

THE NOVA SCOTIAN SURVEYOR

Spring 2017

No. 201



VICTORIA PARK, TRURO, NS



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NOVA SCOTIAN
SURVEYOR

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CONTENTS PAGE

President's Report	<i>Kevin Brown</i>	2
Executive Director's Report ..	<i>Fred Hutchinson</i> ..	4
2017 COGS Awards ...	<i>NSCC</i>	5
SRD Manager's Report	<i>Paul Harvey</i>	6
Squinting Against the Granduer: Land Surveying Defines Canada ...	<i>Dr. Brian Ballantyne</i>	9
Industry Innovation: Are You Ready to be Relevant?	<i>James M. Shaw, Jr</i>	16
Notes on the side of the Road..		20
2016 Annual Convention Minutes		21

THE NOVA SCOTIAN SURVEYOR

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PRESIDENT'S REPORT

Kevin C. Brown, P.Eng; NSLS



Just seems like yesterday that past president, Jim McIntosh, handed the gavel over to me to begin my journey as your new president. It's been a very educational and rewarding expedition during the first six months in this role. Since becoming President of your association, I have attended AGM's in the state of Maine and provinces of New Brunswick, Ontario, British Columbia and Alberta. I have also been planning our 2017 AGM at Fox Harb'r.

The Association of New Brunswick meeting was held in Moncton. The president, Dave Parkhill, accepted the president's position once again, due to the VP resigning just weeks before the AGM. The executive director retired from his position at their association office. Council had discussed joining with the professional engineers of New Brunswick to help with their costs of administration. The membership discussed this issue at the AGM and decided the association would hire their own executive director and manage themselves. Many of the out-of-town presidents were not in favour of joining with the engineers. The New Brunswick membership also decided to stay with the all-in model of PSC.

The next meeting attended was in Ottawa. This meeting was hosted by the following three associations: Ordre des Arpenteurs-Géomètres du Québec, Association of Ontario Land Surveyors and the Association of Canadian Lands Surveyors. There were many presentations, as it was a collaborative event

with the three associations. One of the presentations was on *The Franklin Expedition* with the recent findings of the ships.

The Association of Ontario Land Surveyors had an interesting pilot program that was discussed during their business meeting. It was tailored towards high school students in grade 10 and above. The association worked with the school guidance councillors to development paths and course selections for students to take, if they were interested in the geomatics field. The goal was to elevate awareness to students and parents, regarding the potential of future studies in geomatics. I feel this is something that Nova Scotia could look at for our high school programs.

The Association of Ontario Land Surveyors is also looking to hire someone to help them market the geomatics profession and to attract more young people to the profession. To begin this work, they discussed doing a salary survey. The thought is that the information collected, can support and demonstrate that surveying can provide a good source of income. I've indicated that we would be interested in being a part of the survey.

The Association of British Columbia Land Surveyors held their meeting in Victoria. They had 21 new surveyors join the association as full members this past year. The association did a great job in having the students recognized during the meeting. They had the mentor get up and introduce the new member at the meeting. As well they had the new member submit a three minute video of themselves explaining their journey in becoming a new BC land surveyor. These videos were shown during the meetings and provided a great way for others to know who they were. I must say, some of the new members had a great sense of humor. Overall, their membership is much younger than many of the other provincial associations.

Like Nova Scotia, the Province of British Columbia is adopting Canada's new vertical datum (CGVD2013). They had a presentation

on the adoption of the new datum to the province.

The Association of Alberta Land Surveyors had their in Jasper. This meeting had some great technical sessions. Donald Cooper of the hockey equipment “Cooper” gave a technical session on “accelerate your surveying business”. He touched on many points of business, but his major point was for professionals to understand what the client’s needs are, and develop a comprehensive scoop of work; which should include costing. One of the major items discussed during their business meeting was their funding model. They are looking at charging for digital stamp submissions. The accounting firm of MNP gave a run down on how this model will work. The model had by 2020, a net income of \$223,000. It was left with council to discuss and come back to membership with a recommendation.

Their association also had 21 new members join their membership in the past year and is also on the younger side of the national average. Really nice to see more young adults joining our profession!

The Association of Newfoundland Land Surveyors had their meeting in late May and was opened by the youngest MLA ever for Newfoundland. Mark Brown is only 24 and spoke about how he felt why surveyors are important and how the government needs to consult with them.

They swore in 5 new members at the beginning of the meeting in order to allow them to vote during the meeting. This is the most they have ever had in one year.

They had a presentation given by Ian Edwards group, about the Land Gazette’s new interface. The Land Gazette was developed by Ian's group with support from the association membership. In Newfoundland, they don't have parcel mapping nor any electronic registry. Each surveyor creates a polygon inside the system

and attaches what every information he would like to make available to others for a fee. They are attempting to work with crown lands to get their information in the system. A very time consuming exercise!

The present government announced they are moving the registry office to the west coast from St. John's. The association is not happy with this decision, as well as the lawyers and researchers.

The association had a presentation on the CPD program. At the end of the first three-year cycle, they had 22 non-conforming members. The committee had to work hard with each of the members to top up their points. They are looking at electronic submission of points once you sign up for a seminar or course.

From the presidents meeting:

- Saskatchewan has a meet and greet with the MLA's at the government house every year. They bring in some food and do it at a break or at the end of the day. They had great attendance from the MLA's.
- Québec dropped their project to change their name.
- Ontario needs to switch the date for the strategic marketing development day with Ken Wong, hoping the first part of July.

A majority of the provinces agreed a salary survey is needed and should be done.

Sharing our Nova Scotia experiences, regarding our profession and learning about some of the similarities and differences in other provinces, has given me a broader perspective on the land surveyors’ business. It’s been a great learning journey so far, and many great business and personal connections have been made across our great country. I look forward to the second half of my term as your president and will continue to represent our association on behalf of the membership.



EXECUTIVE DIRECTOR’S REPORT

F. C. Hutchinson, BA, NSLS, CLS



I had the pleasure of attending the COGS Awards banquet on April 28, 2017 and presented three awards to students of the survey technician program, on behalf of our association. *(The awards and recipients are found on the bottom of the next page).*

By the end of the evening, a total of 50 awards were presented to students enrolled in the various programs offered. I also attended the Lieutenant Governor’s Award for Excellence in Engineering at Government House; sponsored by Engineers Nova Scotia and hosted by His Honour, Brigadier-General, the Honourable J.J. Grant, CMM, ONS, CD (Ret’d), Lieutenant Governor of Nova Scotia.

The Municipal Development Officers Association of Nova Scotia held their annual meeting at the Old Orchard Inn on May 10-12, 2017. I gave a presentation on digital plans and the potential for submission to the Land Registry, and for subdivision approval.

A good discussion followed with interest by the members to continue the discussion with all parties involved in the approval process, as well as the Land Registry.

Our Association seems to be well served by our nearly 30 candidate members, but given that about 50% of our existing active membership is 60-years and older, we need to keep our eye on the future sustainability of the profession. I know that the provincial survey economy is not as healthy as we would like, and not all COGS graduates are finding work in their chosen fields.

We need to constantly promote the profession and the work we do for the protection of the public. Surveying is a business that needs to flourish, not just survive. Prices need to be in line with expenses and growth expectations

Land surveyors need to be more proactive in promoting their business. The way the phone is answered; even if it is a recording, speaking at community groups or schools, vehicle lettering, website presence, and let’s not forget the follow-up call to your client after the job has been completed.

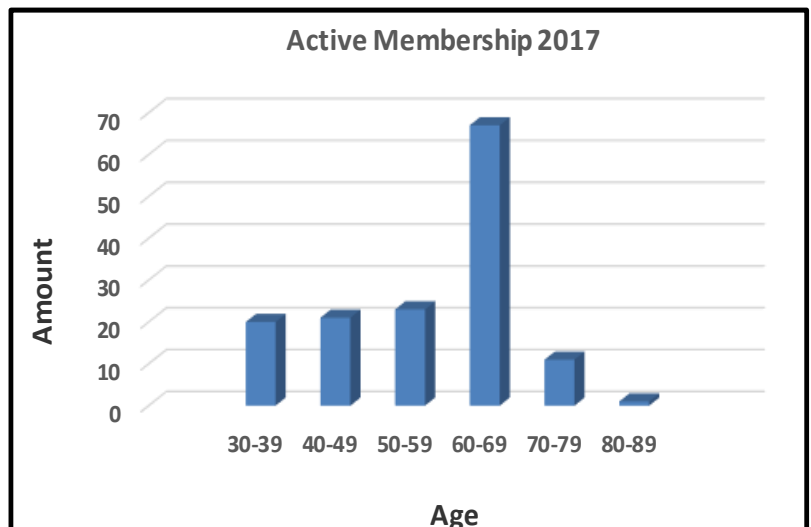
The follow-up call should not be regarding an overdue account, since payment should have been received upon completion of the job. Maybe a few simple questions about the service provided, as well as entertaining any questions the client may have of the work performed.

How many members leave a calling card or notice at the adjacent property, stating that you have possibly entered their property and are working on a common boundary?

Do you make a point of contacting a neighbour when dealing with a boundary that is being debated by the owners?

Trust and impartiality are two very important traits that the public must appreciate in order that a surveyor’s opinion is given credibility.

I’m not suggesting that all surveyors arrive at the same opinion as to the location of a boundary, but that is the goal since there is only one position in law.



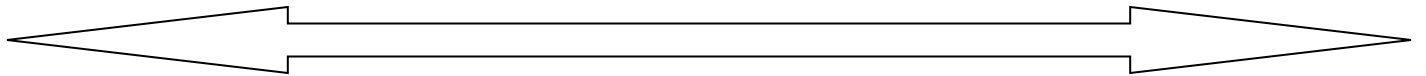
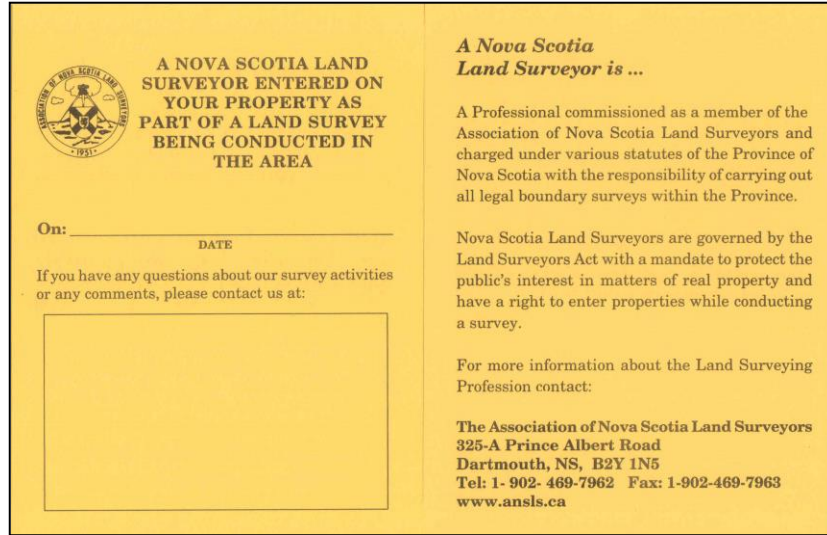
Below there is a front and back of our card, that members can retrieve from us at no charge.

You can stamp the contact area, or provide your business card.

It lets everyone know who was onsite and that you are willing to engage in dialog and also demonstrates professional courtesy.

Your client may have an issue with you communicating with their neighbour, but you need to make this action clear and rationale at the contract stage. Your professional duty is to provide an opinion on the location of boundaries without bias to any land owner.

Wishing all a profitable and enjoyable summer and looking forward to the fall AGM at Fox Harbour.



2017 COGS Awards



George T. Bates Award
Cory White

J.E.R. March Award
Ceilidh MacDonald

J.A.H. Church Award
Preston Jamieson

SRD MANAGER'S REPORT

Paul G. Harvey, NSLS



Optimism is once again in the air. Surveyors are out getting things ready for the 2017 season. They know that this year will be the best one yet. There will be no flies stealing meals from their carcasses and all the surveys are going to be easy ones! I truly hope that this is in fact what is in store for us.

As we work our way into the 2017 season, Practice Review continues to do its best to meet its mandate. I thank all the surveyors for the welcome that I receive. I understand that some comments may be unwanted, but I hope they are beneficial. I am pleased to say the vast majority of comments are very positive. It is the opinion of Practice Review, that the public is well served by the members of our Association.

I am very pleased with the submission of plans in PDF format. PDF simplifies transfer of plans from the Association office to Practice Review, and is proving to be a much better way to make comments to members regarding plans, etc. The transfer of PDF plans between members and PRC appears seamless. All comments from members have been great! If you are one of the very few that still send paper copies, I urge you to move with the times and get digital! We are a profession that must strive to stay current!

Some topics or comments that still seem to be popping up are as follows:

Lines must be cut out and blazed!

Section 5.11 to 5.14 deal with this issue. The landowners have the right to “see” the line, cutting and blazing is important. “Undue Hardship” seems a bit too “much used” as an excuse!

PLEASE ... READ and Follow the Standards:

The changes are subtle, but the document is easily read. The orderly fashion allows us to follow the survey from beginning to end. Read and understand. Many of the “issues” on plans are due to the surveyor not knowing the Standards!

Field Notes Are Required!

After reading the Standards, you will see that field notes are still required! The age of digital does not mean we forget the notes. I can assure you that in time, the notes will prove invaluable. They will be the kick-starter for your memory of the survey!

Draft the plan for the reader in the future:

Visualize the surveyor in the future trying to understand your survey and attempting to retrace your work. Make the plan understandable, complete and correct.

Bearing note:

This note along with the scale factor note, is likely going to be the most talked about around the office. NAD83, ATS77, adjustment, year, coordinate values, etc., are all required. I find that the table selection in the NAD83 Manual provides some great suggestions. I hope to see some standard practices province-wide.

Scale factors, applied/not applied?

This I know is likely going to cause some discussion! "Scale factors applied" or "Scale factors not applied" is no longer sufficient since it is open to interpretation, *may we suggest*:

1. Distances shown on the plan are grid distances, as derived from GNSS. (this is the default configuration on most controllers)
2. Distances shown on the plan are ground distances as derived from GNSS. A scale factor of X.XXXXXXX was applied in the controller *OR* a scale factor was automatically calculated by the controller using the correct antenna height and

measured heights. (this controller must be configured to be able to do this!)

3. Distances shown on the plan are ground distances derived from GNSS grid distances using the indicated scale factor (this implies that GNSS grid distances were manually converted to ground distances by using the inverse scale factor)
4. Distances shown on the plan are ground distances measured using a total station (self-explanatory)
5. Distances shown on the plan are ground distances using a combination of total station measurements and derived GNSS ground distances. These are a few of the common problems I encounter more often than others. As most of you are aware, I have been commenting directly on an amended PDF version of your plan. I am finding this method very satisfactory; and I hope you are as well. Comments seem positive. If you have issues please let me know.

Travelling around the province, and discussions with landowners along the way, gives me a sense that surveyors are doing a pretty good job insofar as public relations are concerned. Generally, people have had positive experiences with field crews. They often comment on how helpful and kind they were. This speaks well of our profession.

Conversations with surveyors have been positive as well. Everyone seems positive in his or her outlook for the future and are happy with the situation as it exists; to me, that sounds good!

I urge members to please send in plans in a timely fashion. Reviewing plans that are months old, does not catch problems soon enough. The PDF can be sent as soon as you are satisfied with your completed work. Review of a survey plan showing a vacant site after the condominium is up is a bit tardy!

While Practice Review is mandated to monitor the members to insure conformity with our Standards, etc.. my desire is to help members when they have difficulty with some areas. Please contact me if I can be of any assistance; you should have learned by now that I will always have a response and will try to make a bad situation better.

Thank you for your patience and support.



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Can I use my own Data Collector? YES Field Genius is compatible with over 60 models of data collectors, call to confirm compatibility.

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Greg Mackinnon, Port of Halifax

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Kevin Shearer, EMW Industrial Ltd.

SQUINTING AGAINST THE GRANDEUR: LAND SURVEYING DEFINES CANADA¹

By Dr. Brian Ballantyne²

Based on the NSC 2017 Keynote Presentation “Land surveying: An institution that has shaped Canada”.

To start

Land surveying is an institution that has shaped Canada. As each fardel of land was demarcated, surveying became part of the very warp and weft of Canada.³ Let’s delve, using a cunning mélange of infrastructure, innovation, ideas, ideals, individuals, imagination and Indigenous lands.

Part 1 – Surveying as part of Canada’s psyche

Institutions matter. In 2013, the Survey on Social Identity revealed that Canadians’ average confidence in seven key institutions was 50%. Sadly, surveying was not one of the institutions measured. To compensate for that oversight, let’s demonstrate the significance of surveying using frequency of phrasing, income, and observations from the courts:

Since 1867, “land surveying” has been used once in every 200,000 words, with peak usage in 1890, 1910, 1925, 1960 and 1970.⁴ In a 2011 study, Canadian surveyors made bank: Median income ranged from \$81,000 (salary) to \$105,000 (self-employed).⁵ To put these amounts in perspective – income over \$80,000 was in the top 10% of all Canadians; the median individual income across Canada was \$34,000.⁶

As for observations about surveyors:

- MacGregor called surveyors: “Highly intelligent men [and women] who are gifted astronomically, mathematically, and logarithmically.”⁷
- It has been noted that: “Surveyors are expected to exhibit a higher standard of intelligence than the person on the street.”⁸

In late-2016, the courts echoed these sentiments:

- “A surveyor acts in a quasi-judicial capacity ... is treated as an expert and accorded deference ... A land surveyor is acting in the capacity of an officer of the state.”⁹

- “Surveyors adjudicate ... Surveyors must approach their work with a judicial mind ... Their primary duty of impartiality [is] owed to society at large.”¹⁰

These sentiments have much lineage, because the Royal Proclamation of 1763 recognized the link between surveys and the land. In acknowledging that it was “just and reasonable” that Indigenous peoples should not be molested or disturbed in their possession of land, Canada could not “grant warrants of Survey” beyond “the Bounds of their ... Government.”¹¹ In 1839, the Earl of Durham’s reforms to the two Canadas (Upper and Lower) focused on the role of surveying. If land “is so carelessly surveyed that the boundaries of property are incorrectly or inadequately defined” there is “a store of mischievous litigation for the people.”

Surveys were integral:

“I have already pointed out the importance of accurate surveys of the public lands. Without these there can be no security of property in land, no certainty even as to the position of boundaries marked out in maps or named in title deeds.”¹²

In 1873, the First Nations at Fort Ellice, Saskatchewan petitioned to stop surveys until their land issues were resolved.¹³ At the Treaty ceremony the following year, the Crown was lambasted for allowing surveys to proceed before Aboriginal title had been addressed.¹⁴ Here we have an early hint of the role of surveying in reconciliation – as an institution that links all peoples with the land. For any discussion of land tenure in Canada must acknowledge that Indigenous peoples knew parcels and boundaries.¹⁵ The very word “canada” refers to a large parcel. In the Laurentian language of the 16th century, “canada” meant village, settlement, land, town, or cluster of dwellings. Cartier, in narrating his early voyages, labeled the St Lawrence valley “le pays de Canada” (land of villages).¹⁶

As Joseph Brant led the Six Nations into Upper Canada in the late-1700’s, the community understood fee simple, leases, severances,

transfers; and advocated for a registry of land rights.¹⁷ The parcel reserved by the Whitefish Lake First Nation, in the 1850 *Robinson-Huron Treaty*, was defined using nine monuments known to the community: From a lake known as “the place of high cranberries,” to Keecheemenessing (“Great Island”), to “an island with a tree having a spreading top” and so on.¹⁸

Part 2 – Six vignettes

The assertion that surveying pervades Canada’s psyche can be substantiated with six vignettes.

Vignette 1: Sometimes, inferior survey equipment rocks

The boundary between Canada and the United States has been described as “inconvenient to the point of freakishness.”¹⁹ The *Royal Proclamation* set out that the southerly boundary of Québec was “in 45 degrees of north latitude.” In 1766, Governor Murray of New York (accompanied by Harpur, Professor of Mathematics) and Lieutenant Governor Carleton of Québec (accompanied by Collins, Deputy Surveyor General) set out to survey said boundary.²⁰ Harpur surveyed the 45th parallel just south of Ilse a la Motte; Collins surveyed the 45th parallel through the north part of Missiskoui Bay. The two demarcations were five miles apart; Collin was north of the 45th and Harpur was south of the 45th. Each surveyor had established his provincial parcel **smaller** than the other’s parcel, a scenario that “is perhaps unique in the history of boundary disputes.”²¹

The two surveyors compromised by establishing a final monument midway between the initial lines.²² The negotiated compromise was a function of technology and technique.²³ It established the monument that served as the start for the entire 250 km survey of the Québec-New York and Québec-Vermont boundary between 1771 and 1774.²⁴

Vignette 2: Royal Canadian Institute & the Time-Lord

In 1849, surveyors in Ontario organized “a society for the better improvement of surveyors, in order that much ... litigation ... may be prevented.”²⁵ The first meeting on June 20, 1849 at King and Yonge Streets in Toronto had the purpose of

uniting three professions – surveyors, architects and civil engineers. By September 1849, surveyor Rankin was Vice-President, surveyor Dennis Sr. was Secretary, and surveyor Fleming was on the Standing Committee. By April 1850, Rankin had assumed the Presidency.

The “prospects of the young Institute were not brilliant” at that time – the meeting of February 8, 1850 drew only two people. Nevertheless, the Institute forged ahead, by:

- Debating legislation for admitting surveyors and surveying lands throughout the province; and
- Discussing topics such as accretion in Toronto harbour.

The Royal Canadian Institute still thrives.²⁶ The Institute crest – which was designed by Fleming – continues to feature surveying equipment: level, compass, theodolite and drafting square.

Surveyor Fleming also continued to thrive, for he was instrumental in promoting time zones. Until the 1880’s, local time prevailed. Universal time meant a global system of time standards based on an international date line. In 1879, Fleming petitioned the Governor General to bring the matter to the attention of Britain; apparently, Canada’s vast geography made us sensitive to progress. Finally, on November 18, 1883 Canada adopted time zones. Fleming’s strength was in using institutions such as the Royal Society of Canada and the Canadian Institute to promote universal time in the face of “national rivalry and odious indifference.”²⁷

Vignette 3: The curious chapter of irrigation

What of the link between a grist mill on the Granby River in Québec in 1831 and a change to Ontario legislation in 1911? The mill dispute ended up at the Privy Council, which allowed a riparian proprietor to “dam up the stream for the purpose of a mill, or divert the water for the purpose of **irrigation.**”²⁸ This decision inspired surveyors across western Canada and had an effect across most jurisdictions.

At the 1894 National Irrigation Congress, surveyor Dennis Jr. learned that the St. Mary’s River (in Canada) was to be diverted into the Milk River (in

the United States), depriving Canadian farmers. He proposed an International Commission “to adjudicate conflicting rights on the international streams of the North American continent.”²⁹ Dennis’ lobbying led directly to the creation of two institutions – the International Waterways Commission in 1905 and the International Joint Commission in 1909 (whose mandate continues to be all trans-boundary waters).

Concurrently, surveyor Pearce was instrumental in having the Powers-that-Be acknowledge that the southern Prairies were arid, and that agriculture was incompatible with the right to take water.³⁰ Members of Parliament were reluctant to acknowledge such a reality: “It is not advisable to advertise that the North-West is a country where irrigation is necessary.”³¹ Pearce persisted. At the 1890 AGM of the Association of Dominion Land Surveyors, he argued for legislation that responded to the aridity. In 1894, his advocacy bore fruit in the *Northwest Irrigation Act*, which vested in the Crown all waters and the beds of most watercourses.

The 1894 legislation eliminated the right to take water, weakened the *ad medium filum* presumption³² and was trend-setting. Soon thereafter, provinces and territories started to retain most watercourses in the public interest: to generate electricity; to regulate floodwaters in spring; to boost flows later in the year³³ (e.g. Ontario enacted the *Beds of Navigable Waters Act* in 1911). Thus, surveyors contributed to what has been called: “a curious chapter in the history of institutions.”³⁴

Vignette 4: Let the man go free³⁵

The Alaska panhandle was first defined in an 1825 Convention between Russia and Britain. The easterly boundary of Russian influence paralleled the coast along the summit of the mountains. If the mountains lay more than 10 leagues (50 km) from the coast, then the boundary was to “parallel the windings” of the coast within 10 leagues. In 1867, Russia transferred Alaska (which included the panhandle) to the United States for \$7.2M. Soon thereafter, a gold rush on the Stikine River meant an influx of miners and the need to survey the jurisdictional boundary between Canada (British Columbia) and the USA (Alaska).

However, the cost of \$1.5M over seven years dissuaded both countries from surveying.

Then, in 1876, there was an assault on the Stikine River. Peter Martin was arrested by BC officials. But wait: Did BC have jurisdiction to arrest Martin? The arrest was only valid if the assault took place in BC (east of the boundary). Surveyor Hunter was dispatched by the Surveyor General for Canada to survey the boundary at the Stikine River, which he established 25 miles east of the coast (*Figure 1*). The assault site was west of the boundary; the arrest was invalid and Martin was released. Surveying meant that a man to whom the presumption of innocence applied was spared the terrors of the BC justice system.³⁶

Prompted by the Martin assault/arrest/release, Canada and the USA realized the need to survey the entire boundary.³⁷ Conventions of 1892 and 1903 established a temporary International Boundary Commission (IBC) to survey the panhandle boundary over 18 field seasons (1877 to 1920). This collaboration is the precedent for the permanent IBC, which continues to ensure jurisdictional certainty between Canada and the United States.³⁸ The IBC would not exist without an ambiguous description, the need to demarcate the boundary and a legacy of ad hoc surveys, meaning that there is a direct connection between Hunter’s survey of 1877 and the IBC.³⁹

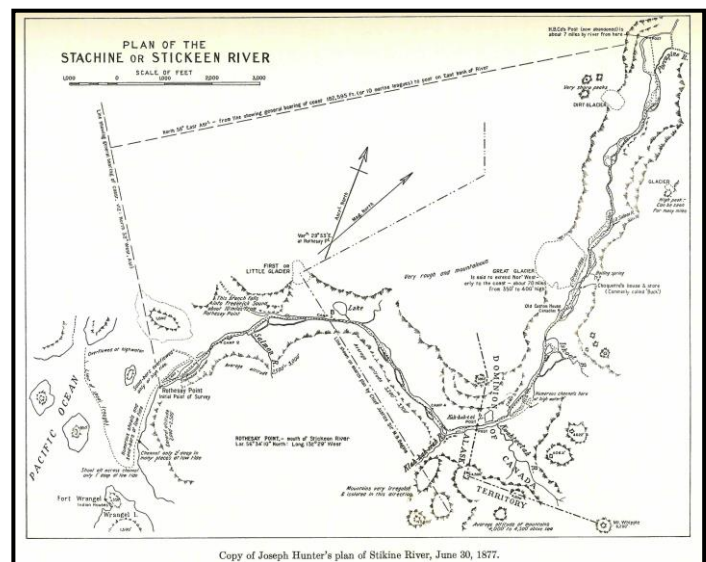


Figure 1 - Hunter's plan of survey, 1877

Vignette 5: Heavy moral responsibility

The decade between 1914 and 1924 saw surveyors invent land use planning in Canada. In 1914, surveyor Adams was appointed as the Town Planning Advisor to the Commission of Conservation.⁴⁰ At the 1915 ALSA – AGM, surveyor Seymour extolled the need for planning and the role of the surveyor. Seymour soon pursued town planning full-time, chairing a Committee on Town Planning for the Association of Dominion Land Surveyors. By 1918, the Association of DLS, working with the Engineering Institute and the Architectural Association, lobbied for a Town Planning Institute of Canada because the surveyor “ought to be interested in the best use of land, not just in the accurate measurement of it.”

In 1924, the editorial in the *Canadian Surveyor* journal promoted a School of Town Planning in Ottawa:

Town planning has evolved and is the great sociological achievement of the age ... The land surveyor has much influence upon subdividing and a heavy moral responsibility in the sociological results ... The future of surveying would seem to hold great opportunities.⁴¹

Surveyors long served the Town Planning Institute: Seymour was an early President; Surveyor General Deville was an early Vice-President; and leMay was elected Vice-President in 1953.

Vignette 6: Friendly resolution of conflicts

Alternative dispute resolution (ADR) is “ideal for property disputes between neighbours.”⁴² The watershed in the history of ADR, is the Jay Treaty of 1794 between Britain and the United States, which allowed boundary disputes to be settled impartially, not politically, by Commissioners appointed by the two parties.⁴³ The parameters of the 1794 Treaty – reliance on legal principles and objective facts – continue to resonate in the IBC and in the Alberta-British Columbia Boundary Commission.

A second form of ADR is third-party arbitration. The westerly section of the Canada – United

States boundary was described ambiguously in the 1846 *Oregon Treaty*, as running:

- To the middle of the channel which separates the continent from Vancouver’s Island,
- Thence southerly through the middle of the said channel,
- To the Strait of Juan de Fuca and the Pacific Ocean.

The question was: To the middle of which channel – Haro or Rosario? Uncertainty led to skirmishes on San Juan Island over sheep in 1855 and a pig in 1859; and to armed encampments.⁴⁴ The question was submitted to the Emperor of Germany for binding arbitration, who relied on three fact-finders.⁴⁵ Two of the three experts found the boundary to lie west of San Juan Island; the Emperor agreed in 1872.

Such binding arbitration informs the *Ontario Boundaries Act*. The legislation was drafted by a surveyor in 1959, has been used extensively by surveyors (on behalf of applicants and objectors), and has Tribunal hearings adjudicated by surveyors (as Examiners of Survey). In 58 years, few applications for confirmation have proceeded to a Tribunal; fewer still have been successfully appealed to the courts. There have been only 22 appeals to the courts; 80% of recent cases have been affirmed.⁴⁶ New Brunswick has a similar institution. Twice, the courts there have chided litigants for not using the alternative process.⁴⁷ In a third example, the Ontario Surveys Act allows the Surveyor General to arbitrate a municipal resurvey (of a concession or side road).⁴⁸ There have been two resurveys in the past 35 years, and the court affirmed the one decision that was appealed.⁴⁹

Part 3 – Speculating about future contributions

Speculating about the future is rife with uncertainty. As one cautionary tale, a pundit calling him- or her-self “Ralph Centennius” predicted in 1883 what Canada would look like now:⁵⁰

Population of Canada: 93M predicted; 35M actual
Rocket cars: ⁵¹ 6,000km/h predicted; 800 km/h actual

However, Ralph was correct in concluding that Canada is “heading for the waters of prosperity.”

Reconciliation is now lurking in such waters, which is a many-splendored thing for surveying:

- Policies in Nunavut that promote land availability, community planning, private-market incentives and diversified housing, given the need for 1,500 dwellings in Iqaluit alone.⁵²
- Infill, laneway, non-traditional and affordable housing in Toronto, Vancouver and Edmonton.
- Common ground between resource extraction and transport (oil sands, shale gas, pipelines) and the social, cultural and environmental concerns of Canadians.

For Indigenous peoples, Canada has ridden the wave of reconciliation – initially honoured, then given lip service, and now being made real.⁵³ Given its links with **both** the land and the past,⁵⁴ surveying is **well-positioned** to encourage reconciliation of Indigenous peoples and, in fact, of **all Canadians** with the land. In 1870, Prime Minister MacDonald hinted at this surveying-reconciliation nexus, as Canada expanded west across the Red River:

“It is, of course, important to have land surveyed for settlement ..., but that is a **secondary condition to the general assent and support of the people.**”⁵⁵

MacDonald recognized that surveying is as much about social negotiation as it is about measuring distances and directions. This recognition means that surveying might now assist with:

- A boundary tribunal for parcels of Aboriginal title land.⁵⁶
- Surveying and mapping capacity within Indigenous communities, as exemplified by:
 - o The current partnership with Wikwemikong First Nation.⁵⁷
 - o The curriculum which is now being drafted for the Certificate to be offered by the Tulo Centre of Indigenous Economics.⁵⁸
- Fit-for-purpose surveying, as a function of land use, parcel value and location.⁵⁹

To borrow from Graeme Sandy of the National Aboriginal Land Managers Association (NALMA): “First Nation’s people have always had an acute sense of where we are in the world. We navigated throughout our territories guided by our stories, landmarks, waters and the

heavens. Mapping and geospatial tools and technologies will help guide us in the future as adaptation has always been our strongest asset.”⁶⁰

To conclude

Canadian surveyors are “agents of change.”⁶¹ As shown in the vignettes, surveying has long embraced existential challenges in the public interest. Scanning, phoning, droning,⁶² lidar-ing, pdf-ing and gps-ing are certainly part of the evolving institution that is surveying.⁶³ However, it’s a false dichotomy to focus on technology at the expense of socio-cultural issues. **The equation is both**, not either-or.

Thus, there is no need to “change the public’s perception of surveyors.” Surveyors are regarded as “trusted professionals,” meaning that raising “awareness and understanding of the value of the surveying profession” is redundant.⁶⁴ Land surveyors have a comparative advantage in Canada;⁶⁵ the future’s so bright, you gotta wear shades.⁶⁶

Dr. Brian Ballantyne advises on land tenure and boundaries for the Surveyor General Branch of Natural Resources Canada. He can be reached by email at brian.ballantyne@canada.ca for further discussion.

¹ Title inspired by: Hail Caesar film. 2015. This is a truncated version of a Keynote Address that had 10 vignettes: Land surveying: An institution that has shaped Canada. National Surveyors Conference. Ottawa. March 1, 2017.

² Of course, this does not necessarily reflect the views of Natural Resources Canada or the Government of Canada.

³ If two fardels = nook, and four nooks = yard-land, and yard-land = 50 acres, then fardel = 6.3 acres.

⁴ Using Google’s Ngram Viewer, which measures how often a phrase is used in literature.

⁵ Framework Partners Incorporated. Findings from the 2011 PSC national compensation survey. January 15, 2012.

⁶ StatsCan. Education and occupation of high-income Canadians. 2011 Census.

⁷ MacGregor. Vision of an ordered land. Western Producer Books. px. 1981.

⁸ Hossie (1928) quoted by Holloway (1952). In: Legal principles & practice of land surveying: A series of 12 papers covering various aspects of cadastral surveying. Department of Mines & Technical Surveys. 1961.

⁹ Mackay v Mackenzie, 2016 PECA 16.

¹⁰ Burke v Watson & Barnard (a firm), 2016 BCCA 439.

¹¹ In: Patterson. Land settlement in Upper Canada, 1783-1840. Ontario Archives 1920. p219. 1921.

¹² The Report & Despatches of the Earl of Durham, Her Majesty’s High Commissioner and Governor General of British North America. pp 145 & 166. 1839.

- ¹³ “They would sometimes express their resentment by defecating upon the top of every survey stake, which added nothing to the amenities of the job.” In: Shaw. *Tales of a pioneer surveyor*. p105. 1970.
- ¹⁴ Indigenous peoples were puzzled as to how the Hudson’s Bay Company parcel was sold for 300,000 pounds to Canada: Daschuk. *Clearing the plains: Disease, politics & loss of Aboriginal life*. Univ of Regina Press. p95. 2013.
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Industry Innovation: Are You Ready to be Relevant?

by James M. Shaw, Jr.

This entry is part 1 of 6 in the series

Slay the beast named Apathy with progress.

This is a dire warning. There is a beast that threatens to destroy the land surveying profession. It is a danger to you, your company, your coworkers, and your employees. It sucks the life from all it contacts. Its victims are left empty, with a sense of impending doom. This monster's name is Apathy.

Apathy is a powerful foe. Many sit at land surveying society meetings feeling Apathy's cold grip. It stirs the weak to whisper, "Land surveying is dead," or "I'll be retired before that happens."

Take heart, though. There is a powerful weapon that can defeat Apathy. This weapon's name is Progress. The strong wield this weapon with conviction. They use new technologies to shine the light of Progress on all. It will take an army—no, a profession—to band together to defeat Apathy. I am calling on you, my fellow surveyors, to join the fight and let Progress lead the way to the end of Apathy.

A Turning Point

While I may have used colorful illustration to grab your attention, the threat is no less real or serious. We truly are at a turning point for our storied profession. The decisions made in the next decade will either lead to its early demise or take it to its new glory days. As the cartoonist Walt Kelly once famously wrote, "We have met the enemy and he [or she] is us." The typical surveying company/department has changed little in the last 15 years, yet the technology has changed significantly. If you are not embracing the new technology, your competitor is. Increasingly, that competition is coming from outside our practice and encroaching on our practice. If we do not become experts with that same technology, we become irrelevant.

However, it seems the mindset of adopting new technology has been lost. Is it fear of the unknown? Are we caught in Apathy's grip? Worst of all, are our most seasoned and fiscally capable surveyors wishing only to make it to retirement, not investing

in the next generation? Herein I repeatedly ask a very important question: are you relevant? Do you bring something unique and compelling to the discussion? Are you connected to current market trends? Are you exposing yourself or your staff to new technologies and enhancing your skills?

One Foot in the Past

Many of the biggest changes this profession had seen in centuries, occurred during the decade of the early 1990s. This was the point at which our analog tools turned digital. As new technologies presented themselves, my employers took advantage of them without hesitation. We moved from hand drafting to CAD; from theodolites to total stations; from calculators to CAD-based COGO; from hand-written field books to data collectors.

Between 1985 and 1995, almost all surveying offices were experiencing these exact same transformations (see Scott P. Martin's "Get It Surveyed" in the January 2017 Field Notes). We had a culture of embracing change. Trade magazines were crammed with the latest technology. Society meetings buzzed with stories about adopting these technologies. All of these advances enabled us to perform more work, with better accuracy, with fewer people. We saved time and gained efficiencies. The excitement was contagious!

Our Current Problem

The excitement is gone. Land surveying college programs across the United States are faltering. Membership in land surveying societies and associations continue to decline. The number of new licensees has been decreasing nationwide. The median age of licensed land surveyors continues to increase. Sole proprietors retire (or die) with no one to take over their practice or service their clients. We struggle to find worthy hires. Since the recession of 2008, there is a pervading sense of weathering the storm rather than boldly turning the bow directly into the waves and forging ahead.

This storm is never going to end. Constant change is the new normal. The pace of change is increasing yearly. Emerging technologies are redefining the entire industry.

The surveyors of 1990 would have clamored to use laser scanners and drones. Adaption was a driving force. Are we not these same surveyors? Why did we allow the status quo to become the norm? When did Apathy start to control us?

There is a clear and simple answer to defeat Apathy: The future surveyor must be an expert at embracing new technology and profiting from it, as we once did. We must lead the way to the future in order to preserve, protect, and promote our profession.

One Foot in the Future

There is much talk about developing the future generation. The NSPS, and many state societies, are pursuing workforce development. But how can we pursue the future generation when we are so poorly preparing the current generation?

The modern surveyor needs to be trained in the following areas:

- Boundary Theory and Determination
- Boundary Case Law
- Records Research
- Geodetic Datums & Control Adjustment
- Global Navigation Satellite Systems: Static & Real-time
- Point Clouds: Collection Techniques, Registration, Data Classification, & Data Extraction
- Photogrammetry: Satellite, High-altitude, Low-altitude, & Terrestrial
- Drone Operation & Piloting
- 3D Topographic Modeling & Surface Modeling
- Geographic Information Systems (GIS)
- Computer Aided Drafting (CAD)

Carefully review this list. Are you or your staff being exposed to all of these skills? If not, is it a clear part of your strategic plan to gain this experience? If you have answered “no” to both questions, then I conclude that you are failing our profession.

These are tough words. This is tough love. I intend to do all I can to save our noble profession for future generations. Again I ask, are you relevant?

It is hard to even imagine what disruptive technologies lie ahead. Automation, artificial intelligence, virtual reality, augmented reality, the Internet of Things, and Big Data will all play major roles in our future. Will we be active participants or will we be passive spectators?

The Threat Is Real

It would be easy to dismiss what I’ve already written as hyperbole from an ardent technophile. I beg you to not dismiss my claims, but challenge them. Do the research. Prove me wrong so that I might sleep better at night. In the meantime, I will build on this position.

Location-based services are already a reality. GNSS and GIS work in harmony to give everyone with a smartphone, a rich, location-oriented experience, even if very few understand the underlying technology.

Virtual reality and augmented reality are set to explode. 2016 was the first year to top \$1 billion in VR sales. AR is being actively pursued by tech giants such as Google, Microsoft, Apple, and Samsung. GNSS and GIS will undoubtedly be working at the core of the AR experience. All of this means that the average consumer is becoming more and more geospatially aware, and someone needs to provide the geodetic information. With increasing regularity, that “someone” is not a land surveyor. Are we relevant?

Geographic Information Systems

We’ve all heard the joke, “GIS means ‘Get It Surveyed.’” That is ignorance speaking. That is like saying, “The only people who should use CAD are surveyors.” We know this to be blatantly false. While I get the joke, I do not find it funny when many surveyors using this line cannot even perform basic functions within a GIS environment.

GIS is an amazingly versatile software tool that can be applied to many problems outside of surveying. It is also a fantastic tool well suited for surveying (again, see Martin’s “Get It Surveyed,” January 2017, Field Notes). CAD communicates details through graphic symbols and text that clutter the presentation. The more details, the more clutter.

GIS stores details in a database. These details may include actual photographs of the feature, copies of deeds, copies of plats, and/or video testimony of the land owners, telling you they recognize a monument as their common corner. The GIS is rich with organized content and highly customizable in the data's presentation.

CAD is project-focused. When the project is completed, the CAD files get archived. GIS is persistent. The more data added to the database, the more valuable the GIS becomes. GIS welcomes longevity and reuse.

Capturing land features has become almost completely digital. It is only a matter of time before a reliable land record system is developed that is also purely digital. The framework for this system is already being envisioned and developed, such as the Federal Land Asset Inventory Reform (FLAIR) Act and the National Land Parcel Database. The development platform is GIS.

Most compelling, government is becoming increasingly fluent in GIS. If GIS is becoming the language of governance, and the surveyor is illiterate, how will this affect the role of the surveyor in the future? If we do not speak this language, how can we effectively service our clients? Are we relevant?

Point Clouds

For centuries, surveyors have played a large-scale game of connect the dots. It was a crude yet fairly effective way to capture the reality of the world we occupy. Now, significantly better reality-capture tools perform more work in less time, with greater accuracy, and with substantially greater detail. Why then are we not using them?

Cost? Yes, these tools—particularly laser scanners—can be expensive. That said, they are far less costly than the salary and benefits of the field crews they can easily replace. It is also worth noting that in the scanning industry, it is not uncommon to share these resources, as different scanners have different strengths. This makes the cost of ownership reducible through cooperative sharing.

Industry Innovation

I believe the primary barrier is the unknown. During

the ten years I have been using this technology, little progress has been made in the data-extraction aspect of this technology. We can scan practically anything. It is the extraction and modeling that makes or breaks a project. You do not need to own a scanner to be an expert at point cloud extraction.

Now these scanners are placed on tripods, airplanes, drones, surface vehicles, and bipeds. The collection rates are unimaginable—particularly for the mobile variety.

Soon these instruments will be placed on self-driving vehicles. Navigation will only be a part of the picture. In the world of the Internet of Things, Big Data is looking to mine this constantly collected information in order to detect the slightest changes, whether in the quality of the paving or the tilt of a utility pole. Street-level topography will no longer be needed, as it will be constantly collected and analyzed.

Point-and-shoot topography is already obsolete. The point cloud is now our greatest source of geographic information. The problem is, point clouds are massive and therefore, difficult to manage. 3D modeling is the bridge between point clouds and geospatial intelligence. The small profile of 3D objects is preferred in a world soon to be awash in augmented reality and virtual reality. 3D geospatial awareness will no longer be a high-minded goal, but rather the most basic entry point.

Is there anyone in your organization who knows how to manipulate and validate a point cloud? Can they create 3D models from a point cloud? There are non-surveyors who absolutely have these skills. Frequently it is the non-surveyor who teaches the surveyor to use this technology. Are we relevant?

Aerial Drones & Persistent Photogrammetry

Drones for low-altitude mapping. Drones for orthophotogrammetry. Drones for lidar. Drones for geo-temporal analysis (fancy way of saying monitoring geographic changes over time). Drones for Big Data.

Big data? Again? At the New Jersey UAS Conference in October 2016, I spoke with a Big Data manager. One goal using Big Data is a constantly updated topographic map created with persistent

photogrammetric collection.
Repurposing the data is a driving force.

Big Data companies are placing serious investments into drone adoption. Part of the vision is that the delivery drone will be simultaneously collecting environmental data (lidar and/or imagery) to detect changes. These changes can then be reported to the affected utility stakeholder, the local zoning department, or the local DPW. These reports will be made for micro-fees. Spread across an entire nation, these micro-fees will turn into serious payoffs for Big Data.

At that same conference, government officials stated that autonomous parcel delivery will slowly emerge within five years and should be persistent nationwide within 10 years. Put that all together, and how important will traditional topography be in 10 years? The clock is already ticking.

Are you actively pursuing your Part 107 certification? Do you even know what that refers to? We can either market ourselves as geospatial experts who provide authoritative validation of the data being collected, or we can idly watch another facet of our careers evaporate. Are we relevant?

Boundary Determination

This is our wheelhouse. This is our last garrison. The one area where the land surveyor is uniquely qualified is in boundary determination.

Now consider this. If the world is steadily marching towards the continuous real-time mapping of our physical environment, how long will vague property ownership be acceptable? It won't. Boundaries will need to be firmly tied to the same geodetic system as all other captured elements. Boundary lines will have a pedigree and an estimate of reliability. The goal will be to eventually resolve all boundary issues so that all boundaries have the same high quality. This will require expertise in boundary law, geodetics, and geospatial databases.

This effort will take time. If the land surveyor does not lead the charge on this issue, another entity will.

Doubt this? How involved is the land surveyor in GIS? How involved is the land surveyor in machine

control? How involved is the land surveyor in photogrammetry? How involved is the land surveyor in subdivision planning? How involved is the land surveyor in road design? We can cling to high-minded ideas of what we are legislatively permitted to practice or we can look at history. History tells us our area of practice is steadily shrinking.

Are we hiring people we trust to make educated decisions concerning boundary location? Are we emphasizing the importance of a thorough understanding of boundary theory? Are we emphasizing a consistent approach to boundary determination? All I need to do is point to pin-cushion boundary corners as evidence of our failing. Are we relevant?

A Call to Action

Apathy has already done considerable harm. Our area of practice and expertise is dwindling. Apathy would happily see the end of the land surveying profession. Progress must be embraced. Progress must be rallied behind, with fierce pride and resilience. The future must be a key topic in every corporate boardroom and every society board meeting. Apathy cannot be allowed to win.

We surveyors have a tremendous advantage, but only if we use it. We already are, or should be, geodetic experts. The world of highly accurate geospatial location has been our domain. Those skills and the critical analysis thereof will make us valuable to any team trying to capture reality for the augmented world. None of this will matter if we are ignorant of the tools used to re-create the world.

I know which side of this fight I am on. Now is the time to boldly show what true leadership looks like. Now is the time to assert our vision for our future. Are you ready to be relevant?

- See more at: <http://www.xyht.com/surveying/ready-relevant/#sthash.MkKrWsXO.dpuf>



James M. Shaw, Jr., PLS of the State of Maryland Society of Surveyors since 2004. Has been a Board member with Maryland Society of Surveyors since 2005. Awarded Surveyor of the Year in 2012. Has published 5 publications with Flatdog Media, Inc.

Notes from the Side of the Road



MEMBERSHIP STATUS

Kyle Bower, NSLS # 641 began employment with Acker & Doucette Surveying Ltd. in December 2016.

Britt Roscoe, NSLS # 631 resigned his commission in January 2017.

David Lorimer, NSLS # 518 resigned his commission in January 2017.

Jeff Fee, NSLS # 595 has been re-instated to full membership and employed by WSP Canada Inc.

Patrick Muise, NSLS # 566 moved to retired status in January 2017.

Michael Tanner, NSLS # 588 moved to retired status in January 2017.

Allan Chisholm, NSLS # 605 moved to retired status in January 2017.

John Ross, NSLS # 413 moved to retired status in January 2017.

George Sellers, NSLS # 435 moved to retired status and has closed his office practice in March 2017.

CANDIDATE STATUS

Geoffrey Dick joined ANSLs through labour mobility in February 2017.

Matthew Williams joined ANSLs in December 2016 and is articling under Kevin Brown, NSLS # 601

Cyrus Steele joined ANSLs in January 2017 and is articling under Gary Grant, NSLS # 404

NEW MEMBERS

Blake Trask, NSLS # 663 received his commission in January 2017 and is employed with SDMM Ltd.

Matthew Berrigan, NSLS # 664 received his commission in February 2017 and is employed with Strum Co.

Geoffrey Dick, NSLS # 665 received his commission in April 2017 and is employed with Allnorth Consultants.

Devin Gale, NSLS # 666 received his commission in May 2017 and employed with DNR.

COMPANIES

Turner Surveys ceased its surveying practice in January 2017.

Acadia Surveys Ltd. ceased its surveying practice in March 2017.

Acker & Doucette Surveying Ltd. has taken over Scotia Surveys office in Shelburne and employed by Kyle Bower, NSLS # 641

Able Engineering Services has taken over Hiltz & Seamone II Ltd. office in Kentville.

DeWolfe & Morse Surveying Ltd. has taken over Scotia Surveys office in Digby.

The Association is always looking for detail information on any member for our issues of The Nova Scotian Surveyor. If anyone would like to add anything to our collection, please contact us by email: ansls@eastlink.ca, or mail to: 325-A Prince Albert Road, Dartmouth, NS B2Y 1N5

Minutes of the 66th Annual General Meeting
The Association of Nova Scotia Land Surveyors
White Point Beach Resort, White Point, NS
October 13 – 15, 2016

Friday, October 14, 2016

Meeting called to order at 9:00 AM by President McIntosh

Introduction of the Out of Town Guests:

British Columbia – Brownyn Denton & Mark Cahill
Alberta – Fred & May Cheng
Saskatchewan – Robert & Wendy King
Manitoba – Mike & Heather Paré
Ontario – Murray & Roselle Purcell
New Brunswick – Dave Parkhill & Beth Dixon

PEI – Derek French
Newfoundland – John Berghuis & Miranda Layden
Canada Lands Surveyors – Tania Bigstone &
Andrew Morse
Professional Surveyors Canada (PSC) – Wilson
Philips

Introduction of new members:

Conor McGuire, NSLS #659
Wesley McNeil, NSLS #660
David Umlah, NSLS #661
Darren Trevors, NSLS #662

Introduction of 2016 Exhibitors:

Cansel Wade
Leica Geosystems Ltd.
Brant Positioning Technology

Arthur J. Gallagher
UKKO, a division of AG Business & Crop Inc.
Atlantic Cad

Opening ceremonies:

President Jim McIntosh opened the meeting by stating: "This meeting will be governed by Roberts Rules of Order and common sense. Each member wishing to speak shall approach the microphone, state his or her name **or** be recognized by the chair. Speaking to a motion will be to a maximum of FIVE minutes and limited to one time only until all wishing to speak have had a chance. If time remains, members may speak a second time. Voting shall normally be done by show of hands but the chair reserves the right to call for a secret ballot. Only regular and life members of the association are allowed to vote. In case of a tie, the chair shall have the deciding vote."

Appointment of parliamentarian: Phil Milo, NSLS #277

Introduction of Council Members:

President Jim McIntosh introduced the Council that served for 2015-2016 as follows:

Zone 1 – Raymond Pottier	DNR Appointee – Bruce MacQuarrie
Zone 2 – Brian MacIntyre	Vice President – Kevin Brown
Zone 3 – Stephen Rutledge	Past President – Jody Isenor
Zone 4 – Dennis Prendergast	Public Representative – Eugene Peters

Moment of Silence:

Everyone was asked to stand and join in a moment of silence for those who are no longer with us: Arthur Harris, NSLS #364, Frank Clark, NSLS #442, Donald Parker, NSLS #375, J. Phillip Vaughan, NSLS #462, Gerald Boylan, NSLS #334, Fred Nolan, NSLS #84, James Reid, NSLS #167, Dan Baillie, NSLS #393, and former members we have lost, as well as those who have lost friends and family this year.

A) Approval of the 65th Annual General Meeting minutes:

The meeting was held at Atlantica Oak Island Resort & Conference Centre, Western Shore, October 14 – 16, 2015 with minutes published in the Spring 2016 issue of the Nova Scotian Surveyor pages 18 – 24.

Call for errors or omissions: *none*

Call for mover to approve the minutes: Jody Isenor Call for seconder: Dan Gerard **Motion carried**

B) Business arising from the minutes of the 65th Annual Meeting: *none*C) Report of Council meetings, highlights and President's activities:

President McIntosh started by identifying the four main issues council needed to deal with over the past year. Starting with registry privatization, act enforcement, the implementation of NAD83 and the active control network, and the ongoing standards review.

Registry Privatization – There was a big sigh of relief when it was decided to modernize the system in-house and not sell the Provincial Registries. Letters of thanks were sent to the Premier and Service Nova Scotia offering our assistance, as a major stake holder in the system, in moving forward. Myself, Fred Hutchinson, Paul Harvey and Bruce MacQuarrie had a meeting with Mark Coffin, the Registrar General and Sandy Waterman, the senior property mapper, on how to submit plans in PDF format. This concept was very well received by them. Since then, we met again in June and September keeping communications open. I am also pleased to say Mark Coffin has accepted our invitation to join us in our meeting, and give an update on their dilemma on receiving digital submissions.

Act Enforcement – We dealt with onsite and sewage disposal system regulations and standards, which came in effect last May. A letter was sent to Nova Scotia Environment in March with no response to date. Terms of reference for the new Nova Scotia Environment Liaison Committee were approved, being chaired by Cyril LeBlanc. All members are QP's with a goal to establish communication with our Association and Waste Water Nova Scotia, Nova Scotia Environment and Engineers Nova Scotia, so we can all work together to resolve these issues.

NAD83 and the Active Control Network – A huge congratulation to Jason Bond for getting this up and running. Thanks and congratulations to Jody, Fred, Jason and all the presenters for the successful seminar in June. The new standards were completed thanks to Carl Hartlen. Ray Pottier agreed to chair the Governance and Standards committee.

Other issues covered – Zone meeting updates, financial status, budget, investments, committee updates & appointments, membership, candidate articles, CBEPS, website, PSC, complaints appeal, Continuing Professional Development (both evaluation and non-compliance), SRD, foreign credential recognition, legislation review, file retention, COGS awards, president's travel, and this years and next years AGM. There is always lots to talk about and issues that requires councils' attention.

The National picture – I attended all the meetings across Canada, except the ACLS in Edmonton, where Fred Hutchinson represented our Association; and Kevin and Denise attended the Quebec City meeting. A lot was learned in travelling across Canada. All associations are dealing with the same type of issues. Financial sustainability, membership sustainability, change in technology and profession, relevance, self-governance and public awareness. This is why I am an advocate for PSC. They are the only national organization with a mandate to promote and support professional surveyors only. Our three-year commitment to the all-in model expires this year and we will be voting on continuing to financially support PSC in the future. We are also very fortunate that PSC is having their annual meeting with us here at White Point and Wilson Philips, chair of PSC, has agreed to speak to us and answer any questions one might have before we vote.

Locally, the biggest takeaway was being able to improve the relationship and communication with the Provincial Government. On the issue of registry privatization, there was no previous communication or consultation from Service Nova Scotia. On the topic of onsite sewage disposal regulations, there was no communication or response to a letter addressing our concerns. At the municipal level, the HRM subdivision bylaw had some very significant changes this summer. There was no consultation or notification to our Association and this is something that is fundamental to our business. For some reason, the government does not feel there is any value to consult us on land related matters, so we must do something about it if we want it to change. That is why I am pushing for committees. I would like a committee to get to the table at the municipal level. Hopefully small steps will improve long-term relationships. It will be up to next year's council to continue with this.

D) Secretary's report on the convention attendance and membership roll.

Secretary Fred Hutchinson gave a report on the membership status.

- Number of members registered for the convention **111**.
- Number of members present for the meeting exceeded the required quorum of 35

	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002
Dues \$	1500	1200	1200	1200	1200	1200	1100	1100	1100	800	800	800	800	800	800
Regular	145	149	151	154	155	152	155	161	165	172	173	177	187	197	203
Life	21	21	19	18	20	19	18	19	19	19	19	20	20	18	16
Retired	33	31	33	34	35	41	35	35	35	34	39	39	35	34	35
Candidate	27	28	24	21	20	25	24	21	24	24	23	24	24	21	21
Honorary	4	4	4	3	3	3	3	3	4	4	4	4	4	4	4
Associate	1	1	1	1	1	2	4	5	7	7	3	2	0	0	0
TOTAL	231	232	232	231	234	242	239	244	254	260	261	266	270	274	279

E) Financial Report:

The finances are open to any member who might have questions. Do not hesitate to call the office with inquiries.

F) Report of Scrutineers:

President – Kevin Brown
 Vice President – Ken Cormier
 Past President – Jim McIntosh
 Zone 1 – Peter Berrigan
 Zone 2 – Brian MacIntyre

Zone 3 – Steve Rutledge
 Zone 4 – Joe Harvie
 DNR Appointee – Bruce MacQuarrie
 Public Representative – Eugene Peters

Service awards were handed out to the following members: Ray Pottier, Dennis Prendergast, Jody Isenor & Jim McIntosh.

G) Report of Committees:

Administration Review: Brian MacIntyre, chair:
 none.

Complaints Committee: Glenn Crews, chair
 Six active complaints.

One dismissed and three new complaints in
 September.

Brian Spicer is the public representative.
 First duty is to protect the public.

Professional Development: Jody Isenor, chair
 Two-day seminar on NAD 83 held in June.

Speakers were Jason Bond, Steve Acker, Robyn
 Ash and others.

There was a question and answer on process
 and procedure.

Looking forward to supporting members moving
 towards NAD 83.

To have another seminar to help.

Hearing: Robert Rayworth, chair: none.

Governance Committee: Ray Pottier, chair
 Continue to populate the committee, currently
 have four members.

Look at Standards of Practice.

To serve the public .

Terms of reference ready for approval by council

Legislative Review: David Whyte, chair: none.

Life and Honorary: Dave Clark, chair: none.

MPD Evaluation Group: Buster Davidson, chair
 Report published in the Nova Scotian Surveyor
 Issue 200.

Nominating Committee: Jody Isenor, chair
 successful in filling all vacancies.

NS Board of Examiners: Kevin Robb, chair
 Four new members sworn in since last meeting.
 Twenty-seven candidate members, four not
 active and 50% have passed CBEPS with home
 studying.

Seventeen still have exams to write or projects to
 complete.

Twelve labour mobility candidates have been
 licensed since 2003.

Thank Joe Harvie for nine years of service with
 CBEPS.

Two survey projects are under review.

Four were assigned projects and three waiting
 for projects (ie: church, community center, non-
 profit).

Looking for more people to review projects, speak
 to Nick Dearman.

Forty-six members have received commission in
 seventeen years.

CBEPS: John Conn, chair

Accreditation of university programs are very time
 consuming and exemptions are all reviewed.

Biggest problem is getting special examiners.

Assess all candidates in Canada.

Public Awareness: Jody Isenor

Update on Facebook and Twitter accounts.

SRD Advisory Committee: none.

Strategic Planning Committee: Mike Allison, chair
 The most recent strategic plan was for 2014-
 2016.

It should be reviewed annually as standards and
 others have been dealt with over the years.

Mike Allison, Ernie Blackburn and Fred
 Hutchinson have now updated the strategic plan
 to 2019.

Look at the plan and forward any ideas you may
 have and the plan is on our website as a road
 map of where we would like to be.

Act Enforcement Committee: Dan Gerard, chair
 If there is something you don't like or have
 conflict with, forward to the committee for review.

There were four complaints that were investigated and calls were made.

The committee met once about an onsite disposal system. The person made a mistake. Are they in conflict with our Act? Not really, but changes do need to be made.

We need to collect information, make calls and push ourselves onto these government faces to help with change; Service NS, HRM policies.

Environmental Committee: Cyril Leblanc, chair

The committee is to deal with QPs and environmental issues.

Request for input was made on August 22, 2016 by Department of Environment on the new regulations for onsite services, to Waste Water Nova Scotia and Engineers Nova Scotia, but not to our Association.

BREAK 10:30

Jason Bond: update on the NSCRS and the Active Control Network

Jody Isenor: move to further support what has been done to benefit the surveyors. Explain and help the surveyors rid of any uncertainties and the importance of this system for the future.

Tom Giovannetti: gratitude and thanks to Jason Bond

Jim Banks, CLS, PEILS: are these guaranteed boundaries?

Jason Bond: evidence is evidence. A coordinate, when defined, could be assigned but not guaranteed. Tracking is at the mm level and land movement is built into the system. The videos from the seminar will be available.

LUNCH 12:00

A short welcoming message from the food and beverage manager at White Point Resort

Mark Coffin: Registrar General, gave a report on Service Nova Scotia and his view on the relationship between them and the Association of Nova Scotia Land Surveyors. That the partnership has been neglected.

Mark Whynot: Why should we pay to register a plan if we supply the plan, just to fill the registry, to be sold?

Mark Coffin: We still need to modernize the system as it will be a very valuable service to have access to.

Ray Pottier: There is still a cost to submit digital plans, compared to the existing system of scanning paper copies.

Mark Coffin: We need to nail down a business plan to move forward.

John MacInnis: A change in our standards should increase the number of members plans being registered.

Mark Coffin: We have a yearly count of plan submissions, so will be able to compare numbers.

Tania Bigstone, ACLS president: CLS plans – legislated with a digital signature “my key”, a look at what other associations are doing may help.

Dan Gerard: Thanks for your participation in our meeting and I feel we have a fantastic system.

Robert King, Saskatchewan president: Filing restoration surveys is at no cost to the surveyor.

Tom Giovannetti: If migrating extent of title, could the public afford this?

Presentation by Wilson Philips, PSC Chair, with a report on Professional Surveyors Canada and what they have done over the past few years as well as where they are headed in the future.

l) Motions:

MOTION #1

WHEREAS the Association of Nova Scotia Land Surveyors have supported the All-in model of Professional Surveyors Canada for the past three (3) years,

AND WHEREAS the All-in model provides financial stability,

AND WHEREAS Professional Surveyors Canada advocates public awareness and national professionalism,

BE IT RESOLVED that the Association of Nova Scotia Land Surveyors pay Professional Surveyors Canada \$200 per active member and practicing life member, with an option to terminate the agreement within 12 months' notice.

MOVED BY: Fred Hutchinson

SECONDED BY: Ray Pottier

Tom Giovannetti: supports, lots of headway made over the years;

Ray Pottier: supports, labour mobility, CBEPS, public awareness, partner to raise profile across Canada and the world;

Carl Hartlen: supports but questions the new model;

Fred Hutchinson: Gives PSC stability to continue and some security to continue;

Carl Hartlen: Is \$200 per enough?

Fred Hutchinson: PSC could always use more financial support but getting all provinces' support would help with this;

Hal Janes, Alberta PSC Director: need more bodies to volunteer to take on projects and grow the organization;

Art Backman: How many provinces are all in? This benefits all of Canada but the two biggest are not in. Should push for all provinces to be supporting PSC. What is the cost of an individual membership?

Fred Hutchinson: The cost is \$250 for those members who are not part of an all-in province, such as Ontario & Quebec;

Dave Parkhill, New Brunswick president: need to vote at the next New Brunswick meeting, but leaning in favor of

All-in;

Mike Paré, Manitoba president: Support Wilson Phillips and PSC. Manitoba is in support of PSC;

Murray Purcell, Ontario president: Ontario is working on council, trying to engage members to come onboard.

Motion Carried

MOTION #2

Approval of budget as per order of business in the bylaws.

BE IT RESOLVED: to approve the 2017 budget as emailed to members and as on the screen. Copies have also been made available at the registration desk.

MOVED BY: Fred Hutchinson

SECONDED BY: Ray Pottier

Art Backman: Is the \$10,000 for ads in Nova Scotia?

Dave Roberts: Looking for a current financial statement to accompany the budget;

Fred Hutchinson: The 2015 financial statement is in the spring issue of the Nova Scotian Surveyor but we could make an unaudited end of September statement available for next year's AGM;

Gary Wadden: Looking for results from the money spent on the PSC Spring advertising campaign;

Wilson Philips: Google, CBC & others reported 1.2 million views of the PSC ads;
Fred Hutchinson: The \$10,000 will be solely for Nova Scotia's ads;
Brian Wolfe: Looking for information on our GIC investment return;
Fred Hutchinson: Returns are consistent with GIC interest.

Motion Carried

MOTION #3

WHEREAS section 12, subsection (1)(o) & (p) of the Land Surveyors Act states "subject to the approval of the Governor in Council, the Council may make Regulations; (o) establishing processes for resolving boundary line uncertainties; (p) prescribing the functions, powers and duties of any entity established in the Regulations to resolve boundary disputes,

BE IT RESOLVED that the governing Council of the Association of Nova Scotia Land Surveyors appoint a taskforce to prepare a report detailing the regulations necessary for the establishment of a process for resolving boundary line uncertainties in accordance with section 12, subsection 1 (o) & (p)

MOVED BY: Glenn Myra **SECONDED BY:** Tim Wamboldt

Glenn Myra – presenter: A task team for property disputes, tasked to protect the public, more dignified than court.

Looking to establish a taskforce for this. Need to detail regulations that need to be put in place to do this. Looking for people who have time and resources.

Tom Giovannetti: in favor of motion

Bruce MacQuarrie: what would the end-product look like? What is the reward? ***Motion carried***

BREAK: 2:55 pm

MOTION #4

WHEREAS the Nova Scotia Coordinate Control Officer has adopted NAD83 (CSRS) datum as the Nova Scotia Coordinate Referencing System then;

BE IT RESOLVED that the following changes be made to the Association of Nova Scotia Land Surveyors Standards of Practice:

In "Section 2 – Definitions" add the following definition immediately after section 2.7: add Section 2.8 and renumber the remaining sections accordingly. Said added section 2.8 to read as follows:

2.8 "Nova Scotia Coordinate Referencing System" means the referencing system based on the NAD83 (CSRS) Epoch (2010) and the Canadian Geodetic Vertical Datum 2013, CGVD2013.

In "Section 3 – Respecting the Manner of Making Surveys" add the following section immediately following Section 3.16:

3.17 All surveys shall be referenced to the Nova Scotia Coordinate Referencing System, NAD83 (CSRS) 3 degree modified transverse Mercator projection system, Epoch 2010, by 31 December 2017.

MOVED BY: Jody Isenor **SECONDED BY:** Ray Pottier

Jody Isenor: Supports the motion. Efforts made by ANSLS to obtain a world class coordinate system needs support. As the standards are written, everyone is in violation as it stands. The motion gives

clarification and is time dated. The date to adapt fully to the new system would be December 31, 2017.
Dan Gerard: supports the motion, but there should be room for change in the future.

Move to amend “by” to “effective”

MOVED BY: Carl Hartlen **SECONDED BY:** Dan Gerard **Amendment Carried**

AMENDED MOTION: discussion

Carl Hartlen: does not really support the main motion

Jim Banks, CLS, PEILS: The only province across Canada allowed to use anything other than the NAD83 in Nova Scotia

Move to amend EPOCH 2010 to 2010.0 in sections 2.8 & 3.17

MOVED BY: Robyn Ash **SECONDED BY:** Dan Gerard **Motion Carried**

AMENDED MOTION: discussion

Art Backman: If restricted to the high precision network (HPN) how many useless monuments will there be?

Jody Isenor: A bunch of useless monuments, but a GNSS system could simply use static and submit the data to Jason Bond to get them upgraded to HPN. The time and cost will be made up in using the new system.

Fred Hutchinson: If each member adopted 5 monuments, it would potentially add to the HPN

Bruce MacQuarrie: For information only, but all surveys for DNR after April 1, 2017 will be in NAD83.

Ray Pottier: If we do not start using it now, when?

Wesley McNeil: supports

Jeff Fee: vertical datum, could you elaborate on what jurisdictions have adopted CGBD2013?

Jason Bond: all information is available on the website, but all points have values assigned on them with instant ties to NAD83

Amended motion carried

OPEN FORUM:

Tom Giovannetti: Thanks Jim for successes. Legislative review must be time consuming and likely needs assistance from members.

Jim McIntosh: Reviews on the table now at a municipal level and will be looking at it in the following year.

ANNOUNCEMENT:

Tania Bigstone has an ACLS meeting scheduled for 4:30 upstairs in the Crow's Nest

Thanks from all the out of town guests:

British Columbia – Brownyn Denton

Alberta – Fred Cheng

Saskatchewan – Robert King

Manitoba – Michael Paré

Ontario – Murray Purcell

New Brunswick – Dave Parkhill

PEI – Derek French

Newfoundland – John Berghuis

Association of Canada Lands Surveyors – Tania Bigstone

Professional Surveyors Canada (PSC) – Wilson

Philips

Motion to adjourn: **MOVED BY:** Glenn Crews **SECONDED BY:** Dennis Prendergast

Motion Carried

Meeting adjourned @ 4:18 PM

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