

Future of the Association Committee Findings and Recommendations

1.0 Background

This report investigates issues surrounding the future of the Alberta Land Surveyors' Association (ALSA) that have been studied by the Future of the Association Committee (FOTAC).

ALSA has periodically over its history conducted exercises to assess whether changes in the land surveying (and more generally, geomatics) industry, political climate and society-at-large will have effects on the Association and its members' activities. FOTAC is the most recent incarnation of this process and has now been active for three years.

The result of FOTAC's activities are as follows :

1. The development of a "general land surveying industry model" which outlines the parties involved in modern land surveying. In particular, it looks at what the role of the modern land surveyor is in the production process. The Committee recognizes that this model is a general one, and that it may not apply to individual surveyors or corporations.
2. The outlining of "threats" to the economic and societal well-being of professional land surveyors and to existence and viability of their Association.
3. Development of general recommendations to Council with regards to future activities to a) further investigate or b) mitigate threats identified.

The results of these activities are summarized in this report.

2.0 Development of a "General Land Surveying Industry Model"

FOTAC recognizes that the land surveying industry has significantly changed over the past one hundred years since the establishment of land surveying as a profession. Key developments that have molded our industry include :

- a) Diversification of activities of land surveyors / survey corporations into wider GIS/mapping/ "non-exclusive scope" areas to better address client desires and regulatory requirements
- b) Increase in number of "geomatics technology" companies that provide GIS/mapping/positioning services outside of the "exclusive scope" area of land-surveying, but that may overlap with services provided by land surveying companies
- c) Increased reliance on field staff for measurement, evidence assessment and public/client relations
- d) Increased reliance on office staff for plan preparation/checking
- e) Increased volume of technical work (both field and office) without matching increase in available, qualified technical labour

- f) Growth of large survey corporations, resulting in fewer sole practitioners and small firms
- g) Increased availability of “self-serve” geomatics products / technologies to the public at large
- h) Movement of provincial government toward consolidation of professions and their Associations, inclusion of technologists into these Associations, and towards cross-border mobility

As a result of these developments, the profession of land surveying has evolved such that the professional spends the majority of the time *supervising* technical staff, as opposed to directly performing the technical work themselves. A similar development has been witnessed in the fields of engineering, law and dentistry, among many others.

Also important is that, in a typical project, the strictly *land surveying* component is becoming a smaller percentage of the entire amount of work that has to be performed. According to the Land Surveyors Act, the definition of surveying is :

- (j) “practice of surveying” means
 - (i) the determination, establishment or recording by any means of the positions of points, natural features or features made by persons on, over or under the surface of the earth,
 - (ii) the determination of the form of the earth,
 - (iii) the practice of land surveying,
 and includes the preparation of maps, plans, systems and documents and the giving of advice with respect to any of the matters referred to in this clause;

Furthermore, the definition of land surveying is given as

- (h) “practice of land surveying” means
 - (i) the survey of land to determine or establish boundaries;
 - (ii) the survey of land to determine or establish the boundaries of any right or interest in land or in air space;
 - (iii) the survey of air space to determine or establish boundaries;
 - (iv) the survey of land to determine the location of anything relative to a boundary for the purpose of certifying the location of the thing;
 - (v) the survey of lakes, rivers or watercourses to establish or determine their boundaries;
 - (vi) the survey by any means, including photogrammetric, electronic or astronomic methods, of land, water or air space for the purpose of preparing maps, plans and documents connected in any way with the establishment or determination of boundaries delineating any right or interest in land, water or air space
 - (vii) cadastral operations and compiling and recording information related to the matters specified in subclauses (i) to (vi);

(viii) establishing and maintaining a network of geodetic points of any order of precision and establishing photogrammetric controls for the purposes of the work specified in subclauses (i) to (v),

It is only over land surveying that licensed Alberta Land Surveyors enjoy an exclusive scope of practice.

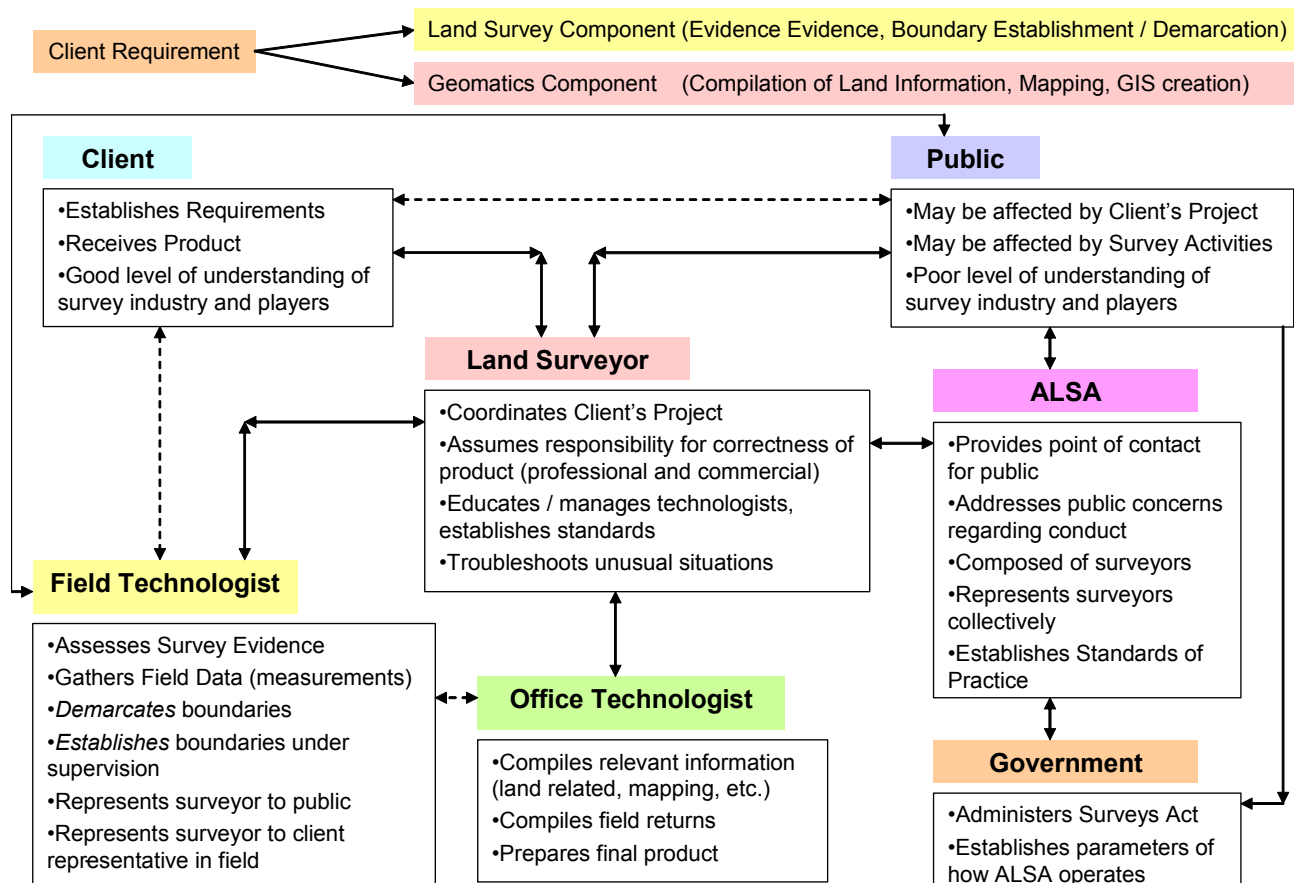
Changes in the fundamental business of land surveying are well illustrated by the example of a well site survey. Traditionally, the majority of the entire project work consisted of evidence assessment and field measurement, which lie solidly in the domain of land surveying. Plan requirements were negligible beyond a simple illustration of the measurements made in the field. The surveyor's affidavit certified that the measurements shown on the plan were correct.

Today, the situation is quite different. A typical well site plan has become a multi-page repository of land-related information. In addition, while originally the ratio of field to office work was weighted towards the field aspect, today both aspects require similar amounts of time. Indeed, to the end-users, the *land surveying* component is often incidental. Furthermore, the well site plan is often one of many other mapping products required by the client. In short, the land surveying business is encompassing much more mapping, GIS, and land development elements than in the past.

2.1 Model of the Modern Land Surveying Industry

Based on the changes in the industry itemized above, FOTAC has developed a generalized model of the modern survey industry which is presented below. This development is significant in that, by identifying realistic roles for parties involved in the land surveying industry, one can better identify relative numbers required to maintain the industry and skills required by various players. Previous attempts to answer the question of "How many land surveyors do we need?" (i.e. the Strategy Summit document) were hampered by a lack of definition for the role of land surveyor and as a result relied on projections based on past membership numbers and economic growth statistics. The committee feels this is akin to deciding how many sailors a new tanker requires based on the assumption the sailors still row the boat.

General Model of The Modern Land Surveying Industry



2.1.1 Role of the Land Surveyor

As can be seen, FOTAC believes that the *average* land surveyor fills the role of project manager – managing client requests, coordinating technical staff, and ensuring final quality control for the finished product. Note that the land surveyor ensures quality control for the entire product, including non land-surveying components (i.e. mapping, land information, etc.). This is significant in that not only does the surveyor accept professional liability for the land survey work performed (i.e. compliance with the Surveys Act and the MSP), but as well a certain liability exists that additional data shown on a plan, or other mapping products produced are correct as well.

FOTAC believes that a critical element of the land surveyor's role is the education of field and office staff. As more technical aspects of a surveyor's work are devolved to technologists, it becomes imperative that good training is present to ensure the quality of their work. Similarly, the surveyor must establish robust quality control measures such that, although they not physically performing the technical work, they are able to attest as

to its correctness in all cases. As a result, continuing lifetime education for the surveyor is a must.

In addition, FOTAC believes that a business component is intrinsic to the role of land surveyor. Not only should the surveyor understand the arts of cost estimating and project management, but he or she should also have a grasp of the larger picture of the economics of the business as a whole. These are concepts that are being forgotten as large survey companies grow with numerous surveyors, not all of which may be involved in high level decision making. Nonetheless, knowledge of the income statement and balance sheet encourages an entrepreneurial spirit that should be retained within the profession.

Lastly, the role of the surveyor has a significant public relations component. Surveying is an interesting industry in that, although one works for a particular client, the nature of the job involves surrounding land owners who are either affected by the client's project (i.e. a new well site being constructed) or by the process of surveying directly (i.e. discovering a property line is not where it was thought to be). Often the land owners affected have nothing to do with the land being surveyed but are inconvenienced by the requirements of the survey (i.e. pins in a lawn required to re-establish a lot several houses over). Although much of the immediate response is handled by field representatives (discussed later), complaints not resolved in the field must be handled by the surveyor.

2.1.2 Role of the Field Technologist

Another key player in the flowchart is the party chief. FOTAC believes that this is a technical position which is responsible for the actual field surveying activities. *Land surveying* responsibilities remain with the land surveyor, as they are responsible for the establishment of boundaries and carry professional liability insurance to protect the public in this regard.

However, the area of evidence assessment (which is a function of land surveying) is a fuzzy one, in that it is unlikely (and practically impossible) that the surveyor will physically inspect every piece of evidence collected by a survey crew. Rather, training and guidelines are provided by the surveyor, and checks put in place to monitor compliance and integrity. Regardless, the party chief must be responsible that their returns are correct and truthful. As of yet there is no effective method for the land surveyor to protect themselves from fraudulent behaviour in this regard, as total responsibility is taken by the practitioner.

Additionally, the role of party chief is an interesting one in that they are de-facto representatives of the land-surveying profession to the public. A recent Public Relations Committee study indicated that the majority of the public associates "land surveyors" with personnel in the field and not the managers in the office. This has some serious ramifications in terms of the public's opinion of the land surveying profession. In addition, the distinction between field technologist and land surveyor is further blurred by traditional land survey profession recruitment campaigns that highlight the outdoor nature of the work.

Overall, the field technologist position is one of increasing responsibility and visibility that requires a great deal of independent judgment to be effective. While the surveyor continues to retain overall responsibility for a project, and must continue to carefully review and monitor the actions of the field technologist, smooth operations require professionally-minded personnel in this position.

2.1.3 Role of Office Technologist

The office technologists are essentially responsible for the creation of the final product. Depending on the company, this role may be filled by a calculator, a plan checker and a draftsperson separately, or by one single person. For the purposes of discussion, FOTAC treats these separate roles as a single one.

The office technologist must collect and compile land-related and mapping information pertinent to the project and integrate this with field returns into products required by the client. As a result, strong computer and CADD skills are required, as is a basic understanding of surveying regulations and relevant regulatory requirements.

In an idealized production process, the office technologist has sufficient understanding of surveying projects to properly perform a document search, collect required mapping materials and set-up the job for the field technologist. The office technologist also performs checking of the field returns and integrates them into the office's CADD/GIS system. The land surveyor's role is to establish and manage this process, ensure quality of the final product and to resolve issues that are flagged by the office and field technologists.

2.1.4 Role of ALSA in modern land-surveying

ALSA serves several roles in the land surveying industry, in addition to its primary role of protecting the public. From the surveyor's point of view, ALSA is an association of colleagues which collectively sets policies on the practice of land surveying, controls registration of land surveyors and polices unauthorized practice. ALSA also represents the interests of the profession to public agencies, other professional organizations and the public at large. In addition, ALSA manages collective initiatives such as continuing education opportunities and educating the public about the land surveying profession.

However, as Justice Cote pointed out in his 2006 address at the Alberta Land Surveyors' Association Annual General Meeting, the true purpose of the ALSA is to provide the framework that supports the self-governing profession that protects the interests of the public. Truly, the ALSA exists primarily for the public's benefit and not the surveyors'. Furthermore, not only must this fact be true in *substance*, but in *appearance* as well. The ramifications of this will be discussed further in the subsequent section.

3.0 Threats to the Land Surveying Profession and the Alberta Land Surveying Association

Acknowledging that the nature of the land-surveying business is changing, FOTAC discussed what “threats” exist to the profession. The concept of “threat” is an ambiguous one, in that threats to some may be considered opportunities by others, and certain threats to a status-quo may indeed be beneficial to the public in the long term. For the purpose of discussion, FOTAC has developed the following starting-points :

“Threat to the Future of the Association” is defined as :

Any scenario or development which results in a loss of value to the designation ‘Alberta Land Surveyor’, as managed by the self-governing Alberta Land Surveyors’ Association

where “managed” implies that

The Association controls membership distribution, disciplines members, and polices unauthorized use of trademarks and designations

and where “self-governing” is defined as :

An Association that maintains its own set of rules of conduct/practice, and whose governing council is comprised primarily of members forming the Association

Note that the concept of “value” has been purposely left ambiguous. The committee felt that there were a number of reasons why the ALS designation was “valuable”, ranging from economic advantages to a feeling of “professionalism” associated with the designation. Any factor that would reduce the reasons why one would want to become an ALS is thusly defined as a “threat.”

In addition, it was felt that a key element to preserve was the fact that land surveyors manage their own professional affairs as a group (via the ALSA) rather than having practices dictated from a government board.

3.1 Threat Assessment

FOTAC has identified the following issues as major threats to the future of the Association :

1. Lack of understanding of the profession and its value by the public-at-large
2. Friction caused by lack of supply for amount of land surveying work required
3. Increasing amount of “non-exclusive” geomatics work performed by non-land surveying companies
4. Increasing importance and responsibility of technical staff

5. Government policies with regards to professions
6. Changes in sister provincial Associations
7. Lack of participation in Association activities

3.1.1 Lack of Understanding of the Profession by the Public-at-Large

An endemic problem for the land surveying profession is that the public in general does not have a strong understanding of the nature of the profession and of the value of the services an Alberta Land Surveyor provides. This ambivalence towards the profession is troublesome in that it is difficult for the Association to rally public support to make positive changes in its structure or to prevent negative changes. In reality, personnel within the particular Department responsible for administration of the Surveys Act become more influential than the public at large as far as changes in the land surveying industry are concerned.

As a recent public relations study indicated, the public is not even well informed of the roles of the players in the land surveying industry. According to this study, a significant portion of the public associates field technologist with the role “surveyor” and is not clear on the distinction between the title “land surveyor” and “surveyor.” As a result, public opinions of the professional nature of land surveying are heavily coloured by the conduct of field personnel representing land surveyors.

Furthermore, recent advances in web-based GIS systems (i.e. GoogleEarth, SPIN), declining prices of Global Positioning Receivers and the increasingly “Do-It-Yourself” attitudes of the public at large lead to a perceived de-valuation of the services a land surveyor provides. Many practitioners have encountered land owners who claim to be able to re-trace their own property corners, run fence lines and the such. Unfortunately, these land owners fail to realize the complications and intricacies of the practice of retracing and establishing boundaries, and even the limitations of the technology at their disposal.

Finally, it was previously noted that ALSA’s primary function is to protect the public by ensuring that land surveying services are provided by qualified personnel and are of a certain high standard. This role is directly effected through the operations of the statutory committees of Registration, Practice Review and Discipline. Activities of the Standards and Professional Development committees also support this role.

As Justice Cote has pointed out, a potential danger befalling professional associations is that the public may feel that they represents the professionals’ interests rather than the public’s and as a result demand government oversight of that profession. Currently, the executive director of ALSA does receive periodic complaints from the public regarding conduct of land surveyors’ and their representatives, which implies that at least some portion of the public is aware of the discipline role that ALSA plays.

However, FOTAC believes that it is imperative that ALSA emphasize the fact that it exists to protect the public’s interest and to ensure that the public’s concerns are being

addressed with regards to the practice of land surveying. Currently, little data exists to gauge public satisfaction with the operations of our Association, nor is there external accountability with regards to how public inquiries and complaints are dealt with. For this reason, FOTAC believes that the possibility of an external audit procedure or an independent ombudsman be investigated.

3.1.2. Friction due to supply / demand

The recent “boom-cycle” of the Albertan economy has resulted in a very high volume of survey work. Due to a lack of available personnel, this has created delays in production across a large section of the land surveying industry, even coupled with efficiencies due to new technology and devolvement of many responsibilities to field staff.

These delays, and increasing costs for survey products, may lead to dissatisfaction amongst the public, who, due to a lack of understanding of the importance and nature of the work, may seek alternative sources of services. Examples of such developments are evident in the creation of new products such as title insurance and short-cuts in the production of existing products such as sketch plans for public dispositions. In addition, discussion of allowing other providers (i.e. professional engineers) to certify certain survey products (such as well site surveys) is an example of a public seeking to circumvent the need for high-quality land surveying products.

3.1.3 Increasing amount of “non-exclusive” geomatics work performed by non-land surveying companies

Increasingly, companies are integrating geomatics information into a wide variety of products. As mentioned above, this is largely due to the advent of easily-available GIS databases and improvements in CADD software that allow the creation of visually complex maps. In addition, the development of parcel mapping has provided a useful framework to “hang” thematic data upon, this allowing the creation of maps that straddle the boundary between “land surveying” and geomatics.

It was previously discussed that this trend has permeated the land surveyor’s own products as well and that many plans created under the Surveys Act will contain a great deal of generalized land use information beyond the description of boundaries. For the large part, the addition of this information is due to client requests and increasing regulatory requirements.

This trend serves to further confuse the general public, who may not understand the distinction between the land survey aspect of a given product and the more general geomatics component. Indeed, there exists a “grey area” of overlap between land surveying and mapping when thematic information is shown in reference to boundaries of land, regardless of whether those boundaries are derived from field measurements or via parcel mapping databases.

3.1.4 Increasing importance of technical staff

Due to shifting roles of players in land surveying industry, technical staff are assuming ever increasing responsibilities. Currently, this is addressed privately through increased pay to party chiefs, but this may not be sufficient in the future if this group organises and demands more public recognition. Coupled with the public's perception that the field staff *are* the surveyors, unexpected outcomes could arise. A similar development has resulted in the "One Act, Two Associations" model affecting APEGGA and ASET in which technologists certified by ASET now have the ability to sign plans within restricted scopes of practice.

The reality of the situation in the land surveying industry is that devolution of technical tasks to party chiefs is unlikely to reverse as project complexities grow and land surveyors assume increasingly managerial roles. As a result, the onus is upon surveyors to take a pro-active approach to establishing the nature of the surveyor / technical staff relationship in a public nature.

3.1.5 Changes in Government Policies Regarding Professions

FOTAC has identified a concept known as the "two-publics" which greatly affects professions. One "public" is the public-at-large composed of people that professional legalisation is designed to protect from unauthorized practice. It is this public that professionals must serve and protect.

Ironically, in the case of land surveying, this public does not have any strong opinions regarding the value of our services or the nature of our Association (except if provision of services are delayed or prices are high). Instead, it is really the "second public", the Department responsible for the Surveys Act, that affects the structure of the land surveying industry. Thusly, key members of this department can have very large impacts. Examples of large scale changes in the industry brought about by government initiatives include the digital submission of legal plans and subsequently of digital dispositions. Oddly, in many cases initiatives that significantly affect the profession may come about without much input from the surveying community.

Furthermore, issues surrounding other professions may affect land surveying if the government, due to perceived poor functioning of a single profession, opts to paint all self-governing professions with the same broad brush and attempts to implement greater government oversight in general. Thus it is imperative that the ALSA monitor developments in other professional associations.

An interesting dilemma exists in that by being active in representing surveyor's concerns to Government, the Association faces the danger in being perceived as acting in the interests of land surveyors and not in the interests of the public. This in turn undermines public confidence in the concept of self-government for the profession. In fact, many of the activities of the Association may be viewed as being somewhat "self-promotional," in particular in the area of public relations. Of course, from the land surveyor's side, these

activities are viewed as strengthening the Association as a whole, which in turn benefits the public.

Since the primary role of the Association is to serve the public interest over all else, FOTAC believes it may be beneficial to “separate our laundry,” as it were, and attempt to separate activities appropriate for an industry association, such as public relations, education, and advocacy from those of a professional association, which include registration, establishment of standards of practice, continuing professional development and discipline. In this way, the public’s (and government’s) confidence in the self-governing aspect of the Association may be enhanced. The details of this “separation of activities” remains for future study.

3.1.6 Changes in Sister Associations and Cross-Border Mobility

Although provincial associations are independent and acts concerning professions differ from province to province, developments in one jurisdiction may provide precedents in another. In addition, threats to surveying professions are often common across provincial boundaries. For example, associations in all Western provinces are concerned maintaining viable membership numbers and improving the public’s awareness of the land surveying profession.

In some provinces, this problem is particularly acute, leading to a very possible scenario that there may simply not be enough land surveyors to provide service. In such a case, the government of that province then would have no choice but to allow other groups to provide land surveying services. This in turn would provide a impetus for groups in other jurisdictions (possibly those providing general geomatics services) to demand the right to provide land surveying services, despite the existence of a healthy land surveying association.

The concept of cross-border mobility helps in this regard, as areas with few surveyors (or an over-abundance of work) can be bolstered by practitioners from other provinces. Similarly, resource sharing amongst associations helps ensure that common efforts are not duplicated (i.e. public relations) and equalizes the quality of programs available across jurisdictions (i.e. continuing professional development opportunities).

3.1.7 Lack of Participation in Association Affairs

ALSA is the communal representation of interests of land surveyors. However, increased work demands on surveyors lead to greater difficulties in terms of attracting volunteers to Association committees, which are crucial to the operations of the Association. If surveyors do not participate actively in Association affairs, and in public life in general, then the ability of the Association to undertake initiatives and deal with changes is limited.

4.0 Suggested Actions for the Future

To this point, FOTAC has developed a model of the land surveying industry and identified several key near-term threats to the Association. As a result of these activities, FOTAC proposed this committee be extended for another year with the mandate to examine the following topics :

4.1 Formalizing the Role of Technologists within the Land Surveying Industry

4.2 Establishing an External Review of Procedures by which Public concerns are dealt with within the Association

4.3 Industry Association vs. Professional Association Activities within ALSA

Due to the nature of these issues, FOTAC would like to invite a member of ASSMT to participate on the committee in the upcoming year.