## FAQ

## Richland County Radio Tower Project April 2022

Emergency radio systems are critical for most emergency services, local response teams, and state government communications. They sometimes are the only support still functioning during certain disaster situations. These systems must be robust, reliable, and in proper working order, 24 hours a day, 7 days a week, 365 days a year. This is when clear communication really can be a matter of life and death.

In Richland County, this system is used to communicate with law enforcement, EMS, emergency management, fire departments and county highway crews. This includes: Richland County Departments of Sheriff, Emergency Management, EMS and Highway as well as Richland Center Fire, Richland Center Police, Lone Rock Fire, Lone Rock EMS, Lone Rock Police, Viola Police, Kickapoo EMS, Kickapoo Fire, Cazenovia Fire, Cazenovia EMS, Yuba EMS, Blue River Fire, Blue River EMS, Muscoda Fire, Muscoda EMS, Ithaca First Responders, Western Richland County Responders and Richland Center City Utilities.

Many people understand what an emergency dispatch radio system is used for; we call 911 and help arrives. But, behind the scenes, most do not understand exactly how those lines of communication work from the ground up, from start to finish.

A basic communications process looks something like this:

- Call comes to Dispatch.
- Call for services is created with detailed information in a database,
- Dispatch operations of emergency response personnel takes place using various methods such a pager activation and radio announcements.
- Paging operation is a one-way encode neither dispatchers nor emergency personnel may understand failures until minutes have clicked away.
- Upon responding to a call for service the radio system is the lifeline of responders to access additional help or services to bring a call to resolution.
- Timely and clear conversations in the remote areas of operation are key.
- Currently, as law enforcement and emergency response personnel must manually switch channels on different towers depending on their location in the county.

Richland County has seen breakdowns in all areas of this process for several years and if these are not addressed loss of property or life is inevitable. Much of the equipment that currently makes up the radio system in Richland County is well past "end of life" expectancy.

1. What issues have occurred with current system?

Besides the fact the radio system design, equipment, and operation are beyond their lifecycles, there have been several specific incidents that go along with normal breakdowns and inadequacies. Listed below are just a few of these specific events.

a. 2/28/2022 – Sheriff channel issues again at around 18:30, down for several periods of time. Also noted Fire pager test had no voice, was paged from Console 2. Jason came in at 19:30 and noted Motorola TPS 262 unit in the bottom of the radio rack downstairs had Fail A and Fail B on the SM8 slot.

- b. 2/26/2022 22:17pm Sheriff down, Jason responded and noted about 14 minutes unaccounted for on recording. Sheriff channel back up and 15 minutes later is the Viola shooting incident at the Iron Horse.
- c. 2/25/2022 Possible issues again with Cazenovia page but seemed to be isolated incident.
- d. 2/22/2022 Baycom back and replaced fire repeater, found bad antenna. Tuesday morning the Baycom technician returned with a Motorola MTR2000 and swapped the unit. The unit came online, and a second issue of a bad antenna or antenna wire was also found. The repeater was connected to the RCALL antenna for the time being and testing done. Pages were clear and Baycom is to return later this week to address the antenna or antenna wire. Note the Motorola MTR2000 is another used unit and is not covered by maintenance as it is end of life.
- e. 02/19/2022 Dispatch advised getting a call from Brett saying that the Cazenovia fire page for testing was very poor. Dispatch did 3 other pages, 1 being from the second console and Brett advised some of the tones did not even come through let alone voice.
- f. 02/08/2022 Cazenovia EMS/Fire Page on February 8th, 2022. Request stated pages for two days have been "broken up and crackly," unknown if bunker tower having issue or operator error.
- g. For the Month of February 2022 Bunker tower was down intermittently for 3 weeks for at least two nights dispatch operated entirely off a backup radio.
- h. Lone Rock Paging was down in Feb 2022
- i. Dispatch console had errors in January X 3
- j. IFERN does not currently work in the entire county this is important if there is a MABAS call
- k. June 2021 Sheriff Department had problems with the tower switching for paging Caz and Lone Rock
- I. March 2021 Eagle Tower was down, and deputies could not communicate
- m. October 2020 Eagle Tower was down Deputies could not communicate
- n. Feb 2020 Richland Fire was down for two days no Fire/EMS traffic
- o. Feb 2020 IFern Channel failure during a MABAS incident involving multiple counties
- p. March 2018 Dispatch Consoles began to fail These consoles were the ones from LaCrosse.
- q. March 2018 Squad Chase on City. Officers were involved in an accident. Radio system failed no ambulances were able to be paged or fire departments.
- r. March 2017 Sylvan and Richland communications down for 5 days due to failure at both Console and Control Base.
- s. April 2016 Officers out with a subject in Jarvis Hollow with weapons. The officers could not get out on the radios (portable or in cars).
- t. March 2016 incident Pine St Lone Rock where Deputy Herbers has gun drawn and trying to use the radio to call for help and it never works. He has to ask an ex-girlfriend of the suspect who was also inside the residence to call 911 and tell dispatch he is ok but hurry (sending help).
- u. May 2015 Richland Sheriff Repeater failed and Bunker fire failure to set off weather sirens in Cazenovia.
- v. August 2009? Officer Kanable was at home and dispatch was down. He had a mobile radio and contacted Darin Gudgeon. He then contacted Bob Frank. It was approved that dispatch would call Chad and he would page from his him any 911 calls. An Ambulance was paged from there. This was caused by a cut in the dry loop from digging in the street. They were down for 23 hours. There was no backup plan for this as the infrastructure was not redundant.
- w. Bear Valley officers cannot communicate out of there and know where other officers are and if assistance is coming.
- 2. How long have we needed a new radio system?

It is challenging to put a specific date or timeline to this need, but here are some of the steps taken throughout past years to attempt to update these systems. In March 2010 there was resolution to study the radio system and in October 2010 the study was completed. In April of 2014 the county looked at it

very closely with a full study but did not act on that study; with a decision not to move forward at the February 2015 LEJC Meeting. Then again in April- October of 2017.

Dispatch console units in the 911 center were given to the County (2nd hand) when La Crosse County replaced their units. We received the equipment from LaCrosse County September of 2016. It was end of life at that time, but we were still getting support. While Baycom has continued to support long past the agreed upon 4 years it is becoming impossible to provide this support and service due to unavailability of parts. Currently we are replacing parts with unsupported used equipment that is unreliable. Not only are the consoles end of life but the other equipment that is involved in running the radios are end of life and unsupported.

3. What are the annual maintenance costs of our current radio system?

The pieces of the system that can be covered cost \$31,000.00 per year. Additional costs are incurred that are not covered as we do not have maintenance agreements on equipment too old.

4. What will the annual maintenance costs of new system be?

Annual maintenance for any new system will come with choices. New radio systems being more like a computer network (software based), the choice of keeping software and even hardware refreshed over the years of service may be presented. Costs will also be based on the expansion of sites and system capabilities. TNCG would estimate annual maintenance to be in the range of \$80K - \$130K.

5. Why do we want to stay below 50% capacity for borrowing?

The 50% is a limit set by the County. Moody's approach to the rating includes several categories including debt and pension obligations combined. Their calculations include the amount of debt, pensions and OPEB as a percentage of equalized valuation, and as a percentage of operating revenue. Moody's rating methodology does not use the percentage of legal debt capacity in its scorecard, but would consider how it would impact the County if the County was in danger of not having sufficient capacity to meet unforeseen needs. The last credit report the County received was in December of 2019. Since that time, the County has continued to pay down on its debt and is currently at 32.44% of its borrowing capacity.

The rating process also considers pension and OPEB liabilities. The Wisconsin Retirement System is one of the best funded systems, so that does not become a concern. The only OPEB liabilities for Richland County is the small life insurance benefits offered through the ETF, which is a liability around \$900,000.

Current Debt: Debt Outstanding after \$2,955,000 payments made on 3-01-22 is \$21,865,000 Debt Limit Based on 2021 E.V. (5%) - \$67,404,910 Percentage of Debt Limit Used - 32.44%

Debt if borrow \$7.5 million = \$29,365,000 Percentage of Debt Limit Used - 43.56%

Debt if borrow \$10 million = \$31,865,000 Percentage of Debt Limit Used - 47.27%

6. Why do we want 95/95 coverage? Is that a public safety standard? Is it a law, regulation or suggested guideline?

The coverage term 95/95 represents a standard of 95% of an area you wish to cover and the successful operation of a radio 95% of the time. Radio signals are not a constant and cannot be expected to work

under every change in conditions. This standard represents a level of quality that can and should be met for life saving communication devices. This standard is by no means any type of requirement or rule, but more of an accepted industry standard for public safety system design. Many agencies decide to lower standards where budgetary concerns must be addressed but realize those coverage trade offs with those decisions.

7. How is 95/95 calculated? Is it calculated based on where people live or just by acres?

Calculation of radio coverage is performed using software modeling by a skilled engineer understanding the equipment and antenna systems within a design. Modeling software uses accepted mathematical predictions developed for the industry. Signal levels are plotted to meet a minimum required level giving the reliability factor and that is understood across the designated area. It must be reviewed to understand where people live.

8. What is our current coverage level?

Current "Countywide" coverage is difficult to predict due to the nature of Richland County's multiple independent sites reusing the same frequencies. This type of system places the burden of understanding which channel works best on the radio user and that may need to be done during a situation of extreme stress. A true comparison could only focus on a single site and would likely use the Tower Hill site, being the best central location. True North puts the coverage level of that site at 65% coverage.

9. What do other counties with similar topography have for a radio system?

Public Safety radio systems that are being replaced tend to move towards P25 digital operation to gain the benefits of this industry standard. Other key radio system decisions are made based on items such as capacity and frequency of operation.

10. How much will subscriber (EMS, Fire Departments, Law Enforcement, Highway) equipment cost? Who is paying for it?

The question of who will need to support any updating of subscriber equipment will need to be discussed during the RFP response. The key decision of P25 operation will dictate the need to purchase higher cost subscriber equipment. A public safety radio subscriber capable of P25 operation may have a budget from \$3,000-\$6,000. If all subscriber equipment needs to be purchased because current equipment is NOT P25 compatible, the estimated cost is \$1.44 million. We are still assessing how many departments already have radios that are P25 compatible to get a more accurate estimate of what subscriber equipment costs will be. There will definitely be some new radios that will need to be purchased. Grant funds will be pursued to potentially cover the costs of subscriber equipment but it is likely that only a portion of the costs can be covered that way. There are several options that have been discussed for who will pay for subscriber equipment:

- a. County borrows to cover full costs of subscriber equipment
- b. Subscribers pay full cost of equipment
- c. County/Subscribers cost share (50/50, 75/25, 90/10?)
- 11. RFP results: the County received proposals from 2 companies with a total of 5 different options for our radio/tower system consideration. Initial understandings of the estimated project budgets range in cost from \$6 \$12 million. This budget range is driven by number of sites, amount of equipment, and coverage level results. True North is currently estimating the project budget at \$8.5 million based on balancing an understanding of the County's needs and the proposal results. Additional clarification questions are currently out to improve the proposal understandings.

- 12. Please note that Richland County is using a "REQUEST FOR PROPOSALS", process and not bids. This will be a design/build project. The RFP process is the common process to use when acquiring a replacement radio system. This gets the county a solid understanding of the radio equipment costs when applied to the site design provided by these vendors. Left out of the understanding are tower site or civils cost as the County needs to be involved in working with property or tower owners in order to understand the use of site and then those systems can be completely designed by a civil engineering firm. Richland County intends to keep that process separate from the radio vendor contract and release a bid to hire a civil contractor to complete the needed work once those processes are needed. True North has evaluated the proposals and come up with strong civil cost budgetary numbers with contingency funds built in for any unexpected expenditures.
- 13. There are towers all over Richland County, why don't we just use what is already in place?

It is likely that our radio tower communication system will use a total of 8-9 towers. All of the proposals that are being considered plan to use towers that already exist but it will be necessary to build some sites in order to cover all areas of the county. The current proposals recommend from 1-3 new tower sites.