

# **REVIEW OF DETAILED ASSESSMENT AUDIT PROGRAM**

**PREPARED FOR**

**ALBERTA MUNICIPAL AFFAIRS**  
**Local Government Services Division**  
**Assessment Services Branch**

**By**

**ALMY, GLOUDEMANS, JACOBS & DENNE**  
*Property Taxation and Assessment Consultants*  
7630 North 10<sup>th</sup> Avenue  
Phoenix, Arizona 85021

**August 2006**

## Contents

Acknowledgments.....	iv
Executive Summary .....	v
Background and Approach .....	v
Conclusions and Recommendations .....	vi
1. Introduction.....	1
1.1 Background.....	1
1.2 Evaluating Assessment and Property Tax System Effectiveness .....	1
1.2.1 Components of an Assessment and Property Tax System.....	1
1.2.2 Ratio Studies .....	3
1.2.3 Performance Audits .....	3
1.3 Scope of and Approach to the Review.....	4
1.4 Organization of Report .....	6
2. Overview of Assessment Administration in Alberta .....	7
2.1 Assessment.....	7
2.1.1 1995 Reforms and Subsequent Developments .....	7
2.1.2 Legal Framework .....	8
2.1.3 Organizational Framework .....	9
2.1.4 Assessment and Equalization Calendar .....	9
2.2 Role of the Assessment Services Branch.....	10
2.2.1 Standards Setting .....	10
2.2.2 Assistance .....	10
2.2.3 Corrective Actions .....	11
2.3 Assessment Audit and Equalization.....	11
2.3.1 Self-Evaluation and Reporting by Municipal Assessors .....	12
2.3.2 Annual Audits of Reported Performance.....	12
2.3.3 Detailed Audits .....	13
2.3.4 Equalization of Assessments.....	14
2.3.5 Progress Monitoring.....	15
3. Assessment Audit Program Management.....	16
3.1 Planning and Scheduling.....	16
3.2 Resource Requirements, Funding, and Staffing .....	18
3.3 Quality Assurance and Control.....	22
3.4 Stakeholder Relations .....	23
3.5 Opportunities for Improvement .....	24
3.5.1 Consider Augmenting the ASB Staff.....	24
3.5.2 Collect Data on Time Utilization and Productivity .....	24
3.5.3 Streamline High-Level Reviews of Audit Reports .....	25
4. Audit Strategy .....	26
4.1 Introduction.....	26
4.2 Risk Management .....	26
4.3 Other Opportunities for Improvement .....	29
5. Use of Information Technology.....	31
6. Annual Audits .....	33
6.1 Overview.....	33

6.2	Data Reporting .....	33
6.3	Sales Ratio Analyses .....	35
6.4	Opportunities for Improvement .....	37
7.	Detailed Assessment Audit Standards and Tests .....	39
7.1	Audit of Administrative Tasks .....	39
7.1.1	Planning and Staffing.....	39
7.1.2	Exemption Administration.....	40
7.1.3	Internal Quality Control.....	40
7.1.4	Assessment Roll Preparation and Communication.....	41
7.1.5	Assessment Complaints and Amendments .....	41
7.2	Audit of CAMA System .....	42
7.3	Audit of Attribute Data .....	43
7.4	Audit of Sales Data Processing.....	45
7.5	Audit of Valuation Models and Their Application.....	46
7.6	Audit of Regulated Property Assessments.....	48
7.6.1	Machinery and Equipment.....	48
7.6.2	Farmlands.....	49
7.6.3	Linear Property .....	49
8.	Reporting and Communicating Audit Results .....	51
9.	Conclusions and Recommendations .....	53
	Appendices.....	58
A1	Acronyms and Abbreviations .....	58
A2	Illustrative Time Utilization Record .....	59
A3.	A Rudimentary Illustration of A Decision-Theory Derived Risk Model .....	60
A4	References.....	63

## ACKNOWLEDGMENTS

We received outstanding cooperation from Alberta Municipal Affairs, and we would like to thank Brian Quickfall, Assistant Deputy Minister, and Steven White, Executive Director of the Assessment Services Branch (ASB) for the assistance we were given. Our review of ASB's audit program would not have been possible without the help of Brian Ferguson, Sheila Young, and Jerry Husar. We also would like to thank John Scott; Dean Cramer (as an auditor and as president of the Alberta Assessors' Association); Lynda Downey; Barb Priddle, and Ruth Cassaday. In addition, thanks are due to Ron Bennet, Barry Campbell, Barrie Hozak, Steve Kutanzi, Gilles Lapointe, Michael Laviguer, Grant Lloyd, Peter Loh, Keith Martin, and Randy Townsend.

We benefited from discussions with assessment professionals outside the ASB. They included members of the Equalized Assessment Panel Technical Committee that we have not already acknowledged, including John Elzinga, Roy Fegan, and Ian Ferguson; Ian McClung, assessor of the City of Calgary; and Stan Dilworth, Don Procuda, and Karen Wronko of the City of Edmonton. We are grateful for the additional insights that they provided.

The AGJD study team comprised Richard Almy, Robert Denne, and Robert Gloudemans. We solely are responsible for the conclusions and recommendations contained in this report.

## EXECUTIVE SUMMARY

### Background and Approach

Alberta Municipal Affairs (AMA) aspires to “A well-managed and efficient assessment and property tax system in which stakeholders have confidence.” AMA has assigned its assessment, and equalization functions to the Assessment Services Branch (ASB) of the Division of Local Government Services. Among the components of the Alberta system is ASB’s assessment audit program. The audit program has two main elements: annual audits and detailed audits. Because it was approaching the end of the first five-year cycle of detailed audits, the ASB considered this an opportune time to review the detailed audit program, and it sought an external consultant to make the review. The ASB selected Almy, Gloude-mans, Jacobs & Denne (AGJD) to make the review, and we were asked to:

- Review the current objectives, processes, and schedule of the detailed assessment audit program;
- Determine the practicality and suitability of continuing with all or some of the current audit tasks in the next five-year detailed audit cycle; and
- Recommend changes or alternatives to the audit tasks or to the current detailed audit process that will enhance the effectiveness and timeliness of the audit programs.

We thoroughly evaluated the audit program, considering its systemic context, program management, the role of ASSET (Assessment Shared Services Environment), and the relationships between annual and detailed audits. We considered all phases of detailed audits, including the tests used and how findings were documented and communicated. We also considered issues that had previously surfaced and that surfaced during our review. These included:

- Identifying and mitigating the risks inherent in deficient original assessments and in failures by the Province to detect such deficiencies, especially failing to detect efforts to conceal deficiencies.
- How to increase the benefits of the detailed audit program not only to the municipalities that were audited but also to the entire assessment community, while recognizing that the audits impose costs on the audited as well as the auditors. (There is a perception that detailed audits are most beneficial to the chief administrative officers of smaller municipalities.)
- How to audit performance in the valuation of specialized, often high value properties, especially when there are few comparable properties.

- How to improve the “transparency” of detailed audits, particularly whether to make the audits public. Transparency has been an ongoing issue with the entire audit and equalization program (see Equalized Assessment Panel, pages 11 and 12).
- How to ensure that municipalities appropriately respond to audit findings and recommendations.

Many narrower technical issues also surfaced during our review. Some of the issues are interrelated. Successfully addressing some may aggravate other issues or raise new issues.

Outside the scope of our assignment were such policy questions as the legitimacy of the education tax, whether all types of properties should in principle be valued on a market value standard, whether the current regulatory regime is in some way fundamentally unfair, and whether (and how) ASB’s valuations of linear property should be audited. Nevertheless, we do offer some observations about the assessment of regulated property and about auditing linear property assessments.

We interviewed members of the Assessment Audit Unit of ASB in a workshop setting and individually. We also interviewed the Assistant Deputy Minister who had ASB in his portfolio, the Executive Director of ASB, other members of the ASB staff, and the assessors of Calgary and Edmonton. We joined a meeting of the Equalized Assessment Panel Technical Committee, and we interviewed the president of the Alberta Assessors’ Association (an auditor in ASB). We reviewed pertinent sections of the MGA, regulations, manuals, and guidelines. We examined samples of work products. We evaluated the ASSET system. We drew upon our experience in reviewing performance audit programs in other jurisdictions, our earlier experience in Alberta, and our familiarity with the relevant professional literature.

## **Conclusions and Recommendations**

Given the policy of devolving responsibility for assessment to municipalities, we believe AMA from the outset of the reforms in 1995 has crafted an innovative and effective oversight program, the centerpiece of which is the audit program. The program has had its critics, and ASB has endeavoured to implement recommendations made in 2001 by the Equalized Assessment Panel and the Auditor General of Alberta. Most notable is the implementation of ASSET, which came on stream in 2005. ASSET already has allowed ASB to make audit and equalization more contemporaneous with municipal property taxation and to strengthen annual audit tests of the accuracy of municipal assessment rolls. ASSET also allows any municipality to investigate assessments in any other. ASSET has allowed other incremental improvements, including more comprehensive reporting by municipalities, and ASB has made other refinements, such as more standardization.

The audit staff is small in comparison to its workload, as measured by the number of municipalities that must be studied. This puts pressure on the Audit Unit to further increase the efficiency of its audit program. Effectiveness could be improved in a few areas as well. We believe ASSET and SAS provide opportunities to make these increases, although additional staff may be

necessary. Although section 9 of our report identifies more than twenty specific recommendations, many are inter-related, and they can be summarized as follows:

- Further improvements in annual audits involving more statistical tests
- Increased use of risk management concepts to focus resources where the benefits to municipalities and taxpayers would be greatest
- Greater analysis of real estate market developments and property price trends and patterns in Alberta to provide a better base for evaluating performance and also to help municipalities do a better job
- Greater emphasis on specific detailed audits and reduced emphasis on scheduled audits
- Make detailed audit reports readily available; better publicize best practices and warn about dubious practices

# 1. INTRODUCTION

## 1.1 Background

Goal 3 of the 2005-2008 business plan of Alberta Municipal Affairs (AMA) is “A well-managed and efficient assessment and property tax system in which stakeholders have confidence.” Among the components of the system is the assessment audit program of the Assessment Services Branch (ASB) of the Local Government Services Division of AMA. The audit program has two main elements: annual audits and detailed audits. Because it was approaching the end of the first five-year cycle of detailed audits, the ASB considered this an opportune time to review the detailed audit program, and it sought an external consultant to make the review. The ASB selected Almy, Gloudemans, Jacobs & Denne (AGJD) to make the review. We were asked to:

- Review the current objectives, processes, and schedule of the Detailed Assessment Audit program;
- Determine the practicality and suitability of continuing with all or some of the current audit tasks in the next five-year detailed audit cycle; and
- Recommend changes or alternatives to the audit tasks or to the current detailed audit process that will enhance the effectiveness and timeliness of the audit programs.

This report contains our conclusions and recommendations. As further background, section 1.2 places assessment audits in the context of a “well-managed and efficient assessment and property tax system.” Section 1.3 describes what we did. And section 2 briefly describes the current assessment and property tax system in Alberta for readers who are not familiar with it.

## 1.2 Evaluating Assessment and Property Tax System Effectiveness

### 1.2.1 Components of an Assessment and Property Tax System

A property tax system does three things.<sup>1</sup> It identifies and links taxable subjects (taxpayers) and objects (taxable property). It produces tax assessments. And it collects taxes. Thus, there are two main functional components—an assessment component, which includes valuation, and a collection component. There also is a control component, which dictates powers and responsibilities, provides resources and governs how they are used, and evaluates performance. In a decentralized system like Alberta’s, control functions are divided between the provincial government and municipal governments. The Province establishes the policy and legal framework, which is reflected in the Municipal Government Act (MGA), regulations, and guidelines, and it supervises municipalities, which are responsible for the day-to-day control of assessment operations pursuant to law.

---

<sup>1</sup> For more background material on property tax systems, see International Association of Assessing Officers, 2003, *Assessment Administration*.



The supervisory function is especially important when there are many small or sparsely populated local assessment districts and when a measure of property wealth (or tax effort) serves as the basis for jurisdiction-wide taxation or the distribution of funding for a function like education. Effective supervision is challenging in such a setting. Supervisory agencies like ASB typically pursue four broad, interrelated strategies:

1. *Setting standards*—the development of standards and specifications is necessary for effective, uniform administration of property tax laws. They provide the basis for evaluating performance.
2. *Providing assistance*—through assisting and counselling assessors and other local officials, a supervisory agency can foster excellence, eliminate duplication of effort and provide tools and services that are too costly for many local governments.
3. *Monitoring performance*—analyzing local government performance is essential to effective supervision. As will be discussed, ratio studies are the main monitoring tool. Performance audits like ASB’s detailed audits also are an important monitoring tool.
4. *Taking corrective actions when necessary*—clearly, the preceding activities are futile if deficient performance goes uncorrected. Equalization, a type of corrective action, has various forms.<sup>2</sup> Basically, it is the process an agency with authority over local assessment districts uses to adjust the total appraised (or assessed) value of each district to a common percentage of the legal standard of value (usually market value). A ratio study is the tool that is most often used in determining whether an adjustment is needed.

Although crucial to effective supervision, monitoring activities and enforcement actions usually are a source of tension between local governments and senior governments, as recent appeals of equalized assessments attest. The challenge a supervisory agency faces is achieving the balance of activities that results in the highest level of performance with the least consumption of resources and the least amount of stress. In other words, the more effectively a supervisory agency encourages high-level performance and the more effective its assistance activities are, the less onerous its enforcement activities will need to be. Effective supervision deters the destructively competitive underassessment that can occur when provincial aid is based on local property tax wealth. A competent property tax supervisory agency encourages competence in local assessment offices. In summary, the assessment supervision model described above combines effective programs for monitoring local conditions and local performance, a strong commitment to assisting when necessary, “counselling” when performance falls below expectations, and enforcing legal standards firmly and consistently. We will evaluate the ASB’s supervisory activities in general, and the detailed audit program in particular, on the basis of practices in other similarly situated supervisory agencies.

---

<sup>2</sup> Although not crucial to our review, equalization may be characterized as being “direct” or “indirect.” In the former, the calculated equalization factor is applied to each local assessment before the local tax rate is applied. In the latter, the factors are imbedded in the calculated equalized values. Many consider equalizing each assessment (direct equalization) to be more effective because doing so may highlight inequities in the underlying assessments, but the practical effect of this largely depends on the sequence of the assessment, equalization and appeal processes.

## 1.2.2 Ratio Studies

As noted, ratio studies are the principal tool for objectively analyzing assessment performance. They figure in both annual and detailed audits. A ratio study systematically compares appraisals made for tax purposes (or assessments) with recent sales (or, infrequently, appraisals made by an independent party or agency, generally a property tax supervisory agency). A ratio study addresses two main issues: (1) the *level* of values, that is, how close the typical ratio of appraised value to indicated market value is to 1.0 or 100 percent; and (2) the *uniformity* of the ratios, that is, how close the individual ratios are to the typical ratio. Ratio studies are used first and foremost to monitor appraisal performance at the local (municipality) level. Alberta assessors use ratio studies to determine whether they have met the Province's quality standards (discussed later). The ASB audits these studies during the annual audit process. The audited measure of the level of appraisal is used to produce equalized assessments.

As a ratio study is a form of applied statistical analysis, the validity of conclusions drawn about appraisal performance depends on certain underlying conditions being met. In addition, uncertainty cannot be completely dispelled, and judgment always is needed in interpreting the results of a ratio study. We will address these issues later as well. There is an extensive professional literature on making ratio studies properly, including the 1999 *Standard on Ratio Studies* published by the International Association of Assessing Officers (IAAO).

## 1.2.3 Performance Audits

Alberta's detailed audits essentially are performance audits. Performance audits can be valuable in two ways. When ratio study results are inconclusive (such as when sales samples are too small or non-representative) or irrelevant (as in the evaluation of assessments not based on market value), a performance audit can provide indirect evidence of the accuracy of assessments. If the assessor's systems and procedures conform to legal requirements and professional standards, the resulting values can be presumed to be accurate reflections of the underlying market values. Second, while ratio studies can provide evidence that appraisals do not meet accuracy standards, they cannot provide direct evidence of the cause of the problems. Performance audits can pinpoint the causes. Thus, an assessor or a supervisory agency can use the results of a performance audit to identify strengths and weaknesses in current operations, design improvements, and build a case for investments in new systems and procedures.

In addition to Alberta, about twenty-six state property tax supervisory agencies have performance audit programs (Dornfest and Thompson, question 7—see references). The programs differ in objectives, scope, methodology, and documentation. Performance audits may be regularly scheduled or conducted only when needed. In the latter case, they may focus on the practices used in the appraisal of classes of property that have too few sales to produce reliable ratio study results or when market value is not the legal basis of assessment. Regularly scheduled audits may be a component of an assessment roll approval process as distinct from equalization (Florida, Kentucky, Massachusetts, Oklahoma), or they may be used to encourage assessing units to use high-quality assessment practices (California, Connecticut, and New York). More recently, auditing activities take place during a revaluation to ensure that they produce values of accept-

able accuracy (Alberta, Arkansas, Massachusetts, and New York). Hence performance audit programs can be of interest to revaluation contractors as well as local government officials. Another innovation is to involve local governments in the auditing process (Alberta and Connecticut). In addition to differing objectives, factors affecting the differences include the resources the supervisory agency can devote to the audit program, as well as the history of supervision in the jurisdiction. The audits range from comprehensive, well-documented audits, such as California's assessment practice surveys to more narrowly focused reviews whose documentation essentially consists of a completed questionnaire (for example Oklahoma and Kentucky). In contrast to ratio studies, there are no detailed professional standards for assessment performance audits aside from generally accepted governmental auditing standards.<sup>3</sup>

### 1.3 Scope of and Approach to the Review

AGJD's approach to its assigned tasks was as follows:

1. *Review detailed assessment audit procedures in depth.* We considered audit preparations, all areas investigated in detailed audits, and the standards, tests, and procedures covered by the *Detailed Assessment Audit Manual*, including communication and follow-up. We evaluated whether the tasks reviewed and the way findings were documented ("yes/no" findings and comments) reliably resulted in meaningful conclusions. While being mindful of the need to be even-handed, we looked for opportunities to vary the focus of detailed audits based on the composition of the assessment roll, previous history, and other relevant factors (see task 3, below).
2. *Evaluate audit program management.* We concentrated on program objectives, risk management, resource allocation, work assignments and scheduling, quality assurance, auditor satisfaction, and stakeholder relations. Although we understand that the current practice is not to release detailed audits generally, we explored whether the lessons learned from detailed audits have been communicated to the assessment community in ways that encourage progressive improvements in local practices (and discourage undesirable practices).
3. *Analyze how the ASSET system could be optimally used in the audit programs.* We examined closely how the ASSET system (Assessment Shared Services Environment) was (and could be) used for such purposes as detecting attempts to subvert annual audits and in remedying such attempts during annual audits. In addition, we considered whether the systems and techniques used in New York and elsewhere might be applicable to areas of the Province with limited market activity, where conventional stratified sales ratio studies may not produce meaningful findings. (The New York State Office of Real Property Services (ORPS), which monitors assessment performance in nearly a thousand towns, makes use of computer-assisted mass appraisal (CAMA) models to estimate market values in regional market areas, which are then used to gauge performance in individual towns. ORPS also analyses whether changes in local assessed values are consistent with

---

<sup>3</sup> In section 11 of the *Standard on Ratio Studies*, the IAAO offers some recommendations on making personal property (machinery and equipment) studies. Its *Assessment Practices: Self-Evaluation Guide* provides general advice.

town location, economic base, and growth.) ASSET, in addition to enabling the advanced CAMA technologies contemplated in section 10.5 of the IAAO *Standard on Ratio Studies*, could facilitate detecting and resolving such commonplace problems as sales chasing, cherry picking, and in expanding sales samples backward in time. By relieving the data assembly burdens on detailed auditors and increasing the analytical tools available to them, ASSET should permit both more in-depth analyses and deeper sampling of data where personal reviews will remain essential.

In carrying out the tasks listed above, we considered the detailed assessment audit program in the context of the Alberta property assessment system and the ASB's functions in that system (see section 2). We considered issues that had previously surfaced and that surfaced during our review. These included:

- Identifying and mitigating the risks inherent in deficient original assessments and in any failures by the Province in detecting any such deficiencies, especially in failing to detect any efforts to conceal deficiencies.
- How to increase the benefits of the detailed audit program not only to the municipalities that were audited but also to the entire assessment community, while recognizing that the audits impose costs on the audited as well as the auditors. (There is a perception that detailed audits are most beneficial to the chief administrative officers of smaller municipalities.)
- How to audit performance in the valuation of specialized, often high value properties, especially when there are few comparable properties.
- How to improve the “transparency” of detailed audits, particularly whether to make the audits public. Transparency has been an ongoing issue with the entire audit and equalization program (see Equalized Assessment Panel, pages 11 and 12).
- How to ensure that municipalities appropriately respond to audit findings and recommendations.

Many narrower technical issues also surfaced during our review. As will be seen, some of the issues are interrelated. Successfully addressing some may aggravate other issues or raise new issues.

We considered some issues to be not part of our mandate. These included whether all types of properties should in principle be valued on a market value standard, whether the current regulatory regime is in some way fundamentally unfair, and whether (and how) ASB's valuations of linear property should be audited. We do, however, offer some observations about the assessment of regulated property and about auditing linear property assessments in section 7.6.3.

Another issue that is outside the scope of our assignment is the very legitimacy of the education tax. We would note, however, redistributive taxes like education requisitions are inevitably controversial. Although they attempt to match resources with needs, areas that contribute more than

they receive tend to dislike them. A clear implication of such tensions is the need to have a defensible equalization program and, by extension, an effective audit program.

Our review of the detailed audit program had the following elements: We interviewed members of the Assessment Audit Unit of ASB in a workshop setting and individually. We also interviewed the Assistant Deputy Minister who had ASB in his portfolio, the Executive Director of ASB, other members of the ASB staff, and the assessors of Calgary and Edmonton. We joined a meeting of the Equalized Assessment Panel Technical Committee, and we interviewed the president of the Alberta Assessors' Association (an auditor in ASB). We reviewed pertinent sections of the MGA, regulations, manuals, and guidelines. We examined samples of work products. We evaluated the ASSET system. We drew upon our experience in reviewing performance audit programs in other jurisdictions, our earlier experience in Alberta, and our familiarity with the relevant professional literature. We gave particular attention to issues raised by the City of Calgary in its equalization appeals.

## **1.4 Organization of Report**

As previously noted, sections 1 and 2 of this report essentially provide background information. Section 3 contains our analysis of audit program management. Section 4 examines in more detail our evaluation of the overall strategy of annual and detailed audits and sets out what we believe would be more cost-effective. Section 5 evaluates ASSET and the use of IT in general. Section 6 briefly examines annual audits and the integration of annual and detailed audits. Section 7 systematically evaluates detailed assessment audit standards and tests. Section 8 evaluates how audit results are communicated to affected municipalities and to stakeholders. Section 9 summarizes our conclusions and recommendations.

## 2. OVERVIEW OF ASSESSMENT ADMINISTRATION IN ALBERTA

We assume that most readers already will be familiar with assessment systems in Alberta. Therefore, the main purpose of this short description is to provide the context for our evaluation of the detailed audit program.

### 2.1 Assessment

#### 2.1.1 1995 Reforms and Subsequent Developments

Profound changes to the property assessment and tax system in Alberta began in 1995, when:

- Market values replaced regulated values as the basis of taxation for residential and much non-residential real estate. However, “linear” property, machinery and equipment, and farmland remain valued on a regulated basis. Machinery and equipment assessments are excluded from the assessment base used to determine education property tax requisitions.
- Responsibility for assessment (except for linear properties) was devolved from the province to municipalities, which now total 354. Most are small (the median parcel count, population, and total assessment is about 600, 1,000, and \$50,000, respectively). Almost 300 municipalities have parcel counts less than 5,000, which is a benchmark used to decide whether a full-time assessor would be viable. Thus most of those rely on contractors.
- The reassessment cycle was shortened from eight years to one year beginning in 1998.
- The scheme for funding public schools changed. The Province distributes about one-third of the funding for primary and secondary schools from the Alberta School Foundation Fund (ASFF). Subject to certain limits, it annually requisitions from each municipality an amount that is based on the municipality’s equalized assessment. This mechanism is in essence a provincial property tax for schools.
- The Province’s role in property tax administration changed from a provider of basic assessment services to a supervisor of local assessment performance. The audit program began in 1995.

Developments in the ensuing decade largely have been consistent with the original vision. They are the result of technological opportunities, lessons learned during implementation, issues raised in equalization appeals, and recommendations by the Auditor General (AG), the Equalized Assessment Panel (EAP), and others. For example, the AG recommended that a detailed audit of every municipality be made at least once every five years, and ASSET is the result of an EAP recommendation.

### 2.1.2 Legal Framework

The legislative basis for the 1995 changes to the assessment and tax system is the Municipal Government Act (MGA). It is divided into parts, divisions, and sections. Parts 9 through 12 lay out the Alberta property tax system, with part 9 concerning assessment. Division 5 (sections 317 to 321) deals with equalized assessments, and division 6 (sections 322 through 325) spells out the general powers and duties of the Minister of Municipal Affairs relating to assessments and equalized assessments. Part 12 concerns the Municipal Government Board, which has jurisdiction to hear appeals of equalized assessments (section 488(1)). Part 14 and part 16 give the Minister other powers relevant to audit and to supervision. Especially important are section 570(1), the provision of assessment information; section 571(1), inspections; and section 574(1), directions and dismissal.

As the MGA envisages that many details of the property tax system will be spelled out in regulations, section 322 gives the Minister specific authority to make regulations in enumerated areas, including the qualification of assessors, the kinds of properties that are to be valued on a regulated basis, valuation standards generally, the preparation of assessments, equalizing assessments, and auditing assessments. Of the ten regulations that pertain to assessment and taxation, two, as will be discussed, are particularly pertinent to the detailed audit program:

- The Matters Relating to Assessment and Taxation Regulation (AR 220/2004 or “MRAT”). MRAT contains five parts. Parts particularly relevant to the audit and equalization program are (1) standards of assessment, (2) recording and reporting property information, (3) equalized assessments, and (4) assessment audits. Part 1, standards of assessment, establishes the quality standards, requires assessors to follow the Alberta Assessment Quality Minister’s Guidelines, and requires an annual declaration by each assessor that requirements for assessments have been met. Part 2, establishes the duties of assessors to record and report information required by the Minister and in accordance with the Minister’s guidelines. Part 3, equalization, requires the Minister to assess the information reported; allows the Minister to rely on reported information in the determination of assessment levels if the information is acceptable, and allows the Minister to prepare equalized assessments using whatever information is available if the reported information is not acceptable. Part 4 authorizes annual and detailed audits, places obligations on municipalities to facilitate the audits, and requires that audits be made in accordance with the Alberta Assessment Quality Minister’s Guidelines.
- Qualifications of Assessor Regulation (AR 233/2005), which took effect 1 January 2006 (replacing AR 55/99). The regulation establishes required qualifications and requires assessors to declare that they have the requisite qualifications.

As suggested above, the *Alberta Assessment Quality Minister’s Guidelines* is an important component of the legal framework for assessment and equalization. The Guidelines were reissued effective December 2005, and *Assessment Bulletin*, IB Bulletin No. 05-04, December 2005, details the changes. The Guidelines have five parts that elaborate on MRAT regarding recording and reporting information, annual and detailed audits, and equalization. The Guidelines essen-

tially also incorporate by reference the *Recording and Reporting Information for Assessment Audit and Equalized Assessment Manual*, which also was updated effective December 2005.

In conclusion, the legal framework for assessment and equalization in Alberta is set of interlocking statutes, regulations, and guidelines. Except for some concerns regarding equalization appeals discussed in section 3.3, we find the framework to be coherent and well designed. Appropriately, the ASB places primary emphasis on legal requirements in the design of its detailed audit program.

### **2.1.3 Organizational Framework**

The Minister of Municipal Affairs acts through Alberta Municipal Affairs (AMA). The AMA has assigned its linear property assessment, supervision, and equalization functions to the Assessment Services Branch (ASB) of the Division of Local Government Services.<sup>4</sup> The ASB's Audit Unit makes annual and detailed audits. It also assists assessors.

As noted, appointed municipal assessors are responsible for the assessment of all taxable property except linear property.

Municipal assessments may be appealed to local assessment review boards, with a further right of appeal to the Municipal Government Board (MGB), which also is in the portfolio of the Minister of Municipal Affairs. Among its other duties, the MGB also has the responsibility of hearing equalization appeals.

### **2.1.4 Assessment and Equalization Calendar**

An assessment year is the calendar year prior to a taxation year. For any assessment year, such as 2006, property generally is assessed on the basis of its physical condition on the preceding 31 December (2005) and its market value on the preceding 1 July.<sup>5</sup> Currently, assessors are supposed to submit their declarations and data submissions by 31 January, and rolls are to be completed by 28 February. The deadline for property tax bylaws is determined by the municipality (usually late spring or early summer).

ASB has attempted to make audit and equalization more contemporaneous with taxation. Annual audits and equalized assessment determinations now take place during an assessment year, instead of being spread over a two-year period as was originally the case. To accomplish this, implementation of the ASSET system was required, and ASB has advanced the declaration deadline from 1 April to 28 February to 31 January. Assessors contend that the period between the condition date (31 December) and the declaration deadline (31 January) is too short. The detailed audit cycle is the same as the province's fiscal year, which runs from 1 April to 31 March.

---

<sup>4</sup> Organization charts can be found at [http://www.municipalaffairs.gov.ab.ca/as\\_who\\_where.htm](http://www.municipalaffairs.gov.ab.ca/as_who_where.htm).

<sup>5</sup> When a municipality makes supplementary assessments, the physical condition date would vary.



## 2.2 Role of the Assessment Services Branch

As noted above, the ASB has responsibilities, such as the assessment of linear property, that are not related to assessment supervision and are outside the scope of our review. Section 2.2 summarizes the ASB's supervisory activities that have a bearing on audit and equalization.

### 2.2.1 Standards Setting

As summarized in section 2.1.2, Alberta's statutory and regulatory framework establishes standards in a number of important areas of assessment practice. MRAT contains mandatory assessment level and uniformity quality standards, which generally are referred to as the "quality standards." The Qualifications of Assessor Regulation ensures that each municipality appoints a professionally qualified assessor. The Assessment Quality Minister's Guidelines and the accompanying *Recording and Reporting for Assessment Audit and Equalized Assessment Manual* contain standards for forms, codes, and computerized data submittal. It also contains some practice standards. Other sources of practice standards include:

- As will be described in some detail later, the ASB's *Detailed Assessment Audit Manual* outlines the areas of assessment practices that are examined in detailed audits.
- The Alberta Assessors' Association's *Market Value and Mass Appraisal for Property Assessment in Alberta*, which is being updated and has been renamed *Property Assessment in Alberta Handbook* is cited as a source of best practices.
- Certain publications of the International Association of Assessing Officers, including *Mass Appraisal of Real Property* and applicable standards, also provide information on best practices.

The Consolidation of the 2005 Minister's Guidelines Regarding the Assessment of Farm Land, Linear Property, Machinery and Equipment, and Railway Property and associated appendices set out base rates and modifiers for valuing regulated property. Various other cost manuals remain valid.

Desirably, the ASB would have the resources to ensure that its standards-setting activities kept abreast of market developments and industry best practices. As will be discussed, the regulated property standards are outdated, and the Alberta Assessors' Association (AAA) believes the manual needs updating.

### 2.2.2 Assistance

The ASB, chiefly through its Education Tax and Assessment Advisory Unit and often in conjunction with AAA and other organizations, offers assistance directly, through publications, and through conferences and educational programs. As noted, it issues and attempts to maintain several manuals, and it issues serial publications. The most useful serial publications that pertain to the audit and equalization program are *Assessment Bulletins*. These are in two series: ASSET News and more general bulletins. These are successors to Assessment Audit Information Sheets.

ASB also publishes *Advisory Aspects*, an occasional newsletter. Most publications and other current information can be found on Alberta Municipal Affairs website, [www.municipalaffairs.gov.ab.ca/as/](http://www.municipalaffairs.gov.ab.ca/as/). Within the limits of its resources, the ASB provides answers to questions and similar forms of direct assistance on request. Resources permitting, there are numerous opportunities for ASB to improve its assistance activities, however.

An issue that arises—and which the Equalized Assessment Panel considered—is whether the assistance and monitoring functions should be carried out by the same individuals or whether advisory staff should be separated from auditing staff. The rationale for separation is clear and appealing: an advisor may not be an unbiased auditor. There is anecdotal information from other jurisdictions about auditors “going native” (seeing no evil) and about auditors who set out to persecute certain assessors. No complaints of either type have reached our ears in Alberta. The rationale for separation also is a bit simplistic. Much like a good parent, a well supervised professional advisor/auditor should be able to provide support *and* call attention to shortcomings. Moreover, both effective assistance and effective monitoring benefit from knowledge of local conditions. Insisting on separation risks a lower level of effectiveness or higher costs. The risks of uneven treatment by auditors can be (and are) mitigated by effective oversight of the detailed audit process.

As discussed further in section 5, the Assessment Shared Services Environment (ASSET) system enables participating municipalities to access a province-wide sales and assessment database through *milenet*, AMA’s secure extranet gateway. ASSET is an assistance and analysis tool that aims to increase productivity and make the audit and equalization process more transparent. ASSET also will include a notification service and a sales database, which will be particularly valuable in lesser-populated areas.

### **2.2.3 Corrective Actions**

As noted, when performance falls short of standards, corrective actions are warranted. The equalization process is a kind of corrective action. At best, it only improves the distribution of education tax requisitions. More promising, and in keeping with a “right first time” philosophy, the ASB now will no longer let a municipality declare an annual assessment roll that does not appear to meet the quality standards, except in rare extenuating circumstances. As will be discussed in section 2.3.5, what the ASB does when it detects a real or apparent problem is crucial. The MGA provides a number of enforcement tools. In an extreme case, section 324 gives the Minister the power to quash an assessment roll. Short of that, section 323 allows the Minister to cause reassessments of all or part of a municipality at the municipality’s expense. If applied suddenly, these tools could cause fiscal chaos. Fortunately, section 574 gives the Minister the power to order any corrective actions deemed warranted and to dismiss any official that failed to carry out the order satisfactorily. This power has persuaded municipalities to dismiss non-performing assessors. The Minister, under section 575, may appoint an administrator.

## **2.3 Assessment Audit and Equalization**

From the beginning, the assessment audit and equalization program has been an integral part of the ASB’s strategy for ensuring that municipal assessors met the challenges of assessing ordinary

real property at current market values. A goal was to increase awareness of market values across the province and to encourage municipal assessors to develop effective valuation programs. Another was to make assessors appropriately responsible for making a proper ratio study (rather than transferring this responsibility to the Province). An additional goal was local assessment rolls that would not be vulnerable to large appeal losses and that would not require large equalization adjustments. Finally, the program was designed to make monitoring and equalization by the Province more efficient—it would not have to duplicate work that municipalities should have done, and it could incorporate in its analyses local knowledge of market conditions. Program components are discussed below. In addition to annual and detailed audits, the Audit Unit examines the assessments of Crown properties.

### **2.3.1 Self-Evaluation and Reporting by Municipal Assessors**

Section 319(1) of the MGA establishes the duty of assessors to provide the information needed to equalize assessments. MRAT, the Alberta Assessment Quality Minister’s Guidelines, and the *Recording and Reporting for Assessment Audit and Equalized Assessment Manual* elaborate on this duty. Using an ASB ratio study template, assessors originally were required annually to evaluate the accuracy of their appraisals as of the valuation date and report their findings and supporting data to ASB using its recording and reporting routine. Now they report data and supporting information using ASSET, as discussed further in sections 5 and 6.

Assessors must, as part of the required annual submission, file one or more declarations. In effect, the annual declarations are certifications by the assessor that the assessment complies with the law and that the information supplied for the audit is complete, accurate, unbiased, and representative of the municipality. As they are signed attestations, they establish accountability and provide the basis for annual and detailed audits.

### **2.3.2 Annual Audits of Reported Performance**

ASB recognized that not all municipalities could meet the quality standards, and it did not naively believe that all would attempt to do so. The purpose of annual audits is to ensure that reporting requirements are complied with, that declared performance is supported by credible evidence, and that performance complies with quality standards (see section 6). Annual audits also provide the basis for equalization adjustments as will be discussed. Thus, the annual audit process potentially has two types of benefits. The taxpayers in each municipality that meets the quality standards are assured of assessments that are reasonably accurate overall. The equalization process assures each municipality that its requisition for the Alberta School Foundation Fund is fair. Equity is assured within and among municipalities.

As noted, in 2004, ASB initiated an effort to audit the so-called “live” roll rather than auditing the previous year’s roll, as was originally the case. Annual audits now have the three stages described below.

In stage 1, after the audit data are loaded, ASSET makes a number of automated information and data tests. If the tests are passed, ASSET stratifies assessments by value range and actual use and makes ratio studies to determine whether quality standards are met. ASSET automatically

notifies the assessor whether stage 1 quality tests have been passed. If these tests are passed, the assessor may submit the annual declaration. Thus, the stage 1 tests are of proposed assessments, raising the possibility that the values in the roll that accompanies the tax rate bylaw may be different than the values that were audited. For 2006, the goal was for all assessors to submit their declarations by 31 January so that rolls could be finalized by 28 February. Equalized assessments for 2007 would be prepared by 1 November 2006. In the future, the goal is to prepare equalized assessments at the same time the roll is finalized (by 28 February).

In stage 2, auditors review ASSET reports and look for issues that should be considered in preparing the equalized assessment. If an issue is detected, a stage 3 audit is initiated. In 2006, the majority of stage 2 reviews took place in February and almost all were completed by the end of March. The plan is to complete them in February in the future. This obviously implies a period of intense work.

Stage 3 (post assessment) audits examine problematic conditions involving use codes, the sales reported, year-to-year changes in values, changes between the audited roll and the tax rate bylaw roll, time adjustments, and CODs. Stage 3 audits are made in the office. The auditor may request that the assessor respond to the concerns (possibly making changes in the submitted data) or he or she may recommend a specific detailed audit. Stage 3 audits also are made as a follow-up to earlier audit findings.

### **2.3.3 Detailed Audits**

From the outset, ASB recognized that ratio study-based annual audits would not be sufficient, and it developed a program of detailed (performance) audits. As analyzed in section 7, a detailed audit comprises additional ratio analyses and an evaluation of assessment practices. The objective of a detailed audit is to provide an unbiased opinion of the quality of a municipality's assessment roll measured against the standards set out in the *Detailed Assessment Audit* manual.

ASB has attempted to make continuous strategic and procedural improvements to detailed audits. The current *Detailed Assessment Audit Manual* is an outgrowth of the Assessment Audit Guide produced in 2001. Currently, there are two basic types of detailed audits: focused audits (specific, follow-up, and compressed) and regular, scheduled audits. In a specific detailed audit, the focus is on the issue or issues raised in a stage 3 audit or in a specific request. A follow-up audit focuses on issues identified in a detailed audit. Compressed audits follow on detailed audits made before 2001; they focus on legislatively mandated tasks and on sales chasing. Scheduled audits are made on a five-year cycle pursuant to a recommendation of the Auditor General. This schedule implies that an average of seventy-one audits must be completed each year. Yet in the first cycle, an average of sixty audits was completed.<sup>6</sup> The scope of a regular scheduled detailed audit covers:

#### **X Planning**

---

<sup>6</sup> In two years, more than seventy-one audits were completed; fewer were made in years with major equalization appeals.

- X Staffing
- X Computer-assisted mass appraisal (CAMA) system
- X Data collection and maintenance
- X Sales data
- X Income data
- X Valuation of property at market value
- X Valuation of regulated property
- X Assessment roll preparation and communication
- X Assessment complaints and amendments

The tests in these areas will be discussed in section 7. However, the focus may be on generally problematic aspects of assessment, such as time adjustments, the correct classification of machinery and equipment that may properly be classified as linear property, and the like. In addition, undue delays in receiving requested data from a municipality may heighten scrutiny.

By probing assessment practices, detailed audits provide assurances that municipalities have not attempted to subvert the annual audit process. They enable ASB to identify the strengths and weaknesses of municipal assessment programs and allow it to make cogent recommendations for improving effectiveness and efficiency.

#### **2.3.4 Equalization of Assessments**

Equalized values are based on strata median ratios: total assessed value of the stratum *divided by* the median ratio *equals* equalized value. Equalized values for each stratum are summed to yield the total equalized value.

Pursuant to the MGA and common practice, ASB's equalization determinations affect education tax requisition in the next tax year. As previously noted, equalization assures that requisitions and other sharing arrangements are fair.

Although the audit program has received the greatest amount of critical scrutiny, the AG in 2001 expressed a concern that there was no assurance that the roll that was equalized was substantially the same as the roll that was audited. In other words, there was a concern that an unscrupulous municipal assessor could submit one roll for audit and attach a different version to the tax bylaw. An ASSET task is to verify that any differences are warranted.

### **2.3.5 Progress Monitoring**

In 2001, the AG recommended that ASB more formally monitor each municipality's progress in addressing weaknesses revealed in a detailed audit. As a result, ASB now includes follow-up audits in its detailed audit schedule. Follow-up activities also are initiated when the annual audit process raises concerns about practices. As noted, ASB prioritizes the problems and allows an appropriate period to remedy the deficiencies. High-priority problems must be corrected by the next assessment year at the latest. This is reasonable, when one considers the time available for making procedural improvements in the current assessment year. Should there be insufficient progress, the ASB communicates its concerns to the municipality, continues to monitor the situation, and considers appropriate enforcement actions.

### 3. ASSESSMENT AUDIT PROGRAM MANAGEMENT

#### 3.1 Planning and Scheduling

The ASB aims to have each municipal assessor achieve and maintain a high standard. It recognizes that its performance is integral to achieving this goal. At least three levels of plans affect the audit program: those of the AMA, the ASB, and the Audit Unit. The first two are highly generalized, but they establish the framework for the Audit Unit's planning. Audits are an element of both strategies that have been identified in achieving goal 3.<sup>7</sup>

The ASB and the Audit Unit make use of participatory planning processes. This helps ensure understanding and acceptance by those on whom the success of the plan depends. The Unit's plans for the 2005-2006 fiscal year are reflected in two documents: a statement of "roles and goals" and a prioritized table of operational "goals" (operational plan and priorities).

The "roles and goals" document contains a chart that contains the following four columns:

1. Roles—the following eight roles are enumerated:
  - Support the assessment and equalized assessment processes
  - Monitor municipal assessments annually for compliance with the reporting requirements and the regulated quality standards (the annual assessment audit program)
  - Monitor municipal assessments for compliance with legislation and for the uses of best practices and procedures (the detailed assessment audit program)
  - Perform inspections on any matter related to assessment on behalf of the Minister
  - Monitor the valuations (assessments) of provincial Crown property
  - Support initiatives and objectives of the branch and the department
  - Provide technical advice and consultative services to clients and stakeholders on all matters related to the audit of assessments and on the valuation of provincial Crown property
  - Facilitate continual improvements of assessment performance and the use of best practices
2. Goals—for each role, one or more goals are enumerated; there are nineteen in total. Each is keyed in some way to the AMA or ASB plan.

---

<sup>7</sup> See *Municipal Affairs Business Plan 2005-2008*, page 368.

3. Objectives—for each goal, one or more objectives are enumerated; there are thirty-nine in total.
4. Potential Measures—a way of measuring progress toward each objective is identified.

The roles and goals document demonstrates the seriousness and thoroughness of planning. The roles appear to be listed in order of their overall importance to ASB’s achieving its mission. Consequently, the listing of goals reflects this ranking. The operational plan and priorities document, on the other hand, ranks the nineteen goals according to their urgency. It also indicates the nature of the timing of activities (ongoing, as-required, and seasonal). Thus, the three detailed audit goals have the ranks indicated in table 3-1.

**Table 3-1: Audit Goals and Priorities**

Goal	Role Ranking	Priority Ranking
(a) As part of the 5-year cycle, the scheduled detailed assessment audits for 2005/2006 are administered and completed within targeted timelines.	5 <sup>th</sup>	14 <sup>th</sup>
(b) As part of the 5-year cycle, the follow-up to the scheduled detailed audits from previous years are administered and completed within targeted timelines.	6 <sup>th</sup>	15 <sup>th</sup>
(c) Specific detailed audits are conducted as required.	7 <sup>th</sup>	7 <sup>th</sup>

The priority ranking is intended to help auditors plan their work on a daily basis. When urgent goals (such as defending equalization appeals) dominate, the detailed audit schedule slips, as the AG noted in 2001. It considered this slippage a significant weakness that could compromise the Province’s ability to determine whether municipalities were producing accurate and fair assessments.<sup>8</sup>

Pursuant to the AG’s recommendation, the Audit Unit developed a detailed plan, discussed below, for accomplishing detailed audits in a more timely fashion. Each year, the Unit submits for management approval the list of municipalities that it wants to audit. When approval is received, each audit is scheduled. Occasionally, there are delays in receiving approval, which can have adverse effects on adhering to the overall goal of audit each municipality at least once every five years. The Unit uses spreadsheets to document progress. A key, of course, to accomplishing any plan is sufficient resources.

<sup>8</sup> Fifty-six detailed audits were completed through 2000.



## 3.2 Resource Requirements, Funding, and Staffing

Section 3.2 examines such issues as the level of effort required by the audit program and Audit Unit funding and staffing. (ASSET and IT support generally are discussed in section 5.) It is worth noting at the outset that there are few relevant industry norms. Although it seems reasonable, the five-year detailed audit cycle essentially is arbitrary.

An element of the AG's recommendation of a formal audit schedule was an assessment of resources needed for each audit. ASB has made efforts to determine its audit resource needs. A company named Earth Tech was engaged to estimate resource requirements.<sup>9</sup> The audit staff developed a detailed audit planning model in Excel. The ASB also engaged PricewaterhouseCoopers (PwC) to look for ways to reduce the Audit Unit's workload so that more resources could be allocated to detailed audits. The ASB participates in a Canadian assessment benchmarking initiative (which is geared toward original assessment as opposed to supervisory agencies).

For each municipality, the audit planning model developed a level of effort (LOE) estimate expressed in days for more than twenty steps in a detailed audit. The model was based on workload and distance factors and estimates of productivity rates and time requirements that were based on the auditors' experience.<sup>10</sup> The productivity rates appear reasonable. The model was informally tested. A scheme for prioritizing audits was developed based on seven criteria. They include the interval since the last detailed audit and issues related to quality standards.

Although there were slight differences in the version of the model that we reviewed and the version that PwC evaluated, both versions suggested that about 9,300 hours of effort would be required to make detailed audits of all of the then existing 360 municipalities. Table 3-2 presents selected LOE statistics for the various categories of municipalities. Overall, the mean and median LOEs are twenty-six and twenty-three days, respectively. Although not clearly evident from the table, the cities of Calgary and Edmonton have very high LOEs associated with them as would be expected. The "Other" municipality (special areas 2, 3, and 4) has a high LOE relative to total assessed value due to the unusual nature of the municipality. However, estimated LOEs generally were proportional to total assessed values, suggesting that the model assigned resources appropriately. We also examined activities that had significant LOEs associated with them and that might be reduced through greater use of ASSET and other changes in the design of detailed audits. These included the effort to acquire data, travel, and time spent inspecting samples of properties. The table also presents LOE estimates for these activities. Collectively, these tasks account for about 40 percent of the estimated level of effort. As can be noted from the table, improvement districts, village, and summer villages have the lowest percentages, suggesting that a strategy of reducing sample sizes would have a greater payoff in large municipalities.

---

<sup>9</sup> The report of this study was not available for our review.

<sup>10</sup> As would be expected, auditors have home bases throughout the province to reduce the time spent travelling and away from home. Currently, auditors are based in Calgary, Edmonton, Lethbridge, Peace River, and Red Deer.

Turning to available resources, the ASB's budget for the 2005-2006 fiscal year totalled \$7,283,000, an increase of 3 percent over the previous year. The budget for the Assessment Audit Unit was \$2,076,000. Of this total, 86 percent was for personnel costs, and the remainder was for supplies and services. The budget for travel expenses is \$110,000 and for telephone and communications, \$17,000. For the 2005-2006 fiscal year, the ASB has an authorized staff of fifty-seven, of which the Audit Unit has twenty positions. The Unit has a director, two regional managers, thirteen auditors (including two vacancies), and four other positions. In general, each municipality is audited by a single auditor. A team audits Calgary and Edmonton.

Although the profession has not developed algorithms and standards for determining funding and resource needs for supervisory agencies (or performance audit programs), table 3-3 presents commonly used benchmarks. Based on total property tax revenues and grants in lieu of property taxes of \$3.7 billion, ASB funding of \$2.6 million, 354 municipal assessment districts, and a staff of fifty-seven, figures for ASB that are comparable to the benchmarks are 0.07 percent, \$7,300, and 6.2, respectively. Although not conclusive because they do not account for system and program differences, the figures suggest that ASB has significant resource constraints. The constraints on the Audit Unit have implications for continuing the current detailed audit schedule.

Compliance activities in general and the detailed audit program in particular imply resource requirements for the audited municipalities as well as for the ASB. Municipal assessment officials must be available for interviews and to supply data. Edmonton estimated a 1:1 ratio. The Calgary assessor seemed to believe that assessors had two sets of duties: local assessment and preparing the annual audit submission (and by implication) participating in detailed audits.

Opinions about the skills auditors must possess are mixed. One concern is that unnecessarily high requirements contribute to difficulties in filling vacancies. A somewhat contradictory belief is that the detailed audit program is tilted toward the least-skilled auditors. We take no position on this issue other than to observe that the role of an auditor is a challenging one and that current position requirements seem commensurate. A related concern is whether all auditors should possess the ability to audit the valuation of all types of properties or whether ASB should utilize specialists. We favour the latter approach; ensuring that every auditor has mastery of every valuation specialty is impractical and unnecessary. When an auditor encounters a property type in which he or she lacks sufficient experience, the auditor should be able to request assistance from a more experienced auditor (occasionally, ASB may need to secure the services of an outside appraiser).

However, we believe that all auditors should possess strong mass appraisal skills, including familiarity with the CAMA systems used by assessors, and that all auditors should continuously develop their appraisal skills. Among other things, this means that management should not "pigeonhole" an auditor as the specialist for a particular property type. In developing general appraisal skills, we do not believe that auditors necessarily need the skills and experience to value any type of property. Nevertheless, they should be able to decide whether the assessor's valuation methods are appropriate and, if not, whether the assessor's value estimates are valid.

**Table 3-2: Statistics on Level of Effort Estimates by Type of Municipality and for Selected Activities**

Municipality Type (Number)	Statistic	Level of Effort (Days)			
		Total	Data Acquisition	Travel	Field Sampling
<b>All (360)</b>					
	Mean	25.9	2.9	28616.0	5.0
	Median	22.8	4.0	2.1	2.5
	Minimum	14.9	1.0	0.1	0.8
	Maximum	341.0	24.0	71.1	196.6
	Sum	9312.6	1018.0	1069.8	1800.5
	Percent	100.0	10.9	11.5	19.3
<b>Other (1)</b>					
	Mean	178.5	4.0	71.1	88.0
	Median	178.5	4.0	71.1	88.0
	Minimum	178.5	4.0	71.1	88.0
	Maximum	178.5	4.0	71.1	88.0
	Sum	178.5	4.0	71.1	88.0
	Percent	100.0	2.2	39.8	49.3
<b>Cities (14)</b>					
	Mean	64.6	4.4	1.9	32.7
	Median	28.6	4.0	1.4	9.2
	Minimum	20.7	1.0	0.1	2.7
	Maximum	341.0	24.0	4.7	196.6
	Sum	904.7	62.0	26.4	457.4
	Percent	100.0	6.9	2.9	50.6
<b>Special Municipalities (4)</b>					
	Mean	60.2	1.8	19.0	23.9
	Median	70.3	1.0	20.4	24.5
	Minimum	20.1	1.0	0.6	1.6
	Maximum	80.3	4.0	34.8	44.9
	Sum	241.0	7.0	76.1	95.4
	Percent	100.0	2.9	31.6	39.6
<b>Rural Municipalities (64)</b>					
	Mean	29.0	2.2	3.9	6.8
	Median	27.7	1.0	3.6	6.3
	Minimum	19.4	1.0	0.1	1.4
	Maximum	45.0	4.0	11.4	18.0
	Sum	1857.4	139.0	250.1	433.8
	Percent	100.0	7.5	13.5	23.4

Municipality Type (Number)	Statistic	Level of Effort (Days)			
		Total	Data Acquisition	Travel	Field Sampling
Towns (110)					
	Mean	24.6	2.7	2.9	4.3
	Median	23.8	4.0	2.2	3.4
	Minimum	17.3	1.0	0.1	1.4
	Maximum	39.9	8.0	10.0	14.8
	Sum	2705.3	301.0	319.7	474.7
	Percent	100.0	11.1	11.8	17.5
Improvement Districts (7)					
	Mean	22.2	2.7	2.7	1.9
	Median	21.3	4.0	1.6	1.4
	Minimum	16.9	1.0	0.6	1.0
	Maximum	29.4	4.0	5.8	4.5
	Sum	155.3	19.0	19.1	13.5
	Percent	100.0	12.2	12.3	8.7
Villages (108)					
	Mean	21.6	3.2	2.1	1.6
	Median	21.7	4.0	1.7	1.5
	Minimum	16.6	1.0	0.2	1.0
	Maximum	28.4	8.0	5.5	2.7
	Sum	2333.2	350.0	223.0	170.9
	Percent	100.0	15.0	9.6	7.3
Summer Villages (52)					
	Mean	18.0	2.6	1.6	1.3
	Median	17.5	1.0	1.3	1.2
	Minimum	14.9	1.0	0.6	0.8
	Maximum	22.7	8.0	4.0	2.5
	Sum	937.1	136.0	84.3	66.8
	Percent	100.0	14.5	9.0	7.1

**Table 3-3: Supervisory Agency Budget & Staffing Benchmarks**

	Budget as a percentage of 1996 total property tax		Agency budget (\$) per assessment district		Assessment districts per staff member	
	1992	1999	1992	1999	1992	1999
Minimum	0.014	0.003	1,098	170	0.14	0.24
Median	0.140	0.141	24,941	30,779	2.03	1.79
Maximum	3.211	0.551	508,333	306,153	43.75	299.00

Source: International Association of Assessing Officers, 2000, *Property Tax Policies and Administrative Practices in Canada and the United States*, page 12, Exhibit 4-3.

We also believe that the Audit Unit (if not ASB generally) needs a statistical specialist, whether groomed from within the existing auditor complement or a new hire. A person with strong statistical skills will be needed to implement recommendations that we introduce in section 4, namely further developing the detailed audit decision model, designing annual audit tests, and in carrying out ongoing analyses of market patterns and trends in Alberta. We note that leading supervisory agencies usually have at least one statistical analyst.

There is a general concern in Alberta that retirements will soon produce a shortage of experienced assessing officers throughout the Province, as well as a shortage of auditors in ASB. The need for succession planning is recognized by AMA management. However, a lean staff will make grooming new auditors difficult. Partly for this reason, we believe that every auditor should be given opportunities to continuously develop needed skills. These opportunities would include varied and challenging auditing assignments as well as continuing education.

### **3.3 Quality Assurance and Control**

This section considers some of the quality assurance and control issues that have been raised since the inception of the audit program. At the outset, it should be acknowledged that the importance of quality assurance and control is well recognized in AMA, as its Goal 3 demonstrates. ASB management also has taken the AG's 2001 and 2004 recommendations concerning audit quality control seriously. The *Detailed Audit Manual* was completed.<sup>11</sup> It provides guidance on audit planning, the tests to be conducted, and other aspects of audit field work. Detailed audits have been scheduled, and spreadsheets are used to track audit progress. An audit report template has been prepared. It makes extensive use of tables that require auditors to comment on each audit test. Attempts have been made to strengthen the review of detailed audit work through formal peer and supervisory reviews of draft audit reports and recommendations before they are released to the municipalities for their responses. A standard file structure has been established for electronic documents and paper documents are similarly filed. The AG recommended that ASB acquire TeamMate, an audit management system developed by PricewaterhouseCoopers (PwC), which ASB duly did. That package attempts to manage risk, documentation, schedules, costs, and issue-reviews, and ASB embedded its structured audit approach in the software.

Auditors were slow to adopt TeamMate for two main reasons. First, detailed audits rely on a library of custom-written SAS-based statistical analyses supplemented by template-based analyses and reports generated from Excel and Word. These, particularly the SAS elements, are not conveniently accommodated by the audit management package. Second, achieving TeamMate's purported advantages in security, access to documents, phased reviews, and productivity would require a retooling of the detailed audit program (including the Audit Unit's organizational culture), investments in hardware (scanners), and quite probably additional supervisory resources. In view of the opportunity costs involved (including a further diversion of resources away from auditing) and the absence of a formal cost-benefit analysis that takes into account the particular nature of assessment performance audits in a setting like Alberta's, we believe the slow progress was reasonable. This is not to say, however, that better documentation is not needed or that audit

---

<sup>11</sup> It will need to be updated to reflect current practices and any of our recommendations that are adopted.

reviews could not be improved; only that an audit management system such as TeamMate is no panacea. Perhaps the main issue that should be considered is whether a peer or supervisory review at each step in an audit would be cost-effective. Another issue is whether document security is as important in an assessment performance audit as it would be in a financial audit.

Partly as a result of the AG's reports, ASB management exhibits a general appreciation of risk management concepts. Some risks and mitigation measures have been identified. However, little has been done to assess formally the likelihood and consequences of the risks and to prioritize mitigation efforts based on cost-benefit analyses. We discuss risk management further in section 4.

PwC, in its study of workload reduction opportunities, identified the trade-off between ensuring that each individual audit is of high quality and improving overall audit "quality" by completing more audits. In essence, a poorer audit may be better than no audit at all. The timeliness of releasing audit reports has important quality implications as well. Every month's delay in issuing a report increases the likelihood that any defective practices will persist into a later assessment year.

As part of its efforts to ensure that ASB's programs are efficient and effective, it tracks the percentage of assessment rolls that meet quality standards. For the 2004-2005 fiscal year, 92 percent of (2003) rolls met standards (against a target of 95 percent). Notably, the Audit Unit has identified potential performance measures for each of its objectives.

### **3.4 Stakeholder Relations**

Several groups have a stake in the audit and equalization program in general and the detailed audit program in particular. They obviously include municipal officials and municipal assessors. Ultimately, ratepayers have a stake. The auditors themselves also are stakeholders.

AMA gauges stakeholder (client) satisfaction through surveys. Aggregate and detailed statistics are reported in annual reports. For AMA's 2004-2005 fiscal year, which reported municipal client satisfaction during 2003, the Assessment Audit Unit achieved an 81 percent overall satisfaction rating against a target of 65 percent. Although AMA does not report areas of dissatisfaction, ASB has been criticized for being "arrogant." Its communications have been criticized, and the Equalized Assessment Panel (EAP) cited the need for greater transparency. Such criticisms have a "Is the glass half empty or half full?" nature. Clearly, ASB uses standard media to communicate with its clients and stakeholders. It uses working groups to consult with stakeholders (e.g., the EAP and the Equalized Assessment Panel Technical Committee [EAPTC]). ASSET potentially will provide a surfeit of transparency. In short, we believe that ASB's communications efforts compare favourably with those of other supervisory agencies. Nevertheless, there are no grounds for complacency. Listening, communicating, and clarifying are ongoing tasks. Poor or late advice is scarcely better than no advice.

In the current climate of acrimonious equalization appeals, it may be worth noting that the director of the Audit Unit regards auditors as professionals. He is concerned about job satisfaction.

This includes making the work of auditing assessment practices rewarding and achieving a proper balance between work and personal lives.

### **3.5 Opportunities for Improvement**

Although ASB and the Audit Unit exhibit most of the hallmarks of a well-managed assessment supervisory agency, a few opportunities for improving management emerged. As we reviewed management practices generally, we also considered possible strategies identified by PricewaterhouseCoopers (PwC) for improving the efficiency of detailed audits. They included:

- Reduce the scope and approach of detailed audits across-the-board
- Reduce the scope of some detailed audits by tailoring audit scope according to municipality characteristics
- Audit assessor quality instead of municipality quality
- Reduce the size of some audit samples
- Standardize audit documentation

PwC wisely recommended that ASB weigh the advantages and disadvantages of each before adopting a new course of action. ASB has followed this advice and has further standardized audit documentation. As will be seen, our management and technical recommendations incorporate some elements of the PwC strategies. (Our recommendations concerning further incorporation of risk management concepts are in section 4.) We also recognize that deliberation is warranted because there are no easy ways to simultaneously improve effectiveness and efficiency in ASB's well-conceived detailed audit program.

#### **3.5.1 Consider Augmenting the ASB Staff**

Although we understand that increasing the staff of ASB would be politically infeasible, we believe a strong case could be made for augmenting the audit staff. As introduced in section 3.2, there is a need for a statistical analyst to make the kinds of studies we recommend in sections 6 and 7. Also as noted, there may be a need for specialist auditors.

#### **3.5.2 Collect Data on Time Utilization and Productivity**

Whether or not the staff is augmented, management will have to make good use of available staff. Management's planning and program evaluation activities currently are hampered by a lack of data on how the audit staff actually uses its time and on achievable rates of productivity for key, repetitive tasks. We recommend that the Audit Unit develop a simple, cost-effective system for recording how auditors spend their time and for recording how much was accomplished in a given period (e.g., week or month) if ASSET cannot provide productivity data. We do not question the professionalism of auditors; many professionals account for their time as part

of a system of cost accounting. In fact, we believe auditors should contribute to the design of the time analysis system and help evaluate it. However, appendix A2 suggests a very simple form that would provide management with the total hours worked and with estimates of how that time was allocated. At the end of a year, it would be possible to calculate the average amount of time spent on a detailed audit. Of course, a more complex system could provide statistics on the time required for each audit. However, we believe that any system should be easy to maintain (the time required for recording information should be well less than 10 minutes per workday) and yet provide data useful in audit planning and overall program evaluation. In this respect, the focus should be on factors that make an audit difficult or time-consuming rather than on the performance of individual auditors. Although collecting information on productivity rates is important, we do not believe quotas should be established. Initially, several variations of information-collection systems could be tested over a period of a few months. Non-audit activities should be tracked as well as key audit activities.

### **3.5.3 Streamline High-Level Reviews of Audit Reports**

As noted, AG has criticized how detailed audits are reviewed and also the timeliness of issuing audit reports. ASB has attempted to address the AG's recommendations by instituting peer reviews at key stages in detailed audits, and it has established an objective of issuing reports within ninety days of the auditor's substantially completing an audit. Events that occur between substantial completion and report issuance include reviews by the Audit Unit director, the Assistant Deputy Minister (ADM), and the Deputy Minister (DM). Such reviews are understandable because a detailed audit report should reflect well on the ministry and may touch on sensitive policy and political issues. It also is understandable that high-level reviews can be a source of delay. We understand that draft reports are read during these reviews and that sometimes only minor grammatical and stylistic changes are made as a result. In an effort to reduce delays while addressing reasonable concerns, we believe that AMA should consider a review strategy that separates style issues from substantive issues. We believe good writing should be accomplished through training, the report template, and professional editing. We believe the Audit Unit director's review should focus on recommendations and potentially controversial findings. After review of such matters, the director could flag for the ADM's attention how they are approached in the report. It may be possible to expedite the review by scheduling a brief telephone or face-to-face conference. A similar strategy could be considered for reviews by the DM.



## 4. AUDIT STRATEGY

### 4.1 Introduction

The highly expensive and labour-intensive process of procuring reliable information is commonly the limiting factor in audits as well as in management generally. In its first cycle of audits, the Audit Unit has systematically gathered general information on both the inputs (practices and resources) and the outputs (assessment quality measures, including ratio studies and data quality indications) of municipal assessors. In so doing it has both amassed the necessary background for the continued performance of its tasks and has also reinforced the principle that quality control/quality assurance programs are a local as well as a provincial responsibility. AMA has done more than this however. By securing intergovernmental cooperation in the development of the ASSET program and associated database, it has greatly enhanced its ability (and the ability of other participants) to monitor assessment quality. This is because ASSET dramatically lowers the cost of procuring reliable information on the myriad facts from which such judgments can reliably be made. In so doing it has positioned itself at the forefront of assessment administration. What now remains to be done is to exploit this important resource more fully and to adjust its previous audit practices to reflect the reduced costs of information procurement and analysis.

We recommend that the Audit Unit develop a revised audit plan that (1) accounts for non-auditing activities, including responding to equalization appeals, (2) is commensurate with available resources, and (3) focuses on strata with substantial amounts of value, on preventing misrepresentation of assessment performance, and on facets of municipal assessment operations that were most crucial to achieving rolls that met quality standards. We envisage an *annual* schedule that accommodates follow-up audits, specific audits, and “scheduled” audits. That is, each year’s audit schedule would include necessary follow-up and specific audits, and a sample of regular/compressed detailed audits drawn from the remaining municipalities. These detailed audits would be selected annually through a stratified random sampling process. As discussed below, this sample would be based on such criteria as total assessed value, strata with high concentrations of value, and the time since the last detailed audit. Thus, the probability of being sampled would increase with the risk that any problems in the municipality’s roll could adversely affect the legitimacy of the requisition process. Since Calgary and Edmonton would virtually always be sampled, a rule might be adopted that no municipality be randomly audited in successive years.

### 4.2 Risk Management

AMA leadership is conversant with the concepts of risk management. As is widely appreciated, the chief fiscal risk associated with the audit and equalization program is inequitable school tax requisitions. Although a general loss of confidence in the audit and equalization program would be damaging, the Province has little financial exposure apart from any resources expended on ineffective audits and apart from the cost of defending appeals. Essentially, the requisition process is a zero-sum game. Municipalities whose equalized assessments are understated benefit at

the expense of municipalities whose equalized assessments are correct or are overstated. The effect would be proportional to the size of the roll or assessed value of the stratum in question. Within any municipality, taxpayers whose assessments are relatively low benefit at the expense of those with higher assessments. The municipality also risks wasted resources when assessment methods and practices are unreliable.

Minor errors in estimates of equalized values are essentially random and unintended due to the judgments and statistical processes involved in the valuation of property and in auditing assessment practices. Avoiding such occurrences would be impossible. Use of best practices would tend to minimize them.

More worrisome would be efforts by any unscrupulous assessors to systematically misrepresent market levels, the uniformity of assessments, or both. A parallel concern would be efforts by an auditor to misrepresent what was done or found, as there is a risk that an auditor could be unduly lax or harsh. Many facets of the audit program are intended to detect and ultimately to preclude misrepresentations by assessors and improper auditing practices.

As noted, ASB bears the risk of defending its equalized assessments when they are appealed. Under the MGA, the equalization appeal process essentially is unstructured. This may create a form of moral hazard. Municipalities with large equalized assessments may launch an equalization appeal with little risk (other than opportunity costs associated with the staff pursuing the appeal). With the Audit Unit's lean staffing, having to divert resources from making audits to defending the audit program has serious program consequences, including making the audit program more vulnerable to challenges and criticism. The consequences for MGB are similar.

Insofar as far as we are aware, AMA has yet to assess formally such risks. Although we are unaware of any jurisdiction where this is actually done, we believe that ASB, as a leader in the field, may want to consider implementing a process to do this. The concept of value at risk (originally a Nobel Prize winning formulation of the interrelationships between asset volatility and portfolio optimization) in this context is a decision-theoretic point of view focused on the magnitude of equalized value that may be misstated due to uncorrected assessment errors. Decision theory, as articulated by such academics as Raiffa & Schlaifer (1961) augmented by Pratt (1995) and others would appear to be particularly relevant here. The usual example of how decision theory is done pertains to how a wildcatter evaluates whether to do further testing, abandon a contract, or drill a potentially dry oil well, but a translation of the principles to audit analyses would appear to be fairly straightforward. The fundamental idea is to assign monetary utilities to various alternative courses of audit action, with these utilities being determined by the known amount of the assessed value involved and the estimated probabilities that the assessment ratio may subsequently be shown to be misstated by a variety of different percentages as a result of an audit.<sup>12</sup> The product of high probabilities pertaining to low amounts of assessed value can

---

<sup>12</sup> Probabilities that assessment ratios will be found by subsequent audit to have been overstated or understated by 1 percent, 2 percent, 3 percent, etc (or more finely grained intervals) will have to be estimated subjectively by ASB, informed by prior experience and modified in future years by the standard techniques of Bayesian statistics. These probabilities, multiplied by the amount of the tax burden that will have been shifted as a result of the possible audit-induced equalization, are "monetized" into so-called "utilities," ignoring for the moment that equalization is a zero-sum game and treating the burden shift as a welfare increase resulting from the shift of the burden to its proper pay-

thereby sensibly be weighed against lower probabilities pertaining to greater assessment values. A sample calculation of this nature is included in appendix A3.

To avoid the appearance of “unfair” discrimination, it would be desirable and natural for the likelihood of a municipality being subject to a repeat audit in the following year to be greatly minimized by way of the probability calculus, if there were no serious faults found in a given year’s audit. It could also be administratively set to zero if desired. It would also be natural for attention to be focused on large pools of value, such as shopping centers or specific kinds of large industrial plants, irrespective of the jurisdictions within which they were located.

The process of testing for sales chasing offers an example of how ASSET and decision analysis could profitably be applied to thorny audit issues. Early Audit Unit practice included routine tests for whether the percentage changes in assessments of sold properties followed a pattern that differed significantly from the pattern of changes observed for the unsold property. This procedure is recommended by the IAAO *Standard on Ratio Studies*, but, unmentioned by the IAAO standard, it can become unreasonably powerful at detecting non-meaningful differences when sample sizes become large. Thus, in practice other jurisdictions have paired its result with an additional test to determine whether the two distributions of changes differ by a meaningful amount, not just at a significant confidence level. An Indiana study, for example, tested both whether the Mann-Whitney test indicated significance at the 95% confidence level and whether the median percentage increase in assessments for sold parcels exceeded that for unsolds by at least 5 percent. ASB has adopted a different approach. Instead of relying on the earlier statistical analyses, it has adopted a practice of drawing a (pseudo random) sample of convenience of unsold properties near and similar to a sample of sold properties. The recorded characteristics and valuation parameters of both the sold and unsold properties are then reviewed and a determination is made whether the sold properties are appraised or coded “significantly differently” from the unsold properties. Such procedures, of course, while they verify data-coding accuracy and valuation consistency simultaneously with checking for sales chasing, suffer from a number of problems. The samples are not guaranteed to be random, large enough, nor representative (as the AG noted); the process is labour intensive, expensive, and cumbersome. It would be far better to perform more efficient ASSET-based statistical tests for sales chasing and use on-site inspections to confirm statistical findings of sales chasing.

Another frequent issue in testing for sales chasing is that the assessor’s records of the value-relevant characteristics of recently sold properties are generally more reliable than those of unsold properties, often leading to higher valuations. This results from the extra attention that is accorded to such properties during the sales validation process, during which renovations and

---

ers. The (positive) utility of various audit-induced equalization shifts may then be weighed against the costs (negative utility) of actually performing the various possible audits. To maximize welfare, management should choose to actually perform in a given year the audits with the highest expected utility, subject to the ASB budget constraint. Given the ready availability of information on the amounts of assessed value in various jurisdictions and strata, the biggest challenges to implementing a decision theoretic approach in this context will be establishing the relevant probability distributions and securing stakeholder acceptance of a technique widely accepted among entrepreneurs but rarely formalized in government circles. As such there may be a need both for stakeholder consultations and expert consultants. Bolstad (2004) gives the most accessible introduction to eliciting and updating the necessary Bayesian probability distributions, and Smith (1988) introduces decision analysis to a commendably broad audience.

improvements that may have gone unnoticed in the general population, such as finished basements and enclosed porches are captured. These innocently cause sold properties' assessments to be increased more than the unsold properties' assessments, yet this practice does in fact prejudicially inflate the apparent performance of the assessor when assessments after the fact of sale are used in the ratio study. Fortunately, with the ASSET database, it is possible not only to verify the assessor's declaration that quality standards were met, but also to track the pattern of changes in assessments of sold and unsold properties and, if necessary, to adjust the results of the ratio study for any misrepresentations of valuation accuracy. Although such analyses have not yet been programmed, they may readily be implemented given the data at hand, and thus done much more expeditiously, cheaply, and widely than they are now. Where statistical tests suggest the likelihood of a problem, follow-up tests may be considered if the probability of a problem or the amount of market value at issue is sufficiently high.

The aim of these recommendations is to strengthen annual audits and develop a sampling methodology for drawing municipalities for detailed audit based on value at risk. As noted, municipalities with a larger base of assessed value would have a higher probability of selection, assuming equal distributions of likely ratio changes as a result of an audit. The algorithm would also consider when the municipality was last audited with recently selected municipalities receiving no or reduced chance of selection. Further, the scope of audits should be informed by results from recent annual audits, the prior detailed audit (if applicable), municipality size and complexity, and whether the Audit Unit had or was auditing other municipalities with the same vendor (a background questionnaire, other available information, and the initial meeting with the CAO could also be considered). As now, specific audits would continue to be performed as a result of issues raised in annual audits or at the request of a municipality. Again, these would be targeted audits that focused on relevant property types and issues.

### **4.3 Other Opportunities for Improvement**

A strategic issue of a different nature is that current procedures understandably concentrate on objectively measurable issues directly related to market values. This is almost inevitably at the expense of important issues that are less subject to definitive measurement. Again a decision theoretic approach to identifying the value at issue and the relative probability of its correctness may be useful in identifying approaches to addressing deficiencies. Two issues mentioned during interviews with staff and stakeholders are of this nature. One is the consistency, or lack thereof, in the valuation treatment among the various jurisdictions of relatively rare but widely dispersed property types, such as shopping centers or golf courses. The other is the treatment of rarely marketed properties, such as major industrial plants. For the latter there should be opportunities to compare the consistency of reported construction costs or appraised values (per square meter or other unit) across jurisdictional boundaries, even if there is no opportunity to compare assessments to selling prices or selling prices per unit. This might constitute an area into which ASSET might begin to evolve. Explorations by ASB of such issues would necessarily put ASB foursquare into the business of conducting its own statistical studies of market patterns and trends. We recommend that this be done.

Value-trend analyses, by region and perhaps property type, provide valuable background information. Such analyses can be done at a variety of levels of sophistication, which then lend the

analyses to a variety of uses. As described in section 6.4, we recommend that analyses of this general sort be undertaken to support the time trending of sales. However ASB should also consider taking this process much further.

We recommend that it explore the feasibility of obtaining regionally disaggregated macroeconomic data that would support the development of estimates of the total market values of the properties in each of the province's municipalities. Just such studies constituted an essential part, for interim years between audits, of the oversight program of the California State Board of Equalization during its oversight of county property tax rolls. Before the advent of Proposition 13 in 1978, California was widely regarded as being in the forefront of property tax administration and its monitoring at the state-wide level. A similar program is also administered by the Department of Revenue of the State of Florida, and somewhat analogous activities are also performed by the New York State Office of Real Property Services. Essentially leading economic indicators of all sorts, from building permits and sales tax receipts to school enrolments, test scores, personal income, population density, and other unintuitive data sources are analyzed to infer market value trends. The results, of course would track market values, rather than taxable values, which can differ, especially where different valuation standards have been employed, such as between industrial property and machinery and equipment. But the availability of such data would help to inform both the probabilities that stated assessment ratios were inaccurate (as required for the decision theory approach to audit prioritization described above) and the deliberations of the bodies charged with the periodic revision of the valuation parameters applicable to properties assessed on a regulated basis.

An ASSET enhancement that has been discussed but not yet implemented concerns the development of more or less homogeneous cross-jurisdictional economic or market areas in sparsely populated parts of the province. Such areas would conceptually facilitate the cross-jurisdictional use of sales and comparative assessment data. To date such efforts have been deferred, as they are necessarily difficult, inasmuch as partitioning a continuum is never easy, and the sizes of the relevant partitions presumably would need to vary with the type of property under consideration. Nevertheless further consideration of this idea seems warranted. In lieu of defining boundaries of homogeneous areas, it may be worthwhile to consider incorporating extracts from the most recent census data in the ASSET database so that users could select records from areas where population density and levels of economic activity, for example, are within desired ranges, without necessarily knowing in advance which municipalities/areas those might be.

## 5. USE OF INFORMATION TECHNOLOGY

The ASSET system is an exemplary implementation of essential infrastructure. The need for such resources is well-recognized. Other oversight agencies have attempted similar undertakings with various degrees of success, but none has matched the scope of ASSET. It is laudable that the program has been implemented with the concurrence and active support of the municipalities and vendors so as to ensure fuller cooperation, rather than imposed on a resentful and resistant group of stakeholders.

The information contained in ASSET permits common quality control questions to be answered definitively, and moreover enables equitable remedies to be crafted when problems are discerned. The issues of reconciling reported assessments and addressing the issue of suspected sales chasing exemplify the advances that ASSET has wrought. Discrepancies between assessment totals reported for various purposes have been addressed by the requirement that all reporting be done through the formal submission mechanism, which identifies the type of submission and incorporates an extensive library of routines to ensure the completeness and accuracy of the reported information as required for the particular submission. As noted in the strategy discussion, the ability to explore data suspected of having been corrupted by sales chasing is also dramatically advanced. In particular, it would be possible to construct tests that could provide a probability that sold properties have been adjusted differently from unsold ones by any specified amount. Such statistical analyses are not now done, but would be relatively easy to implement, and would provide the additional advantage of objective, reliable answers to important questions.

Perhaps even more importantly, ASSET provides the data that would permit the adjustment of ratio study findings when they have been affected by practices such as sales chasing, even the unintentional bias introduced by more accurately capturing property characteristics for sold properties than unsold ones. One simply deflates the biased numerators of such ratio studies by using either a point estimate, derived from unsold properties or by a Monte Carlo analysis in which the proportion of the assessment ratios in the ratio study that have revised assessments is constrained to not exceed the proportion of properties with revised assessments that were not sold. The assessments of any excessive numbers of properties in the ratio study that have revised assessments are set back to their prior assessments for ratio-study purposes. The decision of which properties' assessments are to be set back and which are to be accepted as revised is made on a random (Monte Carlo) basis, with the ratio study being performed multiple times, choosing different random properties to have their assessments set back each time.<sup>13</sup> After a moderately large number of runs, typically between 1,000 and 10,000, which are quickly and easily performed on a modern computer, a stable estimate free from the influence of sales chasing will have been obtained with a minimum of interpersonal stress and finger pointing.

---

<sup>13</sup> This approach to adjusting ratio study results for sales chasing, while not yet codified as part of the IAAO *Standard on Ratio Studies*, was judged to be the preferred method by the U.S. Court of Appeals for the Fourth Circuit (which includes Washington D.C.) in the long running case brought by CSX Transportation against the West Virginia Board of Public Works under the U.S. Railroad Revitalization and Regulatory Reform (4-R) Act. As such it enjoys significant value as a precedent, second only to the Supreme Court in the U.S. (which has never addressed the issue), even without IAAO's endorsement. One of AGJD's partners was instrumental in getting this result.

Sales chasing is not the only potential problem for which ASSET provides a means of ready resolution. Similar considerations apply to the equally pernicious problem colloquially known as “cherry picking” (the practice of selecting sales that tend to confirm the assessments or of deleting sales with poor ratios).

A further strength of ASSET is its provision of a readily accessible source of information on market value indicators, and their trends over time, both of which can provide useful benchmarks for jurisdictions with a paucity of such information locally. Such cross-jurisdictional information is very valuable during original assessment processes as well as for comparisons during audits. Although the current system and database is a major advance over what went before, and is at or near the state of the art for peer agencies of ASB, there are several modifications that might be considered to make it even more valuable. First, there is relatively little attention paid to unusual improvements and their costs, so consideration might be given to augmenting and standardizing the descriptive characteristics of such properties and facilitating retrieval of comparable properties from other jurisdictions province-wide. Second, the current retrieval mechanisms assume that users will not want to select data from more than one jurisdiction at a time (or, equivalently, do not trust users not to choke the system with ill-formed retrieval requests). It would thus be advisable to provide a mechanism that would assist a user who wanted to see how a particular property type, such as lumber mills or golf courses, was handled across the province. Such a system enhancement might entail a number of subsidiary steps, including revising the user’s ability to enter and validate queries, refining the scheme(s) for coding property use, and possibly augmenting the set of property characteristic data that is handled by the system.

## 6. ANNUAL AUDITS

### 6.1 Overview

Annual audits allow the ASB to gauge the overall quality of municipal assessment rolls and compliance with assessment accuracy standards set out in the “Matters Relating to Assessment and Taxation Regulation (Ministerial Order No. L: 243/00). Importantly, they serve as the basis for equalized assessments that are the basis for requisitions made to municipalities to support the Alberta School Foundation Fund.

### 6.2 Data Reporting

The automated data reporting for ASSET constitutes a major advance over previous procedures. Previous procedures by which municipalities were required to submit data to ASB were subject to a variety of problems, including jumbled data (some data submissions featured a few columns of data that were sorted into one sequence while other columns remained in their original order), missing data, failures to certify the validity of the reported data, and far from optimal amounts of data. All of these problems have been addressed by ASSET. Moreover, the upload mechanism eliminates the file-size limitations and column-naming inconsistencies that were inherent in the old system of submitting such data via Excel spreadsheets. The major remaining problems have to do with the timeliness of submissions and the as yet unrealized possibility for a variety of enhancements, as mentioned above in connection with comparable cost data and enough additional descriptive data on unusual property types to permit the construction of comparable grids for them across jurisdictional lines.

Perhaps the most fundamental problems with the system have to do with the reporting of the particulars of sales. The absence of a real estate transfer return is most unfortunate inasmuch as a well-designed one would permit the Audit Unit to improve assessment performance measurement both by limiting the possibility for local assessors to bias the system with dubious reporting practices and by removing a major processing bottleneck.

A thorny problem for audit and equalization lies in the reporting by some municipalities of both hypothetical assessments and hypothetical sales prices. Although the assessor’s rationale for such adjustments may be well-intentioned, we do not believe hypothetical assessments and the kinds of hypothetical sales prices discussed below are acceptable in ratio studies. The practices are manifestly open to abuse. They undoubtedly also contributed to the low coefficients of dispersion reported in some jurisdictions that, in turn, generated suspicions and protracted litigation alleging that sales chasing (and perhaps other nefarious practices) is being condoned.

Our review of the ASSET database has suggested that there are at least two types of potentially troublesome adjustments. The first is the apportionment of a single sale price among the various constituent parcels that make up a single economic transaction, when the better procedure would be to aggregate the assessments and calculate a single ratio with respect to the known sale price (it is, after all, only one sale and thus only one piece of data pertaining to assessment performance). This preferred procedure, in fact, is reflected in ASB adjustment code 8014 (added in



2006), which provides for summing assessments in this manner, in contrast to codes 5010 and 8013, which called for apportioning the price among multiple parcels. We recommend that summing assessments always be used instead of apportioning a sale price among multiple parcels. Of course the sale should only be used at all if it is representative of market value and the assessed values included in the sale can be meaningfully added.

The second set of problematic adjustments are those that are made for changes in property characteristics since the time of the sale, especially those that have gone from being vacant to improved. Essentially, the assessor reports a hypothetical updated vacant land assessment and a time-adjusted sale price. We assume that this sort of practice is motivated by a desire to preserve evidence of market values associated with sales of vacant or nearly vacant land. While sales of such properties elsewhere typically produce some of the most diverse ratios (i.e. with the highest coefficients of dispersion), they have been observed in Alberta to lead in the other direction, generating remarkably low coefficients of dispersion and thereby suggesting the possibility that something may not be copasetic. Thus, a choice must be made concerning reporting of hypothetical assessment data, not traceable to the assessment roll. If there are likely to be enough sales of vacant land to permit analyses of assessment performance without recourse to the use of hypothetical assessments, the use of such hypothetical assessments could be completely banned by ASB, as we recommend above. Alternatively, their use may be condoned under limited circumstances, but the practice should be unambiguously declared by the affected municipality, and some mechanism of auditing, verifying, or certifying such data seems warranted. Since audit verification of data is extremely difficult to do in the absence of ongoing intimate contact with the system being audited, it may be most expeditious for ASB to require assessors to certify that their use of such data for ratio-study purposes presents a true, undistorted picture of assessment equity in their jurisdiction. (In section 7.2 we offer some further consideration of the possibility of auditing such submissions.)

Data elements incorporated in the ASSET design, whether designated as mandatory, conditionally mandatory, or optional, are nevertheless essential for certain purposes. Year of improvement construction, for example, cannot be made absolutely mandatory, since some properties are vacant and others are so old that the date has been lost. But for new improved parcels the year of construction (and renovation) can be crucial. For ratio study purposes, for example, it can be important to differentiate measures of assessment performance between those pertaining to new construction and those applicable to the pre-existing stock. In addition, such information can be essential for local assessors in municipalities seeking to take advantage of the data available from other municipalities similar to their own. Analogous considerations apply to other non-mandatory property characteristics. Thus AMA should take steps to help ensure that municipalities provide such information. This will require both policy articulation and communication and programming revisions to enforce new reporting requirements.

In addition to the data reported through ASSET, ASB obtains sales data from Land Titles. The Land Title data includes ownership information, consideration paid, and “sworn value.” However, it does not include sale details, namely chattels, type of financing, and the nature and motivation for the transaction. ASB and assessors have tried to get Land Titles to approve and mandate use of a sales disclosure form that would contain such information, but such efforts have been unsuccessful.

Data from Land Titles are matched with data reported by the municipalities and differences noted. Several reports allow ASB staff to check for missing data and other reporting gaps or errors. Municipalities report both the actual price and an adjusted price with codes to indicate the type of adjustment (e.g., code 5005 indicates a time adjustment).

In addition, ASB has access to MLS data, which can be used as a check against data reported by assessors. The full potential of this data is just being explored and would seem to offer a partial substitute for field verification of data accuracy (although it must be remembered that MLS data applies to sales only and that MLS does not cover the entire province).<sup>14</sup>

### **6.3 Sales Ratio Analyses**

Using data reported through ASSET, the Audit Unit computes various ratio study statistics using SAS software programs. Median sales ratios must be between 0.95 and 1.05 and coefficients of dispersion (COD) must not exceed 15.0 for improved residential properties with fewer than four dwelling units and 20.0 for all other properties. Summary reports show the number of sales for each stratum (but not the period of sales used) and the average adjusted price (but not the average unadjusted price or time-adjustment factors).

If actual results do not meet standards, the assessor is not allowed to declare the municipality's assessments on ASSET. The assessor may review data, recalibrate valuation models and resubmit assessment information and review the new results. If the assessor is unable to meet the standards, he or she may ask the auditor to review the data and if it is acceptable to the auditor the assessor may be allowed to declare the assessments. The results of the annual audit may be sent to a stage 3 audit where a more thorough review of the information takes place or they may be sent to a detailed audit review. The Audit Unit reviews the results and follows up in the following detailed audit.

ASB has recently adopted a standard stratification scheme for all municipalities. Previously municipalities could stratify as they chose, which often produced strata with too few sales. In addition, a municipality could potentially change or manipulate its stratification scheme to produce a desired result. The new, improved system employs an iterative stratification scheme of predefined property types and value ranges. Within each of ten predefined property types, value ranges are collapsed toward the centre until there are at least 15 indicators of value (sales, appraisals, or opinions) in the year ending with the assessment date (e.g., July 2004 to June 2005 sales for the 2005 assessment year). If there are not at least 15 sales in a property group, sales from the prior year are added and, if there are still not at least 15 sales, sales from next prior year are also added (giving three years of sales). This scheme is followed for each of the ten property use groups, with the groups combined in a specified sequence as necessary until at least 15 sales are obtained. The amalgamation continues as necessary until all residential properties have been combined into a single stratum and all commercial properties into a second stratum, each with three years of sales or supplemental indicators of value. If at this point there are no indicators of

---

<sup>14</sup> According to data in the audit model, municipalities with "MLS potential" comprised 30% of all municipalities, but they accounted for 70% of all sales.

value in either of the two strata, a ratio of 1.00 is adopted. While perhaps seemingly complex, the approach both avoids overly small strata and ensures consistency among municipalities. We endorse the scheme. Of course additional stratification schemes are available to auditors conducting detail audits. This, too, we endorse, inasmuch as assessment results for certain subgroups of property, such as the previously mentioned new construction, may be poorly indicative of results for the tax base as a whole.

The auditor will check the number of sales reported on Land Titles with those reported on ASSET and attempt to resolve any significant disparities. The auditor will review the number of sales (or indicators of value) used and not used and may examine excluded sales if their number is abnormally high relative to included sales. Additionally the auditor will examine changes from the prior year by running a number of trend reports, including a comparison of parcel counts, total assessed and equalized values, and key ratio study statistics (median and COD). Atypical changes, such as a median ratio change of more than 10% or a market value change of more than 10%, are investigated.

Annually the Audit Unit generates reports showing results of the ratio study and comparing actual medians and CODs with provincial requirements. As mentioned, assessors may not declare assessments on ASSET unless they meet minimum ratio study requirements or have received special approval from ASB. In any case, a municipality's equalized ratio directly affects its required school aid requisition. To promote transparency, any municipality can produce sales ratio reports for any other municipality, provided they sign the *milenet* agreement giving them access to the required data and programs.

An ongoing concern is the possibility of "sales chasing" or "cherry picking" in which municipalities might screen and trim sales or change property values so as to achieve a desired result. In addition to comparing reported sales on ASSET against those from Land Titles and monitoring the percentage of sales used or rejected, ASB examines changes made to sales, including the number and average magnitude of adjustments. Currently, assessors cannot declare unless 30% of the sales have time adjustments (this is a system enforced restriction). However, if assessors claim that no time adjustments are warranted, they can ask the auditor to review and, if the auditor agrees, the assessor is then allowed to declare. After assessors declare their values, an auditor reviews a time graph to ensure that time adjustments have been correctly applied.

The Audit Unit will no longer accept blanket chattel adjustments and large average adjustments trigger investigation. As mentioned, the Unit also looks for atypical changes in assessment ratios or CODs, or very low CODs that could signal sales chasing. However these analyses are high-level in nature with more detailed examinations pursued in detailed audits (section 7). Fortunately the ASB also has access to MLS data, which in detailed audits are used to conduct a "look back" study in which assessments are compared to sales that occurred after values were set (after factoring in price level changes, results that deviate significantly from those reported by the municipality could signal special treatment of sold properties).

A troubling practice is the use of multiple sales of the same property in a single ratio study. Since the parcels (not the sales) constitute the universe being studied, multiple sales of the same parcel still represent only the one parcel. Thus, we would recommend that AMA use only the

sale closest to the valuation date in ratio studies to determine whether quality standards have been met.

## 6.4 Opportunities for Improvement

The annual audit program has been strengthened considerably in recent years. Among the improvements are improved data monitoring, the quashing of across-the-board chattel adjustments, and adoption of a standardized stratification scheme for all municipalities. With these accomplished, we see the opportunity for further improvements.

As discussed, the Audit Unit relies on municipalities to process, screen, and edit sales, although it does compare reported sales against Land Titles (and it examines their work in detailed audits). In any case, we believe that the Unit could make more effective use of standardized electronic edits that would check more rigorously for inordinate sales exclusions and trim low-value or otherwise atypical sales. The Unit is in a position to compare electronically the percentage of sales rejected by property type against provincial averages for similar municipalities. Predefined departures from typical patterns could be checked and, as a minimum, investigated further in detailed audits.

The Audit Unit could also adopt standard rejection or trim points for problematic sales based on assessed value, price, or ratio. Low-value sales can be particularly problematic since prices can vary widely on a percentage basis, e.g., a \$40,000 residence may sell for \$30,000 or, just as easily, for \$50,000, a sizable percentage difference that can cause erratic sales ratios. Thus, for example, the Unit could consider trimming any sales that occurred below the 5<sup>th</sup> or 10<sup>th</sup> percentile of assessed values for each major property type (improved residential, improved commercial, vacant residential, and vacant commercial) in a municipality. Rejection of such problematic sales would spare both municipalities and auditors the burden of struggling with them in the reporting and verification process.

Of course, electronic edits could be considerably enhanced if sellers and buyers were required to complete a return that provided information on the particulars of sales. If Alberta Land Titles cannot be persuaded to incorporate such disclosures during the title transfer process, ASB on behalf of assessors could administer a voluntary sales questionnaire when warranted (such as for rarely transferred types of properties).

A potential enhancement that could considerably improve transparency would be the extraction and reporting of average annualized time adjustment factors by major property type and municipality. Average trends could be extracted from a comparison of actual and adjusted prices, where the indicated adjustment factor for an individual property is time-adjusted price/actual price (with conversion to annualized factors based on the time period covered by sales). We suggest that ASB consider publishing time-adjusted factors annually, along with the time period from which they were derived (e.g., earliest, latest, and average sale date). This would enable both ASB and others to quickly identify and compare trend factors among municipalities. In cases where trend factors were not reasonably consistent with market-indicated trends, ASB should consider additional adjustments to assure that sales prices used in ratio studies are reasonably reflective of a common date. Most major Alberta markets have exhibited strong price

trends in recent years and, and provided that markets continue to exhibit significant change, ASB needs to ensure that time trend adjustments are realistic and consistent across economically similar municipalities.

Because of limited sales, small municipalities face a particular problem in determining time trends. Of course, many hire contractors who can draw upon market data and experiences in economically similar towns. Another possibility is for ASB itself to develop benchmark trends for economic areas composed of multiple jurisdictions, which could optionally adopt such trends. As a minimum, the trends would provide ASB with useful benchmarks for evaluating reported or implicit trends. A still further enhancement would be for contractors and municipalities to develop and submit time-adjustment factors per se rather than only imbed them in adjusted prices. This would make clear what factors were being developed and give ASB the opportunity to review them for reasonableness and consistency and, if necessary, substitute its own factors. Again, this would permit ASB to focus more on the provision of standard templates (which it already has) and training than on periodic, in-depth examinations of individual practices.

The important issue of uniform treatment of sold and unsold properties merits additional attention in annual audits. We commend the Audit Unit for requiring municipalities to submit electronic copies of their assessment rolls each year. Among other things, this potentially enables ASB to compare value changes for sold and unsold properties in the same property class or type and seek an explanation for large disparities. Moreover, it provides a basis for corrections/adjustments to be made when warranted. However, we also recognize that timing constraints require that further investigations be deferred to a post-assessment audit. To help address the timing issue, we suggest that municipalities themselves should be required to calculate and submit such analyses via ASSET.

Finally, regulated properties have always been a bit of an orphan in annual audits, with ASB largely accepting figures reported by municipalities. Municipal assessments of such properties are difficult to audit, because in the absence of a market standard and dearth of market evidence, ASB ultimately would have to audit property owner reporting. Commendably, ASB has implemented an AG recommendation to track yearly changes in assessed values and to test for anomalies. One useful benchmark is the ratio of change in regulated to unregulated property assessments.

As discussed previously, with the first round of detailed audits complete and municipalities having improved their valuation practices considerably, we recommend that ASB continue to strengthen its annual audits and supplement them with specific audits when indicated. After all, requisition amounts are a product of the annual, not detailed audits. Annual audits also tend to be more technology-intensive, leveraging database and statistical software and computer support, whereas detailed audits are more labour intensive. While both will always be needed and labour will continue to be the more limiting resource, the Audit Unit will want to utilize available manpower as effectively as possible by maximizing its technology investments and the effectiveness of its more frequent and software-intensive annual audits.

## 7. DETAILED ASSESSMENT AUDIT STANDARDS AND TESTS

Detailed audits are composed of topics, tasks, and standards. Each of the twelve topics (e.g., planning or computer-assisted mass appraisal) consists of one or more tasks (e.g., sales verification or ability to capture property attributes at time of sale). Each task is characterized as being required by law or best practice, desirable (recognizing that there is no “best practice” and other practices may be as effective), or for information only. For required and desirable tasks the auditor will apply one or more tests outlined in the *Detailed Audit Assessment Manual* to determine whether standards have been met. Of course, the applicability of some standards will vary among jurisdictions (e.g., valuation of office towers is highly meaningful in Calgary and Edmonton but not applicable to rural jurisdictions), and topics that do not apply to a jurisdiction are marked as “not applicable.”

Auditors rate municipal practices for each topic as exceeding, meeting, or falling short of required standards. If the auditor decides there is a deficiency that requires action, the auditor assigns a priority to her or his recommendations. There are three levels of priority with increasingly long implementation timeframes. “High priority” requires action in the current tax year or, at the latest, within one assessment cycle. Failures to meet legal requirements automatically are in this category. Failure to meet some best practice standards may receive a lower priority. “Medium priority” requires action by the next assessment year, although more time may be allowed for full implementation. Depending on the costs and benefits, a municipality must act on a “low priority” recommendation within a reasonable period of time. In forming conclusions the auditor weighs results of ratio studies with findings of the procedural review. Where market data are reasonably plentiful, greater weight is placed on the ratio study. Where sales are lacking, greater weight is placed on the procedural review.

As discussed in section 8, audit conclusions and recommendations are documented in a report to the municipality. The auditor reviews a draft with the assessor and the chief administrative officer (CAO) and requests a written response, including actions they will take to meet recommendations. Responses are included in reports, which as discussed in section 3 the AMA reviews internally before they are officially released to municipalities.

### 7.1 Audit of Administrative Tasks

Section 7.1 examines detailed audit standards and tests that are of a general administrative nature. They include the following topics: planning, staffing, exemption administration, internal quality control, assessment roll preparation and communication, and assessment complaints and amendments.

#### 7.1.1 Planning and Staffing

Evaluating the management of assessment operations in Alberta is made difficult by the range in size of municipal assessment districts and the use of contractors by about 80 percent of the municipalities. Simply put, the need for a formal management infrastructure rises as municipality size increases. Contracting for assessment services changes the nature of management. Yet

some level of planning is needed in all municipalities, and the Audit Unit has a two-prong test of planning: (1) a determination that a written plan exists and (2) a determination that the plan is followed. Some tasks (e.g., a review of the organization chart and a review of data from AMA's statistical information return) are for information only.

At present, there are no guidelines on the elements of a good plan or on the internal controls that would be needed to track progress against the plan. There is no guidance on drawing up a good assessment services contract. One way to approach these opportunities to spell out best practices in these areas more clearly would be to have auditors summarize what they believe are the strengths and weaknesses of the materials they review. The lessons learned from this exercise could then be published.

Of the four tasks under the topic of staffing, two are information only (the number of staff and parcels per assessor), and two are required by legislation. The MGA requires that appointed assessors hold a qualification as enumerated in the Qualifications of Assessor Regulation, and an annual declaration of qualifications is required. Moreover, a bylaw must establish the person designated as assessor. Auditors verify that municipalities comply with these requirements.

It would seem that there is little need to address assessor qualifications in detailed audits since the annual return declaration deals with qualifications. It would seem that a similar mechanism could be developed to deal with the bylaw requirement. With respect to staff organization and statistics on parcel counts, assessment service costs, and staffing, a distinction should be made between municipalities that employ an assessor and an assessment staff and those that contract for assessment services. Rather than a cursory review during a detailed audit, statistics should be analyzed on an ongoing basis with the aim of being able to detect atypical figures, the reasons for which could be probed during a detailed audit if warranted. As there are no hard-and-fast rules about what constitutes a good organization design, it would seem that organization needs to be examined only when there are substantial problems with the quality of assessments, which might be caused by a breakdown in communications, inadequate internal controls, and similar organizational issues.

### **7.1.2 Exemption Administration**

As part of their review of market valuation practices, auditors test the administration of exemptions. They review procedures to ensure that they comply with the MGA and regulations. We believe that exemption administration should continue to be subject to detailed audits.

### **7.1.3 Internal Quality Control**

In addition to internal controls that are integral to other topics, detailed audits examine practices in the following tasks (1) ratio studies, (2) reviews of preliminary values, and (3) the creation of a reassessment report. There is one test for each task. The tests in all instances call for reviewing the documentation provided by the municipality with the assessor, presumably discussing the strengths and weaknesses that the auditor sees.

Although each task is important and worthy of auditing, current tests, which are based on best practices, are soft. The review of ratio studies should be informed by issues that arise from annual audits and that arise from tests of software reliability (see section 7.2) as well as by guidance provided by the IAAO *Standard on Ratio Studies*. The professional literature provides limited concrete guidance in value-review systems and reassessment reports. See Gloude-mans (page 206) for advice on the former. In addition to guidance provided in *Market Value and Mass Appraisal for Property Assessment in Alberta*, see the website of the King County, Washington, Department of Assessments for examples of the latter (click on “area reports”).<sup>15</sup> Again, it would be desirable for ASB to publicize more fully what it considers to be good examples of best practices.

Matters not covered by current tests are computerized data quality edits, the establishment of audit trails in computer systems and manual processes. It would be desirable to develop tests in these areas.

#### **7.1.4 Assessment Roll Preparation and Communication**

The *Detailed Assessment Audit Manual* currently identifies seven tasks associated with the topic of assessment roll preparation and the information to be provided to property owners. The auditor is required to verify that the municipality complied with the specifications for assessment rolls in the MGA, determine that the deadline for issuing the roll was met, verify that the municipality complied with requirements for reporting to the Audit Unit, and complied with notice and information requirements. As a material departure from these requirements of the MGA would risk invalidating the assessment, it would seem that they should be addressed in the declaration process and in annual audits. With the possible exception of notice and information requirements, it would seem that ASSET could detect any departures. Thus, detailed audits should address these tasks only on an exception basis (and probably as part of a specific audit). Presumably, most of the municipalities that were cited as being deficient in these areas would not repeat their mistakes.

It would seem that the task of being available to taxpayers (desirable) would be difficult to audit in a meaningful way, especially in the case of contract assessors. Although it would be possible to audit systems that purported to measure elapsed time in communications, doing so would not have a high payoff. (As far as we are aware, no municipalities were found to be deficient in these areas.) However, if municipalities and their contractors were encouraged to put assessment information on websites, availability and timeliness would be improved for at least some property owners. Moreover, a task of establishing and maintaining a website could be objectively evaluated with little effort by the auditor.

#### **7.1.5 Assessment Complaints and Amendments**

Currently, the topic of amending assessments as a result of appeals or notifications of factual errors only has two “information” tests, which require the auditor to discuss with the assessor (1) whether there is anything unusual about the frequency of ARB and MGB appeals and (2) the

---

<sup>15</sup> <http://www.metrokc.gov/Assessor/>



number and reasons for amendments. These tests do not seem meaningful in a scheduled detailed audit. It would be more meaningful to use data in ASSET on revision type codes to determine atypical patterns in amendments and in appeals and to schedule specific audits when warranted. An unusual number of corrections could signal problems with attribute data collection and maintenance. An unusual number of ARB appeals could signal either valuation problems or potential problems with the operation of the ARB. Conceivably, revision data coupled with data on the number of ARB appeals in the statistical information return could be used to shed light on that question. We recommend that ASB add an analysis of data on amendments and ARB appeals to its agenda for strengthening annual audits.

## **7.2 Audit of CAMA System**

The diverse needs of the many municipalities for general versus highly sophisticated assessment software has been respected by the Audit Unit. Software from several vendors with various levels of sophistication is now in use across the province. Similarly, diverse coding schemes featuring various levels of detail for property descriptors have been accommodated, despite the countervailing need for consistent reporting, by means of a system of translation tables. During the first round of audits the Audit Unit has become familiar with the intricacies and operational procedures that characterize successful use of the CAMA software employed by the municipalities. As a result, diverse levels of sophistication & needs have been accommodated in such a way that it is still possible to generate reliable, sharable data. Nevertheless, issues remain.

Currently, the Audit Unit only examines whether a CAMA system has the features considered essential. As a general matter, the Unit may want to consider auditing the performance of the CAMA software packages in use in the province. Such a program was recently imposed in Arkansas, where it was discovered that one of the major vendors had been miscalculating fundamental assessment performance measures, such as the coefficient of dispersion. Although the same would not be true in Alberta, since such statistics are already independently calculated by the province, being able to rely on the auditee's software to produce trustworthy results from given inputs would enable provincial personnel to audit the inputs without having to audit the software/calculations as well in each instance. Such assurance could be gained by requiring each CAMA system to be able to generate valid results from a test suite of standard data. Note that some of the states in the U.S. require software vendors to be certified by the state oversight agency, but in the absence of a testing program such practices serve more to inhibit competition than to provide a measure of quality assurance or audit simplification, and so we would not recommend adopting that practice per se.

The issue of software reliability is of particular note in jurisdictions where "hypothetical" assessments are being proffered as part of the ratio study. As noted in section 6.2, we disapprove of this uncommon practice. However, its acceptability would be enhanced if there were obvious infrastructure provisions, such as software features as well as assessor certifications, designed to prevent self-serving data adjustments. Software assurances that would obviously be desirable would include: 1) a mechanism that barred (or highlighted) changes to the descriptive characteristics of the sold hypothetical property that were not also made to other surrounding parcels (e.g. changing a "view factor") and 2) a mechanism that ensured the hypothetical assessment were derived only from valuation parameters (such as land pricing table entries or multiple regression

equations) that were generally applicable to surrounding properties and readily traceable to the assessment roll. Such provisions, of course, would not be foolproof, but requiring an auditable trail in the setting of such hypothetical values and ensuring the general applicability of the process may serve to allay some concerns. Since we have not determined what fraction of the municipalities make use of hypothetical assessments, though we believe it not to be a province-wide practice, it would seem advisable as part of the audit or certification program to determine which do and to test the software and procedures of those that do for procedural weaknesses and any relevant safeguards.

### **7.3 Audit of Attribute Data**

In conducting detailed audits, the Audit Unit draws heavily on information reported in annual audits. It also requests municipalities to provide a list of properties for which building permits were issued in the assessment year, including the reason for and value of the permit.

The Province routinely provides municipalities with recorded plans, public land dispositions, and title transfers needed for the assessor to keep abreast of property inventories and ownership changes in order to comply with the mandate of Section 285 of the Act—to assess annually all property (except that listed in section 298). Assessments are to reflect the physical status of the property as of December 31 of the assessment year. Auditors inspect a random sample of public recording to see if the assessor’s records and maps reflect such changes. They check to ensure that the assessor’s parcel numbering scheme provides a unique identifier for each parcel and that assessment maps meet accepted standards. They also review procedures for processing and re-viewing building permits to ensure indicated physical changes are reflected in property records.

Alberta municipalities are required to inspect market-value properties at least once every five years (which is one reason for the five-year detailed audit cycle). Assessors should maintain a re-inspection plan and auditors will review the plan with the assessor to ensure that it provides for the necessary inspections and is, if fact, being followed. Computer systems should list when a property was last inspected and, desirably, what type of inspection was made (e.g., drive-by, exterior only, interior, door interview, or by reference to MLS or another source) and by whom.

Consistent with IAAO and Alberta standards, the Audit Unit regards the 5-year re-inspection cycle as mandatory for residential and commercial properties. Although extant standards do not reflect the change, we note that there has been a shift of thinking on this subject given effective enforcement of building permits and advances in modern technology, including aerial photos, the Internet, and the ability to cross-check data with other sources, such as MLS. Given these new tools, assessors may find it more effective to focus limited resources on inspection of sales used to calibrate valuation models, appealed properties, properties with outstanding permits, and hot spot areas where renovations are most common. To be sure, a five-year cycle remains desirable, but we question whether it should continue to be required. We note that the City of Edmonton took exception to its 2001 assessment audit in this regard and we tend to agree. Given the other tools available (and utilized in Edmonton), regular inspections are less cost-effective than previously and, in fact, may no longer be cost effective in some cases. Accordingly, we recommend that the five-year re-inspection cycle be reclassified as “desirable” rather than required. Thus, if a detailed audit found that a municipality has sound procedures for obtaining and working build-

ing permits and keeping its data inventory current and accurate, it could find that the municipality meets standards even though it lacked a systematic five-year re-inspection cycle.

Alberta legislation and guidelines, as well as accepted best practices, require assessors to maintain data on those property characteristics most important in valuation. Sketches and photos are rightfully regarded as desirable and are becoming increasingly important and cost-effective given modern technology. Assessors are required to maintain a data collection manual that explains and illustrates the proper coding of various property types.

The auditor will review the data collection manual with the assessor and draw a sample of properties for detailed inspection and ask for copies of property record cards containing property characteristics. The auditor then inspects the sample properties to ensure that the required data items are recorded and correct. If more than 15% of properties have errors or omissions for any required characteristic, Audit Unit regards the standard as not met. (We note that Edmonton met this standard even though they did not meet the required inspection cycle standard.)

Property inspections are one of the more time-consuming aspects of the detailed audits and, given that an entire cycle has been completed and municipalities appear to be “on board” with collecting the required items, is one of the more expendable going forward. Since data must be submitted electronically, the Audit Unit can rather easily determine the extent of completion of the required items for all properties, and for residential properties could compare selected property characteristics with those on MLS. Thus we recommend that the Unit consider phasing out manual inspections of property provided that certain conditions obtain. Conditions that might collectively eliminate the need for a 5-year re-inspection cycle include: (1) a reliable system of building permit processing and enforcement, (2) a regular and frequent program of aerial, oblique, or street-level photography combined with an effective change-detection program, (3) regular validation of sales, (4) regular drive-throughs of the municipality, and (5) a comprehensive quality control program at the local level that uses ratio studies and other tools to detect and address patterns of assessment inequity on the basis of geography, kind of improvement, size, age, and the like. The Audit Unit should consider developing its own conditionality requirements as part of the process of considering whether to adopt this recommendation. From an overall management perspective, one cannot effectively audit every aspect of the assessment process and monitoring the accurate collection of property data is one of the most difficult and time-consuming. While the first round of detailed audits has accomplished much good in this area, we recommend going forward that training and automation be emphasized and that manual data audits be undertaken only on an as-needed basis, e.g., when assessment quality standards are not met and possibly when there have been major personnel changes in the jurisdiction.

Finally, assessors would desirably maintain current replacement cost data for purposes of updating cost manuals to the current market. Collecting and analyzing such data is far from a trivial task and, in any case, is relatively unimportant if properties are appraised using either the sales comparison or income approaches. Accordingly, we are glad to see this item described as “desirable” rather than mandatory. We note that the Province commendably maintains a residential cost manual and clearly it is more efficient for the Province to keep the manual current than for the municipalities to do so separately. Of course, there will be local variations in costs but these are more effectively captured through market modifiers, since even in the cost approach costs

must ultimately be reconciled with market prices. Section 7.6 below addresses valuation methods in more detail.

## 7.4 Audit of Sales Data Processing

Complete and accurate sales data are vital to both municipalities in the delivery of values and to the Audit Unit in monitoring performance and determining assessment levels and related education requisitions. To begin, municipalities are expected to process title transfers received from Land Titles and update computer files accordingly. To meet this requirement, computer files must reflect at least 95% of sales listed in Land Titles.

Once received, sales must be reviewed to determine whether they constitute open market, arm's-length transfers. Assessors can check sales against a multiple listing service or contact a party to the sale or other knowledgeable source, such as a realtor or bank. While ASB encourages assessors to verify all sales, or at least as many as possible, it requires as a minimum that assessors investigate outliers, defined as those with assessment-to-sales ratios of less than 0.70 or greater than 1.30. The auditor reviews a sample of sales for correct coding. If more than 15% are not correctly classified as usable or not usable for market analysis in accordance with the *Annual Assessment Audit and Equalized Assessment Manual*, the Unit considers the municipality in non-compliance. Desirably, the assessor should also maintain an acceptable coding manual (or other written guidelines) to be used in sales validation.

In addition to determining whether sales represent open market, arm's-length transfers, assessors should confirm or capture property characteristics at time of sale. This can be accomplished through a multiple listing service, contact with a party familiar with the sales, or field review. ASB standards require assessors to undertake such investigations for at least outlier ratios as described above. In any case, property characteristics at time of sales should be attached to sales records, preserving an electronic snapshot of the property at time of sale. The auditor will select a sample of outlier ratios and either perform a field review or consult a multiple listing service to determine whether these requirements have been met.

Assessors should also review sales to see if adjustments are required for time or other factors, such as creative financing or the inclusion of chattels in the sale. The *Detailed Assessment Audit Manual* emphasizes that assessors should not "adjust sales just to achieve preferred ASRs" (page 28). This task is considered "desirable" (not mandatory) and the auditor will review analyses supporting adjustments and "comment when the number and amount of adjustments is larger than expected for the municipality type and location." As we explain below, this concern may be too one-sided, discouraging rather than encouraging or requiring needed adjustments.

Finally, the assessor must maintain a sales file either in electronic or paper form that, as a minimum, contains, in addition to salient attribute data, sale price and any adjustments thereto, sale date, certificate of title number, and a code documenting any adjustment to the price. The auditor will examine a sample of sold properties to determine whether sales files contain this minimum information.

The audit of the sales validation process, like many other aspects of the detailed audit process, involves an important element of education, in this case in terms of helping municipalities to understand correct processes and to identify areas requiring improvements. While we laud this role of the detailed audits and commend the good that has been accomplished, we also raise the question of whether, going forward, this education could not be more efficiently, timely, and consistently delivered through training programs (a theme to which we return at other points in our report).

With the initial round of detailed audits completed, we recommend that a number of sales validation tasks now be moved forward to the annual audits. For one, the Audit Unit can check electronically to determine whether Land Title transfers have been reflected in ASSET submissions and whether such submissions contain required data items. It can also compare data on sales submissions with data from multiple listing services to see whether data for sold properties reflects the status of the property at time of sale. We question whether it will be productive in the future to check to ensure that no more than 15% of outlier sales ratios have been incorrectly coded as usable or unusable for ratio studies. Since assessments and the requisition process are annual events, it is critical that all sales be coded consistently and accurately and, as discussed in 6.4 above, to a large extent ASB can monitor this annually through electronic edits, with follow-up action targeted as necessary. Of course, it should also supplement this process with manuals and training programs explaining correct procedures for editing and adjusting sales.

Again as explained in 6.4, we recommend that Audit Unit overhaul its approach to time adjustments. These should be transparent, not buried in submitted prices, and the Unit needs to ensure that appropriate adjustments are, in fact, made when markets are changing significantly. The Unit and many contractors already have procedures and templates for determining and applying time adjustments and educational efforts in this area should be continued. As a minimum, the Unit could construct an annual matrix of time adjustments by property type and municipality to help identify which municipalities are applying or not applying adjustments and which may be applying atypical adjustments. We recommend that Audit Unit itself determine average or typical adjustments by property type for broad market areas (often consisting of multiple jurisdictions with similar economic environments) and stand ready to substitute such adjustments when municipalities fail to make market-indicated adjustments.

## **7.5 Audit of Valuation Models and Their Application**

At the initiation of the audits, municipalities are requested to provide descriptive materials documenting the valuation process, including manuals, valuation schedules, quality assurance measures, and maps delineating market areas and neighbourhoods. Auditors endeavour to determine if valuation practices represent best practices as expressed in IAAO standards, texts, and course materials and the manual *Market Value and Mass Appraisal for Property Assessment in Alberta*, which provides specific guidance for various property types.

Both IAAO materials and the manual indicate that, provided adequate market data exist, the sales comparison approach is preferred for vacant and residential properties and the income approach is preferred for most commercial or income-producing properties. The cost approach is preferred for special purpose properties and other properties when there is inadequate data to apply either

the sales comparison or income approach (smaller jurisdictions are advised also to look outside their boundaries for market data, especially when the property market in question encompasses a broad area). Regarding the income approach, assessors must routinely collect both income and expense information and have programs in place for developing market rents, expense ratios, and capitalization rates. Desirably the assessor will also maintain a library of income information, including trade publications that report benchmark income parameters.

The auditor will check to see if the approaches being used for various property types are appropriate for the jurisdiction and if the required income and expense data are collected and income models developed. He or she will also explicitly review the manner in which special purpose properties are valued.

While standards for the evaluation of valuation procedures are necessarily general, with the assessor referred to the *Handbook* and IAAO materials for more guidance, the auditor's examinations can be quite detailed. We see this as a two-edged sword. On the one hand, auditors are often able to make a number of helpful observations and recommendations to the assessor. On the other hand, just as appraisers often use different methods and procedures, auditors are sometimes seen as quibbling over secondary valuation issues. Since, however, assessors are free to accept the auditor's recommendations on such issues (as long as they do not constitute mandatory tasks), we see no particular problem other than the question of whether audit resources could be more productively employed.

The auditor will apply one or more tests to determine whether sold and unsold properties are similarly valued, which would normally include at least a comparison of valuation changes for the two property groups. As observed previously, because of the importance of this issue, we recommend that such analyses be made as part of the annual audits.

As part of our overarching recommended strategy to strengthen further the annual audit program, we do not think it imperative that the Audit Unit undertake a full review of valuation procedures in all detailed audits. Alberta has made enormous progress since the implementation of market value assessments and the large majority of municipalities seem to be headed in the right direction, often assisted by contractors familiar with sound methodology and required procedures. Rather we would prefer to see ASB provide oversight and education and monitor key valuation parameters and issues. One suggestion in this regard is for ASB to track and report valuation methods, techniques, and key parameters (such as value per square meter, average value changes, market rents, expense ratios, and capitalization rates) by major property types with a view to ensuring consistency with required standards, identifying deficiencies or anomalies, and highlighting municipalities using advanced techniques. An annual questionnaire on assessment practices (or changes therein) could help in gathering the required information on assessment practices and could spotlight important current issues. Information on average values and value changes could be extracted from annual ASSET submissions.

One means of reducing the time spent on detailed audits suggested by contractors themselves is to focus more on valuation methods and valuation models used by contractors. Since contractors will tend to use similar methods and techniques in similar jurisdictions, focusing more on those methods themselves rather than results in individual client jurisdiction would seem to carry effi-

ciencies. Of course, it is the municipalities that must be audited, but it would seem unnecessary to examine the valuation methodology of each jurisdiction audited if that methodology is common to many.

As with current specific audits and compressed audits, we believe detailed audits can be tailored to focus on key areas or issues identified in a strengthened annual audit program, with the Audit Unit also prepared to make “spot” audits of problem municipalities, municipalities where the assessor or contractor has changed, or those where value-at-risk considerations suggest it would be prudent to do so. Also, resources permitting, they may be made at the request of municipalities wanting assistance in reviewing and improving their operations.

Special-purpose manufacturing and high-value properties, such as major shopping centres and office towers, present special challenges, since they are appraised using predominately single-property appraisal methods, rarely sell, and usual benchmarks do not apply. All too often state and provincial equalization programs implicitly assume that they are assessed at the same overall ratio as other property. According to the IAAO ratio study standard (1999), however, this is not appropriate. Rather “The equalization agency should conduct an appraisal of such properties (the appraisals may be trended for several years) or audit and adjusted as necessary the values developed by the local jurisdiction” (section 5.5.2, page 13). Although this advice is not directly applicable to Alberta’s detailed audits, it does suggest that an appropriate approach to monitor the quality of appraisals made for these property types would be review appraisals. The State of New York is a good example of this approach. Although the state conducts CAMA analyses and sales ratio studies for residential (class B) properties, it conducts appraisal ratio studies for commercial (class C) properties and review appraisals for usually the two predominant utility (class D) properties as applicable in a municipality. Similarly, assuming staff expertise, ASB could audit the appraisal of two or more major properties as appropriate in detailed audits. Or, properties of a given type (e.g., manufacturing plants or regional shopping centres) could be the subject of occasional special audits randomly conducted across the province.

## **7.6 Audit of Regulated Property Assessments**

Regulated properties include machinery and equipment, railway, farmland, and linear properties. Municipalities are responsible for assessing machinery and equipment, railways, and farmland, which are in turn subject to detailed audits. Linear properties are assessed by the Province and not subject to detailed audits. At the same time, however, linear properties constitute a large percentage of the value of the Province and their treatment is highly controversial.

### **7.6.1 Machinery and Equipment**

Machinery, equipment, and railway property is locally assessed in Alberta and subject to detailed audits. Machinery and equipment is assessed at 77% of value and is not subject to the education requisition.

Properties in these categories are valued based on the cost approach using either replacement cost or historical cost. If replacement cost provides the starting point, depreciation and trend fac-

tors are required. If historical cost provides the starting point, physical and economic/functional depreciation factors, as well as trend factors, should be applied.

The auditor checks to ensure that data on equipment type and age (required by AR 289/99 s.3(2)) that form the basis of cost trend and depreciation factors are maintained. The auditor also examines a sample of properties (e.g., 15) to determine whether correct trend factors and depreciation factors in the Minister's applicable guidelines have been applied to base costs. These checks appear reasonable and appropriate. However, it is important to note that detailed audits focus only on the assessor's treatment of *reported* property. We recommend that ASB also examine the methods used by assessors to identify and list all applicable property. While businesses are required to report fully to the assessor, experience elsewhere has shown that many may not completely or correctly do so.

Complicating both the assessment and auditing process is the lack of standard reporting forms. Another, somewhat related problem is that many assessors, particularly in smaller jurisdictions, are less knowledgeable about such property than they are of real property and cannot determine whether required information is being correctly and completely reported, particularly since companies report to municipalities in various formats as they choose. Clearly, a standard, enforceable reporting form is needed. If experience in the U.S. is a guide, taxpayers with properties in more than one municipality would welcome a standard reporting form.

### **7.6.2 Farmlands**

Farm buildings are exempt in Alberta. Although farmland accounts for only about 3% of all value in the province, it is important in certain regions (especially the Lethbridge area).

As with machinery and equipment, auditors select a sample of properties to ensure that required data are maintained and that farm productivity, base rates, and other cost rates are correctly applied. We have no recommendations for modifications or improvement.

### **7.6.3 Linear Property**

Linear property encompasses pipelines, wells, electric generation and transmission facilities, and telecommunication properties. The first two constitute some 80% of the total linear property value. Despite the importance of these industries in Alberta, linear properties are not assessed on a market value basis. In addition, there is concern that regardless of their valuation basis, valuations are grossly lagging those for other properties. For example, representatives from the City of Edmonton noted that since 1997 property taxes have risen 70% on homes and 64% on commercial property, but only 3% on linear property. The City of Calgary sees linear values as totally unrealistic.

In any case, the detailed audit does not extend to linear property and thus it is strictly outside the scope of our study, although we will offer our comments and observations below. ASB assesses linear properties directly based on information self-reported to the Province and reports resulting values to the municipalities.



Current valuation tables for linear properties were developed in the late 1990s based on work done in the early and mid 1990s, which in turn appears to reflect mid-1980s values, thus effectively making the base tables some 20 years old. However, annual trend factors have been applied to pipelines and their values thus are more current than those of other types of linear property. Electric generation and transmission property is reported to be in the next best shape, followed by telecommunications properties and wells, the values for which are least current.

A working group of industry experts and assessors is supposed to evaluate valuation tables for linear properties every three years and is currently conducting a review. Although tentatively scheduled for 2007, any updates to the base tables require ministerial approval and can be politically sensitive. In the interest of fairness, we believe that the tables should be kept reasonably current and at least approximate the market value standard used for unregulated properties.

Some have questioned the omission of linear property from the detailed audit and, as noted above, contend that increases in linear assessments do not match increases in the construction or acquisition costs on which they are based. As a general matter, regardless of how they are valued, because of their importance in the tax base, we believe that assessments for linear property should receive the same level of scrutiny as other properties. Of course, this raises the issues of independence and of the staff required to monitor and audit reported information. If the necessary resources could be obtained, perhaps ASB could assign two or three additional auditors to the audit and review of linear property submissions and related analyses. These auditors would focus on whether current reporting policies and requirements are being followed and, as a benchmark, might examine the ratio of reported value to investment or book value.

## 8. REPORTING AND COMMUNICATING AUDIT RESULTS

As noted, ASB has developed a Microsoft Word template for audit reports. A report has two parts: Part A is an executive summary and part B contains findings and the municipality's responses for each topic area. The executive summary explains the background for the audit and summarizes the recommendations. Part B makes use of a standard tabular format for summarizing the auditor's findings and conclusions in connection with each topic. Essentially, the top part of each table lists the tasks and contains adjoining columns in which the auditor (a) indicates the basis for the tests (e.g., required by law or best practice, desirable, and information), (b) gives a yes or no conclusion about whether the test was met (or was not applicable), and (c) provides succinct supplementary comments when appropriate. The bottom part of each table contains rows for providing conclusions, recommendations, and the municipality's response. We believe this tabular approach has several advantages: it economically encourages complete and consistent reporting. It provides the reader with a succinct statement of findings and conclusions.

Draft reports are reviewed with the assessor and, sometimes, the CAO. The aim is to ensure that both parties understand the situation and that any errors are corrected. Municipal responses also are requested. After this preliminary meeting, the draft reports are vetted by AMA, as noted in section 3. Thereafter, the reports are formally submitted to the municipalities.

It is ASB policy to release the audit report only to the municipality being studied, and outside requests for audit results are referred to the municipality. The EAP, the AG, and others have recommended that ASB should make all reports available to anyone interested in them and we agree. Under the current arrangement, some municipalities might make their reports available to anyone who asked, while others were selective or less open. Further, the Freedom of Information Act would seem to dictate that the reports are public information regardless of ASB policy.<sup>16</sup> Thus, in the interest of transparency, governmental efficiency, and promoting confidence in the system, we recommend that ASB make pdf copies of final audit reports available on its web site.

Doing so would forewarn the assessment community of problems, and other municipalities might benefit from citations of exemplary practices. Doubtless, ASB's limited progress in implementing these recommendations has been affected by the adversarial climate of equalization appeals and the Audit Unit's limited resources. We note with approval that ASB has begun to report its findings in bulletins and *Advisory Aspects*.

In 2004, the AG noted that audit reports contain insufficient information on tests that involve samples. The concern was that overall conclusions could be invalid if they were based on invalid conclusions drawn from the samples selected. The AG identified three ways of addressing this issue: better documentation in the reports (and presumably in work "papers" as well), reviews to ensure documentation was deemed to be sufficient, and a determination of "the level of review required based on an assessment of the risk that the conclusions are invalid." The latter

---

<sup>16</sup> We note that Texas and California are among the jurisdictions that publish audit reports. See <http://www.boe.ca.gov/proptaxes/apscont.htm>, for example.

presumably would consider the amount of equalized assessment in doubt and the costs and benefits of the various remedies.

## 9. CONCLUSIONS AND RECOMMENDATIONS

ASB's audit and equalization program has been and continues to be worthy of emulation. Its design and execution have three outstanding features: First, it reinforces market value assessment; second, it properly makes municipal assessors accountable for their performance; and third, it identifies causes of both good and deficient performance. Commendably, the Audit Unit has striven to improve the program continuously. It is in the spirit of making continuous improvements that we offer the recommendations listed below. They are inspired by AMA's goal of "a well-managed and efficient assessment and property tax system in which stakeholders have confidence," the constraints imposed by a large workload and a small audit staff, and the further opportunities that ASSET and other technological developments provide.

To summarize key recommendations made in the body of our report, we recommend:

1. The Audit Unit of ASB should accelerate its transition from the current program of attempting to complete a "regular" detailed audit of every municipality every five years to an audit program that (1) further utilizes the power of ASSET to strengthen annual audits, (2) continues specific and follow-up audits whenever conditions indicate that they would be desirable, and (3) includes "regular" (albeit somewhat truncated) detailed audits of a random sample of remaining municipalities chosen on the basis of decision theoretic considerations. The decision-theoretic sampling process should be designed in good part to maximize "bang-for-the-buck." That is, large municipalities and those with comparatively large pools of value in a stratum would be more likely to be audited than municipalities that have comparatively little value or that were recently selected for a random audit. While the just-completed five-year cycle was highly equitable and served to ensure that most municipalities are now headed in the right direction, we believe that, looking to the future, stakeholders would be better served by a system of strengthened annual audits supplemented by more targeted detailed audits. Municipalities could be more confident that their requisitions were fair; taxpayers could be more confident that all types of property were being fairly and accurately valued.
2. As the Audit Unit fully recognizes, the current month-long period for accomplishing the first two stages of annual audits implies a period of intense work. To the extent practicable, all auditors should contribute to the process, especially the stage 2 reviews.
3. In its selection of detailed audit targets, the Audit Unit should more formally incorporate in its detailed audit decision model balancing of value at stake against the probability that the computed ratio was in error by various unacceptable percentages (the higher the value at risk and the higher the potential error, the greater the likelihood of audit). The latter would be based in part on sample variability and flags or issues raised in annual audits.
4. Management should attempt to separate style from content issues in reviewing draft audit reports. The goal here is to not delay the timely publication of reports due to style issues, which are better addressed on a more permanent basis through template design, training, and professional editing.

5. Although the Audit Unit should not expect every auditor to have equal mastery of every valuation specialty, it needs well-rounded auditors, and it should support continual professional development, including courses, conference participation, and the maintenance of a professional library. While all auditors need strong knowledge of CAMA systems used by assessors, specialization in such areas as valuing major commercial and industrial properties and machinery and equipment valuation is highly desirable. Specialists could assist with the review of valuation practices in specific municipalities and could make cross-jurisdictional studies of the valuation of categories of high-value properties. These recommendations are consistent with our overarching recommendation that future detailed audits be more targeted than presently. At the same time, however, we caution that auditors require strong general appraisal skills and that individuals should not be given dead-end specialties.
6. The staff of the Audit Unit should be of sufficient size and have sufficient skills to accomplish annual and detailed audits within established deadlines. Although we understand that additional staff would require additional funding, and that such funding is politically difficult and sensitive, we see an immediate need for at least one statistical analyst to assist with the expanded tests and analyses recommended in our report. Management also should evaluate the need for additional auditors to ensure that each year's detailed audit program is carried out timely, that specific valuation issues are addressed satisfactorily, and that succession and professional development is provided for.
7. Resources permitting, ASB should ask its stakeholders how it could be more effective in expanding its assistance activities to municipalities (although we note that an experienced auditor recently was transferred to the Education Tax and Assessment Advisory Unit). As discussed, one of the three broad activities of oversight agencies is training and assistance. Successful delivery of such services improves valuations and compliance, reduces the necessity of enforcement and corrective actions, and benefits all stakeholders. Unfortunately, assistance activities are necessarily human resource intensive (a sentence or two of advice during an informal visit can be more effective than issuing a detailed report). However, if and when such resources can be secured or made available, considerable cost-benefits could be expected in applying them to enhance ASB's training and mentoring functions.
8. Audit Unit management and auditors should develop a simple, cost-efficient system for tracking how much time auditors spend on auditing and on other activities. Information on how resources are used, coupled with information on work accomplished, can be used to justify staffing requests, document efficiency, and evaluate strategies for further enhancing audit and assistance activities. Given the inherent variability in the factors that affect the time spent on a particular audit or audit activity, we recommend against using the system to establish "quotas" for auditors.
9. The Audit Unit should continue to leverage the use of statistical analysis, technology, and ASSET in both annual and detail audits. The Unit has made enormous strides in this area and ASSET is perhaps the pre-eminent example of an assessment database constructed

through the joint cooperation of an assessment oversight agency and local jurisdictions. Nevertheless, as discussed at various points in our report, ASB has the opportunity for making greater use of these valuable resources.

10. The Audit Unit should continue to expand the use of electronic reviews in sales screening and data validation. As a minimum, it should monitor and compare the percentage of sales that assessors screen as usable or not usable. It can also consider the use of standard edits based on ratio, value, and sale price. It could compare data changes made to sold and unsold parcels. Where available and considered reliable, MLS data can be used to help check the accuracy of property characteristics data. The aim of these electronic checks is to discontinue as a general test labour-intensive field reviews of sales screening aimed at ensuring that at least 85% of sales have been correctly coded.
11. ASB should develop and implement a system of identifying “market areas” across the Province. Market areas are broad geographic groups of property subject to the same economic forces and influences. They can be parts of a large city like Calgary or Edmonton or a combination of a number of small municipalities in the same region subject to the same economic forces (e.g., farming or oil exploration). Market areas are a cornerstone of mass appraisal and can be used as a basis for data reporting and sharing, comparison of valuation parameters, and the development of time-adjustment factors.
12. The Audit Unit should continue to improve its treatment of time adjustments. While it checks to ensure that municipalities are not making unwarranted adjustments and currently checks to ensure that at least 30% of properties have received adjustments, it could do more to ensure that warranted adjustments are being made and that the pattern of adjustments is reasonably consistent among municipalities. As a minimum, we recommend that ASB extract, compare, and report time-adjustments made by municipalities. Better, it could determine and make available its own benchmark adjustments and apply them when municipalities fail to make necessary adjustments (or apply unrealistic adjustments). It should also strive to share its knowledge in this area, including statistical methods and time-adjustment templates, with assessors.
13. The Audit Unit should strengthen its tests for equal treatment of sold and unsold properties. In particular, it should build strong checks for the practice into its annual audits. Such checks can compare and test for unreasonable differences in value changes between sold and unsold properties. Detailed audits should employ more stringent versions of the same test (e.g., using stratified comparisons) and supplemental measures outlined in the IAAO literature on the subject. When differential treatment of sold and unsold properties has been found, ASB could consider employing the Monte Carlo based procedure for automatically adjusting assessment ratios based on differences in rates of changes in assessments between sold and unsold properties.
14. The Audit Unit should continue to use a standard stratification scheme. The current method, based on property type and value range, has the strong advantage of treating all municipalities equally and making efficient use of stratified sampling techniques. While

other schemes could be explored (e.g., based on market areas if such became available), any such scheme should be applied equally to all municipalities.

15. The Audit Unit should discontinue its practice of using more than one sale of a parcel in a year's ratio study. When a property resells in the study time period, only the sale closest to the appraisal date should be used. When a sale involves multiple properties, the assessments should (if meaningful) be added and compared to the price (the price should not be allocated to multiple parcels). Each sale constitutes a single transfer and indicator of market value and thus should not be represented more than once in the study and should only be matched against actual assessments in existence at time of sale. With the possible exception of sales of certain properties with assessments that are partly regulated and partly on a market-value basis, hypothetical assessments should not be created for use as the numerators in ratio studies unless tight controls are in place to ensure the integrity of the presumed assessments..
16. When a data element is needed for an audit test or cross-jurisdictional analysis, the Audit Unit should encourage municipalities to collect and provide the element in ASSET, along with those currently denoted as mandatory (of course, some such elements could be reported as zero or N/A). Elements, such as year of construction, can prove helpful in a number of performance analyses. Assessors themselves would find elements of comparison, such as leasable area, useful for seldom-occurring commercial or industrial properties when data are shared among municipalities. Little, if any, additional resources are required to supply these additional items.
17. The Audit Unit should consider eliminating *routine* field checks of data in its detailed audits. This is one of the most time-consuming portions of detailed audits and one with comparatively little returns. Thus, if a jurisdiction is using good practices and no flags have been raised in the annual audits, we suggest expending with routine field inspections.
18. The Audit Unit should overhaul its approach to auditing valuation procedures. Rather than automatically making regular detailed investigations, we suggest that ASB focus more on providing education and monitoring and on comparing and reporting on practices in use across the Province. An annual or periodic questionnaire could be used for this purpose. Based on tabulated results, ASB could compare and monitor progress in implementation of modern, recommended techniques and assessors could evaluate how they compare against their peers and note those that are using more advanced methods. Where municipalities show up poorly in annual audits or request additional input, ASB should stand ready to conduct a more thorough examination of valuation models and practices.
19. As a further alternative to detailed audits of valuation procedures, ASB should develop and compare market indicators (sometimes called "valuation parameters") across municipalities, particularly those that would fall in the same market area or are similar in terms of size and economic composition. Examples would include value per square meter by property type and the ratio of machinery and equipment value to real property value.

Again, atypical municipalities could be flagged for follow-up examination in detailed audits.

20. For special-purpose and other high-value properties that rarely sell and are appraised using predominately single-property appraisal methods, consideration can be given to conducting review appraisals. The review appraisals could be done as part of a regular detailed audit. Alternatively, properties of a given type (e.g., manufacturing plants or regional shopping centres) could be periodically selected for special audits across the province on a random basis.
21. Regarding machinery and equipment, ASB (not just the Audit Unit) should examine the methods assessors are using to ensure full reporting in order to ensure that significant amounts of property are not escaping assessment. In addition, it should work with affected stakeholders to develop standard reporting forms, which all businesses should be required to use.
22. The Audit Unit should reconsider its policy of referring requested for copies of detailed audit reports to the municipality in question. While we understand the difficult climate created by equalization appeals, we believe that making detailed audit reports readily available (for example, on ASB web site) would promote transparency, help municipalities to understand what a detailed audit might entail, and alert them to examples of better or alternative practices of peer jurisdictions.
23. ASB should seek to form an alliance with the Alberta Assessors Association and like-minded parties to lobby for the inclusion of a transfer declaration in Alberta Land Titles transfer process. Such declarations shed light on the details and circumstances of sales that are essential to determining whether they are useful in valuation and in ratio studies. They would improve sales data used by both assessors and ASB, reduce more costly alternative efforts to obtain such information, and generally serve to improve the quality of assessment administration in the Province.
24. The use of a five-year inspection cycle should be reclassified as desirable rather than mandatory. While it remains good practice, we believe that access to building permits and MLS data, as well as technological advances, particularly aerial photos, reduces the need for regular inspections in jurisdictions that make use of these technologies. Thus, if a municipality can demonstrate sound procedures for working building permits and reviewing and keeping its property characteristics data current and accurate, they should not be required to physically review each property every five years.



## APPENDICES

### A1 Acronyms and Abbreviations

AAA	Alberta Assessors Association [verify]
AG	Auditor General (of Alberta)
AGJD	Almy, Gloude-mans, Jacobs & Denne
AIS	Assessment Information System (the predecessor to ASSET)
AMA	Alberta Municipal Affairs
ASB	Assessment Services Branch (of ASB)
ASFF	Alberta School Foundation Fund
ASSET	Assessment Shared Services Environment, the system that superseded AIS
CAMA	Computer-assisted mass appraisal
CAO	Chief administrative officer
EAP	Equalized Assessment Panel
EAPTC	Equalized Assessment Panel Technical Committee
GIS	Geographic information system
IAAO	International Association of Assessing Officers
LOE	Level of effort
MGA	Municipal Government Act
MGB	Municipal Government Board
MRAT	Matters Relating to Assessment and Taxation [Regulation]
ORPS	[New York] Office of Real Property Services
PwC	PricewaterhouseCoopers

## A2 Illustrative Time Utilization Record

Auditor:	_____		
Period:	[Month]	_____	
Total paid hours:	_____		
<i>Estimated percentage of total paid hours spent during period on program or activity</i>			
1. Audit & equalization program		_____	%
a) Annual audits	_____	%	
b) Detailed audits	_____	%	
2. Other programs		_____	%
3. General & administrative activities		_____	%

Note: The percentages entered for activities 1, 2, and 3 should approximate 100%. The percentages entered for details 1a) and 1b) should not exceed the percentage entered in 1.

### **A3. A Rudimentary Illustration of A Decision-Theory Derived Risk Model**

Illustrated below is a barebones calculation of a risk analysis for two different possible audits. The first column features an enumeration of the feasible changes that may occur in the determined median ratio between the time of the original submission of the data and the final determination of the official median after the audit. For illustrative purposes only, the scale is presented here ranging from a decrease of twenty percentage points to an increase of the same magnitude, and the size of each increment is a whole percentage point. In real-world usage, the range would probably need to be about this wide, but the size of each increment would be much smaller, as would the probability associated with each of the more granular increments (the second column). The granularity of each increment should presumably match the number of decimal places to which the official median is calculated. It will be important for later calculations to ensure that some non-zero probability is assigned to each feasible outcome.

The cells shaded in yellow below will need to be specified by the user; those in the left columns may be somewhat subjectively determined, while the figures in the topmost line in the right columns should be readily available from the jurisdiction (or estimable from last year's roll). The remaining cells are simply the result of obvious elementary calculations (the absolute value of the product of the percentage error, the probability of the error, and the total assessed value of the jurisdiction or stratum), with the ultimate sum of them being highlighted in green at the bottom of the table. Although the probabilities in the left columns could be initially assigned merely on the basis of experience, elicited through questioning techniques described in the references cited above, they may also be derived by smoothing the results of prior years' audit experiences. Since the objective is the determination of the "real" median ratio, each submitted sale ratio is potentially that median. The difference between that ratio and the actually determined median ratio is the amount by which the sale would have changed the median (in the absence of all the other sales). To obtain a measure of the probability distribution of moving the median by various amounts (required for the left column below), each observation could be assigned a weight (or probability) proportional to the inverse of its distance from the known median. If this process is followed for one or more years of data from historical audits, the result will be a collection of discrete probabilities for each of the values in the range of -20 percent to +20 percent. These discrete probability "lumps" should be smoothed, ensuring that all possible values retain some non-zero probability so that they can be appropriately updated once the results of the audit are known, particularly how the audit may have affected the derived median ratio. The probabilities to be used in the following year's decision can then be based on an updated set of probabilities, with the updating performed on the basis of Bayesian statistics, as described more fully in the references above, tempered by expert knowledge of subsequent changes in the practices and situations in the individual jurisdictions or strata.

The necessary calculations, as indicated below, are conceptually simple and easily implemented in a spreadsheet for a small-scale problem. For finer-grained analyses encompassing a larger number of audit choices, of course, a different vehicle may be more appropriate, but the essential approach remains unchanged. If desired by resource lumpiness, the algorithm could be implemented separately for each region, and the central office would be in a position to see what benefits would be obtained by moving audit resources among the regions.

Illustrative calculation of a risk-based decision analysis

Possible Change in Ratio Due to Audit	Jurisdiction/Stratum A		Jurisdiction/Stratum B	
	Probability of such a Change	Assessed Value	Probability of such a Change	Assessed Value
		100,000,000		200,000,000
-20	0.010	200,000	0.001	40,000
-19	0.010	190,000	0.001	38,000
-18	0.010	180,000	0.001	36,000
-17	0.010	170,000	0.001	34,000
-16	0.010	160,000	0.001	32,000
-15	0.010	150,000	0.001	30,000
-14	0.010	140,000	0.002	56,000
-13	0.010	130,000	0.002	52,000
-12	0.010	120,000	0.003	72,000
-11	0.010	110,000	0.004	88,000
-10	0.010	100,000	0.005	100,000
-9	0.010	90,000	0.010	180,000
-8	0.010	80,000	0.020	320,000
-7	0.010	70,000	0.030	420,000
-6	0.020	120,000	0.040	480,000
-5	0.020	100,000	0.050	500,000
-4	0.030	120,000	0.060	480,000
-3	0.040	120,000	0.080	480,000
-2	0.050	100,000	0.081	324,000
-1	0.100	100,000	0.090	180,000
0	0.200	-	0.100	-
1	0.100	100,000	0.090	180,000

Possible Change in Ratio Due to Audit	Jurisdiction/Stratum A		Jurisdiction/Stratum B	
	Probability of such a Change	Assessed Value	Probability of such a Change	Assessed Value
		100,000,000		200,000,000
2	0.050	100,000	0.080	320,000
3	0.040	120,000	0.070	420,000
4	0.030	120,000	0.050	400,000
5	0.020	100,000	0.030	300,000
6	0.020	120,000	0.030	360,000
7	0.010	70,000	0.020	280,000
8	0.010	80,000	0.020	320,000
9	0.010	90,000	0.005	90,000
10	0.010	100,000	0.005	100,000
11	0.010	110,000	0.003	66,000
12	0.010	120,000	0.003	72,000
13	0.010	130,000	0.002	52,000
14	0.010	140,000	0.002	56,000
15	0.010	150,000	0.002	60,000
16	0.010	160,000	0.001	32,000
17	0.010	170,000	0.001	34,000
18	0.010	180,000	0.001	36,000
19	0.010	190,000	0.001	38,000
20	0.010	200,000	0.001	40,000
Check: Sum must be 1.000	1.000		1.000	
Sum: Expected Utility of the Audit		5,100,000		7,198,000

## A4 References

- Auditor General of Alberta. 2001. "Systems Audit Report: Property Assessment Audit and Equalization Process, Alberta Municipal Affairs."
- \_\_\_\_\_. 2004. Letter re performance measures, safety services and municipal property taxes.
- Alberta. Minister of Municipal Affairs. 2004. Matters Relating to Assessment and Taxation Regulation. AR 220/2004.
- Alberta Assessors' Association. 1999. *Resource Requirements for Professional Assessment Services*.
- Alberta Equalized Assessment Panel. 2000. Report and Recommendations to the Minister of Municipal Affairs on Equalized Assessment in Alberta.
- Alberta Municipal Affairs. *2004-2005 Annual Report*.
- \_\_\_\_\_. *Municipal Affairs 2005-2008 Business Plan*.
- Alberta Municipal Affairs. 2004. "Alberta Assessment Quality Minister's Guidelines."
- Alberta Municipal Affairs. Assessment Services. 2005. *Recording and Reporting Information for Assessment Audit and Equalization Manual*. Edmonton: Alberta Municipal Affairs.
- Alberta Municipal Affairs. Assessment Services. Assessment Audit Unit. 2004. *Detailed Assessment Audit Manual*. Edmonton: Alberta Municipal Affairs.
- Alberta Municipal Affairs. Local Government Services Division. 2005. "Alberta Assessment Quality Minister's Guidelines and Regulations Scheduled for Re-enactment." *IB Bulletin* No. 05-04, December 2005.
- Bolstad, William M. 2004. *Introduction to Bayesian Statistics*. Hoboken, NJ: Wiley.
- Dornfest, Alan S., and Douglas C. Thompson. 2004. "State and Provincial Ratio Study Practices: 2003 Survey Results." *Journal of Property Tax Assessment and Administration* 1 (number 1): 31-70.
- Pratt, John W., Howard Raiffa, and Robert Schlaifer. 1995. *Introduction to Statistical Decision Theory*. Cambridge, MA: MIT Press.
- PricewaterhouseCoopers. 2002. "Assessment of Workload Reduction Opportunities within the Assessment Audit Unit."

Raiffa, Robert O. and Robert Schlaifer. 1961. *Applied Statistical Decision Theory*. Cambridge, MA.: Harvard Business School.

Schlaifer, Robert. 1961. *Introduction to Statistics for Business Decisions*. New York: McGraw-Hill.

Smith, J.Q. 1988. *Decision Analysis: A Bayesian Approach*. New York: Chapman and Hall.