

1 **RADIO COMMUNICATIONS SYSTEMS COMMITTEE**

2  
3 Sheriff's Office  
4 West Bend, Wisconsin

May 6, 2014  
3:00 p.m.

5  
6 Present: Daniel Goetz, Rick Gundrum, Brian Krebs, Thomas Niebler, Herbert Tennes,

7  
8 Also present: Sheriff Schmidt, Captain Gonwa, County Attorney, County Manager, Chief Fahey, Chief  
9 Hoell, Chief Dolnick, Chief Bishop, Chief Meuler, Chief Groves, Chief Dean Schmidt and John Schrader,  
10 Thomas Williams, Mike Lunebach and Rich Patterson of Harris Corporation.

11  
12 Absent: Dennis Myers

13  
14 County Board Chair Tennes called the meeting to order at 3:00 p.m. and read the affidavit of posting

15  
16 **MINUTES**

17 Minutes for February 6– Moved by Supervisor Goetz and second by Supervisor Niebler to approve the minutes  
18 of February 6, 2014. Motion carried. Minutes for March 14– Moved by Supervisor Goetz and second by  
19 Supervisor Niebler to approve the minutes of March 14, 2014. Motion carried.

20  
21 **DISCUSSION OF RADIO SYSTEM IMPROVEMENT OPTIONS – HARRIS CORP.**

22 Sheriff Schmit explained to the Committee he and John Schrader had several meetings with Harris Corp.  
23 The formal proposal presentation is scheduled for Wednesday, June 11, 2014 at 1:00 p.m. at the Sheriff's  
24 Office Training Room.

25  
26 This meeting today is to give the Committee an update and ideas of what Harris Corp. has found and how  
27 the County can proceed in the future.

28  
29 Tom Williams, Account Manager from Harris Corp began the discussion. Harris Corp. has years of  
30 experience with our current system, 700 Megahertz systems and combination of the two. They reviewed  
31 what we currently have and gave highlights of the full 700 megahertz system and its enhancements. The  
32 700 megahertz overlay of our existing VHF system will enhance the in-building coverage.

33  
34 **The new Overlay system** will give 95% DAQ3.4, LSM, which is the gold-standard in reception.

35 Review of two proposals:

- 36 1. 4-site 700 MHz Overlay at 23 dB portable indoor coverage in 4 population centers. 2 new Water  
37 Tower sites, 2 VHF collocutors. The main coverage sites would be Hartford, Germantown, West  
38 Bend and Jackson. This proposal is the most cost effective.  
39 2. 8-site 700 MHz replacement system at 12 dB portable indoor coverage in 4 population centers and  
40 6dB countywide. This proposal replaces all VHF with 700 MHz system.

41  
42 **DB LEVELS** A brief explanation of decibel levels was given. For every 3dB, the power changes up or  
43 down by a factor of 2. So getting 12dB outside it would automatically be assumed a good reading would  
44 be 6dB inside.

45  
46 **TRAFFIC CAPACITY** – We currently have 10 channels and only 6 are usable as the other 4 get too much  
47 interference. The 700 MHz Overlay system will give 5 broader channels that will give 8 talk paths  
48 (equivalent of 8 channels).

49 \*Sheriff's Clarification: The current VHF system has 10 channels. 1 serves as the "control" channel. The  
50 system is programmed to use the 6 most noise free channels first, with the 3 channels with the most  
51 interference will be used last. Current daily use needs only require the first 3-4 channels to handle radio

1 traffic. During an extraordinary widespread event, more channel capacity will be needed, and all 9 traffic  
2 channels may be in use, including the 3 that experience some interference.

3  
4 **LAND USE CLUTTER MAPS** were shown where the FCC demands a 5-mile boundary around the county.  
5 In order to get a license for a system, the reception must begin to degrade within 5 miles from the county's  
6 borders. Also these maps showed where the population and buildings density was located versus  
7 agriculture and marsh areas. Within the dense areas the 700 MHz system will work at full capacity of 12  
8 dB and over the open-land areas the VHF will take over. Regular buildings and homes can be penetrated  
9 with only 6dB because of the clarity of the 700 MHz system.

10  
11 **CHANGES SUGGESTED FOR OVERLAY SYSTEM** – Add a water tower site in Hartford and a 2<sup>nd</sup> site  
12 on Starlight Drive in Germantown (another water tower location). So all VHF sites will remain as is and  
13 only 2 new sites will be needed.

14  
15 **The Full 700 MHz system** – With this system we will keep the boundaries of 5 miles around the outside of  
16 the county to meet FCC licensing requirements. There would still be 4 main municipalities which would  
17 have the 12 dB but the other areas will receive 6dB.

18  
19 Consensus of Committee is to view both proposals, but they were very interested in the Overlay proposal.

#### 20 21 **Questions and Discussion**

- 22 • Outside Interference – Interference from other counties close to our borders will be eliminated with  
23 the Overlay system.
- 24 • Newburg – Most likely the best case scenario would be to shift the Master 3's to Newburg for better  
25 reception.
- 26 • Why keep VHF – VHF gives the best and longest overall coverage for all remote areas of the  
27 county. 700 MHz will enhance city and heavy populated areas better.
- 28 • Only some areas will need the multiband portables that will take both VHF and 700 MHz systems.  
29 These will switch automatically and most users won't know which system they are using. The  
30 portables will pick the best and clearest one for the area.
- 31 • Conversion Timeline – If all paperwork and licensing goes well, it should take 4-6 months to  
32 complete the change-over.

33  
34 Harris representatives stressed that not all buildings will be penetrable with 12dB, however with this  
35 proposal it was not requested that all buildings be tested. 12dB is what major cities use to get the best  
36 coverage. There will always be some buildings and areas that will never have coverage, those being 10"  
37 thick cement walls, elevator shafts, lead-lined areas (like radiology in hospitals) etc. It will be up to the  
38 municipalities to add extra coverage within those buildings if it is imperative they be covered. A  
39 discussion was held where some buildings would be easy to retrofit and others would not be cost effective.  
40 It was noted, some buildings would benefit from BDA's.

#### 41 42 **NEXT MEETING DATE**

43 The next meeting date will be Wednesday, June 11, 2014 at 1:00 p.m. at the Sheriff's Training Room.

#### 44 45 **ADJOURNMENT**

46 Moved by Supervisor Gundrum second by Supervisor Niebler to adjourn at 4:33 p.m. Motion carried.