



**INTERMAP TECHNOLOGIES CORPORATION**  
**ANNUAL INFORMATION FORM**  
**YEAR ENDED DECEMBER 31, 2018**

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## FORWARD-LOOKING STATEMENTS

In the interest of providing the shareholders and potential investors of Intermap Technologies<sup>®</sup> Corporation (“Intermap” or the “Company”) with information about the Company and its subsidiaries, including management’s assessment of Intermap’s<sup>®</sup> and its subsidiaries’ future plans and operations, certain information provided in this Annual Information Form (AIF) constitutes forward-looking statements or information (collectively, “forward-looking statements”). Forward-looking statements are typically identified by words such as “may”, “will”, “should”, “could”, “anticipate,” “expect,” “project,” “estimate,” “forecast,” “plan,” “intend,” “target,” “believe,” and similar expressions suggesting future outcomes, and includes statements that actions, events, or conditions “may”, “would”, “could”, or “will” be taken or occur in the future. These forward-looking statements may be based on assumptions that the Company believes to be reasonable based on the information available on the date such statements are made, such statements are not guarantees of future performance and readers are cautioned against placing undue reliance on forward-looking statements. By their nature, these statements involve a variety of assumptions, known and unknown risks and uncertainties, and other factors which may cause actual results, levels of activity, and achievements to differ materially from those expressed or implied by such statements. The forward-looking information contained in this AIF is based on certain assumptions and analysis by management of the Company in light of its experience and perception of historical trends, current conditions and expected future development and other factors that it believes are appropriate.

The material factors and assumptions used to develop the forward-looking statements herein include, but are not limited to, the following: (i) there will be adequate liquidity available to the Company to carry out its operations; (ii) payments on material contracts will occur with a reasonable period of time after contract completion; (iii) the continued sales success of Intermap’s products and services; (iv) the continued success of business development activities; (v) there will be no significant delays in the development and commercialization of the Company’s products; (vi) the Company will continue to maintain sufficient and effective production and software development capabilities to compete on the attributes and cost of its products; (vii) there will be no significant reduction in the availability of qualified and cost-effective human resources; (viii) the continued existence and productivity of subsidiary operations; (ix) demand for geospatial related products and services will continue to grow in the foreseeable future; (x) there will be no significant barriers to the integration of the Company’s products and services into customers’ applications; (xi) the Company will be able to maintain compliance with applicable contractual and regulatory obligations and requirements, and (xii) superior technologies/products do not develop that would render the Company’s current product offerings obsolete.

Intermap’s forward-looking statements are subject to risks and uncertainties pertaining to, among other things, cash available to fund operations, availability of capital, revenue fluctuations, nature of government contracts, economic conditions, loss of key customers, retention and availability of executive talent, competing technologies, common share price volatility, loss of proprietary information, software functionality, internet and system infrastructure functionality, information technology security, breakdown of strategic alliances, and international and political considerations, including but not limited to those risks and uncertainties discussed under the heading “Risk Factors” in this AIF and the Company’s other filings with securities regulators. The impact of any one risk, uncertainty, or factor on a particular forward-looking statement is not determinable with certainty as these are interdependent, and the Company’s future course of action depends on Management’s assessment of all information available at the relevant time. Except to the extent required by law, the

Company assumes no obligation to publicly update or revise any forward-looking statements made in this AIF, whether as a result of new information, future events, or otherwise. All subsequent forward-looking statements, whether written or oral, attributable to the Company or persons acting on the Company’s behalf, are expressly qualified in their entirety by these cautionary statements.

**UNLESS OTHERWISE NOTED, ALL DOLLAR OR “\$” REFERENCES IN THIS AIF ARE EXPRESSED IN UNITED STATES DOLLARS.**

**CORPORATE STRUCTURE**

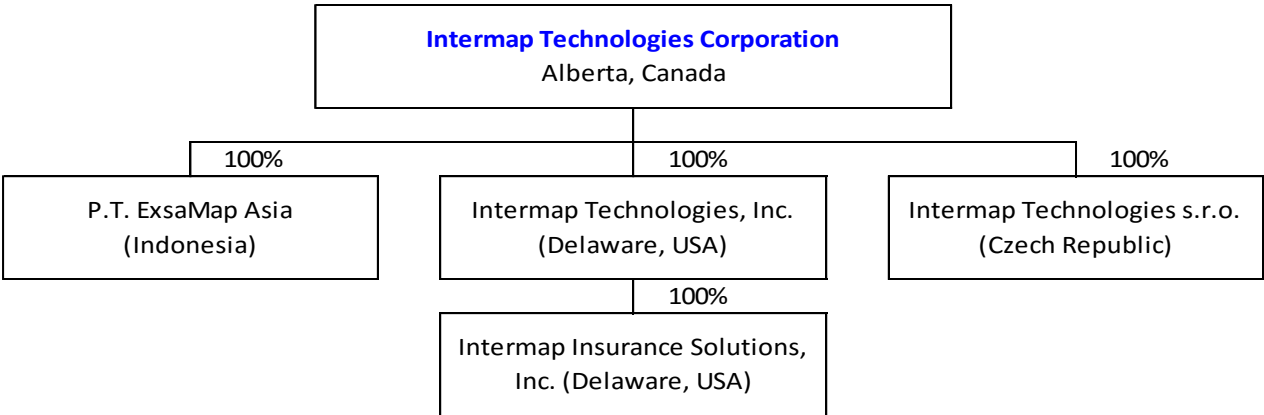
Intermap Technologies Corporation (“Intermap” or the “Company”) was formed through the issuance of a Certificate of Amalgamation under the *Business Corporations Act* (Alberta) on February 25, 1997, as Intermap Technologies Limited. The Company changed its name to Intermap Technologies Corporation and consolidated its Class A Common shares (the “Shares” or “Common Shares”) on a 12.5-to-one basis by Articles of Amendment filed on May 25, 1999.

The head office of Intermap is located at 8310 South Valley Highway, Suite 400, Englewood, Colorado, USA 80112. Its registered office is located at 400, 3rd Avenue SW, Suite 3700, Calgary, Alberta, Canada T2P 4H2.

Intermap has four active, wholly-owned subsidiaries: Intermap Technologies, Inc. (Intermap U.S.A.), a corporation formed under the laws of Delaware, with its head office located in Englewood, Colorado; Intermap Technologies s.r.o. (Intermap s.r.o.), a corporation formed under the laws of the Czech Republic with its head office located in Prague, Czech Republic; , P.T. ExsaMap Asia, formed under the laws of the Republic of Indonesia; and, Intermap Insurance Solutions Inc., a corporation formed under the laws of Delaware and a wholly owned subsidiary of Intermap U.S.A.

Intermap U.S.A. satisfies a United States federal government requirement that a United States entity own certain of the technologies used by Intermap. Intermap s.r.o. provides software development services for the Company. P.T. ExsaMap Asia provides geospatial data processing services primarily for the Company’s mapping services operations. Intermap Insurance Solutions Inc. provides software and services to the global insurance sector. The Company actively conducts business through Intermap, Intermap U.S.A., Intermap s.r.o, P.T. ExsaMap Asia and Intermap Insurance Solutions Inc.

The following chart illustrates the structure of the Company’s subsidiaries and percentage of ownership.



## **GENERAL DEVELOPMENT OF THE BUSINESS**

### **General History**

Intermap was formed on January 31, 1996 and commenced active business operations on September 1, 1996. On November 11, 1996, the Company acquired all of the assets that had comprised the image mapping services division of Intera Information Technologies Corporation (IITC), a company which traces its history operating mapping aircraft for the US Army back to 1919. On February 25, 1997, Intermap amalgamated with a junior capital pool corporation (effectively a publicly listed shell company) listed on the Alberta Stock Exchange (now the TSX Venture Exchange).

The assets acquired from IITC included cash and cash equivalents, employees, contracts, software, equipment, and goodwill. On November 11, 1996, under a Transfer, Assignment, and License Agreement (the ERIM Agreement) among Intermap, Environmental Research Institute of Michigan (ERIM), and Intermap U.S.A., Intermap acquired the rights to certain International Traffic in Arms Regulations (ITAR) restricted digital mapping technology developed by the Defense Advanced Research Projects Agency (DARPA).

Today, Intermap generates revenue from three sources: geospatial data collection and production, value-added data licensing, and related downstream software solutions and services. The software solutions are augmented by Intermap's proprietary data collection, processing infrastructure, and archive library.

### **2016**

In 2016, Intermap announced the release of a new version of its InsitePro software to include risk scoring functionality. This risk scoring allows users to combine flood and other perils, along with Intermap's proprietary terrain data and the users' own information, such as claims history and accumulation, to deliver location-specific scores that are based on the best information available. Insurers who underwrite flood can combine multiple flood models with heights above river levels together with their own loss histories to create a single score based on the most relevant and complete information available to them. InsitePro began to gain market share, including subscriptions by underwriters associated with Lloyd's of London.

In December 2016, Intermap announced that it had completed a debt restructuring with Vertex One Asset Management, its sole creditor. Under the terms of the agreement, Vertex extended the maturity date of its July 2016 and September 2016 notes to September 2020, and eliminated the related interest charges. In addition, the terms of the February 2015 17.5% of net revenues Royalty Agreement were canceled and any related obligation was eliminated. In addition, Intermap announced it had received a \$6.0 million bridge loan from Vertex to be repaid with the proceeds of an equity rights offering (Rights Offering), completed during the first quarter of 2017.

### **2017**

In January 2017, the Company announced it entered into a contract to upgrade its multi-frequency radar system, to support the execution of an acquisition services contract in South East Asia. The upgraded radar technology allows for remote sensing to produce imagery and elevation products in areas where competing optical technologies are often inadequate, in cloud covered geographies.

On March 31, 2017, Intermap completed the previously announced Rights Offering, raising total gross proceeds of \$2.9 million. The proceeds of the Rights Offering were used to repay the \$6.0 million bridge loan from Vertex, and the balance of \$3.1 million was converted to a non-interest-bearing term loan, due September 1, 2020.

## **2018**

During 2018, the Company released its NEXTMap One™ terrain dataset. NEXTMap One offers precision, 3D geospatial data at an unprecedented 1-m resolution anywhere in the world, is produced using Intermap's patented Intelligent Resolution Improvement System (IRIS™). By combining the best features from multiple sensors, IRIS generates a seamless global dataset that is both highly accurate and spatially rich. Intermap uses high resolution satellite imagery along with multi-band radar, LiDAR and other datasets to produce NEXTMap One. This blend of data produces very high vertical accuracy of up to 1m (LE90), enabling new applications at a very affordable price. NEXTMap One is designed for continuous and real-time updates, with planned yearly data updates. The launch of NEXTMap One represents a significant technological advancement in global elevation data production. At the end of 2018, the Company announced a business agreement with Lufthansa Systems GmbH & Co KG ("Lufthansa Systems"), where the companies will jointly bring to market the world's first high resolution geospatial terrain dataset, called Lido/SurfaceData NEXTView ("NEXTView"), targeted at multiple aviation specific use cases. Using proprietary information from each company, NEXTView improves and enriches installed applications for air safety, flight planning logistics, situational awareness, training, and emergency response, among other solutions, for both commercial and government customers.

## **DESCRIPTION OF THE BUSINESS**

### **General Overview**

Intermap is a global geospatial information company, creating a wide variety of geospatial solutions and analytics for its customers. These geospatial solutions can be used in a wide range of applications including, but not limited to, location-based information, risk assessment, geographic information systems, engineering, utilities, global positioning systems maps, oil and gas, renewable energy, hydrology, environmental planning, land management, wireless communications, transportation, outdoor advertising, and 3D visualization. Intermap has three core sources of revenue: geospatial data acquisition and production, value-added data licensing, and software solutions and services.

Intermap creates geospatial datasets, including elevation models and imagery, using its' proprietary radar technology mounted in a Learjet aircraft. The Company has two radar-equipped aircraft, which provide operational flexibility related to geographical location of data collection. Intermap's radar-based technology allows it to collect data at any time of the day, including through cloud cover or darkness, which are conditions that limit most other competitive technologies. The radar technology also enables data to be collected over larger areas, at higher collection speeds, and at accuracy levels that are difficult to achieve with competitive systems. Once the raw digital data is collected, it is then processed to create three different geospatial datasets: digital surface models, digital terrain models, and orthorectified radar images (similar to a black-and-white photo). All of the Company's data acquisition and production is controlled and managed through Intermap's ISO 9001:2000 quality management system.

Unlike other geospatial companies, Intermap often retains ownership of its data and generates further revenue by licensing the use of its geospatial products, including with added value for specific

applications. Intermap is striving to become the premier worldwide provider of geospatial data solutions, and currently offers 3D geospatial data for the entire globe.

Intermap uses its proprietary NEXTMap® database, together with third party data, to create geospatial solutions for its customers. The NEXTMap database an aggregated dataset of IFSAR-derived data and third-party data collected by multiple sensor technologies, including light detection and ranging (LiDAR), photogrammetry, satellite, and other available sources. The NEXTMap database also includes information such as 3D city models, census data, weather related hazards, points of interest, cellular towers, flood models and wildfire models. The Company has many years of experience aggregating and maintaining data derived from a number of different sensor technologies and data sources.

Intermap uses its NEXTMap database to build solutions for specific vertical markets, where the end user needs answers related to their business, rather than geospatial data. Insurance is the first vertical market in which Intermap has generated measurable revenue from software and solutions. InsitePro is insurance underwriting software offered to evaluate risk, and is gaining market share in North America, while Intermap's Czech office generates revenue with software and services to the entire national insurance market in that country. With the launch of NEXTView in the aviation market the Company is targeting multiple aviation specific use cases to improves and enrich installed applications for air safety, flight planning logistics, situational awareness, training, and emergency response, among other solutions, for both commercial and government customers.

## **Summary of Products and Services**

### **Data Acquisition and Production**

Since Intermap's inception, this has been the Company's core source of revenue. Work is project-based, typically with sovereign clients, and each project is tailored to the specific needs of the client. Intermap's aircraft can operate around the world, and with the support of local partnerships, the Company has never failed to deliver on a data acquisition project.

### **Value-added Data Licenses**

The Company creates high-resolution geospatial data acquired directly using its own radar sensor IFSAR equipped aircraft. While the system is capable of higher resolution the standard product has a ground sampling distance of five meters and is the highest resolution and quality level of data produced by the Company included in its geospatial database. The digital elevation models created from this radar sensor have a five-meter posting and vertical accuracy of up to 50 cm in unobstructed regions with slopes less than 10 degrees. The image created from the radar sensor has been corrected to remove geometric distortions caused by the terrain and has a 0.625 meter resolution and horizontal accuracy of 1.5 meters.

Intermap's radar sensor systems create three core digital map products as follows:

**Digital Surface Model (DSM):** a digital elevation model that measures the top surface of the earth and objects located on it. The DSM is derived from the radar hitting the top of objects or the "first-reflective-surface." The DSM data includes vegetation, buildings, roads, and natural terrain features. Examples of DSM-related applications include line-of-sight calculations for cell tower placement, property development analysis, and military operations support. A DSM can also be used as a comparatively inexpensive means to improve the accuracy of cartographic products such as topographic line maps and road maps.

**Digital Terrain Model (DTM):** a topographic model of the “bare earth.” A DTM is a DSM that has had vegetation, buildings, and other cultural features digitally removed, leaving just the underlying terrain. This is achieved using Intermap’s proprietary software tools that create terrain elevations based on measurements of the ground contained in the original radar data. A DTM provides a geometrically correct reference frame over which other data layers, such as aerial photography and other types of images, can be draped. The DTM, coupled with surface analysis tools, supports applications such as the development of accurate topographic maps. The DTM is also a valuable component in analysis involving various terrain characteristics such as profile, cross-section, line-of-sight, aspect, and slope. Examples of DTM-related applications include flood modeling, agricultural land analysis, recreational GPS applications, Internet mapping, optical image orthorectification and automotive applications.

**Multi-Frequency Orthorectified Radar Imagery (ORI):** The system produces 5 image layers: four P-band polarimetric images which provide information on infrastructure, including infrastructure under vegetative cover and one X-band image. The X-band image is a grayscale image of the earth's surface that looks similar to a black-and-white photograph. The ORI are derived from the intensity of the radar wave that is rebounded from the earth’s surface back to the IFSAR radar system. The radar imagery is then processed using the DSM to remove the distortions that are inherent with any image collection process. This rectification process results in each pixel in the image being located in its correct geometric position. The ORI is typically used as the basis for extracting terrain features such as roads, trees, and buildings and for other mapping applications such as topographic line maps.

Intermap’s production and editing capabilities create the following digital products in areas the radar sensor has not collected data:

**World 30:** This product is part of the Company’s geospatial database and provides seamless, surface elevation data with a 30-meter ground sampling distance affording more efficient geospatial analyses, especially in the cloud belt, and in the developing nations of the world. World 30 data was made available for the entire world in June 2012 and World 30 v2.0 was made available in August 2013. During 2015, the Company released v3.0 of this product. This latest version includes improved ICESat Filtering and newly developed Terrain Filter specifically engineered for high-amplitude noise reduction. The ICESat points are used to normalize all component datasets before fusion into the World 30 product. This allows for better control of the land and water boundaries, which can lead to improved coastal behavior and improved accuracies. Terrain Filter improves high-latitude regions of the dataset. The product has an accuracy starting at 5 vertical meters, and the Company believes the application can be used in industries such as telecommunications, forest management, aviation, engineering, energy exploration, environmental management, public works design, firefighting, geology, and city planning.

**World 10:** This product is part of the Company’s geospatial database and provides seamless, surface elevation data with a 10-meter ground sampling distance affording more efficient geospatial analyses throughout the world. World 10 data was made available for the entire world in June 2015. The dataset has increased spatial content and improved coastal regions over SRTM, not to mention improved polar-regions over World 30. World 10 is also available as a Digital Terrain Model (DTM) over much of Canada, or as a custom order for other areas around the world. The product has an accuracy starting at 5 vertical meters, and the Company believes the application can be used in preliminary work in industries such as telecommunications, forest management, aviation, engineering, energy exploration, environmental management, public works design, firefighting, geology, and city planning.



**NEXTMap One:** Precision, 3D geospatial data at an unprecedented 1-m resolution, produced using Intermap's patented Intelligent Resolution Improvement System (IRIS™) . By combining the best features from multiple sensors, IRIS generates a seamless global dataset that is both highly accurate and spatially rich. Intermap uses high resolution satellite imagery along with multi-band radar, LiDAR and other datasets to produce NEXTMap One. This blend of data produces very high vertical accuracy of up to 1m (LE90), enabling new applications at a very affordable price. NEXTMap One is designed for continuous and real-time updates, with planned yearly data updates.

Using the above core products as foundation elements, Intermap produces additional mapping and image products for its customers tailored to customer-specific accuracy requirements, file formats, and coordinate systems. These products include:

**Custom contours:** enable the end user to perform profile analyses, elevation identification, slope modeling, or to create detailed maps. Because these contours are based on the Company's geospatial database DTM, the Company is able to offer higher accuracy digital map products than traditional publicly available products.

**Terrain-derived hydrology datasets:** provide water bodies and double line drainages. With this dataset, the end user can perform more accurate stream flow and soil erosion analyses, and snowmelt runoff predictions.

**Terrain-derived coastline datasets:** represent coastal boundaries in the end users' area of interest. The end user can use it in coastal GIS applications for more efficient and correct analyses.

**Slope maps:** represent the terrain's degree of slope. This is useful for quick and effective slope analyses of the terrain.

**Aspect maps:** display the cardinal direction of the slope for effective terrain analyses. The aspect helps define the amount of sunlight striking the surface of the terrain.

**Hillshade images:** provide the end user with a more accurate and clearer visualization of the topography. It is well suited for hiking applications, site planning, presentations, and plotting.

**Contours:** provide high quality contour layers as a visual aid to performing profile analysis, elevation identification, slope indication, or to create detailed maps.

**Clutter:** includes both Clutter Type and Clutter Height provided for all vegetation and urban clutter classes.

**Land cover:** provides a colorized land classification overlay that identifies and classifies the context of the urban footprint, open land, and forest cover.

Intermap's data is licensed to clients for tightly defined end uses, or to value-added resellers to create and commercialize derivative products.

**Data Fusion Services:** While customers view the access to data as a corporate information technologies requirement, the maintenance and consistency of data is often overlooked as these activities are considered on a project basis. To address this gap, the Company has developed elevation data fusion techniques that are unique in their ability to model systematic errors present in the

individual datasets prior to merging/aggregation. This technique can be used to improve the combining of any elevation data. It is particularly effective when higher resolution data, such as LiDAR, is integrated into the Company's consistent geospatial database removing any calibration errors, bias and planar tilts where needed, further increasing the overall accuracy of the data. The combined improvements are applied to the full resolution LiDAR data, unlocking its full potential for government and large geospatial users. The enhanced LiDAR data may also be combined through fusion with the Company's geospatial digital elevation models resulting in a consistent dataset through the incorporation of all available third-party data into the geospatial base layer. In a similar manner, building models can be fused into the geospatial dataset, further increasing value in large urban centers where radar is known to provide a less than optimal solution.

The Company believes that government and resource geospatial data managers have access to significant quantities of elevation data. Unfortunately, these datasets have often been collected with many different technologies, project specifications, and quality control parameters. This information, when viewed in total, can be inconsistent. As a result, it is difficult to implement key applications requiring seamless integration of multiple datasets, either due to the size of the region of interest, or analysis of temporal variation. The seamless elevation dataset that is created with the Company's data fusion services can be ideal for maximizing investment in LiDAR, photogrammetric-derived elevation models, or geospatial data, and filling gaps in areas where available data is limited. Intermap introduced this service in 2014 and performs these services on a relatively frequent basis for its customers.

### **Software and Solutions**

**InsitePro:** The Company's only pure software product, InsitePro is configurable insurance underwriting software. The application calculates location-specific risk by combining the Company's geospatial datasets with third-party and public information to create accurate and dependable risk assessments for natural catastrophe risk. InsitePro delivers risk information derived from complex risk models and datasets in a clear visual environment, in terms that fit seamlessly with a client's business and workflow. Clients can evaluate single locations or large portfolios of locations quickly and easily. InsitePro is gaining market share in the United States insurance market with underwriters and carriers who are insuring flood. With changes to the National Flood Insurance Program, it is expected that demand for risk assessment solutions that can support flood underwriting will increase significantly. Beyond the United States, InsitePro is also gaining market share in Canada.

InsitePro is sold directly to clients as pre-paid annual subscriptions.

**Insurance Services:** Intermap's Czech office has been the principle source of flood risk data, models, and software for the Czech insurance industry for over a decade. With a continuing relationship with the national insurance association (CAP), over 80% of flood underwriters in the country use Intermap's products and services. Intermap also serves the Slovak insurance industry, with 80% market share.

Revenue is realized on a contract basis supporting clients with the services they need.

**NEXTView:** The Company's high-quality configurable data solution serves various aviation markets, including avionics, drone and government regulatory agencies. The solution combines information and data from both Intermap and Lufthansa Systems to deliver superior terrain and obstacle awareness that improves airborne safety and efficiency. The partnership with Lufthansa Systems enables the solution to be certified for avionic applications. This certification is a significant barrier to entry into

the aviation market. Lufthansa currently serves a large market share of avionics manufacturers and airlines, and NEXTView will have a clear path to market through that existing customer base.

### **Business Model and Revenue**

Intermap's foundational assets and core capabilities provide a competitive advantage. Any future competitors hoping to offer geospatial solutions on the same basis as Intermap will likely be faced with prohibitive capital costs and a lower probability of success, as they will be competing for customers who are able to purchase products and services with immediate availability from Intermap. Additionally, competitors' software products will not have access to Intermap's entire proprietary geospatial database. The large scale proprietary digital terrain data found in the Company's geospatial database uniquely permits other smaller scale datasets, such as those derived from LiDAR, which are often incompatible, to be reconciled with each other and integrated into a larger whole. The Company's geospatial database provides the consistent "base" for such enhanced data sets.

Intermap operates in one industry segment, digital mapping and related services, with three different classifications of revenue: Acquisition Services (fee-for-service contracts), Value-added Data Licenses (geospatial database licensing), and Software and Solutions.

#### **Geospatial Data Acquisition and Production Services**

The Company's mapping services business typically involves a client requesting imagery and/or a digital elevation model for a specific area and purpose. Intermap provides such data on a fee-for-service contract basis and then typically licenses the use of the data and/or digital maps to the customer. These custom mapping services projects have traditionally been conducted as a result of government or commercial contracts. With the Company's data fusion technologies, the offerings are being expanded to include data integration and maintenance programs for its existing project clients. From time-to-time, the Company also collects data on a speculative basis, that is, without a contract in place for the collection or licensing of the data to be collected. Prior to the start of any speculative collection, the Company typically receives an expression of interest in all or part of the data from one or more customers, which may include indications of the price that the customer may be prepared to pay and the estimated timing before a commitment to purchase the data could be made. Project-specific contractual data acquisition and speculative data sales have historically generated significant revenues and margins for the Company, however they are unpredictable in timing and value, thus creating sources of revenue and margins that can vary significantly on a quarter-to-quarter and year-over-year basis. See "Risk Factors – Revenue Fluctuations and Speculative Data Collection."

#### **Value-added Data Licenses**

Intermap is creating and updating a worldwide database of location-based information which can be licensed to a broad group of customers as raw data. Whenever possible, Intermap adds value to the data to maximize the revenue from the license and the usefulness for the client while establishing continued annual revenue for the duration of the client's use of the value-add data.

#### **Software and Solutions**

Intermap's software product (InsitePro) is licensed with pre-paid annual subscriptions which generate recurring predictable revenue. Services are delivered on a contract-by-contract basis, to best support clients and produce predictable revenue.

NEXTView will be licensed based on the use case. Avionics licenses will be long term subscriptions based upon the number of avionics units installed in aircraft. Drone applications will be annual subscriptions based upon the nature of the business and number of drones. Government aviation authorities will purchase long-term or perpetual licenses, with maintenance and updates sold in subsequent years.

### Revenues by Product Category

The Company recorded revenues for the following categories of products and services during the two most recently completed financial years:

(in thousands)	2018	2017
Acquisition Services	\$8,699	\$14,926
Value added Data	4,735	2,837
Software and Solutions	2,386	1,541
	<b>\$15,820</b>	<b>\$19,304</b>

### Pricing

Pricing for mapping services varies by customer, location, and their individual requirements. The project price under a contract is typically negotiated with the customer as a function of the area requested, its location, terrain characteristics, and the type of license requested.

The Company's value-added data pricing is dependent on accuracy and includes set pricing per km<sup>2</sup> with discounts for increasingly larger contiguous areas purchased. The Company is planning on the continuous update of its 3D terrain database with new types of data from multiple sources, both internally and externally generated. The access to this updated data is expected to be primarily via maintenance fees charged to participating customers.

The Company's software and solutions pricing includes annual pre-paid subscriptions, and one-time purchases of enterprise level licenses, per-user, per-click and for specific functionality development (services).

### Principal Markets

#### Market Overview

Intermap believes that several markets requiring reliable location-based information and 3D terrain data exist as follows:

#### Government Agencies

A large portion of Intermap's historical revenue has come from government contracts with national mapping agencies. The Company is a leading commercial supplier of imagery, DSMs and DTMs to United States federal agencies, including the National Geospatial Intelligence Agency (NGA) and the United States Geological Survey (USGS). As the Company collects data around the world, it expects increased opportunities to arise for selling licensed products to government agencies outside of the United States.

The data is a key requirement for many types of initiatives, including base mapping/cadastral systems, infrastructure planning, natural resource management, risk management, economic development, and intelligence.

## **Geospatial Data Market**

Beyond government agencies, end users of geospatial data are found throughout the economy, including automakers, telecommunications companies, software providers, engineering firms, and more.

## **Insurance**

Intermap is continuing to develop its insurance software application, InsitePro, to continue to gain market share in the U.S. and European markets. Underwriters and carriers concerned with flood and other natural catastrophe perils are increasingly demanding solutions that can help assess, segment, rate and select risks for underwriting. The flood insurance industry is evolving quickly in the United States, Canada, Europe and Asia, and InsitePro is poised to serve those growing markets.

Intermap's service business is also concerned with flood risk management for insurance in Czech Republic and Slovakia. Like InsitePro, Intermap's insurance services are positioned to exploit the changing and expanding flood insurance market in Europe with established capabilities and datasets.

## **GIS**

Intermap is marketing its geospatial database to a number of traditional geospatial markets. In these markets, customers typically use desktop-based GIS and engineering systems offered by strategic companies such as ESRI (a GIS mapping software company), Autodesk (a 3D design software company), and Blue Marble - Global Mapper (a GIS data processing company) for planning, engineering, environmental management, site, or route selection and permitting.

## **Selling and Distribution Methods**

Data distribution occurs through direct sales, channel partners, value-added partners, OEMs, or through the Company's Internet-based store.

### **Direct Sales**

Direct sales are carried out through a commissioned sales team employed by the Company. The direct sales team is responsible for the sale of data acquisition services, licensing of the geospatial database, and software subscriptions.

### **Channel Partners**

In order to reach markets not easily accessed by traditional direct selling efforts, the Company leverages a network of channel partners. These partnerships are established to broaden the Company's customer base, penetrate new markets, and establish recurring revenue streams. The Company attempts to work with channel partners who are generally well-positioned in broad and diverse vertical markets. The channel partners distribute the Company's products and services to their principal markets and create and sell solutions or consumer products based on the Company's product infrastructure. Ultimately, Intermap's selection of a channel partner is governed by its ability to promote an integrated solution or product to mass markets, thereby creating an opportunity for recurring revenue to the Company.

## **Production Process**

The Company owns all of the technology required to create, collect, process, edit, and deliver products to its customers. All of the Company's production processes, quality assurance, and quality control processes are documented under the Company's ISO 9001:2000 Quality Management System.

### **Software Production**

The Company has assembled a core software development team and is currently planning to expand this team to carry out Intermap's strategy for software platform and software applications. The team consists of developers, engineers and other staff the Company believes is capable of executing on its product roadmap. The team is complimented by internal personnel knowledgeable about the production and aggregation of the necessary databases utilized in each of the Company's software applications. The Company is also planning to expand its current capabilities in customer support, customer training and implementation, and operating the Company's SaaS and PaaS based infrastructure. This support team plays a key role in the maintenance and development of the Company's software solutions.

### **Radar Production**

Areas targeted for radar collection are first flight-planned by Intermap's operations staff. Field crews are then dispatched to install GPS-based ground control points, as required. The aircraft and radar are subsequently flown to collect data over the target locations. The collected raw radar data is sent to the Company's interferometric processing (IP) centers either in Denver, Colorado or Jakarta, Indonesia. During IP, the raw radar data and GPS information are converted into a fully orthorectified (corrected) image and a digital surface model on a flight line basis. These flight line products are then joined together into map sheets.

### **Specialized Skill and Knowledge**

The Company needs well-trained technical staff having knowledge in software development and radar-related disciplines and/or mapping. Intermap fills a portion of this requirement for software developers, engineers, scientists, and technicians through recruitment programs at accredited colleges and universities. Career paths frequently lead from technician, to design engineer or software developer, to manager. In addition, the requirement for mapping specialists is fulfilled from the conventional GIS community or through graduates of GIS programs at both community colleges and universities.

### **Radar Technology**

The Company's ability to produce multi-frequency radar imagery and 3D digital elevation models over large areas and with a high level of detail and accuracy results from its proprietary radar digital mapping technology. This technology remotely and simultaneously collects latitude, longitude, and elevation (x, y, and z coordinates) data with an extremely high level of efficiency relative to other mapping technologies. An added benefit of the radar technology is the ability to collect data in poor visibility conditions (night or cloud cover) and to fly at high altitudes, which facilitates a wide swath of data collection. The Company's standard DEM product provides a vertical accuracy of up to 50 cm and imagery of a horizontal resolution of up to 62.5 cm. The P-band sensor provides the unique capability of foliage penetration, providing imagery of infrastructure typically hidden below forest canopy. Intermap believes it has a strong leadership position in the mapping industry as a result of its proprietary IFSAR radar technology.

The Company operates two radar systems. Each system consists of two quad-polarimetric P-band antennae, two X-band radar antennae coupled to a transmitter receiver and data storage system. Both radar systems are mounted in Learjet 36A aircraft. The X-band system is configured in an IFSAR mode, the two images created are processed via a digital correlation process that extracts terrain height information used to geometrically correct the radar image. The radar technology uses GPS data, together with onboard laser-based inertial measurement data to attain highly accurate positioning control. The accuracy of the system's positioning information, along with careful baseline calibration, reduces the likelihood that additional location measurements are required in subsequent processing steps.

Compared to competing technologies, the Company's ability to produce data on time and within a specified budget is largely due to the radar technology's all-weather acquisition capability (with the exception of abnormally high winds and turbulence) and its superior speed and efficiency. The post-collection processing of the data is also less labor-intensive than competing technologies (see "Competition").

## Competition

### Data Acquisition

The Company's geospatial solutions approach does include the use of an airborne remote sensing radar technology and there are a number of such technologies that compete with Intermap's radar based capabilities as summarized below:

**LiDAR:** Intermap believes that LiDAR is the most competitive technology to the Company's IFSAR based radar system because of its availability and accuracy. The equipment is easily obtainable, and mapping services are usually offered by companies on a fee-for-service basis. Pricing, while project-specific, typically ranges from approximately \$60 to \$250 per square kilometer in the US for large areas (>5000 kilometers square), roughly five to ten times the cost of Intermap's products and the end product varies dramatically in quality and precision. In other parts of the world, the price can be significantly higher. However, given the high level of competition in the LiDAR sector, it is likely that prices will continue to be driven down. Although LiDAR is capable of higher accuracy than Intermap's radar technology, it continues to have challenges in our niche markets due to its inability to cover large areas efficiently, limited ability to fly in poor weather conditions, non-standard processing methods to derive hydro-enforced (rivers run downstream) DSM and DTM finished data products, and a much higher cost associated with collecting large areas relative to the Company's radar technology. Furthermore, Intermap believes that LiDAR does not play a key role in the cloud belt regions of the world, due to its inability to operate through dense clouds. While Intermap considers its radar capability to be a competing technology, the Company also has partnership agreements with LiDAR suppliers to provide their products and services as part of an optimum geospatial solution for the Company's customers.

**Other IFSAR Systems:** The Company believes there are two other active commercial companies worldwide with IFSAR radar technology.

Orbisat da Amazonia S.A. (Orbisat) operates an IFSAR system used primarily in South America. Orbisat has historically been active in the IFSAR market and the Company believes that they will remain an active competitor to Intermap during 2018.

Fugro N.V. (a Dutch company that provides geotechnical, survey and geoscience services to the oil, gas, mining, and construction industries) has an IFSAR system mounted in a Gulfstream II aircraft

referred to as GeoSAR. Fugro N.V. has historically concentrated its IFSAR sales efforts on fee-for-service work with the United States military and its business does not incorporate the strategy of building and licensing a digital map database. Fugro has historically been active in the IFSAR market and the Company believes that they will remain an active competitor to Intermap during the coming year.

**Satellite Imagery:** Three high-resolution commercial satellite technologies, with the capability to derive high resolution elevation models, have either recently launched or represent a one-time mission. Intermap partners with certain satellite imagery suppliers to provide dedicated geospatial solutions to its customers.

**Optical Satellite Sensors:** For technical and economic reasons, Intermap believes it is difficult to use satellite optical data from suppliers such as DigitalGlobe and Planet Labs to generate stereo images of large areas and apply photogrammetry to create elevation data. Intermap has previously sold terrain data to satellite companies in order to provide them with the elevation data they require to rectify their satellite imagery for their customers. Intermap also sells terrain data to NGA, which is the largest customer for the satellite companies. The Company regards satellite imagery as a complementary data layer, providing color or black-and-white optical images that can be draped over Intermap's terrain data.

With the recent advancements in Intermap's Web Service offerings, based on the NEXTMap database, there are new found possibilities in the orthorectification of satellite images. Intermap is now finding several high-resolution satellite providers are inquiring about services based on our World 10 database. These include both online and under license services.

The Ministry of Economy, Trade, and Industry (METI) of Japan and the United States National Aeronautics and Space Administration (NASA) released the ASTER GDEM V2 on October 17, 2011. This elevation model has a vertical accuracy of 20-meters. The first version of the ASTER GDEM, released in June 2009, was generated using stereo-pair imagery collected by the ASTER instrument onboard the satellite. ASTER GDEM coverage spans from 83 degrees north latitude to 83 degrees south, encompassing 99 percent of Earth's landmass. The improved GDEM V2 adds 260,000 additional stereo-pairs, improving coverage and reducing the occurrence of artifacts. The refined production algorithm provides improved spatial resolution, increased horizontal and vertical accuracy, and superior water body coverage and detection. The ASTER GDEM V2 maintains the GeoTIFF format and the same gridding and tile structure as V1, with 30-meter postings and 1 x 1 degree tiles. This elevation data set has not been hydro-enforced and is negatively biased downward by approximately 10-meters. Intermap believes that this data is not sufficiently precise for most commercial applications such as aviation safety, environmental control, engineering, flood management and topographic mapping.

Intermap has merged ASTER V2 and SRTM (explained below) and calibrated it using high resolution LiDAR data from a spaceborne LiDAR sensor (ICESat) to derive an elevation model with fewer artifacts than the ASTER V2 and with a better vertical accuracy. The Company introduced this product in June 2012, called World 30, at a 30-meter horizontal resolution and a follow-on product called World 10 at a 10-meter horizontal resolution, in June 2015.

**SAR Satellite Sensors:** A new SAR synthetic aperture radar (SAR) satellite called TerraSAR-X was launched in 2010 by the German military. This satellite is a SAR satellite with 3-meter pixel horizontal resolution in strip map mode and 1-meter horizontal resolution in spotlight mode. A second



TerraSAR-X platform was launched in a tandem orbit with the original creating the Tandem-X mission (launched in 2007) which provides an interferometric solution to derive digital elevation data. The first pass of the globe by Tandem-X mission has enabled the creation of a first look digital elevation model with a 12-meter posting and a 3-meter vertical accuracy. This elevation model is currently available to the public. Additionally, the first release of the Tandem-X DEM will not be hydro-enforced, which will make the data set not suitable for many applications such as topographic and flood mapping.

**One-Time Shuttle Mission:** A NASA space shuttle mission flown in February 2000 generated near worldwide digital map coverage of the Earth's surface, using IFSAR technology. Intermap was a member of one of two teams chosen by the NGA to produce and edit the shuttle mission data. The digital maps generated by the mission have a vertical accuracy of 10-meters at 30-meters horizontal resolution (USA), or DEM posting. Intermap believes that this data is not sufficiently precise for most commercial applications such as automobile related applications, aviation safety, environmental control, engineering, and flood management.

While Intermap expects competitors to eventually develop or acquire technology that competes with its IFSAR radar digital mapping capabilities, the Company believes that it has a lead in accuracy, efficiency, production throughput, know-how, and software tools to manage the production process. In particular, within the cloud belt, the high resolution (.625-meter) cloud free Multi-Frequency IFSAR radar image is still a key differentiator for Intermap. The Company's business initiatives, InsitePro, 5-meter elevation data, World 30 DSM, and World 10 DSM, along with its e-commerce data store are intended to capitalize on the market lead Intermap believes it currently enjoys. Additionally, while Intermap considers satellite imagery to be a competing technology, the Company also has partnership agreements with certain satellite imagery suppliers to provide their products as part of an optimum geospatial solution for the Company's customers.

### **Software and Solutions**

Intermap's Insurance offerings, including software and services, face competition from software suppliers that include Core Logic, Verisk and Lexis Nexis.

Intermap's competitors may have significantly more financial, technical, marketing and other resources than the Company. Many of these competitors have extensive customer-bases and broader customer relationships than Intermap, and they also have longer operating histories and greater name recognition, particularly in the software product space. The Company believes that it competes effectively with higher quality proprietary datasets, delivered with a product that compares favorably on ease of use, specialization in solving customer problems, optimization of accessed datasets, pricing, and quality.

### **Business Cycles**

The Company's mapping services business is highly dependent on government budgeting cycles and, to a lesser extent, value added data re-sales to state and local governments that are also subject to government budgeting cycles. These government cycles can be as long as 36 months or more.

Data licensing and software/services can be sold with a much shorter sales cycle, typically 3 months or less.

Recurring revenue from software is a growing part of Intermap's top line, which adds some stability to financial planning for the Company.

## **Employees**

As of December 31, 2018, Intermap had 124 employees located as follows: 17 in Calgary, Canada; 29 in Englewood, Colorado, USA; 1 in California, USA; 1 in Virginia, USA; 16 in the Czech Republic; and 60 in Jakarta, Indonesia.

## **Foreign Operations**

The Company operates through its three active subsidiaries which are based in the United States, Czech Republic, and Indonesia. The Company has a long history of performing projects in a wide variety of countries in addition to the countries in which it resides. In 2018, approximately 67% of Intermap's revenue was derived from the United States, 21% from Asia Pacific, and 12% from Europe. For more details, see "Risk Factors – Foreign Operations" below and the financial statement note entitled "Segmented Information" of the consolidated financial statements for the year ended December 31, 2018, a copy of which is filed and is available on SEDAR at [www.sedar.com](http://www.sedar.com).

## **RISK FACTORS**

The risks and uncertainties described below are not exhaustive. Additional risks not presently known or currently deemed immaterial may also impair the Company's business operations. If any of the events described in the following business risks actually occur, overall business, operating results, and the financial condition of the Company could be materially adversely affected.

### **Cash Flow and Liquidity**

The Company is dependent upon its cash flow from operations to fund its business as it currently has \$33.9 million in outstanding secured long-term debt, no line of credit or credit facility, access to equity capital markets is severely constrained and the current share price is significantly depressed. The cash position of the Company at December 31, 2018 was \$1.3 million, compared to \$6.4 million at December 31, 2017. Over the past two years, the Company has undertaken a significant reduction in staff and realigning of the mix of talent and key resources, as well as overall reductions in operating costs.

The above factors in the aggregate indicate there are material uncertainties which may cast significant doubt about the Company's ability to continue as a going concern. The Company's ability to continue as a going concern is dependent on management's ability to successfully secure sales with upfront payments, restructure the balance sheet (including a reduction of debt) and obtain additional financing. Failure to achieve one or more of these requirements could have a materially adverse effect on the Company's financial condition and / or results of operations. The Board of Directors and management have taken actions to address these issues including retaining a financial advisor as well as a strategic consultant to explore strategic alternatives. Such alternatives could include, a sale of the Company, a sale of assets, a business combination or continuing as a standalone entity under a new capital structure. The Board of Directors has been informed by Vertex One Asset Management ("Vertex"), the Company's only first lien secured creditor and its largest shareholder, of its general preference for liquidity at this time. Vertex has provided financial support to the Company for the past six years. There can be no assurance that the consideration of strategic alternatives will result in the completion of any transaction or any other alternative. The Company may not be able to meet its

future obligations if it is unable to complete a strategic alternative transaction or secure additional capital.

### **Availability of Capital**

Cash generated from operations may not be sufficient to satisfy current liquidity requirements. As such, the Company will require additional capital. The extent of the Company's future capital requirements will depend on many factors, including, but not limited to, the market acceptance of its products and services, demand for geospatial related products and service, and competition within this industry. No assurance can be given that any such additional funding will be available or that, if available, it can be obtained on terms favorable to the Company.

### **Revenue Fluctuations**

Intermap's revenue has fluctuated over the years. Acquisition services projects, the purchase of value added data, and the purchase of software and solutions by the Company's customers are all scheduled per customer requirements and the timing of regulatory and/or budgetary decisions. The commencement or completion of acquisition projects within a particular quarter or year, the timing of regulatory approvals, operating decisions of clients, and the fixed-cost nature of Intermap's business, among other factors, may cause the Company's results to vary significantly between fiscal years and between quarters in the same fiscal year.

### **Nature of Government Contracts**

Intermap conducts a significant portion of its business either directly from, or in cooperation with, the United States government, other governments around the world, and international funding agencies. In many cases, the terms of these contracts provide for cancellation at the option of the government or agency at any time. The current state of the public finances in many of the countries the Company has historically operated in has led to reductions in the amount of data ordered by its government customers. In addition, many of Intermap's products and services require government appropriations and regulatory licenses, permits, and approvals, the timing and receipt of which are not within Intermap's control. Any of these factors could have an effect on Intermap's revenue, earnings, and cash flow.

## **Project Finance Facilities**

Intermap's contracts may include significant down payments and the commencement of work under such contracts may be dependent on the finalization of a third-party project finance facility to provide for the down payment and progress payments under the terms of the contract. While the Company expects that such financing facilities will be finalized in a reasonable period of time from the date of contract completion, Intermap is typically not a party to the financing facility negotiations and both finalization and timing of the financing facility is therefore outside of the Company's control. No assurance can be given that any required financing facility will ultimately be completed subsequent to contract finalization.

## **Foreign Operations**

A significant portion of Intermap's revenue is expected to come from customers outside of the United States and is therefore subject to additional risks, including foreign currency exchange rate fluctuations, agreements that may be difficult to enforce, receivables difficult to collect through a foreign country's legal system, and the imposition of foreign-country-imposed withholding taxes or other foreign taxes. Intermap relies on contract prepayments or letters of credit to secure payment from certain of its customers when deemed necessary. If deemed necessary, the Company could secure export credit insurance on certain of its international receivables, which greatly reduces the commercial and political risks of operating outside of North America but involves additional cost for the Company.

## **General Economic Trends**

Worldwide economic conditions and the access to credit in the financial markets may impact the business of our customers, which could have an adverse effect on Intermap's business, financial condition, or results of operations. Adverse changes in general economic or political conditions in any of the major countries in which the Company does business could also adversely affect Intermap's operating results.

## **Key Customers**

During 2018, the Company had two key customers that accounted for 67% of the Company's total revenue. In 2017, the Company had two key customers that accounted for approximately 77% of the Company's total revenue. To the extent that significant customers cancel or delay orders, Intermap's revenue, earnings, and cash flow could be materially and adversely affected.

## **Executive Talent**

Intermap is focused on aligning its resources with its acquisition services, value added data and software and solutions revenue opportunities. This realignment requires the retention of executive talent. The Company will continue to invest in training and leadership development in response to the changes within the Company to retain talent. Although Intermap has a talented team of experienced executives, it may not be able to further develop executive talent internally or attract and retain enough executive talent to effectively manage the anticipated growth and changes within the Company.

## **Competing Technologies**

With respect to the Company's software applications, several direct and indirect competitors are currently in the market with product offerings that could be considered at least partially competitive to Intermap's products. These potential competitors vary in size and could have greater technical

and/or financial resources than the Company, to develop and market their products. The financial performance of the Company may be adversely affected by such competition. Additionally, no assurances can be given that additional direct competitors to the Company may not be formed or that the Company may not lose some or all of its contracts with existing or future customers, thereby decreasing its ability to compete. Also, existing and future customers may have, or may develop, in-house solutions that could take the place of the Company's software applications. Any adverse change in the business relationships with the Company's customers or partners could have a material adverse impact on the Company's software applications business and its future prospects.

With respect to the Company's radar data acquisitions business, it is possible that commercially available satellite images could match or come close to the image resolution offered by the Company's radar technology. In any event, Intermap continues to evaluate its data collection capabilities and look for improvements to the performance of its radar technology. Although there are only a few direct Intermap competitors currently, the industry is characterized by rapid technological progress. Intermap's ability to continue to develop and introduce new products and services, or incorporate enhancements to existing products and services, may require significant additional research and development expenditures and investments in support infrastructure.

Another approach to production of digital elevation models is the use of auto correlation software to analyze common points in two or more optical images of the same area taken from different viewing angles. Essentially this is the same principle that is used by technicians as they extract elevation points using stereo photogrammetric techniques, but in this case, it is automated using computer software image matching algorithms. This process is well known and has been used with limited success over small areas. Advances in computing power, coupled with massive storage solutions, may make this technology useful over larger areas in the future, and if so, could represent a significant competing technology.

Any required additional financing needed by the Company to remain competitive with these other technologies may not be available or, if available, may not be on terms satisfactory to the Company.

### **Common Share Price Volatility**

The market price of the Company's common shares has fluctuated widely in recent periods and is likely to continue to be volatile. A number of factors can affect the market price of Intermap's common stock including (i) actual or anticipated variations in operating results, (ii) the low daily trading volume of the Company's stock, (iii) announcement of technological innovations or new products by the Company or its competitors, (iv) competition, including pricing pressures and the potential impact of competitors products on sales, (v) changing conditions in the geospatial and related industries, (vi) unexpected production difficulties, (vii) changes in financial estimates or recommendations by stock market analysts regarding Intermap or its competitors, (viii) announcements by Intermap or its competitors of acquisitions, strategic partnerships, or joint ventures, (ix) additions or departures of senior management, (x) changes in economic or political conditions (xi) the selling of significant holdings by large investors, (xii) the financing terms of existing large debt holders of the Company, and (xiii) the Company's ability to meet the continued listing requirements of the Toronto Stock Exchange to maintain the listing of its common shares.

### **Loss of Proprietary Information**

Intermap currently holds patents on the technology used in its operations and products and it also relies heavily on trade secrets, know-how, expertise, experience, and the marketing ability of its

personnel to remain competitive. Although Intermap requires all employees, consultants, and third parties to agree to keep its proprietary information confidential, no assurance can be given that the steps taken by Intermap will be effective in deterring misappropriation of its technologies. Additionally, no assurance can be given that employees or consultants will not challenge the legitimacy or scope of their confidentiality obligations, or that third parties, in time, could not independently develop and deploy equivalent or superior technologies.

### **Software Functionality**

Defects in the Company's software applications, delays in delivery, and failures or mistakes in the Company's software code could materially harm the Company's business, including customer relationships and operating results.

### **Internet and System Infrastructure Functionality**

The end customers of the Company's software applications depend on internet service providers, online service providers and the Company's infrastructure for access to the software applications the Company provides to its customers. These services are subject to service outages and delays due to system failures, stability or interruption. As a result, the Company may not be able to meet a satisfactory level of service as agreed to with its customers, which could have a material adverse effect on the Company's business, revenues, operating results and financial condition.

### **Information Technology Security**

The Company's software applications are dependent on its ability to protect its computer equipment and the information stored in its data centers against damage that may be caused by fire, power loss, telecommunication failures, unauthorized intrusion, computer viruses, disabling devices and other similar events. A failure in the Company's production systems or a disaster or other event affecting production systems or business operations, both internally and externally, could result in a disruption to the Company's software services. Such a disruption could also impact the Company's reputation and cause it to lose customers, revenue, face litigation, or necessitate customer service/repair work that would involve substantial costs and could ultimately have a material impact on the Company.

Intermap's geospatial database has become a valuable asset to the Company. While Intermap has invested in database management, information technology security, firewalls, and offsite duplicate storage, there is a risk of a loss of data through unauthorized access or a customer violating the terms of the Company's end user licensing agreements and distributing unauthorized copies of its data. Intermap has, and will continue to invest, in both legal resources to strengthen its licensing agreements with its customers and in overall information technology protection.

### **Cybersecurity**

The Company's software applications and geospatial database are dependent upon protection against damage or loss that may be caused by a cyberattack. Loss or theft of the Company's geospatial database could result in lost revenue or the ability of a competitor to provide competing software solutions. A hostile Denial of Service (DoS) action could disrupt the Company's software services. Such a disruption could impact the Company's reputation and cause it to lose customers, revenue, face litigation, or necessitate customer service/repair work that would involve substantial costs and could ultimately have a material impact on the Company.

Intermap has invested in database management, information technology security, and firewalls to mitigate the risk of loss or theft of the Company's data. Further investments have been made to prevent DoS activities, including the use of Microsoft's Azure environment and the security it offers, and improvements to the software services' defenses against such attacks.

The Company undertakes periodic reviews of its information technology infrastructure and security policies using the SANS CIS Critical Security Controls as a framework. The areas of focus for review pertain to user and system authentication and access; internal network configuration and security; data storage resiliency and security; and hosted application access security. These periodic reviews serve to proactively shore up areas of vulnerability and ensure policies are effective and enforced. However, the risk cannot be eliminated entirely, and the Company has invested in insurance to mitigate loss in the event of a cyberattack.

### **Breakdown of Strategic Alliances**

Intermap has fostered a number of key alliances over the past several years and intends to enter into new alliances in the future. These alliances occasionally take the form of performing contract services in tandem with, or as a sub-contractor to, another GIS company. The Company believes these new alliances will help enable access to significant scalable markets that would not otherwise be accessible in a timely manner. The breakdown or termination of some or all of those alliances could have a material impact on the Company. At this time, the Company is not aware of any material issues in its strategic relationships. Should any one of these companies be unable to continue its alliance with Intermap, or otherwise choose to dissolve the relationship, the Company would seek to replace the connection with other entities, but there is no guarantee such replacement would occur.

### **Exporting Products – Political Considerations**

Intermap's data collection systems contain technology that is classified as a defense article under the International Traffic and Arms Regulations. All mapping efforts undertaken outside the United States, therefore, constitute a temporary export of a defense article, requiring prior written approval by the United States Department of State for each country within which data acquisition operations are to be performed. The Company does not currently anticipate that requirements for export permits will have a material impact on its operations, although either government policy or government relations with select foreign countries may change to the point of affecting the Company's operational opportunities. The data produced by Intermap's IFSAR radar system falls under Department of Commerce regulations and is virtually unrestricted.

### **Foreign Operations**

A significant portion of Intermap's revenue is expected to come from customers outside of the United States and is therefore subject to additional risks, including foreign currency exchange rate fluctuations, agreements that may be difficult to enforce, receivables difficult to collect through a foreign country's legal system, and the imposition of foreign-country-imposed withholding taxes or other foreign taxes. Intermap relies on contract prepayments or letters of credit to secure payment from certain of its customers when deemed necessary. The Company has in the past secured export

credit insurance on certain of its international receivables, which greatly reduces the commercial and political risks of operating outside of North America.

### **Political Instability**

Intermap understands that not every region enjoys the political stability that is taken for granted in North America. Developments in recent years in the Middle East and Asia illustrate this clearly. Political or significant instability in a region where Intermap is conducting data collection activities and any of its other services, or where Intermap has clients, could adversely impact Intermap's business.

### **Environmental Regulation**

Changes in environmental regulation could have an adverse effect on the Company's airborne data acquisition services business. For example, requirements for cleaner burning aircraft fuel could result in increased costs which could impact the Company's pricing model for acquisition services projects. The complexity and breadth of environmental and climate change related issues make it extremely difficult to predict the potential impact on the Company. Compliance with environmental regulation can be costly, and non-compliance can result in fines, penalties and loss of licenses.

### **Regulatory Approvals**

The development and application of certain of the Company's products requires the approval of applicable regulatory authorities. A failure to obtain such approval on a timely basis, or material conditions imposed by such authority in connection with the approval, would materially affect the prospects of the Company.

### **Aircraft/Radar Lost or Damaged**

Although the Company believes that the probability of one of the Company's aircraft or radar sustaining significant damage or being lost in its entirety is extremely low, such damage or loss could occur. The Company is expected to have available to it, for data collection purposes, one additional aircraft at any given time. The risk to the Company of loss from the damage of an aircraft is therefore considered to be minimal. In the event that a radar mapping system is lost in its entirety through the destruction of the aircraft, it would take the Company approximately six to nine months to replace the lost equipment, if required.

### **Global Positioning System Failure**

GPS satellites have been available to the commercial market for many years. The continued unrestricted access to the signals produced by these GPS satellites are helpful in the collection of the Company's IFSAR data. A loss of GPS would have such a global impact that it is believed that controlling authorities would almost certainly make another system available to GPS receivers in relatively short order.

### **Information Openly Available to the Public**

The Company accesses information available to the public via the internet and may incorporate pieces of such information into its products. If a source of public information determined that the Company was profiting from free information, there is risk it could seek compensation.



## **Force Majeure**

The Company's projects may be adversely affected by risks outside of its control including labor unrest, civil disorder, war, subversive activities or sabotage, fires, floods, explosions or other catastrophes, epidemics, or quarantine restrictions.

## **DIVIDENDS**

The Company has not paid any cash dividends on any class of shares during the three most recently completed financial years. Further, the Company has not paid any cash dividends since its inception and does not intend to pay any cash dividends in the foreseeable future. The Company intends to retain any earnings to finance its operations. There are no restrictions preventing the Company from paying dividends.

## **DESCRIPTION OF CAPITAL STRUCTURE**

The Company's authorized capital consists of an unlimited number of Common Shares and an unlimited number of Class A participating preferred shares (Preferred Shares) without par value. At the close of business on December 31, 2018, there were 17,268,472 Common Shares issued and outstanding. There are no Preferred Shares currently issued and outstanding. On December 1, 2018, the Company completed a 10 for 1 share consolidation adopted at the Annual General and Special Meeting of Shareholders, held on May 16, 2017. All Common Share and share price references herein have been adjusted for the share consolidation.

Each Common Share entitles the holder thereof to (i) dividends if, as and when declared by the directors; (ii) one vote at all meetings of holders of common shares; and (iii) participate in any distribution of the Company's assets upon liquidation, dissolution, or winding up.

Each Preferred Share entitles the holder thereof to (i) dividends if, as and when declared by the directors; (ii) one vote at all meetings of the shareholders of the Company; and (iii) participate (after receiving in priority to the holders of Common Shares, a sum equal to its purchase price) in any distribution of the Company's assets upon liquidation, dissolution, or winding up.

## **MARKET FOR SECURITIES**

The outstanding common shares of the Company are listed and posted for trading on the Toronto Stock Exchange (TSX) under the symbol "IMP". On February 4, 2019 the TSX notified the Company that the TSX is reviewing the Company's eligibility for continued listing on the TSX in respect of its common shares. Specifically, TSX is reviewing the Company with respect to the requirement to maintain a minimum market capitalization of \$3 million and a minimum public float of \$2 million. The Company intends to work with the TSX to demonstrate that the Company satisfies the requirements for continued listing.

If the Company cannot demonstrate that it meets all TSX requirements set out in Part VII of the TSX Company Manual on or before June 3, 2019, the Company's common shares will be delisted 30 days from such date.

**Trading Price and Volume** (in Canadian dollars):

<b>Intermap Technologies Corporation TSX Share Price Information 2018</b>			
<b>Month</b>	<b>High (\$)</b>	<b>Low (\$)</b>	<b>Average Volume</b>
January 2018	0.63	0.55	19,523
February 2018	0.57	0.46	32,689
March 2018	0.52	0.39	17,679
April 2018	0.44	0.39	9,767
May 2018	0.47	0.41	19,132
June 2018	0.45	0.37	11,167
July 2018	0.50	0.37	12,987
August 2018	0.50	0.40	5,814
September 2018	0.44	0.38	22,676
October 2018	0.45	0.35	10,514
November 2018	0.38	0.14	19,995
December 2018	0.21	0.14	27,135

**Prior Sales**

On June 28, 2018, 872,183 Class A common shares were issued to directors of the Company as compensation for services at a weighted average per share price of C\$0.42.

On June 20, 2017, 101,250 Class A common shares were issued to directors and employees of the Company as compensation for services at a per share price of C\$0.80.

On April 12 and June 29, 2017, the Company issued a total of 149,293 Class A common shares that were earned under the Long Term Incentive Plan, closed in 2016, at a per share price of C\$0.70.

On March 30, 2017, the Company issued 6,011,273 Class A common shares in connection with the equity rights offering (Rights Offering), at a per share price of C\$0.60. Total from the Rights Offering of \$2,890 were used to repay the December 14, 2016 bridge loan of \$6,000. The balance of the bridge loan was converted to a term note, maturing September 1, 2020.

**DIRECTORS AND EXECUTIVE OFFICERS**

Set out below are the names of the directors and executive officers of the Company as of the date of this AIF, their place of residence, their positions held within the Company, and their principal occupations in the last five years.

<b>Name, Present Office Held and Residence</b>	<b>Director Since</b>	<b>Principal Occupation</b>	<b>Common Shares <sup>(5)</sup></b>
Patrick A. Blott <sup>(1)(3)(4)</sup> Chairman and Chief Executive Officer New York, U.S.A.	July 13, 2016	Chairman and Chief Executive Officer of the Corporation, Co-Founder and Managing Partner of Blott Asset Management and Director of OSI Geospatial Inc.	245,652

<b>Name, Present Office Held and Residence</b>	<b>Director Since</b>	<b>Principal Occupation</b>	<b>Common Shares <sup>(5)</sup></b>
Andrew P. Hines <sup>(2)(3)(4)</sup> Director New Jersey, U.S.A	September 9, 2016	Principal of Hines & Associates. Director of Tronox Inc. and Director of Schmitt Industries. Previously, EVP/CFO of Natural Markets Foods Group and EVP/CFO of Sonar Entertainment.	135,652
Michael R. Zapata <sup>(2)(3)(4)</sup> Director New York, U.S.A.	September 9, 2016	Managing Partner of Sententia Capital Management LLC, Executive Chairman and President of Schmitt Industries, Inc and Director of the Tip of the Spear Foundation.	135,652
Philippe Frappier <sup>(2)(3)(4)</sup> Director Toronto, Canada	January 30, 2017	Vice President Client Services at IQ Partners. Previously Senior Partner of Searchlight Recruitment Inc. and Independent Management Consultant	135,652

**Notes:**

- (1) Chairman of the Board
- (2) Member of Audit Committee
- (3) Member of Compensation Committee
- (4) Member of Nominating and Governance Committee
- (5) Beneficially Owned, Controlled or Directed, Directly

The directors will hold office until the next annual general meeting of the shareholders unless their office is earlier vacated in accordance with the by-laws of the Corporation and in accordance with the Business Corporations Act (Alberta). The directors and key management personnel in aggregate own or control 3.81% of the issued and outstanding Common Shares of the Company.

**Executive Officers Who Are Not Directors**

***Jennifer S. Bakken, Executive Vice President Finance and CFO (Lone Tree, Colorado, U.S.A.)*** joined Intermap in August 2008 and served as the Corporate Controller until January 2017 when she was promoted to Senior Vice President. In May 2017 Jennifer was named Executive Vice President and CFO.

***Stephen C. Griffiths, Executive Vice President and CTO (Calgary, Alberta, Canada)*** joined Intermap in April 2008 and led the Corporation's Research and Development before he was named Executive Vice President and CTO in May 2017.

**Cease Trade Orders**

No director or executive officer of the Company is, as of the date of this AIF, or was, within the 10 years before the date hereof, a director, chief executive officer, or chief financial officer of any company (including the Company) that was the subject of a cease trade order, an order similar to a cease trade order, or an order that denied the company access to any exemption under securities legislation that was in effect for a period of more than 30 consecutive days, that was issued (i) while that person was acting in such capacity; or (ii) after that person was acting in such capacity and which resulted from an event that occurred while that person was acting in such capacity.

**Bankruptcies**

No director or executive officer of the Company, or shareholder holding a sufficient number of securities to affect materially the control of the Company is, as of the date of this AIF, or has been, within 10 years before the date hereof, a director or executive officer of any company that, while that person was acting in such capacity, or within a year of that person ceasing to act in such capacity,

became bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency, or was subject to or instituted any proceedings, arrangement, or compromise with creditors or had a receiver, receiver manager, or trustee appointed to hold its assets.

No director or executive officer of the Company, or shareholder holding a sufficient number of securities to affect materially the control of the Company has, within the 10 years before the date of this AIF, become bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency, or become subject to or instituted any proceedings, arrangement or compromise with creditors, or had a receiver, receiver manager or trustee appointed to hold the assets of the director, executive officer or shareholder.

### **Penalties or Sanctions**

No director or executive officer of the Company, or shareholder holding a sufficient number of securities to affect materially the control of the Company has been subject to any penalties or sanctions imposed by a court relating to securities legislation or by a securities regulatory authority or has entered into a settlement agreement with a securities regulatory authority or has been subject to any other penalties or sanctions imposed by a court or regulatory body that would likely be considered important to a reasonable investor in making an investment decision.

### **Conflicts of Interest**

Circumstances may arise where members of the Company's board of directors or officers are directors or officers of corporations which are in competition to our interests. No assurances can be given that opportunities identified by such board members or officers will be provided to the Company. Pursuant to the *Business Corporations Act* (Alberta), directors who have a material interest in a proposed material transaction upon which the Company's board of directors is voting are required to disclose their interests and refrain from voting on the transaction.

## **LEGAL PROCEEDINGS AND REGULATORY ACTIONS**

Management of the Company is not aware of any existing or contemplated legal proceedings material to the Company, to which the Company is, or during the financial year ended December 31, 2018 was, a party or of which any of its property is, or during the financial year ended December 31, 2018 was, subject.

Management of the Company is not aware of any penalties or sanctions imposed against the Company by a court relating to securities legislation or by a securities regulatory authority during the financial year ended December 31, 2018.

## **INTEREST OF MANAGEMENT AND OTHERS IN MATERIAL TRANSACTIONS**

There were no material interests, direct or indirect, of directors or executive officers of the Company, or of any of the shareholders of the Company who beneficially own, directly or indirectly, or exercises control or direction over more than 10 percent of the Company's outstanding Common Shares, or any known associate or affiliate of such persons in any transactions within the three most recently completed financial years of the Company or during the current financial year which has materially affected, or is reasonably expected to materially affect, the Company or a subsidiary.

## **TRANSFER AGENT AND REGISTRAR**

The Company's transfer agent and registrar is Computershare Trust Company of Canada, located at 100 University Avenue, Toronto, Ontario, Canada M5J 2Y1.

## **MATERIAL CONTRACTS**

The Company has not entered into any material contract within the most recently completed financial year, or before the most recently completed financial year that is still in effect, and was not in the ordinary course of business.

## **INTERESTS OF EXPERTS**

There is no person or company whose profession or business gives authority to a statement made by such person or company and who is named as having prepared or certified a statement, report, or valuation described or included in a filing, or referred to in a filing, made by the Company under National Instrument 51-102 during, or related to, the Company's most recently completed financial year other than KPMG LLP, the Company's auditors. KPMG LLP is independent in accordance with the auditors' rules of professional conduct in Canada.

In addition, none of the aforementioned persons or companies, nor any director, officer, or employee of any of the aforementioned persons or companies, is or is expected to be elected, appointed, or employed as a director, officer, or employee of the Company or of any of the Company's affiliates.

## **AUDIT COMMITTEE INFORMATION**

The text of Intermap Technologies Corporation's Audit Committee Charter is attached as **Schedule A**.

### **Composition of the Audit Committee**

The members of the Audit Committee are Mr. Andrew P. Hines (Chair), Mr. Michael R. Zapata and Mr. Philippe Frappier, each of whom is independent and financially literate. The relevant education and experience of each Audit Committee member is outlined below.

### **Relevant Education and Experience**

All members of the Audit Committee are financially literate and all members of the committee have accounting or related financial experience.

Mr. Hines is currently a Corporate Director of Tronox Limited, a Corporate Director of Schmitt Industries and principal of Hines & Associates, a financial management consulting firm. Prior to that he was the Executive Vice President & Chief Financial Officer of Natural Markets Food Group; Sonar Entertainment, and World Color Press Inc. He has held Chief Financial Officer and other financial management positions with several other companies throughout his career and served as a Director on multiple Boards and Audit Committees. As part of his role in each of these positions, he was required to have extensive knowledge of the financial operations of the company for which he worked and served, including the understanding of balance sheets, income statements, and cash flow statements. Mr. Hines is a Certified Public Accountant and financial expert as defined by the applicable

rules of the SEC. He is a member of both the American Institute and New York Society of Certified Public Accountants.

Mr. Zapata is currently Managing Partner of Sententia Capital Management LLC, Executive Chairman and President of Schmitt Industries, Inc and a Director of Tip of the Spear Foundation. He holds a B.S from Texas A&M and an M.B.A from Columbia University. In his investment firm capacity, he is required to have extensive knowledge of the financial operations of the companies he invests in, including understanding of balance sheets, income statements, and cash flow statements.

Mr. Frappier has run an Executive Search business for the past 13 years, and as part of his role, is required to have extensive knowledge of the financial operations of the company including; budgeting and forecasting, income statements, cash flow and balance sheets. Prior to running his own business Mr. Frappier he was in charge of multi-million-dollar production budgets in the film and television industry.

### **Audit Committee Oversight**

All recommendations of the Audit Committee to nominate or compensate an external auditor were adopted by the Board of Directors since the commencement of its most recently completed financial year.

### **Pre-approval Policies and Procedures**

Any engagement of non-audit services by the Company's external auditors/accountants, including estimated fees, must be pre-approved by the Audit Committee and the Audit Committee must obtain an annual statement from the auditors regarding non-audit services.

### **External Auditor Service Fees**

#### **Audit Fees**

The aggregate fees billed by the Company's external auditor for audit services during 2018 and 2017 were C\$108,200 and C\$111,949, respectively.

#### **Audit Related Fees**

The aggregate fees billed by the Company's external auditor for assurance and related services that are reasonably related to the performance of the audit or review of the Company's financial statements and are not reported under the "Audit Fees" caption above during 2018 and 2017 were minimal.

#### **Tax Fees**

The aggregate fees billed by the Company's external auditing firm for professional services relating to tax compliance, tax advice and tax planning during 2018 and 2017 were C\$79,128 and C\$70,029, respectively. The services provided were generally related to: (i) the review of tax provisions; (ii) tax return preparation; (iii) personal tax returns for expatriate employees; and (iv) tax related due diligence on potential foreign contracts.

#### **All Other Fees**

There were no other fees billed to the Company during the last two fiscal years for products and services provided by the Company's external auditors other than the services reported above in the prior three captions.

## **ADDITIONAL INFORMATION**

Additional information relating to the Company may be found on SEDAR at [www.sedar.com](http://www.sedar.com). Additional information, including directors' and officers' remuneration and indebtedness, principal holders of the Company's securities and securities authorized for issuance under the Company's equity compensation plans, if applicable, is contained in the Company's information circular for the most recent annual meeting of shareholders that involved the election of directors. Additional financial information is provided in the financial statements and management's discussion and analysis for the year ended December 31, 2018.

## **SCHEDULE A**

### **AUDIT COMMITTEE CHARTER**

#### **ADOPTION**

This charter (“**Charter**”) was approved by the Board of Directors (“**Board**”) of Intermap Technologies Corporation (“**Corporation**”) on the date noted at the conclusion hereof.

#### **PURPOSE**

It is the policy of the Corporation to establish and maintain an Audit Committee (“**Committee**”), composed of independent directors, to assist the Board in carrying out their oversight responsibility for the Corporation’s external audit, internal controls, disclosure, financial reporting, and related risk management.

The Committee’s function is one of oversight only and shall not relieve management of its responsibilities.

The Corporation’s external auditor shall report directly to the Audit Committee.

#### **ORGANIZATION**

1. The Committee shall consist of a minimum of three (3) directors.
2. Each director appointed to the Committee by the Board shall be independent as such term is defined in Section 1.4 of National Instrument 52-110 and Section 3.1 of the related companion policy.
3. Each member of the Committee shall be financially literate as such term is defined in Section 1.6 of National Instrument 52-110 and at least one (1) member shall have accounting or related financial management expertise.
4. The Board shall appoint the members of the Committee and may seek the advice and assistance of the Nominating and Corporate Governance Committee in identifying qualified candidates. The Board shall appoint one (1) member of the Committee to be the Chair of the Committee.
5. A director appointed by the Board to the Committee shall be a member of the Committee until replaced by the Board or until his or her resignation. A member shall cease to be a member of the Committee upon ceasing to be a director of the Corporation.
6. The Secretary of the Corporation shall be the Secretary of the Committee.

#### **RESPONSIBILITIES**

7. The Committee’s primary duties and responsibilities are to:
  - (a) Select and recommend the nomination and compensation of the external auditors.



- (b) Oversee the independence, work, and performance of the Corporation's external auditors.
  - (c) Review the principal risks that could impact the financial reporting of the Corporation and monitor how management is dealing with such risks.
  - (d) Monitor the integrity of the Corporation's disclosure and financial reporting process and its system of internal controls regarding financial reporting and accounting compliance.
  - (e) Monitor the Corporation's compliance with laws, regulations, and internal policies that apply to financial or accounting matters.
  - (f) Oversee the resolution of any disagreements among external auditors, management, and the internal auditing department, if any.
8. The Committee shall annually select and recommend to the Board the nomination of an external auditor, recommend the replacement of the current external auditor when circumstances warrant it, and monitor the independence, work, and performance of the external auditors. This shall include:
- (a) Considering the views of management in respect of the nomination of the external auditors.
  - (b) Reviewing and recommending for approval by the Board, the terms of the external auditors' engagement, including the reasonableness of the proposed audit fees.
  - (c) Pre-approving any engagement for non-audit services to be provided by the external auditors' firm or its affiliates, together with estimated fees. This shall involve considering the potential impact of such services on the independence of the external auditors.
  - (d) When there is to be a change of external auditors, reviewing all issues and documentation related to the change, including the information to be included in the Notice of Change of Auditors and documentation called for under National Instrument 51-102 as defined in Section 4.11 and the planned steps for an orderly transition.
  - (e) Reviewing all reportable events, including disagreements, unresolved issues and consultations with external auditors, as defined by applicable securities policies, on a routine basis, whether or not there is to be a change of external auditors.
9. In carrying out its primary duties and responsibilities, the Committee shall:
- (a) Review the annual audit plan with the external auditors and with management.
  - (b) Discuss with management and the external auditors any proposed changes in major accounting policies or principles, the potential impact of significant risks and uncertainties on future operations, and key estimates and judgments of management that may be material to financial reporting.
  - (c) Review with management and with the external auditors significant financial reporting issues arising during the most recent fiscal period and the resolution or proposed resolution of such issues

- (d) Review any problems experienced or concerns expressed by the external auditors in performing an audit, including any restrictions imposed by management or significant accounting issues on which there were a disagreement with management.
- (e) Review periodically with management the Corporation's disclosure controls and procedures as such term is defined in National Instrument 52-109 and monitor the certification process set out therein.
- (f) Review audited annual financial statements and related documents in conjunction with the audit findings report of the external auditors and obtain an explanation from management of all significant variances between comparative reporting periods.
- (g) Review with management the adequacy and effectiveness of the internal financial controls of the Corporation including any deficiencies noted in the Audit or Interim Review Findings Report and subsequent follow-up to any identified weaknesses.
- (h) Review with management and the external auditors the quarterly unaudited financial statements before release to the public.
- (i) Before release, review and, if appropriate, recommend for approval by the Board, all public disclosure documents containing audited or unaudited financial information including any press release, annual report, annual information form, management discussion and analysis of operations, prospectus (and all documents which may be incorporated by reference into such prospectus), and all other securities offering documents of the Corporation.
- (j) Review periodically with management the internal procedures implemented to review any other public disclosure of financial information extracted or derived from the Corporation's financial statements.
- (k) Approve the hiring of any partners, employees, or former partners and employees of the Corporation's present and former external auditor.

10. In addition, the Committee shall:

- (a) Oversee the receipt, review, and follow-up of questions, concerns, or complaints pursuant to the Corporation's Code of Business Conduct and Ethics and the procedures set out in Appendix "A" thereto.
- (b) Review with management, at least annually, the capital management policies, the financing strategy and funding plans of the Corporation.
- (c) Review the amount and terms of any insurance to be obtained or maintained by the Corporation with respect to insurable risks inherent in its operations and potential liabilities incurred by the directors or officers in the discharge of their duties and responsibilities.
- (d) In conjunction with the Nominating and Corporate Governance Committee, monitor financial and accounting personnel succession planning within the Corporation and review the appointments of the Chief Financial Officer and any key financial managers who are involved in the financial reporting process.
- (e) Inquire into and determine the appropriate resolution of any conflict of interest in respect of audit or financial matters.

- (f) Periodically review with management the need for an internal audit function.
- (g) Quarterly, review any legal matter that could have a significant impact on the Corporation's financial statements and any enquiries received from regulators or government agencies.
- (h) Review periodically with management the adequacy and effectiveness of the Corporation's policies and procedures for compliance with securities laws, regulatory requirements, and stock exchange rules.
- (i) Report to the Board at the earliest opportunity after each meeting the results of its activities and any reviews undertaken and make recommendations to the Board as deemed appropriate.
- (j) Bi-annually assess the performance of the Committee.
- (k) Annually review the Audit Committee Charter and report to the Board on Committee compliance with the Charter.

## **MEETINGS**

1. The Committee shall convene a minimum of four (4) times each year at such time and places as may be designated by the Chair of the Committee and whenever a meeting is requested by the Board, a member of the Committee, the external auditors, or a senior officer of the Corporation.
2. Notice of each meeting of the Committee shall be given to each member and to the external auditors, who shall be entitled to attend each meeting of the Committee and shall attend whenever requested to do so by a member of the Committee or the Secretary of the Committee.
3. Notice of a meeting of the Committee shall:
  - (a) Be in writing.
  - (b) State the nature of the business to be transacted at the meeting in reasonable detail.
  - (c) To the extent practicable, be accompanied by copies of documentation to be considered at the meeting.
  - (d) Be given at least forty-eight (48) hours' notice preceding the time stipulated for the meeting or such shorter period as the members of the Committee may permit.
4. A quorum for the transaction of business at a meeting of the Committee shall consist of two (2) members of the Committee.
5. A member of the Committee may participate in a meeting of the Committee by means of such telephonic, electronic, or other communication facilities, provided it permits all persons participating in the meeting to communicate adequately with each other, and a member participating in such a meeting by any such means is deemed to be present at the meeting.
6. The Chair of the Committee ("Chair") shall be appointed by the Board. The Chair shall have only those responsibilities and powers delegated to it herein and shall not have a second or

casting vote. The Chair shall have the responsibility of reporting annually to the Board on the Committee's compliance with this Charter.

7. In the absence of the Chair of the Committee, the members of the Committee shall choose one of the members present to be Chair of the meeting and, in the absence of the Secretary of the Committee; the members shall choose one of the persons present to be the Secretary of the meeting.
8. By invitation, the CEO and other parties may attend meetings of the Committee; however, the Committee may meet separately at any time with the external auditors, invited management, or any other third parties as determined by the Committee.
9. At each regular meeting of the Committee, the agenda shall include an opportunity for the members of the Committee to meet in-camera.
10. Minutes shall be kept of all meetings of the Committee and shall be signed by the Chair and the Secretary of the meeting.
11. Minutes of the meetings of the Committee shall be retained by the Secretary of the Corporation and shall be available on request to any member of the Board.

## **RESOURCES AND AUTHORITY**

1. The Committee will be provided with resources commensurate with the duties and responsibilities assigned to it by the Board, including administrative support. If deemed necessary by the Committee, it will have the discretion to institute investigations of improprieties or suspected improprieties, including the standing authority to retain independent counsel or advisors and to set their compensation.
2. The Committee shall have the authority to:
  - (a) inspect any and all of the books and records of the Corporation, its subsidiaries, and affiliates;
  - (b) discuss with any officer of the Corporation, its subsidiaries and affiliates, the Chief Financial Officer and senior staff of the Corporation, any affected party, and external
  - (c) auditors, such accounts, records, and other matters as any member of the Committee considers necessary and appropriate; and
  - (d) communicate directly with the internal and external auditors.

Approved by the Board of Directors on August 5, 2009