RECEIVED

JUN 1 1993

FCC - MAIL ROOM

DOCKET FILE COPY ORIGINAL

RECEIVED

JUN - 1 1993

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
	)	
Replacement of Part 90 by	)	
Part 88 to Revise the Private	)	**PR Docket No. 92-235**
Land Mobile Radio Services and	)	
Modify the Policies Governing Them	)	

To: The Commission
COMMENTS OF **The City of Colorado Springs, Colorado**

This document is in response to the **NOTICE OF PROPOSED RULE MAKING**, released November 6, 1992. While the respondent agrees in principle with the notice, it has several concerns and suggestions for the Commission's consideration.

I. Introduction

The respondent, the City of Colorado Springs, hereinafter referred to as the "City," is an incorporated city in the State of Colorado.

The City agrees that without significant regulatory changes in the bands below 512 MHz, the quality of Private Land Mobile Radio **(PLMR)** will likely deteriorate. **PUBLIC SAFETY, LOCAL GOVERNMENT, AND UTILITY** communications will ultimately be endangered.

The Commission is to be commended for taking the initiative with PR Docket 92-235. When completed and implemented, Part 88 will regulate and control **PLMR** communications systems for decades to come. It is because of these long-range implications that the docket must ultimately satisfy the requirements and limitations of state, county and local government agencies to the maximum extent possible.

The City agrees that the proposals must allow for technical flexibility and encourage the use of new and emerging technologies. The existing analog equipment uses principals and techniques developed in the 1930's and 1940's. The newer digital technology must be allowed to evolve. The City's objections are financial impact and the rapid implementation time. Some technical limitations will also be addressed.

The Public Safety Services - Police, Fire, and Emergency Medical Services - use five 150 MHz - 174 MHz radio channels, and twenty 450 MHz - 470 MHz radio channels. Local government functions use nine 150 MHz - 174 MHz radio channels, nine 450MHz - 470 MHz, and four 800 MHz - 900 MHz radio channels; and they are shared with utilities.

The City owns all utilities (electric construction, generation, transmission service, and distribution; gas transmission, construction, distribution, and service; wastewater collection and treatment; and water collection, construction, treatment, distribution and service. The utilities use ten 150 MHz - 174 MHz channels, six 450 MHz - 470 MHz channels, and four 800 MHz channels; and they are shared with local government. The channels are currently operated in the conventional mode, but also can operate in the trunked mode when the controlling infrastructure is installed. Local government and utilities share some channels. It is important to note that the City's utilities departments are larger than the local government departments in employees, inventory, and budget.

The City radio complement includes 1,683 mobiles, 1,436 portables, and 1,275 pagers. The City has approximately 256 base stations that are networked together using 23 analog microwave sites with 50 paths connecting them. The microwave system uses 900 MHz, 2 GHz, 6 GHz and 23 GHz. The total value of all City communications equipment is approximately $6,500,000.

The topography of the City challenges adequate communications coverage. The City generally lies in a valley at the confluence of Fountain and Monument Creeks. Austin Bluffs and Popes Bluff divide the City from east to west. There are rolling hills through the eastern part of the City and the Rocky Mountains are to the west. Monument Hill and the Black Forest lie on the northern border of the City. These are all formidable barriers to communications, although they do make excellent antenna platforms, in some instances.

The above paragraphs indicate the scope of the City's communications systems. The statistics and information stated above are used for estimates and calculations in this document.

The City is financially disadvantaged compared to many agencies throughout the nation. In 1990, "Amendments 3 and 4" were passed by the City electorate. This resulted in tax limitations and tax roll backs. This, in turn, resulted in mandated reduced spending by the City. To compound the problem, the state electorate passed "Amendment 1." This severely limits imposed taxes by all taxing agencies and districts in the state. As a result, budgets are being cut back and scrutinized throughout the state. Expensive communications systems will be very difficult to budget and implement, especially in a short period.

The City is aware that the Commission does not want to hear complaints and concerns about PR Docket 92-235 unless solutions or alternatives are proposed. With this in mind, the City will submit proposals for the Commissions consideration.

III. Discussion

A. Migration

The City has concerns about being able to modify the equipment it has for split channel operation. In some radios, the frequency synthesizer might not handle the split frequency. If this is true, the synthesizer would have to be modified or replaced. Crystals would have to be of a higher stability in this type of radio. Reduced deviation, Continuous Tone Coded Squelch Systems (CTCSS) and audio recovery (increased audio amplification) are other potential problems to be considered. In addition, much of the equipment used to test the radios would have to be replaced. Reducing the bandwidth of receivers does not appear to be a practical option because of the filters that will need replacement.

Impact to the City

If all City radios are modified by the deadline date for the initial split, and if the price of each radio is $30 (based on the Commission's estimate per radio), the cost to the City will be approximately $120,240. This is based on 1,683 mobiles, 1,436 portables, 256 base stations, and 1,275 pagers. A pager is estimated to cost $15 to boost the recovered audio. All that is required to modify the transmitter is to lower the deviation on the transmitter. However, interference from transmitters in the newly created channels might cause problems. Modifying a base station is another matter. It may be better to replace it rather than investing money in any modifications that might not be satisfactory.

Because of the above considerations, the City would rather not invest money into existing radios, which may operate unsatisfactorily after the modifications. The money would be better spent on new radios that meet all requirements. The design life of PLMR mobile and portable radios are generally considered to be seven years. In reality, reliability and maintenance costs determine how long a unit is kept in service. Many radios are in service 10 to 15 years. Considering this, a plan with a longer phase-in time would be attractive to budget for the change over, and to maximize the use of existing equipment.

The second split would require a complete system change-out with additional equipment to cover engineering considerations. Considering the total cost in today's dollars and using the existing number of mobiles, portables, and pagers, the City is looking at an estimated total of $9,500,000. Another $750,000 will have to be spent to replace the control base stations and mobile relays.

Proposed Solutions

The City considers the time frame to be unrealistic and in some cases, not well defined. The City, therefore, proposes that the deadline for implementation of the first split be changed to five years from the date Part 88 is approved by the Commission and that the second split be implemented in phases for six years thereafter. This would allow a total of 11 years for implementation. This, therefore, would allow adequate time to budget for the narrow band system and effectively and efficiently plan for the conversion.

The City further proposes that provisions be made for an Urban Plan to be submitted by each urban area within a state (Denver and Colorado Springs in Colorado's case) to that state's Frequency Advisory Committee (FAC). Regional areas, which are outside the urban areas, would submit regional plans so the entire state has a coordinated State Implementation Plan. The Commission would provide guidelines, target dates, and a mechanism to implement the process. The FAC would review, modify and ultimately

submit the plan to a national review committee or coordinator. The national coordinator would then forward the plan to the Commission. The Commission would ultimately approve or reject the plans for all states. This is envisioned to be similar to NPSPAC (National Public Safety Planning Advisory Committee), which has worked well for the 800 MHz - 900 MHz band.

The advantage to the Commission would be to have each state's EAC do much of the ground work

C. Transmitter Power/Antenna Height

Many wide area coverage systems used by the City and other agencies have transmitters exceeding the limits prescribed by the tables. Voting receivers can be used to enhance "talk-back" to the dispatcher, however, "talk-out" is another matter. For county-wide or regional systems, there is no economical substitute for one, high-ERP transmitter. In some cases, adequate engineering with multiple transmitter sites may allow the table criteria to be met. If the infrastructure is not in place, a lengthy engineering time, implementation budget, and installation time may be needed.

Impact to the City

If HAAT tables are retain as currently proposed by the Commission, every transmitter at our communications sites would greatly exceed the allowable ERP levels listed. If the ERP is reduced to comply with the table, the coverage for each transmitter will be reduced correspondingly. The only way the City could meet CALEA (Commission on Accreditation for Law Enforcement Agencies) standards, and provide adequate coverage for City radio users, is to redesign every system. The only option is to install and use two or three additional transmitters for each channel. If forty channels are used as a standard, the approximate cost to the City for transmitter replacement would be approximately $320,000. The cost of engineering and constructing any additional sites to accommodate the expansion is estimated at $550,000.

Proposed Solution

The City proposes that provisions for a waiver, or exemption, be incorporated to help solve this problem. This is even more important if the 1996 implementation deadline is not changed. The FAC could be the screening authority using the plan described above. The waiver or exemption could have time limits. Again, the Commission would have final approval or rejection.

Another solution would be to revise the HAAT tables to allow for a greater ERP. A compromise might work until a true Public Safety cellular-type system is designed and made available commercially. This system would employ techniques similar to 800 MHz cellular service, i.e., selecting appropriate frequency, reusing the frequency, accomplishing hand off and other management techniques. The big

Electric Overhead, Electric Underground, Electric Production, Park and Recreation, and Regional Building. The Water Department covers several counties - mobile relays are located on Pikes Peak, Badger Mountain, Mt. Princeton, and Tennessee Pass. The Electric Department has a large service area, outside the City limits. The Park and Recreation Department and Regional Building are county-wide systems. The Pikes Peak Firefighters Net is a multi-county system. All of these systems virtually would become useless if they could not operate as a mobile relay. To eliminate the mobile relays would require a very large investment. When the proposed ERP requirements are factored in, along with reduced bandwidth considerations, the problem is sizable.

Proposed Solution

The City proposes waivers and/or exemptions be allowed until a complete system replacement can be accomplished. The City also proposes that mobile relay operations be allowed, if it can be justified to the FAC or the Commission's satisfaction.

E. Paging

The various City departments and divisions now have paging capability on approximately half of their channels. Most of the City's paging is performed on 150 MHz - 174 MHz channels. A very few are performed on 450 MHz - 470 MHz channels.

Impact to the City

If all pagers must be replaced with narrow bandwidth digital pagers, the estimated cost is approximately $700,000. This includes pagers, the paging terminal, and new paging transmitters. The cost of a narrow band digital pager is estimated at $500. This figure may be somewhat high. Currently, there are no such pagers in existence, except perhaps in manufacturers' laboratories.

The City's concerns are threefold. They are:

1. Many, if not all, existing pagers being used would not function if the transmitter deviation is reduced.

2. Adequate radio coverage will not be provided if the Effective Radiated Power is reduced drastically.

3. The impact of reduced deviation on digital alphanumeric pagers is questionable. Can the new digital pagers work on the proposed narrow band frequency assignments.

Proposed Solutions

The City proposes to consolidate its paging functions into two paging only channels that will serve all departments and divisions. In the future, tone and voice paging will be replaced with digital paging, except for Fire Department alerting functions.

The City noticed with great interest that certain paging channels were proposed to be grandfathered. If all City paging is to be accomplished on two paging only channels, then it is proposed that provisions be made for these two channels be grandfathered also. The existing bandwidth and ERP would be retained.

At some time in the future, all City pagers would be converted to digital. The bandwidth could be reduced at this time.

IV. Summary

The impact of Part 88 may have devastating financial repercussions for the City and all other **PLMR** radio users in the country. Replacing existing equipment in an organized manner, and meeting the ERP tables with adequate coverage are the paramount concerns of the City. Therefore, the City begs the Commission to allow an adequate time frame and sufficient flexibility to meet the new rules. If analog radios can be replaced with digital radios as they end their useful life, Part 88 can be implemented with manageable financial impact.

The City also urges the Commission to allow the states with their urban areas, and regional areas, to plan their own implementation of Part 88. With realistic time frames, planning at the state and local level, combined with flexibility, Part 88 can be implemented without bankrupting the **PLMR.**

The Commission must provide provisions for paging only channels to remain at the existing deviation, and the paging transmitter site be allowed sufficient ERP for adequate coverage until all pagers can be replaced with narrow bandwidth digital pagers.

Respectfully Submitted,

Robert H. Sayers

Robert H. Sayers,
Communications Field Engineer
City of Colorado Springs
404 West Fontanero Street
Colorado Springs, CO 80907

May 19, 1993