

IGLD: a Case Study for Leveraging Digital Tools to Enhance QA/QC on Large Scale Static Gns Observation Campaigns

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SUMMARY

In 2022, The National Geodetic Survey (NGS), USACE, WIDOT, MIDOT conducted a GNSS observation survey campaign in the Great Lakes region along the border between the United States and Canada. The survey was part of a binational effort between NOAA'S National Geodetic Survey (NGS) and Natural Resources Canada's (NRC) Canadian Geodetic survey (CGS) for the development of a new International Great Lakes Datum (IGLD). The observations conducted in the United States were planned and coordinated by the Field Observation Branch (FOB) of the Observation and Analysis Division (OAD) of NGS located in Chesapeake, Virginia. The GNSS survey campaign required immense planning, equipment, and personnel to complete within a 6-week window coordinated between both countries. Strict survey protocols were developed for both observers and managers to provide a quality control and quality assurance (QA/QC) system. Development of effective logistics was heavily supported

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leveraging digital tools to plan, conduct, and visualize the GNSS survey. Campaign specific GIS maps were created to enhance the communication between field and office personnel. Modern efficient mobile apps were utilized for navigating to bench marks and recording observation metadata. The overall success of this static GNSS campaign spanning multiple time zones (1,000 miles) highlights NGSs' efforts to incorporate modern digital tools to conduct their work.

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