

STAFF REPORT

TO: Hailey Planning and Zoning Commission
FROM: Beth Robrahn, Planning Director
RE: Zoning Ordinance Amendments – Article 8A Wireless Facilities
HEARING: May 19, 2008

Applicant: Blaine County

Note: Staff analysis is in lighter type.

Notice

Notice for the public hearing was published in the Wood River Journal and mailed to public agencies and area media on April 30, 2008.

Application

The applicant has proposed several amendments to Section 8A of the Zoning Ordinance. The amendments submitted by the applicant are attached.

Background

Emergency services use two-way radio systems to communicate. Two-way radio systems operate on a fixed set of Federal Communication Commission (FCC) licensed frequencies that are designed to operate over a large area (50 to 100 miles). The critical issue with these two-way radio systems is that there is a good signal path (“line-of-site”) and signal level. These systems are designed to transmit signals from hand held devices (radios) to repeaters. A repeater is an electronic device that receives a signal and retransmits it at a higher level and/or power, or onto the other side of an obstruction, so that the signal can cover longer distances without degradation. Repeaters are routinely installed on mountain tops or high tower locations to provide maximum area coverage and provide connection when topography interferes with line-of-site for optimal performance.

The existing communication system used by Blaine County emergency services is dated and does not accomplish complete interoperability between Law Enforcement and Fire/EMS agencies. In two-way radio, interoperability relates to three areas; compatible communications paths (compatible frequencies, equipment and signaling), radio system coverage or adequate signal strength and scalable capacity.

The Idaho Statewide Interoperability Executive Council (SIEC), commissioned by the Governor of Idaho to provide policy level direction and to promote efficient and effective use of resources for matters related to public safety wireless radio interoperability, recommended that the State move to a 700MHz trunk system. Part of the SIEC mandate was to study alternative

technology/infrastructure. Blaine County is in the process of conforming to SIEC mandated standards for technology/infrastructure.

The Local Emergency Planning Committee, a committee which included all Blaine County emergency agencies, began planning for a 700MHz Trunking Radio system to serve the needs of the County and improve the interoperability of its emergency communication system as recommended by SIEC and bring the system into compliance with Project 25.

Project 25 (P25) is a set of standards for public safety digital radio produced through the joint efforts of the Association of Public Safety Communications Officials International (APCO), the National Association of State Telecommunications Directors (NASTD), selected Federal Agencies and the National Communications System (NCS), and standardized under the Telecommunications Industry Association (TIA).

In April of 2007 the “Interoperable Emergency Communication Plan” was prepared to identify radio frequency strengths and weaknesses in Blaine County. This was done to assist with the Statewide Interoperability Executive Council’s (SIEC) task to promote interagency cooperation and provide support statewide for efficient and effective use of local and private resources to achieve public safety wireless radio interoperable communications for local and private public safety agencies.

The “Interoperable Emergency Communication Plan” was used as a reference for the Public Safety Interoperability Communications (PSIC) grant application. A \$1.1 Million grant has been awarded to Blaine County. Blaine County plans to begin purchasing equipment within the next month with a goal to get the 700MHz system operational in 2009.

Blaine County contracted with Motorola to design the 700MHz system. In May 2007 Motorola produced the “Blaine County 700MHz Engineering Study”, also referred to as the “Blaine Digital Interagency Network”. The new 700MHz system includes the current repeaters located in the County. The 700MHz system consists of a 5 operator position MCC7500 Dispatch Console, to be located in the new Blaine County Justice Center (Public Safety Facility), and four 700MHz ASTRO Repeater radio sites located at PHQ East (ski patrol headquarters on Baldy), Dollar, Galena and Picabo Mountain.

Blaine County then contracted with 180 Connect, Inc. – Network Services to “field verify” the recommendations of the Motorola study by analyzing local conditions and make additional recommendations.

According to the County, the optimum height for the tower is 120 ft. for the current system at the Public Safety Facility. The Federal Aviation Administration (FAA) regulations allow for a maximum of 75 feet. Hailey’s current ordinance allows a maximum support structure height of 40 feet. 180 Connect analyzed the feasibility of mounting the 12 antennas and one 6 ft microwave dish required for the 700MHz system to a 40 ft support structure and found that other installation scenarios would be complicated, add additional costs and result in other technical challenges such as meeting the required vertical separation between antennas. 180 Connect recommended a 75 foot support structure with a microwave antenna height of 65 feet.

According to the County's Radio Frequency Engineer, there are (4) factors driving the height requirement of antenna structure at the new Blaine County Public Safety Facility.

1. Microwave surface terrain landscape clearance toward Picabo Mountain which is required for the 700MHz two-way radio system. A 6GHz microwave link (6 ft microwave dish) is required to operate point-to-point, line-of-sight, with "Fresnel zone clearance" (nearby close-in path obstructions). Microwave will not work with path obstructions.
2. Sufficient vertical space to physically mount all required antennas. The total number of antennas has been reduced in the design due to use of radio system combiners. There are 6 to 12 antennas planned for at this time. This number variation reflects the current need (6) and the number needed during the migration to the 700MHz system (12). After migration, the County expects that a complete conversion to the 700MHz system will reduce the total number of antennas needed at the site.
3. Sufficient vertical space and vertical separation between all required antennas to ensure they do not mechanically or electrically interfere with each other (minimum 20 feet between antenna tip and antenna base).
4. The ability to communicate directly from the new Public Safety Facility to units in the field without the infrastructure (repeaters or microwave links) being operational. The lower the antenna height the shorter the direct radio-to-radio range will be.

Given the conflict between the recommended equipment requirements for the 700MHz system and the height limit in Hailey's current ordinance a text amendment is being proposed that would establish standards specific to public safety radio communication.

Hailey's current ordinance requires co-location. There is an existing 90 foot Verizon mono pole which can not be used to support the system's infrastructure requirements due to security issues. The County is required to comply with Commission on Accreditation for Law Enforcement Agencies (CALEA) "Standards for Public Safety Communications Agencies" (Section 6.4.1) and Association of Public Safety Communications Officials (APCO) "Guidebook for Homeland Security and Preparedness Planning for Public Safety Communication Centers". According to the County because the repeaters on the mountains are not secure (are vulnerable to man-made and natural damage, i.e. castle rock fire) it is imperative that a secure wireless facility at the Public Safety Facility is in place so that if all else fails communication can occur directly with mobile radio units.

Staff has reviewed the applicant's proposed amendments and has made separate recommendations for amendments that would minimize the number of instances where public safety radio communication would be exempted from requirements. The applicant's proposed amendments are attached and are highlighted in the full section of the current article. Staff's recommendations are attached in ordinance form.

Standards of Evaluation

Section 14.6 of the Hailey Zoning Ordinance sets forth the following standards of evaluation:

The Commission shall, at a minimum, consider the following criteria in making its recommendation to the Council:

- 1. The proposed amendment is in accordance with the Comprehensive Plan;**
The applicant provided analysis on the following Comprehensive Plan policies.

5.0 Land Use

Policy 5.4.6. Provide adequate areas for institutional and public facilities, such as schools, senior care, medical, judicial and other community facilities, integrated within the community. (See also 9.0 Public Facilities, Utilities and Services, and 15.0 School Facilities and Transportation.)”

- c. Encourage and support regional planning efforts for provision of institutional and public facilities.’**

Applicant Analysis: The proposed text amendment acknowledges the industry standards for Public Safety Communication Centers and the fundamental requirement that two-way public safety radio transmission provide sufficient coverage to allow emergency personnel to communicate in the field. The text amendment establishes siting and design standards that are specific to public safety communication equipment. The proposed text amendment will allow Blaine County to seek approval of a 75’ radio tower that is part of the Public Safety Communication Center (dispatch center) located within the new Public Safety Building. The radio tower is essential to the operation of the Public Safety Communication Center which serves all public safety agencies within Blaine County including the cities of Hailey, Ketchum and Sun Valley, Blaine County, Idaho State Police, Wood River Fire Protection District, Carey Fire Protection District, Blaine County Road and Bridge, hospital to ambulance communication and ambulance dispatch and remote operations.

9.0 Public Facilities, Utilities, And Services Goals, Policies & Implementation

Goal 9.1: Maintain or improve service levels of all City utilities and facilities to adequately and efficiently provide for the health, safety, welfare and convenience of the City...”

Policy 9.5: Support Police Department improvements to meet projected Law Enforcement needs.

Policy 9.6: Support Fire Department improvements to meet projected fire protection and emergency incident response needs.

Applicant Analysis: The proposed text amendment and the subsequent approval of the proposed 75’ radio tower located at the Public Safety Communication Center located within the new Public Safety Building will allow for critical two-way radio communications by public safety agencies within Blaine County, thereby protecting the public health, safety and welfare of area residents and visitors.

2. Essential public facilities and services are available to support the full range of proposed uses without creating excessive additional requirements at public cost for the public facilities and services;

The emergency communications system being planned for the Public Safety Facility site is intended to provide better essential public service to the local and regional community. These amendments would accommodate the specialized needs of emergency and public safety communication.

3. The proposed uses are compatible with the surrounding area; and

The amendments are written to address the particular area and context a wireless communication support structure is proposed to be located.

1. The proposed amendment will promote the public health, safety and general welfare.

The premise of the proposed amendments is that the needs of improved public safety communication equipment are not met by the current wireless regulations.

Summary and Suggested Conditions

The Commission shall hold a public hearing and determine whether the proposed amendments are in accordance with the applicable standards of evaluation.

Motion Options

A motion to recommend to the Council that the proposed amendment (as proposed or as modified) be **approved**, finding that the four standards of evaluation have been met.

or

A motion to recommend to the Council that the proposed amendment be **denied**, finding that the following standards of evaluation have not been met:

Attachments:

1. Staff recommendations in ordinance form
2. Letter from Wireless Site Solutions, dated April 25, 2008 explaining the difference between cellular and two-way radio RF engineering
3. Pole specifications
4. Brochure on interoperability
5. Applicant’s proposed amendments