

STATEMENT OF KEVIN PLUMB

IMPROVEMENTS TO TRUMBULL'S EMERGENCY LAND MOBILE RADIO SYSTEM AND EXPECTATIONS

CONNECTICUT SITING COUNCIL APPLICATION 421

TRUMBULL, CONNECTICUT

I am a resident of Trumbull, Connecticut. I reside at 10 Marina Avenue. I am a Professional Broadcast Engineer (CPBE) specializing in RF and transmission systems, with over 25 years of continuous service. In addition to my normal duties I am the engineer for several tower sites across the United States, responsible for the construction, maintenance, safety, FCC compliance, and day to day operations. I hold numerous industry certifications including the CPBE (certified professional broadcast engineer (#50916) issued by the Society of Broadcast Engineers issued July 1<sup>st</sup> 2009. I have been asked by CATT to submit comments regarding the Connecticut Siting Council Docket 421, applicant T-Mobile

**BACKGROUND**

T Mobile seeks to install a communications facility alongside the Trumbull Police Headquarters building on Edison Road located, within a high density residential neighborhood. The proposed supporting structure for this communication system will be a standard monopole. In order to accommodate existing public safety land / mobile 2 way radio systems the proposed monopole support structure will also include a platform at the top of the structure.

## **IMPROVEMENTS TO TRUMBULL'S EMERGENCY LAND MOBILE RADIO SYSTEM AND EXPECTATIONS**

Eric Fine the RF consultant for the town of Trumbull has stated his firm Northeastern Communications is representing the Town of Trumbull and its current and future radio needs. Mr Fine indicated that raising the current LMR antennas at Edison Road will make significant changes in coverage. Eric Fine also indicated at the CSC hearing on December 6, 2011 that antenna height equals reach on several occasions and that by simply raising the height of the existing tower 50 feet will future proof the Town's radio systems.

According to the testimony at the above hearing Mr Fine indicated that the tower would allow him to upgrade the PD system by relocating equipment from Monitor Hill to the new 150 foot (AGL) Edison Road tower. When Mr Fine was asked for technical details he provided general statements and had presented no technical research.

Based on the analysis provided in Map 7 the move from Monitor Hill to Edison Road 150 feet (AGL) is actually a loss in height by 130 feet (HAAT). The result of this loss in height also directly corresponds to the number of persons the new and improved signal will reach. Based off the 2000 total US census data contained within the signal analysis software this move will reach 256,519 less persons when comparing the existing to proposed 40dbu (using r-6602 (Carey) service contour).

## **CONCLUSION**

As a town resident with background of RF technology systems and procurement it is clear to me that there is a great deal of "homework" that needs to be done with respect to extending the height of this tower beyond the 130 feet (AGL) indicated by T-Mobile that would be satisfactory to meet their mobile device communication plans.

Reliable two-way radio coverage is the foundation of any Public Safety and Local Government radio communications system. It appears as if the Town of Trumbull has outgrown its current Police, Fire / EMS, and Public Works & Engineering radio systems.

It also appears as if the Town has not taken a serious approach to the Emergency Communications problems, example, lack of any technical LMR details at the December 6, 2011 CSC hearing. Also reinforced by our First Selectman's request to correct the record by acknowledging that only example he provided in his opening remarks was the Shawnee Road incident. Which had actually nothing to do with the RF signal and was a simple intermittent microphone cable.

Over the last few months I have spent time reviewing the actual needs and requests of the Trumbull Police Officers through their elected union representative. My take away from these conversations were the following priorities.

- 1) Digital Radio system with encryption (this would prevent scanners from intercepting communications, and provide greater officer safety for incident response)
- 2) New portable radios (current are exceeding 10 years of continuous use and have malfunctioning microphones, ie Shawnee Road incident)
- 3) Upgrades to the in car audio and video recording system. Current vendor is no longer in business and future upgrades and support are seriously in question.

Based on item one alone the town should develop a new radio system by first listening to daily needs of the town employees (police officers..) then generating a formal RFP. This would give diverse technology companies a chance to submit different solutions to take Trumbull well beyond 2020.

The purpose this RFP would be to clearly articulate the Town's preliminary radio Coverage requirements for the new system so that proposers can develop their system offerings with a clear understanding of the Town's expectations and requirements. There are many aspects of radio coverage performance that could be addressed so that proposers can have relevant, factual information upon which to develop their system designs? The Town would not be responsible for any costs involved in the vendors' proposal development.

Some of the topics contained in this RFP would include:

- 1)a description of the Town's required coverage areas
- 2) The type of coverage required i.e. mobile, portable on street, portable in light structures, portable in medium / heavy structures, and coverage in special areas such Trumbull Shopping Park, Trumbull Center, and selected buildings
- 3)Use of portable radios (head level / belt level, speaker mics, radio carrying devices such as swivel attachments for belt use)
- 4)Delivered audio quality performance (TIA / TSB-88 DAQ – voice sound quality required for the system)
- 5) Coverage reliability throughout the defined coverage areas
- 6) Coverage acceptance testing requirements that will be used to verify coverage performance once the system has been constructed.

An RFP would allow the Town to define acceptable coverage. For example the ability to successfully complete inbound (field to dispatch) outbound, (dispatch to field), and radio to radio voice communications in a repeat mode via the system infrastructure throughout the designated areas, standing still, and while in motion, with at least the minimum required level of audio quality (per TIA / TSB-88B or latest approved version DAQ) and with at least the specified level of propagation reliability. This level of performance is required for analog (if proposed), digital, and digitally encrypted modes of operation. As for audio quality vendors would be required to meet DAQ levels: For reference, the DAQ definitions, as defined in Bulletin TSB-88

Delivered Audio Quality	Subjective Performance
DAQ 5.0	Speech easily understood.
DAQ 4.5	Speech easily understood.
DAQ 4.0	Speech easily understood.
DAQ 3.4	Speech understandable with repetition only rarely required. Some Noise/Distortion.
DAQ 3.0	Speech understandable with slight effort. Occasional repetition required due to Noise/Distortion.
DAQ 2.0	Understandable with considerable effort. Frequent repetition due to Noise/Distortion.
DAQ 1.0	Unusable, speech present but unreadable.

*12/13/11*  
*Kevin Burns*

The above signed, *Kevin Burns*, being known to me or after satisfactory proof of identification, personally appeared before me and verified the above prefilled testimony for the Connecticut Siting Council dated *12/13/11* is true and accurate and that they adopted it as their free act and deed on the *13* day of December, 2011.

CT Notary My Commission Expires/ Connecticut Commissioner of the Superior Court

*John C. Gigante*  
(signature/date) *12/13/2011*

*John C. Gigante*  
*Notary Public State of CT*  
*My Commission expires 12/31/2016*

