

Request For Information

Wireless Broadband Next Generation 9-1-1 / Public Safety Wide Area Network Design Minneapolis / St. Paul Eight County Metropolitan Area

Request:

The Metropolitan Emergency Services Board is seeking information from qualified individuals / organizations about the design and implementation of a high capacity (1 gigabit or higher) wireless broadband wide area network to support all of the Internet Protocol (IP) based computer applications used in common in the nineteen Public Safety Answering Points (PSAPs) in the eight county metropolitan area; including, but not limited to, next generation 911, console functions associated with the regional ARMER trunked radio system, GIS, mobile data, CAD, RMS, and criminal justice data networks. The Metropolitan Emergency Services Board intends to utilize this information to prepare a Request For Proposal for the actual implementation and maintenance of a regional public safety wide area network.

Background:

The Metropolitan Emergency Services Board is a joint powers organization created by Anoka, Carver, Chisago, Scott, Hennepin, Dakota, Ramsey, and Washington Counties for the express purpose of managing the 911 network and databases in support of the nineteen PSAPs within the eight county metro area. The Board has the authority to enter into contracts and expend funds as necessary in the management of the 911 system. The Board acts as the point of contact for the nineteen PSAPs with wireless carriers, telephone companies, the State of MN, and the MN Public Utilities Commission. The Board is funded solely through assessments to the member counties based on population, and does not receive any direct funding from the 911 surcharge on telephone bills.

The Metropolitan Emergency Services Board believes that much of the existing 911 system must be upgraded and / or replaced in order to provide comparable access to users of new IP-based telecommunications services. At the same time, many of the traditional public safety communications tools or applications are also moving to, or have already moved to, IP-based systems and software. The Board believes an opportunity exists to share equipment and applications between multiple agencies on a single, secure, robust, redundant, and diverse wide area network; rather than to continue to implement separate, application specific IP networks on an individual PSAP basis.

The eight county metropolitan area has approximately 2.7 million residents within 185 communities or townships. The nineteen PSAPs in the metro area 911 system receive about 1.3 million 9-1-1 calls annually, of which about 55% are currently wireless.

The regional ARMER trunked radio system IP infrastructure is in place within the entire metropolitan area.

Program / Project Description:

The Metropolitan Emergency Services Board intends to implement a regional, IP-based, 911 system that will link all of the PSAPs in the eight county metropolitan area together on a wide area network, and wants to consider utilizing a high capacity wireless broadband WAN architecture. The network must support the NENA technical and operational standards related to Next Generation 911, IP telephony, and IP-based PSAP equipment. The network must permit interconnection to the existing 911 network and support of the public switched telephone network as we know it today, including full duplex voice applications.

The Metropolitan Emergency Services Board also administers a regional, public safety GIS program that creates, maintains, and distributes regional GIS data sets for use by the regional emergency response agencies and the metro area PSAPs. This GIS program has a need for wide area network connectivity to enable the automated update and error correction process between the PSAPs and the Board office. The proposed wireless network must support this GIS responsibility of the Board.

The proposed wireless network should be designed with sufficient capacity to support all of the other IP-based public safety applications currently coming into the metro area PSAPs. These applications would include, but are not limited to, the criminal justice data network (CJRS, NCIC, NLETS, etc.), the console function associated with the ARMER regional radio system, PSAP connectivity for mobile data networks, CAD, RMS, and a broadband, secure Internet connection.

The proposed network should be designed with sufficient diversity and redundancy to prevent any single point of failure from isolating a PSAP or otherwise taking a PSAP or group of PSAPs out of service. The ideal implementation would utilize a call taker workstation that would provide the ability to work with all of the appropriate public safety applications for a particular PSAP, regardless of where the workstation is physically connected to the wide area network.

Information Requested:

The Metropolitan Emergency Services Board would like qualified consultants or organizations to provide recommendations and budgetary cost estimates on:

1. Preparing a high capacity wireless wide area network design that can be used for planning purposes and as a means of identifying the individual network elements that would need to be included in an RFP for implementation of the network. The

design should include:

- a. a minimum of a one Gigabit Ethernet ring architecture connecting the eight county PSAPs, the Minneapolis Emergency Communications Center, and two diverse, redundant data centers with a minimum of two data paths to each facility (see Table 1 – ring PSAPs in bold)
 - b. a redundant, physically diverse method of connecting the eleven remaining PSAPs at reduced bandwidth
 - c. no proposed individual data path should be designed to carry more than 40% of the daily bandwidth traffic requirements or total network capacity
 - d. the assumption that the total bandwidth requirements for all 19 PSAPs under normal day to day operations would not exceed 300 Mbps (see Table 1)
 - e. recommendation on the type of wireless connectivity that would best meet the stringent requirements associated with supporting public safety operations
 - f. recommendations on potential data center sites capable of housing all of the public safety applications used by the PSAPs
2. Recommendations on how the proposed wireless wide area network could be secured, monitored, managed, and maintained on a 24x7, 365 days per year basis that would ensure a 99.999 percent operational reliability level with no degradation of services at the PSAP level under normal busy hour traffic conditions.
 3. Preparing a cost benefit analysis of the proposed wireless wide area network, compared to a similar sized network supported by a commercial carrier/telephone company, including the cost of security, monitoring, management, and maintenance.

The information you provide in response to this request should be considered public unless specific portions are marked “confidential” or “trade secret”. Please send your information response to this request by September 15, 2009 to:

Pete Eggimann
Director of 911 Services
Metropolitan Emergency Services Board
2099 University Ave. W
St. Paul, MN 55104

651 643 8377
peggimann@mn-mesb.org

Please direct any questions, request for clarification, or comments about this request for information to Pete Eggimann.

Table 1 – Traffic Estimates up to Year 2010

COUNTY / PSAP	Trunks*	Positions	Annual 9-1-1 Call Load	Bandwidth (Mbps)	Administrative call load (est.)	Total Bandwidth
ANOKA COUNTY						
Anoka County	10	6	118,522	10	35,000	12
RAMSEY COUNTY						
RCECC†	24	21	215,440	33	69,000	39
White Bear Lake	6	2	7,886	6	2,500	8
Subtotal	30	23	223,326	39	71,500	47
WASHINGTON COUNTY						
Washington County‡	10	10	31,947	18	10,600	22
CARVER COUNTY						
Carver County	6	4	16,305	8	6,000	10
CHISAGO COUNTY						
Chisago County	4	3	9,352	6	14,000	8
HENNEPIN COUNTY						
Airport	4	4	11,148	8	4,000	10
Bloomington	6	6	35,553	10	11,000	12
Brooklyn Center	6	3	19,106	8	7,000	10
Eden Prairie	6	4	18,104	8	6,000	10
Edina	6	3	18,147	7	6,000	9
Hennepin County	18	15	143,825	19	40,000	19
Hopkins	6	2	6,207	6	2,000	8
MECC	14	15	352,954	19	100,000	21
Minnetonka	6	4	13,336	8	4,000	10
Richfield	6	3	13,351	7	4,000	9
St Louis Park	6	3	28,423	7	9,000	9
University of MN				7		7
Subtotal	84	62	660,154	114	193,000	134

† Ramsey County includes traffic from Ramsey County, Maplewood and St. Paul.

‡ Washington County includes traffic from Cottage Grove.

COUNTY / PSAP	Trunks*	Positions	Annual 9-1-1 Call Load	Bandwidth (Mbps)	Administrative call load (est.)	Total Bandwidth
DAKOTA COUNTY						
DCC	32	19	86,301	38	28,000	48
SCOTT COUNTY						
Scott County	6	4	55,494	8	20,000	10
TOTAL	182	131	1,201,401	241	368,100	291

PSAPs Connected to the Proposed Ethernet Ring

PSAP	Physical Address
Anoka Co. Central Dispatch	325 East Main St., Anoka, MN 55303
Carver Co. Sheriff's Office	606 East 4 th St., Chaska, MN 55318
Chisago Co. Sheriff's Office	313 Main St., Center City, MN 55012
Dakota Communications Center	2860 160 th St. W, Rosemount, MN 55068
Hennepin Co. Sheriff's Office – Current (Communications)	9300 Naper St., Golden Valley, MN 55427
Hennepin Co. Sheriff's Office – New Location – expected 2011 occupancy	1145 Shenandoah Ln N, Plymouth, MN 55447
Minneapolis Emergency Comm Center	350 S. 5 th St., Minneapolis, MN 55415
Ramsey Co. Emergency Comm Center	388 13 th St., St. Paul, MN 55102
Scott Co. Sheriff's Office	301 S. Fuller St., Shakopee, MN 55379
Washington Co. Sheriff's Office	14900 61 st St., Stillwater, MN 55082

8 County Twin City Metropolitan Area

