



Proposal for Ramsey City Council

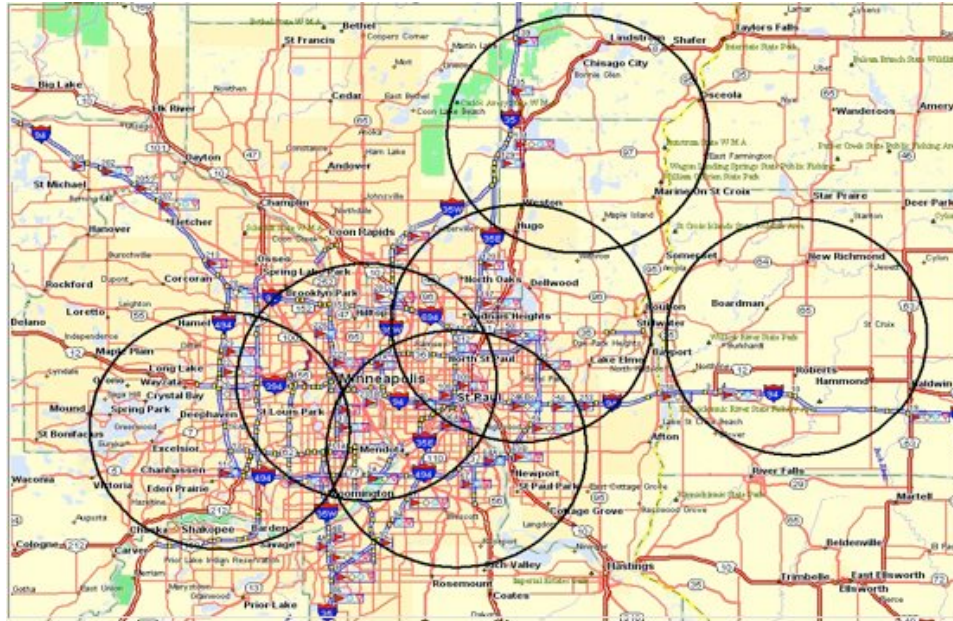


Synopsis

This proposal is for the placement of a small antenna and related radio repeater equipment on water tower #2 for the use of Skywarn spotters and amateur radio operators as a public service.

Details

The metro area repeater association (MARA) manages and maintains a series of radio links and repeater sites throughout the Twin Cities area as shown in the map below:



As you will note on this coverage map, there is no solid coverage in the North West metro area, which is what this location would solve.

Many of the other locations around the Twin Cities are placed on similar water towers, and peacefully coexisting with various city radio services, commercial radio services, and cell phone services. The general policy for MARA is If any interference is noted, the system is immediately taken offline, a solution created and tested, and then brought back online. All the repeater equipment is remotely controllable by MARA's engineers, and local site contacts are established for quick response when required.

All we ask for is space to mount the equipment, maintenance access for any repairs required, and a small bit of power to run it. All labor and equipment to install and maintain the antennas and repeater radio system will be provided by MARA engineers working with city engineers to comply with any specific requirements.

Technical Details

The system draws the equivalent power usage of a 60w light bulb. This would be a "Remote Receive" site for the system.

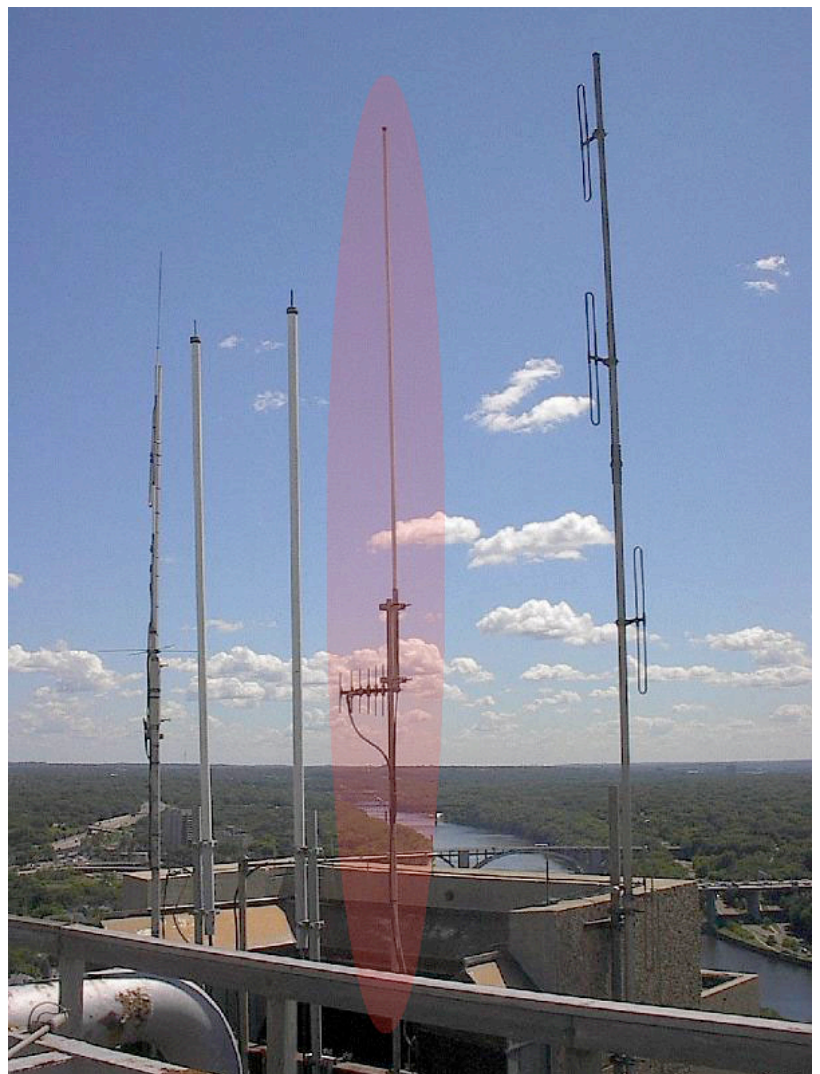
The MAIN 146.850 MHz repeater transmitter is located on one of the City of Oakdale's 180 foot high water tanks located just north of the intersection of Interstate Highways 94, 694 and 494 on the eastern edge of the Twin Cities Metro Area. Our repeater transmit antennas are mounted on the top of this water tank.

The 146.850 MHz transmitter used as the MAIN transmitter at Oakdale, is a solid state 500 watt continuous duty transmitter set at 450 watts of RF output power. It feeds a CELWAVE Super Stationmaster (fiberglass stick) antenna mounted on top of this 180 foot high tank by 200 feet of 7/8" Heliacx cable. Our calculated output power from this transmitter is about 1000 watts ERP (Effective Radiated Power). This transmitter site and equipment provides a solid signal in a 60 mile radius circle of coverage (suitable for mobile and handheld radio operation) from its location about 300 feet above the average terrain in the Twin Cities area.

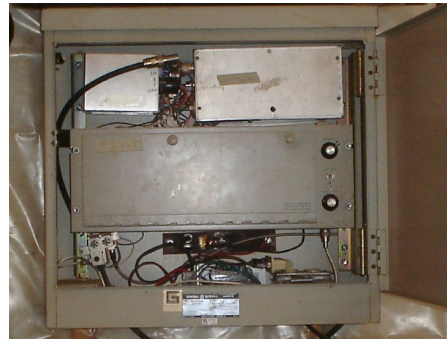
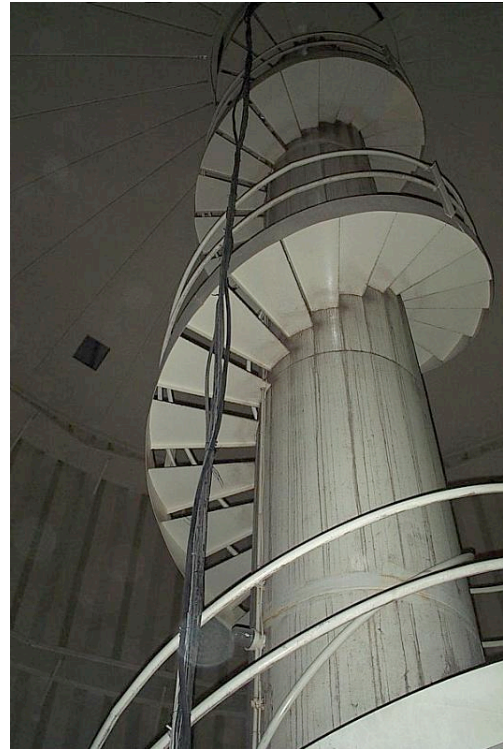
146.250 Remote Receiver sites

What makes the 25/85 repeater system operate so well are the multiple receiver sites used to pick up the transmitted signal on 146.250 MHz. Each of these six remote receive sites are linked to the White Bear Lake "Repeater Central." Many of the receive sites share sites with other Amateur Radio or Business Band repeater systems.

The antenna will need to be mounted on top of the South side of water tower #2. The highlighted antenna in the photo is similar to what would be mounted on top of the water tower.



Coax cables will be run down to the “brains” box mounted inside the water tower. One of the other water tower locations looks like this photo, though there are other radio equipment cables in the bundle running down the steps.



The “brains”, otherwise known as the repeater equipment of the system fits into a standard rack cabinet or a 20”x20”x10” wall mountable steel cabinet, depending on the requirements, and similar to this photos.

Any further questions can be directed to Joel Jameson, 763.843.0628 or any of the MARA staff though the web site at <http://www.wd0hwt.net>

Additional informational links for the attached files:

<http://transition.fcc.gov/pshs/techtocics/techtocics13.html>

<http://www.arrl.org/files/file/EMCOMM%20Broch%20for%20viewing.pdf>