,495,939	$1,400,000	91.6	89.2	78.8	18	1.13
42	PETWORTH	8	$562,375	$387,500	107.7	108.0	109.7	10	0.99
43	RANDLE HEIGHTS	2	$477,500	$477,500	92.5	92.5	94.1	4	0.98

44	NOMA	3	$100,617,066	$90,000,000	100.3	103.0	103.7	6	1.00
49	16TH STREET HEIGHTS	1	$3,900,000	$3,900,000	96.9	96.9	96.9	0	1.00
52	TRINIDAD	5	$1,484,000	$325,000	99.9	107.0	90.3	25	1.18
56	WOODRIDGE	5	$919,200	$750,000	92.4	87.8	85.6	12	1.03

TABLE 5

FY 2013 HISTOGRAM OF RESIDENTIAL SALES RATIOS

GRAPH OF SALES RATIOS

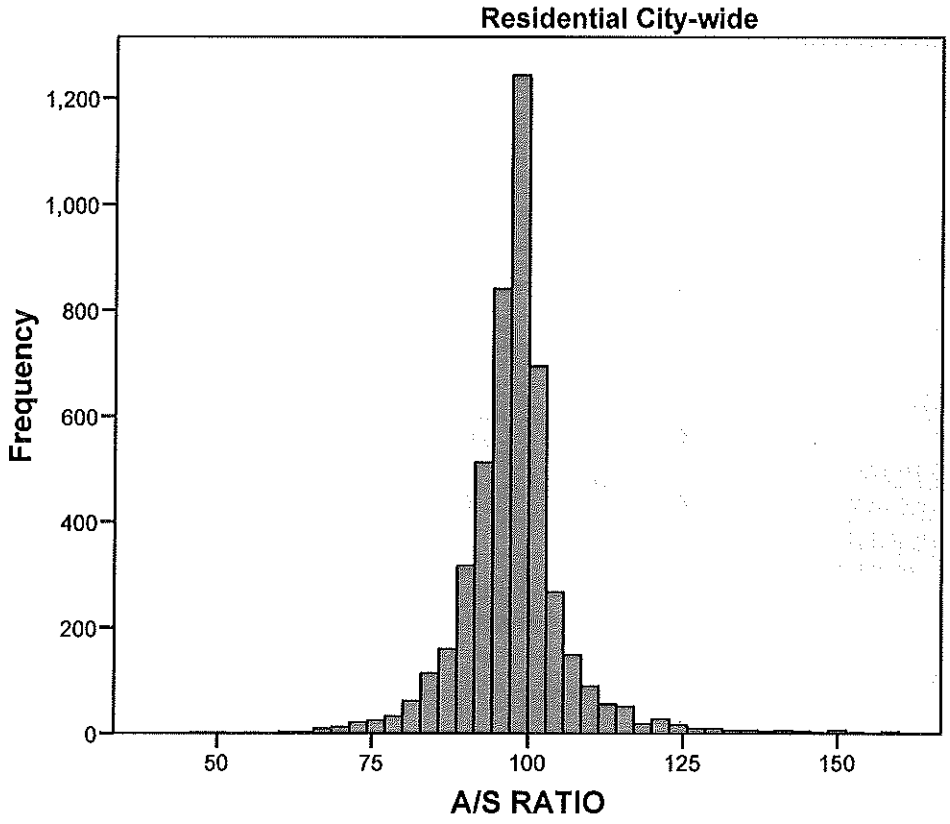


TABLE 6

Compliance with IAAO Ratio Study Performance Standards for FY 2013 Assessments

The IAAO sets advisory standards for assessment statistics. These standards are depicted in Table 2. In this table, a "+" indicates compliance with the standards.

2013	Residential Median Ratio	Residential Coefficient of Dispersion	Residential Price-Related Differential	Commercial Median Ratio
AMERICAN UNIVERSITY	+	+	+	Ø
ANACOSTIA	+	+	+	Ø
BARRY FARMS	Ø	Ø	Ø	Ø
BERKELEY	+	+	+	Ø
BRENTWOOD	+	+	+	Ø
BRIGHTWOOD	+	+	+	Ø
BROOKLAND	+	+	+	Ø
BURLEITH	+	+	+	Ø
CAPITOL HILL	+	+	+	Ø
CENTRAL	+	+	+	+
CHEVY CHASE	+	+	+	Ø
CHILLUM	Ø	Ø	Ø	Ø
CLEVELAND PARK	+	+	+	Ø
COLONIAL VILLAGE	Ø	Ø	Ø	Ø
COLUMBIA HEIGHTS	+	+	+	+
CONGRESS HEIGHTS	+	+	+	Ø
CRESTWOOD	+	+	+	Ø
DEANWOOD	+	+	+	Ø
ECKINGTON	+	+	+	Ø
FOGGY BOTTOM	+	+	+	Ø
FOREST HILLS	+	+	+	Ø
FORT DUPONT PARK	+	+	+	Ø
FOXHALL	Ø	Ø	Ø	Ø
GARFIELD	+	+	+	Ø
GEORGETOWN	+	+	+	Ø
GLOVER PARK	+	+	+	Ø
HAWTHORNE	Ø	Ø	Ø	Ø
HILLCREST	+	+	+	Ø
KALORAMA	+	+	+	Ø
KENT	+	+	+	Ø
LEDROIT PARK	+	+	+	Ø
LILY PONDS	Ø	Ø	Ø	Ø
MARSHALL HEIGHTS	+	+	+	Ø
MASS. AVE. HEIGHTS	Ø	Ø	Ø	Ø
MICHIGAN PARK	Ø	Ø	Ø	Ø
MOUNT PLEASANT	+	+	+	Ø
N. CLEVELAND PARK	+	+	+	Ø
OBSERVATORY CIRCLE	+	+	+	Ø
OLD CITY #1	+	+	+	+

OLD CITY #2	+	+	+	+
PALISADES	+	+	+	Ø
PETWORTH	+	+	+	Ø
RANDLE HEIGHTS	+	+	+	Ø
NOMA	Ø	Ø	Ø	Ø
SW WATERFRONT	+	+	+	Ø
RIGGS PARK	+	+	+	Ø
SHEPHERD PARK	+	+	+	Ø
16TH STREET HEIGHTS	+	+	+	Ø
SPRING VALLEY	+	+	+	Ø
TAKOMA PARK	Ø	Ø	Ø	Ø
TRINIDAD	+	+	+	Ø
WAKEFIELD	+	+	+	Ø
WESLEY HEIGHTS	+	+	+	Ø
WOODLEY	Ø	Ø	Ø	Ø
WOODRIDGE	+	+	+	Ø
FORT LINCOLN	Ø	Ø	Ø	Ø

+ = Meets IAAO Standard
× = Does not meet IAAO Standard
Ø = Insufficient data

TABLE 7

SUMMARY OF SALES RATIO STATISTICS FY 2013

SALES RATIOS BY PROPERTY TYPE: CITY-WIDE

PROPERTY TYPE	SALES	AVE PRICE	MED PRICE	MEDIAN	MEAN	WEIGHTED	COD	PRD
All	4,978	$997,679	$465,000	98.0	97.7	95.7	6	1.02
Residential	4,771	$575,670	$459,000	97.9	97.7	97.4	6	1.00
Commercial	207	$10,724,282	$1,000,000	99.4	97.8	93.5	15	1.05