

MINUTES OF THE Senate COMMITTEE ON Assessment and Taxation

The meeting was called to order by Senator Fred A. Kerr at  
Chairperson

12:00 noon ~~XXXXXX~~ on Wednesday, February 27, 1985 in room 526-S of the Capitol.

All members were present except:

Senator Bud Burke (Excused)  
Senator Robert Frey (Excused)

Committee staff present:

Tom Severn, Research Department  
Melinda Hanson, Research Department  
Don Hayward, Revisor's Office  
LaVonne Mumert, Secretary to the Committee

Conferees appearing before the committee:

Dean McQuown, International Association of Assessing Officers

Dean McQuown testified that he is the Director of Research and Technical Services for the International Association of Assessing Officers, an organization of 8,500 members headquartered in Chicago. He said they offer their services to state and local agencies in assisting with evaluation functions and reappraisal plans. They also provide consulting for many other aspects of property tax assessment administration and conduct training programs. Mr. McQuown distributed copies of Standard on Mass Appraisal of Real Property (Attachment 1) and Understanding Real Property Assessment (Attachment 2). He advised not rushing a reappraisal process and said they usually consider it to be a 5-6 year process. He characterized the reappraisal process as a great opportunity to evaluate the procedures currently used, to more effectively serve the people, to conserve resources and to create a data base. Mr. McQuown stated that the computer is a "natural" in assessment administration.

Mr. McQuown described the reappraisal in progress in West Virginia which was court-ordered. Some 1.2 million parcels are being reappraised in a 2 1/2 year period at a cost of 34 million dollars, which also includes a mapping program. Some of the counties had not been reappraised for 30 years and others were fairly current. The plan is to completely reappraise 32 of the 55 counties (at a cost of \$25 per parcel), to trend values in about 11 counties (at a cost of \$8 to \$10 per parcel) and to manually inspect another groups of counties (at a cost of \$15 per parcel). He said the bulk of the work is being done by non-local people because the counties were not free to hire their own firms. There was an advisory committee that selected the contract firm. Each jurisdiction has the option of utilizing a micro computer. The state has a certification program to keep the assessments in line. There is also a 10-year phase-in plan.

Mr. McQuown answered questions from Committee members. Senator Hayden asked what method can be used to reflect changes in valuations during the reappraisal period. Mr. McQuown said it would probably be best to maintain the existing system during that period of time. He told the Committee that his organization feels that the assessment function is a local function and that property tax is a local tax and should be controlled locally. He said he does not think it is possible to keep assessments up to date without computer assistance. He stated that many problems in this area are a result of a poor base. Mr. McQuown noted that with a phase-in plan it is true that the values will be off because of inflation and other factors at the end of the phase-in, but said all values will be off in proportion to each other because there is an equitable base. Mr. McQuown agreed that some classes may accelerate and noted that is the problem with setting a base year. He believes the values should be changed each year as the market warrants.

Mr. McQuown also answered questions from the audience. The appraisal process in Florida was briefly described. The county appraisers are elected and their budgets must be approved by the Department of Revenue. They are required to use computer systems that are compatible with the state system. The state performs a sales ratio study on the individual counties and can order a county to comply.

CONTINUATION SHEET

MINUTES OF THE Senate COMMITTEE ON Assessment and Taxation,  
room 526-S, Statehouse, at 12:00 ~~a.m.~~ XXXXXX on Wednesday, February 27, 1985

Mr. McQuown concluded his presentation by pointing out that the state - local problem exists everywhere. He said that, generally, interior inspections are not cost effective and that data mailers and exterior inspections can be very valuable.

Senator Mulich moved that the minutes of the February 26, 1985 meeting be approved. Senator Thiessen seconded the motion, and the motion carried.

Meeting adjourned.



# STANDARD ON MASS APPRAISAL OF REAL PROPERTY

Approved March 1984

## **International Association of Assessing Officers**

The assessment standards set forth herein represent a consensus of thought in the assessing field and have been adopted by the Executive Board of the International Association of Assessing Officers. The objective of these standards is to provide a systematic means by which assessing officers can improve and standardize the operation of their offices. The standards presented here are advisory in nature, and the use of, or compliance with, such standards is purely voluntary.



## Acknowledgments

Work on this standard began in 1983 under the direction of Robert J. Gloudemans, a member of the International Association of Assessing Officers' Assessment Standards Committee. Elmer A. Cronk, CAE, was then Chairman of the Committee. At the time of adoption of the standard by the IAAO Executive Board, the Assessment Standards Committee was composed of Michael L. Austin, RES, Chairman; Lyle H. Ask; James H. Dupont; Chester L. Henderson; Rene Gagne; Robert J. Gloudemans; and David K. Siefkas, RES. Dean A. McQuown provided staff support and Elvira Sorgine created the typescript.

Development of the standard benefited from the recommendations of many people. In particular, the committee would like to thank Richard R. Almy; Barbara Brunner; Robert M. Clatanoff; Eugene P. Davey, CAE; Robert C. Denne; Jerry Knight; and Josephine Lim for their thorough review of drafts of the standard.

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# STANDARD ON MASS APPRAISAL OF REAL PROPERTY

## 1. Scope

This standard presents information and recommendations on various aspects of the mass appraisal of real property for ad valorem tax purposes. Appraisals made on an other-than-market-value basis or on an individual basis are outside the scope of this standard.

## 2. Introduction

**2.1 Market Value Standard.** State<sup>1</sup> statutes require assessing officers annually to establish assessed values for all taxable parcels in their jurisdictions. In general, assessed values are defined as market values or stated percentages thereof, with the percentages sometimes dependent upon the use or classification of properties.

Market value is defined as “the most probable price expressed in terms of money that a property would bring if exposed for sale in the open market in an arm’s-length transaction between a willing seller and a willing buyer, both of whom are knowledgeable concerning all the uses to which it is adapted and for which it is capable of being used.”<sup>2</sup> Most statutes define market value in similar terms, although the concept may be called “true value,” “actual value,” “full cash value,” etc.

A few states have laws requiring all real property to be assessed on a basis other than current market value. In most of these states, assessed values are generally constrained by their value in a “base year.” Such laws distort the relationship between assessed values and current market values and are to be discouraged.<sup>3</sup>

In addition, most states have laws allowing qualifying properties (usually farmland) to be assessed on a special, non-market value basis, such as use value.

**2.2 Mass Appraisal.** In general, appraisal for assessment is mass appraisal. Mass appraisal is the process of valuing a universe of properties as of a given date, utilizing standard methodology, employing common data, and allowing for statistical testing.<sup>4</sup> For the determination of a parcel’s value, assessing officers must rely upon valuation equations, tables, and schedules developed through mathematical analysis of market data.

Properly done, the development, construction, and use of a mass appraisal system results in a valuation system characterized by accuracy, uniformity, and low per-parcel costs. Except in special cases, individual analyses and appraisals of properties are not practical for ad valorem tax purposes.

The objective of mass appraisal is to produce high-quality property valuations quickly and at low cost. This requires the integration of good data, skilled personnel, and modern technology into a single, harmonious system. The ready availability of computers has greatly expanded the capabilities of the assessor’s office and has created the expectation of better valuations at equal or reduced real costs per parcel. The

assessor must blend modern technology with sound appraisal practices so as to provide the public with a modern, efficient system of property valuation.

This standard describes a modern, cost-effective mass appraisal system. Section 3 focuses on the collection and maintenance of property data. Section 4 summarizes the primary considerations in valuation methodology, including the role of the three approaches to value in the mass appraisal of various types of property. Section 5 discusses certain managerial considerations: staff levels, data processing support, contracting for reappraisals, support of valuations, and benefit-cost issues.

## 3. Collecting and Maintaining Property Data

**3.1 Overview.** Effective procedures for collecting and maintaining adequate property data (i.e., data on property ownership, location, size, use, physical characteristics, sales prices, rents, costs, and operating expenses) should be established. Property data constitute the foundation of a mass appraisal system, for accurate current data are essential to the uniform valuation of property. In addition, property data are needed for performance audits, defense of appeals, public relations, and management information.

**3.2 Geographic Data.** Assessment maps are generally used to show the location and configuration of parcels. Assessors should maintain assessment maps covering the entire jurisdiction, and maps should be prepared according to current standards of detail and accuracy.<sup>5</sup> Without current assessment maps, assessing officers cannot easily know whether all parcels in the jurisdiction have been accounted for and where each parcel is located. Assessment maps are also helpful in displaying the size of parcels, land uses, and various other land-related data. In addition, maps can be used to plot property data (e.g., sales data), to assist in market analyses, and to help organize management planning and work assignments. A unique parcel identifier should be displayed for each parcel outlined in an assessment map. Parcel identifiers are used to link various assessment records to the parcel in question.

**3.3 Sales Data.** A file of sales data should be maintained. Real estate transfer data are essential to an effective appraisal system. Sales data are required in all applications of the sales comparison approach; in the development of market-based depreciation schedules in the cost approach; and in the derivation of overall rates, income multipliers, discount rates, equity yield rates, and equity dividend rates in the income approach.<sup>6</sup>

**3.4 Income and Expense Data.** Income and expense data should be collected for income-producing property, as these data are required in the application of the income approach to value.<sup>7</sup> (See section 4.3.)

**3.5 Property Characteristics Data.** The assessor should collect and maintain sufficient property characteristics data for classification, valuation, and other purposes. Accurate valuation of real property by any method requires physical descriptions of land and building characteristics.

**3.5.1 Selection of Property Characteristics Data.** The determination of the set of property characteristics data to be collected and maintained should be made by giving consideration to: (1) the factors that influence the market in the locale in question, (2) the requirements of the valuation methods that will be employed, (3) the requirements of classification and property tax policy, (4) the requirements of other governmental and private users, and (5) the marginal benefits and costs of collecting and maintaining each particular property characteristic.

Determining what property characteristics data to collect and maintain for a mass appraisal system is a crucial decision with long-term consequences. Valuation programs are limited by available data. At the same time, data collection and maintenance are usually the most costly aspects of a mass appraisal system. Collecting data that are of little importance in the assessment process should be avoided unless another governmental or private need is clearly demonstrated.

A pilot program is one means of evaluating the benefits and costs of collecting and maintaining a particular set of property characteristics. In addition, much can be learned from studying the data used in successful mass appraisal systems in other jurisdictions.<sup>8</sup>

In some instances, the choice of data is largely dictated by prior actions concerning valuation software, such as the purchase of a vendor-supplied mass appraisal system or the use of in-house software that is already in place. In such cases, the data must be tailored to the software, unless the software is to be replaced or modified. Depending on the structure of the data files and the nature of the programs, the modification of in-house programs can range from a relatively simple task to a very complex one. Some vendor-supplied software is quite flexible in the data it can accommodate, while other software is quite rigid.

If a jurisdiction is seeking to implement new valuation programs and has an existing data base, then the quantity and quality of the available data should be carefully considered. Of course, if the data are sparse and unreliable, a major recanvass will be necessary. On the other hand, data judged to be reliable should be utilized in the new system whenever possible. New valuation programs or enhancements requiring major recanvass activity or arbitrary conversions to new coding formats should be viewed with suspicion when the existing data base already contains most major property characteristics and is of generally good quality. Normally, data on the following are required for the mass appraisal of real property.

#### 3.5.1.1 Characteristics of Land and Location.

1. Neighborhood.
2. Land or property use. Usually a set of property classification or use codes is developed. Such codes permit properties to be grouped into generic categories for valuation, taxation, and other purposes, including assessment-ratio studies. A good set of use codes will permit properties to be classified both by major or primary use (e.g., residential) and by subcategories or refinements (e.g., single-family residential).<sup>9</sup>

3. Parcel size.
4. Locational characteristics (e.g., proximity to a nuisance, view, etc.).
5. Zoning.

#### 3.5.1.2 Characteristics of Improvements.

1. Building size.
2. Design (e.g., intended use, arrangement of stories, architectural style, etc).
3. Construction quality.
4. Construction materials.
5. Age/condition.
6. Other building features.

#### 3.5.2 Collecting Property Characteristics Data

**3.5.2.1 Field Inspections.** The assessor should develop a formal system for making periodic field inspections to identify properties and ensure that property characteristics data are complete and accurate. The primary way to obtain property characteristics data is to physically inspect the properties. This inspection can be performed either by appraisers or by specially trained data collectors. As a combination approach, experienced appraisers would make key subjective decisions, such as the assignment of construction quality class or grade, while data collectors would gather all other details. Depending on the data required, an interior inspection may be necessary; in most cases, however, a comprehensive exterior-only inspection should be sufficient.

The data collection program should incorporate checks and audits to ensure that data are being recorded correctly and consistently. Good quality control in data collection is crucial to a successful mass appraisal system.

**3.5.2.2 Data Collection Format.** Data should be collected in a prescribed data collection format, which can be standard for all properties or can differ among major property classifications (e.g., residential, commercial, agricultural, and vacant land). In either case, the format should be designed to facilitate both the collection of data in the field and their entry into the computer.

Data collection is facilitated by arranging the collection format in a logical order. For example, all items requiring an interior inspection should be grouped together. The coding of data should be as objective as possible, with measurements, counts, and check-off items used in preference to items requiring subjective evaluations (e.g., "number of plumbing fixtures" versus "adequacy of plumbing: poor, average, good"). With respect to check-off items, the available codes should be exhaustive and mutually exclusive, so that exactly one code logically pertains to each observable variation of a building feature (e.g., type of roof). In general, the data collection format should encourage consistency among data collectors, should be clear and easy to use, and should be adaptable to virtually all types of construction.

Ideally, the data collection format will permit direct data entry, thereby avoiding the need to transcribe or process the data more than once (see section 3.5.3).

**3.5.2.3 Data Collection Manuals.** A data collection manual that contains instructions for field inspections and for recording data should be developed. The manual should explain how to record each data item. Pictures and illustrations can be par-

ticularly helpful. The manual should be simple yet complete, and bring about a high degree of standardization. In addition, the manual should present guidelines for personal conduct during field inspections and, if interior data are required, should outline procedures to follow upon failure to gain entry to a property.

**3.5.3 Data Entry.** As indicated, a data collection form should serve as a data entry form as well. Unless optical scanners, portable terminals, or portable microcomputers are employed (see below), the data must be manually keyed from the data entry form into the computer files. There are two ways to do this: batch data entry and on-line data entry. In the first method, data entry documents are batched and then keyed. Maintenance reports and, possibly, property record cards are then produced. This method is more efficient in terms of computer usage but is cumbersome in terms of paper flow and error resolution. In contrast, on-line processing permits data to be entered directly into a computer terminal and, most importantly, also permits errors and omissions to be identified, evaluated, and resolved immediately. A parcel record can also be recalled on the terminal as needed. Maintenance reports and property record reports can be generated when they are required.

The accurate keying of data, particularly in the batch mode, can be facilitated by printing "field" (or position) numbers next to each data item on the data collection form. These numbers guide the key operator in entering data in the correct sequence and position on the file. Some field-addressable data entry programs do not require the assignment of field numbers. Such programs may be preferable to those requiring field numbers since a savings in transmission time is usually possible.

The keying of data from a data entry form can be bypassed in at least two ways. First, a form designed to be read by an optical scanner may be used. While optical character recognition has obvious advantages, it may complicate form design and slow the data collection process. Second, a portable terminal or microcomputer may be used, allowing the direct transfer of data via telephone connection, tape cassette, or other means.

All data entry programs should include data edit capabilities. These are error or warning messages generated in response to invalid or unusual data items. Examples of data errors include missing data codes and invalid characters. Warning messages should also be generated when data values exceed normal ranges (e.g., more than eight rooms in a 1200 square foot residence). Many problems can be prevented by incorporating editing in the data entry/maintenance programs rather than deferring the "cleaning up" of the data to the time when the valuation models are being constructed.

**3.5.4 Maintaining Property Characteristics Data.** Property characteristics data should be continually updated in response to changes brought about by new construction, new parcels, remodeling, demolition, and destruction. There are several ways of doing this. The most efficient involves building permits. Ideally, strictly enforced local ordinances would require building permits for all significant construction activity, and the assessor would be given copies of the permits. This would allow the assessor to identify properties whose characteristics are likely to change, to inspect such parcels on a timely basis (preferably as close to the assessment date as possible), and to update the files accordingly.

Aerial photographs also can be helpful in identifying new or previously unrecorded construction.

Some jurisdictions have utilized self-reporting, in which property owners are given the data in the assessor's records and asked to provide additions or corrections.

In any case, properties should be periodically revisited to ascertain that assessment records are current. Generally, a cursory inspection will suffice. Assuming that most new construction activity is identified through building permits or other ongoing procedures, an adequate cycle for such physical reviews is from four to six years long.

## 4. Valuation

Many valuation methods and techniques can and should be utilized in an ad valorem mass appraisal system. While a detailed discussion of these techniques is outside the scope of this standard<sup>10</sup>, this section summarizes their major features.

There are three basic valuation approaches: the cost approach (section 4.1), the sales comparison approach (section 4.2), and the income approach (section 4.3). The type of property and the availability of cost, sales, and income and expense data will generally dictate the relative emphasis that should be placed on each approach (section 4.4). Mass appraisal methods often employ elements of two or more of these approaches, and, in general, the use of two or more approaches for any given parcel produces a more satisfactory and supportable valuation than would be obtained with a single approach. The accuracy of valuations, of course, is also highly dependent on the frequency of reappraisals (section 4.5).

**4.1 The Cost Approach.** The cost approach is applicable to virtually all improved parcels and, if used properly, can produce highly accurate valuations. The cost approach provides an estimate of market value through estimating current construction costs, subtracting accrued depreciation, and adding estimated land value. (Depending on the depreciation method used, it may also be necessary to adjust for the interactive effects of land and location on the one hand and the structure on the other.)

Current construction costs should be based on the cost of replacing a structure with one of equal utility, using current materials, design, and building standards. Buildings should be classified by type of construction or intended use, and the typical features of each class should be specified. Per-unit construction costs for each class should then be computed and tabulated by such criteria as size, wall type, design, and area-perimeter ratio. Costs of individual construction components and building items should also be included in order to adjust for features that differ from the base specifications. These costs should be incorporated into a construction cost manual and related computer software. The software can perform the valuation function, while the manual, in addition to providing documentation, can be used when non-automated calculations are required.

Construction cost schedules can come from a variety of sources. They can be developed internally, based on a systematic study of local construction costs; they can be obtained from firms specializing in such information;<sup>11</sup> or they can be custom generated by a contractor. In any case, cost schedules should be verified for accuracy by applying them to recently constructed improvements of known cost. Construction costs also should be updated prior to each reappraisal.

Estimating accrued depreciation constitutes the most dif-

difficult aspect of the cost approach, especially for older properties. Accrued depreciation, which is the difference between the current construction cost and the market value of the structure<sup>12</sup>, should be estimated on the basis of market analysis. Depreciation schedules can be extracted from sales data in several ways.<sup>13</sup> Provisions should exist to make allowances for abnormal depreciation due to such factors as deferred maintenance, natural disasters, obsolete design, and economic-related obsolescence.

Land values used in the cost approach must be current and consistent. They are estimated independently, commonly by the sales comparison approach.

**4.2 The Sales Comparison Approach.** The sales comparison approach estimates the value of a subject property by analyzing the sales prices of similar properties.

In mass appraisal, application of the sales comparison approach generally involves the use of automated statistical techniques, with multiple regression analysis (MRA) being the primary one. This technique seeks to relate variations in sales prices to variations in property characteristics, and produces an equation used to estimate the value of a property based on its characteristics. If desired, the equation can be converted to tabular form for use by non-statisticians.<sup>14</sup>

Many assessment jurisdictions have used MRA to produce highly accurate appraisals for residential properties, including condominiums and apartment buildings. Successful application of the technique depends upon the quantity and quality of the data employed. Good results can be achieved using as few as ten accurately coded data items and fifty usable sales, although additional data generally improve the reliability of the results, particularly among heterogeneous properties.<sup>15</sup> Locational differences may be recognized by developing separate MRA equations for various areas, by including location and land-related data in the equations, or by a combination of these approaches.

Most commercially available statistical software packages contain MRA in flexible, easily used formats.<sup>16</sup> Several mass appraisal firms have integrated the technique into their valuation software. Proper use of MRA generally requires a staff person with a good working knowledge of statistics, although not necessarily a trained statistician. A major advantage of MRA is that it provides extensive diagnostic information on the reliability of the generated equations, including the significance and reliability of each data item. Interpretation of the output and the design or redesign of the equation do, however, require specialized knowledge.

An alternative to MRA is adaptive estimation procedure (AEP), often called "feedback." This technique constructs a valuation equation that is initially specified, within limits, by the user (although the specification may have little to do with the final result) and then continually refined as each new sale is processed by the system.<sup>17</sup> Although the assumptions and statistical methodology differ from MRA, both techniques will produce accurate results if properly used and supported by reliable data. By nature AEP tends to be less affected by distorted data than MRA. The software can be programmed to give various statistics relating to the overall performance of the model. The technique does not generate statistics on the reliability of the individual variables as MRA does, although useful diagnostics could presumably be developed. AEP is not available in general-purpose statistical software packages, although it is available from some vendors, and some jurisdictions have programmed versions of the technique on their own.

A mass appraisal application of the sales comparison approach that is conceptually similar to manual applications is automated comparable sales analysis. Typically, an automated comparable sales analysis system will find a predetermined number of sales that are most comparable to the subject parcel based on user-defined criteria. The system will then adjust the sales prices of the comparables for physical and locational differences in relation to the subject parcel. The adjustments can be based on user-defined amounts or can utilize results from MRA. The estimated value of the subject parcel can be computed, for example, as the median or mean of the values of the adjusted comparables. The technique has the major advantage of being self-documenting and easily supported when good comparables are available. Possible disadvantages relative to MRA and AEP are the dependence on a relatively small number of sales and potentially lengthy processing times.

In general, the sales comparison approach is the most reliable valuation approach when good sales data are available. Mass appraisal applications of this approach are sophisticated and efficient in their use of data and can produce highly consistent results across the majority of residential parcels in a jurisdiction. Limitations of the approach include the requirement of adequate sales data, difficulties in handling unusual properties, and the need for statistical expertise. The latter limitation, however, applies more to model design and development than to the actual review, use, and defense of generated values.

**4.3 The Income Approach.** The income approach provides valuation estimates by capitalizing the projected income stream of the subject property.

Mass appraisal applications of the income approach begin with collecting and processing income and expense data. (These data should be expressed on an appropriate per-unit basis; e.g., per square foot or per apartment unit.) Appraisers should then compute normal or "typical" gross incomes, vacancy rates, net incomes, and expense ratios. These figures can be used to judge the reasonableness of reported data for individual parcels and to estimate income and expense figures for parcels with unreported data.

The developed income figures can be capitalized into estimates of value in a number of ways. The most direct method involves the application of gross income multipliers, which express the ratio of market value to gross income. At a more refined level, net income multipliers or their reciprocals, overall capitalization rates, can be developed and applied. These multipliers and rates should always be extracted from actual income and sale price data obtained from properties that have recently been sold. Income multipliers and overall rates tend to provide reliable, consistent, and readily supported valuations when good sales and income data are available.

Other applications of the income approach are less well-suited to the mass appraisal process. These techniques include discounted cash flow analysis; mortgage-equity analysis; and the building residual, land residual, and property residual techniques. These techniques require the appraiser to estimate such variables as: the remaining economic life or investment holding period; the future income stream of the property; the value of the land, the building, or the reversion at the end of the holding period or economic life; and the required rate of return on investment.

Despite the fact that these techniques are not well-suited to the mass appraisal process, and despite the fact that they re-

quire individual analyses of each parcel, they have their place in the modern assessor's office and, in fact, are often the most valid techniques in the appraisal of large investment properties. Desktop computers can help in the application of these techniques by correlating data, performing the required mathematics, and in some cases, extracting indicated rates of return from an analysis of income and sales data.

In general, the income approach is the preferred valuation approach when reliable income and expense data are available, along with well-supported income multipliers, overall rates, and required rates of return on investment. Unfortunately, collection and maintenance of income and expense data is a time-consuming and difficult process. In addition, proper capitalization of income figures requires considerable skill and judgment. Of the three approaches, the income approach is the most difficult to automate and usually the most costly to apply.

**4.4 Considerations by Property Type.** The appropriateness of each valuation approach varies with the type of property under consideration. Exhibit 1 ranks the relative usefulness of the three approaches in the mass appraisal of major types of properties. The exhibit assumes that there are no major statutory barriers to obtaining cost, sales, and income data. Again, while certain approaches tend to produce better results for a given type of property, the use of two or more approaches should produce greater accuracy.

**4.4.1 Single-family Residential Property.** The sales comparison approach is the best approach for single-family residential property. Automated versions of the approach are highly efficient and generally accurate for the majority of these parcels. The cost approach is a good supplemental approach and should serve as the primary approach when sales data are inadequate. The income approach is usually inappropriate for mass appraisal of single-family residential properties, since the majority of these properties are not rented.

**4.4.2 Multi-family Residential Property.** The sales comparison and income approaches are preferred in valuing multi-family residential property when adequate sales and income data are available. Multiple regression analysis and related techniques have been successfully used in valuing this property type, although analyses that are primarily manual will suffice in many small and medium-sized jurisdictions. Income multipliers can also be highly effective. As with other residential property, the cost approach is useful in providing supplemental valuations and can serve as the primary approach when good sales and income data are not available. Since the values of multi-family residential property are sensitive to local economic factors, one must be sure that land values and depreciation factors used in the cost approach are representative of the current market.

**4.4.3 Commercial Property.** The cost approach tends to be most appropriate for commercial property, due to the flexibility of the approach and the general inadequacy of sales and income data. Nevertheless, where good sales data are available, the sales comparison approach is preferred. Although the income approach is difficult to automate, it is preferred to the cost approach when good income data are available and reliable capitalization rates or income multipliers can be developed. When the cost approach is used as the primary approach, values generated should periodically be checked

against available sales data. Cost factors, land values, and depreciation schedules must be kept current through periodic review.

**4.4.4 Industrial Property.** Industrial properties are subject to the same considerations discussed for commercial properties.

**4.4.5 Non-agricultural Land.** The sales comparison approach is the preferred approach for non-agricultural land. Application of the sales comparison approach to vacant land involves the collection of sales data, the posting of sales data on maps, the calculation of standard unit values (e.g., per square foot, per front foot, or per parcel) by area and type of land use, and the development of land valuation maps or tables, in which the pattern of values is displayed. The computer can assist in this process. When vacant land sales are not available or are few, additional benchmarks can be obtained by subtracting "replacement cost new less depreciation" from the sales prices of improved parcels. The success of this technique requires reliable cost data, and it tends to work best for relatively new improvements, for which depreciation is minimal.

If neither vacant-parcel nor improved-parcel sales data are available, reliance must be placed on an application of the income approach. Such applications include the capitalization-of-land-rent method and the cost-of-development method. In the latter, incomes and expenses from the development and sale of the land are projected and capitalized.

Regardless of how they are initially estimated, land valuations should be kept current. An efficient way to do so between physical reappraisals is by applying trending factors based on sales analysis. While this process should be automated, appraisers should personally analyze the developed factors and make the final determinations.

**4.4.6 Agricultural Property.** Depending on the circumstances, any of the three approaches to value may be most applicable to agricultural property. If adequate sales data are available, the sales comparison approach is preferred. The availability of good income data can favor the income approach. Although many agricultural parcels include improvements, the land usually contributes most to the total value. Although the presence of improvements can dictate reliance on the cost approach, the land value must, of course, be estimated through the sales comparison approach, or, possibly, the income approach.

The considerations for the ad valorem appraisal of agricultural land are generally similar to those that apply to non-agricultural land.<sup>18</sup> However, land rents are often available, sometimes permitting the development and application of overall capitalization rates. This method, of course, also entails the estimation of normal land rents for unrented parcels.

**4.4.7 Special-purpose Property.** The cost approach tends to be most appropriate in the appraisal of special-purpose properties, due to the distinctive nature of such properties and the general absence of adequate sales and income data.

**4.5 Frequency of Reappraisals.** Properties should be revalued annually.<sup>19</sup> Annual assessment does not necessarily mean, however, that each valuation must be reviewed or recomputed individually. Instead, trending factors based on criteria such as property type, location, size, and age can be developed and applied to groups of properties. These factors should be derived

from assessment-ratio studies or other market analyses.

The analysis of assessment-ratio study data can suggest groups or strata of properties in need of physical review. In general, trending factors can be highly effective in maintaining equity when appraisals are uniform within strata. Physical reviews and individual reappraisals are required to correct lack of uniformity within strata.

While assessment trending can be effective for short periods, properties should be physically reviewed and individually reappraised at least every six years. This can be accomplished in at least three ways: (1) reappraising all properties at periodic intervals (e.g., every four to six years); (2) reappraising properties on a cyclical basis (e.g., one-fourth or one-sixth each year); and (3) reappraising on a priority basis as indicated by assessment-ratio studies or other considerations, while still ensuring that all properties are physically reviewed at least every sixth year.

## 5. Managerial Considerations

**5.1 Overview.** Mass appraisal requires that human, computing, and other resources be well managed and that appropriate appraisal and analytical methods be employed. In this section certain key managerial considerations are discussed.

**5.2 Staffing.** A successful internal mass appraisal program requires a sufficiently large staff composed of persons skilled in general administration and supervision; appraisal; mapping and drafting; data processing; and secretarial and clerical functions. While the development of numerical staffing standards requires knowledge of legal responsibilities, workloads, and other resources, parcels-per-employee ratios greater than 2,500 to one (1,500 to one in very small districts and 3,500 to one in very large districts) should be viewed with some concern. Similarly, a parcels-per-appraiser ratio greater than 5,000 to one may cause concern.<sup>20</sup>

Unless efficiency or practical concerns dictate otherwise, persons performing the various mass appraisal functions should report to the assessor. When these functions are not performed by the assessor's staff, it is imperative that they be adequately provided by other departments, a state-level agency, a service bureau, or another source. Strong lines of communication must be established between the assessor's staff and those outside support groups.

The assessor's staff members must be qualified to perform their respective duties.<sup>21</sup> They need a combination of education, experience, and ongoing training. Position descriptions should state the minimum and ideal qualifications for each position. Compensation should be competitive with comparable positions in private industry.

Given the importance of automation to the modern assessor's operations, virtually all offices should have at least one staff person familiar with data processing and statistical concepts to coordinate research and development with the data processing staff. Moreover, assessors who develop valuation equations based on multiple regression analysis or related statistical techniques should employ a staff person (or consultant) with strong statistical training and experience. Large jurisdictions and state agencies should concentrate statistical, research, and data processing skills in an assessment standards section of their agency.

Automation of the appraisal process tends to shift job responsibilities. Less time should be needed to file and retrieve records, make algebraic computations, calculate and post

values, produce reports, and compile assessment rolls. Therefore, more time will be available for managing, data processing, monitoring the general pattern and equity of valuations, and making more complicated appraisals such as those of special-purpose properties. In general, automation should expand the valuation capabilities, productivity, and professionalism of the staff. At all times the staff should be actively involved in new developments and ongoing modifications of the system.

**5.3 Data Processing Support.** Mass appraisal systems require considerable data processing support. Computers and related equipment should be used to store and update records, perform mathematical computations, prepare assessment notices (and tax bills), and perform other repetitive activities.

**5.3.1 Hardware.** With respect to valuation, the hardware system should be powerful enough to permit computerization of appropriate applications of the cost, sales comparison, and income approaches. Other applications of data processing, such as word processing, data inquiry, and activity summaries, should also be considered.

Computer equipment can be purchased, leased, rented, or shared with other jurisdictions. If the purchase option is chosen, the equipment should be easy to upgrade so that technological developments can be taken advantage of without purchasing an entirely new system.

**5.3.2 Software.** Computer software can be developed internally, adapted from software developed by other public agencies, or purchased (in whole or in part) from private vendors. (Inevitably there will be some tailoring needed to adapt externally developed software to the requirements of the user's environment.) Each alternative has advantages and disadvantages. The software should be designed so that it can be easily modified; it should also be well documented, at both the appraiser/user and programmer levels.

Security measures should exist to prevent unauthorized use and to provide backup in the event of accidental loss or destruction of data.

**5.3.3 Centralized Data Processing Support.** State agencies can promote efficiency by providing data processing to local jurisdictions at low rates, possibly set only to recover marginal costs. They can also help to standardize processing and valuation procedures among jurisdictions. In addition, states can sometimes help local jurisdictions obtain computer resources at reduced costs by coordinating contracts with vendors.

## 5.4 Contracting for Appraisal Services.

**5.4.1 Overview.** Reappraisal contracts can include mapping, data collection, data processing, and other services, as well as valuation. They offer the potential of acquiring professional skills and resources quickly. Often these skills and resources are simply not available internally; contracting for them can permit the jurisdiction to maintain a modest staff and to budget for reappraisals on a periodic basis.

On the other hand, contracting for reappraisals makes the assessor dependent on outside services and less likely to develop in-house expertise. The staff is likely to remain small and will probably fail to develop a strong understanding of the mass appraisal system or to have a strong commitment to it. Contracting for reappraisals can also be costly, unless costs are



amortized over many years. All in all, jurisdictions committed to maintaining highly accurate valuations on a year-to-year basis should develop internal mass appraisal capabilities, although this may well include manuals and software acquired from outside sources.

**5.4.2 Requests for Proposals.** As an alternative to in-house reappraisals, jurisdictions can contract with a professional mass appraisal firm. This is normally done by first developing and then issuing a request for proposal (RFP). The developed RFP should clearly state the objectives and requirements of the desired services. A group meeting with potential vendors can be useful in developing the RFP, provided that the meeting focuses on the concerns of the jurisdiction. With respect to valuation, the RFP should specify in detail which valuation methods and techniques are to be employed and what manuals and software are to be provided. The RFP should provide for documentation and should explain the firm's role with respect to training and system maintenance. The RFP should also specify the firm's role, if any, in defending the resulting values.

When jurisdictions contract for reappraisal services, they should do so based on the firm's expertise, experience, responsiveness to the RFP, maintenance commitments, and similar factors. While costs should be considered, a mass appraisal contract should never be based on cost alone.

**5.4.3 Contract Monitoring.** The RFP should set out a plan for monitoring results and a timetable for completing various components of the project. If data collection is involved, there should be procedures whereby the assessor can review and verify the quality of the collected data. Sign-off procedures should exist at the completion of key stages of the project.

**5.5 Support of Appraisals.** The assessor's staff must have confidence in the appraisals and be able to explain and defend them. This confidence begins with application of reliable appraisal techniques, generation of appropriate valuation reports, and review of preliminary values. It is helpful to have application reports that list each parcel, its characteristics, and its calculated value. Parcels with unusual characteristics, extreme values, or extreme changes in values should be highlighted with warning messages for subsequent individual review. Equally important, summary reports should show average values, value changes, and assessment-ratio statistics for various strata of properties. These should be reviewed to ensure the overall consistency of values for various types of property and various locations.

The staff should also be prepared to support individual valuations as required, preferably through comparable sales. At a minimum, staff should be able to produce a property record and explain the basic approach (cost, sales comparison, or income) used to estimate the value. A property owner should never merely be told that "the computer" or "the system" produced the appraisal. Generally, the staff should not attempt to explain multiple regression analysis or other statistical mass appraisal techniques to the layman. However, equations converted to tabular form can be used to explain the basis for the valuation. Cost tables can be used to support values based on the cost approach.

In all cases, the assessor's staff should be able to produce sales or appraisals of similar properties in order to support (or at least explain) the valuation of the property in question. Comparable sales can be obtained from reports that list sales by such features as type of property, area, size, and age. Alter-

natively, interactive programs can be obtained or developed that identify and display the most comparable properties.

Assessors should notify property owners of their valuation in sufficient time for property owners to discuss their appraisals with the assessor and appeal their assessments if they choose to do so.<sup>22</sup> Statutes should provide for a formal appeals process beyond the assessor's level.<sup>23</sup>

## 5.6 Benefit-Cost Considerations.

**5.6.1 Overview.** The objective of mass appraisal is to produce equitable valuations at low costs. In general, however, equity has a cost, and a trade-off exists between equity and the cost of valuations. Improvements in equity generally require increased expenditures; an exception occurs, however, when expenditures can be utilized more efficiently.

Benefit-cost analysis in mass appraisal involves at least two major issues, one of policy and the other of administration.

**5.6.2 Policy Issues.** The policy issue concerns the magnitude of allocated expenditures. For even a minimal degree of equity, an assessment jurisdiction requires a certain expenditure level simply to inventory, list, and value properties. Beyond that point, additional expenditures make possible rapid improvements in equity at first, but the marginal improvements grow more slowly and eventually level off at relatively high expenditures. Normally, jurisdictions should budget for expenditures that, if efficiently utilized, permit attainment of equity measures specified in appraisal performance standards.<sup>24</sup>

**5.6.3 Administrative Issues.** The administrative side of benefit-cost analysis in mass appraisal emphasizes the maximization of appraisal equity within budgeted expenditures. Maximizing equity per dollar of expenditure is the primary responsibility of assessment administration. The assessor must establish the priority of competing expenditures, acquire essential resources, and accomplish key tasks while foregoing other activities that may be highly desirable in their own right. As discussed earlier, essential features of a "bare bones" mass appraisal system include: complete maps, a property identification system, a system of property use or classification codes, a data collection and maintenance system that includes basic property characteristics, a system for collecting and processing sales data, a cost manual containing realistic cost and depreciation factors, and a land valuation program. In addition, benefit-cost considerations dictate that certain of these features be automated and that, in general, computers be used to perform routine calculations, to process and maintain records, and to generate assessment rolls.

The availability of necessary funding should permit the assessor to achieve a good-to-excellent degree of equity. Cost-effective features available in this regard include: application of automated sales comparison techniques, use of income multipliers and overall rates, and use of assessment-ratio studies in monitoring performance and developing trending factors. In general, adoption of new technological developments will allow a greater degree of equity at a cost-effective price.

Unfortunately, budget constraints may dictate the exclusion of certain highly desirable features that tend to be associated with excellent appraisal systems. These features include: verification of sales data; collection of income and expense data; application of cash flow analysis, residual income capitalization techniques, and mortgage-equity analysis; col-

lection and maintenance of relatively detailed property characteristics information; development and maintenance of a locally adapted cost manual; frequent physical reappraisal of property; and maintenance of fully competitive salaries and an adequate staff. While constrained by available budgets, the assessor should strive to implement these features to the greatest extent possible.

Finally, budgets affect the extent to which the assessor's office can document valuations and provide general taxpayer assistance. Moreover, time spent on such activities tends to detract from time available for general reappraisal. Hence, policy-makers and the public should not expect to find the same detailed level of documentation in mass appraisal that is associated with fee appraisals.

**Exhibit 1****Rank in Typical Usefulness of the Three Approaches  
To Value in the Mass Appraisal of Major Types of Property**

	<u>Cost Approach</u>	<u>Sales Comparison Approach</u>	<u>Income Approach</u>
Single-family Residential	2	1	3
Multi-family Residential	3	1-2	1-2
Commercial	1	2	3
Industrial	1	2	3
Non-agricultural Land	—	1	2
Agricultural*	1-2-3	1-2-3	1-2-3
Special-purpose**	1	1-2	3

\* Includes farm, ranch, and forest properties.

\*\* Includes institutional, governmental, resort, and recreational properties.

## NOTES

- <sup>1</sup> Throughout this standard the term “state” by itself will be used to denote political entities, including provinces and countries, at a higher level than the local level of government.
- <sup>2</sup> See also International Association of Assessing Officers, *Property Assessment Valuation* (Chicago: International Association of Assessing Officers, 1977), p. 21.
- <sup>3</sup> International Association of Assessing Officers, “Policy Statements” (Chicago: International Association of Assessing Officers, 1983). See especially the statement “Basic Principles of Ad Valorem Taxation” (p.8), which addresses the market value standard.
- <sup>4</sup> See also IAAO, *Property Assessment Valuation*. p. 227.
- <sup>5</sup> International Association of Assessing Officers, *Standard on Assessment Maps and Parcel Identifiers* (Chicago: International Association of Assessing Officers, July 1976). Contains information and recommendations on assessment maps and parcel identification systems. See also National Research Council, Panel on a Multi-purpose Cadastre, *Procedures and Standards for a Multipurpose Cadastre* (Washington, D.C.: National Academy Press, 1983).
- <sup>6</sup> International Association of Assessing Officers, *Standard on the Application of the Three Approaches to Value in Mass Appraisal*. (Chicago: International Association of Assessing Officers, September 1983). Section 4 contains guidelines for the acquisition and processing of sales data.
- <sup>7</sup> Ibid. Section 5.2 addresses collecting and processing income and expense data.
- <sup>8</sup> International Association of Assessing Officers, *Improving Real Property Assessment* (Chicago: International Association of Assessing Officers, 1978), p. 58. Contains a list of variables utilized in single-family residential mass appraisal systems in twenty jurisdictions.
- <sup>9</sup> For more information on property use codes, see International Association of Assessing Officers, *Standard on Property Use Codes* (Chicago: International Association of Assessing Officers, May 1980), p. 3.
- <sup>10</sup> For a detailed treatment, see *Standard on the Application of the Three Approaches to Value in Mass Appraisal*. See also *Improving Real Property Assessment* pp. 163-312 and *Property Assessment Valuation*, pp. 67-273.
- <sup>11</sup> Unauthorized reproduction of such cost schedules in computer programs may violate copyright laws.
- <sup>12</sup> For a complete discussion of depreciation, see *Property Assessment Valuation*, pp. 157-160.
- <sup>13</sup> See *Standard on the Application of the Three Approaches to Value*, pp. 6-7, for methods of extracting depreciation.
- <sup>14</sup> See Robert J. Gloudemans, “Simplifying MRA-based Appraisal Models: The Base Home Approach,” *Assessors Journal*, XVI, No. 4 (1981), 155-166 and “The Base Home Approach to Explainability in Mass Appraisal,” paper presented at colloquium on Mathematical Models in Computer-Assisted Valuation, sponsored by the Lincoln Institute of Land Policy, Cambridge, Massachusetts, May 18-19, 1983.
- <sup>15</sup> See International Association of Assessing Officers, *Standard on Assessment-Ratio Studies* (Chicago: International Association of Assessing Officers, September 1980), p. 3, for guidelines on stratification.
- <sup>16</sup> Two of the most widely used packages are Statistical Package for the Social Sciences (SPSS) and Statistical Analysis System (SAS).
- <sup>17</sup> See Robert Carbone and Richard Longini, “Reform of Property Tax Administration for Achieving Intra-jurisdictional Equity,” *Assessors Journal*, XI, No. 3 (1976), 197-208.
- <sup>18</sup> Most states have statutes for appraising agricultural land on the basis of the property’s use or productivity. Where use value lies below market value, the appraisal of the property usually involves the income approach based on predetermined capitalization rates. Use valuation, however, is outside the scope of this standard.
- <sup>19</sup> IAAO’s policy statement “Basic Principle of Ad Valorem Taxation” states: “The current market value assessment standard clearly implies annual assessment as long as property values are changing and property taxes are levied annually.” “Policy Statements,” p. 9.
- <sup>20</sup> Typical staffing sizes and patterns for jurisdictions with various parcel counts are contained in *Improving Real Property Assessment*, pp. 323-325.
- <sup>21</sup> Guidelines are contained in: International Association of Assessing Officers, *Standard on Training of Assessing Officers and Valuation Personnel* (Chicago: International Association of Assessing Officers, July 1978), pp. 3-4.  
  
International Association of Assessing Officers, *Standard on Pre-Entry Education for Assessing Officers and Valuation Personnel*. (Chicago: International Association of Assessing Officers, September 1978), p. 2.  
  
International Association of Assessing Officers, *Standard on Certification of Assessing Officers and Valuation Personnel* (Chicago: International Association of Assessing Officers, October 1979), pp. 2-3.
- <sup>22</sup> International Association of Assessing Officers, *Standard on Public Relations* (Chicago: International Association of Assessing Officers, August 1977), pp. 5-6.
- <sup>23</sup> International Association of Assessing Officers, *Standard on Assessment Appeal* (Chicago: International Association of Assessing Officers, December 1981), p. 7.
- <sup>24</sup> See *Standard on Assessment-Ratio Studies* pp. 11-12, for a listing of performance standards.

# Assessment Standards of the International Association of Assessing Officers

Standard on Assessment Maps and Parcel Identifiers (\$8.00) .....	July 1976
Standard on Public Relations (\$8.00) .....	August 1977
Standard on Training of Assessing Officers and Valuation Personnel (\$8.00) .....	July 1978
Standard on Pre-Entry Education for Assessing Officers and Valuation Personnel (\$8.00) .....	September 1978
Standard on Certification of Assessing Officers and Valuation Personnel (\$8.00) .....	October 1979
Standard on Property Use Codes (\$8.00) .....	May 1980
Standard on Assessment-Ratio Studies (\$8.00) .....	September 1980
Standard on Assessment Appeal (\$8.00) .....	December 1981
Standard on Facilities, Equipment, and Supplies (\$8.00) .....	January 1982
Standard on the Application of the Three Approaches to Value in Mass Appraisal (\$8.00) .....	September 1983
Standard on Mass Appraisal of Real Property (\$8.00) .....	March 1984



Single copies of these standards may be obtained at a handling charge of \$8.00 per standard from: Publication Sales, International Association of Assessing Officers, 1313 East 60th Street, Chicago, IL 60637-9990.

IAAO members can receive copies of these standards at a charge of \$5.00 per standard.

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# UNDERSTANDING REAL PROPERTY ASSESSMENT

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An Executive Summary for Local  
Government Officials 

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by Research and Technical Services Department, International Association of Assessing Officers for Office of Policy Development and Research, Department of Housing and Urban Development. January 1979

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# UNDERSTANDING REAL PROPERTY ASSESSMENT

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## PREFACE

This report is written for local government officials—elected or appointed—who want to improve real property assessment practices. It outlines what these officials should ask about or look for in evaluating whether assessment practices in their communities meet modern standards. It also outlines how improvements can be made in assessment practices.

There are two companion pieces to this report. *Evaluating Real Property Assessment Practices: A Management Guide* provides more detailed guidelines on making a self-evaluation of assessment practices. *Improving Real Property Assessment: A Reference Manual* provides detailed guidelines for assessment personnel on evaluating and improving real property assessment practices.

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# WHY ARE ACCURATE PROPERTY ASSESSMENTS IMPORTANT?


Property assessments are a source of many local political and fiscal problems. Taxpayers object when assessments are inequitable. Fiscal management is also adversely affected. Large, unvoted increases in property taxes caused by the failure to offset increases in assessed values with decreases in tax rates are unpopular. Major shifts in the share of property taxes borne by homeowners, farmers, business, and industry that follow infrequent reassessments also cause an outcry. Reforming real property assessment practices can help avoid or resolve such controversies.

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**Fiscal Health** There are several links between a local government's fiscal health and real property assessments. Assessments based on up-to-date property values can strengthen fiscal health by accomplishing the following goals:

 **Maximizing potential property tax revenues.** Inadequate assessment practices usually underestimate property values, thereby limiting potential property tax revenues by understating the tax base.

 **Increasing borrowing capacity.** Because the borrowing capacity of local governments is often limited to a certain ratio of debt to total assessed value, any general underassessment restricts the power to use bond financing. Bond rating houses also examine assessed value when assigning ratings. With the same debt load, a higher assessed value can result in a higher bond rating and lower interest rate.

 **Assuring a full share of intergovernmental aid.** Intergovernmental payments to local governments are often tied to

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property values. Increasingly, aid distribution formulas penalize local governments that understate property values.

Sound assessments can help maintain fiscal health in other ways. The property tax is a more stable revenue source than the sales and income taxes because property values reflect long-term economic considerations. Property tax rates are flexible and can be easily adjusted to meet changing revenue needs as long as rate ceilings have not been reached. Real property is immobile, and property taxes are difficult to avoid. The property tax captures for the community some of the windfall increases in property values that are generated by public expenditures for services and capital improvements. These benefits of the property tax are maximized when assessed values are based on current market values.

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### **Legal Mandate**

The law in each state requires that property tax liabilities be distributed according to property values. Market value is the usual basis. Under the market value assessment standard, assessors are required to estimate the most likely sales prices of all taxable properties in their jurisdiction. Actual assessments, in turn, are some portion of these estimates, which are called appraisals. The advantage of the market value standard is that property owners and others, using recent sales prices as evidence, can easily judge for themselves whether they are being correctly and fairly treated.

In many of the nation's jurisdictions the law has been ignored. The standard of market value has not been adhered to. Such practices have been tolerated or winked at in the past, but this is rapidly changing. Taxpayers, both individually and collectively, are challenging illegal assessments. They are taking their cases to the courts and to the press. Journalists and consumer groups are increasingly zeroing in on inequities in property tax administration. The attacks are sophisticated, and state and federal courts are being persuaded that inequities must be corrected.

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# WHAT IS THE RELATIONSHIP BETWEEN PROPERTY ASSESSMENTS AND TAX POLICY?



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Public confusion over who is responsible for setting property tax policy often hampers efforts to improve assessment practices. Property assessment involves (1) locating and describing properties; (2) appraising or estimating the value of all properties; (3) keeping records linking properties to their respective owners; and (4) designating the official value for tax purposes, taking into account legal reasons for altering appraised values. Property assessment, therefore, is an administrative function.

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Elected officials, however, are responsible for setting property tax levies and rates.

Popular misconceptions about who is responsible for the property tax arise because assessors adjust assessed values to reflect changes in market values, which increase or decrease property tax liabilities. Several states—including Florida, Hawaii, Montana, and Virginia—have enacted disclosure procedures to help dispel any confusion about who is responsible for property tax increases. These procedures restrict property tax revenues to the amount raised before a reappraisal unless a local governing body (a) gives notice of its intent to raise its levy and (b) holds a public hearing on the proposed levy increase. These hearings enable taxpayers to express their views on the services they expect to receive and to obtain satisfactory justification for the property tax burden they ultimately bear.

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## Responsibility for the Property Tax



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## Reconciliation of Property Tax Policy with Public Goals

Elected officials face a difficult problem in reconciling property tax policy with various public goals. Preserving farmland and open space, for example, may be adversely affected by market value assessments. Some taxpayers, notably the poor and the elderly, may be overburdened even if the assessment function is performed perfectly. Solving such problems requires political judgments that are beyond the scope of this report. However, property tax relief for the poor and elderly can be accomplished through tax credits and abatements without destroying assessment uniformity. Farmland, open space, and historic structures can be preserved by restricting the use of such properties. In this way market value is equal to current use value.

In working to improve property assessments, it may become evident that present law obstructs sound assessment practices. Thus, it may be necessary to lobby for improved property tax legislation. New legislation reinforcing the market value assessment concept should be enacted, while existing legislation hampering market value assessment should be repealed. The property tax relief measures discussed above can help overcome opposition to better assessments from those who fear the consequences of an accurate reflection of current market values in assessed values.

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# HOW GOOD—OR BAD— IS YOUR PROPERTY ASSESSMENT SYSTEM?

You may hear that assessing is not an exact science and that perfection is not attainable. Both are true. Nevertheless, standards of reasonable performance do exist, and there are reliable means of measuring and applying these standards.

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### Assessment Ratio Study

The most objective way to evaluate assessment performance is to make an assessment ratio study. An assessment ratio study is a comparison of the property appraisals made by the assessor and the actual sales prices of the same properties. An assessment ratio is calculated by dividing the assessed (or appraised) value by the sale price, and an assessment ratio study reveals how closely appraised values correspond to sales prices. The overall relationship between assessed values and sales prices in a jurisdiction or class of properties is represented by the average (mean) or middle (median) assessment ratio. Overall assessment ratios for a class of properties, or for the jurisdiction as a whole, should be approximately equal to the legal assessment ratio or to the legal mandated fraction assessed values are of market values. If the overall ratio is below the legal ratio, the tax base is understated. If the assessment ratios for different classes of properties or neighborhoods are unequal, assessment inequities exist.

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### Coefficient of Dispersion

The variation among individual assessment ratios is represented by the "coefficient of dispersion." The coefficient of dispersion is the average percentage by which individual assessment ratios deviate from the median assessment ratio. It is also a measure of assessment equity. For example, a 20 percent coefficient of dispersion means that roughly half of the properties in a class or jurisdiction fall within a range of 20 percent above or below the median assessment ratio. Coefficients of dispersion for residential properties should generally range between 5 and 15 percent. In areas of similar single-family residential properties, coefficients closer to 5 percent are attainable. In older, dissimilar areas, a coefficient at the upper end of the range might indicate good performance. A similar range in coefficients of dispersion should be attainable for multi-family and other income-producing properties. The market for vacant land, however, is much more volatile and, therefore, difficult to predict. Coefficients of dispersion in the area of 20 percent may therefore indicate good performance.

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### Appraised and Market Values

Close correspondence between appraised values and market values is crucially important to property tax equity. A property assessed 20 percent more than market value pays 50 percent more taxes than an equal property assessed 20 percent less than market value. For this reason, your assessor should conduct his own assessment ratio study. Alternative sources of assessment ratio studies include the state property tax supervisory agency; a county-level assessment equalization agency if assessing is a municipal or township function; and the *Census of Governments*, made every five years by the U.S. Bureau of the Census. If an assessment ratio study indicates that assessments are below par, a review of the assessment system should reveal the reasons for the poor performance.

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# DOES YOUR ASSESSOR HAVE THE ESSENTIAL ELEMENTS OF A SOUND PROPERTY ASSESSMENT SYSTEM?


You can determine whether an assessment system is sound by asking your assessor the following questions:  Are appraisals current?  Is the existing appraisal program capable of maintaining up-to-date appraisals?  Is assessing carried out openly?  Is the assessment appeal process accessible, inexpensive, and effective?

## Are appraisals current?


Assessing must be a continuous process. Properties change, owners change, and values change. Annual appraising is recommended. As long as taxes are levied annually, property assessments should be updated annually so that taxes are fairly distributed. Appraisals four or more years old are sure to be a cause of serious property tax inequities.


## Is the existing appraisal program capable of maintaining up-to-date appraisals?


To get an answer to this question, you should ask the following questions:


 Does the assessor have adequate staff support? The appraisal staff should be technically proficient and large enough to get the job done. Appraisers who perform best usually have at least some college education and, in addition, have taken specialized courses in real property appraisal along with having at least several years of experience. The correct size of the appraisal staff can be determined only after a careful study of the appraisal workload, the appraisal techniques used, and the available data processing resources. Appraisal workloads are strongly affected by rapid growth and rapidly changing market values. Other things being equal, older properties present more appraisal problems than newer properties do. Similarly, properties in homogeneous land-use areas are easier to appraise than are properties in mixed

use areas. In general, appraisers should not be responsible for more than 6,000 parcels.

 Does the assessor have the necessary informational resources? The assessor needs a set of up-to-date assessment maps showing the size, shape, and location of each parcel of land. The assessor also needs up-to-date records containing a description of the physical and locational characteristics of each property; records of sales detailing the price, terms, and conditions of the sale *and* the characteristics of the property at the time of the sale; and records of the names and addresses of property owners. To help maintain his records, the assessor should be automatically and routinely furnished with copies of all deeds and other real property transfer documents. These property transfer documents are the primary sources of the sales data which are crucial to market-value appraisals. The assessor should also be notified automatically of all building permits. Building permits alert the assessor to changes in property characteristics. The assessor should have an independent program consisting of periodically inspecting all properties and updating cost, rental, and operating expense data.

 Does the assessor have data processing resources sufficient to support annual appraisals? An annual appraisal program requires considerable data processing support. If the assessor still relies on manual methods to make appraisal calculations, consideration should be given to using computers.

 Does the assessor employ all three basic methods of appraising properties: the sales comparison approach, the income approach, and the cost approach? The sales comparison approach consists of estimating the values of unsold properties on the basis of sales prices of sold properties. The income approach involves appraising properties on the basis of their income-generating capabilities and on expected rates of return on real property investments. The cost approach consists of adding independently determined estimates of land and building values, the building values being derived from estimates of current replacement cost less depreciation. All three approaches should be used. Outmoded appraisal programs often place too great a reliance on the cost approach, however. The cost approach is weakest when replacement costs are not recalculated annually and when current market data are not used to appraise site values and to estimate depreciation. More modern appraisal programs make effective use of the sales comparison approach by using a statistical technique known as multiple regression analysis (MRA). MRA is a particularly valuable tool in the appraisal of single-family residences. The income approach is generally the most appropriate approach to use when appraising income-producing properties such as apartments, office buildings, and stores. This is because the sales of such properties are predicated on their income-generating capabilities, and the income approach is designed to reveal relationships between income and sale price.

 Does the assessor monitor his own performance? The assessor should make his own assessment ratio studies; know ap-



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proximately how many properties, by property type, there are in the jurisdiction at any time; have an annual work program designed to keep appraisals up-to-date; have production goals for each department or staff member; and know the current status of his work program. The absence of assessment ratio studies and other internal controls should be regarded as a serious deficiency which should be corrected immediately.

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### **Is assessing carried out openly?**

A climate of openness in addition to technical proficiency in assessing is necessary. This requires that public officials explain how the property tax administrative duties, and the assessing process in particular, are carried out. Property owners should be informed of changes in their assessments, they should be given access to their property records, and they should be informed of their appeal rights. Individual assessment-change notices should be mailed to all affected property owners, together with information about assessment methods and appeal procedures. Brochures describing the property tax system, appraisal procedures, appeal rights and procedures, and property tax relief programs should be readily available. Pains should be taken to keep the language of these notices and brochures simple, understandable, and factual. Legal and technical terminology, which confuses readers and undermines citizen confidence, should be avoided. The press should be told about reappraisals and major changes in assessing procedures. The assessor should welcome opportunities to explain assessment matters to community groups.

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### **Is the assessment appeal process accessible, inexpensive, and effective?**

Property owners should have ready opportunity to inquire informally about their assessments before their tax bills are mailed, to have factual errors corrected without the expense of a formal appeal, to make formal assessment appeals to an independent body if they are dissatisfied with their assessment, and to take the matter to court if there are questions of law or if valuation questions are unresolved. The appeal process is not merely a series of public relations gestures. It should serve as a vital contribution to the accuracy and equity of assessments. Therefore, appeals need to be handled with the same care and technical proficiency as the assessments themselves. Political considerations should not be interjected into the appeal process.

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# HOW DO WE IMPROVE PROPERTY ASSESSMENTS?

## 1 Planning a Reappraisal:

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# 1st step

A reappraisal is called for when assessments are out-of-date and inequitable. Conducting a reappraisal requires careful planning.

The first step in planning a reappraisal is to determine what needs to be done. Maps must be up-to-date. Data collection and appraisal procedures must be developed. Forms must be designed and printed. Computer systems may need to be developed as well. Staff must be hired and trained. Work plans and assignments must be made. Quality-control checks must be instituted. Properties must be inspected and described. Market data such as sales prices, rents, and costs must be collected. Data must be transcribed, and calculations must be made. Preliminary estimates of market values must be checked for reasonableness. Progress and performance must be monitored. The public must be kept informed.

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## 2 Planning a Reappraisal:

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# 2nd step

The second step is to determine funding requirements and appropriate the necessary funds. The cost of work done by the assessor and other government agencies, such as the data processing department, can be determined through normal budgeting procedures. The cost of work which will have to be done by outside contractors can be determined through a competitive bidding process. It is a good idea to consider the possibilities of cost-sharing and financial assistance. For example, the cost of assessment maps and developing computerized property record files could be shared by other agencies that use property data, such as planning, engineering, highway, and even human resource departments. Local governments may elect to use federal general revenue sharing funds or community development block grants to implement improved map and record systems. Employment programs can be used to hire data collectors. Sometimes state governments have financial assistance programs for improvements of local real property assessment systems.

The third step in planning a reappraisal program is to determine whether the necessary skill and manpower needs can be met within the assessor's office. In general, developing the internal capability to make and maintain current market value assessments is preferable to relying on outside services. Developing a new assessment system, particularly one that is heavily reliant on computers or that requires making a reappraisal of all properties, may necessitate temporary outside assistance. If the review of as-

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## 3 Planning a Reappraisal:

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# 3rd step

essment practices suggests that outside assistance is needed, care should be taken to ensure that contractors are selected on the basis of their responsiveness to the assessor's needs and their technical and financial qualifications, and not on the basis of lowest bid alone.

Many sources of assistance are available to communities, including the state property tax supervisory agency, faculty members of nearby colleges and universities, firms specializing in making reappraisals, firms specializing in developing assessment systems, and management consultants. The International Association of Assessing Officers (IAAO) can also provide assistance. If you or

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your assessor want more detailed information on evaluating assessment systems, a copy of *Evaluating Real Property Assessment Practices: A Management Guide* can be obtained from IAAO. This guide will help you pinpoint problem areas or needs and will help you establish priorities for improving assessment practices. *Improving Real Property Assessment: A Reference Manual*, also available from IAAO, is written for assessors and specialists, and provides detailed coverage of the key elements of an effective real property assessment system as well as specific solutions to assessment problems. In addition to publications, IAAO offers consulting services and conducts assessment personnel education programs. The IAAO Research and Technical Services Department will gladly advise you on how to proceed in either evaluating existing assessment practices or implementing improved assessment practices.

Please feel free to write or call:

Director, Research and Technical Services  
International Association of Assessing Officers  
1313 East 60th Street · Chicago, Illinois 60637 · (312) 947-2051

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## SUGGESTED READINGS

Brandon, Robert M.; Rowe, Jonathan; and Stanton, Thomas H. *Tax Politics: How They Make You Pay and What You Can Do About It*. New York: Pantheon Books, 1976. 297 pp., but see especially pp. 143–244. (201 East 50th Street, 10022; \$6.95 pb)

A lucid and succinct explanation of the theories and principles of property taxation, the assessment process, and the methods used to evaluate assessment performance. Written specifically for lay persons, particularly for those involved in taxpayer associations or interested in forming one.

Ecker-Racz, L. L. *The Politics and Economics of State-Local Finance*. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1970. 242 pp. (Order Department, 07632; \$6.95 pb)

An elementary guide to the tax structure of state and local governments. Chapters 7–10 deal specifically with property taxation, and they cover such issues as full-value assessments, exemptions, farmland on the urban fringe, and site value taxation, among others.

Harriss, C. Lowell. *Property Taxation in Government Finance*. Research publication no. 32. New York: Tax Foundation,

Inc., 1974. 61 pp. (50 Rockefeller Plaza, New York 10020; \$2.50 pb)

An intelligent lay person's guide to the principles of property taxation, its administration, and equity issues. Also briefly discusses the non-revenue effects of property taxation and specific suggestions for reform.

U.S. Advisory Commission on Intergovernmental Relations. *The Property Tax in a Changing Environment: Selected State Studies*. Information Report M-83. Washington, D.C., 1974. 297 pp. (726 Jackson Place, N.W., 20575; no charge pb.)

A "state of the art" report on property taxation in thirty-three states. Evaluates the property tax systems of these states in terms of their (1) legitimacy (enforceable valuation policies where there is no discrepancy between law and actual practice); (2) openness (workable appeals systems, published statistics, and the availability of assessment ratio studies); (3) technical proficiency (consolidated districts, state supervision, assessor certification requirements); and (4) compassion (relief for low-income groups). Statistical data and model legislation are included.