

## COUNCIL REPORT

Date: October 10, 1997  
To: City Council  
Through: Mike Hutchinson  
From: Rich Lorig  
Subject: RFP for 800 MHz Trunked Radio System

### Purpose and Recommendation

This report informs the Council of the status of the Mesa-Phoenix Trunked Radio project and of an existing open architecture standard known in the public safety communications industry as Project 25. The recommendation is to direct staff to prepare a Request For Proposal to be released in March of 1998, and to require mandatory compliance with the Project 25 open architecture suite of standards. The RFP is for the procurement of a digital trunked radio system which is intended to replace all of Mesa's present radio systems.

### Background

For almost five years, the cities of Mesa and Phoenix have been in a partnership to obtain compatible, independent, open architecture trunked radio systems. These compatible systems will be connected to each other so as to form a valleywide network. This valleywide feature is necessary because of Mesa's and Phoenix' valleywide Fire Service dispatching responsibilities, changes in the valley fire services as they move through mutual aid to automatic aid agreements, and because police operations frequently extend across the entire valley. By use of open architecture Mesa and Phoenix can leverage off of each other so valleywide roaming and interoperability are achieved as a no additional cost by-product of joining the two systems together. Council previously approved a contract with a systems integrator to assist Mesa with the engineering and procurement process. Phoenix also has a contract with the same integrator. Pending Council approval, the integrator will develop the Mesa portion of a joint RFP. The RFP will be issued by City of Phoenix Purchasing with line items identifying separate City of Mesa and City of Phoenix systems. Mesa personnel will evaluate the proposals and make recommendations to Council on the Mesa portion of the RFP. This purchase will be funded by proceeds of a portion of the Law Enforcement Bond program approved by the voters in 1995.

### Discussion

The most significant issue is in requiring proposals to be compliant with an open architecture standard. There have historically been only three U.S. suppliers of public safety trunking systems. Two of the three support Project 25 and a fourth company has joined them in developing Project 25 compliant infrastructure. One of the original three trunking system suppliers, however, has chosen to support only their own proprietary system. If we require Project 25 compliance, this manufacturer will not be able to offer a compliant proposal.

Each of the three original companies still currently manufacture and market their own proprietary systems. Proprietary means that all equipment operating in the system is either from the system manufacturer or from a company licensed by that manufacturer. In practice, all equipment on the initial purchase and virtually all subsequent purchases of equipment in proprietary systems come from the system manufacturer. This is because licensing of others is limited or non-existent because of the sole-source nature of continued sales. If proprietary systems are allowed to be proposed along with Project 25 systems, for competitive reasons, manufacturers will

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not propose the more costly state-of-the-art systems that must compete against older systems. These older systems have already recovered their development costs whereas new systems will take several years of sales at higher prices to amortize their design costs.

Because proprietary systems use 15 year old technology and the new standard uses current technology, calling for compliance with the standard will initially cost more. We must note, however, that competition in purchase of proprietary systems only exists on the initial purchase. Subsequent purchases are limited to those available sole-source from the system manufacturer. Assuming a twenty year system life, we estimate 40-50% of the system cost is in the initial purchase and the rest is in subsequent purchases. In the case of a proprietary system this means that more than half of the life cycle capital costs will be sole-source. We estimate 20 year system life capital costs of \$30.72 million for a proprietary system and \$30.80 million for an open architecture system. Although initially the open system will cost more, that cost will be recovered over the system life by reduced costs of replacement mobile and portable radios. By choosing the open standard system, however, many technical, operational and organizational benefits are realized over current proprietary systems.

Cost, however, is not the most critical issue. Proprietary equipment from different manufacturers will not talk to each other. If we allow proprietary systems to be proposed, Mesa and Phoenix would either need to share a single system, or we would need two systems from one manufacturer (if we are to reach our mutual and automatic aid and valleywide roaming goals). Through the use of open systems, we do not limit our choice of supplier nor do we limit the choice of other jurisdictions which are certain to add their systems to this network in the future.

At the same time, the open standard describes a feature-rich technology which has the support of many manufacturers. Because they must continue to compete against each other, they must continue to evolve their product. In addition, because a standard is used, equipment from competing manufacturers talks to each other.

#### Alternatives

1. Issue an RFP which requires Project 25 standards compliance.

#### Advantages

- A. Mesa owned, operated, and controlled system.
- B. Valley-wide interoperability and roaming through Mesa - Phoenix partnership.
- C. Life cycle, open competitive procurement.
- D. Competition forces continued feature development.
- E. Other jurisdictions can join and expand the network in the future without cost to Mesa or Phoenix but with increased benefits for all.
- F. Five manufacturers have told us in writing that they intend to offer equipment to a Project 25 compliant RFP.
- G. System positioned to become the core of a much larger open network which could cover the entire state.

#### Disadvantages

- A. This system initially will cost more than a proprietary system would.
- B. One large manufacturer of proprietary systems has chosen to not provide Project 25 equipment.
- C. Companies not choosing to build Project 25 compliant systems will use all means at their disposal to convince Mesa to allow proposals for proprietary systems. This diverts Mesa's

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attention from technical and operational benefits to political issues.

2. Issue an RFP which uses a functional specification which allows proprietary systems to be proposed.

Advantages

- A. A mature proprietary system would initially cost less than a Project 25 system.
- B. System implementation would probably be easier because of the greater experience with mature systems.
- C. The system could be installed 12-18 months quicker than a Project 25 system will.

Disadvantages

- A. Mesa and Phoenix would have to agree to use the same manufacturer.
- B. Competition exists only for the initial purchase.
- C. Proprietary system manufacturers continue to develop features to be competitive in selling new systems, but have little incentive to support systems in place.
- D. Mesa would need to contract with Phoenix or to overbuild the Phoenix system in order to get valley-wide roaming and interoperability.
- E. Mesa would probably not be able to own, operate, and control its own system. Because of the size of their portion of the system, Phoenix would probably own a single system that both cities share use of.
- F. Purchases of add-on equipment would be sole source to the system manufacturer. Because the units which require frequent replacement are the mobile and portable radios, the largest life cycle cost would be in sole source procurement.
- G. Proprietary system manufacturers have very few choices for mobile and portable equipment. Everything is high tier (high cost) regardless of whether the radio is used by a police officer or firefighter or by personnel in less critical situations.
- H. Three manufacturers presently offer proprietary systems, and only two are generally successful in bidding projects the size of Mesa's.
- I. Other jurisdictions wanting to join the network would have to purchase their system and its components in a sole source procurement. The result would probably be that other jurisdictions might not "grow" the network because of increased sole source costs and their limited options.

3. Write an RFP which specifies desired compliance with Project 25, but which also allows proprietary systems to be proposed through functional requirements in the RFP.

Advantages

- A. All current proprietary system manufacturers could submit a proposal for their own proprietary system.
- B. Controversy before the proposals are received would probably be less because all manufacturers would be allowed to issue proposals.
- C. We might get both Project 25 and proprietary proposals.

Disadvantages

- A. Proprietary systems do not meet the operational needs of the Mesa Police and Fire Departments nor the organizational needs of the City of Mesa.
- B. Because of their higher cost and the need to be competitive there would probably be no

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proposals for the Project 25 open architecture. Manufacturers which build both proprietary and Project 25 systems will propose their proprietary systems in order to be price competitive with other proprietary systems. Proposals of this magnitude cost tens of thousands of dollars for manufacturers to prepare and they would probably offer their most price competitive proposal, and they will not offer multiple proposals.

- C. IGA's and other agreements would need to be in place where Mesa would agree to buy into a Phoenix system in order to share a single, proprietary system.

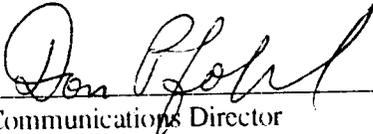
**Fiscal Impact**

The total estimate for Mesa's replacement police and fire radio systems was \$16.2 million. This estimate was based upon use of the Project 25 standard. \$12.2 million was included in the Law Enforcement Bond issue approved by the electorate in 1995. Because of their shorter life expectancy, portable radios were not included in the bond request. We estimate \$4 million will be needed for portable radios. The funds for portable radios will be requested through the normal budget process as we get closer to issuing the RFP. We do not anticipate any changes in personnel needed for maintenance. Personnel who maintain the existing system will be retrained to maintain the new system. We expect one additional position will be needed in the 1998/1999 FY and a second in the FY 1999/2000 time frame to support system management. These will be technical people who program and control the system's operational characteristics to give the flexibility the police and fire field users need. The cost of these two additional people is estimated to be \$131,600 per year.

**Concurrence**

The following persons concur in this recommendation:

Lars Jarvic, Police Chief  
Dennis Compton, Fire Chief

  
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Communications Director

  
\_\_\_\_\_  
Department Manager

  
\_\_\_\_\_  
City Manager

## Basis of Proprietary vs. Open Architecture System-Life Capital Costs

### PROPRIETARY SYSTEM

	Infrastructure	Mobiles	Portables	Total
Base Cost	8	4	4	
Initial Proprietary System Cost	6	3	3	12.0
5 years			4.14	
10 years		4.68	4.68	
15 years			5.22	
20 years				
	6	7.68	17.04	30.72

(\$ in millions)

#### Assumptions

1. Proprietary system will cost 75% of base on initial purchase.
2. All subsequent proprietary purchases will be 90% of base.
3. Prices will increase 3% per year.
4. Mobiles are replaced every 10 years.
5. Portables are replaced every 5 years.

### OPEN ARCHITECTURE SYSTEM

	Infrastructure	Mobiles	Portables	Total
Base Cost	8	4	4	
Initial Open Standard System Cost	8	3.60	3.60	15.2
5 years			3.45	
10 years		3.90	3.90	
15 years			4.35	
20 years				
	8	7.50	15.30	30.80

(\$ in millions)

#### Assumptions

1. Infrastructure will be at base cost.
2. Mobiles/Portables will be 90% of base in initial purchase.
3. Mobiles/Portables will be 75% of base in subsequent purchases.
4. Prices will increase 3% per year
5. Mobiles are replaced every 10 years.
6. Portables are replaced every 5 years.

W. RALPH PEW, P.C.  
Lawyers

ITEM NO. PI.1

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October 22, 1997

Via Hand Delivery

RECEIVED

Mr. Charles K. Luster, City Manager  
City of Mesa  
20 East Main Street  
Mesa, Arizona 85201

OCT 22 1997

CITY OF MESA  
CITY MANAGER'S OFFICE

Re: Zoning Case No: Z96-61  
Development Master Plan for Las Sendas Mountain

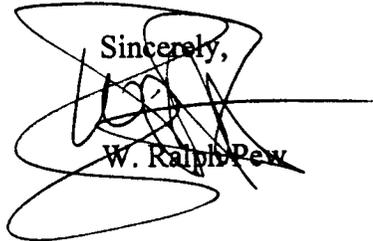
Dear Mr. Luster:

As a follow up to my conversation with Mayor Brown, after the Council meeting on Monday, October 20, 1997, please accept this letter as the request by the Applicant that the public hearing on this matter be scheduled for December 1, 1997.

At the meeting on October 20, 1997, the Council continued this matter to the November 17, 1997 City Council meeting. However, we were under the impression that the Mayor and Vice Mayor wanted public comment on the continuance and wanted to make sure that the Applicant requested enough time in this initial continuance request so that any revisions to the Development Master Plan could be discussed with adjoining property owners and with the City Staff prior to the rescheduled City Council meeting.

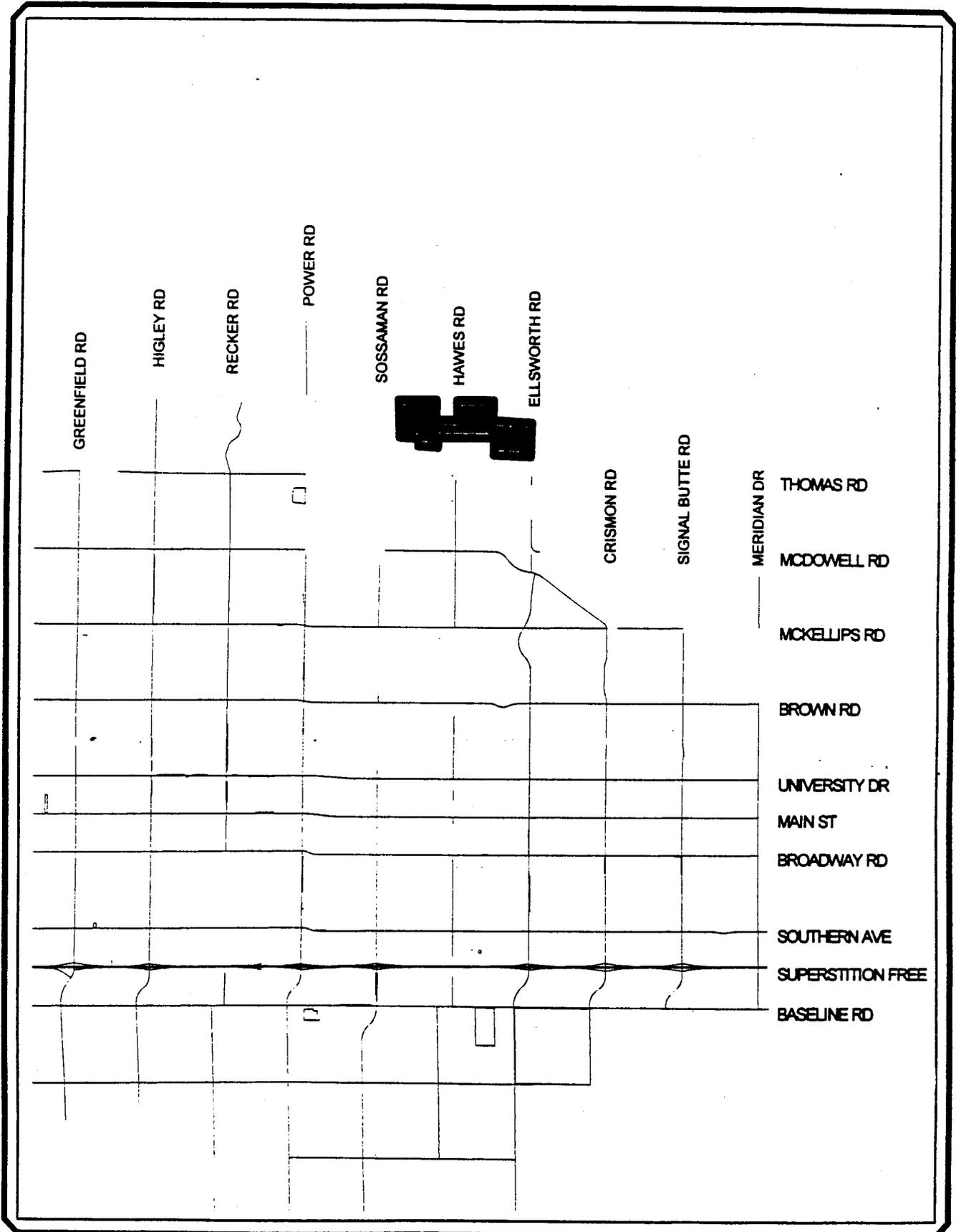
We respectfully request that the public hearing date on Zoning Case No: Z96-61 (Las Sendas Mountain DMP) be scheduled for December 1, 1997. This extension of time will allow the Applicant an opportunity to revise its Development Master Plan and contact adjoining property owners and the City Staff prior to the December 1, 1997 date.

Sincerely,

  
W. Ralph Pew

cc: CRM Holdings, Inc.  
United Development  
Ron Peters, BPLW Architects  
Bill Puffer  
Mark Cormier  
Fawn Finchum

# PLANNING AND ZONING VICINITY MAP

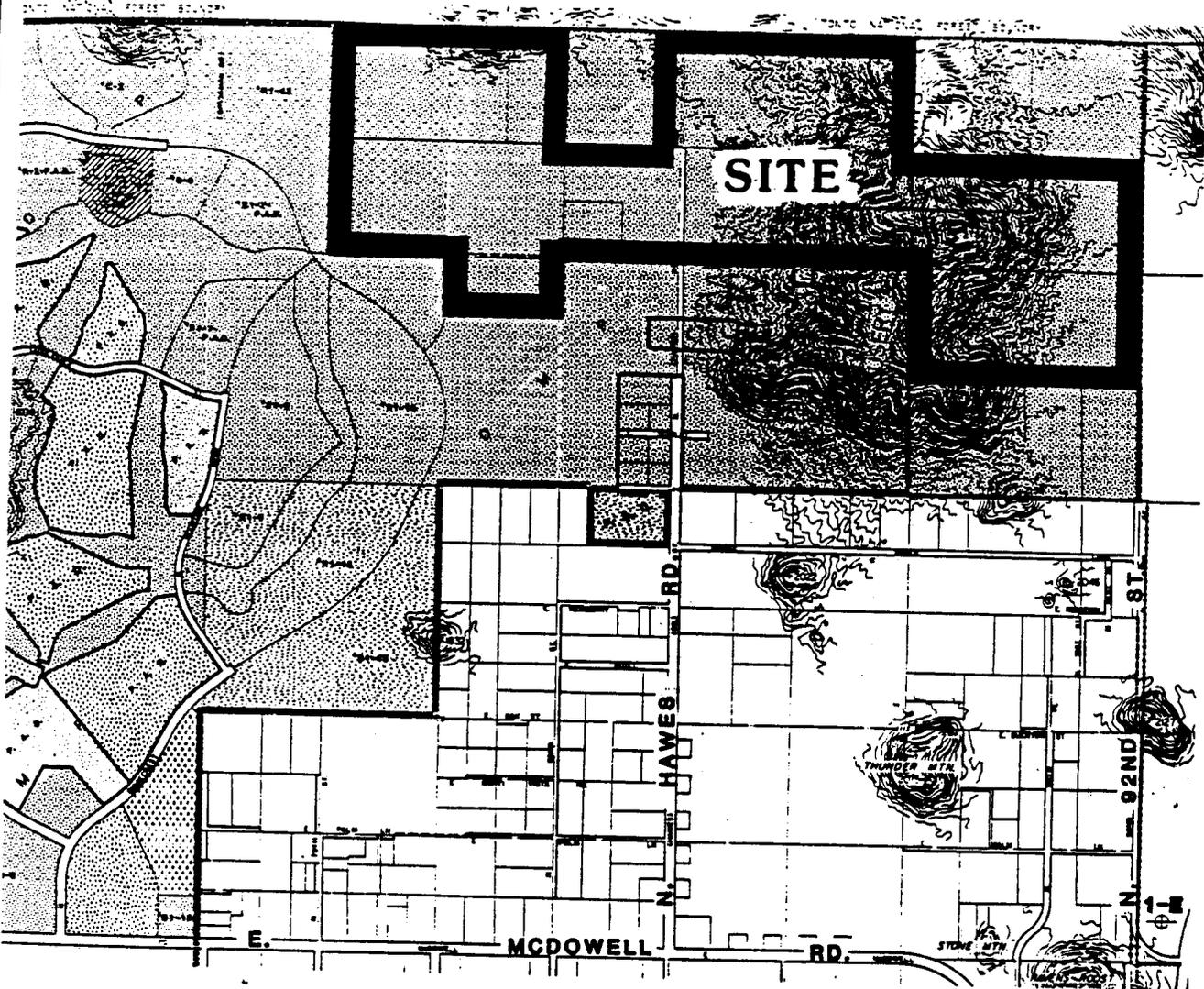




CITY OF  
**MESA**

# PLANNING AND ZONING

CASE NO. Z97-61



## REQUEST

Z97-61

The 3600 through 4400 blocks of North Hawes Road (North 84th Street), both sides. Rezone from R1-90 to R1-90-DMP; also consider the Development Master Plan of "Las Sendas Mountain" (591 acres).