

The City's Police Radio System was designed and installed in 1967. The system at that time was capable of serving the needs of our City's mobile units patrolling approximately six square miles.

Since that time, the City has grown and the ability of our mobile units to transmit and receive each other is greatly restricted by distance and structural interference. The hand-held units encounter restrictions much more severe than the mobile unit because the officers are frequently inside buildings or other enclosures which severely curtails their effective range.

A second problem has been created by the limitation of a single channel for a Police Department our size.

San Joaquin County Sheriff's Department likewise has experienced the same difficulties and contracted with TeleComm Consultants, Inc. (TCI) to evaluate and make recommendations to improve their radio communications system.

In January 1981, the City of Lodi contracted with TCI to do a needs requirement and system design of our Police radio communication system. In the summer of 1982, the City authorized the preparation of specifications and authorized San Joaquin County Purchasing Agent to advertise for equipment for the City of Lodi. At that time, the City was given an estimate of approximately \$95,000 to purchase the necessary equipment to install a new Police radio communications system.

In February 1982, the final draft of specifications was approved. On April 2, 1982, bids were opened and the low bidder was Motorola Corporation. Two bids were received:

Motorola	\$131,059.20
Wismer & Becker	\$187,871.00



TELECOMM CONSULTANTS, INC.

8812 East Las Tunas Drive, San Gabriel, CA 91776
Telephone (213) 285-0269

April 16, 1982

Mr. Jerry Glenn
Assistant City Manager
CITY OF LODI
221 West Pine Street
Lodi, CA 95240

Dear Mr. Glenn:

It is my pleasure to be able to forward a recommendation concerning the bid award for the radio system and dispatch centers. As you know, the bids were received April 2, 1982, from the two companies that responded to the County and City RFB. We have completed our analysis of the bid offerings and find that both bidders were compliant and responsive to the specification and terms. The Motorola Corporation was the low bidder (by a significant amount -- overall County and City -- almost one third of a million dollars); therefore, in our opinion, Motorola should be awarded the contract for the equipment and installation. The Lodi portion was \$131,059 from Motorola and \$187,871 from Wismer and Becker.

Motorola included some options in their pricing. These included additional channels for the mobile radios, a sophisticated antenna-combining system for all of the transmitters and receivers (\$13,259) and some features for the portable radios. After examining these, we do not feel that they are necessary to the system and therefore are not cost effective; we recommend that you do not include them in the order. One option was for some higher capacity batteries for the portable radios; I suggest that you get a couple of these (\$19 each, plus tax).

It will, I am sure, be noted that the bid came in over the estimate that we made when we went to Council for authorization. A contrast of the bid with the estimate follows:

	Estimate	Motorola	Note
Police Consoles 1 & 2	26,000	27,557	
Fire Console	15,000	10,544	
Install	10%	8,851	(1)
Three Chairs	--	897	(2)
Police Mobile Radios	(18) 27,000	(20) 27,240	(3)
Install	10%	2,371	
Police Portables	(11) 15,400	(14) 15,400	(4)
Chargers	--	866	(2)
Convert Police Base to County Fire	--	373	(2)
Police Mobile Relay	4,500	4,165	

Install	10%	480	
Fire Base Station	--	3,527	(5)
Install	--	820	(3)
Relocate Equipment Room	--	3,034	(2)
Convert Police Radios to Fire	1,200	5,609	(6)
Motorola Project Management	--	6,230	(7)

NOTES:

1. Installation has been running higher. This has been the normal experience over the past few years; it now runs about 18 percent.
2. Not in original equipment list, but desirable to get at this time -- at the discounted price.
3. Quantity increased by 2; but price was discounted a little more than was anticipated.
4. Quantity increased by 3; but price was a little higher than predicted.
5. The fire base station was not on the original list. The present one should be replaced within two years. This is the time and price to change it out, and thus have a new base station to go with the new consoles.
6. There were more good radios to convert to fire use than originally scheduled. This will give a total change out of the old fire radios to ones that are two years old or less. Plus, another frequency is to be added for greater flexibility.
7. For the past half year, Motorola has added a project management fee -- something that was not anticipated when the estimate was made for Council.

If the additions represented by the notes above are added up, they come to \$30,000, the difference between the estimate and the actual bid. I would strongly urge the City to go with the full package, including the items covered by the notes above.

I would also recommend that the City deal directly with Motorola in placing the order, and not go through the County. It would be simpler and cleaner to do it that way, and Motorola is agreeable to this.

For completeness sake, there are several items that are beyond the scope of the equipment purchase from Motorola that should be mentioned. The police and Fire dispatch centers need new time stamps for use on call-for-service cards. There is no point in buying these through a prime

TC1

contractor since their integration into the equipment is straightforward. Three such stamps are needed (one for each console), at an approximate cost of \$610 each, including a bracket; \$2000 should cover these items. Some sort of repainting should be undertaken in the police dispatch room. An underground conduit will need to be run from the new equipment room across the blacktop to the police facility for emergency power and for the control cables. A minor amount of carpentry will be needed in the new equipment room to install a plywood backboard for the cable terminating punch blocks.

I shall look forward to meeting with you and the Council next week.

Very truly yours,



Henry L. Richter, Ph.D., PE
President

HLR:rw



COMMUNICATIONS EQUIPMENT AGREEMENT

THIS AGREEMENT, made and entered into this _____ day of _____, 1982, by and between MOTOROLA COMMUNICATIONS AND ELECTRONICS, INC., hereinafter referred to as "MOTOROLA", incorporated as an Illinois corporation and located in Schaumburg, Illinois, and CITY OF LODI, a municipal corporation, hereinafter referred to as "CITY".

W I T N E S S E T H:

WHEREAS, the CITY desires to purchase a Communications System; and

WHEREAS, the parties hereto wish to enter into an agreement pursuant to which MOTOROLA shall perform the work and furnish the equipment and services as more particularly described herein for the consideration and upon the terms and conditions as herein provided;

NOW, THEREFORE, in consideration of the premises and mutual covenants herein contained, the parties hereto agree as follows:

Article 1. ORDER OF PRECEDENCE.

This Agreement shall consist of the following documents, which shall be called the "Contract Documents":

- (A) This AGREEMENT
- (B) ATTACHMENTS thereto, including but not limited to:
 - (A) MOTOROLA Proposal, dated April 1, 1982
 - (B) County of San Joaquin's Specification, dated February 16, 1982

On file in the office of the San Joaquin County Purchasing Agent

In the event that any discrepancy shall exist among between the Contract Documents, the inconsistency shall be resolved by giving precedence to the Contract Documents in the order listed above.

Article 2. PRICE AND PAYMENT SCHEDULE.

MOTOROLA agrees to sell all of the equipment and perform the services as outlined in the attachments Items 69 through 78F except that Item 73 shall include two units with 10-hour batteries, and CITY agrees to buy the aforementioned equipment and services for the sum of One Hundred Thirty One Thousand Ninety Nine Dollars and Forty Eight Cents (\$131,099.48).

Payment Schedule to be:

(A) Eighty percent (80%) of equipment cost for the items delivered to the MOTOROLA Service Station during a month.

(B) Ten percent (10%) of equipment cost and the installation cost for the items installed during a month.

(C) Balance of monies due as each segment of the system is accepted.

MOTOROLA will bill the CITY no more than once a month for the work performed in the previous month. Payment due NET THIRTY (30) DAYS after invoice date.

Article 3. SHIPPING.

All sales and deliveries are FOB Lodi, California. MOTOROLA reserves the right to make deliveries in installments and the contract shall be severable as to such installments. MOTOROLA shall retain title to the articles until CITY makes full payment. After delivery to the FOB point, risk of loss and damage to articles shall be borne by CITY.

All packaging and packing shall be in accordance with good commercial practice.

Article 4. TAXES.

The prices set forth herein are inclusive of any amount for Federal, State, or local excise, sales, lease, gross income service, rental, use, property, occupation, or similar taxes. If any other taxes are determined to be applicable to this transaction or MOTOROLA is required to pay or bear the burden thereof, the CITY shall pay to MOTOROLA the amount of such taxes and any interest or penalty thereon no later than thirty (30) days after receipt of an invoice therefor.

Article 5. CHANGES.

CITY may, by written order, make changes within the general scope of this contract, in one or more of the following:

- (A) Specifications, where supplies are to be specifically made for CITY in accordance therewith.
- (B) Method of shipment or packing.
- (C) Place of delivery.

If any change causes an increase or decrease in the cost of or time required for the performance of any part of the work under this contract, an equitable adjustment shall be made in the contract price or

delivery schedule, or both, and the contract shall be modified in writing accordingly. MOTOROLA is not obligated to comply with any order hereunder unless and until the parties reach agreement as to the aforementioned equitable adjustment and same is reflected as an addendum to this contract.

Article 6. HOLD HARMLESS.

MOTOROLA covenants and agrees to indemnify and hold the CITY harmless from all liabilities, judgments, cost, damages and expenses which may accrue against, be charged to, or recovered from the CITY by reason of or on account of damage to the property of the CITY or the property of, injury to, or death of any person, when such damage or injury is caused by MOTOROLA's sole negligence or that of its employees, subcontractors or agents while on the premises of the CITY during the delivery and installation of the communications equipment. IN NO EVENT WILL MOTOROLA BE LIABLE FOR INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES.

Article 7. EXCLUSABLE DELAYS.

Neither the CITY nor MOTOROLA shall be responsible for delays or lack of performance resulting from

acts beyond the control of the party or parties. Such acts shall include but not be limited to acts of God, strikes, material shortages, compliance with laws, loss of goods in transit, default of suppliers, fires, riots, acts of war, or any other conditions beyond control of the party or parties.

Delays as identified herein may cause an impact to schedule/cost which will therefore be subject to contract modification described in Article 5 "Changes".

Article 8. TERMINATION FOR CONVENIENCE.

The CITY may terminate this AGREEMENT, solely at the convenience of the CITY, in the event that MOTOROLA is unable to comply with the delivery and/or installation schedule in accordance with the attachments hereto, due to causes covered under Paragraph 7, immediately preceding. In the event that the CITY chooses to terminate this agreement solely for the convenience of the CITY, the CITY shall pay MOTOROLA for equipment and services provided to the date of termination and reasonable costs which may be borne by MOTOROLA for termination of subcontracts, removal of installation and test

equipment, and other cost directly related to an unforeseen and abrupt termination.

Article 9. DEFAULT.

If MOTOROLA fails to make delivery or complete installation in accordance with these CONTRACT DOCUMENTS, the CITY may consider MOTOROLA to be in default, unless such delays have been caused by the conditions covered under Paragraph 7 of this AGREEMENT. The CITY will give written notice to MOTOROLA of such default and MOTOROLA shall have thirty (30) days to provide a plan of action to cure such default. If MOTOROLA fails to cure such default to the satisfaction of the CITY, the CITY may, at its option, terminate any unfulfilled portion of this AGREEMENT or complete the system through a third party. In the event the CITY completes the system through a third party, MOTOROLA shall be responsible for an amount in excess of the contract price, not to exceed the value of the terminated portion incurred by the CITY in completing the system to a capability not exceeding that specified in this Contract and Attachments. MOTOROLA SHALL NOT BE LIABLE FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL OR LIQUIDATED DAMAGES.

Article 10. DELAYS BY CITY.

If delays by the CITY cause the installation and acceptance of this system as defined in these Contract Documents, to be rescheduled beyond these limits, the CITY shall be liable only for actual costs incurred by MOTOROLA resulting from these delays. Such charges may include, but are not limited to, rescheduling charges by the equipment vendor; storage charges; and maintenance charges.

Article 11. LICENSES/AUTHORIZATIONS.

The CITY is solely responsible for obtaining any licenses or other authorizations required by the Federal Communications Commission and for complying with F.C.C. rules. Neither MOTOROLA nor any of its employees is an agent or representative of the CITY in F.C.C. matters or otherwise. MOTOROLA, however, may assist in the preparation of the license application at no charge to the CITY. CITY acknowledges that system implementation is predicted on proper F.C.C. licensing.

Article 12. USE BEFORE ACCEPTANCE.

Should the CITY commence use of the system or any sub-system thereof for their intended purposes, other than for the express purposes of training or testing, prior to system acceptance, final payment for said system or sub-system shall be due net thirty (30) days. The warranty or maintenance periods for such equipments put into use, unless warranty or maintenance has already begun, shall be deemed to have commenced concurrently with the use of the equipment for its intended purpose. The use of the equipment for its intended purpose shall be deemed to have occurred when the CITY commences to use and rely primarily on the equipment for its communications.

Article 13. LEGAL INTERPRETATION.

This Agreement and the rights and duties of the parties shall be governed and interpreted according to the laws of the State of Illinois.

Article 14. CITY'S OBLIGATIONS.

The CITY shall provide the following:

- (A) A designated Project Director.

- (B) Ingress and egress to CITY's operations building as requested by the Contractor.
- (C) Required electrical service, air conditioning, space humidity and air filtration to the CITY's Communications Center rooms for all necessary equipment as specified.
- (D) Reasonable facilities such as, but not limited to, secure storage space, a designated work area with adequate heat and light, and access local telephone line. The facilities are to be provided upon request and at no charge to the Contractor.
- (E) Day-to-day normal system operation, after installation completion, which include all tasks covered by the System manager's and System Operator's manuals.
- (F) Such other obligations as defined in these Contract Documents.

Article 15. AGREEMENT ACCEPTANCE.

This Agreement shall not be valid and binding upon MOTOROLA until accepted and executed by an officer of MOTOROLA.

Article 16. DISCRIMINATION.

MOTOROLA shall comply with the California Fair Employment Practices Act (Labor Code Section 1410, et seq.) and any amendments thereto. This Agreement may, at the option of the CITY, be terminated or suspended in whole or in part in the event MOTOROLA fails to comply with the non-discrimination clause of this statute. In the event of termination under this Paragraph, MOTOROLA shall be compensated for goods and services provided to the date of termination. Termination or suspension shall be effective upon receipt of written notice thereof.

Article 17. MISCELLANEOUS PROVISIONS.

- (A) MOTOROLA agrees to provide the CITY with a Spare Parts List, which list shall be a part of this Agreement and incorporated herein as though set forth verbatim and made a part hereof.
- (B) MOTOROLA represents that it is a corporation duly licensed to do business in the State of California.
- (C) MOTOROLA shall forward CITY a duly certified resolution which shall state it has the authority to enter into and execute this Agreement.

Article 18. FULL AGREEMENT.

This AGREEMENT and ATTACHMENTS constitute the final expression of the Agreement of the parties. It is intended as a complete and exclusive statement of the terms of their agreement, and it supersedes all prior and concurrent promises, representations, negotiations, discussions and agreements that may have been made in connection with the subject matter hereof.

IN WITNESS WHEREOF, the parties hereto have set their hands and seals this _____ day of _____, 1982.

CITY OF LODI, a municipal corporation

By _____

ATTEST:

CITY CLERK

MOTOROLA Communications and
Electronics, Inc.

By _____

66)	2	NICAD BATTERY RECYCLING DEVICE		4.9	<u>1,212.00</u>
67)	1	WALL-MOUNTED STATUS MAP			<u>8,550.00</u>
68)	55	3-YEAR WARRANTY FOR PAGERS			<u>1,113.75</u>
68A)		PROJECT MANAGEMENT, FIELD ENGINEERING, TESTING, DOCUMENTATION, TRAINING (SAN JOAQUIN COUNTY)			<u>30,545.00</u>
			LODI		
69)	1	PD DISPATCH CONSOLE #1	3.4.1	4.2	<u>15,803.00</u>
70)	1	PD DISPATCH CONSOLE #2	3.4.1	4.2	<u>11,754.00</u>
71)	1	FIRE DISPATCH CONSOLE	3.4.2	4.2	<u>10,544.00</u>
71B)		INSTALL CONSOLES			<u>8,851.00</u>
71A)	3	CHAIRS			<u>897.00</u>
72)	20	PD MOBILES (MII/SYNTOR)	3.4.1	4.8	<u>27,240.00</u>
72A)		INSTALL 20 MOBILES, FCC CERTIFY 14 PORTABLES, INSTALL 4 CHARGERS			<u>2,371.00</u>
73)	14	PD PORTABLES (MDX/MPR)	3.4.1	4.9	<u>21,224.00</u>
74)	4	SINGLE UNIT CHARGERS			<u>284.00</u>
75)	1	12-SLOT CHARGING SYSTEM			<u>582.00</u>
76)	1	CONVERT EXISTING PD BASE TO COUNTY FIRE MUTUAL-AID FREQUENCY NON-TAXABLE/INSTALLATION	3.4.2		<u>373.00</u>
77)	1	PD MOBILE RELAY	3.4.1	4.4	<u>4,165.00</u>
77A)		INSTALL			<u>480.00</u>
78)	1	FIRE BASE STATION T2-2R	3.4.2	4.12	<u>3,527.00</u>

78A)	INSTALL				<u>480.00</u>
78B)	RELOCATE EQUIPMENT ROOM	LODI PORTION	3.4.3		<u>3,884.00</u>
	(NON-TAXABLE/INSTALLATION)	COUNTY PORTION	3.4.3		<u>3,166.00</u>
78C)	CONVERT HIGHBAND RADIOS TO FIRE FREQUENCY 154.010				<u>4,363.00</u>
	(NON-TAXABLE/INSTALLATION)				
78D)	ADD ADDITIONAL FREQUENCY, 154.070				<u>1,500.00</u>
	(NON-TAXABLE/INSTALLATION)				
78E)	INSTALL CONVERTED HIGHBAND RADIOS				<u>746.00</u>
78F)	PROJECT MANAGEMENT, FIELD ENGINEERING, TESTING, DOCUMENTATION, TRAINING (LODI)	<u>RANCHO SECO</u>			<u>6,230.00</u>
79)	1 CONTROL STATION -- EMCC	<i>Rancho Seco</i>	3.9	4.5	<u>4,943.00</u>
80)	1 CONTROL STATION -- LEC		3.9	4.5	<u>4,943.00</u>
81)	1 CONTROL STATION -- RMC		3.9	4.5	<u>3,186.00</u>
82)	2 TONE REMOTE -- LEC, EMCC		3.9	4.16	<u>736.00</u>
83)	1 TONE REMOTE -- RMC		3.9	4.16	<u>373.00</u>
84)	3 MOBILE RADIO -- EMCC, LEC, RMC		3.9	4.8	<u>4,734.00</u>
85)	1 MOBILE RADIO -- CHP		3.9	4.14	<u>1,889.00</u>
86)	1 MOBILE RADIO -- MED, HEAR, OES		3.9	4.13	<u>1,889.00</u>
87)	1 MOBILE RADIO -- FIRE		3.9	4.13	<u>1,433.00</u>
88)	1 MOBILE RADIO -- LG		3.9	4.10	<u>1,557.00</u>
89)	1 MOBILE RADIO -- STOCKTON PD		3.9	4.0	<u>1,578.00</u>
90)	1 MOBILE RADIO -- SO		3.9	4.8	<u>1,362.00</u>



TeleComm Consultants Inc.

8812 E. Las Tunas Drive
San Gabriel, CA 91776
213/445-9210

July 11, 1981

Mr. Jerry Glenn
Assistant City Manager
CITY OF LODI
221 West Pine Street
Lodi, CA 95240

Dear Mr. Glenn:

This is to furnish you with a progress report on the TCI consulting contract with your city. I am pleased to report that we have completed Tasks One and Two, and this is to summarize our data and our findings.

Some of our information has been presented piecemeal to the staff of the Police Department. This was done to check on the accuracy of some of our observations and conclusions, and adjustments have been made where we have become aware of them.

Under Task One, we have collected and examined the FCC license data for the City, and found that all is in order at the present time. We have taken a set of statistics of the radio and telephone traffic in both the Police and Fire dispatch centers. This has been reduced to chart form and is used to help us determine the necessary staffing patterns, necessary telephone lines, etc. A copy of this is included for you. We have completed a radio coverage survey where our two field engineers made actual measurements of signal strength of the Police system throughout the city of Lodi. Their conclusions bear out some of the expressed difficulties. Other radio difficulties reported by the Police users we feel are the result of poor usage of the radios (improper training) and the lack of a proper battery charging procedure for the handheld radios.

We have had three of us doing an evaluation of the police dispatch center. We have documented the equipment in it. We have drawn floor and equipment plans of the area. We have spent time observing operations in the dispatch center, and riding in police cars. As a result of this, we have prepared a set of deficiency statements which are appended to this report for your information. These are areas which we wish to address quite soon. We have also performed an evaluation in the Fire dispatch center, and have observed operations there. We have interviewed some of the key Fire personnel, and we

now think we have a good understanding of how the Lodi Police and Fire Departments use and view their communications system. We have also examined the telephone system and its utilization in the Police Department, Fire Department, and general City Hall. We have examined the present telephone charges, and from analysis of the bills we will soon be able to give you an evaluation of the effectiveness of your present telephone expenditures.

Under our Task Two work statement, we have interviewed the management and numerous key individuals in the Police and Fire departments to find out what are their expressed and perceived needs for public safety communications in Lodi. The statements that we have received are characteristic of those in public safety organizations similar to what you have. These needs cover the range of dispatch center layout, dispatch console equipment capability, radio system effectiveness, radio system coverage, mutual-aid considerations, communication with the Sheriff's Department and other nearby departments, and access to the various external data bases available to the city. Our staff has taken numerous pages of notes documenting your operating methodology. We understand your dispatch process. We understand the additional duties of the dispatch personnel in both Police and Fire. We have paid particular attention to the separate operations of Police and Fire with the open consideration as to whether or not the two should be merged. We have discussed the subject of possible merger with the management of the Police and Fire Departments at some length.

Among the needs, the foremost was better radio coverage. As we examined the reports of coverage difficulties, and made our own field measurements, we find that the present Lodi Police radio system operates about as well as any local government VHF high band simplex system should. Most of the complaints about coverage relate to communications between mobile units or mobile and handheld units. Coverage across the city in this mode is, of course, going to be limited. Coverage from the base station to mobiles or handheld radios we found was acceptable. I should hasten to add, though, that the quality of communications appears poor because of the lack of the inclusion of a special audio filter in the base stations for both Police and Fire, allowing a loud "buzz" on top of the transmissions. There are some obvious remedies for the poor coverage. One degrading influence is the fact that the police transmitting antenna is located only partway up the mast. Its altitude is limited to cut down on the interference received from departments elsewhere. This is therefore one of those compromising tradeoffs that often has to be made, balancing the damage of interference against the frustration of poor coverage. As I mentioned earlier, there also needs to be education on the part of the users concerning the proper way to use a handheld radio and a better battery charging routine.

One of the next areas was the need for adequate dispatch consoles, both in Police and Fire. The present consoles are at the end of their useful life. Spare parts are difficult to obtain. Work on them is quite difficult due to their age and to the lack of physical access to them. They also lack capability which is present in more modern console hardware.

Early attention needs to be made to putting the basement room where the fixed transmitting and receiving equipment is contained into better order. The room is very cluttered. The routing of wires is quite bad. The room has inadequate cooling, and maintenance must be most difficult for the technicians. TCI has been in contact with Delta Communications, the City's new radio maintenance contractor, to put some of these affairs into order.

I could go into a great deal of fine detail covering some of these subjects, but now we are really at the point of laying out some of our thinking, the alternatives that we have considered, and our first recommendations. I would therefore appreciate the privilege of meeting with you and the Police and Fire Chiefs, either individually or together, to go over some of these alternatives, their respective pros and cons, and budgetary implications. I feel we are now ready to move ahead rapidly with our detailed recommendations, and after our meeting we should be able to send them to you in written form quickly .

We have enjoyed working with the City staff, Lodi is a very interesting and delightful city, and we appreciate the progressive and professional attitudes that we have encountered. I hope the above report gives you a general idea of what we have been up to as we have popped in and out of Lodi. If I can supply more details in these areas, please do not hesitate to ask.

Sincerely yours,


Henry L. Richter, Ph.D., P.E.
President

HLR/bcr





TeleComm Consultants Inc.

8812 E. Las Tunas Drive
San Gabriel, CA 91776
213/445-0239

TCI 81-105L

January 14, 1981

Mr. Jerry L. Glenn
Assistant City Manager
City of Lodi
221 West Pine Street
Lodi, California 95240

Dear Mr. Glenn:

This letter is to follow up the meeting I had with you, Police Chief Marc Yates, and Acting Fire Chief Donald MacLeod. I do appreciate your hospitality in making it possible to visit with you and your public safety chiefs on such short notice. The tour of your facilities was interesting and the discussion of your needs and objectives illuminating.

This letter is a proposal to you and to your City Council for some of the staff members of TeleComm Consultants, Inc. (TCI) and me to provide technical assistance to you and the Public Safety Departments concerning an up-grade of the basic communications capability.

As I explained to you, when we take on a job such as the one we are proposing, we need to approach the task with an overall viewpoint and then present our client with a set of recommendations and a design that will provide short-term and long-term benefits and not just suggest a "quick fix." This means first doing a basic survey-study in which we determine the general characteristics of the telecommunications plant in the City, assess the type of equipment presently in use, and then document and analyze how operations are conducted. In the case of Lodi, I realize that your interest is limited to Police and Fire, and so we are not planning any significant work in the area of your Local Government system, except as it might interface with the Public Safety radio system. It is necessary to gather this baseline data to serve as a starting point for the development of some system alternatives for presentation to you and to the Council and for the development of the specifications for the procurement which undoubtedly will be needed. In essence, we like to take a "snapshot" of our client's operation. Any eventual system must somehow grow out of what presently exists, hence the need for a starting point.

The second step is to determine and help formulate a set of Needs and Requirements statements upon which we can base an eventual system design and which will serve as the criteria for design evaluation. I heard some of the ingredients for such statements during my visit to Lodi. Certainly one of the foremost will be to provide better radio coverage for the Police frequency, particularly as far as hand-held radio operation is

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Mr. Glenn
City of Lodi
January 14, 1981

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concerned. However, TCI does not like to deliver the Needs Statement in terms of correcting present deficiencies, but instead from the very basic standpoint of determining what would be desirable if this were to be a totally new Public Safety telecommunications system. The next step is to prepare a set of Recommendations which would include some alternatives and associated cost estimates, which would allow you and your City Council to decide what level of adequacy and sophistication is the most reasonable and cost-effective for your city.

The fourth step follows the City's selection of the alternative that it feels is most appropriate for its needs and budget. TCI then develops the technical portion of a bidding specification to allow the City to solicit quotations from all manufacturers who meet certain quality and stability criteria. TCI then would evaluate the resulting bids and make a recommendation to the City, based on the TCI analysis.

The last step is to work with the installing contractors to perform ongoing inspections during the installation and assembly and to carry out acceptance testing of the finished system. The acceptance testing would encompass all fixed equipment and a reasonable sample of the mobile and portable equipment, should any be ordered.

There are several items to which we would pay specific attention. The first of these would be radio coverage for the police radio system. TCI would determine the adequacy of the present coverage by making actual measurements of signal strength in the field, which would verify the present situation, including the operation of the present equipment. Then, based on these measurements and, perhaps, on a general radio survey of the city and surrounding area, TCI would develop a design for a mobile relay-type (repeater) system. TCI would determine the necessity for voted satellite receivers to enhance the reliability of picking up the weaker signals from hand-held radios. TCI would also determine the number and optimum locations for such satellite receivers should these measurements show them to be necessary.

The second area we would pay particular attention to is the development of a satisfactory dispatch center. I clearly heard that the City would be open to the development of a joint police and fire dispatch center. We feel that such arrangements are quite cost-effective for cities the size of yours and that better service results from being able to concentrate both operations in one facility with a staff more dedicated to that function than is often the case when they have many auxiliary duties. Your City really needs new console equipment. Physical space is tight,

Mr. Glenn
City of Lodi
January 14, 1981

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and care will have to be taken to be certain that an arrangement can be developed which can handle present operations and which has the capacity for handling possible overload conditions from time to time. Attention also needs to be given to the equipment room that I saw in the basement.

The third area of special interest is that of the establishment of an emergency telephone "911" capability. The dispatch center design must be developed with that eventuality in mind. Operational procedures also need to be designed around the use of the universal emergency telephone number 911. Within the fee proposed in this letter, we will help you develop local procedures and a layout for the 911-Public Safety Answering Point (PSAP) operation. If any significant work were to be required to coordinate the 911 order, installation, or plan approval with either the State or the telephone company, this would be added scope over that proposed herein. As you know, we are working with the County of San Joaquin, and we find that their 911 status is presently changing and that very little information exists as to any real design for implementation, orders to the telephone company, and development of PSAPs and county-wide procedures.

TCI prefers to undertake jobs such as this on the basis of a firm, fixed price contract. We find that we can write a Statement of Work, such as is laid out above, and a time scale, and can perform the work within strict cost guidelines. We feel that a fixed price contract is the best kind of relationship for both consultant and client, in that both know where they stand and that there are no "surprises" that suddenly appear during a program. Our goal is to produce total customer satisfaction, and that is the "bottom line" of this offering. Not everything that we report is necessarily pleasing to the client because, as independent consultants, we have to point out deficiencies as we see them and be honest in our evaluations. We do this part of the task in an impartial and non-personal way, again, just trying to report the facts as we see and perceive them.

We would therefore propose to the City that TCI supply all necessary manpower and expense (including travel, per diem, telephone and reproduction costs) to perform the Work Statement described above, consisting of the five steps, for a firm, fixed price of \$11,370. Since this work effort will be carried out over a number of months, we would like to request progress payments on a Task-by-Task basis. Each billing would occur after a deliverable product had been furnished to the City. A report would be rendered after each phase as the concluding action. The progress payment schedule requested is as follows:

Mr. Glenn
City of Lodi
January 14, 1981

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TASK I (Baseline data)	33,360.00
TASK II (Needs/Requirements)	1,120.00
TASK III (System Alternatives)	2,250.00
TASK IV (Specifications, Bid Analysis)	2,090.00
TASK V (Implementation, Acceptance)	2,550.00

The proposed time schedule for these same tasks would be (time measured from start date):

TASK I Eight weeks
TASK II Eleven weeks
TASK III Fourteen weeks
TASK IV Eighteen weeks (allowing one week turn-around from the City on choice of Recommended Alternative)
TASK V Would depend on the delivery schedule from the vendor and on installation time.

In order to meet the Price and Time schedules just outlined, TCI would have to accomplish this work while still on-site doing the San Joaquin County job. If the Lodi project were to be undertaken as strictly an independent operation, the price quoted above might have to be increased by fifty percent. We expect to be on-scene in San Joaquin during the rest of this calendar year. Therefore, in order to accomplish all of the steps set forth above within this time frame, we would require a contractual "go ahead and start" date by the end of February or the middle of March, at the very latest.

I hope that this informal proposal is responsive to your needs as you see them and that it finds a receptive attitude, both on the part of your staff and the Lodi City Council. If I can supply any additional information, please do not hesitate to call or write.

Very truly yours,



Henry L. Richter, Ph.D., P.E.
President

HLR:dd

The City's Police Radio System was designed and installed in 1967. The system at that time was capable of serving the needs of our City's mobile units patrolling approximately six square miles.

Since that time, the City has grown and the ability of our mobile units to transmit and receive each other is greatly restricted by distance and structural interference. The hand-held units encounter restrictions much more severe than the mobile unit because the officers are frequently inside buildings or other enclosures which severely curtails their effective range.

A second problem has been created by the limitation of a single channel for a Police Department our size.

San Joaquin County Sheriff's Department likewise has experienced the same difficulties and contracted with TeleComm Consultants, Inc. (TCI) to evaluate and make recommendations to improve their radio communications system.

In January 1981, the City of Lodi contracted with TCI to do a needs requirement and system design of our Police radio communication system. In the summer of 1982, the City authorized the preparation of specifications and authorized San Joaquin County Purchasing Agent to advertise for equipment for the City of Lodi. At that time, the City was given an estimate of approximately \$95,000 to purchase the necessary equipment to install a new Police radio communications system.

In February 1982, the final draft of specifications was approved. On April 2, 1982, bids were opened and the low bidder was Motorola Corporation. Two bids were received:

Motorola	\$131,059.20
Wismer & Becker	\$187,871.00