How do surveys fit into land management?

One important purpose of a survey is to provide a description by defining the extent of a parcel of land so that land transactions can be formally registered in a on-line land registry. Modern surveys can do much more than protecting people's rights in individual parcels. By connecting surveyed boundaries to the physical features of the land and the community, a useful framework of information can be built for community land management, becoming known as Integrated Land Management.

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Canada Lands Surveyors use modern technology including total station and global positioning system (GPS) equipment for measuring and storing information in a data collector. Satellite imagery and remote sensing, LIDAR imagery, and unmanned aerial vehicles UAV (drones) are other ways surveyors gather a wide variety of spatially referenced information.

Geographic information systems (GIS) can be powerful tools for land management on First Nation Reserve lands. Information about boundaries and physical features on the land collected by Canada Lands Surveyors in formats that are compatible with the Canadian Spatial Reference System can be related to existing mapping, local GIS, and on-line land registry systems.

Managing land with the tools of GIS can include the mapping of historical culture and traditional uses, documenting community planning processes and outcomes, mapping existing community infrastructure such as housing and roads, base mapping for engineering design for new projects such as water treatment systems and schools, and planning for emergency response and disaster management.

Land tenure information provides data about parcel boundaries and interests in land. Land tenure information combined with existing and planned land use information form a strong foundation for land management. Powerful mapping and computing tools exist to support land managers and Bands in decision making on topics such as land use zoning, assessing the implications of

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contemplated projects, considering requests for land transactions, and planning for housing development.

Geographic information systems can use “as-built” mapping to show customary allotments, investigate access issues for existing parcels, and be used to review encroachments of features over existing boundaries. Other uses include creating property addresses for emergency response planning, tracking public works maintenance and preparing inventories for natural resource management in forestry, mining, and hydro power generation.

Canada Lands Surveyors are experts in research, gathering geographically referenced data, and managing the spatially related information that feeds strong geographic information systems. Surveys completed by Canada Lands Surveyors for land transactions are an important part of building such a system for Integrated Land Management on First Nation Reserve lands.