

Government of the District of Columbia
Mayor Anthony A. Williams
Office of the Chief Financial Officer
Office of Tax and Revenue

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

November 1, 2005

The Honorable Anthony A. Williams
And
The Honorable Linda Cropp

In accordance with D.C. Code § 47-823(c), I am pleased to submit the Office of Tax and Revenue's 2006 Assessment Ratio Report. This report measures the quality of real property assessments within the District of Columbia.

Uniform and accurate assessments 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 required that all real property be assessed annually, resulting in approximately 173,000 reassessment notices being issued in February 2005. These reassessments reflected OTR's estimate of property values as of January 1, 2005. To provide an objective performance measure of that work, this report tests those reappraisal results against actual property sales for the 12 months in calendar year 2004.

The Office of Tax and Revenue has adopted the national standards for measuring property assessment quality as outlined by the International Association of Assessing Officers. Those national standards, as well as our compliance with those standards, are discussed in the body of 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 share any suggestions that you may have to improve this report or the assessment process in the District of Columbia.

Sincerely,

Daniel L. Black, Jr.
Deputy Chief Financial Officer
Office of Tax and Revenue

## 2006 ASSESSMENT RATIO REPORT

## Overview

The Office of Tax and Revenue's Real Property Tax Administration (RPTA) appraises real property for purposes of property taxation. A portion of all properties will be physically reviewed each year. During the review, the assessor 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. In certain circumstances, neighborhood inspections may be made in place of individual property inspections.

In FY 2006, the District, comprised of approximately 173,000 properties was valued. This requires the use of mass appraisal techniques. While a fee appraiser is concerned with valuing one property at a time, an assessor is valuing whole neighborhoods. To accomplish this, special mass appraisal procedures are used. The assessor will review the data and calculate the contributory value of the land and improvements. In addition, individual property type market trends may be developed. The assessor will review the sales from the area. In the District of Columbia, the Recorder of Deeds is a division of the Real Property Tax Administration (RPTA). When real property is transferred, the deed and transfer documents are filed with the Recorder. These documents are imaged and used as a record to change ownership on the assessment roll and capture sales information. The Assessment Division reviews all deeds and property sales prices as the deed transferring the property is recorded. In the assessor's review and analysis of the sales, the assessor will develop land rates, depreciation tables, and sales analysis and/or market trend reports. After completing the analysis, the assessor applies the factors uniformly throughout the neighborhood to value all comparable properties.

RPTA's work is reviewed by OTR's internal auditors, by the District's auditor and is often scrutinized by individual property owners. We are continually striving for higher quality in assessment uniformity. Our quality control program begins with the individual assessor and the assessor's immediate supervisor. As work is completed, each supervisor reviews the analysis, making recommendations and approving the work. When the assessor 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 assure good valuation quality.

A measurement of quality is the assessed value/sale price ratio. A ratio is the relationship of two numbers, in this case assessed value and sale price. It 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 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 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 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 assessed value/sale price ratio, the weighted average of assessed value/sale price ratio or the median of assessed value/sale price ratio. 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 if 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 fall 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 dividing by the number of ratios. The acceptable level for the coefficient of dispersion depends upon the type of properties being reviewed. 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. Typically, PRDs have an upward bias. PRDs should range between 0.98
and 1.03, except for very small samples. For example, a PRD of 1.03 indicates 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

## IIlustration of Ratio Study Statistics

Sample Jurisdiction

| (1) <br> Property <br> Number | (2) <br> Sale <br> Price | (3) <br> Assessed <br> Value | (4) <br> Ratio <br> A/S\% | (5) <br> Deviation <br> From <br> 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 | $\$ 5,997,000$ | $\$ 6,023,000$ | $\mathbf{1 5 0 0 \%}$ | $\mathbf{1 2 0 \%}$ |


| Average Ratio | = | Total of Ratios (4) | $\div$ | Number of Sales (1) | = | 100\% |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 1500\% |  | 15 |  |  |
| Weighted Ratio | $=$ | Total of Assessed Values (3) | $\div$ | Total of Sale Prices (2) | $=$ | 100\% |
|  |  | \$6,023,000 |  | \$5,997,000 |  |  |
| Average Deviation | $=$ | Total Deviations (5) | $\div$ | 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) | $\div$ | Median Ratio (4) | $=$ | 8\% |
|  |  | 8\% |  | 100\% |  |  |
| Price-Related Differential | $=$ | Average Ratio (4) | $\div$ | Weighted Ratio | $=$ | 1.00 |
|  |  | 100\% |  | 100\% |  |  |

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

## RATIO STUDY STANDARDS - VALUES TO SALE PRICES

The International Association of Assessing Officers is a professional organization of assessing officials that provides educational programs, assessment administration standards and research on appraisal and tax policy issues. The IAAO has developed numerous standards and texts on appraisal and assessment administration. Additionally, the organization is a founding member of the national 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 July of 1999. The Standard is advisory in nature. This Standard provides guidance to those performing ratio studies in the mass appraisal field regarding the design, statistics, performance measures and related issues in conducting ratio studies. The District of Columbia Real Property Tax Administration uses the fundamental ratio statistical measures of the Standard, and has adopted IAAO's Assessment Ratio Performance Standard as the criteria to judge the performance of the District's revaluations. See Table 2 below.

## Table 2

Ratio Study Performance Standards

| Type of Property | Measure <br> of Central <br> Tendency | Coefficient of <br> Dispersion | Price-Related <br> Differential |
| :--- | :---: | :---: | :---: |
| Single-Family Residential | $.90-1.10$ | 10.0 or less | $.98-1.03$ |
| Newer, homogeneous areas | $.90-1.10$ | 15.0 or less <br> 20.0 or less | $.98-1.03$ |
| Older, heterogeneous areas | $.90-1.10$ | $.98-1.03$ |  |
| Rural residential and seasonal | $.90-1.10$ | 15.0 or less | $.98-1.03$ |
| Income Producing Properties | $.90-1.10$ | 20.0 or less | $.98-1.03$ |
| Larger, urban jurisdictions | $.90-1.10$ | 20.0 or less | $.98-1.03$ |
| Smaller, rural jurisdictions | $90-1.10$ | Varies with local <br> conditions | $.98-1.03$ |
| Vacant Land | Other Real and Personal Property |  |  |

Source: Standard on Ratio Studies; International Association of Assessing Officers; Chicago, Illinois; July 1999; p.34.

Ratio studies may be performed for various reasons including appraisal accuracy and assessment equity studies, to judge the need for and management of a reappraisal, to identify problems with appraisal procedures, to assist in market analysis, and to adjust appraised 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 2004 before the date of finality of January 1, 2005, for which the FY 2006 assessments are effective. Generally, only sales that are arms-length transactions between a buyer and seller are included in the study. Sales between related parties, with financial institutions or government agencies involved, or sales with extreme ratios, which indicate abnormal transactions, have not been used in this study. An attempt was made to 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 were not. Generally, the District's ratio performance is good and conforms to the IAAO Standard.

While several measures of central tendency may be calculated (average, median, and weighted average) the median is less affected by extreme ratios. Therefore, the IAAO observes in its Standard that the median is generally the preferred measure of central tendency for monitoring appraisal 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, ratio statistics will indicate a lower assessed value/sale price ratio. This rapid escalation in property values has lowered the average ratio. However, one should review the average deviation, coefficient of dispersion, and standard deviation to assure 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 assessor appraised properties uniformly and at market value. Approximately one-half of the sales data used in this study was not available for use by the assessor in the group of properties reassessed. Assuming the assessor 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 assure quality of the mass appraisal. It was conducted on 8,219 improved residential property and 375 commercial property sales from January 1, 2004 to December 31, 2004, and compares the administration's valuations on the tax roll for FY 2006.

Table 3 summaries the Fiscal Year 2006 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 2004 real estate sales. Table 6 measures RPTA's compliance with nationally recognized assessment performance for FY 2006. Table 7 provides a summary of the sales ratio statistics, by property type, for the FY 2006 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 illustrates both good central tendency and reasonable dispersion. The measures of central tendency indicate that properties are valued at approximately $93 \%$ of sale price and that on average all other properties have very similar ratios as indicated by the $12 \%$ coefficient of dispersion.

The analysis from Table 6 and the following descriptive statistics indicate that values determined by assessors for the most recent valuation attained a uniform and appropriate level of value. It shows that of the fifty-six residential neighborhoods that were valued for FY 2006, forty-eight had a sufficient number of sales to be statistically relevant. Thirty-five of the forty-eight neighborhoods met all applicable IAAO standards for assessment performance, and six met all but one. In the case of commercial property, more weight is given to the income approach to valuation, and there are fewer sales allowing more thorough investigation.

## TABLE 3

## Fiscal Year 2006

## Residential Real Property Assessment Ratio by Neighborhood

This table shows the real property assessment ratio data for residential properties. The ratios are of arms-length sales of properties. The sales used sold between January 1, 2004 and December 31, 2004, compared with RPTA’s values effective January 1, 2005. In neighborhoods with fewer than twenty sales, the statistics may not represent actual market conditions due to the small sample size.

Type of Property: Residential

| No. | Neighborhood | No. of Sales | Average Sale Price | Median Sale Price | Median Ratio | Mean Ratio | Weighted <br> Mean <br> Ratio | Coefficient of Dispersion | Price- <br> Related Differential |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | AMERICAN UNIVERSITY | 93 | \$741,423 | \$720,000 | 96.60 | 95.20 | 94.90 | 6 | 1.00 |
| 2 | ANACOSTIA | 82 | \$167,304 | \$161,500 | 94.50 | 94.50 | 89.30 | 16 | 1.06 |
| 3 | BARRY FARMS | 53 | \$128,024 | \$125,300 | 96.90 | 97.30 | 95.90 | 9 | 1.02 |
| 4 | BERKELEY | 29 | \$1,074,397 | \$900,000 | 95.40 | 93.10 | 91.70 | 9 | 1.02 |
| 5 | BRENTWOOD | 50 | \$198,057 | \$182,500 | 83.40 | 88.10 | 85.80 | 18 | 1.03 |
| 6 | BRIGHTWOOD | 160 | \$355,889 | \$343,500 | 89.40 | 89.50 | 86.60 | 16 | 1.03 |
| 7 | BROOKLAND | 232 | \$284,514 | \$275,000 | 88.20 | 89.10 | 87.00 | 18 | 1.02 |
| 8 | BURLEITH | 40 | \$854,850 | \$682,500 | 95.60 | 96.00 | 95.20 | 7 | 1.01 |
| 9 | CAPITOL HILL | 204 | \$560,445 | \$575,000 | 95.70 | 95.50 | 94.60 | 8 | 1.01 |
| 10 | CENTRAL | 487 | \$429,249 | \$369,095 | 93.00 | 93.30 | 93.00 | 6 | 1.00 |
| 11 | CHEVY CHASE | 175 | \$730,993 | \$710,000 | 96.20 | 96.20 | 95.20 | 8 | 1.01 |
| 12 | CHILLUM | 33 | \$315,473 | \$310,000 | 90.20 | 91.30 | 89.90 | 9 | 1.02 |
| 13 | CLEVELAND PARK | 190 | \$470,148 | \$355,244 | 92.40 | 94.80 | 93.90 | 8 | 1.01 |
| 14 | COLONIAL VILLAGE | 17 | \$798,524 | \$775,000 | 92.50 | 93.50 | 93.50 | 17 | 1.00 |
| 15 | COLUMBIA HEIGHTS | 559 | \$363,164 | \$339,900 | 93.30 | 91.40 | 88.40 | 16 | 1.03 |
| 16 | CONGRESS HEIGHTS | 174 | \$161,677 | \$156,500 | 89.70 | 90.50 | 86.70 | 18 | 1.04 |
| 17 | CRESTWOOD | 18 | \$843,172 | \$790,000 | 94.70 | 91.40 | 88.70 | 11 | 1.03 |
| 18 | DEANWOOD | 240 | \$159,288 | \$158,072 | 95.00 | 95.30 | 93.80 | 12 | 1.02 |
| 19 | ECKINGTON | 130 | \$350,832 | \$339,600 | 93.50 | 90.50 | 88.40 | 15 | 1.02 |
| 20 | FOGGY BOTTOM | 92 | \$331,978 | \$249,500 | 85.80 | 88.50 | 89.70 | 11 | 0.99 |
| 21 | FOREST HILLS | 104 | \$553,670 | \$384,950 | 93.10 | 93.30 | 93.60 | 8 | 1.00 |
| 22 | FORT DUPONT PARK | 97 | \$178,892 | \$170,000 | 89.20 | 90.70 | 88.00 | 14 | 1.03 |
| 23 | FOXHALL | 23 | \$723,085 | \$701,900 | 93.10 | 91.20 | 91.20 | 6 | 1.00 |
| 24 | GARFIELD | 74 | \$550,604 | \$436,188 | 92.50 | 93.70 | 92.20 | 11 | 1.02 |
| 25 | GEORGETOWN | 277 | \$1,081,412 | \$835,000 | 95.00 | 93.60 | 92.30 | 8 | 1.01 |
| 26 | GLOVERPARK | 114 | \$496,865 | \$562,500 | 92.30 | 92.30 | 92.40 | 9 | 1.00 |
| 27 | HAWTHORNE | 12 | \$775,067 | \$697,500 | 93.60 | 95.50 | 95.80 | 7 | 1.00 |
| 28 | HILLCREST | 129 | \$210,867 | \$180,000 | 85.40 | 88.40 | 85.60 | 21 | 1.03 |
| 29 | KALORAMA | 229 | \$671,195 | \$415,000 | 92.60 | 91.80 | 91.50 | 9 | 1.00 |
| 30 | KENT | 36 | \$1,102,893 | \$902,500 | 93.70 | 90.00 | 87.80 | 11 | 1.02 |
| 31 | LEDROIT PARK | 86 | \$416,544 | \$412,750 | 93.00 | 90.70 | 88.50 | 14 | 1.02 |
| 32 | LILY PONDS | 39 | \$163,003 | \$160,000 | 91.10 | 92.60 | 91.40 | 11 | 1.01 |
| 33 | MARSHALL HEIGHTS | 85 | \$135,754 | \$135,000 | 91.80 | 91.20 | 89.80 | 9 | 1.02 |
| 34 | MASS. AVE. HEIGHTS | 12 | \$1,928,917 | \$1,512,250 | 96.00 | 97.10 | 95.10 | 9 | 1.02 |


| 35 | MICHIGAN PARK | 18 | \$315,658 | \$337,500 | 90.20 | 92.80 | 90.10 | 13 | 1.03 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 36 | MOUNT PLEASANT | 245 | \$509,437 | \$510,000 | 91.90 | 92.60 | 91.70 | 10 | 1.01 |
| 37 | N. CLEVELAND PARK | 39 | \$687,479 | \$700,825 | 94.20 | 96.10 | 94.10 | 8 | 1.02 |
| 38 | OBSERVATORY CIRCLE | 71 | \$594,752 | \$450,000 | 95.20 | 93.60 | 92.20 | 8 | 1.01 |
| 39 | OLD CITY \#1 | 924 | \$405,494 | \$362,000 | 94.60 | 92.40 | 91.00 | 13 | 1.01 |
| 40 | OLD CITY \#2 | 1,276 | \$424,701 | \$369,900 | 93.20 | 91.90 | 91.60 | 11 | 1.00 |
| 41 | PALISADES | 82 | \$559,961 | \$575,750 | 94.10 | 93.80 | 93.40 | 8 | 1.00 |
| 42 | PETWORTH | 298 | \$297,499 | \$297,250 | 88.50 | 90.90 | 88.20 | 15 | 1.03 |
| 43 | RANDLE HEIGHTS | 97 | \$148,608 | \$142,500 | 95.00 | 92.60 | 90.60 | 11 | 1.02 |
| 46 | R.L.A. (S.W.) | 127 | \$299,148 | \$262,000 | 99.10 | 97.10 | 96.20 | 11 | 1.01 |
| 47 | RIGGS PARK | 77 | \$226,321 | \$231,000 | 92.60 | 96.20 | 94.20 | 11 | 1.02 |
| 48 | SHEPHERD PARK | 35 | \$592,466 | \$600,000 | 90.60 | 91.20 | 90.70 | 12 | 1.01 |
| 49 | 16TH STREET HEIGHTS | 87 | \$506,229 | \$520,000 | 92.20 | 91.80 | 90.90 | 12 | 1.01 |
| 50 | SPRING VALLEY | 38 | \$1,485,753 | \$1,274,500 | 96.40 | 96.40 | 94.20 | 8 | 1.02 |
| 51 | TAKOMA PARK | 22 | \$280,501 | \$280,750 | 88.60 | 89.60 | 88.80 | 10 | 1.01 |
| 52 | TRINIDAD | 140 | \$220,673 | \$215,000 | 83.30 | 85.90 | 80.60 | 21 | 1.06 |
| 53 | WAKEFIELD | 56 | \$481,191 | \$356,725 | 92.20 | 91.40 | 92.10 | 11 | 0.99 |
| 54 | WESLEY HEIGHTS | 96 | \$626,531 | \$450,000 | 93.30 | 93.00 | 90.30 | 9 | 1.03 |
| 55 | WOODLEY | 12 | \$1,191,106 | \$1,155,550 | 91.80 | 88.70 | 88.10 | 12 | 1.01 |
| 56 | WOODRIDGE | 89 | \$280,242 | \$260,000 | 94.20 | 95.30 | 92.00 | 13 | 1.04 |
| 66 | FORT LINCOLN | 15 | \$179,793 | \$170,000 | 90.20 | 92.60 | 93.20 | 13 | 0.99 |

## TABLE 4

## Fiscal Year 2006

Commercial Real Property Assessment Ratio by Neighborhood
This table shows the real property assessment ratio data for commercial properties. The ratios are of arms-length sales of properties. The sales used sold between January 1, 2004 and December 31, 2004, compared with RPTA's values effective January 1, 2005. In neighborhoods with fewer than twenty sales, the statistics may not represent actual market conditions due to the small sample size.

Type of Property: Commercial

| No. | Neighborhood | No. of Sales | Average Sale Price | Median Sale Price | Median Ratio | Mean Ratio | Weighted <br> Mean <br> Ratio | Coefficient of Dispersion | Price- <br> Related <br> Differential |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | AMERICAN UNIVERSITY | 3 | \$26,450,000 | \$1,850,000 | 66.00 | 68.90 | 98.10 | 30 | 0.70 |
| 2 | ANACOSTIA | 8 | \$442,082 | \$273,750 | 84.20 | 91.90 | 100.10 | 29 | 0.92 |
| 3 | BARRY FARMS | 2 | \$3,626,500 | \$3,626,500 | 84.30 | 84.30 | 69.00 | 19 | 1.22 |
| 5 | BRENTWOOD | 11 | \$797,504 | \$555,040 | 99.00 | 97.10 | 104.00 | 20 | 0.93 |
| 6 | BRIGHTWOOD | 10 | \$1,261,000 | \$607,500 | 90.30 | 87.30 | 92.90 | 11 | 0.94 |
| 7 | BROOKLAND | 16 | \$1,149,000 | \$337,500 | 81.10 | 86.10 | 89.70 | 16 | 0.96 |
| 9 | CAPITOL HILL | 4 | \$999,750 | \$725,000 | 68.50 | 73.30 | 73.50 | 16 | 1.00 |
| 10 | CENTRAL | 38 | \$36,774,544 | \$19,650,000 | 99.60 | 93.30 | 94.80 | 8 | 0.98 |
| 11 | CHEVY CHASE | 3 | \$552,120 | \$481,360 | 100.00 | 88.30 | 97.30 | 28 | 0.91 |
| 12 | CHILLUM | 2 | \$1,233,000 | \$1,233,000 | 94.90 | 94.90 | 89.80 | 6 | 1.06 |
| 15 | COLUMBIA HEIGHTS | 35 | \$518,820 | \$400,000 | 60.30 | 70.20 | 70.90 | 32 | 0.99 |
| 16 | CONGRESS HEIGHTS | 20 | \$422,381 | \$275,000 | 75.40 | 76.80 | 69.60 | 27 | 1.10 |
| 18 | DEANWOOD | 22 | \$361,430 | \$358,750 | 72.60 | 75.80 | 73.80 | 23 | 1.03 |
| 19 | ECKINGTON | 3 | \$452,467 | \$370,000 | 81.90 | 81.10 | 76.20 | 14 | 1.06 |
| 20 | FOGGY BOTTOM | 8 | \$23,297,217 | \$1,097,500 | 97.90 | 93.10 | 91.80 | 6 | 1.01 |
| 21 | FOREST HILLS | 2 | \$10,658,240 | \$10,658,240 | 110.30 | 110.00 | 100.30 | 9 | 1.10 |
| 22 | FORT DUPONT PARK | 3 | \$187,067 | \$250,000 | 60.60 | 87.90 | 63.30 | 57 | 1.39 |
| 23 | FOXHALL | 1 | \$2,700,000 | \$2,700,000 | 60.60 | 60.60 | 60.60 | 0 | 1.00 |
| 24 | GARFIELD | 3 | \$9,400,000 | \$9,750,000 | 100.00 | 95.00 | 91.00 | 5 | 1.04 |
| 25 | GEORGETOWN | 12 | \$19,615,000 | \$1,225,000 | 75.50 | 80.00 | 97.60 | 40 | 0.82 |
| 26 | GLOVER PARK | 1 | \$928,000 | \$928,000 | 44.90 | 44.90 | 44.90 | 0 | 1.00 |
| 28 | HILLCREST | 7 | \$459,029 | \$340,000 | 53.50 | 59.90 | 62.60 | 23 | 0.96 |
| 29 | KALORAMA | 4 | \$1,321,525 | \$1,137,500 | 100.00 | 107.00 | 107.40 | 23 | 0.99 |
| 31 | LEDROIT PARK | 2 | \$317,500 | \$317,500 | 78.00 | 78.00 | 76.90 | 4 | 1.01 |
| 32 | LILY PONDS | 1 | \$350,000 | \$350,000 | 98.50 | 98.50 | 98.50 | 0 | 1.00 |
| 33 | MARSHALL HEIGHTS | 5 | \$449,780 | \$385,000 | 69.30 | 69.20 | 67.90 | 20 | 1.02 |
| 35 | MICHIGAN PARK | 1 | \$145,000 | \$145,000 | 70.30 | 70.30 | 70.30 | 0 | 1.00 |
| 36 | MOUNT PLEASANT | 10 | \$1,166,000 | \$775,000 | 100.00 | 87.90 | 88.40 | 17 | 0.99 |
| 39 | OLD CITY 1 | 47 | \$4,939,767 | \$395,000 | 68.60 | 73.20 | 93.80 | 24 | 0.78 |


| 40 | OLD CITY 2 | 59 | $\$ 1,240,834$ | $\$ 800,000$ | 77.00 | 77.00 | 75.40 | 25 | 1.02 |
| ---: | :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 41 | PALISADES | 1 | $\$ 2,300,000$ | $\$ 2,300,000$ | 75.40 | 75.40 | 75.40 | 0 | 1.00 |
| 42 | PETWORTH | 11 | $\$ 423,373$ | $\$ 390,000$ | 63.10 | 71.40 | 65.80 | 35 | 1.09 |
| 43 | RANDLE HEIGHTS | 3 | $\$ 510,000$ | $\$ 560,000$ | 55.80 | 62.60 | 67.60 | 30 | 0.92 |
| 47 | RIGGS PARK | 1 | $\$ 400,000$ | $\$ 400,000$ | 120.10 | 120.00 | 120.10 | 0 | 1.00 |
| 48 | SHEPHERD PARK | 1 | $\$ 750,000$ | $\$ 750,000$ | 132.70 | 133.00 | 132.70 | 0 | 1.00 |
| 49 | 16TH STREET HEIGHTS | 3 | $\$ 878,333$ | $\$ 325,000$ | 100.00 | 100.00 | 100.00 | 0 | 1.00 |
| 51 | TAKOMA PARK | 1 | $\$ 250,000$ | $\$ 250,000$ | 83.20 | 83.20 | 83.20 | 0 | 1.00 |
| 52 | TRINIDAD | 5 | $\$ 296,000$ | $\$ 225,000$ | 58.40 | 69.10 | 65.60 | 38 | 1.05 |
| 53 | WAKEFIELD | 1 | $\$ 1,000,000$ | $\$ 1,000,000$ | 100.00 | 100.00 | 100.00 | 0 | 1.00 |
| 56 | WOODRIDGE | 5 | $\$ 424,400$ | $\$ 450,000$ | 80.50 | 87.20 | 88.60 | 14 | 0.98 |

## TABLE 5

## HISTOGRAM OF 2006 RESIDENTIAL SALES RATIOS



## A/S RATIO

## TABLE 6

## Compliance with IAAO Ratio Study Performance Standards for FY 2006 Assessments

The International Association of Assessing Officers sets advisory standards for assessment statistics. These standards are discussed in Section III of the text. A " + " indicates compliance with the standard.

| 2006 | Residential Median Ratio | Residential Coefficient of Dispersion | Residential Price-Related Differential | Commercial Median Ratio |
| :---: | :---: | :---: | :---: | :---: |
| AMERICAN UNIVERSITY | + | + | + | $\varnothing$ |
| ANACOSTIA | + | x | x | $\varnothing$ |
| BARRY FARMS | + | + | + | $\varnothing$ |
| BERKELEY | + | + | + | $\varnothing$ |
| BRENTWOOD | X | x | + | $\varnothing$ |
| BRIGHTWOOD | x | x | + | $\varnothing$ |
| BROOKLAND | x | x | + | $\varnothing$ |
| BURLEITH | + | + | + | $\varnothing$ |
| CAPITOL HILL | + | + | + | $\varnothing$ |
| CENTRAL | + | + | + | + |
| CHEVY CHASE | + | + | + | $\varnothing$ |
| CHILLUM | + | + | + | $\varnothing$ |
| CLEVELAND PARK | + | + | + | $\varnothing$ |
| COLONIAL VILLAGE | $\varnothing$ | $\varnothing$ | $\varnothing$ | $\varnothing$ |
| COLUMBIA HEIGHTS | + | x | + | x |
| CONGRESS HEIGHTS | x | x | x | x |
| CRESTWOOD | $\varnothing$ | $\varnothing$ | $\varnothing$ | $\varnothing$ |
| DEANWOOD | + | + | + | x |
| ECKINGTON | + | + | + | $\varnothing$ |
| FOGGY BOTTOM | x | + | + | $\varnothing$ |
| FOREST HILLS | + | + | + | $\varnothing$ |
| FORT DUPONT PARK | x | + | + | $\varnothing$ |
| FOXHALL | + | + | + | $\varnothing$ |
| GARFIELD | + | + | + | $\varnothing$ |
| GEORGETOWN | + | + | + | $\varnothing$ |
| GLOVER PARK | + | + | + | $\varnothing$ |
| HAWTHORNE | $\varnothing$ | $\varnothing$ | $\varnothing$ | $\varnothing$ |
| HILLCREST | x | x | + | $\varnothing$ |
| KALORAMA | + | + | + | $\varnothing$ |
| KENT | + | + | + | $\varnothing$ |
| LEDROIT PARK | + | + | + | $\varnothing$ |
| LILY PONDS | + | + | + | $\varnothing$ |
| MARSHALL HEIGHTS | + | + | + | $\varnothing$ |
| MASS. AVE. HEIGHTS | $\varnothing$ | $\varnothing$ | $\varnothing$ | $\varnothing$ |
| MICHIGAN PARK | $\varnothing$ | $\varnothing$ | $\varnothing$ | $\varnothing$ |
| MOUNT PLEASANT | + | + | + | $\varnothing$ |
| N. CLEVELAND PARK | + | + | + | $\varnothing$ |


| OBSERVATORY CIRCLE | + | + | + | $\varnothing$ |
| :---: | :---: | :---: | :---: | :---: |
| OLD CITY \#1 | + | + | + | x |
| OLD CITY \#2 | + | + | + | x |
| PALISADES | + | + | + | $\varnothing$ |
| PETWORTH | x | + | + | $\varnothing$ |
| RANDLE HEIGHTS | + | + | + | $\varnothing$ |
| R.L.A. (N.E.) | $\varnothing$ | $\varnothing$ | $\varnothing$ | $\varnothing$ |
| R.L.A. (S.W.) | + | + | + | $\varnothing$ |
| RIGGS PARK | + | + | + | $\varnothing$ |
| SHEPHERD PARK | + | + | + | $\varnothing$ |
| 16TH STREET HEIGHTS | + | + | + | $\varnothing$ |
| SPRING VALLEY | + | + | + | $\varnothing$ |
| TAKOMA PARK | x | + | + | $\varnothing$ |
| TRINIDAD | $x$ | x | x | $\varnothing$ |
| WAKEFIELD | + | + | + | $\varnothing$ |
| WESLEY HEIGHTS | + | + | + | $\varnothing$ |
| WOODLEY | $\varnothing$ | $\varnothing$ | $\varnothing$ | $\varnothing$ |
| WOODRIDGE | + | + | $\times$ | $\varnothing$ |
| FORT LINCOLN | $\varnothing$ | $\varnothing$ | $\varnothing$ | $\varnothing$ |

$+=$ Meets IAAO Standard
$x=$ Does not meet IAAO Standard
$\varnothing=$ Insufficient data

| 2006 SALES RATIOS BY PROPERTY TYPE: CITY-WIDE |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| PROPERTY TYPE | SALES | AVE PRICE | MED PRICE | MEDIAN | MEAN | WEIGHTED | COD | PRD |
| All | 8,594 | \$ 669,207 | \$349,900 | 93.0 | 91.8 | 92.3 | 12 | . 99 |
| Residential | 8,219 | \$ 439,969 | \$342,850 | 93.1 | 92.4 | 91.5 | 12 | 1.01 |
| Commercial | 375 | \$6,381,012 | \$550,000 | 80.5 | 80.4 | 93.6 | 25 | . 86 |

