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on the cover ...

**Celebrating 100 Years of
Survey Camp at Gull Lake**



also in this issue ...

Know your History - Part 2
DaaS - Geospatial Data in the
Information Age
How to Prepare for Hydrographic
Artificial Intelligence (AI)
Networks and Systems

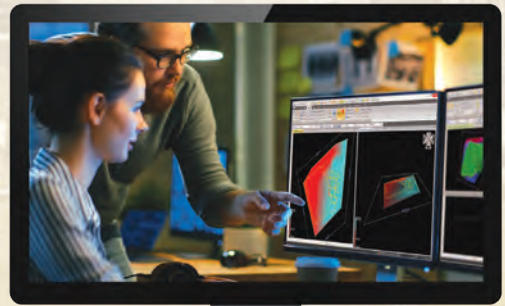
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ONTARIO PROFESSIONAL SURVEYOR



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ON THE COVER ...

On Sat., Sept. 7th, Bob Mountjoy, P.Eng., OLS (Ret) and Maureen Mountjoy, OLS attended the University of Toronto (U of T), Department of Civil and Mineral Engineering’s celebration to mark the 100th year of Survey Camp at Gull Lake in Minden, ON. The photo on the cover was taken at the camp and shows the main bunkhouse (on the left) and the dining hall. (Photo credit: Maureen Mountjoy). The camp will be undergoing a \$1.5M renovation plan to update and expand the Gull Lake site, so the ceremonial celebration also included an official ground-breaking. The AOLS is sponsoring one of the new bunkrooms to honour the many Ontario Land Surveyors who, beginning in the late 1890s, were graduates from U of T and attended the survey camp. See the [article about the history of the camp in The Last Word on page 36.](#)

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President's Page

By Al Jeraj, O.L.S.



My prayers were answered and the Raptors were crowned the NBA champions. Had I known this would have happened, I would have also snuck in a small prayer for my lottery numbers to be picked...LOL!

So much has happened over the last few months. Since the last OPS issue, I have travelled to Saskatchewan and PEI. At both of these meetings, the Presidents from our sister Associations discussed entering into a Memorandum of Understanding (MOU) to be signed by all. The purpose of the MOU is to garner commitment from each Association to explore working together on matters that we all have in common such as CPD, Complaints, and Discipline, etc. This means that we could potentially learn from each other and identify best practices in these and other areas. It doesn't mean that these areas would be administered for each Association by one National Body. A preliminary version of the MOU was drafted by Steve Yanish, President of the Alberta Land Surveyors' Association, and is currently being reviewed. I believe this is the first step towards achieving collaboration on a national level. I am sure we will see more progress on this matter in the coming months when I attend meetings in Manitoba and Quebec.

We held our annual 2-day summer Council meeting on July 23rd and 24th. On the first day, Council was led by our Executive Director through a practical exercise in risk management. It was Council's first exposure to the process. Brian has done a tremendous amount of research on this topic and has spoken to a number of individuals who have led organizations through a similar process. As a result, Brian was able to customize a process for our Association that was appropriate for our size and was designed to keep our mandate of protecting the public as the main focal point.

During the workshop, Council identified a number of harms that the Public could face as a result of the work done by a licensed Surveyor. We identified causes for these harms, then we identified sources of evidence to support our opinions and finally listed some treatments to reduce or eliminate each harm. One of the most important steps was to rate how easy it would be to implement the treatment which will guide us to where we focus our resources.

I have provided a very high level overview of the process and it is not as easy as it sounds; but after going through our first risk management workshop, I think that Council made the right decision to adopt this policy as a way to move forward and bring about positive change to our Association.

On the second day, we had a number of presentations including one from James Dorland, Chair of the Legislation/Regulation Task Force, and one from our financial advisor Julie Brough from Logan Wealth Management. We also approved the new mediation policy and discussed a number of issues that were on the agenda. In line with our Transparency Policy, the minutes of our Council meetings are now posted online for the membership to read. I personally feel that this is a great accomplishment of Council and is a huge benefit to the Membership. Now, the Membership is able to more closely monitor the direction that the Association is heading in and is better prepared to engage their Council Reps at Regional Group meetings with specific questions or comments about the decisions and discussions that occurred at the Council table.

In terms of keeping on track with our Strategic Plan, we are moving forward on a number of fronts. With respect to our Education Strategy, Brian and Maureen were invited by the Dean of Lassonde School of Engineering to participate in a strategic planning workshop. This was great news as it shows that Lassonde wishes to strengthen its relationship with our Association as we move towards a National online education program. In addition, AERC is reviewing the Canadian Board of Examiners for Professional Surveyors (CBEPS) guidelines to determine if we can adopt them and use them to evaluate students who apply to article.

With respect to our goal to update our Regulations, I had mentioned above that the Legislation/Regulation Task Force presented their proposed changes to Council at the summer meeting. The next step is to present the changes to the membership at the Regional Group meetings.

With respect to increasing awareness to the Public and Government about the role that Surveyors play, a briefing note was drafted and has been circulated to the Municipal Surveyors Committee for their review and input. The letter is intended to be sent to the Association of Municipalities of Ontario (AMO), Municipal Councils and other leaders within Municipal Government.

At our last AGM, the Membership voted in favour of moving towards one licence for cadastral and non-cadastral surveyors and it was captured in the Vision Statement of the Strategic Plan. To accomplish our Vision, I encourage our C of R members to get involved by participating on the Expanded Profession Task Force or by submitting their ideas to Council on how we can improve the articling process or the peer review process. In particular, our C of R members are encouraged to

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Executive Director's Notes

By Brian Maloney



It's hard to believe that I have now been here for five months as I write this. We just finished a successful Council meeting where we devoted almost a full day considering our regulatory risk. It proved to be an interesting and fruitful discussion but it also let us know that there is hard work required to have a meaningful view of public risks and the treatments that we may introduce to reduce them.

I am currently reading "The Character of Harms (Operational Challenges in Control)" by Malcolm K. Sparrow. This book discusses approaches for the reduction of harm to the public. The author speaks in terms of harms as opposed to risks, but essentially they are the same at different scales. If we were to consider potential errors in construction surveys on an individual project, there is some risk that an error could occur. If we consider all of the construction surveys in the province, you can almost guarantee there will be an error somewhere, and hence it moves from being a risk to a harm. It really boils down to the level of amalgamation. As we move forward, our discussions will likely cross between risk reduction and harm reduction but should get us to the same conclusions. This approach has been adopted by a lawyer who provided us with some advice and who helped me craft an approach to our workshop.

We will be facing several challenges as we move forward. One of the largest relates to having good evidence to inform our decisions. While we certainly have many metrics that can assist, such as insurance claims and public complaints, these are indicators from actions/harms that have already occurred. Are there ways we can capture information even earlier that will provide us with a sense of the problems and impacts of our changes? We have recently started logging public complaints that do not result in formal complaints. We are hoping that an analysis of this information and trends can help us understand public risks and impacts a little more. I was recently challenged by one of our members who said that information derived from membership surveys is not valid. I would argue that they are another form of evidence and need to be treated as such. This is no different than us, as surveyors, assessing the evidence of a boundary survey. We may choose to discount particular evidence over other

evidence, but if it is the only source of evidence, it needs to be considered. Of course, the uncertainty of the evidence needs to be considered when determining harm reduction treatments.

Another challenge relates to the many competing interests that we must address that require the right balance, which is not always evident. As an example, we can always raise the requirements for new surveyors entering the profession to address certain problems, but then do we get to a point that we have limited competition which results in the public paying higher fees than would be fair. To make the point more clear, at our recent Council meeting, certain business practices were brought into focus that have resulted in complaints and discipline. We could certainly work with the Academic and Experience Requirements Committee to add requirements related to business practice, but can we teach everything a surveyor requires before they get their licence or certificate of registration? Being a professional requires lifelong learning and we need to find the balance to ensure reasonable professional service while not making it unreasonably onerous to become a member.

Although there are other challenges involved with working through this process, the last one I will mention is the level of analysis required before moving forward. We could keep our discussions and thinking at a very high level (e.g. we need more knowledge so we need more training) down to a detailed level (e.g. contracts with the public are not clear enough so we should develop a standard contract). Again, we need to find the balance. The highest level of thinking does not really provide value, but we are limited in resources and could be stymied on moving forward if we get into too much detail. We are a small association with limited resources and we need to be focused on the highest risks and the most practical solutions.

In closing, I will reiterate that as an Association we are doing a good job of protecting the public, but we can improve. This risk management approach will take hard work and dedicated thinking but I believe it will help us meet the expectations of modern regulators.



President's Page (cont'd from page 2)

actively provide Council or the Expanded Profession Task Force with suggestions on continuing education content. There are so many ways we can make progress on this front and I feel our greatest chance to accomplish our Vision, is with the enthusiastic participation of our C of R members.

Time seems to go faster and faster these days. That being said, the 2020 AGM will be upon us before we know it. As a result, we have already begun planning the agenda and content for the event and I am pleased to report that we are in great

shape. This year, we plan to offer our members valuable and practical educational content. I hope to provide greater details on our upcoming AGM in the next OPS article.

The Fall Regional Group meetings are also on the horizon and I encourage everyone to attend and participate. It's a great way to catch up with colleagues and an even better way to rack up those CPD hours.

As always, if anyone has any questions, feedback, concerns or praise, please do not hesitate to contact me, Council or Brian. Enjoy the rest of the summer.





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Know your History — Part 2

By Tom Bunker, O.L.S., C.L.S., P.Eng., C.P.A. (Ret)

The following article is Part 2 in a series of historical articles written by Tom Bunker. Part 1 appeared in Volume 62, No.3, Summer 2019.

The Logistics were Horrendous

In the mid-1970's I asked a friend to travel from Timmins to a remote hunting/fishing camp to spend a winter weekend ice-fishing. The excursion involved a two-hour road trip and then a 45 minute snowmobile ride across lakes, rivers and old logging roads. He replied that he'd bring the bait minnows if I organized everything else as "the logistics will be horrendous".

Organizing a weekend in a remote cabin was simple compared to the effort required to complete the original township surveys in central and northern Ontario.

Background

According to John L. Ladell, author of *They Left Their Mark*, 236 Provincial Land Surveyors (PLS) had been licensed between 1800 and 1857 and apparently still operated in Upper Canada¹. Many of them were independent businessmen and relied on government work as well as local surveys for a successful business.

Original Township Lines

Self-employed surveyors operated under government contracts on Township surveys, referring to *General Instructions* as well as specific instructions for each project issued by the Office of the Commissioner of Crown Lands.

The principal objective of the survey was to create farm lots for settlement but the surveyor was also required to report on topography, soils, timber, mineral geology, water power sites and potential town sites. The requirements of the *General Instructions* from 1851 to 1871 were quite consistent and included:

- 1) Final lines are to be reported in astronomic bearings and variance from magnetic shown;
- 2) Lines to be clearly opened up and blazed, corner posts properly marked;
- 3) Measuring chains to be checked before and during work and honest and capable chainmen to be employed;
- 4) Accuracy to be considered with theodolites checked routinely;
- 5) Details on the creating, marking and placement of wood posts, bearing trees, etc and the size of standard lots;
- 6) Determination of the location and size of water bodies and water courses and requirements for any related shore road allowance;
- 7) The assigned PLS or another authorized PLS was to personally run all lines and **he was not**

to take on any private work until the assignment was finalized;

- 8) Final returns to include: a plan; a report on squatters, topography, town sites, etc.; a diary of activities: and, field notes of observations, including astronomic observations and calculations;
- 9) Rates of daily compensation for the surveyor, chain bearers, axe men and other assistants (to a maximum of ten men in later years) were prescribed and prescribed method of accounts to be kept and rendered;
- 10) Geological samples were to be collected as long as it did not materially impede the survey;
- 11) "You will endeavour to conduct this survey with a judicious economy, combining accuracy with despatch."

The physical processes for bush surveying have not changed significantly since the 1850's with the sighting instrument used to project a traverse/straight line forward in an opening cut across the hilly terrain, using wooden pickets and reference points that are set as required at tops and bottoms of grade changes. The original township lines were "surveyed" by the surveyor and his picket man with axemen cutting open the sight line, the chain bearers following to measure the distances and setting the required wooden posts within the cut line to mark lot corners and offset 0.5 chains each side for road allowances as necessary. In double-front sectional township systems, the survey was generally completed around each "section", running centre-lines of road allowances on concession lines and on every fifth side-line in a convenient pattern. A tent camp with a required cook and labour carriers would be moved as necessary to reduce daily walking.

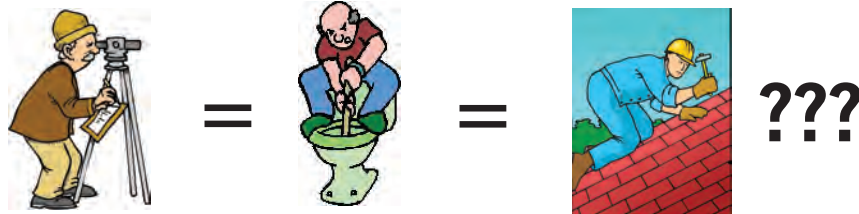
The 1857 survey of Part of Muskoka Township

Instructions to PLS Charles Rankinⁱⁱ were issued 29 April



The 1857 version of J.H. Colton's map of Canada West or Upper Canada shows the primary roadways and railways. Counties are coloured and the land north of the Black River and Severn River are not yet included in such designations. (public domain – commons/wikimedia.org)

cont'd on page 8



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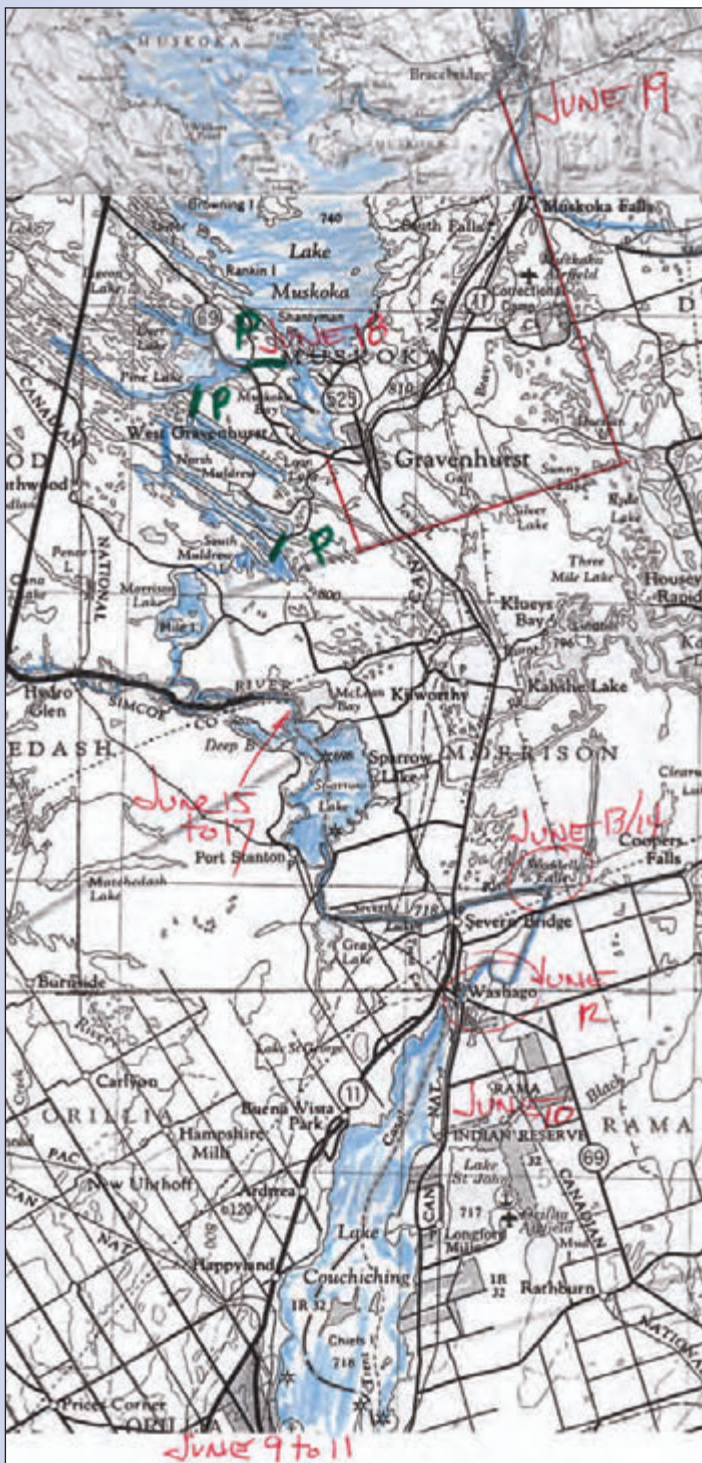
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1857ⁱⁱⁱ to subdivide into farm lots the outlined township that was to adjoin the 1835 “Hawkins line”^{iv} as its easterly boundary and to lie southerly from the Muskoka Lake and River about 13 kilometers from the intersection of Hawkins’ line with the Muskoka River^v.

Sixty year old Rankin lived in Owen Sound at the time and there were no roads into Muskoka.

He was responsible for organizing the survey, including acquiring the required crew (all males at the time), gear, transportation and provisions. His efforts are reflected in his Diary and Report^{vi} covering June to October 1857.



These roads didn't exist in 1857

June 8 - Having engaged the following men viz Wm Spry^{vii} and David Merry as chainmen, F. Spry as picket man, Wm Seely, James Brown and Wm Shanks as axemen and James Crispin as cook, set off by steamer for Collingwood, on our way to Orillia (by the recently completed Northern Railway), evening arrived at Bell Ewart (on Lake Simcoe where they stayed the night).

June 9 – By the steamer J.C. Morrison from Bell Ewart to Orillia, arrived afternoon and proceeded immediately to enquire for the additional hands required to make up the party - not successful in finding any – greater wages than offered being demanded – encamped for the night.

June 10 – Got a boat and crossed to Rama, to enquire there for Indians to make up party as well as to guide us out by portages to Muskoka – none to be had – most of the men being absent, the remaining demanding greater wages. Returned to Orillia – success in engaging Frank Gutier as carrier or axeman.

June 11 – Succeeded in engaging the two more men required in Jos Ernest and F. O’Boyle as axemen or carriers. Engaged a quantity of flour to be furnished us by Mr Lipping and procured various items of necessity.

June 12 – Rained till mid of afternoon, then having engaged a boat to take the party and things to the head of the Severn – Washago Mills – and left word with Mr King to make further enquiry for Indians, with their canoes, and send them after us – both to aid us across portages and afterwards to bring provisions to us. Left Orillia abt 2 o’clock, arrived at Washago Mills and encamped.

June 13 - Sent two men ahead to look for the Muskoka portage – and having obtained a small boat, with the others, moved down, with luggage, at two trips – about 4 miles to 1st Falls and encamped. They stayed encamped the next day (Sunday) as it was usual practice to observe the day without work.

June 15 - Moved down the Severn to Sparrow Lake and across it - about 7 miles – met our two men in the afternoon, they having found the portage (now known as Morrison Landing) – wait the arrival of Indians and canoes to conduct and aid us across to Muskoka – encamped at W. end of Sparrow Lake. It rained the following two days so they stayed in camp. **June 17** - Two Indians with their canoes sent by Mr. King arrive in the evening.

June 18 – a cloudy morning – set off with the Indians & canoes to proceed, with things, to Muskoka Lake – reached there in evening and encamped. The route would follow Morrison Creek from the Severn River, through Morrison Lake into Muldrew (previously Leg) Lake, via portages into Loon Lake, Pine Lake and ending with the portage into Bear Bay of Lake Muskoka.

June 19 – sent men by Mr Unwin’s line (a road exploration line run under Instructions of October 1856) and down the river to N.E. corner of our township, taking luggage round by the Indians with their canoes to same point. Party encamped near N.E. corner of the township having come

today abt 11 miles.

The actual field survey commenced on June 20. His diary reveals that packers were routinely sent out every few days to acquire provisions to support the camp, usually a three-day round trip to/from Orillia. Although he was surveying in isolation, communication through Orillia was good. His diary reflects sending out letters to the Commissioner on September 21 for additional instructions which were issued at Toronto September 24 and arrived at the camp with the provisions on September 28.

Rankin's diary is typical of the period and shows his on-site work running from June 20 by opening up the 1835 Hawkins line (90 chains measured that day) until completion of all survey work on October 5 with a total distance of 6,073 chains. His production was hampered by rugged terrain (portions of the 2ND and 3RD Concessions in the Township were not surveyed) and bad weather, and during the work he sought alternate *Instructions*. He still achieved slightly more than 88 chains per day. He sets out the following in his report: Days surveying – 68 ½; Sundays (no work) - 17; Rain or Snow – 17 ¾; Hiring Men – 1; Travelling – 9 ¼; moving camp – 8; Misc 1 ½. His return trip to Owen Sound required only four days.

Unlike David Thompson, who had surveyed the major lakes and rivers of the Muskoka watershed in the summer of 1837, Rankin made no reference or complaints about insects.

The accuracy of these “original surveys” is unspecified. I suspect that the prospect of four months in the wilderness emphasized production rates over accuracy considerations. The measurements of sections of 1000 acres may be shown on plans as perfect 100 chain squares, but there are often irregular measurements of some of the Lot frontages (not exactly 20 chains) or depths of the section (not exactly 100 chains) in a double front system. It is unlikely that lines already cut open were moved or adjusted for “misses” but posts at section corners adjusted and actual closing measurements reported. My 2013 analysis of reported measurements of several irregularly shaped remote parcels surveyed in 1883 found calculated relative closure errors seldom better than 1:150. Our current performance standards require at least 1:5,000^{viii} and, with modern technology and prop-

erly trained technicians, results of better than 1:10,000 are achievable, even in bush surveys. Modern survey measurements between undisputed corners seldom agree exactly with the original survey reports.



- i Appendix A, page 292, *They Left Their Mark*; John L. Ladell; Dundurn Press, 1993
- ii Charles Rankin (1797 – 1886) was appointed as a Deputy Provincial Surveyor in 1820.
- iii PLS Chas Rankin was instructed to lay out Muskoka Township by using the line run by Hawkins in 1835 as the eastern boundary and to run the Sideline road allowances parallel thereto and Concession Lines perpendicular thereto as illustrated on a “projected plan”.
- iv In 1835 surveyor William Hawkins had run a survey line projecting the easterly limit of Rama Township to Lake Nipissing.
- v PLS Robert Bell had run his baseline in 1847 westerly from the Madawaska River 128 Km (80 miles) to intersect Hawkins’ line just south of the Muskoka River, the baseline becoming the northerly limit of the easterly adjacent and contemporary Draper Township.
- vi Crown Survey Records, Office of the Surveyor General, FNB 1517
- vii Research of 1861 Census indicates the crew members ranged in age from 18 to 40 years, with most in their twenties.
- viii Section 9, O.Reg 216/10



Rankin moved his camp closer to the work area 16 times during the project, each move taking about one-half day.

Camp dates starting at 1 = June 19; 2 = June 30; 3 = July 4; 4 = July 14; 5 = July 22; 6 = July 30; 7 = Aug 4; 8 = Aug 14; 9 = Aug 25; 10 = Sept 1; 11 = Sept 11; 12 = Sept 12; 13 = Sept 14; 14 = Sept 19; 15 = Sept 24; 16 = Sept 26; 17 = Oct 2. Provisions were cached at old camps and on Lake Muskoka. Astronomic observations were taken near camps 16 and 17 only

How to Prepare for Hydrographic Artificial Intelligence (AI) Network & Systems

Success Depends on the Quantity and Quality of all Available Data

By Denis Hains, B.Sc., Quebec Land Surveyor (a.-g.)

This article was first published in Hydro International July/August 2019/Volume 24 Number 4. It is reprinted with permission.

More than 200 participants gathered for the VECTOR 2019 Symposium, from April 15 to 17, 2019, in Rimouski, Canada. This event was coordinated by the “*Technopole maritime du Québec (TMQ)*” in collaboration with the “*Centre de la géomatique du Québec (CGQ)*” and the “*CIDCO*”. I had the honour of being invited as a special guest speaker on “How to prepare for Hydrographic Artificial Intelligence (AI)” and will summarize the highlights of this presentation in the following article.

and critical.

Commercial Marine Autonomous Surface Ships (MASS) such as the “*Rolls Royce-Kongsberg*” illustrated (*Figure 1*) are prototypes in development and will eventually be tested in Europe. Norway is a leader in the field. Many see these commercial MASS as providing economies in terms of fuel consumption, optimization of transportation routes, reduction of greenhouse gas emissions and reduced risks to navigation by respecting many rigid and strict rules of navigation in the world.



With the ever increasing and affordable availability of capacity and computing power to process and store data (BIG DATA), the emergence of Artificial Intelligence (AI) in Marine Geomatics, Ocean Sciences and Hydrography is palpable.

Mathematical models are very powerful, but their reliability must be validated and demonstrated using calibration points. It's the same thing for AI; it can not emulate and learn properly if it can not rely on observations that represent reality.

In the commercial shipping world, AI-based technologies are about to be tested, resulting in additional bathymetry and hydrography needs that will quickly become necessary



Figure 1 – Source image: <https://worldmaritimeneeds.com/archives/266898/imo-msc-identifies-4-deg>

How can commercial MASS learn or can they learn from the charted and uncharted seabed where hydrographic data is insufficient or even absent? I suggest that the success of AI in hydrography is fundamentally dependent on the quantity and quality of all available bathymetric and hydrographic data, whether static, predictive, near real-time, or real-time (dynamic).

LACK OF BASIC DATA

In the world of Ocean Sciences, Bathymetry and Hydrography, there is a lack of basic data that meets modern technological standards. However, those data acquired with multibeam echosounders (MBES) for some decades are localized and increasingly dense and more voluminous than ever. Also, the additional data coming from MBES and specifically its multiplier effect of Backscatter data signal & the LiDAR and Satellite-Derived Bathymetry (SDB) multiplier effect of Reflectance data signal amplify them further.

I emphasize that there is also a lot of unknown, unavailable data, and when it is known and made available, it is often non-standard and low-precision. They, therefore, tend to be unused or rejected. Since AI is based on computing ability and the power of mathematics / statistics, the availability of “all” DATA (especially “BIG DATA”) plays a key role in computer learning and machine learning and deep learning.

RESPECTING STANDARDS

AI in hydrography will be stimulated and catalyzed by MASS. The “key” to success will be based on the same fundamental issue known in hydrography for a long time, i.e., associated bathymetric and hydrographic data of known quality and respecting established standards. This represents a major challenge considering that the vast majority of the world’s oceans and coastal areas have little or no modern hydrographic data of sufficient quantity and quality. However, there are several opportunities with the current technological wave (*Figure 2*) that we are encountering.

To prepare for hydrographic AI, it is better to have the maximum quantity of data where the quality is known, even if it does not always meet the standards, than not having data, or having just little data. This is especially true in remote areas where new needs emerge.

ALTERNATIVE DATA SOURCES

In that context promoting and adopting Crowd-Sourced Bathymetry (CSB) and the unreserved use of alternative data sources such as: Satellite-Derived Bathymetry (SDB); Airborne hydrographic LiDAR; autonomous data

acquisition vehicles: airborne (drones), surface and submarine; is a must, and shall even be forced and accelerated more than ever.

For hydrographic data, ideally the most accurate and exact data are needed. On the other hand, in the context of AI in hydrography, I suggest that all data, and even those that are inaccurate or not precise, are of interest. Rather than being obsessed with precision and accuracy, we must accept data for which the accuracy and precision would not be sufficient for traditional standard purposes. By knowing or even “qualifying” the precision and accuracy, these data will allow the Machine & Deep Learning algorithms to identify areas of risk to avoid for some current and future MASS.

CHALLENGES AND OPPORTUNITIES

What currently appears to be incomplete and imprecise could, in the context of AI, enable a paradigm shift in which hydrographic data reaches unexpected maturity through repetition and mathematical / statistical correlation in the future.

The emergence of AI in hydrography is full of challenges and more importantly opportunities. This is an exciting and important developing field to follow everywhere in the world and the Hydrographic community. With three oceans and the longest coastline in the world, Canada should clearly have an interest in playing a pivotal role in the issue of “How to prepare for Hydrographic Artificial Intelligence (AI) Network & Systems”.



Denis Hains had a 35+ year career with the Public Service of Canada, where he worked for 20 years for Fisheries and Oceans Canada at the Canadian Hydrographic Service (CHS) in Mont-Joli and Ottawa, including 2 years with the Canadian Coast Guard. He also spent 15 years with Natural Resources Canada, particularly as the National Executive Director of the Canadian Geodetic Survey (CGS). He retired in 2018 as Director General of the CHS and Hydrographer General of Canada in Ottawa.

Denis is founder, President and CEO of H2i (Hains Hydrospectral International Inc.). He is the representative appointed by the United States and Canada Hydrographic Commission (USCHC) on the International Hydrographic Review (IHR) Editorial Board of the International Hydrographic Organization (IHO); “Affiliate Research Scientist” of the University of New Hampshire-Centre for Coastal and Ocean Mapping (UNH-CCOM); Vice President of the Board of Directors of the

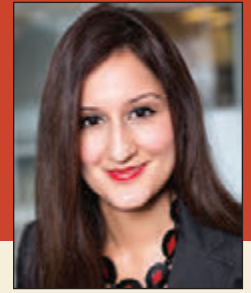
Interdisciplinary Center for Ocean Mapping Development (CIDCO); and he is also a member of the Canadian Hydrographic Association (CHA). He can be reached at denishains@rogers.com



Figure 2 – Source image:
<https://iphonewalls.net/nature/surf-wave-iphone-wallpaper>

“But I’m Not on Duty!”

The Review of Off-Duty Conduct Complaints by Professional Regulators



By Jasmeet Kala

Complaints received by professional regulatory bodies are not just limited to the conduct of licensed members in the course of their professional duties. Rather, they include the conduct of members in their off-duty capacity, including situations in which members may find themselves in their private lives. Professional regulators bear the responsibility of carefully reviewing all complaints received from the public, including those involving their members’ off-duty conduct. They may however, face concerns from their members in this regard, particularly with respect to their members’ ability to live their private lives free of intense or undue scrutiny.

The fundamental question with which professional regulators must grapple is whether a given member’s off-duty conduct runs contrary to their governing rules, regulations and policies, however defined. Many professional regulators have worked on developing their regulations and policies over the years to clarify for their members and the public what constitutes “professional misconduct” and also “conduct unbecoming”, with the latter term being cited and reviewed in many off-duty misconduct cases. While these regulations and policies often outline expectations of members in the context of performing their professional duties, they may not explicitly refer to expectations of members while they are off-duty. The challenge professional regulators face is if, as well as how, they can appropriately define these expectations in a manner that serves to uphold the reputation of their respective professions and protects the public, but is also fair to their members.

Examples of Off-Duty Conduct and Discipline Decisions

Recent decisions provide some insight into what professional regulators have had to consider in addressing off-duty conduct complaints from the public or other members, particularly with respect to members’ use of electronic communication and social media.

Recently, the Ontario College of Physicians and Surgeons (the “CPSO”) found one of its members had committed professional misconduct during his exchange of emails with the Ontario Medical Association (the “OMA”), in the decision *Ontario (College of Physicians and Surgeons of Ontario) v. Tjandrawidjaja*¹. The OMA represents physicians in Ontario with respect to their economic and political interests and also negotiates on their behalf with the provincial government. Dr. Michael Clarence Tjandrawidjaja was

a member of the CPSO and the OMA at the time of the alleged incidents.

In 2016, the OMA’s Board endorsed and promoted a tentative Physician Services Agreement (“tPSA”) that it had reached with the Ontario government. On July 31, 2016, an email was sent by the OMA encouraging members of CPSO to vote in favour of the tPSA and was signed by Dr. Virginia Walley, the then President of the OMA. Dr. Tjandrawidjaja replied to this email calling Dr. Walley a “turd”. He also sent Dr. Walley an email to her personal email address almost a week later stating: “*How much are the liberals bribing you? It will likely come out at some point.*”

This matter was ultimately reviewed by the CPSO’s Discipline Committee (the “Committee”), which determined that Dr. Tjandrawidjaja’s conduct violated various expectations set out in the CPSO’s policies, including its Social Media policy. The Committee commented on physicians being in a position of privilege and the expectation for them to act in a manner that justifies such privilege. The Committee acknowledged that while the tPSA was controversial and subject to varying beliefs, “*bullying, juvenile and utterly disrespectful comments*” brought not only Dr. Tjandrawidjaja’s reputation into disrepute, but impacted the respect that society had for the profession.

The Committee considered both aggravating and mitigating factors in making its decision with respect to penalty and ordered that Dr. Tjandrawidjaja appear before it for a public reprimand and pay \$6,000 in costs to the CPSO.

The decision *Strom v. Saskatchewan Registered Nurses’ Association* (“*Strom*”) has generated a lot of discussion in the field of professional regulation and discipline, particularly regarding expectations of members with respect to their use of social media in their private lives.² In this matter, the Saskatchewan Court of Queen’s Bench (the “Court”) upheld a decision of the Discipline Committee (the “DC”) of the Saskatchewan Registered Nurses’ Association (the “SRNA”), which concluded that one of its members had engaged in professional misconduct through her use of social media.

In February 2015, Ms. Carolyn Strom, a nurse registered with the SRNA, posted comments on her Facebook page and on Twitter, criticizing the care her grandfather received prior to his death at a care home facility. As a result of the posts, the care home facility made a complaint to the SRNA, which brought disciplinary proceedings against Ms. Strom, alleging that she had engaged in professional misconduct contrary to *The Registered Nurses Act, 1988* of

Saskatchewan (the “Act”). The DC of the SRNA heard the matter and concluded that Ms. Strom had engaged in acts of professional misconduct contrary the Act and various provisions of the Canadian Nurses Association Code of Ethics for Registered Nurses (the “Code”), by harming the reputation of the nursing staff at the care home facility and the nursing profession as a whole. The DC ordered Ms. Strom to pay a \$1,000 fine and \$25,000 for costs of the proceedings. Ms. Strom appealed the decision to the Court.

In its review of the matter, the Court noted that the Act gave the SRNA broad powers to determine what constituted “professional misconduct” and furthermore, that the DC was open to make inferences about how Ms. Strom’s comments harmed the nursing profession and the public’s confidence in the nursing staff at the care home facility. The Court did not take issue with the DC’s finding that Ms. Strom’s off-duty comments were connected to her profession, as Ms. Strom had identified herself as a registered nurse in her online comments. The Court further found that the DC conducted a balanced and reasonable analysis of Ms. Strom’s freedom of expression rights, pursuant to s. 2(b) of the *Canadian Charter of Rights and Freedoms* (“Charter”). The DC had concluded that an infringement of Ms. Strom’s freedom of expression rights was justified in this circumstance, due to the resulting harm done to the nursing profession and the fact that Ms. Strom had other avenues of

expressing her concerns, which would not have caused such harm to the registered nurses at the care home facility or the profession as a whole.

The Court dismissed the appeal and concluded that even if the DC could have interpreted Ms. Strom’s actions differently, its decision still fell within the reasonable range of possible and acceptable outcomes. Ms. Strom has brought an appeal of the Court’s decision to the Saskatchewan Court of Appeal, which is scheduled to be heard in the Fall of 2019.

While many decisions of professional regulators related to off-duty conduct, such as the *Strom* decision above, have been upheld by reviewing courts and found to be reasonable, professional regulators still run the risk of having their decisions overturned if the analysis and/or reasons provided for their decisions are flawed or inadequate.

For example, the Supreme Court of British Columbia (the “SCBC”) overturned a decision of the British Columbia College of Teachers (the “College”) with respect to the off-duty conduct of one of its members, Mr. Michael Fountain, in the decision *Fountain v. British Columbia College of Teachers*.³ Mr. Fountain had a domestic dispute outside his family home after he and his wife asked their sons to leave their home. The sons did not leave the premises and engaged in a physical altercation with Mr. Fountain. Following this, Mr. Fountain followed his sons towards the edge of the property and eventually fired his rifle, which his wife had

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provided to him, into the air. Mr. Fountain's evidence was that he had fired the weapon to send a message to his sons to leave the property. One of Mr. Fountain's sons called the RCMP and as a result of a police investigation that ensued, Mr. Fountain was charged. Mr. Fountain was convicted for careless use of a firearm, but appealed the conviction and was acquitted.

The College investigated the matter and issued a Citation against Mr. Fountain. A Panel of the College (the "Panel") conducted a hearing and determined that a reasonable teacher would not have communicated with a gun shot in the circumstances and concluded that Mr. Fountain was guilty of conduct unbecoming of a member of the College. Mr. Fountain appealed the Panel's decision to the SCBC which found that the Panel had not demonstrated a line of analysis such that its decision could be found to be reasonable. The SCBC allowed the appeal and remitted the decision back to the Panel for reconsideration. The Panel then wrote a Reconsideration Decision with supporting reasons for its initial decision, which Mr. Fountain again appealed to the SCBC.

In reviewing the matter, the SCBC considered a number of factors, including the fact that Mr. Fountain was involved in a high-conflict situation following an assault from his sons and that he was ultimately acquitted of careless firearm charges. The SCBC noted that this private matter was not made public and that there was no pattern of conduct which would support any notion that Mr. Fountain's ability to be a teacher was somehow impaired. The SCBC determined that it was unreasonable for the Panel to have drawn the inference that Mr. Fountain's conduct would impair his ability to perform in his profession. The SCBC further determined that the Panel drew an unreasonable inference that Mr. Fountain would send messages in similar violent fashion to children and as a consequence, would be an unsuitable role model. The SCBC allowed Mr. Fountain's appeal and ordered that the Panel's decision be set aside.

Concluding Thoughts

Professional regulators will likely face the challenge of reviewing off-duty complaints for the foreseeable future, particularly in the age of social media. In an attempt to provide more guidance to members of the profession and the public, some professional regulators have implemented policies on expectations of members with respect to social media or electronic communication use outside of their professional duties. Some professional regulators have also attempted to expand their definitions of "professional misconduct" or "conduct unbecoming" to include off-duty conduct. Nonetheless, it remains an issue for professional regulators to tackle from a governance as well as a discipline perspective.



**Please note that the content of this article is provided for informational purposes only and does not contain any legal advice.*

Jasmeet Kala is a lawyer at Keel Cottrelle LLP who engages in a diverse practice involving administrative law, including professional discipline, as well as civil litigation and employment law. She has acted as prosecution counsel for professional regulators and has assisted with developing training materials for Complaints, Discipline and Fitness to Practice Committees. Jasmeet has acted for clients at the appellate level, as well as the Ontario Superior Court of Justice (Civil) and the Commercial List. In addition to her legal practice, Jasmeet is a contributing author to Keel Cottrelle LLP's Professional Regulation Newsletter and is also a member of several professional law associations. Prior to attending law school, Jasmeet was a secondary school teacher with the Peel Board of Education. She can be reached by email at jkala@keelcottrelle.ca

¹ Ontario (College of Physicians and Surgeons of Ontario) v. Tjandrawidjaja, 2018 ONCPSD 39 (CanLII).

² Strom v. Saskatchewan Registered Nurses' Association, 2018 SKQB 110 (CanLII).

³ Fountain v. British Columbia College of Teachers, 2013 BCSC 773 (CanLII).

Livin' La Vida Leica

By Bruce Baker, O.L.S. (Ret)

I have an old Leica TCA 1100 that I gutted and made into a bird house. I set it in a tree at our cottage in Port Franks, which is along Lake Huron. Sure enough a pair of wrens have taken up a home in it and are now feeding their young. All of this is captured in the photographs.

The photographs were taken by Vicki Miles, who is a retired art teacher and our neighbour in Port Franks. She attended Erindale College, lived in residence and had a number of surveyor friends, who were also in residence. Her good friend is Bruce Brouwers, OLS (Ret). It is a small world!



Photo credit: Vicki Miles, Erindale College, Fine Art & History, 1980.



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Registrar's Comments

By Kevin Wahba, B.Eng., LL.B., O.L.S., Barrister & Solicitor



It has now been eight months since beginning my role at the AOLS as Registrar. This endeavour has been a continuous learning experience and I have consistently found myself adapting and evolving in response to new challenges and circumstances that I come across regularly. During this time, I have received several inquiries from members of the public. These inquiries have ranged from simple and straight forward technical questions about the profession, to discussions seemingly fueled by emotionally charged situations. Dealing with the latter group of individuals tends to be an exercise in patience and understanding, balanced by the need to be practical and follow the Association's mandated objectives. In this article, I wish to highlight two groups of individuals that I have commonly responded to; those being, members' clients, and adjoining neighbours of members' clients.

Clients of our members contact the association primarily when facing a conflict with their surveyor. I have received calls regarding survey fees, the retracement of boundaries, lack of communication on the part of the surveyor, the required standard of practice governing surveyors, the complaints and discipline process, and several other questions resulting ostensibly from unsatisfactory client experiences. The common trends around these discussions are mostly issues of either, or a combination of, communication, timing and fees, although fees and communication often go hand in hand when these issues arise. Clients have commonly expressed that the services they were provided were not clearly enunciated from the beginning. Furthermore, there often seem to be misunderstandings as to what the final product of their survey will be, and sufficient documentation to evidence the discussions taking place between the two parties. It may be obvious to say that, although not a legal requirement, all contracts should be in writing. Going beyond that, however, these concerns could have been easily avoided if a comprehensive, fully documented initial meeting with the client was undertaken at the onset.

As a membership, we are conscious of the fact that members of the public are generally unfamiliar with our roles and how we discharge the duties mandated to us by our respective legislation and further legal requirements. As such, it is prudent to ensure that the client is provided with a cursory but sufficient understanding of what we do and how we do it at the time when the surveyor is initially retained. At times, members may come across a client during their careers who is unwilling to fully place their trust in them or is unable to entirely grasp the techniques, principles and technology involved with providing professional surveying services, and unfortunately, these issues may only come to light after the surveyor is formally retained, or even as far as after the final product is delivered to the client. These are eventualities that most professionals come across during their careers, but the responsibility rests on the profes-

sional to ensure that the required practice standards are adhered to, and that best efforts are made to assist the client in understanding their particular circumstance in a professional and respectful manner before the project commences.

Although I have received numerous calls from clients of our members, most often when it is a call from the public, it involves individuals who are the adjoining neighbours of a property which was recently surveyed. Their inquiries range from issues involving right-of-entry and trespass, to damage of property, disagreement with the placement of survey monuments or the retracement of property lines. Some of these issues could be avoided by a simple visit to the neighbour advising them who you are and what activities will be taking place on their property before you begin your survey. For example, neighbours often feel mistreated or frustrated when they attend their property to find nails planted for control points, or cut crosses marked on curbs adjoining their property without any idea as to who did this and why. It is a common practice for surveyors to advise their crew that they should alert neighbours to their presence, and when the neighbours are not home, leave a business card to allow them to identify who was on their property and how to contact the firm if they have any questions or concerns. This is a good practice, albeit, could be bolstered using the door hangers which the Association provides to firms free of charge upon request. The door hangers identify your firm and act as a notice to individuals that surveying activities are taking place on their property. They would also provide individuals with the Association's contact information so that we may be able to address their concerns directly. This may seem excessive to some, but the use of these door hangers may save you several hours on potential complaints arising because of unadvised neighbours. A digital copy of the door hangers can be found on our website at the following link: <https://www.aols.org/sites/default/files/4.25x11-DoorHanger%20final.pdf> As for neighbours who dispute your opinion as to the location of a certain property boundary, being open to discussions with these concerned individuals would also be a potential solution for avoiding complaints from the public. I have received many inquiries from neighbours who only seek to understand why a survey marker was placed in a location different from what they always believed to be the corner of the property. Being open, professional and willing to assist these individuals would have a great impact on how the public perceives your firm and the surveying profession. In certain circumstances, these efforts may still not satisfy concerned individuals, but in implementing these practices, you are able to evidence a genuine effort in assisting the public and furthering your claim that you have discharged not only your duties to your client, but society as a whole.





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IN THE MATTER OF the Surveyors Act, R.S.O. 1990,
Chapter S.29, as amended

AND IN THE MATTER OF David U. Maughan, O.L.S.

AND IN THE MATTER OF a Disciplinary Hearing
of the Discipline Committee of the Association of
Ontario Land Surveyors held in accordance with
Sections 26 and 27 of the said Act

SUMMARY OF THE DECISION OF THE DISCIPLINE PANEL

A discipline hearing into allegations of misconduct by David U. Maughan, O.L.S. proceeded before a Panel of the Discipline Committee on June 3, 2019. The Association and Mr. Maughan jointly advised the Panel that Mr. Maughan was prepared to plead guilty to certain allegations; that the parties had prepared an Agreed Statement of Facts as well as a Joint Submission on Order with respect to the penalty they proposed the Panel should accept.

The Statement of Agreed Facts provided facts regarding complaints made by CB, a member of the public, and by a couple, NM and DM, also members of the public. Those facts can be summarized as follows.

The CB complaint

In October of 2016 Mr. Maughan provided a written proposal to provide surveying services required by CB in order to purchase the original Shore Road Allowance in front of her property. Mr. Maughan provided a fee estimate of \$3,500 to \$4,000 excluding HST, and that he anticipated having his plan completed by the spring of 2017. He further advised that unforeseen complexities could affect the timing of the project and potentially increase his fees to \$5,000 or \$6,000.

Between April and December of 2017 CB contacted Mr. Maughan on several occasions to request status updates regarding the project. Mr. Maughan told CB that there had been some complexities in the retracement of the parcel's boundaries.

By December of 2017 Mr. Maughan had submitted his plan to the Land Registry Office. He then told CB that his invoice would be sent to her after he received a response from the Land Registry Office and would be around \$15,000, excluding taxes.

The Land Registry Office rejected Mr. Maughan's submission on the basis that it did not contain a supporting document of which there was only an illegible copy at that Office.

Shortly thereafter CB emailed Mr. Maughan expressing her shock at his proposed invoice, that he had not told her that his invoice would be this high, and that she wanted to discuss it with him.

Mr. Maughan took the position that CB must pay the entire amount of his invoice in order to deposit the plan. He resubmitted his plan with the illegible document.

CB then instructed Mr. Maughan that further expenditures by him were not authorized. Mr. Maughan responded, among other things, that the plan had been escalated to the Regional Surveyor, that he would do no further work until the issue of his invoice was resolved, and that further work by him might or would increase his hourly rate from \$120 to \$400 per hour.

In early February of 2018 Mr. Maughan sent an interim invoice to CB for \$15,367 including HST. CB did not pay the invoice and complained to the Association about Mr. Maughan's conduct in March of 2018.

The NM and DM complaint

In May of 2018, the Association received an official complaint from NM about the following.

In December of 2013 Mr. Maughan provided the M's with a written proposal to provide certain surveying services required in order to complete the sale of a property in DM'S father's estate. Mr. Maughan stated that he estimated his fees would be in the range of \$8,000 to \$9,000, excluding HST. The M's accepted this proposal and provided Mr. Maughan with a deposit of \$1,500.

In March of 2014 Mr. Maughan told the M's that his field work was substantially completed with some final work to be done once the ice and snow were gone and that the plan of survey would then be finalized. He included an invoice of about \$8,100 that appeared to represent the total cost of the surveying services. DM then provided payment of \$7,000, stating that any further work by Mr. Maughan would be limited to the completion of the current plan of survey.

Mr. Maughan emailed the M's twice in April of 2014 regarding water levels and potential rights of way.

In December of 2015 DM contacted Mr. Maughan to say he had some concerns that the plan was not yet registered and that he had hired a realtor who would be in touch with Mr. Maughan. Mr. Maughan responded that he would work to "wrap things up" in the next few weeks.

In April and in August of 2016 DM contacted Mr. Maughan to ask for an update on the status of the survey.

By March of 2017 the plan was still not registered although Mr. Maughan had made repeated assurances that it was about to be completed for registration.

In June of 2017 Mr. Maughan submitted his certified plan to the Land Registry Office. It was not accepted.

Between June of 2017 and May of 2018 there were ongoing communications between DM and Mr. Maughan. By May of 2018 the plan was still not registered. The M's then made a complaint to the Association. It was acknowledged at the Hearing that after the Agreed Facts were finalized, Mr. Maughan deposited the plan for the M's.

Mr. Maughan then billed the M's for \$1,697.03 for "Communications and Management" with various Land Registry staff etc, and with Mr. Maughan's MPP and for review and reconsideration of his plan as per comments from the Assistant Examiner of Surveys. He suggested the M's contact a knowledgeable solicitor and indicated that his rate for additional "high order" work would increase from \$140 per hour to \$250 per hour.

Mr. Maughan's guilty plea

Mr. Maughan pled guilty to the following allegations with respect to both complaints:

1. That he had failed to comply with the *Code of Ethics* in that he repeatedly failed to ensure that his client CB was aware of the type of surveys recommended and the nature of fees for service, contrary to Section 33(2)(e) of Regulation 1026, R.R.O. 1026, as amended (the "Regulation"). Failure to comply with the *Code of Ethics* constitutes professional misconduct within the meaning of Section 35(3) of the Regulation.
2. That he had failed to comply with the Code of Ethics in that he failed to meet the project time frame that he committed to in his original proposal to CB, failed to respond to this client's concerns in a timely manner, misrepresented the work that would be required to meet Registry Office corrections, and responded to this client in what she perceived to be an unprofessional manner, all of which is contrary to Section 33(2)(a) of the Regulation.
3. That with respect to his actions regarding both complainants he had committed acts of professional misconduct as defined in Section 35(21) of the Regulation: his actions would reasonably be regarded by members of the Association as unprofessional.

On the basis of the agreed facts the Panel accepted Mr. Maughan's guilty plea.

Penalty

As stated above, the Panel was presented with a Joint Submission on Order (the "JSO", marked as Exhibit 5) regarding the appropriate penalty to be imposed on Mr. Maughan. After considering and clarifying its terms, the Panel accepted the terms of paragraphs 1 to 8 of the JSO and imposes those terms on Mr. Maughan.

The JSO as signed by the parties, and dated June 3, 2019, is attached to this Summary as Appendix A. Reference should be made to Appendix A to identify the penalty imposed on Mr. Maughan by the Panel.

APPENDIX "A"

Ex. 5

DISCIPLINE COMMITTEE OF THE ASSOCIATION OF ONTARIO LAND SURVEYORS

BETWEEN:

ASSOCIATION OF ONTARIO LAND SURVEYORS
-and-
DAVID U MAUGHAN O.L.S.

JOINT SUBMISSION ON ORDER

The parties, after receiving legal advice from their respective counsel, agree that the order proposed below is fair and reasonable and protects the public interest and, as such, jointly submit to the Discipline Committee that it order the following:

1. The Discipline Committee orders that Mr. Maughan appear before the panel of the Discipline Committee following the hearing on June 3, 2019, to be reprimanded and that the reprimand be recorded in the register.
2. The Discipline Committee orders that Mr. Maughan's Licence and Certificate of Authorization shall be suspended for a period of twelve months from June 3, 2019, but that such suspension be deferred and will never take effect so long as Mr. Maughan complies fully with all of the provisions of this Order, failing which, the deferral of the suspension shall be revoked.
3. The Discipline Committee imposes the following terms, conditions and limitations on the licence of Mr. Maughan for a period of eighteen months commencing on June 3, 2019:
 - a. Mr. Maughan shall consistently and uncompromisingly use an approved client confirmation of scope of engagement form before undertaking a project for a client, using a form that has been approved by the Registrar of AOLS, which form shall identify the specific project or tasks to be undertaken by him, including a quote or cost estimate and also, where applicable, identifying any tasks or projects that were discussed with the client but not undertaken by him. Written direction shall also be obtained from the client each time that the scope or nature of the terms for the project are changed.
 - b. Mr. Maughan shall only practice the profession in consultation with a Monitor, who is a licenced OLS in good standing, or is a former licenced OLS who now has the designation of a retired OLS, who is accepted by the Registrar and who has signed an agreement acceptable to the Registrar, who will meet or speak with Mr. Maughan as often as they consider necessary to effectively review and Monitor the whole of Mr. Maughan's practice.
 - c. Initially the Monitor will be D.S. Urso. However, the Registrar may choose another Monitor, after consulting with Mr. Maughan, where the Registrar concludes that this would-be in the public interest.
 - d. Mr. Maughan shall cooperate fully with the Monitor (or any replacement Monitor) including participating fully in meetings or conversations with the Monitor when requested and providing information to the Monitor within 48 hours when requested.
 - e. Mr. Maughan shall make his best efforts to communicate with clients or the Land Registry Office(s) / Service Ontario in writing or confirm all material conversations with them in writing and shall provide a copy of those communications / confirmations each week to the Monitor.

cont'd on page 20

- f. Mr. Maughan shall implement any recommendations made by the Monitor.
 - g. Mr. Maughan shall make his best efforts to ensure that the appointed Monitor prepares and provides to the Registrar monthly reports of their observations and conclusions regarding the manner in which Mr. Maughan is conducting his practice and the extent of Mr. Maughan's cooperation with the Monitor. The Registrar may advise the Monitor in writing that the Monitor can reduce the frequency of the reporting by the Monitor to a frequency specified by the Registrar if the Registrar concludes monthly reports are no longer necessary to protect the public.
 - h. Mr. Maughan shall reimburse the AOLS for the cost of the Monitor within 30 days of being invoiced for them by the AOLS.
4. The Discipline Committee requires Mr. Maughan to repay the deposit fee of \$500 paid by CB by July 3, 2019. The \$500 will be paid to the Registrar who will then disburse it to CB.
 5. The Discipline Committee requires Mr. Maughan to repay the fee of \$4250 paid by the M's in equal, consecutive monthly Instalments of \$1000 beginning on July 3, 2019 and ending with the payment of the last \$250 on November 3, 2019. The \$4250 will be paid to the Registrar who will then disburse it to the M's.
 6. The Discipline Committee fixes the cost of these proceedings at \$12,000 and requires Mr. Maughan to pay them in no more than 24 equal monthly instalments of \$500 due on the 1st of each month beginning on December 15th, 2019.
 7. The Discipline Committee orders that the name of Mr. Maughan be published by the AOLS with the summary of the decision and reasons in this matter in its Ontario Surveyor Quarterly Magazine, its In Sight electronic newsletter and on the AOLS website.
 8. Mr. Maughan and the Registrar will jointly submit to the Council that Mr. Maughan should not be liable to repay any claim for additional compensation that the Council of the AOLS may agree to pay either B or M from its Compensation Fund pursuant to s. 33 of the Surveyors Act.
 9. In the event the panel of the Discipline Committee does not adopt this Joint Submission document as a basis for making its determination, finding, and disposition, the parties agree that this matter will then continue on the basis of a full hearing before a panel of the Discipline Committee on a date to be fixed by the Discipline Committee and that same shall proceed on the basis of all of the allegations set out in the Notices of Hearing dated December 21, 2018.

Dated June 3, 2019

Discipline Panel Members:

Terry Dietz (Chair) Peter Meerveld (LGA) David Wilton Doug Hunt Leslie Higginson



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AOLS Deputy Registrar brings Land Surveying to Geomatics Day

By Raquel Farrington

Mentors and mentees have spent the first few weeks of the *Helen Carswell STEAM Program for Women* (formerly known as the Summer Research & Mentorship Program) participating in a variety of hands-on workshops and seminars, professional development classes and hands-on activities.

In early July, the Deputy Registrar of the Association of Ontario Land Surveyors (AOLS), Maureen Mountjoy came out to support the STEAM program, a mentorship-based employment opportunity for local, female-identified high school students, in honour of Geomatics Day. This is the third year that the AOLS has sponsored the summer research program.

that offers a four-year Geomatics Engineering program in Ontario and is 1 of 4 in Canada. Land surveyors are in high demand, and so students are happy to find they have at least three offers of employment upon graduation.

Mountjoy's talk led participants through her storied career as an Ontario Land Surveyor (OLS), a role she is still so passionate about. Mountjoy was the first female to have graduated with a B.Sc. in Survey Science at the University of Toronto (U of T) and in 1978 she became the second female OLS to be licensed in Ontario.

"I will admit it wasn't easy being a young female surveyor in the early days of my career, but I am happy to say that after all these years, I am still excited about what I do. Personally,



A group photo of the high school students and their mentors (in the black tee shirts) was taken at the closing ceremonies. Donald Carswell and Dr. Allan Carswell are standing at the back left; in the second row, third from the left is Jane Goodyer, Dean of Lassonde School of Engineering; Maureen Mountjoy is standing in the back row at the far right.

A licensed land surveyor and advocate for women in the profession, Mountjoy gave a presentation on land surveying, her background as a surveyor and educator and offered insight into the various ways a degree in geomatics engineering, offered at Lassonde, can translate into a meaningful career.

Land surveying is a subset of Geomatics, the branch of science that deals with the collection, analysis, interpretation and management of data relating to the earth's surface. Geomatics is a powerful tool used for environmental and agricultural research, protection and management. For example, it can monitor and warn of possible drought conditions or study the spread of sickness or pollution.

The Lassonde School of Engineering is the only School

I don't think my life would have been as fulfilling if I hadn't discovered the surveying program when I was a student at U of T. My OLS designation has given me the opportunity to take on many diverse and challenging jobs and make many life-long friends."

Although more and more women have chosen to pursue land surveying as a career and made significant impact, the Association of Ontario Land Surveyors (AOLS) still ranks low in female membership, staying at about 6%.

Mountjoy hopes that by staying involved and maintaining a presence among communities in academia and industry, she will inspire more women to consider pursuing a career in land surveying.

“Whenever I get the chance to speak to female high school students and share with them how much I have enjoyed my career, I encourage them to enroll in the Geomatics program at Lassonde, which can lead them to our association upon graduation. Female land surveyors have added tremendous value to our profession. When we encourage young women to join our surveying community, we all benefit.”



Vidushi Jain (Space Engineering Graduate student), Zaria Gomes-John (high school student) and Enas Abubaker (high school student) enjoying the warm weather while on the geocaching scavenger hunt.

The Helen Carswell STEAM Program for Women offers several hands-on activities that help to bridge the gap between young women and Geomatics Engineering, including most recently, a geocaching exercise led by Assistant Professor Mojgan Jadidi. Jadidi had the participants hunting for hidden objects using GPS coordinates. The scavenger hunt was a highlight of the week for the women, with prizes for scavenger

hunt winners adding an element of friendly competition. The women were able to see the real-world application of Geomatics-based principles as they used clues and worked together to survey the area and locate the hidden items.

In addition to active involvement in surrounding Schools, the AOLS provides a myriad of funding to help support current and prospective students. The AOLS Educational Foundation, is a registered charity that presents awards to Geomatics students in several Ontario colleges and universities. At Lassonde, the Foundation grants awards totalling \$18,500. Among them are awards to female high school students entering Geomatics Engineering or female undergraduate students currently enrolled in the program who demonstrate good academic standing and leadership.



Natalie Obregon (high school student) and Megan Ally (high school student) demonstrating their circuits in the lab.

Raquel Farrington is the Communications Manager at York University's Lassonde School of Engineering. She is responsible for the strategy, creative conception and development of all communications materials to grow and share the Lassonde brand.



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Which should come first: Your RRSP or TFSA?

By Julie Brough

Today we are going to attempt to answer the age-old (or at least decade-old) question: “Which vehicle should receive priority when you are tucking away your hard-earned money for a rainy day?”

Most people will tell you to maximize both your RRSP and your TFSA but, realistically, that is not going to be possible for most people (although if you can, I strongly encourage it!). The mantra most of us grew up on was to make sure we are maximizing our RRSP contributions each and every year. But is that still the right option now that the Tax-Free Savings Account is available?

As much as I would like to give a definitive, black-and-white answer, the practical response is that it depends on your personal situation.

To begin, let’s just take a look at some basic math related to the accounts. Let’s assume that an investor has \$6,000 available to invest and is in a 30% marginal tax bracket (the rate of tax paid on the last dollar earned). Let’s also assume that the investment plan is the same whether the funds go into a TFSA or RRSP, and that the annual return will be 5%.

Scenario Assumptions:

Savings Available	\$6,000
Marginal Tax Bracket	30%
Rate of Return	5%

If the investor puts all of their money into their RRSP they will have \$6,000 in their RRSP and will receive \$1,800 as a tax refund. Let’s assume that the investor wisely deposits this tax refund into their TFSA. At the end of one year, there will be \$6,300 in their RRSP and \$1,890 in their TFSA. Now let’s have the investor withdraw those funds. After tax the investor would receive \$4,410 from the RRSP and \$1,890 from the TFSA for a total of \$6,300.

Calculations:	RRSP	TFSA	Total
Deposit	\$6,000		
Tax Savings Deposited to TFSA (\$6,000 x 30%)		\$1,800	
Investment Return	\$ 300	\$ 90	
End of Year Value	\$6,300	\$1,890	
Taxes Due on Withdrawal at 30%	(\$1,890)	\$ 0	
Net Amount Available at end of 1 year	\$4,410	\$1,890	
Combined Value			\$6,300

A second option is for the investor is to put the whole amount into their TFSA. One year later that amount would grow to \$6,300, which could be withdrawn with no tax consequences. Therefore, the investor has the same \$6,300 as in the first scenario.

Does that mean that it doesn’t matter which account you use for your savings?

The answer is no, it does still matter and there are advantages that can be gained. The key to maximizing the value of your savings potential is in the tax rate. The outcome is only equal if your marginal tax rate stays the same.

So now let’s assume our investor is age 25 and in his/her first job. There is a strong likelihood that their income will increase over time. In this case, it makes sense to prioritize the TFSA and save the RRSP contribution room until later, when their marginal tax bracket (and the associated refund) is higher and the probability of the eventual withdrawal of the funds at an equal or lower tax rate is also higher.

Moving to the opposite end of the spectrum, let’s now consider someone later in their career who is earning a high income and is the top marginal tax bracket. Assuming the intent is to use the RRSP funds in retirement, it is likely that the investor will be in a lower marginal tax bracket in the future. In this case, depositing the money into an RRSP at a higher rate and withdrawing later at a lower rate is a winning scenario.

An individual doesn’t need to be in the top marginal tax rate to make this work, they just require some degree of comfort that their marginal tax bracket will not be higher in retirement than it is currently.

But there are other considerations beyond the quantitative ones discussed already.

A TFSA is much more flexible in the short term than an RRSP. You can withdraw funds for a major purchase or an

emergency and replace the withdrawn amounts later, with the caveat that you must wait until the next calendar year to redeposit the funds. This flexibility has added value at certain stages of people’s lives.

For others, where a penny saved is a penny impatiently waiting to be spent, the flexibility of the TFSA may prove an obstacle to long-term savings.

Overall, building some balance between the TFSA and RRSP is likely

cont’d on page 26

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the best long-term scenario for most people. The goal is to find some form of equilibrium, that Goldilocks level of taxable income in retirement (not too high, not too low) that maximizes the value of your savings. A little bit of financial planning can help find that balance.

The future will never play out exactly as it does on a piece of paper, so trying to find a reasonable balance, following some of these guidelines, can work towards making your savings go farther.

- 1) Bias towards the TFSA if your income is likely to increase significantly over time.
- 2) If you require flexibility or are planning a major purchase, focus on the TFSA first.
- 3) If you are in a high marginal tax bracket or you expect your income to be notably lower later, bias towards the RRSP.
- 4) Never be afraid to ask for advice on which will be better for you.



Julie Brough, CFA, CFP is Executive Vice President and Portfolio Manager at Logan Wealth Management, an independent investment management firm offering customized portfolios to its clients. She has been working with high net worth individuals for over 20 years. Contact Julie by email at Julie.brough@loganwealth.com for further information.

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November 13, 2019

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www.gisday.com

February 24 to 27, 2020

Canadian Hydrographic Conference

Quebec City, Quebec

<http://www.chc2020.org>

February 26 to 28, 2020

128th AOLS Annual General Meeting

Huntsville, Ontario

www.aols.org

March 23 to 25, 2020

International LiDAR Mapping Forum

Washington, D.C.

<https://www.lidarmap.org>

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Amsterdam, the Netherlands

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DaaS – Geospatial Data in the Information Age

By Peter Hettstedt

By now, you've all hopefully heard the term "SaaS" or Software as a Service. This concept has been around for a decade or so and refers to a distribution model in which a third-party provider hosts applications and makes them available to customers over the Internet for a subscription fee. Google seems to be one of the standard-bearers for this type of model, but many other software providers have moved to this type of model as well, including such well-known companies as Microsoft, AutoDesk, Bentley and others. To be fair, some of these providers still offer perpetual licenses, but who among us enjoys paying annual maintenance costs to keep their software updated? One of the advantages of cloud-based software is that it will always be up-to-date.

What about "DaaS" – Data as a Service? When hearing this term, most people will think of spreadsheets or financials, but for Geospatial professionals, the term actually could encompass much more useful data for their everyday tasks. Over the past 10-15 years, advances in such fields as high-speed internet, server technology and software have democratized access to valuable geospatial data. A perfect example is digital orthophotos. This raster data can serve many purposes, from pre-planning projects and looking at them in the context of their surroundings, to layering field data over top of the imagery to provide an integrated deliverable for clients, to analyzing images of different vintages for the purposes of change detection. Often, imagery is the first base layer for such applications.

There is in fact an abundance of geospatial data that is available to professionals - Orthophotos, Satellite Imagery, DEM's, Bare-Earth LiDAR, Parcel Fabric, Road Networks, Contours and other natural features such as soil types and hydrology, and more recently 3D Buildings and other types of land classification. Coupled with a growing trend by municipalities and other levels of government to provide open data from their jurisdictions, it's easy to become overwhelmed trying to sift through what's relevant to your application.

There also exists a variety of platforms to access data. As pointed out above, many municipalities are making

data available via their websites and related portals. Unfortunately, with limited budgets, most municipal governments don't have the resources to continuously update these data sets, so they tend to be static snapshots of conditions at the time they were published. If you're inclined to use this type of data, at the very least check the published date to understand how useful it might be to your application.

There are a growing number of sites that offer data visualisation. All datasets are similarly georeferenced to allow the users to layer the data, adjusting transparency of the layers, and even turning them on/off. Many will also allow you to browse other information related to the particular geographic location selected, such as, for example, zoning regulations, postal code data, or property ownership info. Most of these types of sites are either pay as you play, or require a subscription, and tend to cater to non-geospatial users. An example of such a service is shown below. In the example, we can see imagery, 1m contours and parcel fabric data. The function buttons on the left allow users to draw, measure, annotate, query, save and print views, as well as to import csv and zipped SHP files.

Some sites also offer spot purchases of tiles or map sheets in a variety of formats, depending on the type of data. Imagery and other types of raster data can be in JPG, MrSID or GeoTIFF, while vector data is most often found in DWG, DGN or SHP formats. The appropriate format will depend on whether the data is being imported into a CAD or GIS

application. This can be a cost effective solution for occasional users who still need access to data but don't need large volumes of data that require a subscription. Tiles are typically reasonably priced and can cover areas from 0.25 km² to 4 or more km². For smaller areas of interest, it usually only requires a few tiles to obtain full coverage.

And then there are the data streaming services. These cater to clients that require higher volumes of data on a regular basis. Satellite and orthoimagery providers typically make their products accessible via a subscription-based model, supporting WMS (Web Map Services) and WMTS (Web Map

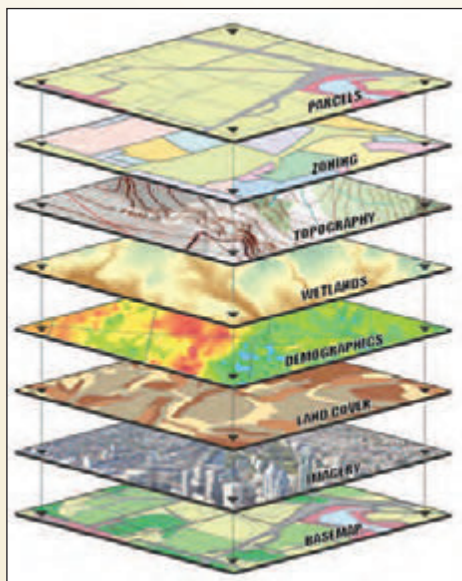


Fig. 1 Map Layers

cont'd on page 28



Fig. 2 An example of a data visualization website.

Tile Services) protocols, amongst others. This allows clients to stream georeferenced imagery directly into CAD or GIS software. Most such sites will include instructions for inexperienced users on how to import the data into their application of choice.

Subscriptions are structured according to either the number of users, the estimated bandwidth to be used on a monthly basis, or both. Access is usually governed by UserID authentication. Streaming does not permit users to save the imagery to a local computer, but rather calls the imagery from a server connection to be displayed in the application of choice. However when the application is closed, the imagery or other data is deleted and would need

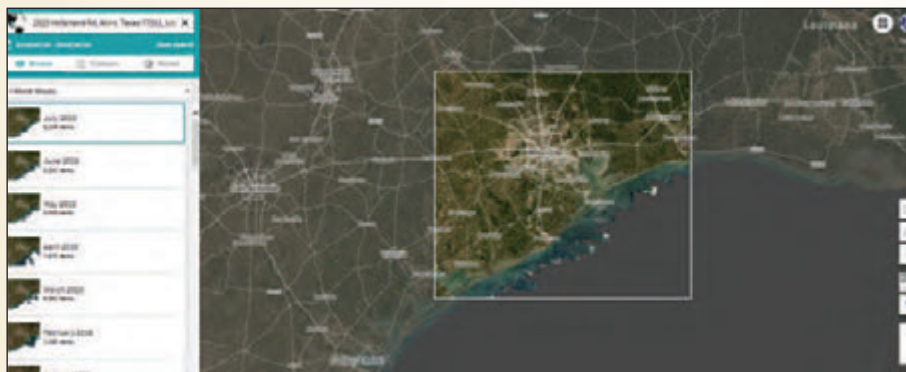


Fig. 3 Planet Explorer interface

to be recalled for the same area in subsequent sessions.

When it comes to satellite imagery, most data providers offer a platform for accessing and viewing archived data and, in some cases, enable tasking of new imagery for particular areas of interest. Both Planet and Digital Globe (now rebranded to Maxar) offer such platforms as a subscription-based service. In the example shown below, the Houston, Texas area has been selected, and the various vintages of 1-month mosaics are shown on the left-hand side of the screen. As we can see, Planet's constellation allows for frequent capture such that monthly mosaics are available for every month going back to 2016. This type of data is very useful for applications such as change detection. Planet can even image the whole earth on a daily basis, at lower resolution (3-5m). This type of resolution is less applicable for applications such as Mapping or Planning, however users who are interested in monitoring ship traffic

for example, into and out of the Port of Houston, would find this type of cadence to their benefit.

As Artificial Intelligence (AI) and Machine Learning (ML) are increasingly deployed, imagery also serves as the basis for automating feature extraction. Until relatively recently, most feature extraction was performed manually from stereo images. With the rise of AI/ML, imagery is being “fed” into AI/ML processes and used as the base data for feature extraction and

land classification. Toronto-based Ecopia is one such company. Its algorithms are extracting building footprints and impervious surfaces with better than 95% accuracy (<5% false positives or false negatives), which in turn produces vector-based content that can be further accessed by interested users.

One aspect of utilizing such data that must be taken into consideration by the user is licensing. Depending on the source of the data, licensing can vary, which in turn impacts how the data can be used. Some companies require specific, separate licenses where publication of the data is intended. These would be in addition to standard use licenses, and often involve additional costs. Other companies may merely require that their data is properly attributed when publicly displayed. And in some rare cases, no publication of data or imagery is permitted. In almost all cases, licenses allow use of the imagery by the customer, colleagues in their organization, and sub-contractors working directly for the client, provided the sub-contractor delete any such data at the termination of the contract. In the event you the reader are looking at utilizing imagery or other data, I strongly recommend familiarizing yourself with the licensing terms to avoid any unpleasant surprises.

So how do you decide what is the best option for you or your organization? Here are a couple of questions you might want to ask of yourself or your colleagues.

- Do you really need to purchase the data? Raster data can eat up memory pretty quickly – anyone who has an iCloud account can attest to this. Unless you're an imagery content provider, consider accessing it via subscription vs. buying it and having to host it internally on your computer or server.
- For imagery, do you need high resolution, or can you accomplish the same task with medium or low resolution imagery? The answer to this question will help you determine if you need orthophotos, or if satellite data can meet

your needs. In some cases, such as for our far north, only satellite data is typically available, because it's not cost effective to fly these undeveloped areas for orthophotos unless it's for specific use cases.

- Do you need to amalgamate a large number of datasets? Try to look for data providers that offer multiple types of data from one easy source. Often, these disparate datasets will be similarly georeferenced, making them easier to integrate and/or layer.

Beyond Surveying, there are many applications that would benefit from access to data, including Smart Cities and 3D City models, Real Estate, Engineering, Planning,

Transportation, Infrastructure and Utilities to name a few. There are an increasing number of sites and options available for those looking to access Geospatial data-as-a-service. And with new satellite technology and new ground-based imaging systems starting to proliferate, the amount of data and services directed at dissemination will only continue to grow.



Peter Hettstedt is the Business Development Manager for First Base Solutions. He obtained a B.Sc. in Geography from the University of Calgary in 1987 and a Certificate in Geodesy in 1988 in France. He has worked in Surveying & Mapping and spent many years in Sales & Management of Survey Technologies with both Cansel & Leica Geosystems. He can be reached by email at phettstedt@jdbarnes.com

NEWS FROM 1043

Changes to the Register

MEMBERS DECEASED

Paul A. Riddell 1236 July 30, 2019

REINSTATEMENT

Francis Lau 1914 Sept. 5, 2019

COFA REVISED

Was: Matthews, Cameron, Heywood - Kerry T. Howe Surveying Limited (a wholly owned subsidiary of J.D. Barnes Limited)

Is Now: Matthews Cameron Heywood, A Division of J.D. Barnes Limited
July 29, 2019, Niagara Falls, ON

COFA RELINQUISHED

David J. Pesce Surveying
May 31, 2019, Orangeville, ON

Dan Dolliver Surveying Inc.
July 1, 2019, Halton Hills, ON

Peter J. Mansfield, OLS
July 1, 2019, Barrie, ON

COFA CANCELLED

Exp Geomatics Inc.
July 12, 2019, Cambridge, ON

Surveyors in Transit

Katherine Sonier is no longer with **Annis O'Sullivan Vollebakk Ltd.**

McKechnie Surveying Ltd. is now located in Unit B, 85 McIntyre Dr., Kitchener, ON, N2R 1H6.

Altimap Land Surveyors Inc. has updated its phone number to 416-990-3001.

Callon Dietz Incorporated Ontario Land Surveyors has closed its Consultation Office in St. Thomas, ON and opened a new Consultation Office, by appointment only, at 1143 Wentworth Street West, Suite 205, Oshawa, ON, L1J 8PY.

McIntosh Perry Surveying Inc. now has a branch office located at 115 Walgreen Road, Ottawa, ON, K0A 1L0. **Saeid Sedaghat** is the Managing OLS.

Rodney Geyer Ontario Land Surveyor Inc. now has the field notes and records of **David J. Pesce Surveying**.

Field Notes and records for **Peter J. Mansfield, OLS** can be requested by email at mansfield.surveyors@hotmail.com

Field Notes and records for **Dolliver Surveying Inc.** are now with **Van Harten Surveying Inc.** in Guelph, ON.

Yifan Zhang is now with **WSP Geomatics Ontario Limited**, 610 Chartwell Road, Suite 300, Oakville, ON, L6J 4A9.

Gavin P.T. Seaman is now with **Callon Dietz Incorporated Ontario Land Surveyors**, 41 Adelaide Str. N., Unit # 1, London, ON, N6B 3P4.

Scott Dalziel has moved to **McIntosh Perry Surveying Inc.**, 3240 Drummond Concession 5-A, R.R. #7, Perth, ON, K7H 3C9.

Travis G. Hartwick is now with **Annis O'Sullivan Vollebakk Ltd.**, 500 - 14 Concourse Gate, Nepean, ON, K2E 7S6.

Ron Bridges is now with **Valard Construction - Geomatics Division**, 2nd Floor, 4209 99 Street, Edmonton, AB, T6E 5V7.

David Pesce is now with the **Region of Peel**, 10 Peel Centre Drive, Suite B, 4th Floor, Brampton, ON, L6T 4B9.

Peter G. Moreton is now the Managing OLS of **MTE Ontario Land Surveyors Inc.** located in Stratford, ON.

THE AOLS IS PLEASED TO ANNOUNCE THAT THE FOLLOWING ONTARIO LAND SURVEYORS WERE SWORN IN:

Tyler Allison	2053	July 26, 2019	Dmitri Elmov	2056	September 20, 2019
Tareyn Gardner	2054	August 29, 2019	Amir Keshavarz	2057	September 20, 2019
Tyler Renaud	2055	August 29, 2019			

Lessons from History

By David Coombs

Tacitus began writing his history of Rome in 105 AD and completed the work in 117. Edward Gibbon wrote *The Decline and Fall of The Roman Empire* between 1776 and 1789. I wrote *The Settlement of Dixie Lake* during the months of January to March 2012.

Historians research, analyze and come to understand aspects of the past, perhaps to appreciate how we have come to where we are today, possibly to support a theory of human behaviour and probably because it is fun.

Edwin Henry Kertland surveyed the necessary concession and "proven" lines for Radcliffe Township in 1861. (See 1918 AOLS Journal article) Dixie Lake straddles Concessions 13 and 14 stretching from lots 7 to 10. No settlement occurred near the lake in the nineteenth century.

In the early twentieth century, several folks acquired the use, if not the title to the lake front lots under *The Free Settlement Act*. This provincial legislation allowed a male, at least 18 years of age, to become an actual settler for free in return for promising to erect a habitable house at least 16 feet by 20 feet and to be an actual resident within six months of being located to the lot. He had to state that he believed the land was suitable for

settlement and cultivation and not valued chiefly for its minerals, mines or timber. The terms also said he must put at least five acres under cultivation. The located owner was assessed and paid taxes to the township. After three years and completion of the requirements, the man could apply for a patent. If, as and when the government inspected the lot and found the settler not in compliance, it could reacquire the lot. It is perhaps not surprising that by 1930 not a single dwelling was built on any lot abutting Dixie Lake, yet few lots had been reacquired. The culprits were loopholes and inspection costs.

In 1931 the located owner of Lot 8, Concession 13 built a summer house and stable. Unfortunately he built on the east side of Lot 7 which was crown land. The line between Lot 7 and Lot 8 had not been surveyed. By 1937, the nearest road, highway 62, was constructed and passed within two kilometres of Lot 8. The next year Annie Luckavitch, sister of the owner of Lot 8, and her husband Louis rented the summer house as they awaited the completion of their home on the adjacent lot. Her son Ambrose was born in January 1938 thus becoming the first person born at Dixie Lake. Annie was 28.

Annie and Louis moved into their new two storey 24 by 24

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foot home in the fall of 1938 along with their three children ages 12, 9 and 9 months. Over the course of the next nine years, Annie bore five more children, two of whom died as babies. Annie was no stranger to these tragedies. Prior to the move she had lost two other babies.

In stark contrast to the Luckavitch family, the second settler arrived at Dixie Lake in September 1945. Edward Kosobuskie acquired Lot 10, Concession 14 from a free settlement owner who had built a 12 by 24 foot summer dwelling in 1944 but had not come close to cultivating five acres. Unfortunately Lot 10, other than its eastern and northern boundary, had also not been surveyed. The summer dwelling was on Lot 9. Edward was squatting.

In 1946 the Ontario government threw in the towel and cancelled the act. It could simply not monitor the compliance issues. It offered located settlers outright ownership by paying \$1 per acre and something for the value of the forest products. Edward paid \$94 as six acres of Lot 10 were in the lake and \$84 for the timber. He was 44 and single.

I never met Edward, although I interviewed five people who had known him. While essentially a hermit, he occasionally wandered to Annie's to cut wood or hay in return for a slab of pork. He periodically walked the three kilometres to the highway and waited to see if any logging trucks passed by. If so, it meant it was not Sunday and he could walk the seven kilometres to town for supplies. He did pay children two cents for a bag of cigarette butts and five cents for a bag of tobacco with the butts removed.

Edward stayed at Dixie Lake until 1969 when, according to some sources, the crown burned his shack which was indeed on crown land. Edward's 25 year career as the hermit of Dixie Lake came to an end. He had stuck to his way of life as long as possible.

I did get to sit down with Annie in 2008 when she was 98. We sat at her kitchen table in her house on the highway. Her 51 year old grandson sat with us and as I held her hand, she spoke and he translated. Annie only spoke Polish.

She talked, with tears in her eyes, of raising a large family at Dixie Lake, the three wedding receptions and the dance platform, her flower and vegetable gardens and being the head of the household after Louis died in 1957. She held on until 1969 when, after 31 years as the matriarch of Dixie Lake, she moved closer to town. I asked for a Kleenex, told her I had lived on her land since 2004 and intended to care for it as she had done. Two years later, on her 100th birthday, I took her flowers from 'her garden'. She died the following year.

Tacitus and Gibbon learned much about human perseverance as they wrote about the trials of the Roman Empire. I appreciated the same trait.



David Coombs has a Ph.D. in Canadian history. After his retirement as a stockbroker in 2004, he began to write. His articles have appeared in The Country Connection, the Toronto Star and the Globe and Mail. He is also the author of "The Beckoning Land" which is an historical novel set in his home town of Barry's Bay during the Depression and WWII. A copy of his book is available for purchase at www.lulu.com (<https://bit.ly/2IpjDkl>)

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Survey Review Department Forum – Original Monuments in their Original Position



By Tom Packowski, O.L.S., Survey Review Department Manager

The Criminal Code of Canada RSC 1985, C-46 Part XI Sec. 442 states “Every one who wilfully pulls down, defaces, alters or removes anything planted or set up as the boundary line or part of the boundary line of land is guilty of an offence punishable on summary conviction”. Section 443 provides that a Land Surveyor may take it up and carefully replace it as it was before it was taken up. The two Sections, read together, do not empower an Ontario Land Surveyor to remove a survey monument or any other evidence that marks a boundary or corner and re-set that monument in another location.

Consider the situation where, during the course of a retracement survey you find a survey monument that is in the vicinity of a boundary or corner that, after careful and thorough analysis, is located at some location other than where you, in your opinion as a Licensed Ontario Land Surveyor, think it should be. But before you disagree with the found evidence ask yourself the following questions.

Have you done a thorough and complete search of all of the documentary evidence related to the monument that you found? If you are surveying a line, it stands to reason that you cannot answer yes to this question if you have not obtained all of the documentary evidence available from both sides of the line. The obvious places for this documentary evidence include all relevant deeds, plans and field notes available from your office and those of other Surveyors who usually practice in the area as well as through a thorough Land Registry Office search. If you have not found documentary evidence relating to the origin or provenance of, for instance, that round iron pipe found near the corner, including the method used when the monument was set, can you say you have thoroughly searched all sources?

The analysis of the evidence that is accepted or rejected in Boundaries Act hearings or Municipal Resurveys held under Part VIII of the Surveys Act are instructive. All begin with an analysis of the documented history, provenance and author of that evidence that was accepted or rejected in the course of that survey. Will your research and your documentation of the same stand up to a complete, thorough and rigorous examination by the adjudicator?

Has your field staff undertaken a thorough and extensive reconnaissance for all the available evidence both in

favour and to the contrary of your initial opinion of the location of that corner or boundary, and again, have they documented what was found as well as what was not found? Could your field notes demonstrate in a tribunal setting, as referred to in the previous paragraph, that the field staff working under your direct supervision, conducted such a thorough and complete search for evidence that a Hearing Officer or Judge would conclude that it would have been highly improbable that you, through the work of your staff, would have missed a critical piece of evidence that suddenly shows up, ten or thirty years after your original work?

Section 9 of the Surveys Act R.S.O. 1990, Chapter S.30 deals with true and unalterable lines etc. This section of the Act states “Despite section 58, every line, boundary and corner established by an original survey and shown on the original plan thereof is a true and unalterable line, boundary or corner, as the case may be, and shall be deemed to be defined by the original posts or blazed trees in the original survey thereof, whether or not the actual measurements between the original posts are the same as shown on the original plan and field notes or mentioned or expressed in any grant or other instrument...”

Has anyone relied on the position of the monument where the field crew found it, no matter whether it may have been set erroneously in the first place or not? This is a critical question that requires a well reasoned answer because it goes back to our role as Surveyors. We provide an important and valuable service to the Public. During a retracement survey we provide an expert opinion as to the location of the boundary. We take documentary and physical evidence and based on our knowledge of the appropriate legislation, regulations and common law, provide an opinion that the corner is, here.

During the subdivision of properties, we carry out the landowner’s intentions in the form of a plan of subdivision, registered under the appropriate Act. It is not our opinion that sets the boundary. It is the subsequent sanction of that intention on the part of the original grantor and grantee that sets the boundary. The issue of the subdivider’s intentions is the subject for another essay however, it is instructive to read the case commentary of *Murphy v. Longmore* summarized in Volume 7, Issue 7, July 2019 of *The Boundary Point* for further comment

on this interesting topic.

Consider a situation where a survey monument is found near the corner on a plan of subdivision but it does not quite match the plan dimensions, yet the neighbours have all seen the monument and understand it to be their shared corner. Surveyors seriously exceed their authority if they take it upon themselves to remove that survey monument and reset it where they think it should have been set if it had been set according to the plan dimensions. Not only does this not agree with the hierarchy of evidence set out in *McPherson v Cameron (1868)*, 7 NSR 208 (CA), it is also contrary to Section 9 referred to hereinabove.

This is not to say that a Surveyor can't or shouldn't reset a survey monument if it is evident that the monument has been disturbed and is no longer in its original position. Does your review of the field notes for the survey that set the monument in question support such a decision? Has your field crew taken pictures of the monument? Have you spoken to the abutting owners who may be affected by your decision?

Consider the situation where a Surveyor is required to upgrade a survey monument as required by O. Reg 525/91 Section 5 (1) (a) along the boundary of a plan of subdivision. It may be necessary to remove a survey monument,

such as a round iron bar, and replace it, in the same position, with a standard iron bar. However, it may be necessary for the Surveyor to provide assurances to the abutting owner(s) that their actions have in no way altered the location of the boundary or corner.

Even in instances where the evidence found through thorough research and extensive retracement suggests that the monument found and relied on by one of the affected landowners is not an original monument in its original position, it may still be necessary to go through a legislated process such as a Boundaries Act hearing or an application under Section 48 of the *Surveys Act*. Even in these two examples and after a robust examination of all of the evidence in a Public hearing, any decision where the boundary is located, and any instruction to remove survey evidence or supposed survey evidence, would itself be subject to an appeal to the Court under Section 12 of the *Boundaries Act* or Section 49 of the *Surveys Act*.

In conclusion, it is contrary to the Criminal Code to remove another surveyor's bar to plant your own in some other location. In addition, there can only be one corner. It does not serve the public interest if there are two (or more) survey monuments planted in close proximity to the corner of the boundary.



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EDUCATIONAL FOUNDATION NEWS

Congratulations to more of our Educational Foundation Award Winners

York University – Lassonde School of Engineering – The recipient of one of the two **Women in Geomatics Entrance Awards** for Fall 2018 was **Karrie Willis**, who achieved good academic standing in her final year of high school and demonstrated leadership qualities. **Evan Rueb** was the recipient of the **Hubert J. Reinthaler Award** for 2018. He was chosen from one of the four recipients of the Aggregate GPA Geomatics Engineering Awards for his combination of high academic standing and evident characteristics of enthusiasm, leadership and professionalism.

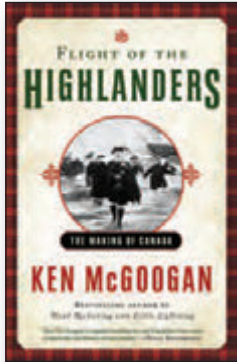
November 1st – Time to “Invest in the Future” and join or renew your membership

This past year, through the generosity of donors and members, the Educational Foundation awarded a total of \$50,000 to students in Geomatics programs at Ryerson University, University of Waterloo, York University, Fanshawe College, Fleming College, Loyalist College and new this fall, the University of Toronto. To continue to offer these awards and attract promising new surveyors, we need your support. If you ask, “Are these awards making a difference for our Association?” The answer is “Yes!” The number of award winners who have become Ontario Land Surveyors has increased to 97 and 18 of our current articling students are award winners. Please “invest in our future” and consider making a donation to the Educational Foundation.

The Educational Foundation would like to recognize with thanks a donation made in the memory of Paul Riddell.

BOOK REVIEWS

Flight of the Highlanders The Making of Canada



Published by Patrick Crean Editions, an imprint of HarperCollins Publishers Ltd.
ISBN 978-1-4434-5259-5

By Ken McGoogan

After decimating the Scottish Highlanders at the 1746 Battle of Culloden, the British government banned kilts and bagpipes and set out to destroy a clan system that for centuries had sustained a culture, a language and a unique way of life. The Clearances, or forcible evictions, began when landlords – among them traitorous clan chieftains – realized they could dramatically increase their incomes by driving out tenant farmers and dedicating their estates to sheep.

Flight of the Highlanders intertwines two main narratives. The first is the Clearances themselves, during which some 200,000 Highlanders were driven – some of them burned out, others beaten uncon-

scious – from lands occupied by their forefathers for hundreds of years. The second story focuses on resettlement. The refugees, frequently misled by false promises, battled impossible conditions wherever they arrived, from the forests of Nova Scotia to the wintry barrens of northern Manitoba.

Between the 1770s and 1880s, tens of thousands of dispossessed and destitute Highlanders crossed the Atlantic. Those who survived the crossing became Canada's first refugees – prototypes for the refugees we see arriving today from around the world.

Information taken from the back cover.

The North-West is our Mother The Story of Louis Riel's People, The Métis Nation

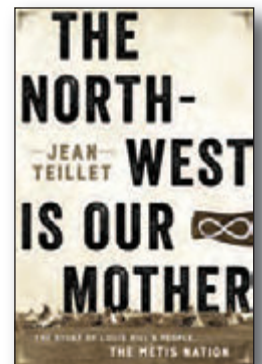
By Jean Teillet

The Métis Nation didn't just drift slowly into the Canadian consciousness in the early 1800s; it burst onto the scene fully formed. The Métis people were flamboyant, defiant, loud and definitely not noble savages. They were nomads with a very different way of being in the world – always on the move, very much in the moment, passionate and fierce. They were romantics and visionaries with big dreams. They fought continuously – for recognition, their lands, rights and freedom. In 1870 and 1885, they fought back when Canada took their lands. Led by the iconic Louis Riel, the Métis' acts of resistance became

defining moments in Canadian history with implications that reverberate to this day: Western alienation, Indigenous rights and the French/English divide.

After their defeat at the Battle of Batoche in 1885, the Métis lived in hiding for twenty years. But early in the twentieth century, the Métis Nation determined to hide no more and began a long, successful fight back into the Canadian consciousness. The Métis Nation is now recognized in Canada as a distinct Indigenous nation.

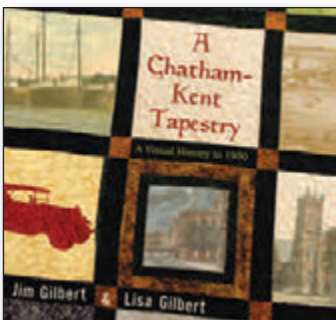
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A Chatham-Kent Tapestry: A Visual History to 1950

By Jim Gilbert and Lisa Gilbert



Published by Biblioasis
ISBN 978-1-77196-300-8

Like the pieces of a patchwork quilt, Kent County's ten townships, together with the city of Chatham, make up the richly-varied municipality we know today as Chatham-Kent. Beginning with records preserved from the mid-19th century, *A Chatham-Kent Tapestry* carefully curates photographs from the Chatham-Kent Museum and other community archive collections, as well as surviving negatives from the *Chatham Daily News*, to tell the remarkable story of one of the oldest communities in Upper Canada.

From early waterway settlements to the arrival of railroads that stitched communities together,

to the sugar beet fields and swaths of corn and wheat, the sugar factories and glassworks, to the rise of the oil, gas, and automotive industries, this evocative collection lovingly honours the parts that form the whole, weaving together the varied identities of Chatham-Kent's communities and the history that they share. Meticulously researched and handsomely designed, *A Chatham-Kent Tapestry: A Visual History to 1950* is an indispensable book for all who call the municipality home, and for lovers of local history everywhere.

Information taken from the back cover.

The Last Word

Celebrating 100 years of Survey Camp at Gull Lake

In January 2014, former Erindale College Professor, Robert C. Gunn, OLS (Ret) published a manuscript: *A Brief Historical Review of Surveying Programs at the University of Toronto, 1888 to 1997*. A copy can be found in the AOLS Library. The historical information is sourced from his manuscript.

In the late 1800's, during the age of railway building throughout Canada, there was a great demand for the services of surveyors, however, this new field of expertise was not being addressed in the instruction of surveying in engineering programs. In December 1888, Louis Beaufort Stewart, DTS, OLS (<https://www.aols.org/sites/default/files/Stewart-L.B.pdf>) was appointed Lecturer in Surveying at the School of Practical Science, which in 1906 became the University of Toronto's Faculty of Applied Science and Engineering.

With the construction of many new buildings, the campus was becoming unsuitable for surveying field courses. In 1917, the Board of Governors authorized Professor Stewart to find land to be used for these field courses. A parcel of land on Gull Lake, south of Minden, was purchased and the Gull Lake Survey Camp was established in 1920. The Camp was six weeks in duration and addressed all areas of practical surveying.

The surveying programs at U of T were very significant for the AOLS, twenty-five presidents of the Association and more than 130 Ontario Land Surveyors, including Oscar J. Marshall, OLS (<https://www.aols.org/sites/default/files/Marshall-O.C.J.pdf>), studied under L.B. Stewart until his retirement in 1932. From 1949 to 1969, fifteen more OLSs graduated from the Survey



Student graffiti adorns the ceiling of the main bunkhouse.

Option Program created by O.J. Marshall. Marshall was also instrumental in establishing the Survey Science Program at Erindale College which ran from 1971 to 1997.

Even though the surveying programs at U of T did not survive, the importance of Gull Lake Survey Camp for Civil and Mineral Engineering students has not been lost. It still remains as the perfect setting to learn the practical aspects of surveying and work together as a team. Many of the alumni who attended the 100th Anniversary Celebration of Survey Camp had fond memories and stories to share. Here's to the next 100 years, and more.

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