



First Nations (Alberta) Technical Services Advisory Group

"Be a leader with integrity by cooperatively providing a safe sustainable future for First Nations through quality technical services."

Remote Water Monitoring



First Nations (Alberta) Technical Services Advisory Group

- Formed 1998 via Chiefs' Summit Resolution
- Mandated by Alberta Chiefs – Chiefs Steering Committee, 2 representatives from each Treaty region in Alberta.
- Board of Directors
3 Representatives from each Treaty region in Alberta

Our Goal....

To assist First Nations communities in achieving and maintaining high standards through our services, thereby providing community members with a solid foundation for healthy living.

Our scope of work includes, but is not limited to training, coordinating, liaising and information sharing among First Nations technical service providers and staff.

Our Mandate

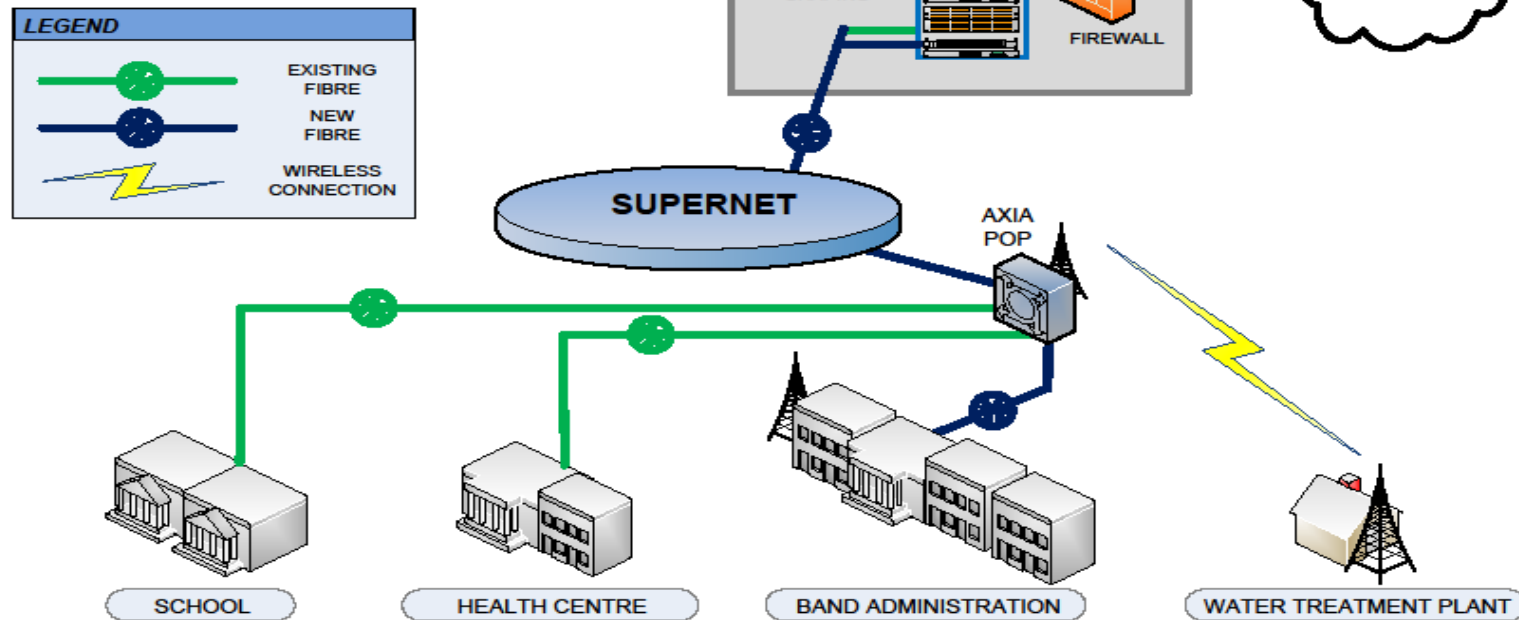
- To provide services and training to First Nation communities in Alberta in the following areas:
 - Circuit Rider Training Program
 - Fire Prevention
 - Environmental Management
 - Housing Initiatives
 - Asset Management
 - Animals and Human Health
 - Information Technology

TSAG Connectivity

- 2005 – Alberta SuperNet
- 2006 – SchoolNet is connected to the Alberta SuperNet
- 2008 – TSAG connects AB FN HC' s to AB SuperNet
- 2009 – TSAG is the regional RMO and provides AB SuperNet to FN Schools
- 2010 – TSAG completes Phase 1 of FNIF Connectivity to Band administration offices and WTP for 12 FN' s
- 2011 – TSAG completes Phase 2 & 3 of FNIF and completes all connections for Administration and WTP buildings

BAND ADMINISTRATION AND WATER TREATMENT PLANT CONNECTIVITY PROJECT

CONCEPTUAL NETWORK DIAGRAM



TSAG built a provincial wide information network linking all First Nation schools and health centers. Currently, TSAG is connecting band administration offices and water treatment plants to the Alberta SuperNet.

Network Operations



Help



- TSAG created an in-house Network Operations Center (NOC) and Help Desk to allow First Nations to have access to the Information Superhighway with dedicated support.

- The combination of all of this infrastructure and expertise uniquely allows TSAG to provide a comprehensive solution in it's support of First Nation communities.

Circuit Rider Training Program

- Train and advance the skills of First Nations operators and trainers to;
 - Maintain water and wastewater treatment systems.
 - Maintain water treatment facility management.
 - Ensure health and safety standards.
 - Enhance the process of reporting.
 - Conduct water testing.
 - Create community awareness.

Circuit Rider Training Program

- The CRTP involves the use of certified trainers who visit First Nations communities and instruct operators on their own system.
- The objective is to help operators maintain and upgrade their skill levels, so that they can maintain a well-functioning water and wastewater treatment system within their communities.



Issues Regarding Water and Wastewater

- Through the Circuit Rider Program, TSAG has noticed issues regarding plant operations at Water and Wastewater facilities.
 - High staff turnover amongst First Nation plant operators. Once trained, plant operators seek better paying opportunities in non-First Nation communities
 - Substandard adherence to proper maintenance and repair at certain water and wastewater plants. Operators, and their respective administrations, simply do not maintain the plants to the necessary levels
 - Water and wastewater plants do not report information on the plant and plant operations in a timely manner
 - When issues occur, such as water quality, the process to resolving issues take an inordinate amount of time.

Circuit Rider Training Program **Plus**

CRTP +

- TSAG would like to expand it's current program into the **CRTP+**
- **CRTP+** would encompass the existing CRTP with the following additions:
 - Remote Water Monitoring in all water and waste water facilities
 - Real time identification of problems at the facilities
 - Help Desk that can provide support for plant operators
 - Plant Operations Data that is stored at a central location (TSAG NOC) that will allow for accurate and timely reporting

Environmental Safety

- Utilizing Aquatic Life, a Canadian owned distributor of environmental testing products, based near Winnipeg, MB.
- s::can spectro::lyser – is a revolutionary optical multi-parameter probe. Using advanced mathematics to analyse the full UV-VIS spectrum allows calibration of the unit to provide accurate and detailed colour, turbidity equivalent and DOC of surface, bore and treated waters.
- this product provides continuous, real-time, on-line monitoring that allows for observation of trends and provides early warning of problems for a wide number of parameters.
- Allows for drinking water security, environmental monitoring, water quality assurance, waste water and effluent monitoring.



Benefits

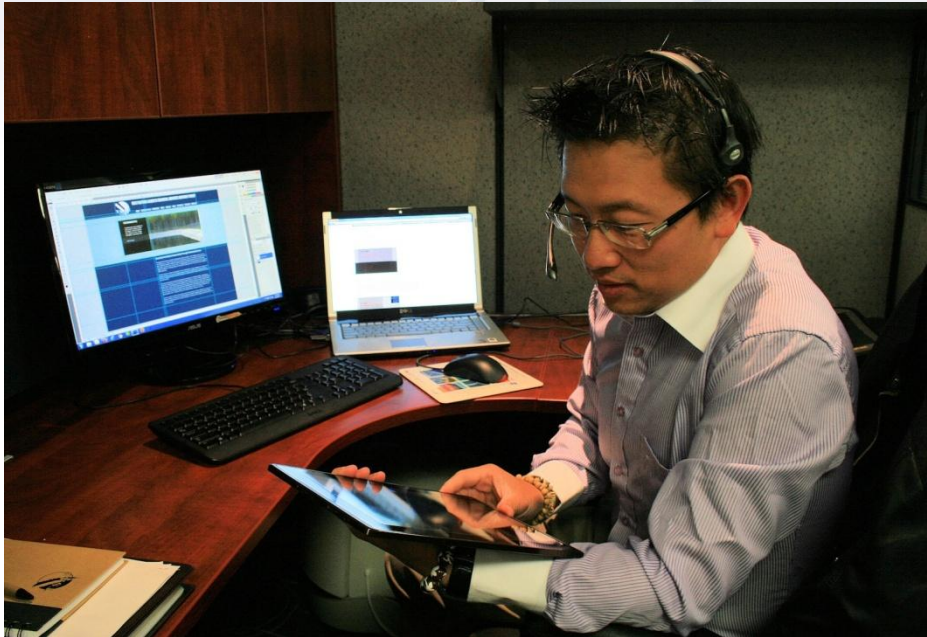
- ✓ Increase the health and safety of potable drinking water in Alberta First Nations;
- ✓ Create an added level of security for water treatment facilities;
- ✓ Mitigate the risk of water contamination;
- ✓ Create alarms to alert Operators/CRTP trainers in the event something goes awry;
- ✓ Add features to ensure reporting and regular maintenance is conducted.

Remote Water Monitoring System

- **Concept:** Remote Water Monitoring Systems have been used in urban communities for many years. They give a qualitative representation of the water quality (chlorine residual, turbidity, nitrates, and organic substances) in **real time**.
- **Process:** Should the system find an anomaly in the water quality, it will alert plant operators, administrations, and/or anyone required to rectify the situation or alert the public. Further laboratory testing will be required, but this will allow First Nation communities to have **real time** access to their drinking water quality.

Remote Water Monitoring System

Benefit: Water quality problems are promptly identified and designated people are quickly contacted.



Result: TSAG would employ the use of a remote water monitoring system supported by the TSAG Circuit Rider Training Program



Thank you

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Questions