

**State of Iowa**

**Wireless E-911  
Implementation  
And  
Operation  
Plan**

August 16, 2004

**IOWA HOMELAND SECURITY AND EMERGENCY  
MANAGEMENT DIVISION  
DEPARTMENT OF PUBLIC DEFENSE**

**State of Iowa  
Wireless E911 Implementation  
And Operation Plan**

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**A. AUTHORITIES**

The Federal Communications Commission (FCC) began to explore the possibilities of extending E911 service to wireless communications systems with FCC Docket No. 94-102. In a Report and Order issued on July 26, 1996 (FCC 96-264), the FCC ordered that the development and implementation of E911 service for wireless communications systems be accomplished in two phases and covered carriers are entitled to full cost recovery for delivering the E911 call.

Phase I of the requirement specifies that wireless E911 calls provide Automatic Number Identification (ANI) and the location of the base station or cell site receiving the call to the appropriate Public Safety Answering Point (PSAP). Phase II requires that covered carriers have the capability to identify the latitude and longitude of a mobile unit making the 911 call, within a radius of no more than 125 meters in 67 percent of all cases.

The covered carriers are to deliver Phase I call within six months of receipt of a request to deliver the call from a PSAP. Phase II calls are to be delivered by covered carriers by October of 2005.

In response to the FCC Report and Order, the Iowa Legislature passed Senate File 530 in 1998. This piece of legislation amended Code of Iowa, Chapter 34A. It was signed by Governor Branstad and became law on July 1, 1998. The law was again amended in 2004 via Senate File 2298. It was signed by Governor Vilsack and became law on July 1, 2004.

The Iowa Administrative Code (Section 605, Chapter 10) was accordingly revised to reflect the changes in the law.

**B. PLAN CRITERIA**

As specified in Iowa Administrative Code, Section 605, Chapter 10.7(34A), this plan contains, the following elements:

1. Maps showing the geographic area served by each PSAP receiving wireless E911 call.
2. A list of public and private safety agencies within the E911 service area.
3. The geographic location of each PSAP receiving wireless E911 calls and the name of the person responsible for the management of the PSAP.
4. A set of guidelines for determining eligible cost for wireless service providers, wire line service providers and PSAPs.
5. A statement of estimated charges for the implementation and operation of wireless E911 phase I and phase II service. The charges shall detail the equipment operated or needed to operate wireless E911 service, including any technology upgrades necessary to provide the service. Charges shall be directly attributable to the implementation and operation of wireless E911 service and shall come from wireless service providers, wire-line service providers, and PSAPs.
6. A schedule for implementation of wireless E911 phase I and phase II service.

**C. ACKNOWLEDGEMENTS**

The credit for the creation of this plan resides not only with this office, but also with various public safety agencies and associations, communications providers, the Iowa Legislature, Iowa Governor, and the Iowa E911 Communications Council.

The council appointed three members to assist this office with the development of the plan. They were Dave Kaus of Iowa Wireless, Bob Hudson of Frontier Communications, and Bob Seivert of Shelby County E911. Their experience in communications and E911 was invaluable.

The wireless communications industry has participated in all aspects of not only the development of this plan but also the relevant legislation and administrative rules. Their cooperation and understanding that the primary goal has been to ensure the safety of the citizens of the state has been refreshing.

The local Joint E911 Service Boards and Public Safety Answering Points actively participated in all aspects of the process and provided a large portion of the background information necessary for the completion of this plan.

## **D. 911/E911 IN IOWA**

### Wire Line E911

#### History

In 1986, the General Assembly, passed a law that created a 29 member State Emergency Telephone Number Commission. This commission was directed to study the issue of statewide implementation of 911 service and submit a written report with their recommendations. The Commission issued their report in January 1987 and the legislative language contained in the report was introduced as House File 2400. House File 2400 was passed by the General Assembly and was signed into law by Governor Branstad on May 6, 1988. This law has been amended several times and re-codified as Chapter 34A.

Under the provisions of Chapter 34A, the Homeland Security and Emergency Management Division has responsibility for the administration of the Iowa Enhanced 911 (E911) Program. The law also requires that each county in the state establish a joint 911 service board. Each board has the responsibility to develop a countywide E911 plan, detailing the manner and cost for the implementation of an E911 system. However, joint 911 service boards are not required to implement service. The Division has the responsibility to review and approve these plans. All 99 counties have approved E911 service plans.

#### Surcharge

Should a joint E911 service board decide to implement service, they may elect to fund the recurring and non-recurring cost of the system with an E911 surcharge on each telephone access line within the E911 service area. In order to impose the surcharge, a referendum must be passed by a simple majority of the voters within the service area. The amount of surcharge to be placed on the referendum is determined by a formula, established in law, and can vary from \$.25 to \$2.50 per month, per telephone access line.

If the voters approve the referendum, the county Commissioner of Elections must certify the election to the Homeland Security and Emergency Management Division and the joint E911 service board must make a written request that the surcharge be imposed. The Homeland Security and Emergency Management Division then has the responsibility to order the implementation of the surcharge with each telephone service provider, providing service within the E911 service area. Within the state there are 159 telephone service providers. Each telephone service

providers remits collected surcharge funds directly to the respective joint E911 service board, on a calendar quarterly basis.

As of 12/31/99 surcharge was being collected by the service boards at the following rates:

Surcharge:	
Surcharge = \$1.00	73 counties
Surcharge < \$1.00	23 counties
Surcharge > \$1.00	1 counties
Surcharge = \$0.00	2 Counties

### Coverage

All 99 counties offer Enhanced 911 Service.

### Wireless E911

#### History

In 1996, the Federal Communications Commission put forth a mandate that requires wireless E911 service to be put in place and function similarly to wire line E911. Also in the original mandate, the FCC specified that wireless service providers are entitled to cost recovery for providing the E911 service.

The 1998 legislature passed and Governor Branstad signed into law Senate File 530 (SF530). This law provides for a statewide surcharge on wireless communications, including cellular, personal communication services, and commercial mobile radio services. The surcharge is to be imposed statewide and may not exceed \$.50 per month, per telephone number. Under this law, the Division is given the responsibility for the “wireless” E911 program. This portion of the Code was amended in 2004 through Senate File 2298. This amendment increased the surcharge to \$0.65.

#### Surcharge

In order to implement the wireless surcharge, the Administrator must adopt administrative rules, setting out the methods for collecting and remitting surcharge, and establishing criteria for determining eligible costs for reimbursement from surcharge funds.

Surcharge orders were sent to wireless carriers in September 1998 to 114 companies that were identified as providing a communications service that may qualify for the wireless E911 surcharge. The collection of the

wireless E911 surcharge was to begin began on January 1, 1999, as is specified in the law. Amended surcharge orders were forwarded on May 18, 2004 that reflected the increase to \$0.65.

#### Administrative Rules / Statewide Implementation Plan

Administrative Rules were developed with the cooperation of the E911 Communications Council. On September 2, 1998, the rules were “Adopted and Filed Emergency” and simultaneously filed as “Notice of Intended Action”. A public hearing on the rules was conducted on October 15, 1998. At the public hearing, comments were provided by the E911 Communications Council, Iowa Department of Public Safety, Joint E911 Service Boards, and wireless service providers. The rules were amended based on these comments and “Adopted and Filed” on November 12, 1998. The rules (Section 605 Chapter 10) became effective on January 6, 1999.

The Statewide Wireless E911 Implementation Plan development began in 1999. The plan utilizes information gathered from the E911 Communications Council, local Joint E911 Service Boards, public safety answering points, wireless service providers, wire line service providers, and state agencies. The plan contains information on costs associated with the implementation and ongoing operation of the wireless network and anticipated timeframes for implementing wireless E911 service in the State of Iowa.

## E. CONSIDERATIONS

When exploring the possibility of implementing enhanced 911 service for wireless phones in the state of Iowa, there are a multitude of considerations that must be taken into account. First of these is how much funding will be available to be used in the implementation.

In the state, the original surcharge was set at a flat rate of \$0.50 per wireless phone number in the state. At the time that SF 530 was authored and ultimately approved, it was assumed that this surcharge would generate approximately \$4,000,000 in revenue annually. It was also stated by the wireless industry that to provide their portion of the E-911 call it would cost them between \$0.18 and \$0.26 per subscriber. The remainder of the surcharge would be used to pay for the cost of transporting the call through the wire line network and any upgrades to PSAP equipment so the PSAP could accept the call.

In the Administrative Rule (Section 605 Chapter 10) that implements the law, it states the bills from wireless companies will not be paid by the E911 Program Manager until those services have been ordered and authorized by the Program Manager. The purpose being to ensure that all PSAPs that wished to accept wireless E911 calls would have the ability to do so prior to the service being delivered by the wireless companies.

It is also intended to ensure that the network used to deliver the wireless E911 call be capable of delivering not only phase I calls but also phase II calls from the moment the network is made active. The main concern in creating a phase II capable network is the idea of upgrading the PSAP only once while the greatest amount of funding is available so the upgrades can be accomplished in the quickest fashion possible.

A second consideration is the implementation of the wire line network needed to deliver the wireless E911 call. Initial assumptions have been focused around delivering this call through the existing wire line E911 network in the state. Several wireless companies have expressed an interest in using this existing network. Their main reason for this is that the infrastructure exists to transport the call to a majority of the Iowa counties and the belief that the network has the capability to handle the additional call volume.

Other wireless companies have expressed concern with using the existing network. Their concern focused on unacceptable call setup times and the ability of the network to process the additional call volume. One company has even expressed the view that they would refuse to hook up to the existing network based on the above concerns.

In the FCC Report and Order, it does not specifically state that the wireless E911 call must be delivered on existing networks. In fact, it encourages all of the involved parties to look for creative solutions that will best serve the individuals that use wireless E911. With this in mind, other possibilities for delivering the call were explored.

The concept of creating a new network to deliver the call would allow for building a network that had the sole purpose of delivering the wireless E911 call. This would allow for the use of the latest technology to ensure that the call could be delivered in the quickest fashion possible and to the appropriate PSAP. It would also allow for the network to be entirely phase II capable from its initiation. This would ensure that the PSAP would have the ability to accept phase I calls, but also phase II calls without any further upgrades.

To this end, in November 1999, the Iowa Homeland Security and Emergency Management Division sought replies to a Request for Proposals (RFP) to provide the network elements. After reviewing the replies, it was determined that US West Communications best met the requirements of the RFP. Where appropriate, information from the US West response has been included in this plan.

In 2002, it became apparent that additional funding would be needed to maintain the network and to also provide the needed funding to ensure that PSAPs within the State were capable of accepting the wireless E911 Phase 2 call. In 2004 the General Assembly approved an increase in the wireless surcharge to \$0.65 per month. This increase designated funds for the PSAP as well as limiting wireless carrier cost recovery to Phase 1 costs.

## F. ELIGIBLE COSTS

The determination of eligible costs for reimbursement from the wireless surcharge fund is divided into four categories: wireless service provider, wire line transport, automatic location information database provider, and local PSAP cost. These four categories are further divided by non-recurring costs and monthly recurring costs. The Iowa Code (Chapter 34A.7A) states that the wireless surcharge be used to reimburse those costs associated with implementing and maintaining the operation of Wireless Enhanced 911 service. Please note that the costs for the wireless service providers are solely for providing Phase I calls.

### PSAP COSTS / IOWA DEPARTMENT OF PUBLIC SAFETY

Iowa Code (Chapter 34A.7A) and the corresponding Administrative Rule (Section 605, Chapter 10) state that the wireless surcharge can be used to reimburse those equipment expenses for communications equipment in the Public Safety Answering Point (PSAP) related to the implementation and maintenance of wireless Phases 2 service. This portion of the plan further defines these costs.

#### Non-recurring Costs:

- Initial hardware/software upgrades or additional equipment purchases needed to receive wireless E911 Phase 2 calls.
- Hardware/software purchases needed to ensure the PSAP can adjust to trunking changes necessitated by network expansion.
- Future equipment purchase expenses, where the equipment purchased is utilized for wireless E911 Phase 2 call receipt and disposition.

#### Monthly Recurring Costs:

- Maintenance for communications equipment in the PSAP related to Wireless E911 Phase 2 service.

### WIRE LINE TRANSPORT COSTS

These costs are associated with transporting the wireless E911 call from the wireless service provider selective router to the PSAP.

#### Non-recurring Costs:

EM Trunks between Selective Router & PSAP  
Outgoing Trunks

Site Dependent Mileage  
Service Provisioning  
Data Links between non-USW PSAP & ALI Data Port  
Site Dependent Mileage  
Service Provisioning

#### Recurring Monthly Costs

EM Trunks between Selective Router & PSAP  
Outgoing Trunks  
Channel Performance VG33  
Site Dependent Mileage  
Data Links between non-USW PSAP & ALI Data Port  
Channel Performance VG33  
Site Dependent Mileage

#### WIRELESS SERVICE PROVIDER COSTS

##### Non-recurring Costs

- ES Trunks from Mobile Switching Center to Selective Router
- Signal Control Point, Wireless Interface Device
- Switch upgrades, hardware/software
- Purchasing
- Engineering
- Accounting
- Legal
  - Non-Disclosure Agreements
  - 911 Contracts
  - Federal or State filings
- Field Technician
- Interconnect, spans/trunks (to router, SCP, and ALI Database)

##### Monthly Recurring Costs

- ES Trunks from Mobile Switching Center to Selective Router
- Signal Control Point, Wireless Interface Device
- Interconnect, spans/trunks (to router, SCP, and ALI Database)
- Switch maintenance, port charges
- Engineering
- Accounting
- Legal
  - Non-Disclosure Agreements
  - 911 Contracts

- Federal or State filings
- Database Management

The wireless service provider has the option of conglomerating with other Wireless Service Providers and the State to purchase and operate trunks, data circuits, and Signal Control Point services. It is possible that by doing this the State can experience cost savings that the individual Wireless Service Provider could not achieve. Separate agreements shall be established between the State, the Wireless Service Provider, and the network provider if the Wireless Service Provider chooses to participate in a conglomeration of services.

#### AUTOMATIC LOCATION INFORMATION (ALI) DATABASE PROVIDERS

##### Non-recurring Costs

- Selective Router Provisioning
- Database setup

##### Monthly Recurring Costs

- Selective Router Functionality
- Database Records

## **G. REIMBURSEMENT OF ELIGIBLE COSTS**

Code of Iowa Chapter 34A states that funds generated by the wireless surcharge shall be used to reimburse eligible expenses associated with delivering, transporting, and answering wireless E911 calls. The Code and subsequent Administrative Rule (Section 605, Chapter 10), further specifies that the funds be disbursed in a specific order. That order is:

1. An amount appropriated by the General Assembly to Emergency Management.
2. Wireless Service Providers, when the initiation of service has been requested and authorized by the E911 Program Manager.
3. Wireline Carriers for transport between the Selective Router and the PSAP.
4. Automatic Location Information Database Providers to include the Selective Router.
5. Outstanding Debt.
6. Joint E911 Service Boards and the Iowa Department of Public Safety.
7. Carryover Operating Surplus.

From the above list, items 2, 3, 4, and 6 will use eligible costs as defined in the previous section of this chapter. (Section F Page 10)

### **WIRELESS SERVICE PROVIDERS**

As specified in Chapter 34A, wireless service providers shall be reimbursed quarterly for "all eligible costs associated with the implementation and operation of E911 services. These expenses shall be submitted to the E911 Program using the above listed eligible cost guidelines.

The wireless service provider shall request reimbursement for expenses incurred in the previous calendar quarter from the E911 Program Manager no later than the 20<sup>th</sup> day following the close of the calendar quarter. Requests for reimbursement received after the 20<sup>th</sup> day following the close of the calendar quarter will not be eligible for reimbursement in that quarter. The reimbursement request must include a breakout of the costs, with original invoices, using the above eligible cost list and the Reimbursement Request Form (Attachment A).

The E911 Program Manager will then process the request and distribute payment within 40 calendar days of the close of the calendar quarter.

In cases where the amount requested for reimbursement exceeds the amount available to disburse, the E911 Program Manager shall take all reimbursement requests and remit a payment to the WSP based on a

percentage of the WSP eligible expenses as compared to the total of all eligible expenses for all WSP for the quarter.

#### WIRELINE TRANSPORT

As specified in 34A, local exchange service providers that transport the wireless E911 call from the selective router to the public safety answering point shall be reimbursed for these costs. The local exchange service provider shall request reimbursement for expenses incurred in the previous calendar quarter from the E911 Program Manager no later than the 20<sup>th</sup> day following the close of the calendar quarter. Requests for reimbursement received after the 20<sup>th</sup> day following the close of the calendar quarter will not be eligible for reimbursement in that quarter. The reimbursement request must include a breakout of the costs, with original invoices, using the above eligible cost list and the Reimbursement Request Form (Attachment A).

#### JOINT E911 SERVICE BOARDS AND THE IOWA DEPARTMENT OF PUBLIC SAFETY

The program manager shall allocate an amount each quarter as specified by Chapter 34A.7A(2)(f). The Joint E911 Service Boards and the Iowa Department of Public Safety may make a written request to the E911 Program Manager to receive funds. The written request must be received by May 15 of each year for those counties and the IDPS that wish to receive wireless E911 funds in the upcoming fiscal year starting on July 1. If the request is not received by the E911 Program Manager by May 15<sup>th</sup>, the Local Joint E911 Service Board or the Iowa Department of Public Safety will not be eligible to receive any funds from the Wireless E911 Emergency Communications Fund for the upcoming fiscal year. The written request form is found in Attachment C. Such requests for funds shall be made for equipment needed under an approved local E911 service plan for wireless calls and necessary for receipt and disposition of the incoming wireless E911 Phase 2 call.

Each PSAP shall receive a minimum of \$1,000 per calendar quarter. The distribution of the remaining surcharge funds will be accomplished by using a formula to divide the remaining surcharge among the PSAPs that are accepting wireless E911 calls. The formula uses wireless E911 call volumes and E911 service areas of the respective PSAPs.

The formula to be used is as follows:

Total dollars available x 65% x (square mile of service area / total Iowa square miles)

PLUS

Total dollars available x 35% x (number of wireless E911 calls taken at PSAP / statewide total number of wireless E911 calls).

The funds will be disbursed every quarter. The funds will be processed by the 40<sup>th</sup> calendar day after the close of the calendar quarter.

The formula outlined above will be reviewed and any necessary changes to the plan will be made at the beginning of each fiscal year. The E911 Council will provide the E911 Program Manager with any suggested changes by May 1 of each fiscal year.

#### AUTOMATIC LOCATION INFORMATION (ALI) DATABASE PROVIDERS

As specified in 34A, local exchange service ALI database providers and third party ALI database providers shall be reimbursed for their costs in operating the selective routing and ALI database components of the wireless E911 network. These providers shall request reimbursement for expenses incurred in the previous calendar quarter from the E911 Program Manager no later than the 20<sup>th</sup> day following the close of the calendar quarter. Requests for reimbursement received after the 20<sup>th</sup> day following the close of the calendar quarter will not be eligible for reimbursement in that quarter. The reimbursement request must include a breakout of the costs, with original invoices, using the above eligible cost list and the Reimbursement Request Form (Attachment A).

## **H. NETWORK DESIGN**

The network that is to be used to deliver the wireless E911 call in the State of Iowa will utilize what is referred to as a Non-Call Path Associated Signaling (NCAS) utilizing an intermediary device for data delivery and with one selective router located in Iowa. This network will then transport the wireless E911 call to the PSAPs that have decided to accept wireless E911 calls, via a separate set of dedicated trunks. All PSAPs will need to utilize two 4-wire data circuits wired to the Automatic Location Identification (ALI) node to perform ALI database information retrieval.

The wireless carrier will have the option of connecting to the selective router with Signaling System Seven (SS7) or with CAMA/Enhanced MF trunks. The connection to the SCP will be accomplished with SS7. The wireless service provider can choose a SCP vendor of their choice. The ALI database will be operated and maintained by the network provider.

For a graphic description of the network, please consult the diagram on page 17.

### **ROUTING**

Routing for Phase I wireless E911 calls will be determined by the location of the tower receiving the E911 call. The call will be routed to the appropriate PSAP based on the towers location within an E911 service area . In cases where the tower is in close proximity to two or more E911 service areas; and the tower has a three sector antenna; and if a majority of one of the sectors lies in a different E911 service area, routing can be done based on tower sectors.

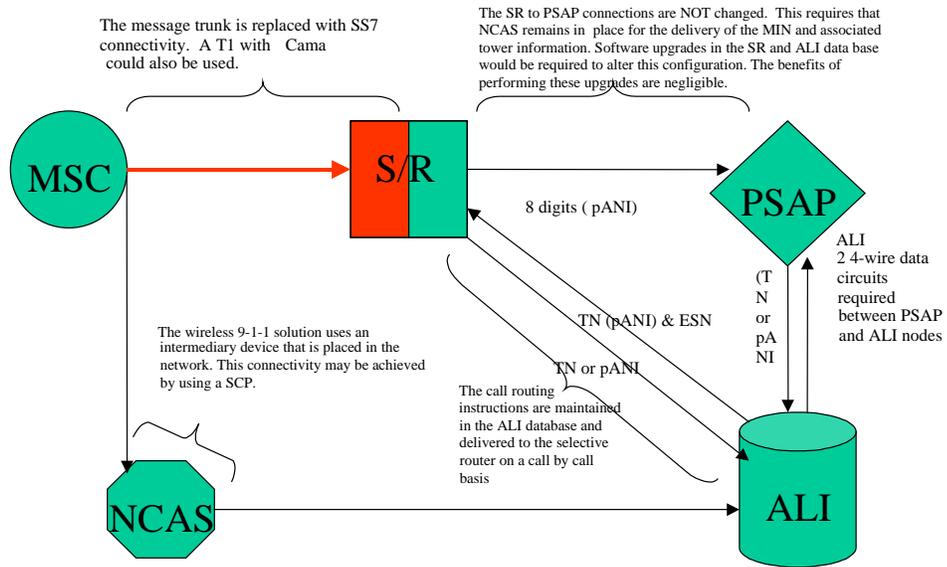
Routing for Phase II calls will be accomplished based on the location of the phone in respect to E911 service areas. The call will be delivered to the PSAP that serves the E911 service area from where the call originates.

When questions or conflicts occur in routing, the E911 Program Manager will work with the wireless service providers and PSAP to achieve a mutual resolution.

Information on service areas, PSAP locations, and jurisdictions served by the respective PSAP is located in the last section (County E911 Service Area Maps, page 32) of this plan.

For counties that have chosen to not accept wireless E911 calls, the respective E911 service board needs to determine where calls originating in their service area will be routed. If necessary, the E911 service board will enter into agreements with the jurisdiction that will accept their calls.

### Iowa Wireless Network configuration



**I. IMPLEMENTATION COSTS (NON-RECURRING)**

WIRELESS SERVICE PROVIDER

The implementation costs for wireless service providers have been derived from actual cost estimates developed by the individual companies. Since costs associated with the individual companies are considered trade secrets, all cost information with respect to the wireless service providers are presented in aggregate form. This is done in accordance with the Code of Iowa (Chapter 34A) and Iowa Administrative Rule (Section 605, Chapter 10). The costs listed below are aggregates from Wireless Service Providers and follow the eligible cost guidelines as specified in Section F, page 10 and are based on actual billings.

TOTAL (Actual)	\$683,000.00
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Phase 2 costs are recoverable under Code of Iowa Chapter 34A in very limited circumstances. For the purposes of this plan, no dollar figure is being used for Phase 2 cost recovery for the Wireless Service Provider.

WIRE LINE TRANSPORT

The cost for transporting the wireless E911 call has been derived from a State of Iowa Request for Proposal using the network specifications described in Section H, page 16. The costs listed here follow the eligible cost guidelines as specified in Section F, page 10 and are based on actual billings.

TOTAL (Actual)	\$788,710.63
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Phase 2 costs are primarily focused on the installation of the E2 interface within the network. This interface allows the PSAP to dynamically update location information for the wireless E911 call.

E2 Interface	\$67,786.25
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LOCAL E911 SERVICE BOARD / IOWA DEPARTMENT OF PUBLIC SAFETY

The non-recurring costs for PSAP upgrades have been derived from information gathered from the PSAPs and the E911 Service Boards. All wire-line enhanced capable PSAPs have provided cost information based on the network in Section H, page 16.

For this plan, all PSAP costs will be addressed in the aggregate for the purpose of brevity. All specific cost information is maintained by the E911 Program Manager and is available for review.

Hardware/Software Phase 1 Upgrades	\$5,051,010.00
Hardware/Software Phase 2 Upgrades(estimated)	\$3,000,000.00
<b>TOTAL NON-RECURRING COSTS (Actual)</b>	<b>\$6,522,720.63</b>

**J. OPERATION COSTS (RECURRING)**

All figures associated with Operation Cost will be **monthly** recurring costs.

WIRELESS SERVICE PROVIDERS

The operation costs for wireless service providers have been derived from actual cost estimates developed by the individual companies. Since costs associated with the individual companies are considered trade secrets, all cost information with respect to the wireless service providers shall be presented in aggregate form. This is done in accordance with the Code of Iowa (Section 605, Chapter 10) and Iowa Administrative Rule. The costs listed below are aggregates and follow the eligible cost guidelines as specified in Section F, page 10.

TOTAL	\$231,440.00
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Phase 2 costs are recoverable under Code of Iowa Chapter 34A in very limited circumstances. For the purposes of this plan, no dollar figure is being used for Phase 2 cost recovery for the Wireless Service Provider.

WIRE LINE TRANSPORT

The cost for transporting the wireless E911 call has been derived from a State of Iowa Request for Proposal using the network specifications described in Section H, page 16.

TOTAL	\$382,642.00
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Phase 2 costs are primarily focused on the installation of the E2 interface within the network. This interface allows the PSAP to dynamically update location information for the wireless E911 call.

E2 Interface	\$14,422.50
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LOCAL E911 SERVICE BOARD / IOWA DEPARTMENT OF PUBLIC SAFETY

TBD

<b>TOTAL MONTHLY OPERATING COSTS (estimated)</b>	<b>\$614,082.00</b>
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**K. IMPLEMENTATION SCHEDULE**

Implementation of Wireless E911 Phase 1 Service began in May of 2000 with the upgrading of PSAP equipment. The network construction began in August of 2000. Phase 1 requests were issued to the wireless service providers in April of 2001 with service turn up being complete statewide in January of 2002.

The implementation of Wireless E911 Phase 2 service began in December of 2003 with the ALI format upgrade process at the PSAP. This upgrade was funded by a \$500,000.00 grant that was awarded to the Division from the Public Safety Foundation of America. This will result in 58 PSAPs accepting Phase 2 calls by the end of 2004. The remaining 67 will need to become Phase 2 mapping capable prior to them accepting Phase 2 calls. The cost to complete this is due to this office by January 1, 2005.

## L. DEFINITION/ABBREVIATION LIST

Following is a listing of relevant definitions and abbreviations that are contained in this plan.

Access Line - means the telephone service line which connects a subscriber's main telephone(s) or equivalent main telephone(s) to the telephone company's switching office.

Administrator - unless otherwise noted, means the administrator of the Iowa Homeland Security and Emergency Management Division.

Angle of Arrival (AOA) - A terrestrial location determination technology that computes a transmitter's location based upon the angle at which the transmitter's radio signal strikes multiple receivers.

Automatic Location Identification (ALI) - means a system capability that enables an automatic display of information defining a geographical location of the telephone used to place the 911 call.

Automatic Number Identification (ANI) - means a capability that enables the automatic display of the number of the telephone used to place the 911 call.

Call Attendant - means the person who initially answers a 911 call.

Call Detail Recording - a means of establishing chronological and operational accountability for each 911 call processed, consisting minimally of the caller's telephone number, the date and time the 911 telephone equipment established initial connection (trunk seizure), the time the call was answered, the time the call was transferred (if applicable), the time the call was disconnected, the trunk line used, and the identity of the call attendant's position, also known as an ANI printout.

Call Relay Method - means the 911 call is answered at the PSAP, where the pertinent information is gathered and the call attendant relays the caller's information to the appropriate public or private safety agency for further action.

Call Transfer Method - means the call attendant determines the appropriate responding agency and transfers the 911 caller to that agency.

Central Office (CO) - means a telephone company facility that houses the switching and trunking equipment serving telephones in a defined area.

Centralized Automated Message Accounting (CAMA) - An MF signaling protocol originally designed for billing purposes, capable of transmitting a single telephone number.

Coin-Free Access (CFA) - means coin-free dialing or no-coin dial tone which enables a caller to dial 911 or "0" for operator without depositing money or incurring a charge.

Conference Transfer - means the capability of transferring a 911 call to the action agency and allowing the call attendant to monitor or participate in the call after it has been transferred to the action agency.

Customer Premises Equipment (CPE) - Terminal equipment at a PSAP.

Direct Dispatch Method - means 911 call answering and radio-dispatching functions, for a particular agency, are both performed at the PSAP.

E911 Communications Council - means the council as established under the provisions of Iowa Code section 34A.15.

E911 Program Manager - means that person appointed by the Administrator of the Homeland Security and Emergency Management Division, and working with the E911 communications council, to perform the duties specifically set forth in Iowa Code chapter 34A and this chapter.

Emergency Call - means a telephone request for service which requires immediate action to prevent loss of life, reduce bodily injury, prevent or reduce loss of property and respond to other emergency situations determined by local policy.

Emergency Service Number (ESN) - A three to five digit number representing a unique combination of emergency service agencies designated to serve a specific range of addresses within a particular geographical area. The ESN facilitates selective routing and selective transfer, if required, to the appropriate PSAP and the dispatching of the proper services.

Enhanced 911 (E911) - means the general term referring to emergency telephone systems with specific electronically controlled features, such as ALI, ANI, and selective routing.

Enhanced 911 (E911) Operating Authority - means the public entity, which operates an E911 telephone system for the public benefit, within a defined enhanced 911 service area.

Enhanced 911 (E911) Service Area - means the geographic area to be served, or currently served under an enhanced 911 service plan, provided that any enhanced 911 service area shall at a minimum encompass one entire county. The enhanced 911 service area may encompass more than one county and need not be restricted to county boundaries. This definition applies only to wire-line enhanced 911 service.

Enhanced 911 (E911) Service Plan (wire-line) - means a plan, produced by a joint E911 service board, which includes the information required by Iowa Code subsection 34A.2(6).

Enhanced 911 Service Surcharge - means a charge set by the joint E911 service board, approved by local referendum, and assessed on each access line that physically terminates within the E911 service area.

Enhanced Wireless 911 Service Area - means the geographic area to be served, or currently served, by a PSAP under an enhanced wireless 911 service plan.

Enhanced Wireless 911 Service, Phase I - means an emergency wireless telephone system with specific electronically controlled features such as ANI, specific indication of wireless communications tower site location, selective routing by geographic location of the tower site.

Enhanced Wireless 911 Service, Phase II - means an emergency wireless telephone system with specific electronically controlled features such as ANI and ALI and selective routing by geographic location of the 911 caller.

Exchange - means a defined geographic area served by one or more central offices in which the telephone company furnishes services.

Feature Group D (FGD) - An MF signaling protocol, originally developed to support equal access to long distance services, capable of carrying one or two ten digit telephone numbers.

Implementation - means the activity between formal approval of an E911 service plan and a given system design, and commencement of operations.

Integrated Services Digital Network (ISDN) - A digital interface providing multiple channels for simultaneous functions between the network and CPE.

Joint E911 Service Board - means those entities created under the provisions of Iowa Code section 34A.3, which include the legal entities created pursuant to Iowa Code chapter 28E referenced in Iowa Code subsection 34A.3(3).

Mobile Directory Number (MDN) - The callback number associated with a wireless phone.

Mobile Switching Center (MSC) - The wireless equivalent of a Central Office, which provides switching functions from wireless calls.

Multi-Frequency (MF) - A type of signaling used on analog interoffice and 911 trunks.

911 Call - means any telephone call that is made by dialing the digits 911.

911 System - means a telephone system that automatically connects a caller, dialing the digits 911, to a PSAP.

Nonrecurring Costs - means one-time charges incurred by a joint E911 service board or operating authority including, but not limited to, expenditures for E911 service plan preparation, surcharge referendum, capital outlay, installation, and initial license to use subscriber names, addresses and telephone information.

One-Button Transfer - means another term for a (fixed) transfer which allows the call attendant to transfer an incoming call by pressing a single button. For example, one button would transfer voice and data to a fire agency, and another button would be used for police, also known as “selective transfer.”

Political Subdivision - means a geographic or territorial division of the state that would have the following characteristics: defined geographic area, responsibilities for certain functions of local government, public elections and public officers, and taxing power. Excluded from this definition are departments and divisions of state government and agencies of the federal government.

Provider - means a person, company or other business that provides, or offers to provide, 911 equipment, installation, maintenance, or access services.

Pseudo Automatic Location Identification (pALI) - An ALI record associated with a pANI, configured to provide the location of the wireless cell of sector and information about its coverage or serving area.

Pseudo Automatic Number Identification (pANI) - A telephone number used to support routing of wireless 911 calls. It may identify a wireless cell, cell sector of PSAP to which the call should be routed.

Public or Private Safety Agency - means a unit of state or local government, a special purpose district, or a private firm, which provides or has the authority to provide firefighting, police, ambulance, or emergency medical services.

Public Safety Answering Point (PSAP) - means a 24-hour, state, local, or contracted communications facility, which has been designated by the local service board to receive 911 service calls and dispatch emergency response services in accordance with the E911 service plan.

Public Switched Telephone Network - means a complex of diversified channels and equipment that automatically routes communications between the calling person and called person or data equipment.

Recurring Costs - means repetitive charges incurred by a joint E911 service board or operating authority including, but not limited to, database management, lease of access lines, lease of equipment, network access fees, and applicable maintenance costs.

Selective Routing (SR) - means an enhanced 911 system feature that enables all 911 calls originating from within a defined geographical region to be answered at a pre-designated PSAP.

Signaling System 7 (SS7) - An inter-office signaling network separate from the voice path network, utilizing high-speed data transmission to accomplish call processing.

Subscriber - means any person, firm, association, corporation, agencies of federal, state and local government, or other legal entity responsible by law for payment for communication service from the telephone utility.

Tariff - means a document filed by a telephone company with the state telephone utility regulatory commission that lists the communication services offered by the company and gives a schedule for rates and charges.

Telecommunications Device for the Deaf (TDD) - means any type of instrument, such as a typewriter keyboard connected to the caller's telephone and involving special equipment at the PSAP which allows an emergency call to be made without speaking, also known as a TTY.

Time Difference of Arrival (TDOA) - A terrestrial location determination technology that computes a transmitter's location based upon the times a signal is received at multiple receivers.

Trunk - means a circuit used for connecting a subscriber to the public switched telephone network.

Wireless Communications Service - means cellular, broadband PCS, and SMR that provide real-time two-way interconnected voice service, the networks of which utilize intelligent switching capability and offer seamless handoff to customers. This definition includes facilities-based service providers and non-facilities based resellers. For purposes of wireless 911 surcharge, wireless communications service does not include services whose customers do not have access to 911, or a 911-like service, a communications channel utilized only for data transmission, or a private telecommunications system.

Wireless Communications Surcharge - means a surcharge of up to 50 cents imposed on each wireless communications service number provided in this state and collected as part of a wireless communications service provider's monthly billing to a subscriber.





## REQUEST FOR WIRELESS E911 FUNDS

(Attachment C)

Date: \_\_\_\_\_

The \_\_\_\_\_ County E911 Service Board or the Iowa Department of Public Safety does hereby request to receive any available funds from the Wireless E911 Emergency Communications Fund for upcoming fiscal year \_\_\_\_\_.

We understand that the availability of funds in any quarter is predicated on the fact that the fund shall be used to first reimburse the wireless service providers for their expenses associated with providing E911 service. If funds remain after the wireless service providers expenses have been paid in full, the remaining funds will be disbursed to the local E911 service boards and Iowa Department of Public Safety (IDPS) that have requested to receive the funds.

The disbursement of any funds to the local E911 service board and IDPS will occur quarterly. The funds will be processed by the Iowa Homeland Security and Emergency Management Division no later than the 40<sup>th</sup> calendar day following the close of the calendar quarter. The funds will be disbursed using the following formula:

Total dollars available x 65% x (square mile of service area / total Iowa square miles)

PLUS

Total dollars available x 35% x (number of wireless E911 calls taken at PSAP / statewide total number of wireless E911 calls).

The number of wireless E911 calls received by the PSAP(s) will be tabulated by the wireless E911 selective router.

\_\_\_\_\_ County E911 service area is \_\_\_\_\_ square miles.  
\_\_\_\_\_ Dept of Public Safety area is \_\_\_\_\_ square miles.

The E911 service area is served by the following PSAP(s):

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Any funds received from the Wireless E911 Emergency Communications fund would be used to fund the following equipment purchases:

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This form is due on May 15<sup>th</sup> of each year for the upcoming fiscal year beginning on July 1. If this form is not submitted by May 15<sup>th</sup> the Local Joint E911 Service Board or the Iowa Department of Public Safety shall not be eligible to receive any remaining funds from the Wireless E911 Emergency Communications Fund in any quarter when a surplus exists after satisfying wireless carrier obligations.

Signature certifies that above expenses are in accordance with Iowa Code Chapter 34, Administrative Rule [605] Chapter 10

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Signature

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Title

**COUNTY E911  
SERVICE AREA MAPS**