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TOWN MANAGER

Public Safety Communications Update

This information provided below is in response to questions raised at the public hearing held on August 28th regarding public safety communications.

What is the size of the monopole proposed for the Public Safety Building on Chestnut Street?

The preliminary design of the proposed monopole is approximately 40-50 inches at the base and 18 - 22 inches at the top of the pole.

Can all of the infrastructure proposed for the Tower at HQ be placed underground?

No. Running fiber to replace the microwave installation at HQ does not eliminate the need for the monopole because the whip antennas must be installed on the pole to achieve the necessary height.

The current public safety communication system is run on leased copper wire with whip antenna repeaters at the Birds Hill water tank and at various other locations around Town. The system is not currently providing the level of service required for satisfactory public safety communication, and Verizon is phasing out its copper lines over the next five years.

The proposed system is a four tower closed loop microwave system with four whip antennas and two 36 inch microwave dishes at HQ. The four proposed whip antennas are for the fire alarm system (2), Police & Fire transmit (1) and Police and Fire receiving (1). The antennas will need to be located at 100 – 115 feet above ground (the current antennas are at 99 feet). Whip antennas and microwave dishes will also be needed at the Cabot Street, RTS and Dedham locations.

The RTS, Cabot and Dedham radio sites need to be connected to the core radio equipment at HQ. This connectivity is planned to be by microwave links, which is the preferred public safety connectivity system. Any links which are not microwave would need to be replaced by redundant fiber links.

The less desirable option is to run fiber above ground (subject to failure) or underground (prohibitively expensive) if one or more of the four structures is not installed. If the microwave is not installed at HQ, the Town would need to run fiber between HQ and at least the RTS and Dedham locations; however, the optimal system would include all four locations.

What would be the result if the monopole is not installed at the public safety building?

A tower could be located in the close proximity to HQ, although there are many disadvantages. The Town does not own land in the vicinity, and any installation close to HQ would presumably have the same aesthetic impact on neighbors. Moreover, such installation would require additional zoning relief.

Most importantly, HQ contains the dispatch center which is the focal point and system node for the mission critical public safety response system. This is where the public's emergency calls for service are answered, prioritized and dispatched to first responders by radio. The two components of the radio system are the two-way radio coverage and the connectivity of the radio sites to the dispatch center. ***Since all sites need to be connected to the equipment at HQ, it is important and prudent to locate the monopole at HQ.***

Moving the structure or equipment to another location adds vulnerability and additional equipment, and creates more points of failure. Equipment would be needed at the new pole location to connect to HQ with redundancy, creating design and maintenance challenges. The further the dispatch center is from the tower, the greater the risk for disruption and vulnerability. A tower at HQ can be better secured and maintained 24-7 in the event of emergency

Locating whip antennas and/or microwave dishes on the Town Hall cupola (the only tall municipal structure in proximity to HQ) is technically possible, but could not be concealed. The cupola is 84 feet, nine inches above grade. Town Hall is an architecturally significant landmark, and further zoning would also be required.

Can the monopole be screened?

There is no practical way to screen a monopole in an open area other than to make it the best color to blend in with its surroundings.