



# City of Ripon

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**To:** Honorable Ripon City Council

**From:** Richard A. Bull, Chief of Police

**Subject:** Authorize the City of Ripon to Award a Contract and Purchase a new City Metro MESH/Motorola Wireless Network as Specified by the Attached Lockheed-Martin Contract for Equipment and Services

**Date:** April 19, 2005

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Honorable City Council members,

For the past 18 months, the City of Ripon has been researching, studying and reviewing new wireless technology. The purpose has been to obtain, implement and operate a City Metro Wireless System that could be used by the City of Ripon government including police, public works, community development, city engineering and city administration. Additionally, our goal is to provide future wireless connections and a system for interoperability data communications to the Ripon Consolidated Fire District and other area public safety agencies.

Currently, the Ripon Police Department connects RPD patrol cars by cellular data connections. Although this system is operational, due to the limited bandwidth, police personnel are limited in data flow and are restricted on large data transfer and video viewing. The Police Department wishes to be as effective in the field as possible; therefore, a larger wireless bandwidth must be obtained. This increased data bandwidth will be used to obtain, transfer and receive large data information such as mugshots, fingerprints, and video feeds, as well as a large number of records and information systems that cannot currently be accomplished.

The Ripon Police Department also needs a secure wireless system that may be used for the transmission of confidential information. Another issue is selectively viewing video feeds from Web Based cameras places in areas of concern, including the Jack Tone Interchange/Commercial area, Downtown Ripon and the variety of city parks including the Ripon Pedestrian/Bicycle Path and Bridge area. Public Safety is the first concern of the Ripon Police Department and the availability of the City of Ripon's 9-1-1 Communication Center to monitor our city's critical areas is very high on our priority list. Ripon Police Department also plans to use covert video surveillance transmissions to monitor and investigate suspected locations of criminal activity including narcotics transactions, suspected gang activities and other investigative surveillance required by the investigative unit of the Ripon Police Department.

During last year's (2004) City of Ripon Goal Setting Workshop, this wireless system project was identified, discussed and placed as one of the City's Short Term (2 years and under) Goals by the Ripon City Council. Since this time, City staff has contacted and been contacted by a large number of commercial wireless companies that have provided presentations, meetings, discussions and proposals.

Over the past 18 months, the City of Ripon has witnessed continued growth and development of a number of wireless technologies. We have been open to reviewing new cutting edge technology and proposals; and have continued to seek the best wireless system for the City of Ripon. Within the first 6 months of this research, the City of Ripon partnered with the City of Modesto as we discovered that we were both seeking and reviewing similar systems. We researched, studied and tested the variety of different wireless technologies that were available and/or being introduced.

The City of Modesto put out a "Request for Projects" entitled: "Modesto Unleashed – A Wireless Future for a safer community and more effective community." The City of Ripon made contacts by E-mail, telephone, website and other means to request, discuss and review project proposals from a number of technology companies. After the City of Modesto put out their "Request for Projects", in October 2004 in association with the City of Ripon, they conducted field-testing of those different wireless technologies that expressed interest in both cities' wireless projects. Due to the technical aspects of this testing, the City of Modesto's I.T. Department was responsible for conducting the actual wireless testing and for scoring the test results.

After reviewing the various testing reports and reviewing a number of wireless presentations, the City of Ripon staff selected the MESH Network as the company and technology that best met the City of Ripon's needs. The system is a 2.4GHz wireless network system that does not operate on the 802.11 wireless standards. This provides a wireless system environment that is safe and secure from "computer hacking" from the various 802.11 devices currently out for public use. Furthermore, this technology was developed for the U.S. Military with over \$170 million in research and development funding from the U.S. government. This technology is in current military use and is designed to remain connected to vehicles at speeds of over 200 mph. During the testing of wireless equipment, we discovered that many of the wireless systems are not engineered for roaming and/or high speed mobile use and that these systems will disconnect when there is an increase in vehicle speeds. We did not encounter disconnection problems with the MESH wireless system. In addition, we believe the Mesh Network product ongoing maintenances costs will be significantly lower as it relates to interference and scalability.

In March 2005, City Administrator Leon Compton and I flew back to Orlando, Florida to visit the MESH Networking Corporate Office. We reviewed a demonstration system site as well as a City Government Wireless System that has been installed in Cocoa Beach, Florida. We spoke to City of Cocoa Beach Police and I.T. personnel; we also conducted a conference call with the City Manager and Police Chief of Buffalo, Minnesota, who had just installed a new MESH wireless system within their city.

One very interesting aspect of this trip, was learning that the MESH Network Corporation had been purchased by Motorola Communications Company, which has been a radio industry standard for many years. With the Motorola purchase, we believe that this company will continue to be stable, operational and able to expand their product. It was clear that Motorola is going to implement the MESH Wireless Network into all of Motorola's Wireless Technology Systems with a future growth into the 4.9 GHz Public Safety bandwidth.

During our discussions with MESH/Motorola, we asked to be involved in their first beta testing of the 4.9 GHz wireless system that can tie into the installed 2.4 GHz system and they agreed. In our review of this wireless system, we feel that it will provide secure service to our city government services for a number of years. As with other technology, advances do occur, but we feel that the MESH/Motorola system will offer a system mitigation plan when and if upgrades are required.

Since MESH/Motorola Wireless Networks does not do the actual implementation and installation of their equipment, MESH brought in the Lockheed-Martin Corporation to insure that our wireless system would be correctly, professionally and successfully studied, planned and implemented. We have been meeting with representatives of the Lockheed-Martin Corporation since September 2004 and they have been an excellent source of technical knowledge and resources for the City of Ripon.

Tonight, the Lockheed-Martin Corporation is prepared to present their proposal for a MESH/Motorola 2.4 GHz Wireless network with the planned implementation of a City wide network of wireless devices, video cameras for identified areas within the City of Ripon, as well as the installation of 49 mobile units including police, public works, city engineering and city administrative vehicles. The identified uses for this system to date are as follows:

- Wireless data transfer of information for police vehicles including CLETS, NCIC, RMS, CAD, County Criminal Justice Database and the County CAL-ID Mugshot and Fingerprint System. Police patrol and investigative units are only as successful as the information that they have access to and this system will provide an increased amount of critical information to the police officers in the field.
- Public Works real time review and operation of City SCADA systems on City wells and pump stations. Currently, the Public Works Department does not have real time monitoring of well and pump station information. This system will give us the ability to not only provide this information; it will also provide this data to public works mobile field units as well as the Public Works Director and Supervisors.

- GIS Mapping information by police, public works, city engineering and city administration. Currently, the City of Ripon has an excellent GIS City Mapping System that provides multiple layers of critical information. This information contains infrastructure locations, critical mapping information, police tactical plans of critical facilities such as schools and other tactical and public safety information. This information is invaluable to have available to all City Departments out in the field.
- In-the-field e-mail and messaging systems would be implemented for quick information delivery that assists in being responsive to information requests, contacts and requests for service from the community.
- This system will provide video camera viewing of city parks, the Jack Tone Interchange Commercial area, the downtown area, key traffic locations, and the Ripon Pedestrian/Bicycle Path and Bridge area by 9-1-1 Communication and police personnel.

The Ripon Police Department is currently engaged in discussion of public safety partnerships with future video system connections at schools and within certain business. (We are looking at video camera systems that will activate if an alarm is triggered inside the schools or commercial businesses, these alarms may include burglary, panic or robbery alarm systems). The benefits of the MESH Network system is that video information from these locations can be accessed by the officers in the field.

In a related police project, the Ripon Police Department is in the process of selecting a new Digital Mobile Camera System for installations in all police vehicles, The Digital Video Mobile System will be able to wirelessly transmit video feeds back to Police personnel and 9-1-1 Communications personnel through the MESH system. With this feature, police and dispatch personnel will be able to observe the activity recorded by the video camera that is mounted within these police cars. This would allow police personnel to observe traffic stops and other police related incidents from the police department and/or other police mobile computers to provide better information of what is taking place in the field.

A citywide Automobile Vehicle Location System (AVL) will be implemented for all City of Ripon government vehicles outfitted with this wireless system. The MESH Network has a position application feature included that will provide real time locations of MESH equipped vehicles. This will be invaluable to dispatching and responding the closest police units to incidents and would also keep track of the locations of police units during critical incidents.

Future uses include wireless water meter reading, possible internet hotspots and public access information centers. Additionally, we have a number of other projects under review including:

- City staff is also working on future deployment of Voice over Internet Protocol (Voice over IP) voice communications by all city departments. This system would add voice capabilities to this wireless system.
- Hand held PDA type devices for a variety of police, public safety and service operations used by means of a portable handheld wireless system.
- In the near future, we anticipate that the Ripon Consolidated Fire District will become involved and connected to this wireless system. Their possible uses would include the AVL system, GIS Mapping review of critical information including hazardous material storage areas, fire hydrant locations, utility infrastructure locations and tactical plans for commercial building and parcel and building structures
- The MESH capabilities of the system to the device level make this system ideal for incident command coordination activities at the scene.

Upon returning from our fact-finding Florida trip, City Administrator Leon Compton, City Attorney Tom Terpestra and I have been involved in intense contract negotiations with the Lockheed-Martin Corporation in association with the MESH/Motorola Networking Company. We have a strong commitment from Lockheed-Martin and MESH/Motorola that they are willing to see this project to succeed at all costs.

As this will be the first MESH/Motorola Wireless Citywide System in the entire State of California, all parties agree that this must be a successful project as the City of Ripon Wireless System is being viewed as a "West Coast" showpiece for what this type of system can and will do by both Lockheed Martin and MESH/Motorola. City staff has aggressively negotiated the best deal possible for the City of Ripon, and we feel that we have accomplished this goal. City Administrator Compton would attest to the fact that we feel that we have sharply reduced the price of this system which includes a reduced three (3) year software maintenance contract.

At this time, the Lockheed Martin Corporation will be providing a verbal and visual overview of our proposed project for the City Council Review. Additionally, the City Council has been provided with a Contract Proposal that has been negotiated between the City of Ripon and Lockheed-Martin for review and approval.

**Recommendations**

The City of Ripon and the Ripon Police Department is requesting and recommending the following actions:

- That the Ripon City Council recognizes and acknowledges that with the specialized wireless system requirements that this wireless system qualifies as a sole source item. Therefore, the City Council waives the formal bidding process due to this sole source provision and the fact that we have negotiated a reduced price cost of this system.
- The Ripon City Council further authorizes the purchase of the MESH/Motorola Wireless Proposal as described in the Lockheed Martin Corporation for \$553,998.00 for the equipment and implementation of the MESH Wireless System with a 5% reserve account for any unforeseen additional expenses. The project and installation timeline anticipates that the project will be implemented in July 2005 as outlined in the Lockheed Martin timeline projection. I am requesting that the City Council authorize a purchase order for \$ 452,618 plus a contingency account of \$26,380.00 for a total of \$478,998 which is \$75,000 less than the total project cost. This is due to the fact, that the City of Ripon has been tentatively awarded \$75,000 in San Joaquin County Homeland Security Funding; however, we may not issue a purchase order for the \$75,000 funding until final approval by the State and Federal Homeland Security Departments. Once this Homeland Security funding is finalized and approved, I am requesting City Council approval to issue the final \$75,000 purchase order in hard equipment costs for this project.
- Approve and authorize Mayor Chuck Winn to sign the Lockheed Martin Corporation contract on behalf of the City of Ripon for this described project.

Finally, this project is a city wide department project with multiple funding account sources. I request that City Administrator Leon Compton be directed to review, identify and finalize all funding source amounts to fully fund this project. I have discussed this with City Administrator Compton; he advises that the City of Ripon does have the funding for this project and that it will be appropriately distributed among the identified funding sources.

Respectfully submitted,



Richard A. Bull  
Chief of Police