MASS APPRAISAL & RATIO STUDY

MANUAL / STANDARDS

FOR THE

DEAF SMITH COUNTY APPRAISAL DISTRICT

PO Box 2298
Hereford, TX 79045

MASS APPRAISAL* / RATIO STUDY*
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The purpose of this standard is two fold. First it will be a general guide to the appraiser and second it will be an explanation to the public on how the Deaf Smith County Appraisal District conducts appraisals and how these appraisals are tested for accuracy. This standard is not intended to be exhaustive on mass appraisal and how to conduct a ratio study. For more detailed information the appraiser should be familiar with the Mass Appraisal Concepts textbooks from the classes that the *Texas Department of Licensing and Regulation* requires, text books from the International Association of Assessing Officers (IAAO), and by the Uniform Standards of Professional Appraisal Practice (USPAP).

Definition: MASS APPRAISAL: *A standardized procedure to adjust a large number of properties to a specific date (January 1). This means that similar properties within similar neighborhoods will be appraised in the same way. Mass appraisal systems must be statistically testable.*

Definition: RATIO STUDY: *A basic test of appraisal accuracy, appraisals are compared to the actual sales price. When the appraisal is divided by the sales price, the result of a 1.00 means the appraisal matches the sales price. A result of over 1.00 means the property was over appraised, result of under 1.00 means the property was under appraised.*

(Note: When a word is followed by an "*" there will be a definition listed for that word.)

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I.   MASS APPRAISAL

A.   Goals of Appraisal. The Texas Constitutions stipulates that all property will be appraised at its market value*.

1. The State Property Tax Code 25.18 requires the appraisal district to implement a plan for periodic reappraisals. The plan must provide for the reappraisal of all real property in the district at least once every 3 years. (See the DSCAD's Reappraisal Plan.)

2. The appraisals will be accurate. An accurate appraisal comes close to 100% of market value, however, market value is not set is stone, therefore, ratios from 90% to 110% are very good and probably represent the highest degree of accuracy an appraisal district can realistically expect to attain.

3. The appraisals will be uniform. Appraisals are uniform when they do not treat one property or class of properties differently from any others. Property within a category will be appraised at approximately the same level as the others, and each category will be appraised at approximately the same level.

Definition: MARKET VALUE: *The sales price expected from an arm's length transfer between a willing buyer and a willing seller, neither under duress, both trying to maximize their gains, if the property were to be exposed on the open market for a reasonable amount of time. Market value is defined as the price of financial arrangements equivalent to cash. The vast majority of property sold in Deaf Smith County uses a down payment and borrowed money from a financial institution, thus this is the standard used in the DSCAD mass appraisal models and ratio studies.*

B.   Why use mass appraisal?

1. Mass Appraisal is Economical to Use. A good mass appraisal system produces good values for many properties at a fraction of the cost of other types of appraisal. One-at-a-time appraisals (appraisals done by fee appraisers) require a considerable amount of time to do and it is an expensive process. Many Fee Appraisers charge $300 for a residential property, also farm and commercial appraisals done by Fee Appraisers can cost thousands of dollars. The DSCAD has over 11,000 properties to appraise and these appraisals are paid for by the Schools, County and City. Therefore, appraisals have to be done cost effective, yet the public deserves an accurate and fair appraisal of their property. The appraisals done by the DSCAD using mass appraisal, costs, on the average, about $20 each.

2. Mass appraisal models are developed from the local market. Mass appraisal systems can be developed using the cost approach to value. However, it is usually preferable when the information used in mass appraisal is gleaned from sales of

the local market. This data is then applied to unsold property, for an estimated market value. Thus the appraisals are not based upon what property is selling for in another location and appraisals are not raised based upon a taxing entity's need for more money. The appraisal should be an accurate estimate of what the property would sell for in today's market.

C.   **Step One in Mass Appraisal is to analyze the local market.** This is done by collecting sales data. The DSCAD will have an ongoing process of searching for sale prices. Through the deed records, multiple listing services, sales verification letters, Fee Appraisers, Realtors and by simply asking buyers and sellers, much data can be collected. The appraisers must be aware of what affects the market. These can be (but not limited too) size, quality, condition, land, age, location and special features such as financing, fireplaces, extra bathrooms, sprinkler systems and many more.

   1.   Sampling is a very important feature of analyzing the market.

      a.   Size. The appraiser needs a proper amount of sales data to work with. Too few sales may not yield acceptable results.

      b.   Distribution. The sample of sales that are used needs to reflect the makeup of the market. If all of the sales are from one neighborhood or from one class of homes then you will not have reliable data to appraise other neighborhoods or classes of property.

      c.   Collecting data from multiple sources is critical for ratio studies, this is called randomness.

D.   **Step Two is to develop a classification system.**.

   1.   Identify neighborhoods and improvement quality classes. While no two properties will be exactly the same, many properties will have major similarities with other property, these that have similarities can be grouped together and be appraised similarly.

   2.   Typical properties are identified, these are called benchmarks*. This is sometimes called a statistical profile.

   3.   Property characteristics are noted, typical as well as atypical. Some property characteristics are measurements, quality, condition, special features, land, age, location.

Definition: BENCHMARK: *Properties that are typical of a larger class.*

E.   **Step Three is to build schedules.** Mass appraisal systems make use of three basic types of schedules: one for land, a second for improvements, and a third for depreciation.

Along with these schedules, you will also need a table of adjustments for specific property features.

1. <u>A basic schedule is developed </u>by:

    a. The data that comes from the classification system is grouped and sorted. The land value is subtracted, additives are subtracted and the remaining depreciation is corrected back to 100% good, then you divide this amount by the square feet. When this is done then specific price ranges for classes can be identified. When a specific price is identified to represent a class of property this price is called a baseline*. This is the best unit value. Then a schedule of unit values can be developed.

    b. Property characteristics, such as quality, condition, special features, age, or location can become adjustments that are to be added to the unit values of the schedule.

2. <u>Establish land values</u>. This is best done by a market study on what vacant lots are selling for. However, a ratio (or percentage) between improvements and land can be established. In any case, appraisal practice stipulates that you separate your appraisal into land value and improvement value.

3. How <u>adjustments</u> are made.

    a. Specific feature adjustments. This is usually a dollar amount adjustment. For example a class of residences may or may not have a fireplace or extra bathroom. If the market suggests that a fireplace or extra bathroom would increase the sales price then those residences with these additional features would be adjusted upward.

    b. Schedule adjustments. This would be a table of adjustments, for example, accumulated depreciation can be measured using depreciation schedules. A residence with more depreciation needs to be discounted more than a residence without so much deterioration.

        (1) A schedule can correlate size and value, as the larger the improvement is, the less price per square feet it will be.

    c. Table adjustments. This can be a modifier that can adjust a single property or a group of properties. For example this could be an adjustment for the fact that the properties in one neighborhood sell for more than the properties in another neighborhood.

        (1) The procedure for building an adjustment table is:

            (a) Calculate ratios and central tendency.

(b)   Divide 1 by the typical ratio to convert it into a multiplier. Example: $1/.86 = 1.16$ the value is then multiplied by 1.16 for an adjusted value.

4.   <u>Income mass appraisal</u>. A mass appraisal model can be developed using the income approach to value. Rental rates, expenses, interest rates, capitalization rates, and vacancy rates can be documented and used to appraise income producing property.

Definition: BASELINE: *The value that each benchmark represents.*

F.   **Step Four is to test the results using ratio Studies.** Once you have a preliminary set of schedules, you must test them with a ratio study using sales information.

1.   Two ratio studies are preformed, one using sales that occurred before the appraisal date and one using sales after the appraisal date. The results of the later sales ratio study should be the same as the first. If not then adjustments can be made. In this way appraisals can sometime be reviewed for reliability before being applied to all property.

2.   If bias* is found, it may be necessary to rebuild the schedules or to make other adjustments. Bias can arise from consistently over or under appraising properties due to incorrect adjustments for one or more of: quality, size, age/condition, location or features.

3.   To make an adjustment:

a.   Find the typical ratio (mean or median).

b.   Divide the preliminary appraisal by the typical ratio and subtract the preliminary appraisal to find the gross adjustment.

c.   Add the gross adjustment to the land or improvement for an adjusted appraisal.

d.   Make the adjustment by:

(1)   dividing the adjusted appraisal by the original appraisal then select the best modifier (mean). Then find the schedule value and multiply it the modifier.

(2)   or, divide the adjusted land or improvement value by the square feet then select the best value per/sqft for a new value in your schedule.

Definition: BIAS: *Systematic deviation from a desired result. In other words, when something is consistently wrong with the schedules producing wrong results.*

(This ends the section on Mass Appraisal. The next section is on how to conduct a Ratio Study.)

II. RATIO STUDY

A. Uses of Ratio Studies.

1. Ratio studies provide a means for evaluating the accuracy and uniformity of appraisals as well as to test the present appraisal system.

2. Ratio Studies are used by the Appraisers to determine the need for adjustments to appraisals or for a general reappraisal.

3. The Appraisal Review Board can use ratio studies to determine if property is being appraised fairly.

4. The Property Tax Division of the Comptroller's office uses its own ratio study. Every other year the PTD checks the performance of the DSCAD with a ratio study and this study is then used by the Texas Education Agency to provide state funds to the Independent School Districts in Deaf Smith County.

B. Collection and Preparation of Market Data. Sales data should be verified and adjusted as necessary. Adjustments can be for financing, personal property and time of sale or for any other situation that is not typically found in market sales. Sales should be excluded from the ratio studies that are not valid indicators of market value. For example a repossessed property, a sale among relatives or a sale with unusual financing may not be true market sales. Care should also be given to the characteristics of the property at the time of sale. For example, if someone buys a house and immediately adds on to the property and the appraiser comes by at a later time, he could mistake the sales price for the property as he now sees it.

1. Sampling. Ratio studies use a sample of properties, for example, those that have sold during a specified period, to draw conclusions about the overall accuracy of appraisals. The sample must be representative of the population.

2. Defining Neighborhoods. Often property can be stratified according to age, type and value range. This aids in treating similar properties the same.

3. Photographs of Sales Used. This helps in maintaining the consistency of classes and adjustments.

4. Adequacy of Samples. For a ratio study to be effective, there must be similarity between properties in the sample and the population.   The larger the sample, the greater the reliability of the ratio study.

5. Period from Which Sales are Drawn. Sales used in a ratio study will be the most current available. Typically, for a revaluation, sales from the past 2 years will be

used. However, if sales are few then data can be gathered from prior years, commercial property for example, will require additional years of sales data.

6.   Sources of Sales Data. Sales information must be acquired, confirmed and screened. It will be important to get the total amount paid for the property, the relationship of buyer and seller, they type of transfer (gift, foreclosure, probate) time on the market, interest transferred, type of financing and if any other property was included in the sale.

   a.   Multiple listing services, deeds, contacting the buyers and seller directly, and third party sources are excellent ways of acquiring sales data.

      (1)   Texas does not have laws requiring full disclosure of sales data and this puts an appraisal district under a severe handicap, as much time, effort, and resources are spent in acquiring sales data.

7.   Confirming Sales. The primary way the DSCAD confirms sales is by sales verification letters sent to the buyers and/or seller, also by contacting the seller and/or buyer by telephone. Every effort is made to find and include market sales in the ratio studies. The appraisers must use good judgment in screening sales.

8.   Invalid Sales. The following types of sale MAY be excluded from ratio studies.

   a.   Government agencies. Examples: Sheriff deeds, tax deeds, HUD, FHA and others.

   b.   Charitable, religious organizations.

   c.   Financial institutions. Especially where the financial institution is the seller and the lender.

   d.   Relatives, estate settlements, business associates.

   e.   Forced sales.

   f.   Trades, partial interests and contracts.

9.   Adjustments to Sales Prices.

   a.   Sometimes a sales price may need to be adjusted (if not thrown out) when there is out of the ordinary financing. For example, when the seller and lender are the same and the financing is not at market rates. One also has to be careful with assumptions and "points."

   b.   Adjustments for date of sale. Sales should be monitored for changes in price levels over time. Market analysis needs to be done so that an

appraiser knows if the market is appreciating or depreciating. An older sale can be used but it may need to be adjusted for time.

    (1)   This can be done by tracking sales and ratios over time.

    (2)   Analyzing resales (although one has to be careful that a remodel was not done between sales).

    (3)   Comparing values over time in neighborhoods.

10.   <u>Outlier Ratios</u>. These are very low or high ratios. They may have resulted from errors in the appraisals or they may be unrepresentative sales. These should be subjected to additional scrutiny. If a sale is found to be invalid then the sale should be excluded.

    a.   If outliers are concentrated in certain areas or classes of property then they point to a bias in the appraisal process and should be included in the ratio study.

    b.   However, sometime a property simply sells over or under market value. These sales can sometime be trimmed from the ratio study. Some use up to a 5 percent exclusion of outliers. The DSCAD may use this or other amount deemed appropriate.

    c.   Basis for excluding outliers.

        (1)   Five percent exclusion.

        (2)   If a property can be proved by other sales that it is not typical of market value then the outlier can be excluded. For example, if a property sells for $40 per sqft and the appraiser has readily at hand, several other comparable sales for, say $35 per sqft, then the outlier can be discounted from the ratio study, so as to not skew the conclusions and adjustments arising from the study.

C.   Statistical Analysis. A ratio is calculated for each property in the study. This is done by taking the appraisal and dividing it by the sales price. Measures of appraisal level and uniformity is then calculated.

1.   Measures of Central Tendency*. These relate to the overall **level** (or accuracy) of appraisal. This level appraisal should be figured for the overall district, each category of property as well as each stratum.

    a.   Median. When all of the ratios are arrayed* in ascending order the exact middle ratio is the median ratio. (If there are an even amount of ratios then the two middle ratios are averaged.)

(1) The Property Tax Division of the Comptroller's office conducts an annual ratio study on appraisal districts, this study uses the median for reporting appraisal districts performance.

b. Mean. This is the average of all of the ratios.

c. Weighted Mean. The sum of the appraised values is divided this by the sum of sales prices.

(1) The Property Tax Division of the Comptroller's office conducts an annual ratio study on school districts; this study uses the weighted mean. This weighted mean is then reported to the Texas Education Agency for use in the school funding formula.

d. The standard for the selected measure of central tendency should fall in the range of .90 to 1.10.

Definition: MEASURE OF CENTRAL TENDENCY: *A statistically derived number that represents a larger group of numbers. An indicator of the most representative observation in a set of observations.*

Definition: ARRAY: *A ranking of a set of numbers in order from low-to-high or high-to-low.*

2. Measure of **Uniformity**. A median, mean or weighted mean could calculate at a 1.00 and at first glance look like the appraisal district is doing a very good job of appraising. However, the appraiser needs to look deeper to see if the appraisals are uniform. For example a ratio study of 100 sales with 50 sales appraised at 75% of market value and 50 sales at 125% of market value will have mean of 1.00. The average is good but all the appraisals are not accurate and, more importantly, not uniform. Thus a test is needed to determine if the appraisals are uniform. The most common test for uniformity is to calculate a Coefficient of Dispersion* (COD).

Definition: COEFFICIENT OF DISPERSION: *Measures the average percentage of deviation of the ratio from the central tendency.*

a. The steps to calculate a COD are as follows:

(1) Subtract the central tendency (median, mean, wt. mean) from each ratio.

(2) Make each ratio a positive number. (Absolute value*.) Total these differences.

(3) Divide the total absolute difference by the number of ratios.

(4)   Divide by the C.T. and multiply by 100. (See chart.)

b.   How to interpret a COD.

(1)   For residential property the DSCAD's goal is for the COD to be 10.00. The number of 10 would indicate that the <u>majority</u> of the appraisals are uniform. If the COD for all residential property or a class or strata approaches 20.00 then a reappraisal should be conducted to make the appraisals more uniform.

(2)   For commercial property a COD of 15.00 is the goal of the DSCAD. If the COD is more than 20.00 then a revaluation in necessary.

Definition: ABSOLUTE VALUE: *The absolute value of a negative number is that number without the negative sign.*

3.   <u>Additional test for uniformity</u> is the **Price Related Differential** (PRD). When low value properties are appraised at greater percentages of market value than high value property, this bias is called *regressivity*. When low value properties are appraised at smaller percentages of market value than high value properties this bias is called *progressivity*.

a.   To test for this, take the mean and divide it by the weighted mean. If the answer is above 1.00 then this would indicate regressivity. A measure below 1.00 suggests progressivity.

(1)   The range for DSCAD is .98 to 1.03, anything outside of this range would warrant a reappraisal.

4.   <u>Sample Size, Remedies for Inadequate Samples</u>. It has been suggested that the appraiser use math formulas to select a sample size. However, with Deaf Smith County and Hereford being a small community, it has been more practical to use a universe of sales. Then the appraiser will let the ratio study speak for itself on whether any conclusions can reasonably be drawn from the data. Sometimes there is not enough information to draw any definite conclusions, in these cases it would be best to wait for more sales. Practice has shown that the DSCAD has to rely upon 2 years of sales date for enough information to make adjustments on our residential appraisals (if the need arises, we can use older sales). If property values are not changing rapidly, commercial property, farm and ranch may require 3 to 5 years of sales information.

5.   Where practical, <u>graphs, scatter diagrams and charts</u> may be developed.

6.   <u>Confidence intervals</u> may be calculated as additional checks for uniformity.

D. Evaluation and Use of Results. A ratio study is a powerful tool for analyzing appraisals and for identifying areas that need improvement. The results can help the appraisal district to direct it's priorities and resources.

    1. The ratio study will be an honest study. Sales will not be pulled out simply to have a better study. The ratio study will be a tool to identify and correct appraisal bias.

    2. The results of the study will be applied to all properties, that the ratio study was intended to examine, without prejudgments. In other words, if a ratio study shows that adjustments need to be made, whether up or down, then the appraiser will make these adjustments without any favoritism.

    3. Care should be given that sold properties and unsold properties be treated the same. Unequal appraisals between these two groups (sales chasing) is not policy of the DSCAD and appraisers will check for this bias.

    4. Of course, the ratio study is simply a tool that the appraiser uses. His own judgment and common sense should be exercised when evaluating a ratio study and acting on the results.

E. Frequency of Analysis. Ratio studies should be conducted yearly. This will allow problems to be recognized and corrected before they become serious.

    1. After a revaluation, another ratio study should be conducted to see if the results are consistent with the intent.

F. Documentation. Good records should be kept. The ratio studies, conclusions, steps taken to correct potential problems, any charts and supporting data should be kept to refer back to for defending the appraisals.

G. Training. Appraisers who conduct ratio studies will take the Mass Appraisal course required for Registered Professional Appraisers as stipulated by the Board of Tax Professional Examiners.

H.   Examples and Charts. See attached.

1.   The first spreadsheet (TITLE: HEREFORD ISD) is a ratio study on sales in a recently mass appraised neighborhood and for single family residences.

    a.   The sales have been screened and confirmed, they have been stratified into 5 divisions.

    b.   Central tendencies and coefficient of dispersions have been figured for all sales as well as for each strata. All central tendencies are between .90 and 1.10, all CODs are close to or below the goal of 10.00.

    c.   A Price Related Differential has been calculated and has fallen into the acceptable range of .98 to 1.03.

    d.   This ratio study shows that the majority of appraisals are accurate and uniform. Thus the last mass appraisal was a good reappraisal. No reappraisal or adjustments are needed at this time.

    e.   However, the appraisal district would do well to keep an eye on strata #1 as it's COD is higher than, and the ratio is lower than, the other stratum.

2.   The 2nd spreadsheet (TITLE: SALES SINCE THE REAPPRAISAL) is a ratio study on sales in another neighborhood that was reappraised two years ago.

    a.   One can see warning signs in the results of this ratio study.

        (1)   As the appraiser looks at the overall central tendency, the mean at 1.07 (while it is within the range of .90 to 1.10) seems high. However, when you look at the mean for strata 1 the mean is 1.19 this is too high.

        (2)   In examining the COD, the overall COD of 16 to 17 is within acceptable limits, but it too seems high. When the COD of each strata is looked at, then one observes that the first two stratum are too high.

        (3)   The PRD is outside of the acceptable range of .98 to 1.03. The PRD is 1.04 which shows regressivity, (That is, when low value properties are appraised at greater percentages of market value than high value properties).

    b.   As the appraiser examines the sales data, the most bias is shown to be in the appraisals of Class "3" residences (see spreadsheet TITLE: CLASS 3).

(1)   For the Class 3 sales the mean is 1.18 and the COD is 23.49. This class of residences should be reappraised. Most of the time and resources should be spent in correcting the appraisals in this category.

(2)   Notice that on the spreadsheet TITLE: SALES SINCE THE REAPPRAISAL WITHOUT CLASS 3, the other classes seem to be fine. All others have mean of 1.03 and a COD of 11.31 with a good PRD of 1.01. A minimal amount of time and resources can be spent on these categories.

Hereford ISD
Category A Single-Family Residential

Prop.id	sale price	Land	Imps.	Appr.	Ratio	Abs Dev			
R1556	10,000	2,140	11,990	14,130	1.41	0.42	Strata 1		
R4844	23,000	2,000	15,700	17,700	0.77	0.23			
R2030	15,000	1,750	17,260	19,010	1.27	0.27	Strata 2		
R4519	20,000	4,000	15,540	19,540	0.98	0.02	Wt. Mean		0.94
R4056	22,000	2,900	19,800	22,700	1.03	0.04	COD		11.28
R1051	31,000	2,800	21,310	24,110	0.78	0.22			
R1236	26,500	2,400	24,110	26,510	1.00	0.00			
R4009	30,548	2,400	26,040	28,440	0.93	0.08			
R6012	32,311	3,100	29,340	32,440	1.00	0.01			
R6366	40,000	3,200	31,170	34,370	0.86	0.14	Strata 3		
R4729	45,000	3,750	31,740	35,490	0.79	0.21	Wt. Mean		1.00
R6316	38,000	3,650	33,400	37,050	0.98	0.02	COD		6.98
R6032	36,000	3,100	36,060	39,160	1.09	0.09			
R4747	37,000	4,000	36,370	40,370	1.09	0.10			
R2732	41,741	9,120	32,870	41,990	1.01	0.01			
R2263	39,950	4,380	40,010	44,390	1.11	0.12			
R6337	45,000	3,600	41,370	44,970	1.00	0.00			
R4471	48,000	2,400	44,140	46,540	0.97	0.03			
R5916	48,000	5,400	44,220	49,620	1.03	0.04			
R6298	55,000	3,750	48,460	52,210	0.95	0.05			
R1041	48,500	3,600	50,040	53,640	1.11	0.11			
R2363	54,000	3,130	51,590	54,720	1.01	0.02			
R3141	53,000	8,370	47,300	55,670	1.05	0.05	Strata 4		
R6260	59,505	9,920	47,810	57,730	0.97	0.03	Wt. Mean		1.01
R7714	35,000	14,640	43,470	58,110	1.66	0.66	COD		9.36
R2721	58,500	15,340	44,600	59,940	1.02	0.03			
R3350	59,845	6,000	54,870	60,870	1.02	0.02			
R6258	67,450	5,600	59,170	64,770	0.96	0.04			
R2326	68,000	5,340	60,740	66,080	0.97	0.02			
R3021	75,000	10,080	57,130	67,210	0.90	0.10			
R2785	81,000	10,340	61,350	71,690	0.89	0.11			
R4572	71,000	4,000	68,060	72,060	1.01	0.02			
R3314	76,000	8,000	68,470	76,470	1.01	0.01			
R6664	76,674	9,820	71,750	81,570	1.06	0.07			
R3484	95,000	9,520	75,570	85,090	0.90	0.10	Strata 5		
R6697	85,500	9,180	77,150	86,330	1.01	0.01	Wt. Mean		0.99
R6658	96,000	10,810	79,100	89,910	0.94	0.06	COD		3.12
R6831	92,600	9,060	82,320	91,380	0.99	0.01			
R6587	91,000	9,500	82,390	91,890	1.01	0.01			
R25575	103,000	5,000	101,040	106,040	1.03	0.03			
R2802	116,000	9,050	105,640	114,690	0.99	0.01			
R3542	121,500	11,000	107,090	118,090	0.97	0.02			
R7218	153,000	10,000	143,250	153,250	1.00	0.01			
R2816	154,000	8,520	146,620	155,140	1.01	0.01			
44	2,675,119	275,660	2,387,420		44.52	3.63			

Median	1.01	
Wt.mean	1.00	
COD	8.28	
PRD	1.02	

Sales Since the Reappraisal

Prop.ID	Class	GD	sqft	%gd	Sale Date	Appraisal	Sales price	$/sqft	Ratio	Abs.Dev
26 R1061	4F	.2	940	75	03/18/99	24,110	31,000	32.98	0.78	0.29
11 R1166	3F	.8	1244	75	06/10/99	25,240	13,000	10.45	1.94	0.87
49 R2131	4M	.0	1484	65	12/18/98	25,520	26,000	17.52	0.98	0.09
21 R1066	3F	.8	1404	75	X	25,650	29,900	21.30	0.66	0.21
46 R5169	4F	.5	1101	70	07/02/99	25,940	20,000	18.17	1.30	0.23
19 R1747	3F	.0	834	65	03/04/99	26,170	25,000	29.98	1.05	0.02
15 R2182	4M	.5	950	75	11/08/99	28,820	30,000	31.58	0.89	0.18
47 R2344	4M	.0	1215	75	10/05/98	26,880	27,500	22.63	0.98	0.09
45 R1519	3F	.8	1572	65	11/17/99	28,570	34,000	21.63	0.84	0.23
48 R2350	4M	.8	1040	75	07/09/99	29,860	34,000	32.69	0.88	0.19
8 R1961	4M	.5	1387	75	08/24/98	30,850	38,855	28.01	0.79	0.28
43 R10940	4F	.5	1296	75	07/23/98	31,170	31,500	24.31	0.99	0.08
23 R1028	5M	.0	1635	80	12/04/98	45,960	49,475	30.26	0.93	0.14
61 R5966	5M	.0	934	85	06/23/99	47,990	48,000	51.39	1.00	0.07
36 R5916	5M	.2	1456	75	09/09/98	49,620	48,000	32.97	1.03	0.04
57 R2286	5M	.0	1574	75	08/02/99	50,440	52,000	33.04	0.97	0.10
56 R2287	5M	.2	1531	80	09/03/98	51,880	48,500	31.68	1.07	0.00
25 R1041	5M	.5	1695	75	06/15/98	53,640	48,500	28.61	1.11	0.04
34 R2363	5M	.3	1839	80	06/09/98	54,720	54,000	29.36	1.01	0.06
39 R10420	5M	.2	1673	85	11/15/99	56,250	52,500	31.38	1.07	0.00
62 R1183	5F	.2	1228	75	10/01/98	57,760	65,000	52.93	0.89	0.18
22 R26187	4F	.0	1593	75	10/25/99	64,470	60,120	37.74	1.07	0.00
59 R2328	5M	.2	2275	80	03/25/99	66,060	68,000	29.89	0.97	0.10
53 R1047	5M	.6	2307	80	11/10/99	75,900	61,000	26.44	1.24	0.17
48						1,658,810	1,619,861		51.34	8.15

Strata 1	
Mean	1.19
COD	28.99
Strata 2	
Mean	1.02
COD	25.61
Strata 3	
Mean	1.03
COD	13.57
Strata 4	
Mean	1.03
COD	7.70

Median	1.00
Mean	1.07
Wt. Mean	1.02
Median COD	17.03
Mean COD	15.87
Wt. Mean COD	16.58
PRD	1.04

Class 3

	Prop.ID	Class	GD	sqft	%gd	Sale Date	Appraisal	Sales price	$/sqft	Ratio	Abs.Dev
44	R1688	3F	.8	1736	10	01/25/99	· 7,490	10,500	6.05	0.71	0.38
10	R1421	3F	.5	845	55	02/24/99	19,360	25,000	29.59	0.77	0.32
45	R1519	3F	.8	1572	65	11/17/99	28,570	34,000	21.63	0.84	0.25
21	R1066	3F	.8	1404	75	X	25,650	29,900	21.30	0.86	0.23
31	R1555	3F	.8	1001	70	X	18,830	18,500	18.48	1.02	0.07
19	R1747	3F	.0	834	65	03/04/99	26,170	25,000	29.98	1.05	0.04
1	R1464	3F	.5	696	55	04/20/99	12,600	12,000	17.24	1.05	0.04
3	R1261	3M	.8	1113	65	07/12/99	21,640	19,500	17.52	1.11	0.02
33	R1642	3F	.8	1200	65	03/04/99	21,310	19,000	15.83	1.12	0.03
6	R1359	3F+	.8	1034	75	01/29/99	33,740	30,000	29.01	1.12	0.03
12	R1459	3F	.8	1140	75	10/04/99	22,860	19,000	16.67	1.20	0.11
9	R1434 R1	3M	.5	816	55	11/12/98	17,320	10,000	12.25	1.73	0.64
20	R1704	3F	.5	1518	55	07/09/99	19,360	10,000	6.59	1.94	0.85
11	R1166	3F	.8	1244	75	06/10/99	25,240	13,000	10.45	1.94	0.85
14							300,140	275,400		16.47	3.87

Median		1.08
Mean		1.18
Wt. Mean		1.09
Mean COD		23.49
Wt. Mean COD		25.35

Sales Since the Reappraisal - Without Class 3

Prop.ID	Class	GD	sqft	%gd	Sale Date	Appraisal	Sales price	$/sqft	Ratio	ABS.DEV.
2 R1923	2F	.8	912	40	06/24/98	9,420	7,500	8.22	1.26	0.23
18 R1491 R1	2F	.8	856	50	01/15/99	20,440	16,000	18.69	1.28	0.25
22 R26187	4F	.0	1593	75	10/25/99	64,470	60,120	37.74	1.07	0.05
7 R1397	4F	.0	840	70	07/09/99	21,190	19,000	22.62	1.12	0.09
26 R1061	4F	.2	940	75	03/18/99	24,110	31,000	32.98	0.78	0.25
43 R10940	4F	.5	1296	75	07/23/98	31,170	31,500	24.31	0.99	0.04
51 R6366	4F	.5	1258	80	07/02/98	34,370	40,000	31.80	0.86	0.17
50 R6012	4F	.5	1417	70	06/01/98	32,440	32,311	22.80	1.00	0.02
46 R5169	4F	.5	1101	70	07/02/99	25,940	20,000	18.17	1.30	0.27
24 R1042	4F	.8	1522	75	08/03/98	37,690	38,000	24.97	0.99	0.03
17 R6032	4F+	.5	1134	85	12/31/98	39,160	36,000	31.75	1.09	0.06
49 R2131	4M	.0	1484	65	12/16/98	25,520	26,000	17.52	0.98	0.04
47 R2344	4M	.0	1215	75	10/05/98	26,880	27,500	22.63	0.98	0.05
32 R1680	4M	.2	1640	70	10/22/98	33,710	25,000	15.24	1.35	0.32
15 R2182	4M	.5	950	75	11/08/99	26,820	30,000	31.58	0.89	0.13
42 R5270	4M	.5	1226	85	08/31/99	33,550	35,000	28.55	0.96	0.07
13 R6351	4M	.5	1305	75	04/09/99	36,200	39,950	30.61	0.91	0.12
8 R1961	4M	.5	1387	75	06/24/98	30,850	38,855	28.01	0.79	0.23
48 R2350	4M	.8	1040	75	07/09/99	29,860	34,000	32.69	0.88	0.15
58 R2283	4M	.8	1671	75	03/02/99	44,390	39,950	23.91	1.11	0.09
14 R2159	4M	.8	1297	80	06/25/99	38,060	41,800	32.23	0.91	0.12
37 R5904	4M+	.5	1074	80	11/03/99	36,280	43,000	40.04	0.84	0.18
54 R1661	5F	.0	1922	75	08/05/99	45,890	37,000	19.25	1.24	0.21
62 R1183	5F	.2	1226	75	10/01/98	57,780	65,000	52.93	0.89	0.14
61 R5988	5M	.0	934	85	06/23/99	47,990	48,000	51.39	1.00	0.03
57 R2288	5M	.0	1574	75	08/02/99	50,440	52,000	33.04	0.97	0.06
23 R1028	5M	.0	1635	80	12/04/98	45,960	49,475	30.26	0.93	0.10
39 R10420	5M	.2	1673	85	11/15/99	56,250	52,500	31.38	1.07	0.05
56 R2287	5M	.2	1531	80	09/03/98	51,880	48,500	31.68	1.07	0.04
59 R2328	5M	.2	2275	80	03/25/99	66,080	68,000	29.89	0.97	0.05
38 R5916	5M	.2	1456	75	09/09/98	49,620	48,000	32.97	1.03	0.01
34 R2363	5M	.3	1839	80	06/09/98	54,720	54,000	29.36	1.01	0.01
25 R1041	5M	.5	1695	75	06/15/98	53,640	48,500	28.61	1.11	0.06
53 R1047	5M	.6	2307	80	11/10/99	75,900	61,000	26.44	1.24	0.22
34						1,358,670	1,344,461		34.87	3.95

Median	1.04
Mean	1.03
Wt. Mean	1.01
Median COD	11.16
Mean COD	11.31
Wt. Mean COD	11.48
PRD	1.01