State and Provincial Ratio Study Practices: 2003 Survey Results

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In reporting on previous ratio study survey results (Dornfest, *Property Tax Journal*, 1993, 1995 and 1997, and *Assessment Journal*, 1997), a great deal of confusion regarding ratio study terminology, techniques, standards, and use was noted. A certain amount of this is probably unavoidable, resulting from long standing practice and local statutory guidelines, both of which are difficult to change.

Historically, little written material was available to provide a basis for standardization of ratio studies. By the late 1970s, IAAO was providing guidance through materials, including their *Improving Real Property Assessment* textbook. This soon was followed by the first IAAO ratio study standard, published in 1980. By 1990, IAAO's *Property Appraisal and Assessment Administration* text and an updated *Standard on Ratio Studies* were available, and were soon in wide circulation. Recently, these materials have been updated, and there is now a

1999 version of the *Standard on Ratio Studies* and a 1999 textbook, *Mass Appraisal of Real Property*.

Although these materials present many unified themes for ratio study practices, disparities in use and terminology still exist and make interpretation of survey responses somewhat subjective. We attempted to address this problem by personal follow up contacts with many of the participants in the survey.

In addition to exploring U.S. state and Canadian provincial and territorial practices, the continuing nature of this survey makes it possible to report on the incorporation of IAAO ideals into practice. In reviewing this latest 2003 survey, the reader will find a continuation of trends noted in 1997. Today, it appears that an increasing number of jurisdictions are following major points addressed in IAAO standards and recommended ratio study practices.

Alan Dornfest currently serves as the property tax policy supervisor for the Idaho state Tax Commission where he has done property tax and tax policy research since 1977. During his tenure with the Idaho State Tax Commission, he has been responsible for the design, use, and ongoing development of the Idaho Assessment/Sales Ratio Study, including standards and equalization methods. he has conducted several surveys of US states and Canadian provinces' use of ration studies and written technical ratio procedural manuals.

The intent of this analysis is to continue to search for clarification of technical issues by exploring and reviewing state, provincial and territorial level ratio study practices throughout the United States and Canada. Responses are interpreted to attempt to provide meaningful comparisons with previous surveys.

Hawaii and Delaware are unique in that they do not provide state oversight for local assessments. Responses for these states were from local jurisdictions, and were compiled into composite views that incorporate the prevailing practices, but do not necessarily reflect the practices of any particular local jurisdiction.

RESPONSES FROM U.S. STATES AND CANADIAN PROVINCES AND TERRITORIES

The 2003 survey is the sixth in a series of surveys conducted periodically by this office since 1985. Although many of the questions have been retained to permit longitudinal comparisons, a few areas needed clarification or are of greater import today, and therefore were updated or expanded. In addition, the current survey was conducted as an interactive online survey over the Web. Although this greatly facilitated completion, shortening turnaround time and broadening participation, design limitations in some instances restricted answers to a few questions, which then required additional follow up for clarification.

Tables 1 through 4 provide increasing levels of detail of responses. New or expanded areas being explored this year include:

- personal property ratio study appraisal methods;
- list of exempt intangible property;
- sale price disclosure methods including tracking and legal penalties;

- proportion of sales with adjustments for time, financing, etc.;
- reliability of COD and PRD measurements and questions on use of point or interval estimates in determining compliance with uniformity standards;
- lowering of burden of proof requirement when point estimates of appraisal level continue to be low;
- procedures for determining representativeness;
- limits on the number of sales that can be trimmed as outliers.

Surveys were sent via e-mail messages with embedded links to our agency Website to all U.S. states and to Canadian provinces and territories. Responses were received electronically from every Canadian province and two of three territories, as well as from each state, four counties within Hawaii, and the District of Columbia. The overall response rate was the best ever achieved in the history of this survey.

Some of the responses did not fit cleanly into one or another category of answer, and so may be shown more than once. This is particularly true when responses for different categories of property are expected to vary, as in COD standards for residential, commercial, vacant land, and other types of property. For this reason, attached tabulations do not always add to the number of total responses.

Table 1 is a summary of key findings regarding U.S. and Canadian responses to major survey issues. Major ratio study practices and trends in states since 1989 may be compared in this table. Trends in Canadian provinces and territories are discernable beginning in 1994. Because of the larger number of Canadian respondents in 1997 and 2003, comparison to previous provincial surveys may be misleading.

Table 2 follows at the end of this article as Appendix A and includes a more

•	Table 1: Key Findings			ED ST				ANAD		
'03	Summary of Survey Results	1989	1992	1994	1997	2003	1994	1997	2003	Note:
	Topic: Total Responses >	48	47	46	51	51	7	11	12	(a)
	Annual ratio study	35	37	35	41	41	1	6	8	(a)
	Conducted by state/prov./territory only	29	24	26	29	38	6	3	7	
	Only sales used in ratio studies	19	15	20	23	25	5	8	8	
	Personal property ratio studies	6	10	9	8	7	0	0	0	
	Intangible personal property exemption		32	25	32	37	3	4	6	
7	Procedural audits in lieu of ratio study		11	19	17	22	2	3	3	-
	Full disclosure of sales price	24	33	30	35	37	6	9	11	(b)
oa	ruii disclosure or sales price		33	30	33	31		9		(0)
9	Sales Price Adjustments:									
	Time	11	13	14	15	18	4	9	4	1
-	Financing	13	10	16	16	15	3	8	5	
	Personal Property	28	26	31	32	26	6	9	4	
9	r ersonar Froperty	20			32					
	Equalization Adjustments:									
	Order reappraisal	//////////////////////////////////////	20	//////////////////////////////////////	31	31	2	1	1	1
	Trend by category	18	16	11	14	13	1	2	1	
	Give local officials a grace period to comply	10	10	2	12	3	0	2	1	
	Other			11	4	10	6	3	0	-
120	Otter									
13a	Uniformity Standards for COD/COV:	24	26	32	34	//////////////////////////////////////	2	8	9	1
	More stringent than the IAAO '99 Standard	3	1	6	1	5	1	1	4	1
	Less stringent than the IAAO '99 Standard	18	9	21	23	21	3	6	3	1
	No standard	23	20	18	17	13	2	3	3	1
	IAAO '99 Standard					23			5	1
	ii ii io oo danaara									
13h	Vertical Equity Standards for PRD:			11	18	22	2	4	6	1
	IAAO Standard: PRD = 0.98 to 1.03		<i>,,,,,,,,,,,,</i> ,,,,,,,,,,,,,,,,,,,,,,,,	8	12	17	2	2	5	
	PRD standard of ranges different from IAAO			3	4	5	1	1	1	(c)
	No standard			35	34	28	4	7	6	(-)
14a	Testing Assessment Level:									
14a	Statutory + or - 10%	17	10	11	15	16	1	4	1	î l
14a	Statutory + or - 5%	6	5	5	6	6	2	2	2	
16	Assessment (Residential) 100% of MV:	14	27	17	22	23	6	6	8	1
Note	s:									
(a)	1994 Canadian survey response rate was 7/1:	2 or 58%.								
	1997 Canadian survey response rate was 11/	12 or 92%	6.							
Ì	2003 Canadian survey response rate was 12/	13 or 92%	6.							
l	1989 US survey response rate was 48/51 or 9	14%.								
Ì	1992 US survey response rate was 47/51 or 9	2%.								
	1994 US survey response rate was 46/51 or 9									
	1997 US survey response rate was 51/51 or 1		I. DC plus	a compos	site of 2 of	4 Hawai	ian counti	es.		
	2003 US survey response rate was 51/51 or 1									
	The 2003 US total includes the additions of Pe									

detailed tabulation of U.S. and Canadian responses; this allows comparison to 1994 and 1997.

From these tables it appears that the *typical* ratio study program would include the following features:

- An annual ratio study, typically of real property, is conducted by the state or, in Canada, by the province or territory.
- Sales or a mix of sales and appraisals of real property are used to develop the ratio study.
- There is statutory authority to require disclosure of sales prices to administrative

- jurisdictions by means of mandatory disclosure and transfer fees.
- Adjustments to sales prices are made primarily for personal property included in the sale and, secondarily, for financing and time.
- U.S. results are used primarily to equalize funding, advise local officials of assessment conditions, and to determine the need for reappraisal. Secondary uses of significant frequency are adjusting locally determined values and equalizing assessments of centrally

- assessed properties. Canadian results are used primarily in an advisory capacity.
- Level and uniformity standards often are used for gauging performance or compliance; these standards often are similar to IAAO recommended standards.
- Results are calculated on the basis of samples for which there is generally no predetermined minimum size.
- Reliability frequently is tested and confidence intervals typically have replaced point estimates for determining compliance with standards or other requirements.

Detailed responses received from each state, province or territory are found in Table 3 for Canada and Table 4 for the US. These tables are labeled as Appendices B and C, respectively, and follow this narrative. Tables 3 and 4 provide a complete rendition of these responses, except where it became evident from the responses that the wording of a few questions may have caused confusion. In these few instances, the responses are judged as not meaningful and are not reported in the tables.

Lastly, a text version of the online survey, showing the original questions in their entirety, follows the tables as Appendix D.

Recent Trends - U.S.

Since the questions asked in the current survey and the respondents are similar to those presented in 1989, 1992, 1994, and 1997, a comparison of changes in U.S. ratio study practices over time is possible.

General Trends

The number of states doing annual ratio studies is unchanged since 1997,

and remains at forty-one (41). Although many states combine sales and appraisals, there appears to be a growing tendency toward the use of only sales. This may be related to resources needed for high quality appraisals that are USPAP compliant, a requirement that had not been specified in IAAO standards prior to the 1999 Standard on Ratio Studies. The number of states using only appraisals has fallen to two, California and Missouri. In California's case, the close ties between sale price and assessed value reduce the applicability of traditional sales based studies, except when needed to provide evidence of over-assessment.

While the number of states doing personal property ratio studies increased from six to ten between 1989 and 1992, this indicator has been steadily decreasing; only seven of the forty (40) states where personal property is taxable were doing ratio studies on this property in 2003. Personal property ratio studies that are done are based solely on appraisals.

The number of states doing procedure audits in lieu of ratio studies has increased. There were nineteen (19) such states in 1994, seventeen (17) in 1997, and twenty-two (22) in 2003. Such studies typically are done to provide information about selected property categories for which there is little market activity or when use value and other constraints not directly related to the market are in place.

Disclosure of Sale Price

There are three elements of disclosure: full mandatory sales price disclosure, transfer fees, and mandatory recordation of any transfer instrument. There now are only three states with none of these elements as statewide policy: Idaho, Missouri, and Texas. New Mexico, which had been a long-standing member of this group, enacted disclosure in 2003. Additionally, several major local jurisdictions within Missouri, including most recently Kansas City, have full dis-

closure, so only parts of that state are without market data. This group of three states plus Louisiana, Mississippi, and Utah do not have full disclosure or transfer fees, and so lack fundamental market information from actual, documented transactions.

Disclosure typically occurs with a sale price statement filed when deeds are processed. Disclosed sales prices are confidential in five states. In response to a new question, thirty-three (33) states indicate that they have legal penalties for property owners who falsify information submitted to comply with sale price disclosure provisions.

Intangible Property

The number of states reporting intangibles as exempt continued to increase. There were twenty-five (25) states reporting such a statutory exemption in 1994, thirty-two (32) in 1997, and thirty-seven (37) in 2003. Table 2 delineates the number of states exempting various specific intangibles.

Adjustments to Sale Prices

After increasing use, as indicated in the 1994 survey, there has been little change in the number of states indicating that they sometimes make adjustments to sales prices for time, personal property, or financing. Few states responded to the questions about the proportion of sales actually receiving adjustments. However, from those that did respond, it appears that adjustments are made to a small percentage of sales.

As in 1997, three states still indicate use of overall adjustments. Of these, only two, Florida and Arizona, make significant overall adjustments, and the substance of these has not changed for many years.

Use of Ratio Studies

The ratio study has traditionally been used in an "advise and assist" role. In 2003, forty-three (43) states indicated this use, as opposed to thirty-five (35) states in both 1994 and 1997. The pat-

tern of other major uses was similar to that noted in 1997. Thirty-one (31) states use the ratio study for equalizing funding distributions, and the same number (although not necessarily the same states) uses their studies to order reappraisal. Nineteen (19) states that centrally assess public utilities or railroads use ratio studies to equalize utility property with locally assessed categories.

Twenty-six (26) states may order adjustments to locally determined assessed values. Only sixteen (16) of these indicate a specific procedure for doing so. Of these, thirteen (13) may adjust individual categories by applying trending factors. Previous surveys showed that the number that would apply trends to individual categories of property has varied considerably over time, ranging from eighteen (18) in 1989 to eleven (11) in 1994, to fourteen (14) in 1997. Indiana was added to this group in 2003, while New Mexico and Utah no longer use this practice.

Three of the states that use the ratio study to adjust locally determined values provide some grace period to permit local compliance before imposing or ordering adjustments. Although this appears to be considerably fewer than the number of states giving this response in 1997, the 2003 survey did not permit multiple choices for this question, so any such conclusion is questionable.

Uniformity Standards

The number of states adopting uniformity standards has continued to increase. All but thirteen (13) states now indicate such standards. Historically, twenty-three (23) states had *not* developed standards in this area in 1985 and 1989. By 1992, this number had fallen to twenty (20), and this number continued to fall to eighteen (18) in 1994 and seventeen (17) in 1997. Twenty-three (23) states have established standards that are similar to those recommended by the 1999 IAAO *Standard on Ratio Studies*. General uniformity standards are

based predominantly on the Coefficient of Dispersion (COD).

The number of states that have developed Price-related Differential (PRD) standards has continued to increase from eleven (11) in 1994 to eighteen (18) in 1997, and twenty-two (22) in 2003. However, twenty-eight (28) states still do not indicate standards for vertical equity. It is noteworthy that the number using the guidelines found in 1990 or 1999 versions of the IAAO *Standard on Ratio Studies* has continued to increase from two in 1992 to eight in 1994, to twelve (12) in 1997, and finally to seventeen (17) in 2003.

Thirty-four (34) states indicate that they can initiate action on the basis of poor uniformity. The most typical action is ordering reappraisal, which can be done in twenty-three (23) of these states. Of the states that can initiate action, three—Delaware, Missouri, and Michigan—have yet to adopt formal uniformity standards.

New questions this year examine the use of reliability measures, such as confidence intervals, in determining compliance with assessment uniformity standards. Twenty-four (24) states indicate testing the reliability of the COD, while twelve (12) indicate testing the reliability of the PRD. Regardless of such testing, only eight states take reliability into account when making decisions or determining compliance with uniformity standards.

Level Standards

A level standard is defined as some range of acceptability around the statutorily-required assessment ratio. Such ranges may be provided by statute, but, more frequently, are established by administrative or oversight agency authority. Many states have established ranges of this type, but the number of states with *no* standard for assessment level has remained fairly stable with seventeen (17) in 2003 and eighteen (18) in 1997, after declining from

nineteen (19) in 1992 to thirteen (13) in 1994. The IAAO Standard on Ratio Studies recommends ±10% for direct equalization of locally determined values and ±5% for indirect equalization of funding distributions. The number of states using the $\pm 10\%$ parameter rose to sixteen (16) in 2003, from fifteen (15) in 1997, and eleven (11) in 1994. Interestingly, this number remains below the seventeen (17) that reported use of this standard in 1989. Six states continue to use a $\pm 5\%$ range, and this number has changed very little since seven states reported this range in 1985.

Reliability

Employing the principles of statistical sampling error, ratio studies tend to be more reliable when conducted using large uniform samples, and less reliable when these conditions are not met. There appears to be increasing awareness of and concern with this aspect of the ratio study. The number of states indicating that they tested reliability and used this information for compliance purposes increased from thirteen (13) in 1994, to eighteen (18) in 1997, and to twenty (20) in 2003.

For the first time since these surveys have been conducted, the 2003 survey shows fewer states using point estimates than confidence intervals for testing compliance.

In 1997, questions were added concerning use of point estimates in cases in which assessment level is found to be out of compliance as a result of a wide confidence interval. At that time, no state indicated such a situation would influence their finding regarding assessment level. However, in 2003, three states indicated they might use the point estimate in these situations. Two states indicated that they might lower the level of confidence. In one of these states, Idaho, such lowering of the degree of confidence occurs only after three years. During that time, compliance is

achieved on the basis of samples with confidence intervals that include the desired range, but without necessarily having point estimates within $\pm 10\%$ of market value. The 1999 *Standard on Ratio Studies* recommends such lower degrees of confidence

Market Value

In the late 1980s, states increasingly began assessing residential and certain other non-agricultural property at 100% of market value. This trend has now leveled off, with only twenty-three (23) states assessing residential property and thirty (30) states assessing commercial and industrial property at 100% of market value. Even among these states, comparability cannot be assumed, since many may apply post assessment partial exemptions that are not reflected in survey responses. In other words, a state may assess at 100% of current market value, but, for example, may then allow a \$20,000 or 20% reduction in that value before determining the taxable value. This happens most often with respect to primary residential property.

Some states set market value as an appraisal goal, but restrict the meaning of this term somewhat by establishing "base" years. Usually these represent points in time at which assessments are frozen. For the purpose of this analysis, "acquisition value" is considered a base year concept. The use of the base year concept is unchanged from 1997, with thirteen (13) states continuing to report this practice for at least some classes of property in 2003.

Many states are on cyclic reappraisal, following either regular or locally determined appraisal patterns. Fourteen (14) states update all values annually to current market value, down from eighteen (18) states that adjusted values in this way in 1997. A modified version of this practice is used in Nevada, where the update is to a cost or market-based required value, and in

Washington, where some, but not all, counties annually update values to current market value.

Measures of Assessment Level

States typically compute three measures of level: the mean, the median, and the weighted mean. The weighted mean and the median are the most common, being computed in thirty-nine (39) and thirty-eight (38) states, respectively.

For equalization, states predominantly use the median, with thirty (30) states now relying on this statistic, while only nineteen (19) reported using the weighted mean. The 1999 Standard on Ratio Studies differentiates between direct (parcels) and indirect (funding) equalization, suggesting that the median is more appropriate for the former and the weighted mean for the latter. The survey did not attempt to parse this question into these two equalization subgroups.

Outliers

There is a large increase in the number of states that try to identify outlier ratios. While, twenty-six states (26) indicated testing for outliers in 1997, thirty-five (35) do so in 2003. Ten (10) states indicate limits on the number of outliers that may be eliminated from any sample.

Sales Chasing

In 1997, twenty-one (21) states indicated that they reviewed samples to determine if sales chasing was distorting results. This question was modified this year to determine how many states have statutory requirements to test for sales chasing, with ten states indicating such requirements.

Sample Size and Representativeness

Uncertainty continues regarding any minimum sample size standard that should be used to evaluate assessment performance based on a ratio study. The number of states requiring samples to consist of more than thirty (30) observations increased from four in 1994 and three in 1997 to ten (10) in 2003. Fewer

states, five in 2003 as opposed to thirteen (13) in 1997, now use minimums of 20 to 30 observations. The number of states indicating acceptability of samples with fewer than five observations decreased from eight in 1997 to seven in 2003. The number of states with no clear answer on this issue declined significantly from sixteen (16) in 1997 to nine in 2003.

Thirty-two (32) states indicate that they may test samples for representativeness. This is a considerable increase from 21 states in 1997.

The 1999 Standard on Ratio Studies includes a section on stratification for equalization of funding distributions (Section 4.4.2), which suggests value stratification to create samples that are representative for this purpose. This was a new section in 1999, and the number of states indicating stratification by value range has increased from eleven in 1997 to 16 in 2003.

Legal Action

An increasing number of states indicate that the ratio study can result in outside legal action. Thirty-seven (37) states provided this indication in 2003, while only thirty-two (32) did so in 1997, and thirty (30) gave this answer in 1994.

RECENT TRENDS—CANADA

This year's survey includes responses from all Canadian provinces and territories, except Canada's third and newest territory, Nunavut. A similar number of provinces responded in 1997, but there were fewer responding in 1994, making comparisons with that year difficult. In a few cases, significant trends are apparent and are stated. In other cases, the general nature of Canadian ratio studies is discussed. Some comparison with U.S. practices is offered.

General

The number of provinces doing annual ratio studies appears to have

increased, with eight in 2003 as compared to six in 1997.

As in the past, the ratio study tends to be done at the provincial or territorial level, rather than by local jurisdictions.

Only one province, Alberta, adds appraisals to sales samples and only one territory, Northwest Territory, relies strictly on appraisals for its ratio study.

Personal property is shown to be exempt in all but three provinces. None do personal property ratio studies.

Procedural audits are used by three provinces. This is unchanged since 1997.

Disclosure of Sale Price

Eleven of the twelve responding jurisdictions have full disclosure, and every province has either a transfer fee or full disclosure. The lone Canadian exception is the Yukon Territory, which has only mandatory recordation. Nine (9) provinces indicate that they impose legal penalties for property owners who falsify reported sales information.

Intangible Property

While only two of ten provinces exempted intangibles in 1992, three of seven did so in 1994, four of eleven reported this exemption in 1997, and six of twelve responses reported the exemption in 2003. This corresponds to the similar pattern of increasing exemption for intangibles noted in the United States.

Adjustments to Sales Prices

Adjustments for time, personal property, and financing appear about as frequently as in the U.S. However, the number of participating provinces or territories has decreased since 1997. No Canadian jurisdictions make overall adjustments at this time.

Use of Ratio Studies

The predominant use is as a tool to advise local jurisdictions or assist mass appraisal programs. Only two provinces use ratio studies to adjust locally deter-

mined values, and two equalize funding. Only Saskatchewan indicates that it can order reappraisal. As was the case in 1997, none use the study to adjust utility (centrally assessed) values.

Standards—Level and Uniformity

There is a slight increase in the number of provinces reporting use of uniformity standards. Nine provinces report such use now, while eight did so in 1997. Most of the reporting provinces now use standards that are at least as stringent as those recommended in the IAAO *Standard on Ratio Studies*, with only three reporting use of less stringent standards.

Six provinces report use of PRD standards, and five of these cite the range found in the IAAO *Standard on Ratio Studies*.

Seven provinces indicate that they can initiate action based on uniformity. This number is unchanged since 1997.

In 2003, five provinces indicate use of tolerance ranges for assessment level compliance, as opposed to seven provinces that indicated such ranges in 1997. Only one province now shows use of a $\pm 10\%$ range for this purpose. Four used this range in 1997. Two indicate use of a tighter $\pm 5\%$ range.

Reliability

Six provinces indicate that confidence intervals are computed and could influence a determination of compliance with assessment level standards.

Four provinces test the reliability of the COD, while two do so for the PRD.

Market Value

Full value assessment is far more prevalent in Canada than in the U.S. Eight of the reporting provinces assess residential property at 100% of market value. Ten (10) Canadian provinces and territories assess commercial and industrial property at 100% of current market value. Five provinces report annual update of appraised values.

Measures of Assessment Level

Canadian use of the various measures of assessment level is similar to that in the U.S. Four provinces report testing the normality of the data distribution.

Outliers

Nine provinces indicate testing for outliers. This is an increase from six in the 1997 survey. Three provinces place limits on the number of sales that may be trimmed.

Sales Chasing

One province, Quebec, indicates statutes requiring testing for sales chasing.

Sample Size and Representativeness

Minimum sample size requirements generally are similar to those in the U.S.

Five provinces indicate that they test samples for representativeness. Three provinces stratify samples by value, while four stratify by geographic area.

Legal Action

Appeals and legal action as a result of ratio studies are indicated in three provinces.

CONCLUSIONS

Ratio studies remain critical as ways of measuring, evaluating, and working toward the improvement of assessment practices in most places. A degree of order in the development and use of these studies has been brought about by the use and availability of the IAAO *Standard on Ratio Studies*. There also appears to be some movement toward adopting the recommendations of the 1999 version of the Standard. Some technical areas covered in the IAAO *Standard on Ratio Studies* have not yet been incorporated into U.S. and Canadian programs.

In 2003, for the first time, the number of states basing assessment level compliance on confidence intervals exceeds the number basing compliance on point estimates. This appears to be a major change in practices toward those recommended in the IAAO Standard.

An even more pronounced trend was observed in Canada, with the number of provinces that moved in this direction jumping sharply from one in 1997 to six in 2003. However, few states and no provinces or territories appear to have responded to the recommendation in the Standard to lower the level of confidence when long term inequities are apparent. This recommendation has only been part of the IAAO Standard since 1999, so it will be interesting to see if it gets more attention with time.

The 1999 Standard focused heavily on outlier review procedures and issues. Since 1997 there has been a dramatic increase in the number of states concerned with this issue, although it is not clear whether procedures demonstrated in the IAAO Standard are in widespread use. Nonetheless, concerns over this issue are apparent. Sales chasing is a concern, and future surveys should explore changes in the number of U.S. states or Canadian provinces or territories with statutes requiring testing of this issue. Follow up questions could explore issues of resolution once sales chasing is identified.

The 1999 IAAO Standard on Ratio Studies continues the tradition of providing valuable guidance and assistance, and more features of the Standard have now been implemented. It is hoped that this survey will provide focus for U.S. states and for Canadian provinces and territories, which are attempting to evaluate their ratio study systems and work toward internationally recognized guidelines. It is worth noting that the IAAO Executive Board recently adopted standards review procedures recommended by the Technical Standards Committee. Under these procedures, important technical standards, such as the Standard on Ratio Studies, can be reviewed more frequently and can thereby be more reflective of the state of the art in this challenging and ever changing area.

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State or Province/Territory only 26 29 38 6 3			None/Unknown	0	0	0	0	-	-	
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Both Sales & Appraisals 21 25 24 2 3 Yes 24 2 3 State or Province/Territory 35 14 Local 14 23 Local 23 24 Yes 9 8 7 Yes 9 8 7 0 Sales only 7 8 7 0 Appraisals only 7 8 7 8 Both Sales & Appraisals 1 0 0	What does study include?	clude?	Appraisals only	2	4	2	0	0	-	
Yes 24 State or Province/Territory 35 Local 14 State or Province/Territory 23 Local 24 Yes 40 3 6 Yes 9 8 7 0 0 Sales only 7 8 7 0 0 Appraisals only 7 8 7 Both Sales & Appraisals 1 0 0			Both Sales & Appraisals	21	25	24	2	3	-	
State or Province/Territory 35 Local 14 State or Province/Territory 23 Local 24 Yes 37 40 40 3 6 Yes 9 8 7 0 0 Sales only Appraisals only Both Sales & Appraisals 7 8 7 8 7	If both, combined?		Yes			24			0	
Local 23 24 24 24 24 24 24 24	Caplames atoples od/M	Cac	State or Province/Territory			35			9	
State or Province/Territory 23 Local 24 Yes 37 40 40 3 6 Yes 9 8 7 0 0 Sales only 7 8 7 8 7 Both Sales & Appraisals 1 0 0 0	selects sample		Local			14			2	
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Sales only Appraisals only 7 8 Both Sales & Appraisals 1 0	PP Ratio Study conducted?	iducted?	Yes	6	∞	7	0	0	0	
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both, combined? udy used?	s, Appliaisais,	OI DOM:	Both Sales & Appraisals	-	0	0				
udy used?	Ratio Study, if	both, combined?								
	How is PP ratio study used?	tudy used?								
	PP Appraisal Techniques	hniques	Iowa curves			2				
			Other			-				

			Note:																							(a), (b)										
		sesuo	2003		9	9	8	3	8	3	3	8	က	e	3	8	2	3	8	-	က		2	4		11	11	2	2	11	0 0	0 0	10	0	-	•
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ses	TES	sesuo	2003		37	6	32	33	33	34	35	29	34	30	34	35	22	35	35	9	22		56	15		37	2	80	20	35	4 0	2 5	17		7	•
espon	TED STATES	Numbers of Responses	1997		32	15															17		25	41		35										
arable R	UNIT	Number	1994		25	17															19			=		30										
Appendix A / Table 2: Tabulation of Comparable Responses		Response			Yes	No	Capital Stock	Bonds	Deposits	Contracts and contract rights	Copyrights	Custom computer programs	Customer lists	Goodwill	Licenses	Patents	Rights-of-way	Trademarks	Trade secrets	Other	Yes		Yes	Yes		Yes	State or Province/Territory	Local assessors	Both	At deed recording	Within statutory time period	Other	Sale price statement	Comprehensive questionaire	Both	
Appendix A / Table		Topic		Intangible Personal Property	Cooping and District Acts	Statutory Exemption:															Procedure audit in lieu of ratio study? Yes	If yes, which categories?	Ratio study + Procedural Audits = Compliance?	Can equalization or reappraisal be ordered from audits?	Disclosure	Legal Requirement?		Disclosure made to:			Disclosure occurs when?	Chadacat stages and caA			Type of disclosure document?	
	2003	Question	Number	9	00	po							ę,	60							7	7a	7b	70	80	8a		8a			q8	0			90	
	1997	Question	Number		U	0	,,,,,,,,	111			.1111							,,,,,,,,			7	7a	7c	7b		8a		8a								
	1994		Number		o	0															9					7		7a								

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	onses	2003	4	80	10	10	9	-	0	6	2	0	6	4	2	4	-	,	8	က	0	12			2	2	-	2	6	0	က	-	0	-	-
CANADA	Numbers of Responses	1997	4	7	10	80						0	6	6	8	6	-	0	-	2	0	10			4	က	-	6		0		2	-	2	c
0	Number	1994	3	4	2	2						0	9	4	3	9	0	0	3	0	-	9			က	-	2	7		0		-	-	0	0
TES	onses	2003	8	39	34	26	10	14	3	35	80	2	32	18	15	26	2	0	11	4	က	47		<i>-</i>	56	31	30	43	31	19	2	13	3	3	40
UNITED STATES	Numbers of Responses	1997	9		36	25						4	34	15	16	32	2	4	11	4	က	45			27	31	31	35		18		14	3	12	V
TINO	Number	1994	6		30	28						က	33	14	16	31	0	,-	2	7	80	36			22	30	22	35		13		11	2	2	11
	Response		Yes	No	Yes	Yes	State or Province/Territory	Local	Both	Yes	No		Yes	Time	Financing	Personal property (chattels)	Closing costs	Brokerage fees	Intangibiles	Other	Yes	No		Yes	a. Order adjustments	 b. Equalize funding 	c. Order reappraisal	d. Advise local jurisdictions	e. Assist mass appraisal	f. Adjust or equalize CAP	g. Other	a. Order trend by class/category	 b. Trend jurisdiction-wide 	c. Grace period	Othor
	Topic		Cleitachilaco on colocida ol	Is disclosure confidential?	Value-related fee?	Mandatory recordation?	tedus te animon noitebroner aeu il	injediational lough	Junsalctional level:	Contribution for fallification lesson	Legal perialities for falsifying:	No element of disclosure?	Verifed sales price adjusted?				Adjust for:				Cotaconto ibe ledele se teslecile	blanket of global adjustments?	Describe adjustments	Court cases?				Purposes of ratio study?					Adilietment procedures?	Adjustified procedures:	
2003	Question	Number	0	ao	8f	89				40	10					0	D				0,	2	10a	10b				11					12	7	
1997	-	Number	00	PO	8b	8c										0	D				4	2	10a	10b				1					12	7	
1994	_	Number	70	a	76	7c										o	D				0	2	10a	10b				11					12	7	

		ses	2003 Note:		3	2	4	3	9	9		2	7	7 4	7 7 0	3 0 0 4 7 5	2	2 7 4 0 8 4 2	2 7 4 9 3 9 0 4 7	υ∨40 € 4 2 4	2 7 4 0 0 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2 7 4 0 4 4 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	5 7 4 4 3 3 0 6 5 5 5	5 7 7 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9																	
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	C	Mumbers	1994	2	2		-	3	2	4	*	2	2 4	2 4	2 4	2 4	2 4	2 4	2 4	7 4	7 4	7 4	2 4 4 2 2	2 4 2 2 2	24 25 27	24 22-2	24 201-22	24 27 20 0	24 27 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	24 22 - 22 0 8	24 62+2208	24 22 7 2 0 8	24 22-2308 2	24 22-2306 29	24 27-2208 294	24 62-2208 3940	24 27-2208 29400	24 27 20 8 29 4000	24 62+206 94000	24 277308 294000+	24 27708 2940001
	(S		2003 1	38	13	23	5	21	22	28		17	17	17 34 23	17 23 9	17 23 9 10	17 34 23 9 9 10 24	17 23 9 9 10 12 12 12	17 334 10 10 12 12	17 34 23 23 9 9 10 10 17	17 34 23 29 9 9 10 11 12 8	17 334 23 23 9 9 10 10 17 17 8	17 223 23 9 9 10 10 12 17 8 8	117 334 223 9 9 10 10 117 8 8 17	117 100 100 100 100 100 100 100 100 100	117 334 109 109 117 117 117 117 116 6	117 334 99 99 117 117 117 117 119 99	117 334 109 109 117 117 117 119 119	177 223 233 240 240 171 171 171 188 199 9	117 109 109 117 117 117 119 119 119	117 334 109 109 117 117 118 119 119 118	117 223 223 224 100 100 100 117 117 117 118 118	117 117 110 110 1117 117 118 118 118 118 118	117 117 117 117 118 118 119 119 119 119 119 119 119 119	117 117 117 117 117 118 119 119 119 119 119 119 119 119 119	117 117 117 117 118 119 119 119 119 119 119 119 119 119	117 117 119 119 117 117 117 119 119 119	117 117 118 119 119 119 119 119 119 119 119 119	117 117 117 117 118 118 119 119 119 119 119 119	117 117 118 118 118 119 119 119 119 119 119 119	117 23 29 29 29 29 29 29 29 29 30 30 30 40 40 40 40 40 40 40 40 40 4
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	á	Num	1994	32	18		9	21	11	35		00	30 8	30	30	30	30	30	30	30	30	30	30 33	33 33 33 33 33	30 8 33 31 113 113	30 30 30 111 11 11 11 11 11 11 11 11 11 11 11 1	33 33 17 11 17 17 17 17 17 17 17 17 17 17 17	33 33 30 11 11 11 11 11 11 11 11 11 11 11 11 11	8 33 33 113 17 17	33 33 111 17 17 17	8 30 30 113 113 114 114 114 114 114 114 114 114	8 30 33 13 13 14 17 17 17 17 17 17 17 17 17 17 17 17 17	8 30 30 111 111 111 111 111 111 111 111 1	8 30 30 113 113 114 114 115 115 115 115 115 115 115 115	8 30 30 30 112 114 115 115 115 115 115 115 115 115 115	8 30 30 30 11 11 11 11 11 11 11 11 11 11 11 11 11	8 30 33 33 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	8 30 33 33 33 34 17 17 17 17 17 17 17 17 17 17 17 17 17	8 30 30 30 41 11 11 11 11 11 11 11 11 11 11 11 11	8 30 30 30 30 41 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	8 30 30 30 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
		Response			No	IAAO '99 Standard	More stringent	Less stringent	Yes	No																															
		Topic		Statute / Standard for COD / COV?					,	Price related bias / PRD standard?			action re: uniformity?	action re: uniformity?	a action re: uniformity?	action re: uniformity?	action re: uniformity?	action re: uniformity? hich actions? eliability measures? dependent upon:	action re: uniformity? hich actions? eliability measures? dependent upon: assessment level:	action re: uniformity? hich actions? eliability measures? dependent upon: assessment level:	action re: uniformity? hich actions? eliability measures? dependent upon: assessment level:	action re: uniformity? hich actions? eliability measures? dependent upon: assessment level:	action re: uniformity? hich actions? eliability measures? dependent upon: assessment level: le variance?	action re: uniformity? hich actions? eliability measures? dependent upon: assessment level: ale variance?	action re: uniformity? hich actions? eliability measures? dependent upon: assessment level: sle variance?	action re: uniformity? hich actions? eliability measures? dependent upon: assessment level: ble variance? e permitted:	action re: uniformity? hich actions? eliability measures? dependent upon: assessment level: ole variance? rariance set by statute?	action re: uniformity? hich actions? eliability measures? dependent upon: assessment level: ole variance? rariance set by statute? gal authority?	action re: uniformity? hich actions? eliability measures? dependent upon: assessment level: ole variance? e permitted: ariance set by statute? gal authority?	action re: uniformity? hich actions? eliability measures? dependent upon: assessment level: ole variance? ariance set by statute? gal authority?	action re: uniformity? hich actions? eliability measures? dependent upon: assessment level: ale variance? rariance set by statute? gal authority? ence intervals:	action re: uniformity? hich actions? eliability measures? dependent upon: assessment level: ale variance? rariance set by statute? gal authority? ance intervals: es of level: Calculate	action re: uniformity? hich actions? eliability measures? dependent upon: assessment level: ale variance? se permitted: ariance set by statute? and authority? ance intervals: es of level: Calculate	action re: uniformity? hich actions? eliability measures? dependent upon: assessment level: le variance? ariance set by statute? and authority? ance intervals: es of level: Calculate	action re: uniformity? hich actions? eliability measures? dependent upon: assessment level: le variance? ariance set by statute? gal authority? ence intervals: es of level: Calculate	action re: uniformity? hich actions? eliability measures? dependent upon: assessment level: le variance? rariance set by statute? gal authority? ance intervals: es of level: Calculate	action re: uniformity? hich actions? eliability measures? dependent upon: assessment level: assessment level: assessment level: gal authority? ance intervals: es of level: Calculate es of level: Equalization	action re: uniformity? hich actions? eliability measures? dependent upon: assessment level: assessment level: ariance set by statute? gal authority? ance intervals: es of level: Calculate es of level: Equalization			
2003	-	Question	Number	13a Stat	200		13a Con			13b Pric						13c If sc	13c If sc	13c If sc		13c If sc 13d If ye	13c If so, v	13c If so 13d If ye 13e Acti	13c If sc 13d If ye 13e Acti	13c If sc 13d If ye 13e Acti	13c If so If ye 13d If ye Action 14 Test Allo 14a	13c If sc 13d If ye 13e Acti 14 Tes Allo	13c If sc 13d If ye 13e Acti 14 Tes Allo	13c If sc 13d If ye 13d Acti 14 Tes Allo 14a Var	13c If so If ye 13d If ye 144 Allo 144 Vari	13c If so If ye 13d If ye 14a 14a 14b 14b	13c If so If ye 13e Acti 14	13c If so If	13c If so If ye and If ye If	13c If so If ye 13d If ye 144 Allo 14b If nc 14c Cor	13c If so If ye 13d If ye 14a Van If nc 14b If nc 14c Cor	13c If so If ye 13d If ye 14a Varn 14b If nc 14c Cor	13c If so If	13c If so If	13c If so If	13c If so If ye 13d If ye 14a Vari If ye 14b If nc 14c Cor Mee Mee 14d	13c If so If
1997	_	-	Number	13a	3					101	13b	130	13b	130	130	130	130	130	130	130	130	130 130 130 140 141	130	130	130 144 149	130	130	130	130	130 14 14 14 14 14 14	130 141 149 149	130 140 140 140 140	130 140 140 140	130 140 140 140	130 140 140 140	130 140 140 140	130 140 140 140	130 140 140 140 140 140	130 140 140 140 140	130 140 140 140 140 140 140 140 140 140 14	130 140 140 140
1994		Question	Number	133	3					124	25	20	130	130	130	130	130	130	13c	130	130	130	130	130	13c 14a	1130	13c 14a	13c 14a	13c 14a	13c 13c 144 14b	13c 13c 14a 14b	13c 14a 14b	13c 14a 14b	13c 13c 14a 14b	136 149 14b	13c 14a 14b	13c 14a 14b	13c 14a 14b 14b	13c 13c 14a 14b 14b	13c 13c 14a 14b 14b	13c 14a 14b

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A	bonses	2003	4		3	9	4	7	0	2	2	0	0	0	0	0	80	9	2	0	80	7	10	10	2	0	ი ი
CANADA	Numbers of Responses	1997	4		5	-					1	-					9	2	5								
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UNITED STATES	Numbers of Responses	1997	13		26	18					11	33					22	13	18								
TINO	Number	1994			unknown	13											17	2									
	Response		Yes		Point estimates	Confidence intervals	95% confidence level	90% confidence level	Other confidence level	No	Yes, confidence interval overlaps	No change	May lower level of confidence	May use point estimate only	May review level measures	May use additional info	Yes	Yes	Yes	Yes	Residential @ 100% of FMV	Farmland @ 100% of FMV	Commercial @ 100% of FMV	Industrial @ 100% of FMV	Utilities @ 100% of FMV	Personal Prop. @ 100% of FMV	Railroads @ 100% of FMV
	Topic		Test for statistical normality?	Testing reliability	le compliance based moor.	is compilative based upon.		If yes, which test?		Is a sample mean ratio of 85%, with	75% and 95%, in compliance?		Power of COO is coinced	nevise il con silowed pool	dimonings		Residential non-ag property appraised at 100% of current fair market value?	Property appraised as of a constant base year?	Are property values updated during an interim year?	Can local jurisdictions establish different assessment ratios?				Statistical contraction	Statutoring set ratios		
2003	Question	Number	14e	15	150	29		15b If yes,		450	2			15d			16	460	00	16b				160	3		
1997	-	Number	14e	15			15a	1111111	111111	454	130			15c			16	16a	16b					180	20		
1994	_	Number		14c	144	100				7 7	2						15	15a						454	200		

1994 1997 2003 Cluestion Auestion Boldsours The total for the responses to the 1995 and 1997 11				Appendix A / Table	ile 2: Tabulation of Comparable Responses	parable	Respon	ses				
Number of Responses Numbers of Responses Numbers of Responses Numbers of Responses	1994	1997	2003			INO	TED STA	TES	0	ANADA	1	
17 17 Ratio Study Samples Range of values? 11 18 1994 1997 2003 1994 1997 2008 170 171 171 171 172 172 173 174 175	Question				Response	Numbe	ers of Res	souses	Number	's of Resp	ponses	
	Number	Number	Number			1994	1997	2003	1994	1997	2003	Note:
	17	17	17	Ratio Study Samples								
		172			Range of values?		1	18			4	
		- 19			Geographic neighborhood?		20	16			6	
			173	Stratification	School district?		4	80			-	
			5	Suamicanon	City (Municipality)		-	12			4	
					County			25			2	
		17a			Other factors?			12			4	
					less than 5	4	80	7	-	2	3	
					5 to 9	7	80	10	2	,	-	
	200	174	175	olemon toollows	10 to 19	8	4	10	2	-	က	
	POI	0.1	9/-	olliallest salliple	20 to 30	6	13	2	0	3	-	
					greater than 30	4	3	10	0	-	2	
					other	19	16	6	2	3	-	
		17c	17c	Sample size quotas or goals?	Yes	12	7	20	0	2	-	
		17d	17d	Do you identify outlier ratios?	Yes		26	35		9	6	
		17e		If outliers, what action taken?								
		17f		Determine Representativeness?	Yes		21	32		4	5	
					Stratify by geographic area		21	21		7	4	
		173	17f	Cylore doidy sey }	Stratify by property class		Most	29		2	4	
		2		il yes, willer apply :	Stratify by value range		=	16		2	3	
		umi			Other			9			2	
			179	Fixed trim points remove outliers?	Yes			16			3	
			17h	Limit on trimmed sales?	Yes			10			3	
			18	Statutes for sales chasing?	Yes			10			-	(f)
	17	19	19	Legal action re: ratio study?	Yes	30	32	37	-	4	3	
				= These questions are changed from	m previous surveys							
					003 survey							
	Notes:											
	(a)	Question 8	Disclosure	: The total for the US for 1997 was re	evised to reflect an error in tabulatin,	ng Oregon's r	esponse, v	which shou	ld have be	en counte	d as a 'Ye	S'.
	(p)	Question 8	3 Disclosure	: The total for the US for 2003 include	les the additions of Pennsylvania an	nd, effective.	July 2003, 1	New Mexic	.0.			
	(c)	Question 1	4a Allowab	le variance: Not shown are response	es to the 1992 survey, which total 19	9 'No' US ans	swers to thi	s portion o	f the quest	ion.		
	(P)	Question 1	4a + or - 5	% variance: Not shown are responses	s to the 1985 survey, which total 7 L	US response	s to this po	rtion of the	question.			
	(e)	Question 1	6 Assessm	ents = 100% of MV: US responses w	vere edited so that the 'Yes' count re	eflects only the	hose jurisd	ctions who	se assessi	ment leve	l equals 10	Jo %00
		current (20	02 or 2003) market value for all residential prope	erties.							
TO THE PARTY OF TH	(<i>t</i>)	Question 1	8 Sales ch	asing: The 1997 responses to this qui	lestion were not complied for either	· US or Canac	da.					

2003 Survey of Ratio Study Practices of US and Canada

Question #:	Q2	Q2		Q3		retion of	Table 3: Ca	Q4b	Q4c	Q5	Q5a	Q5e			
Province/Territory	How often does your jurisdiction conduct ratio studies?	Every 7 years	Province/te	conducts yo rritory, local, nder contrac	university of		Does your study include sales or appraisals or both?	If sales, who performs sample selection?	Who conducts sales validation?	Are machinery & equipment taxable personal property?	If yes, is a ratio study conducted?	If you use appraisals, what techniques are used?			
Alberta	annually		prov/terr				both	local	prov/terr	Yes	No				
British Columbia	more frequent		prov/terr				sales only	state or province	local	No	na	na			
Manitoba	every	4				other	sales only	local	local	Yes	No	na			
New Brunswick	annually		prov/terr				sales only	prov/terr	prov/terr	No	na	na			
Newfoundland	every	3	prov/terr				sales only	prov/terr	prov/terr	No	na	na			
Nova Scotia	annually			local	univ. or		sales only appraisals	local	local	No	na	na			
Northwest Territories	every				private		only			No	na	d/e tables			
Ontario	annually		2000			other	sales only	local		No	1024	10000	- E		
Prince Edward Island Quebec	annually		prov/terr	local			sales only	prov/terr prov/terr	prov/terr prov/terr	No No	na na	na na			
Saskatchewan	annually		prov/terr	IDGII			sales only	local	prov/terr	No	na	na			
Yukon Territory	annually		prov/terr				sales only	prov/terr	prov/terr	Yes	No	na			
Question #:	Q6a	Q6b	Q6b	Q6b	Q6b	Q6b	Q6b	Q6b	Q6b	Q6b	Q6b	Q6b	Q6b	Q6b	Q6b
Province/Territory	Personal Property Exemption Statute?	Capital stock exempt?	Bonds exempt?	Deposits exempt?	Contracts exempt?	Copy- rights exempt?	Custom computer software exempt?	Customer lists exempt?	Goodwill exempt?	Licenses exempt?	Patents exempt?	Rights of Way?	Trade- marks exempt?	Trade secrets exempt?	Other?
Alberta	Yes														
British Columbia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Manitoba	Yes	unk	unk	unk	unk	unk	unk	unk	unk	unk	unk	unk	unk	unk	unk
New Brunswick	No												1		
Newfoundland	No														
Nova Scotia															Yes
Northwest Territories	No														
Ontario	No														
Prince Edward Island	No														
Quebec	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Saskatchewan	No														
Yukon Territory	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	

3															Otto		oden G	Purposes sess of ratio of ratio study?	Purposes of ratio Purposes stately?	Purposes of ratio Purposes stately? assist CAMA	Purposes of ratio Purposes stately? assist CAMA sessist CAMA	Pyposes of ratio Pyposes study? study? study? study? study?	eses of ratio Purposes thought of ratio and ratio of ratio and ratio of ratio and ratio of ratio and ratio of r	Purposes of ratio Purposes at ratio Purposes of ratio of ratio of ratio Purposes of	Sees of ratio Purposes study?	eas of ratio Purposes study? of ratio study? at the CAMA at CAMA	Purposes of ratio Purposes a study? Study? Study? Study? Study? Study Sessist CAMA Sessist CAMA Other COher	Purposes of ratio Purposes at sub-fy? State of the control of the
	- GBP	Are there logal penalties for fasaltying?	No.	Yes	nuk	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	P P P P P P P P P P P P P P P P P P P		Purposes of ratio Purposes of ratio	Purposes of ratio Purposes of ratio Purposes advise	study?	Auroces of ratio. Purpores states? advice advice asses	State Purposes of ratio Purposes of ratio Purposes advises asses advises asses advises asses advises asses asset as asses as asses as as a second as a second asses as a second as a secon	Purposes of ratio Purposes of ratio Purposes of salary Purposes and salary sala	abbies of ratio Purposes of ratio Purposes of ratio Purposes of ratio and another asses	abviee asset	abrice asset as asset as asset as asset as as as a second asset as a second asset as a second asset as a second asset as a second as	abrite ass arvite ass ass ass ass ass ass ass ass ass as	abviee ass aviee ass ass ass ass ass ass ass ass ass a	### Or ratio Purpc #### Or ratio Purpc #### Or ratio ##### Or ratio #### Or ratio ##### Or ratio ##### Or ratio ##### Or ratio ##### Or ra
	089	At what level does it occur?		provilerr	prov/terr			local	províterr	proviter	provilerr			proviterr	0446		Purposes of ratio P											
	089	Do you have a mandatory recordation law?	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	014h		Purposes of ratio	Purposes of ratio study?	study?	study?	shuy?	shoots of ratio	shoy? equation	shop? Purposes of ratio shop?	study?	Purposes of ratio	Purposes of ratio study? equative	study?
	086	Do you have a transfer tax or deed stamp?	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Offa		huposes of ratio study?	Study?	huposes of ratio	study?	study?	shufy?	shary?	onder adjust	Stroops of ratio	Study order adjust	Study order adjust	Stady of ratio stady of ratio stady of ratio stady of ratio stady
	Q8e	Disclosure confidential?	9	No	No	Yes	No	Yes	No	No	Yes	No	Yes	No	Oto		Are blanket or global adjustments made?	Are blanket or made?	Are blanker or plocks adjustments made? No	Are blanket or plobal adjustments made? No No No No	Are blankest or global adjustments made? No No No No	Are blankest or global adjustments made? No No No No No	Are bisiriosis or plocal adjustments made? No N	Are branched or plocal adjustments made? No N	Are biament or plocal adjustments made? No	Are bistrated or placed a clipsomeries made? No	Are bistrated or complete a characteristic maddle? No No No No No No No No No N	No harvest or plobal adjustments made? 7 No
Appendix by Labie 3. Canadian Responses	P90	Type of disclosure doc.: statement, survey, or both?	stmt.	stmt.		stmt.	stmt.	stmt	stmt.	stmt.	stmt.	stmt.	both	stmt.	8		Other?											
-	Q8c	Do you track disclosure?	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	90		intangibles?	intangibles?	intangibles?	friangibles?	Intangibles?? Yes	intangibles?	intangibles?	Interuglibles 2 Yes No No	Principles 2 Yes No No	Interuglibles 2 Yes No No No	Vess Yes	Principles 2 Yes No No No No No No No No No N
	080	Disclose at deed recording?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	other	Yes	Yes	8		Brokorage fees?	Brokorage fees?	Brokerage fees?	Brokerage fees?	Brokerage fees?	Brokenage fees?	Brokerage fees?	Brokerage fees?	Brokerage frees?	Brokerage fees? No No	Brokerage fees? No No No Yes	Brokerage frees? No
	OBa	Disclose to Prov/Terr or local or both?	proviterr	thod		provitor	thod	thoq		thod	proviter	proviterr	thod	No	80		Catao.											
	80	Do you have a disclosure law?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No No	90		Uped Open position ()											
	070	Can equalization or reappraisal be ordered as a result?	Yes	Yes	Yes	oN.			No			Yes	Yes	No	00		Financing? P											
	975	Procedural audits C + ratio study to o determine compliance?	Yes	No	nnk	Yes	unk	Yes	No	No	unk	na			90		Time?	Time?	Time?	Time? Yes	Time?	Time? Yes	Time? Yes	Time? Yes	Yoss Yos	Time? Yes	Time? Yes No No No No Yes Yes Yes	Timer 7 No No No Yoss Yoss Yoss
	70	Do you audit Pr appraisal procedures in lieu of ratio study?	Yes	No	o _N	No	No	Yes	No	Q.	No	No	Yes		90		Do you adjust sale prices? If Yes, do you adjust for:	Do you adjust sale prices ? If Yes, do you adjust for: Yes	Do you adjust sale prices 7 if Yes, do you adjust for: Yes	Do you adjust sale you adjust for: you adjust for: Yes Yes	Do you adjust sale prices P II free, Co you adjust for. Yes Yes Yes	Ves Yes Yes Yes Yes Yes Yes Yes	Ves	Ves Yes Yes Yes Yes Yes Yes Yes	Ves You adjust sale You adjust for. You adjust for. Yes Yes No Yes Yes Yes Yes Yes Yes Yes Ye	Vess	You adjust sale Prices 7 Prices You adjust for C You adjust for C Yes Yes No	Ves Yes Yes Yes Yes Yes Yes Yes Yes Yes Y
		Province/Territory p	Alberta	British Columbia	Maniloba	New Brunswick	Newfoundland	Nova Scotia	Northwest Territories	Ontario	Prince Edward Island	Quebec	Saskatchewan	Yukon Territory	Orinefon #		Province/Territory F								Aberta Aberta Aberta Aberta Mantecko New Burrawick New Burrawick New Burrawick New Burrawick New Burrawick Ontario	Aborta Aborta Aborta Manabaa Manabaa Nere Bruranick Nerefordland Nere Scotlan korthwest Territories Ontasio	Aberta Aberta Aberta Manados New Burnskick New Burnskick New Burnskick Ontario Ontario Ontario Ontario Ontario Ontario Ontario	Province Tentary Cambridge Province Tentary Part P

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Question #:	Q12				Q13a		fix B / Table 3:		Q13b	1		Q13c			
Province/Territory	Which adjustment procedures are used?	Assessment Uniformity: COD/COV Standard?	'99 IAAO Standard or <u>7</u> for homo- geneous residential?	'99 IAAO Standard or <u>?</u> for hetero- geneous residential?	'99 IAAO Standard or 2 for rural res. and seasonal?	'99 IAAO Standard or <u>7</u> for urban income properties?	'99 IAAO Standard or <u>7</u> for rural income properties?	'99 IAAO Standard or <u>7</u> for un- improved properties?	Assessment Uniformity: PRD Standard?	Can your ju	risdiction initiate conditions?	e any action as a If yes, please cl	a result of assess neck all that appl	sment uniformity y:	
Alberta	grace period	Yes	< or =15	IAAO	IAAO	< or =20	IAAO	< or =20	No	Yes	order reappraisal		cod	point estimates	
British Columbia		Yes	IAAO	IAAO	< or =15	IAAO	IAAO	IAAO	Yes	Yes	order reappraisal		cod	point estimates	
Manitoba		Yes	IAAO	IAAO	IAAO	IAAO	IAAO	IAAO	No	Yes		other	cod	unknown	
New Brunswick	apply trend factors	Yes	IAAO	IAAO	< or =15	IAAO	IAAO	15U, 20R	No	Yes		other	No	unknown	
Newfoundland		Yes	IAAO	IAAO	IAAO	IAAO	IAAO	IAAO	Yes	No	order				
Nova Scotia	other	Yes	IAAO	IAAO	IAAO	IAAO	IAAO	IAAO	Yes	Yes	reappraisal		No	unknown	
Northwest Territories		No	IAAO	IAAO	IAAO	IAAO	IAAO	IAAO	No	No					
Ontario Prince Edward Island		Yes No	8.0 IAAO	8.0 IAAO	15.0 IAAO	20.0 IAAO	IAAO	IAAO	Yes No	No No					
Quebec		Yes	< or =20	< or =20	< or =40	< or =20	< or =40	IAAO	Y: .95-1.05	No					
Saskatchéwan		Yes				-			Yes	Yes		other	both	point estimates	
Yukon Territory		No							No	Yes	order reappraisal		prd	point estimates	
Question #:	Q14c	1			01	4d				Q14e	Q15a	Q15b	Q15c	Q15d	
Province/Territory	Do you use confidence intervals?	Arith.Mean Calculation:	Arith. Mean Equalization:	Median Calculation:	Median Calculation:	Weighted (Aggregate) Mean Calculation:	Weighted (Aggregate) Mean Equalization:	Geometric Mean Calculation:	Geometric Mean Equalization:	Do you test for normality?	Testing Reliability:	Which conf. Interval do you calculate?	Given example, would you rule in compliance? Yes, confinterval overlaps the compliance threshold, or, No, only point estimates are used?	answer if COD si uniformity? No chan level of confidence point estimate only level; May review p level measures	howed poor age, May low be; May use by to evaluate previous year k; May use
Alberta	No			median calc			w equal			No	point est.				
British Columbia	Yes	arith mean calc		median calc		wm calc				No	conf. interval	95%	No	review level meas.	additional info
Manitoba	Yes	arith mean calc		median calc						Yes	conf. interval	95%	Yes		
New Brunswick	No	arith mean calc		median calc		wm calc				No	point est.		Yes		
Newfoundland	Yes	arith mean calc		median calc		wm calc				No	conf. interval	90%	Yes		additional info
Nova Scotia	No	arith mean calc		median calc		wm calc				Yes	point est.		No		
Northwest Territories	unknown	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	unk				
Ontario	Yes	arith mean calc		median calc	med eq	wm calc				Yes	conf. interval	95%	Yes		additional info
Prince Edward Island	unknown	arith mean calc		median calc		wm calc				No	unk.				100
Quebec	Yes	arith mean calc	arith equal	median calc	med eq	wm calc	w equal	geo calc	geo equal	Yes	conf. interval	90%	Yes	review level meas.	additional info
Saskatchewan	Yes	arith mean calc		median calc						No	conf. interval	95%			additional info
Yukon Territory	No	arith mean calc		median calc		wm calc				No	unk				

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														019	Can there be legal challenge to your ratio	Yes	2	Yes	No	No.	Yes	NA	2	2	No	o _N	No.
														80	If Yes, describe procedure	andits					audits	N/A			Questionn		1
														018	Do you have a sales chasing law?	9	2	No	No	9	oN.	- Q	2	2	100	9	oN.
														017h	If Yes, what is %?		66.6						10		П		
														017g 017h 017h	s there a limit on % of sales that can be trimme d?	No.	Yes	Yes	No	No.	oN.	o _N	Yes	8	No	Ŷ.	
														0170	Are fixed trim points set to set to cally emove emove sufficers	2	Ŷ.	No	Yes	Yes	Ñ	oN.	Yes	- N	N _o	o _N	
															If Yes, do you strately by other factor?			Yes			Yes						
														П	If Yes, do you stratify by value range?	Yes					Yes				Yes		
														П	If Yes, do you stratify by property class??	Yes			Yes		Yes				Yes		
															of year, do year stratify by geo-graphic area?	Yes			Yes		Yes				Yes		
	Your other property types ralios?			1999 costs				NA	pipelines/hydro@100%	100%			land@MV/bldgs@cost	0171	Do you attempt to determine repre- sentiative-ness?	Yes	No.	Yes	Yes		â	No	No	No	Yes	No	No
	Your minerals ratio?		NA			100%	100%	N/A	N/A	N/A	not assess				What action do you take if you if determine a sample includes outliers?	Verify with assessor.	typo, typo, otherwise include it		Extude	excluding outliers.	check COV & COD & Std. dev.	N/A	review and removal	review records and inspect	Analysed them	REQUEST	
	Your railroad ratio?	100%	statutory	1999 costs		100%	100%	N/A	prescribed linear rates	N/A	not assesss	N/A			of you do you determine if a ratio is an outlier?		skowed	standard deviation	If < 50% or > 150%	or <1/2 median		N/A	>2 std dev / <0.5 or >1.8	plus or minus 30 %		ASR STUDY	
	Your personal property ratio?		NA	1999 costs		0	60	N/A	NA	N/A	not assess			0170	Do you identify outliers?	No	Yes	Yes	Yes	Yes	Yes		Yes	Yes	100	Yes	No
	Your utilities ratio?		statutory	1999 costs	100%	100%	100%	N/A	100%	100%	not assess			Q17c	Do you establish any sample size quotas or goals?	No.	2	Yes	No	No	No	NA	No	No	No	92	No
	Your industrial ratio?	100%	100%	100%	100%	100%	100%	N/A	100%	100%	100%	100%		Q17b	What is your smallest sample size?	10 to 19	10 to 19	>30	5 to 9	20 to 30	10 to 19		>30	9	\$	other	9
	Your commercial ratio?	100%	100%	100%	100%	100%	100%	N/A	100%	100%	100%	100%			Do you straitly by Other factors?		Yes		Yes		Yes						
	Your familiand ratio?	Ag use value	statutory rates	100%	100%	100%	100%		100%	100%	100%	50% OR 70%			Do you stratify by county?		Yes	Yes	Yes		Yes		No.	No			No
Q16c	Your residential ratio?	100%	97%	100%	100%	100%	100%	N/A	100%	100%	100%	75%			Do you dratify by city?				No		Yes		Yes		o _N		
Q16b	Can local jurisdictions establish different assessment ratios?	No	No	No	No	No	No	No	No	No	No	No	No	78	Do you stratify by school district?		Yes		Yes		Yes		No		Yes		
Offeas	De you update values during interim year?	N.	Yes	Yes	Yes	No	8	No		Yes	Yes	No	No.	0178	Do you stratify by geo- graphic neighbor hood?		Yes		No		9		9		No		
	If yes to Q16a, what year?	Annually		1999		1999 moving to 2002						CURRENTLY 1998	July 31 of prior year		Do you straify by range of values?	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	2	
Q16a	Do you use a base year?	No	No.	Yes	No.	10		No	Yes	No	No	Yes	No		Do you stratify by range of values?	Yes		Yes	Yes		Yes		Yes		Yes		
016	Do you appraise non- ag property @ 100% of current market	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No		Do you stratify your samples?	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
Question #;	Province/Territory	Alberta	British Columbia	Manitoba	New Brunswick	Newfoundland	Nova Scotia	Northwest Territories	Ontario	Prince Edward Island	Quebec	Saskatchewan	Yukon Territory	Question #:	Province/Teritory	Alberta	British Columbis	Manitoba	New Brunswick	Newfoundland	Nova Scotia	Northwest Territories	Ontario	Prince Edward Island	Quebec	Saskatchewan	Yukon Territory

Question #:	Q2	Q2			Q3		Q4	Q4b	Q4c	Q5	Q5a	Q5e
State	How often does your jurisdiction conduct ratio studies?	Every ? years	0.25	te, loca	lucts your ratio st al, university or pr contract or other	ivate	Does your study include sales or appraisals or both?	If sales, who performs sample selection ?	Who conducts sales validation ?	Are M & E taxable personal property ?	If yes, is a ratio study conducted?	If you use appraisals, what techniques are used? Depreciation or economic life tables?
Alabama	annually	0	state				sales only	state	state	Yes	No	
Alaska	annually	0	-	local			sales only	local	local	Yes	No	
Arizona	more	0	state	10.001			sales only	state	state	Yes	No	
Arkansas	annually	0	state				both	state	state	Yes	Yes	depr or econ
California	every	5	state				appraisals			Yes	Yes	depr or econ
Colorado	annually	0			univ. or private		both	local	local	Yes	Yes	depr or econ
Connecticut	annually	0	state				sales only	local	state	Yes	na	
Delaware	every	5			univ. or private		sales only	local	local	No	na	
Dist. Col.	annually	0		local	The second secon	1-	sales only	local	local	Yes	No	
Florida	annually	0	state				both	state	local	Yes	No	
Georgia	annually	0	state				both	state	state	Yes	No	
Hawaii-Hawaii Co.	annually	0		local			sales only	local	local	No	na	
Hawaii-Honolulu Co.	annually	0				other	sales only	local	local		na	
Hawaii-Kauai Co.	annually	0				other	both	local	local	No	na	
Hawaii-Maui Co.	annually	0		local			sales only	local	local	No	na	
Idaho	annually	0	state				sales only	state	local	Yes	No	
Ilinois	annually	0	state				sales only	state	state	No	na	
Indiana	every	4		local			both	local	local	Yes	No	
Iowa	annually	0	state	13.00			both	local	local	No	No	
Kansas	annually	0	state				both	state	state	Yes	No	
Kentucky	annually	0	state				both	local	state	Yes	No	
Louisiana	annually	0	state				both	state	state	Yes	No	
Maine	annually	0	state				both	state	state	Yes	No	
Maryland	annually	0	state				sales only	state	state	Yes	No	
Massachusetts	every	0	state	local			both	state	local	Yes	No	
Michigan	annually	0	otato	loodi		other	both	state	state	Yes	No	
Minnesota	annually	0	state	local		011101	sales only	state	state	No	na	
Mississippi	every	0	state	ioui		1	sales only	state	oluto	Yes	No	
Missouri	every	2	state			1	appraisals	oldio		Yes	No	
Montana	annually	0	state				sales only	state	state	Yes	No	
Nebraska	annually	0	state			1	sales only	local	local	Yes	No	
Nevada	annually	0	state				both	state	local	Yes	Yes	depr or econ
New Hampshire	annually	0	state				sales only	state	state	No	na	dops or coors
New Jersey	annually	0	state				sales only	state	state	No	na	
New Mexico	annually	0	otato	local			sales only	local	otato	Yes	No	
New York	annually	0	state	local		1	both	state	local	No	na	
North Carolina	annually	0	state			1	sales only	state	local	Yes	No	
North Dakota	annually	0	state			1	both	state	local	No	na	
Ohio	more	0	state				sales only	state	state	Yes	No	
Oklahoma	annually	0	state				both	state	state	Yes	No	
Oregon	annually	0	State	local		-	both	local	local	Yes	No	
Pennsylvania	annually	0	state	ioual			sales only	state	local	No	na	
Rhode Island	annually	0	state				both	state	state	Yes	No	
South Carolina	annually	0	state				sales only	local	local	Yes	No	
South Dakota	annually	0	state			1	sales only	state	local	No	na	
Tennessee	every	2	state			1	sales only	local	local	Yes	No	
Texas	annually	0	state				both	state	state	Yes	Yes	depr or econ
Utah		0	state	local		other		state		Yes	Yes	depr or econ
Vermont	annually	0	state	local		outel	both	state	local state	Yes	No	debi oi econ
Virginia		0		local		-				Yes	No	-
Wash	annually	0	state	local		-	sales only both	state	state	Yes	Yes	donr or soon
and the state of t	annually	0	state			-	both	state	local	Yes	No	depr or econ
West Virginia	more		-			-					and the latest and th	
Wisconsin	annually	0	state				both	state	state	Yes	No	
Wyoming	annually	0	state				sales only	state	local	Yes	No	

Question #:	Q6a							Q6b							
State	Intangible Personal Property Exemp- tion Statute?	Capital stock exempt ?	Bonds exempt ?	Deposits exempt?	Contracts exempt?	Copy- rights exempt?	Custom computer software exempt?	Customer lists exempt?	Goodwill exempt?	Licenses exempt?	Patents exempt?	Rights of Way (ROW) ?	Trade- marks exempt?	Trade secrets exempt ?	Othe ?
Alabama	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Alaska	Yes						res	Yes				res			
Arizona		Yes	Yes	Yes	Yes	Yes		res	Yes	Yes	Yes		Yes	Yes	
	na	V	V	V	V	V	V	V		V	V		V	V	
Arkansas	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Vee	Yes	Yes		Yes	Yes	
California	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Colorado	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Connecticut	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Delaware	No														
Dist. Col.	na														
Florida	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Georgia	No														
Hawaii-Hawaii Co.	na														
Hawaii-Honolulu Co.	No														
Hawaii-Kauai Co.	No														
Hawaii-Maui Co.	No														
ldaho	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
linois	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Indiana	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	Yes	Yes	
lowa	No														
Kansas	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	
Kentucky	No	1.00							1.44		1.00				
Louisiana	No														
Maine	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Maryland	Yes	100		100	100	100	100	100	100	100	100		100	100	
Massachusetts	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Michigan	Yes	Yes	Yes	Yes	Yes	Yes	103	Yes	103	Yes	Yes	103	Yes	Yes	100
Minnesota	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Mississippi	No	165	168	165	168	162	162	162	162	165	162	165	168	165	
		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Vee	Van	Yes	Yes	
Missouri	Yes										Yes	Yes			
Montana	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Nebraska	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Nevada	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
New Hampshire	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
New Jersey	No														
New Mexico	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
New York	No									207			- 10		
North Carolina	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
North Dakota	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ohio	Yes														Yes
Oklahoma	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes		Yes	Yes	
Oregon	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Pennsylvania	na														
Rhode Island	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
South Carolina	na														
South Dakota	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Tennessee	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Texas	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Jtah	Yes	Yes	Yes	Yes	Yes	Yes		Yes		Yes	Yes		Yes	Yes	Yes
/ermont	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes		Yes	Yes	
/irginia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wash	Yes	Yes	Yes	Yes		Yes	. 00	Yes		Yes	Yes		Yes	Yes	
West Virginia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Visconsin	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	100	Yes	Yes	
Nyoming	Yes	100	100	100	100	103	100	100	100	100	100		100	100	

Question #:	Q6a							Q6b							
State	Intangible Personal Property Exemp- tion Statute?	Capital stock exempt ?	Bonds exempt ?	Deposits exempt?	Contracts exempt?	Copy- rights exempt?	Custom computer software exempt?	Customer lists exempt?	Goodwill exempt?	Licenses exempt?	Patents exempt?	Rights of Way (ROW)	Trade- marks exempt?	Trade secrets exempt ?	Othe
A1-1												1/			
Alabama	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Alaska	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes		Yes	Yes	
Arizona	na			3.4			2.6						2.6		
Arkansas	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
California	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Colorado	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Connecticut	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Delaware	No														
Dist. Col.	na														
Florida	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Georgia	No														
Hawaii-Hawaii Co.	na														
Hawaii-Honolulu Co.	No														
Hawaii-Kauai Co.	No														
Hawaii-Maui Co.	No														
Idaho	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Ilinois	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Indiana	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	163	100	Yes	Yes	Yes	Yes	
Iowa	No	103	103	105	165	103	165	165			165	163	103	163	
- Control of the Cont		Vee	Vee	Vee	Vee	Van	Von		Vee	Vee	Vee	Von	Von	Vee	
Kansas	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	
Kentucky	No									-					
Louisiana	No													14	_
Maine	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Maryland	Yes										1000				2000
Massachusetts	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Michigan	Yes	Yes	Yes	Yes	Yes	Yes		Yes		Yes	Yes		Yes	Yes	
Minnesota	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Mississippi	No														
Missouri	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Montana	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Nebraska	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Nevada	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
New Hampshire	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
New Jersey	No	7007700		101-201									10.0000		
New Mexico	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
New York	No														
North Carolina	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
North Dakota	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ohio	Yes		. 00	. 00		. 00				. 00		. 00			Yes
Oklahoma	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes		Yes	Yes	. 00
Oregon	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	-
Pennsylvania	na	163	163	100	103	163	100	163	100	103	103		100	, 65	
Rhode Island	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
South Carolina	na	165	165	165	169	165	105	169	169	165	168	168	105	165	
South Dakota	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
		Yes		Yes	162	Yes						and the second second			
Tennessee	Yes	162	Yes		Van	1000000	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Texas	Yes	V	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Utah	Yes	Yes	Yes	Yes	Yes	Yes		Yes		Yes	Yes		Yes	Yes	Yes
Vermont	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes		Yes	Yes	
Virginia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wash	Yes	Yes	Yes	Yes		Yes		Yes		Yes	Yes		Yes	Yes	
West Virginia	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Wisconsin	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Wyoming	Yes														

Question #:	Q8	Q8a	Q8b	Q8c	Q8d	Q8e	Q8f	Q8g	Q8g	Q8h
State	Do you have a disclosure law?	Disclose to state, local or both?	Disclose at deed recording ?	Do you track disclosure ?	Type of disclosure doc.: statement, questionnaire or both or other?	Disclosure confidential ?	Do you have a transfer tax or deed stamp?	Do you have a mandatory recordation law?	At what level does it occur?	Are there legal penalties for falsifying ?
Alabama	No									
Alaska	No							Yes	state	na
Arizona	Yes	both	Yes	No	both	No	No	Yes	local	Yes
Arkansas	No						Yes	No		na
California	Yes	local	Yes	Yes	both	No	Yes	No		Yes
Colorado	Yes	local	Yes	Yes	questionnaire	No	Yes	Yes	local	No
Connecticut	Yes		Yes	Yes	statement	No	Yes	Yes	local	Yes
Delaware	No		Yes	Yes	statement	No	Yes	No		No
Dist. Col.	Yes		Yes	Yes	both	No	Yes	Yes	local	Yes
Florida	Yes	both	Yes	Yes	questionnaire	No	Yes	Yes	local	Yes
Georgia	Yes	both	Yes	Yes	other	No	Yes	Yes		Yes
Hawaii-Hawaii Co.	No		Yes	No	other	No	No	Yes	state	No
Hawaii-Honolulu Co.	No		other	Yes	statement	No	Yes	No		Yes
Hawaii-Kauai Co.	Yes	both	Yes	Yes	statement	No	Yes	Yes	state	Yes
Hawaii-Maui Co.	Yes	both	Yes	Yes	other	No	Yes	Yes	state	Yes
Idaho	No					No	No	No		na
Ilinois	Yes	both	Yes	No	questionnaire	No	Yes	No		Yes
Indiana	Yes	both	Yes	No	questionnaire	No	No	Yes	local	Yes
Iowa	Yes	both	Yes	Yes	statement	No	Yes	No	10001	Yes
Kansas	Yes	both	Yes	Yes	questionnaire	No	No	No	local	Yes
Kentucky	Yes	local	Yes	Yes	statement	No	Yes	No	10 0011	Yes
Louisiana	No	locai	Yes	No	otatoment	No	No	Yes	state	na
Maine	Yes		Yes	Yes	statement	No	Yes	No	Ototo	Yes
Maryland	Yes	state/provincial	Yes	Yes	statement	No	Yes	No		Yes
Massachusetts	Yes	both	Yes	No	Statement	No	Yes	Yes	state	No
Michigan	Yes	local '97	statutory	No	statement	No	Yes	No	June	Yes
Minnesota	Yes	local '97	Yes	Yes	both	No	Yes	Yes	local	Yes
Mississippi	No	local or	163	103	Dotti	140	No	Yes	local	na
Missouri	No						No	No	iocai	na
Montana	Yes	both	other	Yes	other	Yes	No	Yes	state	Yes
Nebraska	Yes	both	Yes	Yes	statement	No	Yes	No	State	Yes
Nevada	Yes	both	Yes	No	statement	No	Yes	No		Yes
New Hampshire	Yes	both	statutory	Yes	questionnaire	No	Yes	Yes	local	Yes
New Jersey	Yes	both	Yes	Yes	statement	No	Yes	No	iocai	Yes
New Mexico	Yes	DOUT	162	162	Statement	INO	No	No		na
New York	Yes	both	etatutoni	Yes	both	Yes	No	Yes	both	Yes
North Carolina	No	DOUT	statutory	162	DOUT	168	Yes	Yes	local	
	5.14.450.64 CF	hoth	Voc	Yes	ototomont	Voc		100000000000000000000000000000000000000	local	na
North Dakota Ohio	Yes Yes	both	Yes	Yes	statement	Yes No	No Yes	No Yes	local	Yes Yes
Oklahoma	No	DOUT	outer	168	outer	140	Yes	No	iocai	No
CONTRACTOR OF THE PARTY OF THE	Yes	local	Yes	Yes	other	No	No	Yes		Yes
Oregon	Yes	97 No	Yes	No	statement	No	Yes	Yes	both	Yes
Pennsylvania Rhode Island	No	37 140	168	140	Staternent	INU	Yes	Yes	local	No
South Carolina	Yes	state/provincial	Yes	Yes		No	Yes	Yes	state	Yes
THE RESERVE OF THE PARTY OF THE	19100000	both			questionneire			1000 1000 1000	state	100000000000000000000000000000000000000
South Dakota	Yes	DOUT	Yes	Yes	questionnaire	No	No Yes	No		Yes
Tennessee	No No			No		No		No No	etata	No
Texas	No			No			No	No	state	na
Utah	No		V	V	- 47		No	Yes		na
Vermont	Yes	h - th	Yes	Yes	other	No	Yes	No		Yes
Virginia	Yes	both	Yes	Yes	other	No	Yes	No	1000	Yes
Wash	Yes	both	Yes	Yes	statement	No	Yes	Yes	local	Yes
West Virginia	Yes	97 public	Yes	Yes	both	No	Yes	No		No
Wisconsin	Yes	both	Yes	Yes	statement	No	Yes	Yes	state	Yes
Wyoming	Yes	97 both	Yes	Yes	both	Yes	No	Yes	both	Yes

Question #:					Q9			
State	Do you adjust sale prices? If Yes, do you adjust for:	Time ?	Financing ?	Personal property?	Closing costs?	Brokerage fees?	Intangibles ?	Other?
Alabama	Yes						-	
Alaska	Yes	Yes	Yes	Yes				
Arizona	Yes	Yes	res	res				
Arkansas	Yes	res		Yes				
California	No			163				
Colorado	Yes	Yes	Yes	Yes			Yes	
Connecticut	No	103	163	103			103	
Delaware	Yes	Yes	Yes	Yes	Yes		Yes	
Dist. Col.	No		, 55					
Florida	Yes							Yes
Georgia	Yes			Yes				
Hawaii-Hawaii Co.	Yes			Yes				
Hawaii-Honolulu Co.	Yes	Yes	Yes	Yes				
Hawaii-Kauai Co.		1.00						
Hawaii-Maui Co.	Yes			Yes				
Idaho	Yes	Yes		Yes				
Ilinois	Yes	Yes		Yes				
Indiana	Yes	Yes		Yes			Yes	
Iowa	Yes						10000000	
Kansas	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Kentucky	No		//		133.50			
Louisiana	Yes	Yes	Yes	Yes				
Maine	No							
Maryland	No							
Massachusetts	Yes	Yes	Yes	Yes			Yes	
Michigan	Yes		Yes	Yes				
Minnesota	Yes	Yes	Yes	Yes			Yes	
Mississippi	No							
Missouri	Yes	Yes	Yes					
Montana	No							
Nebraska	Yes		Yes	Yes			Yes	
Nevada								
New Hampshire	Yes			Yes				
New Jersey	No							
New Mexico	No							
New York	Yes	Yes						
North Carolina								
North Dakota	No							
Ohio	No							
Oklahoma	Yes	V		Yes			V	
Oregon	Yes	Yes		Yes			Yes	
Pennsylvania Rhode Island	No No							
South Carolina	100000000000000000000000000000000000000							
South Carolina South Dakota	No Yes		Yes	Yes				
Tennessee	No No		res	Yes				Yes
Texas	Yes	Yes	Yes	Yes			Yes	res
Utah	No Yes	Yes	Yes	Yes			Yes	Yes
Vermont	Yes	162	res	Yes			162	res
Virginia	No Yes			res				
Wash	Yes			Yes				
West Virginia	No.			res				
Wisconsin	Yes			Yes			Yes	
Wyoming	Yes	Yes	Yes	Yes			169	
vvyoming	res	res	Yes	res				

Question #:	Q10	Q11a	Q11b	Q11c	Q11d	Q11e	Q11e	Q12
	Are	Purposes	Purposes	Purposes of ratio	Purposes of ratio	Purposes	Purposes	Which adjustment procedures
State	blanket or global	of ratio study include	of ratio study	study include	study include advise of	of ratio study	of ratio study include	are used: order locals to trend
	adjustme nts made?	ordering readjust- ments?	include equal- ization?	ordering re- appraisal ?	assess- ment conditions ?	include assist CAMA?	adjust or equalize CAP?	classes/categories, trend equally, grace period other?
Alabama	No			Yes	Yes	Yes	Yes	
Alaska	No		Yes	Yes	Yes			
Arizona	Yes	Yes		Yes	Yes	Yes		other
Arkansas	No	Yes		Yes	Yes		Yes	other
California	na		V	Maria	Yes			
Colorado	No		Yes	Yes				
Connecticut Delaware	No No		Yes			Yes		
Dist. Col.	No				Yes	Yes		
Florida	Yes		Yes		Yes	Yes	Yes	
Georgia	No		Yes		Yes	Yes	Yes	
Hawaii-Hawaii Co.	No		100		100	Yes	100	na
Hawaii-Honolulu Co.	No	Yes	Yes			100		na
Hawaii-Kauai Co.	No					Yes		
Hawaii-Maui Co.	No				Yes	Yes		na
Idaho	No	Yes	Yes		Yes	Yes		order local
Ilinois	No	Yes	Yes		Yes			trend
Indiana	No	Yes	Yes	Yes	Yes		Yes	order local
lowa	No	Yes	Yes	Yes	Yes			order local
Kansas	No	Yes	Yes	Yes	Yes	Yes	Yes	grace period
Kentucky	No		Yes	Yes	Yes	Yes		
Louisiana	No	Yes		Yes	Yes			grace period
Maine	No		Yes	Yes	Yes			
Maryland	No				Yes	Yes		
Massachusetts	No	Week	Yes	Yes	Yes	Yes	- Marie	and a treat
Michigan Minnesota	No	Yes Yes	Yes	Yes	Yes Yes	Yes	Yes Yes	order local
Mississippi	No No	res	res	Yes	Yes	res	res	order local
Missouri	No	Yes	Yes	Yes	Yes	Yes		other
Montana	No	165	165	165	165	165	Yes	Other
Nebraska	No	Yes	Yes	Yes	Yes	Yes	Yes	order local
Nevada	No	Yes	1.00	Yes	Yes	Yes		grace period
New Hampshire	No	1.00	Yes	Yes	Yes	Yes	Yes	3
New Jersey	No		Yes	Yes	Yes	Yes	110,000	
New Mexico	No	Yes		Yes	Yes	Yes		trend
New York	No		Yes		Yes			
North Carolina	No						Yes	
North Dakota	No	Yes	Yes	Yes	Yes			order local
Ohio	No	Yes		Yes				order local
Oklahoma	No	Yes		Yes	Yes	Yes		order local
Oregon	No	Yes		Yes	Yes	Yes		order local
Pennsylvania	No	Yes	Vee		Yes		Yes	other
Rhode Island South Carolina	No No		Yes		Yes	Yes	Yes	
Courth Delicate	No	Yes	Yes		V	162		other
Tennessee	No	Yes	Yes	Yes	Yes	Yes	Yes	order local
Texas	No	100	Yes	103	Yes	103	103	order local
Utah	No	Yes	Yes	Yes	Yes	Yes	Yes	other
Vermont	No	Yes	Yes	Yes	Yes	Yes	Yes	trend
Virginia	No	Yes	Yes	Yes	Yes	Yes	Yes	other
Wash	Yes		Yes		1992/16		Yes	
West Virginia	No				Yes	Yes		
Wisconsin	No		Yes	Yes	Yes	Yes		
Wyoming	No	Yes	Yes	Yes	Yes	Yes		order local

Question #:				Q13a				Q13b		Q13c		Q13d	Q13e
State	Assess- ment Uniformity: COD/COV Standard?	'99 IAAO Standard or ? for homo- geneous residential?	'99 IAAO Standard or ? for hetero- geneous residential?	'99 IAAO Standard or 2 for rural res. and seasonal?	'99 IAAO Standard or ? for urban income properties?	'99 IAAO Standard or 2 for rural income properties?	'99 IAAO Standard or 2 for un-improved properties?	Assessment Uniformity: PRD Standard?	conditions' check all the reappra	n as a res ent unifor ? If yes, p	ult of mity clease Order hold	If Yes, COD or PRD or Both?	If you inititate action re: uniformity is such action based upon point or intervalestimates
Alabama	Yes	20	20	20	20	20	20	No	Yes			cod	
Alaska	Yes	IAAO	IAAO	IAAO	IAAO	IAAO	IAAO	Yes	Yes				
Arizona	Yes	15.0 Maricopa	20.0 All other	20.0	less than 25.0	less than 25.0	less than 25.0	No	Yes				point
Arkansas	Yes	IAAO	IAAO	IAAO	IAAO	IAAO	IAAO	Yes	Yes	Yes		cod	point
California	No	IAAO	IAAO	IAAO	IAAO	IAAO	IAAO	No					
Colorado	Yes	15.99 or less	15.99 or less	20.99 or less	20.99 or less	20.99 or less	20.99 or less	Yes			Yes	cod	point
Connecticut	Yes	IAAO	IAAO	IAAO	IAAO	IAAO	IAAO	Yes		Yes	-		point
Delaware	No					10.000		No	Yes			both	interval
Dist. Col.	Yes							Yes	7.55			-	
Florida	Yes	15% or less		15% or less	20% or less			Yes					point
Georgia	Yes	15% or less	15% or less	20% or less for	20% or less	20 % or less		Yes		Yes	Yes		
Hawaii-Hawaii Co.	No	1070 31 1000	1070 01 1000		20,000 1000	20 70 01 1000		No		. 00	. 00		
Hawaii-Honolulu Co.	Yes	IAAO	IAAO	IAAO	IAAO	IAAO	IAAO	Yes					
Hawaii-Kauai Co.	No	inno	inno	ireto	17410	irvio	irvio	No		_			
Hawaii-Maui Co.	Yes	IAAO	IAAO	IAAO	IAAO	IAAO	IAAO	Yes		_		-	
Idaho		15	IAAO	15	20	IAAO	IAAO	Yes	Me	Ma	Nie	-	
Ilinois	Yes	10	IAAO	15	20	IAAO	IAAO	No	No	No	No	-	
	No	45	IAAO	IAAO	20 or less	IAAO	IAAO			_	37		
Indiana	Yes	15 or less				IAAU	IAAO	No	Yes	-	Yes	cod	point
lowa	Yes	20.0	20.0	20.0	20.0			Yes	Yes			both	interval
Kansas	Yes	20.0 or less	20.0 or less	20.0 or less	20.0 or less	20.0 or less	20.0 or less	Yes	Yes	Yes	Yes	both	interval
Kentucky	Yes	20 or less	20 or less	20 or less	20 or less	20 or less	20 or less	No			Yes	unkno	unknown
Louisiana	Yes	20.0 or less	20.0 or less	IAAO	20.0 or less	IAAO	IAAO	Yes	Yes			both	interval
Maine	Yes	20	IAAO	IAAO	IAAO	IAAO	IAAO	No	Yes			cod	point
Maryland	Yes	IAAO	IAAO	IAAO	IAAO	IAAO	IAAO	Yes			Yes	both	point
Massachusetts	Yes	10%	10%	10%	20%	20%	20%	Yes	Yes		Yes	cod	
Michigan	No							No	Yes				point
Minnesota	Yes	IAAO	IAAO	IAAO	IAAO	IAAO	IAAO	Yes				both	interval
Mississippi	Yes	25.0	25.0	25.0	25.0	25.0	25.0	Yes	Yes	Yes			
Missouri	No							No	Yes	Yes	Yes	both	
Montana	No							No					
Nebraska	Yes	IAAO	IAAO	IAAO	IAAO	IAAO	IAAO	Yes	Yes			both	point
Nevada	Yes	IAAO	IAAO	IAAO	IAAO	IAAO	IAAO		Yes			cod	interval
New Hampshire	Yes	20.0	20.0	IAAO	20.0	IAAO	IAAO	Yes			Yes	prd	point
New Jersey	Yes	15 or less	IAAO	15 or less	15 or less	15 or less	15 or less	No					
New Mexico	Yes	IAAO	IAAO	IAAO	IAAO	IAAO	IAAO	Yes	Yes			both	
New York	Yes			tion's population				Yes	100			-	
North Carolina	No	DDE 70110		- портиноп				No					
North Dakota	No							No	Yes			both	
Ohio	Yes							Yes					
Oklahoma	Yes	20	20	20	20	20	20	No	Yes	Yes		both	point
Oregon	Yes	IAAO	IAAO	IAAO	IAAO	IAAO	IAAO	No	Yes	Yes		cod	interval
Pennsylvania	FALSE	17710	17010	174.0	1000	irvio	17010	No	100	103		500	
Rhode Island	No							No					
South Carolina	Yes	IAAO	IAAO	IAAO	IAAO	IAAO	IAAO	No		_			
South Carolina South Dakota	Yes			25.0 OR LESS			11.4.14	No					
Tennessee	Yes No	IAAO	IAAO	IAAO	IAAO	IAAO	IAAO	No No		_			-
				30			IAAO			-	Ver	and	naint
Texas	Yes	30	30		30	30	20.05	No	V		Yes	cod	point
Utah	Yes	15	15	20-25	15	20	20-25	No	Yes	Man			point
Vermont	Yes	20.0 (not on	20.0(not on	20.0(not on	20.0(not on	20.0(not on	20.0(not on	No	Yes	Yes		cod	point
Virginia	No						-	No					
Wash	No							No					
West Virginia	Yes	15	IAAO	IAAO	20	IAAO	IAAO	No				cod	point
Wisconsin	Yes	IAAO	IAAO	IAAO	IAAO	IAAO	IAAO	Yes	Yes			cod	point
Wyoming	Yes	15.0 or less	IAAO	IAAO	20.0 or less	IAAO	IAAO	Yes	Yes			cod	interval

Question #:	Q14c				Q	14d				Q14e
State	Do you use confidence intervals?	Arith.Mean Calculation:	Arith. Mean Equalization:	Median Calculation:	Median Equalization:	Weighted (Aggregate) Mean Calculation:	Weighted (Aggregate) Mean Equalization:	Geometric Mean Calculation:	Geometric Mean Equalization:	Do you test for normality ?
Alabama	No	V		Van	V	V				No
Alaska	No	Yes Yes	Yes	Yes Yes	Yes Yes	Yes Yes	Vee			No
Arizona	No No	Yes	res	Yes	Yes	Yes	Yes			No
Arkansas		Yes		Yes	res	Yes	Yes			No
California	na	res		res			res			
	No	V		Vee	Vee	Yes				No
Colorado	No	Yes		Yes	Yes	Yes				No
Connecticut	na				Yes		V			No
Delaware Dist. Cal	Yes	V		V	Yes	V	Yes			No
Dist. Col.	No	Yes		Yes	Yes	Yes				Yes
Florida	Yes	Yes		Yes		Yes	Yes			No
Georgia	Yes			Yes	Yes	Yes				No
Hawaii-Hawaii Co.	Yes	Yes		Yes						No
Hawaii-Honolulu Co.										
Hawaii-Kauai Co.	No									No
Hawaii-Maui Co.	Yes	Yes		Yes		Yes				Yes
Idaho	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes
Ilinois	No	Yes		Yes	Yes	Yes				Yes
Indiana	Yes			Yes	Yes					No
Iowa	No	Yes		Yes	Yes	Yes				No
Kansas	Yes	Yes		Yes	Yes	Yes		Yes		Yes
Kentucky	No			Yes	1.00					Yes
Louisiana	Yes	Yes		Yes		Yes				No
Maine	No	Yes	Yes	103		Yes				No
Maryland	No	Yes	163	Yes		103	Yes			Yes
Massachusetts	Yes	Yes		Yes			Yes			No
	No	162		res		Yes				
Michigan		V		V	V		Yes			No
Minnesota	No	Yes		Yes	Yes	Yes				No
Mississippi	No				Yes					No
Missouri	No	Yes		Yes	Yes	Yes	Yes			No
Montana	na					Yes	Yes			No
Nebraska	Yes	Yes		Yes	Yes	Yes	Yes			Yes
Nevada	Yes			Yes						No
New Hampshire	Yes	Yes		Yes	Yes	Yes	Yes	Yes		No
New Jersey	No									No
New Mexico	No	Yes			Yes	Yes				No
New York	Yes					Yes	Yes			No
North Carolina	No	Yes		Yes	Yes					No
North Dakota	No	Yes		Yes	Yes	Yes				No
Ohio	No	Yes	Yes	Yes	Yes	Yes	Yes			No
Oklahoma	Yes	Yes		Yes	Yes	Yes				No
Oregon	Yes	Yes		Yes		Yes		Yes		No
Pennsylvania	No	Yes								No
Rhode Island	No	Yes	Yes	Yes	Yes	Yes	Yes			No
South Carolina	Yes	Yes	100	Yes	Yes	100	100			No
South Dakota	No	Yes		Yes	Yes	Yes				Yes
Tennessee	na	Yes		Yes	Yes	Yes				No
Texas		169		162	162	Yes				
	Yes	V	V	V	V					Yes
Utah	Yes	Yes	Yes	Yes	Yes	Yes	V			Yes
Vermont	No	Yes		Yes	V	Yes	Yes			No
Virginia	No	Yes		Yes	Yes	Yes				No
Wash	Yes					Yes	Yes			No
West Virginia	No			Yes		Yes				No
Wisconsin	Yes	Yes		Yes		Yes	Yes			Yes
Wyoming	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Question #:	Q15a	Q15b	Q15c			Q15d		
State	Testing Reliability: Do you base compliance on point estimates or confidence intervals?	Which conf. Interval do you calculate ?	Given example, would you rule in compliance? Yes, conf interval overlaps the compliance threshhold, or, No, only point estimates are used?	poor ur confidence level; May	niformity? Note; May use review pre	o change point esti vious year	answer if CC May lower I mate only to 's level meas , sample size	evel of evaluate ures; May
Alabama	point est.		no, only point est.					may use
Alaska			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					
Arizona	point est.		no, only point est.	no change				may use
Arkansas	point est.		no, only point est.	no change				
California	point est.		no, only point est.					
Colorado	point est.		no, only point est.					may use
Connecticut	point est.		no, only point est.					
Delaware	conf. int.	95%	no, only point est.				may review	
Dist. Col.	22		,, p				,	
Florida	point est.	95%	no, only point est.	no change				
Georgia	conf. int.	95%	no, only point est.	no change				
Hawaii-Hawaii Co.	conf. int.	90%	yes, confidence					may use
Hawaii-Honolulu Co.	point est.						1	
Hawaii-Kauai Co.	point est.		no, only point est.			may use		
Hawaii-Maui Co.	conf. int.		,, p			,		
Idaho	conf. int.	90%	ves, confidence	no change				
Ilinois	point est.		no, only point est.	no change				
Indiana	conf. int.	95%	no, only point est.	- Janigo				may use
lowa	na		yes, confidence	no change				in any area
Kansas	conf. int.	95%	yes, confidence	no change			may review	may use
Kentucky	na		yes, confidence				,	may use
Louisiana	conf. int.	90%	yes, confidence				may review	may use
Maine	point est.		no, only point est.			may use		
Maryland	point est.		no, only point est.					
Massachusetts	conf. int.	95%	no, only point est.	no change				
Michigan	na							
Minnesota	point est.		no, only point est.					
Mississippi								
Missouri	point est.		no, only point est.	no change				
Montana								
Nebraska	conf. int.	95%	yes, confidence					may use
Nevada	conf. int.	95%	yes, confidence					may use
New Hampshire	conf. int.	90%	yes, confidence	no change				
New Jersey								
New Mexico	point est.		no, only point est.			may use		
New York	conf. int.	95%	yes, confidence				may review	may use
North Carolina			no, only point est.		may lower		may review	may use
North Dakota	point est.		no, only point est.					may use
Ohio	point est.		no, only point est.				may review	may use
Oklahoma	conf. int.	95%	no, only point est.					may use
Oregon	conf. int.	95%	no, only point est.				may review	may use
Pennsylvania								
Rhode Island								
South Carolina	conf. int.	95%	no, only point est.	no change				
South Dakota	na							
Tennessee								
Texas	conf. int.	95%	yes, confidence		may lower			
Utah	conf. int.	95%	no, only point est.	no change				
Vermont	point est.		no, only point est.	no change				
Virginia	point est.		no, only point est.	no change				
Wash	conf. int.	90%	yes, confidence					
West Virginia	point est.		no, only point est.	no change				
Wisconsin	conf. int.	95%	no, only point est.					
Wyoming	conf. int.	95%	yes, confidence		1			may use

2003 Survey of Ratio Study Practices of US and Canada Appendix C / Table 4: US Responses

П	Your 'other' property types ratios?	T		200	2											Ī	12		70-110	2				T					Varies		0						Γ				T	formula		
	Other property types ratio @ 100% of Market Value?			No No	2	No				Yes	Yes	W	2				No		No	2									No.		No	Yes						Yes	Yes		Yes	No	Yes	
	Your 'other'			Historic	all lavania	Pri & Sec O&G				timber							Vacant Lots																								All taxable	Timber Land		
	Your minerals ratio?	20	Exempt			58				40	N/A		Ī	pased	Ose	Ī	30%		70-110	2			45	32		35	Gravel		Varies		0	100	5		local	n/a	40			Ī	Ì	Ì		
	Minerals ratio @ 100% of Market Value?	7	oN.		Т	No			Yes	No	o _N	No.	2	Yes	No.	Yes	oN N	Yes	No.	2		0.000	Yes	N ON	Yes	Yes	No.		o _N	Yes	oN.	Yes	Yes		oN.		N _o	Yes	Yes		Yes	Yes		Yes
	Your railroad ratio?	20	į	20	74.87	58	20		Ī	varies	N/A	Ī	Ī	100000	33.33	Ī	25	ń	70-110	5			45	35		35			Varies				Ī		local	6,0	55			Ī	Ī	T	Gross	11.5
	Railroad ratio @ 100% of Market Value?	No	Yes	o N	2	No	oN.	Yes	Yes	No	o N	Q.	2	Yes	o S	Yes		Yes	o N	Yes			Yes	2 02	Yes	Yes	Yes		oN.	Yes	Yes	Yes	Yes		No	200	£ 8	Yes	Yes	7	Yes	Yes		No
	Your personal property ratio?	20		10,16,25	0.7	58	70		Ì	40	N/A	Ī	Ī		Ī	na	20%	ų,	70-110	2	90-110	20	45	33.3	i	net book	Not		İ		0	Ì	Ī		local	10.5	30				Ī	Ī	Į.	9.5 or
Ì	Personal property rabio @ p 100% of p Market Value?	No	П	No	2	No	i	Ì	Yes	No	No	Voe	0	Yes	7	8 9 9	o _N	Yes	t			No	Yes	9 N		o N	No	Ì	60	Yes	No	Yes	Yes		No	Ì	No	Yes	Yes		Yes	Yes	H	
ŀ	Your Publibles Trable?	30		25	2	58	70			varies	1		l		33.33		30	15205	70-110	2	90-110	20	30	32		35			Varies						local	10.5	25						Gross	11.5
16c	Utilities ratio @ 100% of Market Value?	No.	Yes	0 2	Yes	No.	No.	Yes	Yes		Yes	Yes	3		No.	Yes	o _N	Yes	+	133		No	Yes	0 N	Yes	Yes	Yes	Yes	S ON	570	Yes	Yes	Yes		oN:	ON S	S o	Yes	Yes	Yes	Yes	Kes a		No
	Your industrial ratio?	20		25	2	29	70	Ī	Ī	40	Ī	Ī	Ī		33.33	Ī	25	¥	70-110	2	90-110	20	¥	32		35			Varies			Ī	Ī		local	10.5	40			Ī	Ī	Ī		11.5
ŀ	Industrial ratio @ 100% of in Market Value?	No.	Yes	0 0	2	Yes	No No	Yes	Yes	No No	Yes	Yes	Yes	Yes	No.	Yes	No.	Yes	t			No	Yes	2 º	Yes	Yes	Yes	Yes	S ON	H	Yes	Yes	Yes		oN :	No.	No S	Yes	Yes	Yes	Yes	Yes	Yes	No
	Your commit the ratio?	20		25	200	29	70	Ì		40	t	İ	t	-	33.33	İ	25	ų.	70-110	2	90-110	20	4	32		55		Ì	Varies			İ	Ì	Ī	local	0	40				Ť	t		9.5
	Commercial ratio	oN.	Yes	o N	2	No	No	Yes	Yes	o _N	Yes	Yes	Yes	Н	1	Yes	o _N	Yes	No No	1		o _N	Yes	2 02	Yes	No.	Yes	Yes			Yes	Yes	Yes		oN :	Yes	S oN	Yes	Yes	Yes	Yes	Yes	Yes	No
	If no, your Farmland ratio?	10		16 20% use or prod value	to de dec de prod. vand	29%	yes use value based on		classified use; rolling 5-	40				use value	Use Va	Ose value	30% of use value	Ilke	70-110%	Use Value	5% - 25%	20	15% & Hea	Use12%	productive capacity	35	Current use values	Use Value	Special Method	Use Value if land meets	Use	Use value for qualified	Ose value		assessed at its present	And Use	25% or use value				Unless in CII program	income formula by	Use Value	9.5% of productivity
	Farmland ratio @ 100% of Market Value?	No	П	o N			No	Yes	No		Yes	Yes	Yes			No			No.			No	Yes						No No				Yes				S S	Yes	Yes	Yes			No	
ŀ	If no, F your Resi- dential	10		10	200	7.96	7.0	Ì	Ī	40	Ť	Ì	Ī	10000000	33,33	Ì	11.5	Ç	70-110	2	90-110	90	Various	19	8	35		Ì	See 16b			Ì	Ì		local	4	25		22		Ī	Ī		9.5
ı	Residential ratio @ Market Value?	No	Yes	0 N	2	No	No.	Yes	No No	No	Yes	Yes	Yes	Yes	0 E	No N	No	Yes	t	1			No No		Yes	Yes	Yes	Yes	No o		Yes	Yes	No N	Yes	oN:	ON S	8 2	Yes	No No	Yes	Yes	Yes	Yes	No
Q16b	Can local juris- dictions establish different assess- ment ratios?	No	oN :	o N	No No	o _N	No.	o N	No No	Yes	o _N	Voc	Yes	oN.	Yes	N S	oN.	o N	o N	No on	No.	No	o N	No on	oN.	No.	No	Yes	Yes	Yes	oN.	ON S	No.	Yes	Yes	0 Z	9 S	oN.	oN.	oN:	0 N	N O	No	No
Q16aa Q16b	Do you update c values e during d interim a year?	No	eu :	0 N	Yes	Yes	9	o S	res	No	o _N	No	2	Yes	2	Yes	9	o No	res	No	No	oN N	Yes	0 N	oN.	Yes	o _N	9 N	Yes	o _N	No.	9	Yes	o _N	Yes	oN.	No.		Yes	,	o N	8 2	oN :	No
	Myes to O16a, what year?			Ť	Ī			2002	Ì		Ť		Ī		9000	000		4000	200	Current			Ī	ppo	Ī	Ī			Varies		Current	counties	Ī			Ī	Г				Ī	T		
Q16a	Do you use a base year?	No	oN.	0 2	No.	Yes			No No	Yes	ο 2	o N	No.	o _N		S oN	o _N					o _N	0 N		Yes	o _N	Yes	Yes	Yes				N ON	No.	oN ;	Yes	Yes	oN.	oN.	oN :	0 N	Yes	oN :	No
Q16 Q16a	Do you appraise non-ag property @ 100% of current market value?	No	Yes	No No	Yes	Yes	oN.	Yes	Yes			Yes			oN.	Yes	Yes	Yes	Yae	Yes	Yes	No	Yes	No o	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Question #:	State	Alabama	Alaska	Arizona	California	Colorado	Connecticut	Delaware	Florida	Georgia	Hawaii-Hawaii Co.	Hawaii-Kanai Co	Hawaii-Maui Co.	Idaho	llinois	lowa	Kansas	Kentucky	Maine	Maryland	Massachusetts	Michigan	Minnesota	Missouri	Montana	Nebraska	New Hampshire	New Jersey	New York	North Carolina	North Dakota	Ohio	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota Tennessee	Texas	Utah	Vermont	Virginia	West Virginia	Wisconsin	Wyoming

Question #:				Q17a				Q17b	Q17c
State	Do you stratify your samples ?	Do you stratify by range of values?	Do you stratify by geo- graphic neighbor- hood?	Do you stratify by school district?	Do you stratify by city?	Do you stratify by county?	Do you stratify by other factors?	What is your smallest sample size?	Do you establish any sample size quotas or goals?
A(-)								- 11	
Alabama	No		Yes		1/	Yes		other	Yes
Alaska	Yes	NI-	1000	NI-	Yes		Yes	10 to 19	No
Arizona Arkansas	Yes Yes	No	Yes	No Yes	No Yes	Yes Yes	res	other >30	No Yes
California				res	res	res		other	Yes
Colorado	No		V				V	>30	
WATER CONTRACTOR OF THE PARTY O	Yes		Yes		11		Yes		Yes
Connecticut	Yes				Yes			>30	N1-
Delaware Dist. Col.	No		V					10 to 19 20 to 30	No No
	Yes	V	Yes	N-	A.	V	A1-		
Florida	Yes	Yes	No	No	No	Yes	No	20 to 30	Yes
Georgia	No	No	No	No	No	No	No	5 to 9	Yes
Hawaii-Hawaii Co.	Yes	Yes	Yes				Yes	>30	No
Hawaii-Honolulu Co.	Yes	Yes	Yes					_	No
Hawaii-Kauai Co.	Yes		Yes					<5	No
Hawaii-Maui Co.	Yes	Yes	Yes	No	No	No	Yes	<5	No
Idaho	Yes	No	No	Yes		Yes	Yes	5 to 9	No
Ilinois	Yes					Yes		20 to 30	No
Indiana	Yes						Yes	5 to 9	No
lowa	No						Yes	other	Yes
Kansas	Yes					Yes		5 to 9	Yes
Kentucky	No							20 to 30	Yes
Louisiana	Yes	Yes				Yes		>30	No
Maine	Yes							10 to 19	No
Maryland	Yes					Yes		10 to 19	No
Massachusetts	Yes	Yes	Yes	No	No	No	Yes	10 to 19	Yes
Michigan	Yes				Yes	Yes		10 to 19	No
Minnesota	Yes	Yes	Yes	Yes	Yes	Yes		5 to 9	No
Mississippi	Yes	No	No	No	No	Yes	Yes	5 to 9	No
Missouri	No							>30	No
Montana	No							other	No
Nebraska	Yes	Yes	Yes	Yes	Yes	Yes	Yes	10 to 19	Yes
Nevada	No							<5	No
New Hampshire	No							5 to 9	Yes
New Jersey	No							<5	No
New Mexico	Yes		Yes	Yes				<5	Yes
New York	Yes	Yes	Yes					other	No
North Carolina	Yes					Yes		>30	Yes
North Dakota	No							>30	Yes
Ohio	Yes	Yes	No	No	Yes	Yes	Yes	other	Yes
Oklahoma	Yes					Yes		10 to 19	Yes
Oregon	Yes	Yes	Yes					<5	No
Pennsylvania	No							>30	No
Rhode Island	Yes				Yes			5 to 9	No
South Carolina	Yes	Yes		Yes		Yes		20 to 30	Yes
South Dakota	Yes	Yes		Yes	Yes	Yes	No	other	No
Tennessee	Yes	Yes	Yes		Yes	Yes		none	No
Texas	Yes	Yes		Yes				5 to 9	No
Utah	Yes	No	Yes	No	No	Yes	Yes	10 to 19	Yes
Vermont	No							other	No
Virginia	Yes	Yes	Yes	No	Yes	Yes	No	<5	No
	Yes	Yes	No	No	No	Yes		5 to 9	No
Wash		1 500	- 10						
Wash West Virginia		Yes	Yes	No	No	Yes		<5	No
Wash West Virginia Wisconsin	Yes Yes	Yes Yes	Yes	No	No Yes	Yes		<5 10 to 19	No Yes

Question #:		O17d	176
State State	Do you identify outliers	If Yes, how do you determine if a ratio is an outlier?	What action do you take if you determine a sample includes outliers?
Alabama	Yes		Determine if its a valid sale or not, or representative to the sample
Alaska	No		Local officials typicyally exclude 5% on each end
Arizona		Sales ratio less than 25 or orester than 2.0	They are eliminated
Arkansas			
Colifornia	ON ON		
Colorado	No.		American introduce making
Congressions	62		Assessor investigates connects
Collingual	$^{+}$	000	discounted as #10 con
Delaware		44c of 21;00	discard outliers
Dist. Col.		SCALLER PLOI	DISCORLIFT THE COLLIER
Florida		Typically identify ratios below 30% and above 170% as outliers in sales ratio studies	Exclude such samples from sale ratio study analysis
Georgia		less than 10.00 and greater than 70.00	trim if basis is not shown. no more than 5% on either side
Hawaii-Hawaii Co.		No current standard	investigate outliers
Hawaii-Honolulu Co.			Outliers are referred to appraisers for evaluation
Hawaii-Kauai Co.	No	Generally <50% or >150%	Varies, elminate if number of outliers is relatively small
Hawaii-Maui Co.	Yes		Note outliers
Idaho	Yes		
Ilinois			Review or delete
Indiana		using 6 times the interquartile difference to determine the boundaries	Remove outliers from the study
lowa			
Kansas	Yes	Use the IAAO outlier identification method. (factor = 1.5)	Can implement trimming procedures or accompdation through robust estimation
Kentucky	Yes u	ži.	
Louisiana	Yes		Outliers are removed according to standards set by administrative rule
Maine		Natural break in data in high and low range	exclude from computing stats
Maryland			Examine outliers, allow assessors to examine outliers prior to study. Sample of outliers sent to assessors.
Massachusetts	Yes		
Michigan		visual review tradominant ranna of samples	If the outline is not remeasurative of the class, it is removed from the study
Minnesota		Sales with ratios outside of 50% to 150% range	They are flagged for additional verification. Residential sales with outlier ratios in the largest jurisdictions are trimmed.
Mississippi			None
Missouri		Investigation of each safe.	Oulliers are exclude from study.
Montana		We set a point criteria (e.g., remove any with ratio less than 25% or creater than 250%, etc.)	We examine the impact on measures (means median) when different levels for outliers are used
Nobracka			We contact counts and attenut to confirm if sale is arms landth or non arms landth
Nevada	Yes		we commer county and execution to constitute again to their and their actions and their actions and their actions and their actions are their actions and their actions are their actions and their actions are the actions are the actions are their actions are the actions are their actions are the actions
New Hampshire	Vec		No enactific action is directed, decisions are based on all information available
Now Jorean		lesi of trien factorie	Trick publisher duport as unforted, sociations and based of an information available.
New Maxico	Т	COOL SHIFT INCIDES	THE CARRIED
New York		Tarms and conditions of sala	Trimming salice
North Carolina		observe if ratio falls below or above statutory limits.	investigate nature of outlier.
North Dakota	No.		
Ohio	9		See item g., below.
Oklahoma		extreme outliers are reviewed by equalization analysts and may be excluded from sample if legitimate reasons for	potential removal from sample
Oregon	Yes		Investigate; eliminate or alter measure of central tendency used
Pennsylvania	Yes		Multiply by 4 and divide by 4 the first mean ratio of sales data
Rhode Island			
South Carolina	Yes F	Frequency distribution & sales report requests	Notify county of results and request review/adjustments if warrented
South Dakota	9		
Tennessee	9 N		N/A
Texas	Yes		Remove outliers
Utah		Extreme ends of ratio array	May be excluded on a case by case basis
Vermont			Soot sample outliers to determine if arm's length.
Virginia		Per IAAO 1999 standard Section 6.6 and table 1. 1.5x3x1QR	Defete Extremes (3x10R trimmina): sales verification questionnaire on outliers (1.5x10R)
Wash		Up to 5% of sales with ratios <25% or >175% may be invalidated in ratio study	Remove from valid sales study.
West Virginia		More than 2 standard deviations from the median	
Wisconsin		problems with data, or special use categories	review the outliers to determine the cause
Wyoming	Yes		Evaluate and analyze

Question #:			Q17f			Q17g	Q17h	Q17h		Q18	Q19
State	Do you attempt to determine representativeness?	If Yes, do you stratify by geo- graphic area?	If Yes, do you stratify by property class?	If Yes, do you stratify by value range?	If Yes, do you stratify by other factor?	Are fixed trim points set to automatic- ally remove outliers?	Is there a limit on % of sales that can be trimmed?	If Yes, what is your %?	Do you have a sales chasing law?	If Yes, describe procedure:	Can there be legal challenge to your ratio study?
Alabama	Yes	Yes	Yes			No	No		No		
Alaska	Yes	Yes	Yes	Yes		No	No		No		No
Arizona	No		-			Yes	No		No		Yes
Arkansas	Yes	Yes				No	Yes	0	No		Yes
California	No					No			No		No
Colorado	No					No	No		Yes	Comparison of sold and unsold sample and	No
Connecticut	No					No	No		No		Yes
Delaware	Yes		Yes			Yes	No		No		No
Dist. Col.	Yes	Yes	Yes			Yes	No		No		Yes
Florida	Yes	Yes	Yes	Yes	Yes	Yes	No		No		Yes
Georgia	Yes		Yes			No	Yes	5	No		No
Hawaii-Hawaii Co.	Yes	Yes	Yes			Yes	No		No		No
Hawaii-Honolulu Co.	Yes	Yes	Yes	Yes		No	No		No		No
Hawaii-Kauai Co.	Yes	Yes	Yes			No	No		No		Yes
Hawaii-Maui Co.	Yes	Yes	Yes	Yes		No	No		No		No
daho	Yes	Yes	Yes	100		No	No		No		No
linois	No	103	103			No	No		No		Yes
ndiana	No					No	No		No		Yes
lowa						No					Yes
Kansas	No	V	Vee		V		No	20	No		
	Yes	Yes	Yes		Yes	No	Yes	20	No		Yes
Kentucky	Yes		Yes			No	No		No		Yes
Louisiana	Yes	Yes		Yes		Yes	No		No		No
Maine	Yes		Yes			Yes	Yes	30	No	Review PerCent Change in assessed Value	Yes
Maryland	Yes		Yes				No		Yes		
Massachusetts	Yes	Yes	Yes	Yes	Yes	Yes	No		Yes		Yes
Michigan	-		Yes			No	No		No		Yes
Minnesota	No					No	Yes	5	Yes	We compare sold and unsold market vlaue	Yes
Mississippi	Yes		Yes			No	No		No		Yes
Missouri	No					No	122.0		No		Yes
Montana	No					Yes	No		Yes	Within our quality assurance process.	No
Nebraska	Yes		Yes			No	Yes	2	No	Determine pre assessed value to see if A.V.	Yes
Nevada	Yes	Yes	Yes			No	No		No	103	No
New Hampshire	No					No	No		No	While there is no statutory requirement, we do	Yes
New Jersey	No					No	No		No		Yes
New Mexico	Yes	Yes	Yes	Yes		No	No		No		No
New York	Yes	Yes	Yes	Yes		Yes	No		No		Yes
North Carolina	Yes	Yes	Yes			No	No		Yes		Yes
North Dakota	No					No	No		No		No
Ohio	Yes	Yes	Yes	Yes		Yes	No		No	Compare aggregate value increase by class to	Yes
Oklahoma	No					No	No		No	in administrative rules	Yes
Oregon	Yes	Yes	Yes	Yes		No	Yes	5	No		Yes
Pennsylvania	No					Yes	Yes	200	No		Yes
Rhode Island	Yes	Yes				Yes	No		No		No
South Carolina	Yes	1.00	Yes	Yes		No	No		No		Yes
South Dakota	No					No			No		Yes
Tennessee	Yes	Yes	Yes	Yes	Yes	Yes	No		No	not statutory, but tested by split sample survey	Yes
Texas	Yes	100		Yes	. 00	No	No		Yes	concentration and previous years sold	Yes
Utah	Yes	Yes	Yes	103	Yes	No	No		Yes	Compare % value change from prior year to	Yes
Vermont	No	165	105		165	No	No		No	Sompare to value change norm prior year to	Yes
Virginia	Yes	Yes	Yes	Yes	Yes	No	No	-	No		Yes
		res			res			F			
Wash	Yes		Yes	Yes		Yes	Yes	5	No		Yes
West Virginia	No		V	V		No	No		Yes	Assured an investment of search and a second	Yes
Wisconsin	Yes		Yes	Yes		No			No	Annual review of randomly selected parcels,	Yes
Wyoming	Yes	Yes	Yes	Yes		Yes	Yes	5	Yes		Yes

Appendix D: (This is a text version of the online survey)

2003 Ratio Study Survey of States, Provinces & Territories

conducted by

Alan S. Dornfest, AAS Property Tax Policy Supervisor

and

Douglas C. Thompson Property Tax Appraiser

Idaho State Tax Commission, Boise, Idaho

Contact information for the person completing this survey:
Name: Last: First: MI:
Professional Designation: Title:
Bureau / Department:
e-mail address: Telephone:
Agency or Jurisdiction: State or Province:
 Your jurisdiction: ☐ State agency or ☐ Provincial/territorial agency or ☐ Local jurisdiction or ☐ Other (please describe):
2. How often does your jurisdiction conduct ratio studies? Annually or More frequently or Every years?
3. Who conducts your ratio study? (Please check all that apply) \square State or \square provincial/territorial officials or \square Local officials or \square University or private company under contract or \square Other (please explain)
4. Which of the following does your ratio study include? \square Sales only or \square Appraisals only or \square Both sales and appraisals?
a. If you use both sales and appraisals, do you combine them in studying one type or category of property? $\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$
b. If sales are used in the ratio study, which jurisdiction performs the sample selection? \square State or province or \square Local
c. Which jurisdiction conducts the sales validation? $\hfill\Box$ State or $\hfill\Box$ province or $\hfill\Box$ Local
5. Are business or commercial machinery and equipment considered taxable personal property in your jurisdiction? \square Yes or \square No
a. If yes, is a ratio study conducted for such personal property? \square Yes or \square No

b. If yes to (a.) above, which of the following does your personal property ratio study involve? Sales only or Appraisals only or Both sales & appraisals
c. If you use both sales and appraisals, do you combine them in studying one type or category (e.g., vehicles, machinery) of property? \square Yes or \square No Please explain:
d. How are the results of your personal property ratio study used? Please explain:
e. If you use appraisals, what techniques does your jurisdiction use? (Please check all that apply) Depreciation or economic life tables, Iowa curves Other (Please list):
6. Regarding intangible personal property:
a. Do you have a statutory exemption for intangible personal property? \square Yes or \square No
b. If yes, which types of property would receive this exemption? (please check all that apply)
7. Does your jurisdiction audit appraisal procedures of any class or category of property in lieu of a ratio study? ———————————————————————————————————
b. Does your jurisdiction use procedural audits in addition to ratio study information to determine compliance? \square Yes \square No
c. Can equalization or reappraisal be ordered as a result of such audits? $\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$
8. Regarding sales price disclosure and recordation:
a. Does your jurisdiction have a law requiring disclosure of real estate sales prices to assessment officials? \square Yes \square No If yes, is disclosure made to \square state/provincial or \square local assessors or \square both?
b. Does the sale price disclosure occur at deed recording or within a statutory period of time (e.g., 30 days) or Other (please explain):
c. Is a method in place to track a disclosure document for every recorded sale? \square Yes \square No
d. Please select the type of disclosure document used: \square Sale Price Statement or \square Comprehensive Questionnaire or \square Both or \square Other (please explain):
e. Is the disclosed sale price confidential in the jurisdiction to which disclosure was made? \square Yes \square No

or or

f. Do you charge a value related fee (e.g., transfer tax, deed stamp) for real property transfers? \square Yes \square No If so, please describe (include rate(s)):
g. Does your jurisdiction have a law making recordation mandatory for real property transfers? Yes No If yes, at what level does recordation occur, state/provincial or local assessors or both?
h. Are there legal penalties in place for falsifying information on the sales disclosure document? $\hfill\Box$ Yes $\hfill\Box$ No
9. If a sale is verified to be a valid arm's length market value transaction and is to be used in your ratio study, do you adjust the sale price for any of the following? \square Yes \square No
If you adjust, approximately what percentage of the sales in a typical ratio study are adjusted? (click all that apply)
Time % of Sales Financing % of Sales Personal Property % of Sales Closing Costs % of Sales Brokerage Fees % of Sales Intangibles % of Sales Other % of Sales Please describe:
10. Are blanket or global adjustments made to sales prices prior to computing ratios? (For example, some jurisdictions adjust all prices down by 1% in an attempt to adjust for personal property that is difficult to isolate sale by sale; others adjust by 10% for financing considerations.) Yes No
a. If yes, please describe types of adjustments and indicate the maximum adjustment generally permitted by this procedure:
b. Are there any court cases in your jurisdiction affirming or disallowing these blanket adjustments? \square Yes \square No If yes, please give citation:
11. For which of the following purposes is your ratio study used? (click all that apply):
☐ To order adjustments to locally determined assessed values. ☐ To equalize state or provincial funding of local jurisdictions. ☐ To order local jurisdictions to reappraise. ☐ To advise provincial, state, or local jurisdictions of assessment conditions. ☐ To assist mass appraisals programs. ☐ To adjust or equalize centrally determined assessed values (such as utilities) ☐ Other (please describe):
12. If you use your study to adjust or to order adjustment to locally determined assessed values, which of the following procedures is used?
☐ Order local officials to apply trending factors to individual classes or categories of property. ☐ Trend all types of property equally, based on a jurisdiction-wide factor. ☐ Give local officials a grace period to comply with indicated factors.

Other (please describe):					
13. Regarding assessment uniformity: a. Do you have specific standard uniformity as measured by the COD (Coefficient of Variation)? (These may case would be used to find jurisdiction of the property of	efficient of Disp y be statutory or ons in or out of	ersion) o procedur complianc	or COV ral, but in either ce.)		
Uniformity: COD	IAAO '99 COD St	andard	Your COD Standard (if different)		
Single Family Homes & Condos(homogeneous)	10.0 or less				
Single Family Homes & Condos (heterogeneous)	15.0 or less				
Rural Residential & Seasonal	20.0 or less				
<pre>Income Producing Properties (larger, urban jurisdictions)</pre>	15.0 or less				
Income Producing Properties (smaller, rural jurisdictions)	20.0 or less				
Unimproved Properties	20.0 or less				
b. Do you have standards for pinequity) as measured by the PRD (Price statistical tests? The Yes No Uniformity (Vertical IAAO '99 P		ential) c			
Equity): PRD	RD Scalldard	differen			
All Property Types 0.98 - 1.0	3				
c. Can your jurisdiction initiate any action as a result of assessment uniformity conditions? Yes No If yes, please check all actions that apply: Order reappraisal, Withhold funding (e.g., revenue sharing), Other action (please describe): d. If you answered Yes to 13 (c) above, do you calculate reliability measures, such as confidence intervals, on uniformity statistics around the COD or the PRD or Both?					
	DOCII:				
is such action dependent upon point	a regult of agge	amont uni	formity		
	a result of asses t estimates or				
14. Testing assessment level:					
a. Do you have an assessment amount of variance from your statutor. If yes, please click on your amount or □ Other (please specify):	t estimates or level standard the ily required asse	interval at allows	estimates? s some evel? Yes No		
a. Do you have an assessment amount of variance from your statutor. If yes, please click on your amount of	estimates or level standard the ily required asse f variance permit et by statute? [interval at allows ssment le ted:	estimates? s some evel? Yes No 10%, or \$\frac{1}{2} 5%,		

compl	ian	ce,	are	all	owance	s mad	le	for	sam	ple	reliab	ility	using	statistical	tests
such	as	conf	ider	ıce	interv	als?		l Yes	; 	No	Please	expla	ain:		

Measure	Calculate	Equalization
Arithmetic Mean		
Median		
Weighted (aggregate) mean		
Geometric mean		
Other (please specify):		

Weighted (aggregate) mean					
Geometric mean					
Other (please specify):					
statistically normal? Ye	would this det	ermination aff	ect the measu	ıre(s)	ion
15. Testing reliability:					
a. Is statistical cobased on \square point estimates				vel	
b. If yes, which terconfidence, or \square 90% level (please describe):				fidence	
c. Assume that there measured by the ratio study value. An equalization orderstudy sample has a mean ratibetween 75% and 95%. Would assessment level requirement of the compliance, or Yes, the confidence compliance.	y sample mean er could be is tio of 85% and d you rule this nts?	to fall betwee sued if the st a 95% confide s result in co used to make i	en 90% and 110 candard is not ence interval ompliance with .nferences abo	% of mark met. A	
d. How would you rethe sample COD (or other more Please check all that apple May use the point estimate measures from previous years sample size, to make a find	easure of uniformity: No changement only to every serior No may be not be no	ormity) showed e,	d very poor uner the level o	iformity? f confider level	
16. Do you appraise any namarket value (full cash va					
a. Do you appra (e.g., 1990)? Yes No	ise all proper If yes, what				
Is property given year required to have No Please explain how		dated during s	such interim y	rear? 🔲 Y	es

b. ratios?	Can your local jurisdictions establish different assessment Yes \square No If yes, please explain:
c. ratio for t	What is the state or provincial statutorily set assessment the major types of property?
Type of Property	Your Jurisdiction's Ratios
Residential	100% of Market Value? Yes No If no, please enter your ratio
Farmland	100% of Market Value? Yes No If no, please enter your ratio or indicate use value %
Commercial	100% of Market Value? Yes No If no, please enter your ratio
Industrial	100% of Market Value? Yes No If no, please enter your ratio
Utilities	100% of Market Value? Yes No If no, please enter your ratio
Personal	100% of Market Value? Yes No If no, please enter your ratio
Railroads	100% of Market Value? Yes No If no, please enter your ratio
Minerals	100% of Market Value? Tes No If no, please enter your ratio
Other type:	100% of Market Value? Tes No If no, please enter your ratio
a. Wi yes, by: Range of va Geographic School Dist City? County? Other facto	neighborhood?
category of	What is the smallest sample you will use to evaluate any property? less than 5, or 5 to 9, or 10 to 19, or 20 to greater than 30, other (please specify):
	Do you establish any sample size quotas or goals (e.g., 3% of category or number based on statistical sample size formula)? Yes res, please explain how are these established?
	Do you identify outlier ratios? Yes No If yes, how do you f a ratio is an outlier?
e. W outliers?	That action do you take if you determine a sample includes
f.	Do you attempt to determine how representative the sample is? Yes

200%) set to automatically remove outliers? \square Yes \square No

g. Are fixed trim points (such as all ratios below 50% or above

☐ Stratify by geographic area☐ Stratify by property class☐ Stratify by value range☐ Other (please describe):

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h. Is there a limit on the percentage of sales that can be trimmed out of a sample? \square Yes \square No If yes, please enter the %:
18. Do you have statutory requirements to check for sales chasing? \square Yes \square No If yes, please describe your procedure for testing and correcting:
19. Can a taxing district or third party initiate legal action as a result of your jurisdiction's ratio study? \square Yes \square No If yes, please describe:
Additional comments:
Your time and expertise in completing this survey are greatly appreciated. Thank you.
Would you like a copy (Adobe Acrobat .pdf $^{\otimes}$ electronic format) of the report prepared from this information sent to your e-mail address? \square Yes \square No If you wish that it be sent to another e-mail address, please enter it here:
Please submit your responses on or before July 7, 2003 by clicking this button: