

Hydro's VHF Mobile Radio System Replacement

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- ◆ Hydro's existing VHF mobile radio system
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Mobile Communications System

- ◆ Required for voice communications between personnel performing switching operations, maintenance & emergency repairs
 - mobile to a fixed location
 - mobile to mobile
 - one to one
 - one to many
- ◆ Factors influence coverage
 - Terrain
 - Mobile range



Classes of Service – Mobile Radio Systems

◆ Public Safety

- Police – RCMP/RNC
- Civil Defense
- Fire & Rescue

◆ Public Service

- Power Utilities – Newfoundland Power, Hydro
- Forestry – Kruger & Abitibi woods operations
- Manufacturing – North Atlantic Refining, Voisey's Bay Nickel, Hibernia platform, Terra Nova FPSO

◆ Private Individuals

Mobile Communication Systems for Power Utilities

- ◆ Power utilities rely on effective wireless communications for switching, troubleshooting, live line, emergency repairs & general maintenance
- ◆ When these systems do not work, life & property will be endangered and customers will be impacted

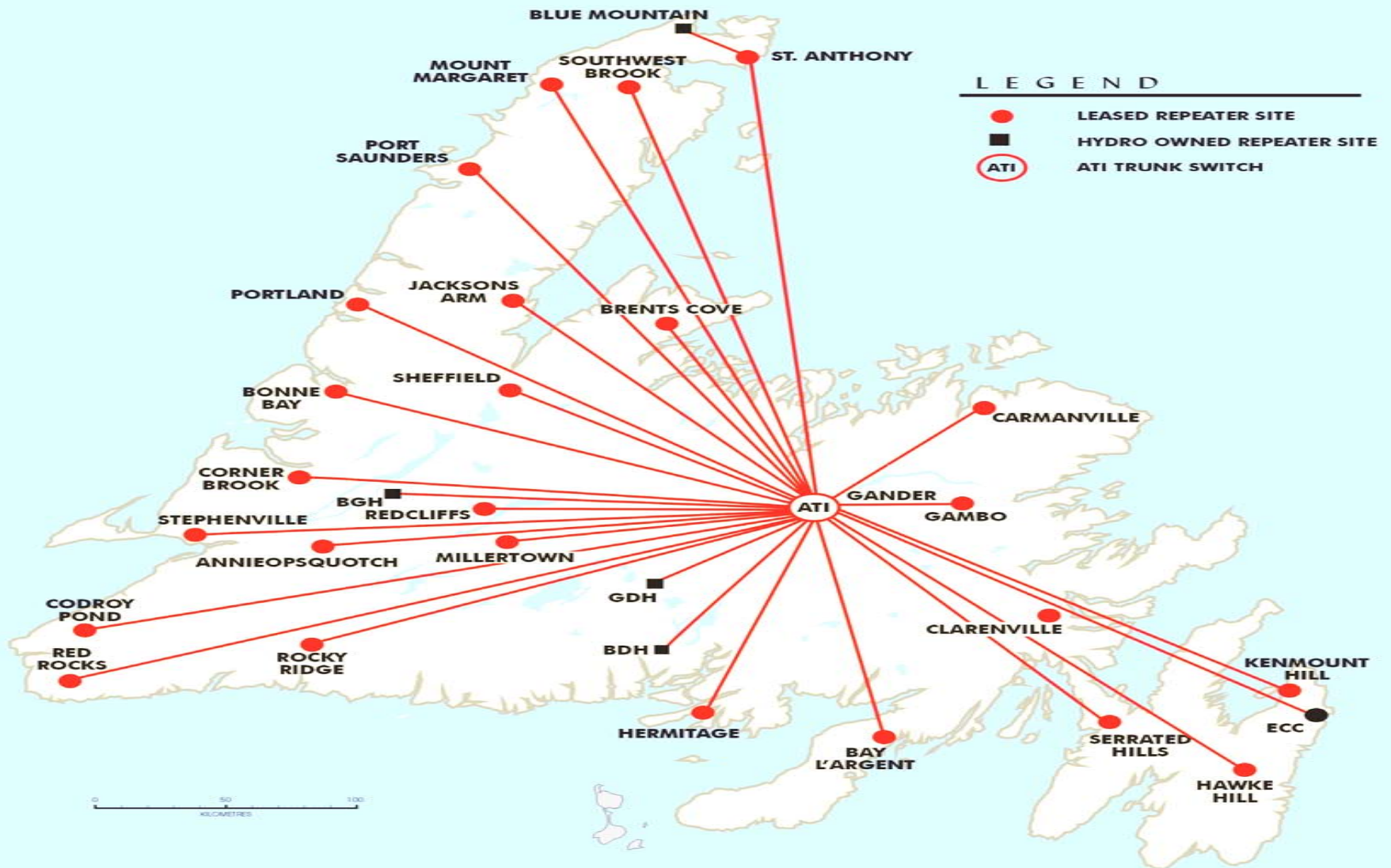


Hydro's Existing VHF Mobile Radio System (MRS)

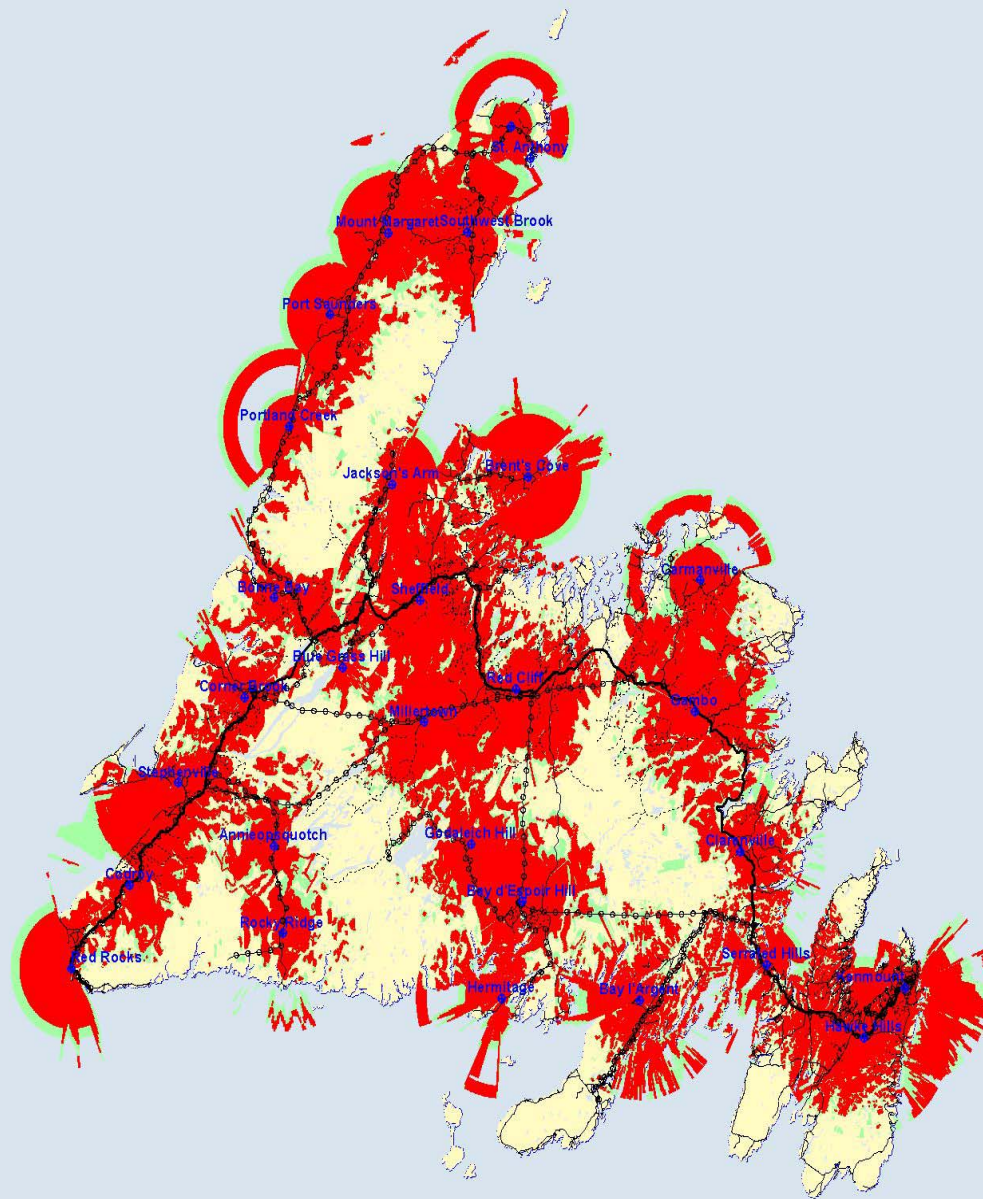
- ◆ Primary communications link between field and ECC personnel
 - Reduce outage time
 - Increase efficiency of field personnel during routine maintenance
 - Increase worker safety – working alone and emergencies
- ◆ Communications link between work crews and/or area offices
- ◆ General communications link between fleet vehicles
- ◆ DTW road maintenance

Existing VHF MRS

- ◆ Manufactured by ATI & placed in service in 1989
- ◆ Expected design life of 10 years
- ◆ Central switch and 29 repeaters: 25 Aliant sites, 4 Hydro sites
- ◆ Provides public telephone network access
- ◆ System management capability – remote monitoring & diagnostics
- ◆ Switch & repeater equipment maintained by Aliant
- ◆ Hydro owns approximately 300 mobile radios and 100 portables
- ◆ DTW owns 350 mobiles



Existing VHF Mobile Communications System



EXISTING VHF MOBILE RADIO COVERAGE



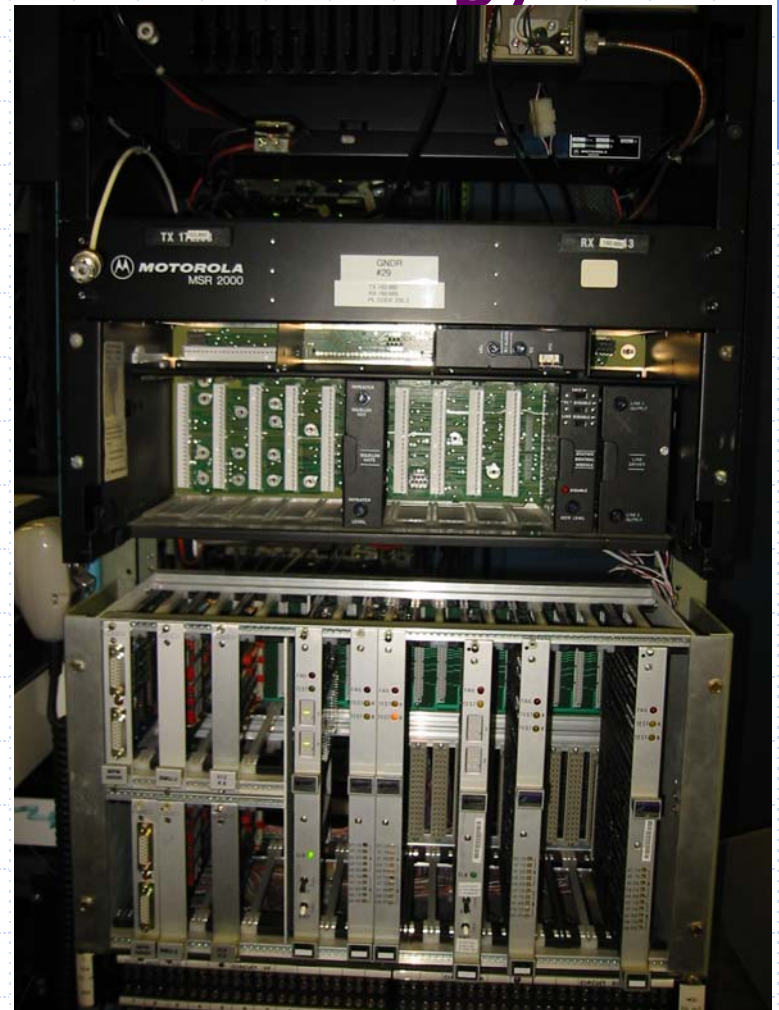
Existing VHF System Technology Issues

- ◆ Manufacturer support non-existent
- ◆ Site controllers & central switch proprietary design
- ◆ Inadequate spares to maintain central switch & site controllers
 - Repair services limited
 - Unable to secure additional spares
 - Unable to test existing spares



Existing VHF System – Technology Issues

- ◆ Motorola repeater equipment manufacturer discontinued in 1996 – limited repair support, new modules unavailable
- ◆ Motorola mobile & portable radios manufacturer discontinued – most units unable to be repaired



Existing VHF System – Business Issues & Concerns

- ◆ Current system is physically, functionally & technically obsolete
 - Subject to random failure with undetermined cause
 - Expansion is not possible to support additional coverage and infill needs
 - No longer supported by the manufacturer
- ◆ Maintenance of VHF system is by Aliant
 - No trained staff remaining knowledgeable about switch.

Implications of VHF MRS Failure

- Complete system failure is inevitable – the only question is when
- System failure will impede Hydro's ability to do work
 - Extend outages to our customers
 - Decrease productivity
- Replacement time after complete or partial failure of 18-24 months is not acceptable in terms of customer service & the safety of personnel

Proposed Project

- ◆ Complete replacement of the existing system with a new VHF MRS
 - Satellite & cell phone technologies are not suitable
- ◆ Support coverage requirements - 39 sites
- ◆ All repeaters will be installed at existing towers
- ◆ Hydro will issue a functional specification
 - Ensure most appropriate solution at least cost
 - Final technology solution not determined at this time

Proposed VHF MRS

- ◆ Will address the functional requirements of our field personnel
- ◆ Radio coverage will be expandable to meet future needs
- ◆ Will support Newfoundland Power's requirements when and if required
- ◆ Will enable Hydro to operate in a manner that is efficient and in the best interest of our customers
- ◆ Is the least cost option for Hydro's customers

Proposed VHF MRS

- ◆ Proposing a shared cost agreement between Hydro & DTW
 - Capital & operating costs to be shared
 - DTW coverage requirements over and above Hydro's will be at DTWs expense
 - Any cost recovery from DTW of capital and/or operating contributions will result in a reduction of Hydro's revenue requirement and thereby benefit customers

Summary

- ◆ All components of the existing system are manufacturer discontinued
- ◆ Spare parts are no longer available
- ◆ A complete replacement of the existing infrastructure is only option
- ◆ Hydro will issue tenders to ensure competitive bidding
- ◆ The system is critical to our operations and cannot be allowed to run to failure