

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

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| In the matter of |) | |
| |) | |
| The Development of Operational, |) | |
| Technical and Spectrum Requirements |) | |
| For Meeting Federal, State and Local |) | WT Docket 96-86 |
| Public Safety Agency Communication |) | |
| Requirements Through the Year 2010 |) | |
| |) | |
| Establishment of Rules and Requirements |) | |
| For Priority Access Service |) | |

To: The Commission

January 11, 1999

COMMENTS ON THE THIRD NOTICE OF PROPOSED RULE MAKING

The State of California (State) through its Department of General Services, Telecommunications Division submits the following comments regarding the above-captioned proceeding, FCC 98-191 (released September 29, 1998), 63 Fed Reg. 58645 (November 2, 1998).

The State operates several large land mobile radio communications systems for use by state agencies including the California Highway Patrol, the California Department of Forestry and Fire Protection, the California Department of Corrections, the California Youth Authority, the California Department of Transportation (CALTRANS), the California Department of Parks and Recreation, the California Department of Fish and Game, the California Department of Water Resources, the

California Department of Justice, and the Governor's Office of Emergency Services together with several other, smaller agencies. For the past several years, these agencies have been evaluating their land mobile communications needs now and into the future. This evaluation has resulted in a recommendation that these agencies join together in developing one or more shared, statewide radio systems. Besides the tremendous expense of building such a system (estimated at over \$3B), the availability of usable spectrum, in sufficient quantity to satisfy all State needs has been identified as a critical element of the project, one for which the only answer apparent on the horizon is the spectrum being allocated at 746-806 MHz.

USE AND LICENSING OF RESERVE SPECTRUM

The State recommends that the 8.8 MHz of spectrum held in reserve after the First Report and Order on the above-captioned proceeding be added to the 12.6 MHz of spectrum designated for assignment through the regional planning process with the proviso that the regional planning committees be instructed that certain portions of the 21.4 MHz¹ are to be set aside in the regional plan for statewide and for other wide area, multi-jurisdictional radio systems.

The State notes a certain ambiguity in the Commission's and other proposals to license the 8.8 MHz of spectrum directly to each state. Some entities have interpreted this proposal to mean that the 8.8 MHz of spectrum is for use by the state to satisfy its own internal operations while other entities have interpreted it to mean the state is to

¹ Results from the 12.6 MHz of spectrum assigned to the Regional Planning Committees in the First Report and Order plus the 8.8 MHz of spectrum which had been held in reserve pending comments in this proceeding.

decide how the spectrum would be best utilized to satisfy the communications needs of all public safety entities (city, county, state, special district, volunteer, etc.) within the state boundaries. Either interpretation might include state sponsorship of a statewide shared radio system for use by Federal, state, and/or local public safety entities. The State believes 8.8 MHz of spectrum to be too large an amount for use by the states for their own internal operations and it is unprepared to act as the arbiter in how all public safety agencies within the state's boundaries might use the spectrum. In particular, the State notes that it has neither the personnel, the equipment, the processes and procedures, nor the legislative authority to establish a "sub-licensing" program by which it might permit other public safety entities to use all or part of the 8.8 MHz of spectrum should such spectrum be "licensed directly to the state".

Nonetheless, state agencies find themselves in a somewhat unique position, especially those states whose land area is spread across two or more regional planning areas. The jurisdictional area of a state agency is, by definition, the entire state. State agency personnel must have the ability to roam anywhere within the state's boundaries, either as part of their normal day-to-day business or in response to an emergent situation.² To support these operations and movement of personnel, State agencies need a land mobile communications system which provides coverage in all parts of the state and that system, while not necessarily requiring common frequencies statewide,

² Some State personnel routinely travel to all parts of the state as part of their normal duty assignment. Other personnel might routinely work only in one area, but in the event of an emergent event may be sent to the scene of the emergency, even if such event is outside their "normal" operating area. For instance, during the "Rodney King" riots several years ago, the California Highway Patrol sent over 2,000 officers from all parts of the state to Los Angeles to help control the civil unrest. Each year, the California Department of Forestry and Fire Protection must send personnel and equipment to various parts of the state in response to forest and wildland fires.

needs to be allocated frequencies which are “same radio compatible”³ in all parts of the state. Yet, failure of just one regional planning committee to provide appropriate channel assignments can destroy the state’s ability to meet its communications need.

In years past, the Commission assigned specific channels for “state use only”.⁴ During the 800 MHz NPSPAC⁵ planning process the State was confronted with comments and concerns expressed by non-state agencies that for every channel assigned to the State, two other channels were removed from availability due to interference situations that would result from use of the channels over wide areas.⁶ While assignment of channels in this new spectrum presents different interference situations, the State already has heard concerns being expressed by entities within both regions⁷ that any channels assigned to the State will diminish the total number of channels which are assignable to any entity. This is due to a perceived need to

³ “Same radio compatible” means assignment of radio channels which may not necessarily be common across the entire state but must be in the same frequency band (in some cases, same sub-band as determined by the availability of equipment) to permit a single radio (either mobile or handheld) to be used in all parts of the state. A State radio user should not be required to determine where he/she is located to then determine which radio is supposed to be used in that area, to then determine which frequency to select on that radio before he/she can call for help.

⁴ For example, see §90.20(d)(16)

⁵ National Public Safety Plan Advisory Committee regarding use of the 821-824 MHz and 866-869 MHz spectrum

⁶ The channel assignment plan for the NPSPAC channels was predicated upon geographic separation between stations permitting systems to be built on overlapping frequencies at closer distances than would normally be possible for a co-channel assignment. Thus, “adjacent” channels were offset at 1/2 the bandwidth. However, the assumption that a state agency might use an assigned channel anywhere in the state made it impossible for the regional planning committees to assign the “adjacent” channel to any other agency since there would be virtually no geographic separation between the state agency (being everywhere) and that other entity. Thus, assigning a channel to a state agency meant also “protecting” the adjacent 1/2 channel on both sides from interference (much like the Commission protected the adjacent 1/2 channel on the five National Mutual Aid channels)---or, each channel assignment to a state agency actually “used up 3 channels which might have been used by other agencies”.

⁷ Region 5 in Southern California and Region 6 in Northern California

provide “guard channels” on either side of all channels assigned to the State. This places the State at a distinct disadvantage in arguing within the regional planning structure for spectrum. Any other entity or group of entities attempting to build large, wide-area systems will find themselves at the same disadvantage. Simply put, wide-area systems reduce the “reusability” of not only the channels assigned to the system but also the adjacent channels which might present interference situations.

The State requests the Commission assign 100 channel-pairs (2.5 MHz of spectrum) for state use only. The State further requests that these 100 channel-pairs be spread across the entire band, grouped into at least 20 sets of adjacent channels with at least 200 kHz separation between each set.⁸

Furthermore, the State requests the Commission assign one “wideband” channel-pair (300 kHz) for development of state wideband data systems. States traditionally have been behind the power-curve in the development and implementation of newer technologies. This is largely due to the processes and procedures state agencies must follow to implement new programs and to the inherent inertia which results from operating large communications systems..⁹ The State sees great potential

⁸ Grouping of channels into sets with a frequency separation between sets will permit use of transmitter combiners and receiver multi-couplers so that several channels can be installed at a single radio site. The State does not believe there needs to be any separation between the channels within a particular “set” since it will be able to control adjacent channel interference situations through its own system design process. This will reduce the number of “guard channels” to only those needed at the edge of each block. In fact, after the state/wide area system is built, it should be possible to recover some of the “guard channels” through assignment of those “guard channels” in areas having adequate geographic separation from the state/wide area system.

⁹ If a new idea is “tested” in only a small portion of the state’s overall system, success of the test could result in a demand for deployment throughout the system. Such demand may not fit into long-term funding plans and the establishment of priorities. Failure of a test, on the other hand, represents an expenditure of time, effort, and money which might have been better applied elsewhere. By their very size and complexity,

for wideband, over-the-air data applications in the future, but finds itself unable to react as quickly as some local entities already are reacting.

Similarly, the State recommends the Commission assign 100 channel pairs (2.5 MHz) and two wideband channel-pairs (600 kHz) for wide-area, multi-jurisdictional radio systems. Regional systems, whether sponsored by the state or not, require that the involved entities first set aside their inherent distrust about the motives of others and their inherent concern about losing control of their own destiny to allow them to come together to build consolidated radio systems. It takes time for these alliances to develop and the State believes the Commission should encourage the sharing of radio systems by reserving a portion of the new spectrum for that specific purpose.

In requesting that certain spectrum be set aside for state-only use, the State also recognizes that shared radio systems involving state, Federal, and local agencies are desirable. Therefore, the State recommends that states building radio systems on “state-only” channels be permitted to include Federal and local agencies in the design of those systems and, that should such a shared system be constructed, the Federal or local agencies participating in the system be considered full partners of the system, not merely as “permitted users”.

The State recommends that the Commission task each regional planning committee with identifying the specific channels to be set aside for state-only and for wide-area, multi-jurisdictional usage. It is not necessary for the same channels to be set aside for these functions nationwide and, in fact, it may be desirable to select

state systems present greater risks to be considered in deciding to conduct any experiments. Thus, there is greater inertia to overcome to conduct such tests.

different channels in each region to minimize interference between adjacent states/regions.

In recognition that setting aside spectrum for state-only and regional systems which is never utilized while other localized needs remain unmet is undesirable, the State recommends these assignments be held for a period of 5-years after approval of the regional plan or selection of a digital interoperability standard, whichever is later¹⁰. At the end of that 5-year period, construction of the system must have been started (but not necessarily completed) or the channels will revert to the regional planning committees for general-use assignment.

With regard to licensing and/or control over the 2.6 MHz of interoperability spectrum, the state recommends such licensing/control be decided by the regional planning committee. While in California, the State is the licensee of some of the existing interoperability channels, other channels are licensed by the individual entities. The different methods of licensing these channels is based not only in tradition but also in differences in how the channels are to be used. The State expects the same to be true for any new interoperability channels designated. It will make sense for some of the channels to be licensed exclusively by the State and for other channels to be licensed on an individual agency basis. Furthermore, while California has a strong statewide communications organization, such is not necessarily true in other states. There may, in fact, be no state agency in some states which could serve as the manager of all interoperability licenses.

¹⁰ As noted in its Petition For Reconsideration on the First Report and Order for the captioned proceeding, the failure of the Commission to select a digital interoperability standard will delay manufacture of radio equipment and, therefore, will delay the ability of any entity to design and build radio systems.

INTEROPERABILITY BELOW 512 MHz

The State supports Commission efforts to identify spectrum below 512 MHz for interoperability purposes, however, none of the proposals made by the Commission in this Third Notice offer true nationwide interoperability. The five VHF channels and four UHF channels identified in paragraph 191 are not clear, unused channels---there are numerous existing users on the adjacent channels who will cause and receive unacceptable interference from the proposed channels for many years to come.¹¹ The 138-144 MHz spectrum suffers not only from a Congressional mandate that it be auctioned, but also from the Department of Defense's identification of 36 bases around the country near which this spectrum will not be released for reuse in the foreseeable future. Similarly, use of the VHF Maritime Band is restricted in and near waterways and coastal areas. Thus, while each proposal offers some usefulness for interoperability on a localized basis, none of them offer the nationwide interoperability requested by PSWAC.

PREPARATION OF COMPUTERS TO ACCOMMODATE YEAR 2000

The State shares the Commission's concern about the potential impact of Y2K on computer systems, particularly those associated with public safety communications

¹¹ The VHF channels are offset 7.5 kHz from existing systems using 25 kHz bandwidth radios while the UHF channels are offset 12.5 kHz from existing systems. In each case, the existing system's bandwidth completely overlaps the proposed interoperability channel. Any new system installed on the proposed interoperability channel will cause unacceptable interference to those existing systems and will receive unacceptable interference from them. While the new channels were created as a result of "re-farming", existing users are under no mandate to ever convert to narrowband (12.5 kHz or eventually 6.25 kHz bandwidth) technology. Thus, there is no relief to the interference situation in the foreseeable future.

systems. Unlike its oversight on how common carriers provide service to their customers, the Commission has no responsibility in law, regulation, or tradition on how public safety communications systems are operated. The Y2K problem is not an issue of how the radio spectrum is utilized, but rather is an issue of how public safety systems will be impacted operationally by software failures of the equipment it uses.

Furthermore, most of the equipment is not radio equipment for which the Commission might claim some peripheral responsibility, but rather is associated equipment such as dispatch consoles, computer-aided dispatch systems, logging recorders, and other devices for which the Commission has claimed no historical interest.

If the Commission wants to help public safety agencies address the Y2K problem, it should require all equipment manufacturers (as a condition of Type Acceptance) to publish listings of Y2K compliance for all equipment known to still be in-service or being offered for sale. Such listing should include categories of "Not Affected" for equipment that does not use any software and "Tested/Compliant", "Tested/Non-compliant" and "Not Tested" for equipment that does use software. Such listings should also identify the software version where important. For equipment found to be "Non-compliant", the manufacturer should identify expected problems. For example, a radio may show the wrong date on a display, but if that display does not otherwise impact operation of the radio, such "non-compliance" probably is not a problem requiring quick action. Users need information---information that will either help them solve the problem before midnight on December 31st or information that will

help them develop a contingency plan on how to handle a known problem. It is the unknown problems that will create the biggest disruption.

Respectfully submitted,

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