

REPEATERS TECHNICAL PLAN – 2013
CRARS PROJECT ACTIVITY PLAN

Current Situation

CRARS supports three repeaters, located at: Brown Bay, Menzies mountain, and the Campbell River Hospital. The club implemented the Menzies repeater in 2012 replacing a repeater located in Strathcona Park. The current repeaters support VHF and UHF communications.

IRLP was implemented at the CRARS site located at the Search and Rescue (SAR) Larwood building. Due to recent internet communication issues at the SAR site, the IRLP system is currently temporarily relocated to a member's site.

APRS facilities are currently operated from a club member's home location. The longevity of this service is unknown at this time and is subject to the member's discretion.

The long term repeater technical development and support plan is based on these three repeater sites. The current additional IRLP and APRS communication facilities will be part of the plan. Currently IRLP and APRS facilities may not be available all times as members travel, etc. and service is discontinued for short periods.

Implementing this proposed technical plan will be an ongoing exercise, completing tasks as member time and resources permit.

Menzies Repeater

This site has wide and distant VHF coverage and is classified as the CRARS main communications repeater. Menzies repeater is hosted by North Island Communications (NIC). NIC has installed the requisite equipment for CRARS on an NIC owned tower operated by solar panels. CRARS equipment power requirements are to be maintained at a minimum. Consequently, there is no plan to install additional communication facilities at the Menzies site.

Brown Bay Repeater

The Brown Bay repeater in the past has hosted UHF and HF equipment. There is currently UHF repeater facilities. The recently detailed review of the Brown Bay site, as well as reviewing liability issues, noted that the current site is no longer suitable for HF operations. Due to RF from the commercial operations. Implementing HF would require relocating equipment and support facilities to at least ¼ mile away from the current location.

The Brown Bay repeater is UHF and does not have wide or distant communications. Hence this operating mode is limited and questionable as to its value to members. Installing VHF communications is also questionable. There is limited "line of site" pathways through the mountain hence VHF would offer limited communication opportunity. Considering the current light communications load on existing VHF repeaters, it is questionable that an

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additional VHF repeater would provide significant value to CRARS. Given that supporting Brown Bay requires driving 40 kilometers from Campbell River, plus access requires a hike up the mountain sometimes in bad weather, VHF facilities will not be installed. The current UHF repeater facilities will be removed. The repeater site has internet access but this is not being used at this time it will however, remain available for any future potential use. .

There is a potential to use Brown Bay as a UHF link to the CRARS VHF repeaters. This would enable integrated communications from any VHF repeater thereby providing a wider coverage area. It is planned to install a UHF link at Brown Bay to connect to Menzies and the Hospital repeaters.

The Hospital Repeater

The hospital is designated as CRARS second repeater. This is because the coverage area is not as broad as Menzies. However, the hospital has its own emergency power supply so in the event of a city disaster with wide spread power outage, the hospital may become the prime useable repeater. Currently only VHF repeater facilities are located at the hospital. The repeater site has internet access but this is not being used at this time. It is proposed to install increased functionality at the hospital.

Hospital access is difficult in that access must be pre arranged. It is considered to be easier than access to a member's site as members are not always available. The hospital is a secure location and CRARS assets are safe. The hospital has backup power adding communication advantages in times of city power outage.

1. IRLP The IRLP system currently operating at a member's site and using simplex frequency, will be relocated to the hospital site and connected to the repeater. This repeater operation not only moves IRLP communications to a higher antenna location but provides higher repeater output power thus giving a broader broadcast range. Range is also increased when combined with the proposed Brown Bay UHF linking facility. IRLP will be relocated to the hospital at the earliest opportunity to take advantage of the hospital facilities.
2. Echolink The Echolink system provides VOIP functionality similar to IRLP. The Echolink system was develop in USA consequently it has grown larger than the Canadian developed IRLP system. The Echolink world wide node count is approximately five times larger than IRLP.

Echolink operates using a Windows based operating system. IRLP operates using a Linux operating system. IRLP developers have developed a mechanism to operate both IRLP and Echolink on a single computer. The dual operating system will be investigated and implemented if practical as it would permit both IRLP and Echolink to function without increasing the VOIP equipment requirements. Both systems

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- would operate on the single repeater frequency. Should joint system operations on a single computer system found not to be practical and thereby requiring Echolibnk to have its own hardware, the requirements will be documented and brought to the membership for discussion and approval.
3. Phone patch CRARS used to have phone patch facilities provided by Comox Valley amateurs. This facility was discontinued approximately 2011. The requirements for a phone patch facility will be documented and brought to the membership for discussion with the expectation that a club phone patch can be justified and implemented for CRARS.
 4. Island Trunk It is possible that John Adam's repeater will be removed in the near future. Should this happen, members should consider connecting a club repeater to the Island Trunk system.

Ongoing Support

In the past, repeater and technical support has been sporadic and members with required expertise have taken on various tasks under their own initiative. While this gets tasks completed, it has caused member stress and sometimes technical undertakings conflict. This situation has also caused friction with co-tenant North Island Communications (NIC), There is no authorized member responsible for technical support.

In keeping with the co-locate agreement recently completed with NIC, it is required that CRARS have more control on member access to the Brown Bay site. It is also evident that only specific agreed personnel should work on equipment at all sites. This does not mean that only certain members have site access but it does mean that access must be controlled. It must also be considered that CRARS has only a few competent technical members, therefore equipment support is challenging.

It is proposed that a two member team be annually appointed to support CRARS site equipment. The team can be supplemented with additional member resources as the team requires. Support includes repeaters and other communications devices such as IRLP, APRS and other equipment that may be installed at sites as members decide. This team should be composed of one technical members and one non technical member. It is anticipated that the technical member will guide the non technical member who will increasingly learn site requirements. It is anticipated that over time, non technical resources will be able to increasing augment the technical members. This team can be formed annually, concurrent with executive elections.