

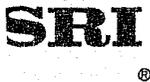
## 911 IN FLORIDA: A Preliminary Report

By: KARL D. FELPERIN      DIANE M. JENNINGS  
THEODORE R. LYMAN      TERRENCE J. YUNG

*Prepared for:*

STATE OF FLORIDA  
DEPARTMENT OF GENERAL SERVICES  
DIVISION OF COMMUNICATIONS  
TALLAHASSEE, FLORIDA

013673



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Menlo Park, California 94025 · U.S.A.

March 1974

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SRI Project 3101

*Approved by:*

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## SUMMARY OF FINDINGS AND RECOMMENDATIONS

We present in this summary the major findings and recommendations given in the report. Chapter references are given to assist the reader in determining how these findings and recommendations were derived.

This preliminary report is being issued after three months of our six-month contractual effort. It defines the basic requirements of 911 from the viewpoint of the State of Florida, to guide the development of statewide 911 in the best interests of the citizens of the state. It presents to local officials alternatives that will be analyzed, evaluated, and recommended in our final report. These alternatives and recommendations made in the report are preliminary, given to provide feedback and thus to increase the participation of the various stakeholders in the 911 planning process.

Specific recommendations and findings are as follows.

- On the basis of the intent and progress of state legislative action and of implementation by the Florida Division of Communications, as well as the recent passage of the federal Emergency Medical Systems Act requiring 911, we believe that 911 should be planned and implemented on a statewide basis by local governments. In addition, the large number of visitors and part-time residents give Florida both the responsibility for ensuring that visitors receive emergency services equal to those obtainable in their home communities and the opportunity to lead the nation in statewide 911.
- The 20 telephone companies, 67 counties, 400 incorporated cities, 200 hospitals, and 900 police and fire protection agencies constitute a situation of extreme fragmentation. In particular, the mismatch between telephone exchange and public safety jurisdictional boundaries will require the state to develop clear and firm guidelines for local implementation and to consider subvention to local governments for some of the costs to be incurred (Chapter II).
- The major benefit of 911 to the public is in decreasing the response time, measured from incidence of need to contact of the appropriate public safety agency. Although no firm data on reduction of response time due to 911 are available, national estimates range from 2 to 120 seconds. In addition, 911 improves the sense of participation of the public in the activities of public safety agencies, and is

## I INTRODUCTION

### A. Background of the Study

On December 27, 1973, the Florida Division of Communications, Department of General Services, awarded a contract to Stanford Research Institute (SRI) to develop a system concept for implementing Universal Emergency Telephone Number 911 throughout the State of Florida. The contract called for the concept to be presented in the final report, to be delivered six months after contract award. Since the final report would not be delivered before the expected end of the state legislative session, the Division of Communications included in the contract a requirement for a preliminary report, to be delivered three months after contract award, which would assist state legislators and executive branch officials in formulating 911 policies. This preliminary report, then, attempts to present the most important 911 issues, and is oriented to the needs of policy formulation at the state level. The final report will present to the Division of Communications firm recommendations for state action and will also present alternative 911 plans for local governments in Florida, with local recommendations as appropriate.

### B. State Planning Background

The present study follows directly from two ongoing programs of the State Division of Communications. In 1972, the Florida Legislature passed House Bill 3937 [Florida Statute (F.S.), Chapter 287.29] on law enforcement communications. In passing this bill, the legislature noted clearly that the limited number of radio channels had not been assigned by system engineering on a statewide basis, rather, that the existing radio communications systems operated by local governments within Florida had failed to meet needs for rapid and complete interagency communications. The law enforcement communications act not only required that the State Division of Communications formulate a statewide system of law enforcement communications, but further required the development of a law enforcement agency telephone system provision on a regional basis throughout the state.

In 1973 the Florida Legislature passed House Bill 205 (F.S., Chapter 73, 254), relating to emergency medical telecommunications. In so doing, the legislature noted the increasing interest by both the general population and all levels of government in emergency medical services. It noted that the state's emergency medical telecommunications had been fragmented, slow to develop, and established on an arbitrary basis, also with no regard to system engineering on a statewide basis. The act specifically directed the Division of Communications to develop an integrated regional system of emergency medical telecommunications, and it mandated the coordinated efforts of local agencies with the Division.

On the basis of the intent of this previous legislation, as well as 1970 legislation (F.S., Chapter 365.17, mandating 911, when practicable) we consider it both necessary and prudent that 911 be planned on a statewide basis. First, the planning efforts already performed by the Division of Communications and the various local governments have been significant steps toward improving the technical and institutional base of law enforcement and emergency medical communications. Lacking, however, to date, have been direct efforts to make these and other public safety agencies more accessible to the public. Without such public access, the legislative intent of a coordinated, integrated law enforcement and emergency medical system will not be fulfilled, and the taxpayers of Florida will not realize a fair return on the considerable investment they have already made.

Second, passage of the 1973 Emergency Medical Systems Act by Congress, with authorization of \$185 million dollars over the next three years, explicitly required the provision of plans for 911, except as waived by the Secretary of Health, Education, and Welfare. Unless 911 is planned on a statewide basis, then, the considerable amount of money that will be available to Florida under this act will be apportioned within the state only to those local communities that provide for 911. This will further fragment the emergency medical communications within Florida. The provision of adequate modern emergency medical service by federal funds will, if 911 is not planned statewide, show a pattern of great horizontal inequity,

depending on the haphazardness of local institutional processes. Such horizontal inequity would clearly violate the legislative intent of the Florida emergency medical telecommunications act.

For these reasons, development of a statewide system of 911 is clearly a state responsibility in Florida, on the basis of both the legislation by the state and the subsequent legislation by the federal government. Failure to carry out this development would be an explicit and dramatic reversal of state policy.

#### C. Objectives of the Study

The request for proposal issued by the Division of Communications in September 1973 required that the study include consideration of all conceivable 911 techniques and that it depict the trade-offs and available alternatives. The statewide plan to be derived from these alternatives would include as a minimum: cost, degree of sophistication, and response time considerations. As agreed contractually between the Division of Communications and SRI, the study will provide the following results:

- Specification of the technical and operational features of a statewide 911 system based on both national experience with 911 and the unique problems and requirements of local governments and public safety agencies in Florida.
- Specific examination and recommendation of all agencies and emergency services to be included. This will include all law enforcement, fire protection, and emergency medical organizations, as well as other entities such as poison control, suicide prevention, and Coast Guard.
- Assessment of the technical and economic impact of 911 on public safety agencies, telephone companies, local governments, and so on. A timetable for implementation, based on the technical, operational, and financial capabilities of public safety agencies and telephone companies, will be prepared.
- Specific recommendations for each part of the state, in sufficient detail that engineering design can proceed if the recommendations are adopted. Telephone, personnel, facilities, and equipment requirements will be estimated, and both initial and recurring costs will be derived in sufficient detail to enable decisions between recommended alternatives to be made by the state as well as local governments.
- Specific recommendations for financing the recommended system, including federal funds and state subvention to local governments, as are found to be appropriate.

D. Process of the Study

In approaching the development of a system concept for statewide 911 for Florida, the SRI project team realized that the success of the effort would depend on a broad base of support from a large number of stakeholders. These stakeholders include various state agencies; law enforcement, fire, and emergency medical agencies, both state and local; and county and municipal elected and administrative officials. The project was structured to allow for the contribution of these stakeholders during the process of the study, rather than confront them with the final recommended plan after the study was completed. As a vehicle for interchange, SRI proposed and the Division of Communications adopted the organization of a State-County-Municipal Task Force to include representatives of the various stakeholder groups. This Task Force is now meeting monthly during the duration of the study and is serving as a valuable instrument for two-way interchange on the substantive 911 issues. The members of the Task Force, with their affiliations and representation, are given in Table 1. We believe that the Task Force should be continued after the SRI study has been completed. During the acceptance and implementation of the statewide 911 concept by the Division of Communications, the Task Force will serve as a vehicle for adjusting state policies to suit changing situations.

E. Purposes of the Report

As mentioned in the Introduction, the purpose of this report is to provide information in time for the 1974 legislative session so that legislation can be provided for statewide 911. Most of the emphasis in this report is on statewide requirements, and policies and local area alternatives. Statewide alternatives and recommendations will be given in the final report. Table 2 summarizes the information to be supplied by this report and the final report, as well as information that will not be provided under this study. As Table 2 shows, the final report will put more emphasis than this report on the 911 alternatives, configured on the basis of the policies presented in this report, including specific comments and criticism on the policies presented. It should be noted, however, that the final report will not be an engineering design; rather it will provide a

Table 1

MEMBERSHIP OF STATE-COUNTY-MUNICIPAL TASK FORCE

<u>Name</u>	<u>Affiliation</u>	<u>Representation</u>
Karl R. Adams	House Criminal Justice Committee	Florida House of Representatives
K. C. Alvarez	Ocala Police Department	Florida Police Chiefs Association
Robert Burns	General Telephone Company	Florida Telephone Association
Robert J. Chewning	Orlando Public Safety	Florida Police Chiefs Association
Rick Dunn	Senate Criminal Justice Committee	Florida Senate
Charles C. Hall	Orange County Emergency Medical Service Council	Florida Medical Association
Paula Hawkins	Florida Public Service Commission	Florida Public Service Commission
W. R. Kaufman	Florida Highway Patrol	Florida Highway Patrol
Thomas Kelly	Volusia County	State Association of County Commissioners
S. J. (Buddy) King	City of Jacksonville	Florida State Fireman's Association
Tommy Knight	State Fire Marshal	State Fire Marshal
Russ Marchner	Dade County League of Cities	Florida League of Cities
Clayton H. Moore	Florida Public Services Commission	Florida Public Services Commission
J. Rhett McMillan, Jr.	Associated Public Safety Communications Officers	Associated Public Safety Communications Officers
Wallace A. Payne	City of Dunedin	Florida League of Cities

Table 1 (concluded)

Name	Affiliation	Representation
Stewart Price	Department of Administration	Help Stop Crime Program
Lynwood Roberts	City of Jacksonville	State Association of County Commissioners
Chuck Robinette	Department of Agriculture and Consumer Services	State Division of Forestry
Jack Skeries	Department of Administration	Bureau of Criminal Justice Planning and Assistance
Inci Swanson	Department of Health and Rehabilitation	Health Planning Council
Jim Tait	Commission on Local Government	Commission on Local Government
Borwin Williams	Florida Sheriffs' Association	Florida Sheriffs' Association
Gene Wright	Boynton Beach Fire Department	Florida State Fire Chiefs Association
Charles Walters	State Department of Community Affairs (Civil Defense)	Division of Emergency Government

Table 2

INFORMATION TO BE SUPPLIED BY THE SRI STUDY

Included in This Report (March 1974)	To Be Included in the Final Report (June 1974)	Information That Will Not Be Supplied by the Study
<ul style="list-style-type: none"> <li>• Jurisdictions and agencies to be included in 911 plan.</li> <li>• Cooperation required between jurisdictions.</li> <li>• Operational requirements for public safety agencies.</li> <li>• Degree of regionalization required for 911 in different parts of Florida.</li> <li>• Initial and recurring costs to public agencies and telephone companies on statewide basis.</li> <li>• Alternative methods for 911 costs sharing.</li> <li>• Time required to implement 911 statewide.</li> <li>• Services required from the telephone companies.</li> </ul>	<ul style="list-style-type: none"> <li>• Initial and recurring costs for each local 911 alternative.</li> <li>• Organizational and management alternatives for local 911 systems.</li> <li>• Estimates of response time for local 911 systems.</li> <li>• Availability of federal funds for 911 financing.</li> <li>• Cost-benefit comparison of various local 911 alternatives.</li> <li>• Identification of interim 911 solutions.</li> <li>• Recommendation of statewide 911 plan.</li> <li>• Short-range guidelines for local implementation.</li> </ul>	<ul style="list-style-type: none"> <li>• Engineering design and specifications for local 911 systems.</li> <li>• Firm specifications of telephone facilities for local 911 systems.</li> <li>• Exact personnel requirements for local 911 systems (number and training).</li> <li>• Public information requirements for local 911 systems.</li> </ul>

concept for action by the state and by local governments such that engineering design can proceed after the recommendations presented have been accepted and modified.

We see four intended purposes of this report. First, we expect that it will increase the understanding of the various stakeholders regarding specific policy issues of statewide 911. Second, we expect that it will stimulate discussion and reaction. Such discussion and reaction may resolve certain issues and heighten interest in others, which will serve the third purpose of providing SRI with feedback for the final report. Fourth, such feedback should be invaluable for the state in its planning after the study has been completed.

#### F. Organization of the Report

In organizing this report, we have been conscious of two different audiences. On the one hand, we are informing various state officials--in both the legislative and the executive branches--together with the various elected and appointed governmental officials who are affiliated with, and directly concerned with the problems of, local government. For this audience, the issue of 911 is viewed as one of policy: state policy in general and state-local intergovernmental relations in particular. On the other hand, we address a large audience of law enforcement, fire protection, emergency medical, and other public safety officials whose particular background and interest are technical and operational. In both general and specific terms they will be asking the question: What does the state want us to do? This group will be directly responsible for the implementation and operation of 911 throughout Florida. Their interest will be more specific than general; it will be focused on the specific requirements that pertain to their particular local area.

To present our results to both groups, it is necessary that we relate the concerns of one group to the particular orientation of the other. We have organized the report with this intent.

In Chapter II, our Statement of the Problem, we examine the particular problems of 911 in Florida by contrast with an "ideal 911 state." We then discuss the boundary mismatch problem, illustrating it by the example

of Dade County. Next we present 911 as a state policy issue. We consider the benefits of 911 to the public; the corresponding costs to the public, both as ratepayers and as taxpayers; and the changes in the role and operation of public safety agencies that we believe will accompany implementation of statewide 911. Next, we shift focus to the operational methods of 911. Our intent here is to show the relationship of operational methods of performing 911 to the particular institutional problems that accompany such methods.

In Chapter III we discuss the national experience with 911. We note that such experience is of somewhat limited direct applicability, since 911 has previously been implemented in a "pocket" or happenstance fashion, not statewide. We review and analyze the local experience, from various sources of information. Next, we discuss experience in two states: California, where 911 has been mandated upon local governments legislatively, and New York, where the state regulatory agency has created a policy that will have far-reaching consequences.

On the basis of this national experience we then discuss in Chapter IV the requirements for 911 in Florida. We present specific policies that we believe should be applied statewide, on the basis of experience to date, and we propose alternative policies on which we will be obtaining more information for our final report.

Chapter V presents alternative 911 system concepts for specific areas of the state, together with our guidelines used for proposing these alternatives. We do not analyze or compare these local alternatives in this report; we merely offer them to obtain comment and feedback from various officials.

## II STATEMENT OF THE PROBLEM

This chapter presents, on the basis of previous 911 experience and our current understanding of Florida, the requirements for 911 that we believe should be met by all alternative 911 configurations and local 911 systems in the state. An ideal state for implementing 911 is contrasted here with the boundary mismatch situation faced by state and local planners of Florida. The contrast of ideal with reality should provide additional focus to the task of statewide 911 implementation. From this perspective we can offer system requirements that would bring Florida closer to the ideal state for 911 implementation.

### A. An Ideal State for 911 Implementation

We can hypothesize an ideal state for 911 implementation--a state unlike any existing in this country. The actual details of such a state--the size, population, demographics, politics, intergovernmental structure, and so forth--are unimportant for this example. The single important characteristic of this state is that its political, structural, and physical aspects would be ideal for statewide implementation of 911; in other respects this state would be far from ideal.

This ideal state would have a single telephone company serving its entire population. This single telephone system would not overlap adjoining states, and its central office boundaries would be completely congruent with the political boundaries of cities and counties (i.e., exchange boundaries would be the same as city and county boundaries). The telephone equipment would, of course, be the newest common-control variety, with electronic switching at all central offices. Moreover, the pay telephones installed by this nonexistent telephone company would not

require a coin to dial 911. Finally, and most unrealistically, the costs associated with the installation and operation of the 911 system would be almost negligible.

The various city and county governments in this "ideal" state would have a high degree of adherence to state authority, a philosophy far removed from "home rule." All the public safety officials would defer to this authority--each "following the line" without deviation. Should the political officials of the central authority decide that 911 should be implemented, each official involved would see this requirement as binding on the policies of his or her department. Law enforcement officials would agree on the validity of any citizen request for service (thus horizontally uniform service levels would prevail), and each agency would have all the resources to meet service requirements.

Public safety officials would not compete for absorbing each other's communication facilities, because public safety communications would be highly consolidated by direction (based on following expert consultants' recommendations to the "letter"). Cooperating public safety officials would, by consensus, decide on matters of public service. Such a minimal degree of public safety fragmentation would save considerable money for the taxpayers and at the same time provide them with the benefits of 911 emergency telephone service. The costs associated with 911 operation would be low because of the considerable scale economies of consolidated service delivery.

Finally, the problem of "who pays for the ongoing operation of 911," would be minimal. In our example, either the state or the local jurisdictions would incur all the costs associated with 911 operation; the need for mixing state funds with local funds would not arise.

Lacking the pluralism characterizing the states of this country, our "ideal" state would probably be an undesirable, totalitarian, and dull

place to live. It would, however, be a relatively easy state for which to plan, design, and implement an emergency telephone system.

#### B. Comparison of Florida with the Ideal

Florida, of course, differs from our imagined ideal state in almost every way. Not one, but 20 telephone companies operate within Florida's boundaries (see Table 3). Most of the 404 telephone exchanges overlap boundaries, not only the boundaries of the state (with Georgia and Alabama) but the local jurisdiction boundaries of the 67 counties and nearly 400 incorporated cities. Compounding this mismatch problem, the boundaries of the nearly 650 fire protection agencies and the informal service zones of the hospitals and ambulance companies\* overlap, and they are not coincident with those of telephone exchanges or law enforcement agencies. There is no semblance of order among the service boundaries of the agencies, public and private, that will be the principals of 911 implementation.

When we consider politics, we can assume that the public safety officials of the 67 counties and the approximately 900 law enforcement and fire protection agencies are responsive to their specific citizen-clients and that they act within the institutional restraints of their professions. It is to be expected, then, that service policy consensus is lacking and is difficult to achieve among public safety officials serving different masters. Officials of municipal fire departments and rural fire districts in the state, actively involved in political decisions within their areas, may view 911 as a distinct threat to their time-honored and cherished positions. On the other hand, law enforcement officials, while possibly visualizing an expanded definition of their

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\* Approximately 200 hospitals, 20 of which provide ambulance service, in addition to 190 other ambulance and rescue agencies.

Table 3

## SUMMARY OF TELEPHONE COMPANY STATISTICS

Telephone Company	Number of Central Offices	Number of Prefixes	Number of Main Stations			Percent of Total Main Stations	Number of Florida Counties Served
			Residence	Business	Co-in		
Florida Telephone Co.	1	1	--	--	--	0.01%	1
Florida Central Telephone Co.	6	6	2,971	158	15	0.10	4
Florida State Telephone Co.	13	13	8,290	1,152	100	0.30	6
Florida Telephone Corp.	34	41	89,572	17,592	1,509	3.47	9
General Telephone Co. of Florida	74	184	617,172	112,237	12,442	23.67	8
Gulf Telephone Co.	2	2	3,464	634	43	0.13	2
Indiantown Telephone System	1	1	--	--	--	0.03	1
Northeast Florida Telephone Co.	2	2	1,742	294	26	0.06	1
North Florida Telephone Co.	26	27	19,189	2,982	333	0.72	13
Orange City Telephone Co.	3	3	--	--	--	0.12	1
Quincy Telephone Co.	3	3	4,981	759	42	0.18	1
St Joseph Telephone and Telegraph Co.	12	13	10,112	1,464	232	0.38	7
Southeastern Telephone Co.	18	25	67,781	19,685	1,252	2.83	8
Southern Bell Telephone and Telegraph Co.	163	403	1,604,214	287,963	36,963	61.54	38
South Georgia Telephone Co.	1	1	--	--	--	0.002	1
Southland Telephone Co.	3	3	1,525	79	14	0.05	1
United Telephone Co. of Florida	35	39	106,194	22,517	1,854	4.17	12
Vista-Florida Telephone System	1	2	(7,500)*	*	200	0.24	1
West Florida Telephone Co.	2	3	--	--	--	0.15	1
Winter Park Telephone Co.	4	13	46,479	10,159	959	1.84	2
Total	404	785	2,583,686+	476,923+	55,984+	100 %	--

\* Includes Residence and Business Stations.

role, may fear that the provision of 911 will create a demand for service far in excess of the resources available. Consequently, distrust, manifested in diminished interagency and intergovernmental cooperation, may further hamper 911 planning and implementation.

To summarize, Florida is beset with problems of fragmentation, as are all the states of this country. The fragmentation of telephone service and of public safety delivery is, however, only the most visible problem of 911 implementation. The interpersonal problems--mistrust and misunderstanding of 911--are, in the final analysis, the most difficult to overcome.

C. Effects of the Boundary Mismatch Problem

We have chosen the Greater Miami area of Dade County for a graphic presentation of the boundary mismatch problem. This choice was made for three important reasons:

- Dade County is highly fragmented, particularly in terms of telephone exchanges.
- Dade County has a long history of both public and official desire for 911, coupled with much confusion and misunderstanding. Our example may help clarify the situation.
- Dade County does not have telephone exchange overlap with adjacent counties, so it can be considered by itself.

Figure 1 indicates, by various overlays, the extent of the boundary mismatch in this particular area of the state. Table 4 presents the problem in terms of the number of Dade County citizens affected by incongruent telephone exchange and city boundaries.

In this example area, five law enforcement agencies provide the emergency dispatch function. Figure 1(a) indicates the geographic areas served by four city police departments; emergency calls for the remaining area are serviced by the Dade County Public Safety Department. Figure 1(b) shows the approximate Southern Bell Telephone exchange boundaries and indicates the boundary mismatch. Figure 1(c) focuses on a portion of the Greater Miami area and indicates the areas of mismatch and how the mismatch

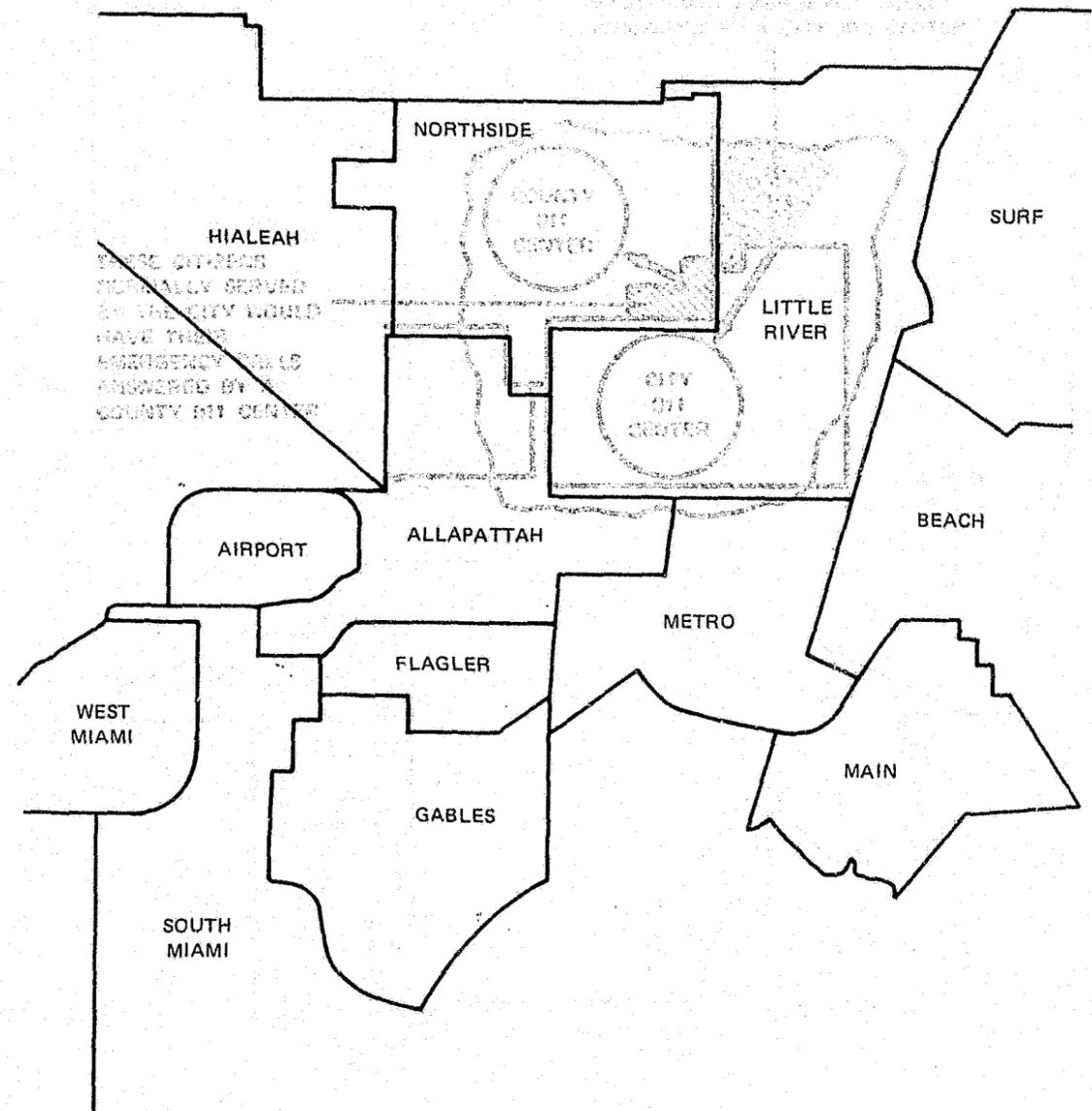
Table 4

NUMBER OF CITIZENS\* AFFECTED BY BOUNDARY MISMATCH PROBLEM

Exchanges of Greater Miami	Total in Exchange	Citizens in Exchange Residing in**				Areas Served by Dade County
		Miami	Miami Beach	Hialeah	Coral Gables	
South Miami	84,000	13,000	-	-	22,000	49,000
Gables	101,000	50,000	-	-	51,000	-
West Miami	17,000	5,000	-	-	-	12,000
Allapattah	76,000	43,000	-	3,000	-	30,000
Northside	74,000	8,000	-	3,000	-	63,000
Little River	88,000	52,000	-	-	-	28,000
Surf	40,000	-	30,000	-	-	10,000
Beach	54,000	13,000	41,000	-	-	-
Main	13,000	-	13,000	-	-	-
Flagler, Metro (Biscayne)	201,000	201,000	-	-	-	-

\* Approximate numbers.

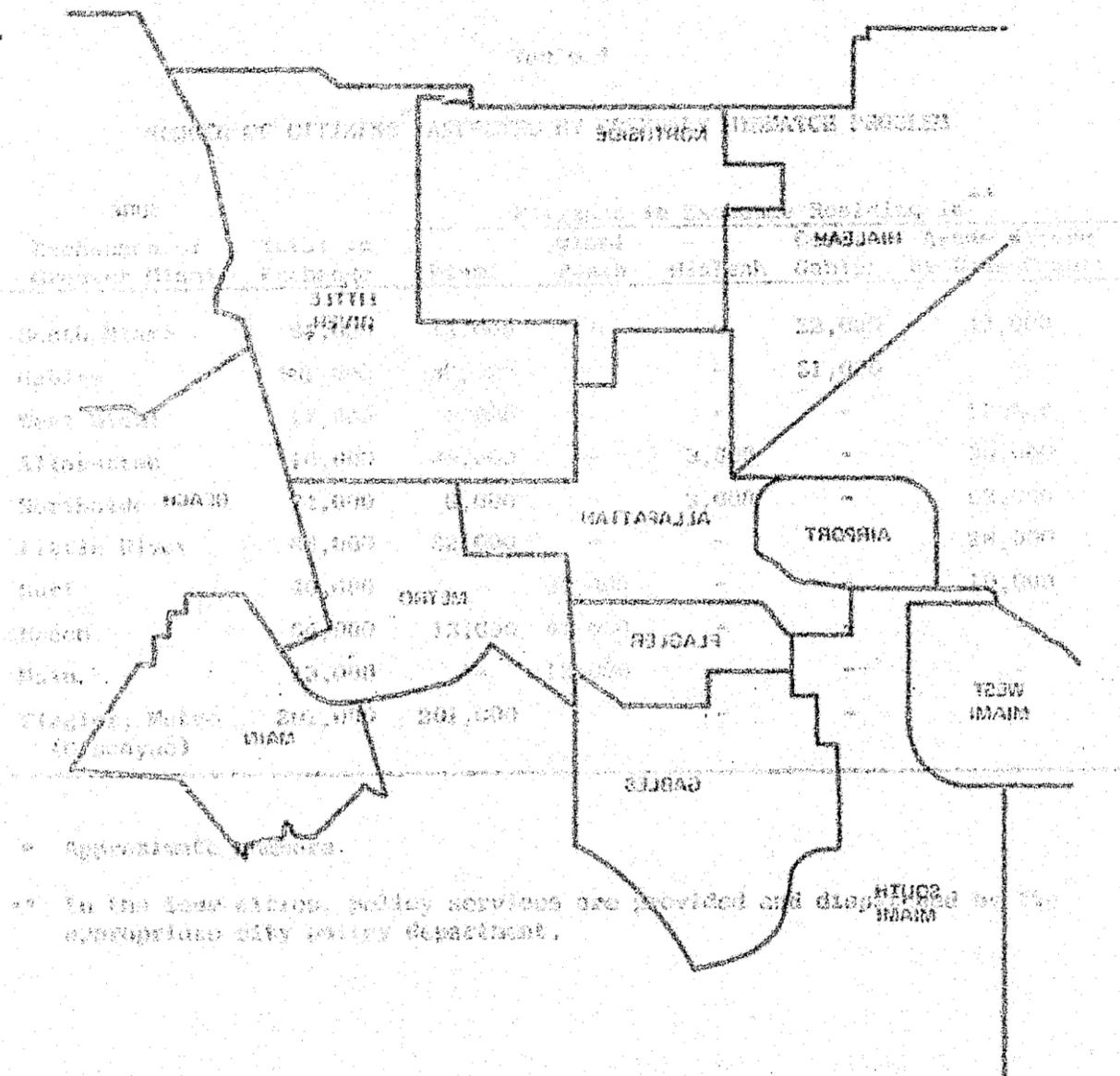
\*\* In the four cities, police services are provided and dispatched by the appropriate city police department.



\*Approximate boundaries.

FIGURE 1(b) TELEPHONE EXCHANGES\* OF GREATER MIAMI AREA

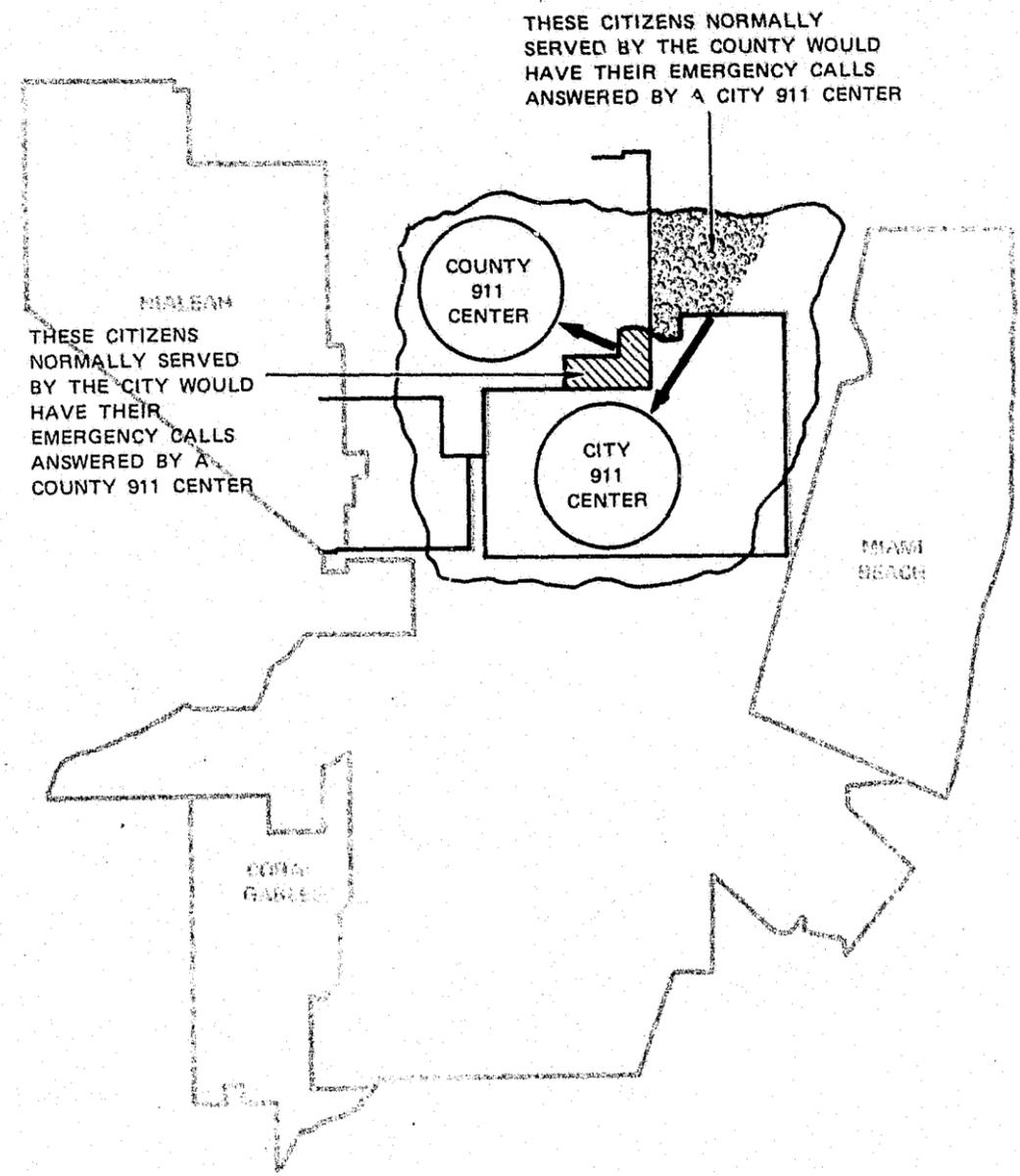
FIGURE 1(a) CITIZENS AFFECTED BY BOUNDARY MISMATCH PROBLEM



\* Approximate boundaries.  
 \*\* In the lower areas, police services are provided and dispatched by the appropriate city police department.

Approximate boundaries

FIGURE 1(b) TELEPHONE EXCHANGES OF GREATER MIAMI AREA



NOTE: This example of a city 911 center and a county 911 center is presented only to illustrate the problem. It is not a recommendation for Dade County.

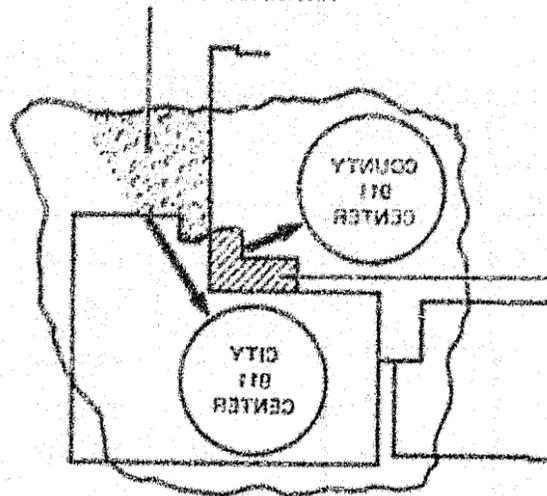
\* Approximate boundaries  
 \*\* Police dispatch for areas shown and unincorporated areas of Miami provided by Dade County Public Safety Department

DA-1001-1

FIGURE 1(a) OTHER DISPATCHING POLICE SERVICES IN GREATER MIAMI AREA

FIGURE 1(c) CITIZENS WHO WOULD BE AFFECTED BY THE BOUNDARY MISMATCH PROBLEM

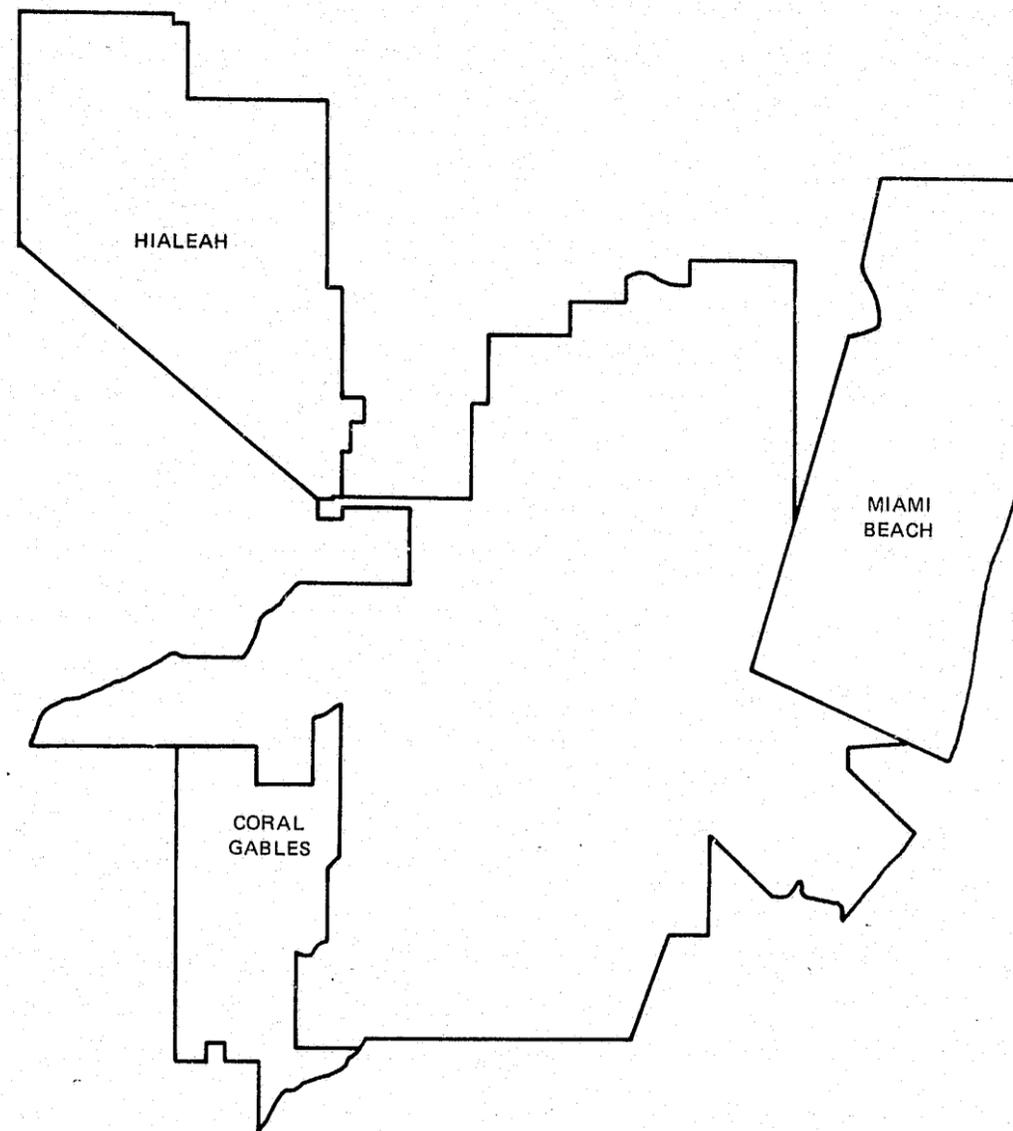
THESE CITIZENS NORMALLY  
SERVED BY THE COUNTY WOULD  
HAVE THEIR EMERGENCY CALLS  
ANSWERED BY A CITY 911 CENTER



THESE CITIZENS  
NORMALLY SERVED  
BY THE CITY WOULD  
HAVE THEIR  
EMERGENCY CALLS  
ANSWERED BY A  
COUNTY 911 CENTER

NOTE: This example of a city 911 center and a county 911 center is provided only to illustrate the problem. It is not a recommendation for Dade County.

FIGURE 1(a) CITIZENS WHO WOULD BE AFFECTED BY THE BOUNDARY MISMATCH PROBLEM



\*Approximate boundaries.

†Police dispatch for other cities and unincorporated areas of this area provided by Dade County Public Safety Department.

SA-3101-3

FIGURE 1(a) CITIES DISPATCHING POLICE SERVICES IN GREATER MIAMI AREA\*

produces a 911 problem (i.e., where citizens would, on dialing 911, be connected to a public safety agency other than their own). This mismatch problem is greatly simplified in our presentation. If we had added the fire district boundaries and the informal emergency medical service zones to the maps, they would have been nearly unreadable.

The telephone exchange local jurisdiction mismatch problem is massive when viewed from a statewide perspective. Ninety-eight telephone company central offices (approximately 24 percent of the total) have service area boundaries that extend over county lines (nearly all cross a city, fire district, or emergency medical boundary). Of these 98 central offices, 83 have a two-county overlap, 13 have a three-county overlap, and two have a four-county overlap.

Such boundary mismatch problems are common to 911 planning and are not unsolvable. They can be minimized, if not totally overcome, by:

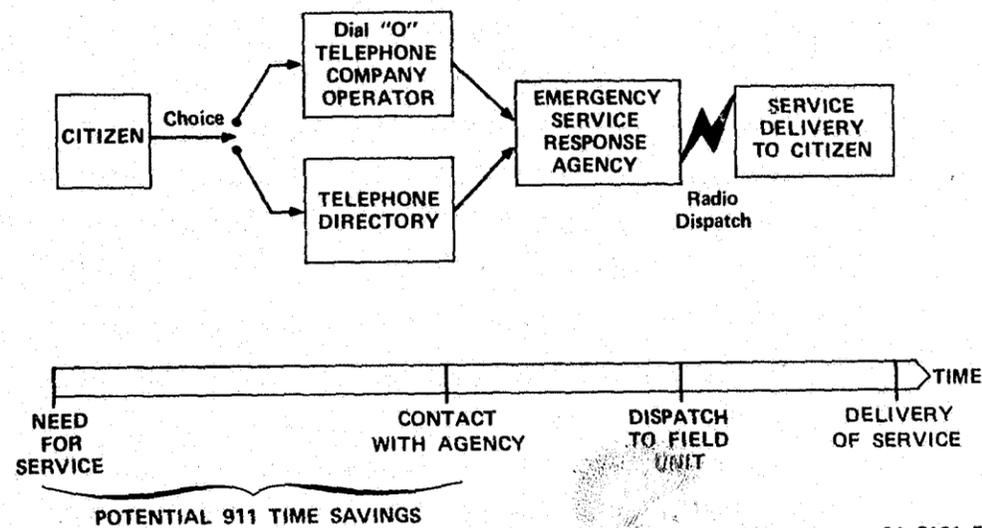
- Provision of some degree of 911 to all citizens in the state.
- Various degrees of consolidation of 911 centers and emergency service dispatch centers.
- High levels of intergovernmental and interagency cooperation.

D. 911 as a State Policy Issue

1. Benefits to the Public

In considering 911 as a state policy issue, we examine three specific issues: the benefits to the public, the expenditures required, and the changes in the role and operation of public safety agencies.

The main beneficiary of 911 is, of course, the public. The public gains in three ways. First, 911 makes a significant reduction in the actual response time of public safety agencies. This response time reduction attributable to 911 is illustrated in Figure 2; it consists of the reduction of the time between perception of need by the individual and establishment of contact with the public safety agency. Unfortunately,



SA-3101-5

FIGURE 2 CURRENT EMERGENCY SERVICE SYSTEM

it is difficult to obtain precise quantitative data on this reduction; public safety agencies customarily count response time from the point of contact and have no way of knowing just how long the individual in need searched through the many public safety agency numbers in his telephone directory, or alternatively, waited to obtain the correct number through the telephone operator. In any case, it has been estimated that between a few seconds and a few minutes are saved by 911 in most metropolitan areas.\* Second, with 911 available, the citizen has a greater sense of safety; he feels that the provision of 911 is symbolic of a greater willingness of law enforcement agencies to serve him. Third, law enforcement agencies, by receiving information more rapidly, can make a significant increase in apprehension and clearance, as the President's Commission on Law Enforcement has shown.<sup>1</sup> Within the State of Florida, the Governor's Stop Crime Program has made a significant public information effort oriented to encouraging citizens to call law enforcement agencies; 911 is clearly supportive of this effort.

The high proportion of the public within Florida who are visitors, part-time residents, or new residents makes 911 all the more important. First, such people would presumably have less knowledge of the proper agency to call than long-term or permanent residents. Second, many of these visitors come from areas served by 911. As 911 increases in coverage across the United States, an increasingly large proportion of visitors will expect to have the same service available during their stay in Florida. Third, visitors to Florida who have used 911 successfully will champion its implementation in their home communities. Florida thus has both a responsibility and an opportunity for leadership in statewide 911 implementation.

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\* As an example, the city of Oak Park, Michigan, estimated that the time saved ranges between 2 and 120 seconds.

1. "The Challenge of Crime in a Free Society" (Washington: Government Printing Office, 1967).

## 2. Costs to the Public

Because the public is the greatest beneficiary from 911, it is fitting for the public to bear most of the costs. Specifically, the public will pay in two roles: as taxpayers and as ratepayers. They will pay as taxpayers for the increased expenditures by the state or local governments, necessary for the implementation and operation of 911. As ratepayers they will pay for the necessary modifications to the telephone systems, of the various telephone companies, that will be required for 911.

The distinction between taxpayers and ratepayers is critical for the "political economy" of 911. That is, the same level of total expenditure will have, in general, very different political consequences depending on whether it is included as an increase in telephone rates or an increase in taxes. This is not to say that the total level of expenditure--in comparison with the benefits, or even absolutely--is necessarily large. It is rather to point out that the feasibility of statewide 911 may well be determined by the specific method of finance chosen.

The capital expenditures by the various telephone companies will be offset by reduced costs and possibly by increased revenue. First, 911 will decrease the need for operator assistance in emergency calls so fewer operators may be needed. At present 80,000 emergency calls per month are handled by telephone company operators in Florida. Second, the 911 and related public safety equipment and facilities--leased lines terminal equipment, automatic call directors, and so on--will increase telephone company revenue considerably. In considering the costs of statewide 911 to the telephone companies, these offsets against capital outlay must be determined, to arrive at the real costs to be incurred by the telephone companies of Florida.

## 3. Changes in the Roles and Operation of Public Safety Agencies

The third area of policy that should be considered is the changes in the roles and operation of local public safety agencies. It

is possible that 911 will result in a higher volume of calls, requiring more operators to provide the level of service previously given. As is shown in the next chapter, for the local communities that have implemented 911, the increase has usually been only temporary, with call volume returning to its old level within several months after initial implementation. Particularly for law enforcement, where--unlike fire and emergency medical--there is no clear definition of what constitutes a "true emergency," 911 may have potentially disruptive effects. What is clearly an emergency to a citizen may not be an emergency to a particular law enforcement agency. For this study, the critical question is: To what extent should the State of Florida, in setting standards for 911, attempt to define what constitutes a "valid" emergency?

A second change in the public safety role is the need for more detailed and explicit cooperation between agencies in handling 911 calls. This increased cooperation must be effected in two areas: intra-agency cooperation within the same jurisdiction, and interagency cooperation between jurisdictions. In the former area, explicit policies and operational procedures have to be worked out between law enforcement, fire, and emergency medical services to provide the most rapid and comprehensive emergency assistance to citizens. Between jurisdictions, explicit and sometimes detailed policies on areas served, information to be obtained, call transfer procedures, and so on, must be worked out. Here again, a critical question is: To what extent should the state require the implementation of specific intra-agency and interagency policies and procedures?

#### D. 911 Operational Methods

##### 1. General Considerations

This section describes a typical public safety communications system in terms of its elements and information flow, compares present systems

with a 911 emergency system, discusses various 911 operational methods and system configurations, and compares these systems both operationally and to the extent they reflect institutional problems and solutions.

The functional responsibility of a public safety communications system is to provide a rapid and accurate means for the flow of information, between a citizen requiring emergency service and the appropriate public safety agency, that will result in the rapid delivery of service to the citizen. The primary elements in the system are the citizen, the answering center, and the responding public safety agency. The current emergency service system was illustrated in Figure 2. The citizen who does not already have the telephone number may either (1) dial "0"--the telephone company operator--or (2) find the agency's 7-digit number in the telephone directory and dial it. The agency then dispatches an emergency vehicle to deliver service to the citizen. Either calling procedure can waste valuable time in a critical situation and may create unnecessary stress that leads to further delays.

The objective of the 911 emergency service communications system is to maximize the ease of getting the proper emergency service and to minimize the response time required for a citizen to receive this service. The system does this by simplifying the role of the citizen, that is, by reducing the number of decisions he must make and increasing the responsibility of the public safety communications system.

The primary function of the 911 emergency answering center is to facilitate the flow of information between the citizen and the responding agency. The center answers emergency calls and selects the proper agencies. The manner in which the information is routed to the agency varies with the jurisdictional, operational, and organizational requirements of the area being served. The four operational methods are direct dispatch, call transfer, call relay, and call referral. Most 911 systems comprise a combination of several methods to handle variations

in the levels of cooperation, centralization, and consolidation between and within the participating agencies in the system, as well as local boundary mismatch problems.

Figure 3 illustrates the information flow for each of the operational methods, and Table 5 compares the methods in terms of their applicability and particular advantages and disadvantages.

## 2. Basic 911 Methods

### a. Direct Dispatch

With the direct dispatch method, two of the emergency communications system elements, emergency answering and responding agency, are collocated. For example, the answering center might be collocated with a centralized multiagency dispatch center handling emergency calls for police, fire, and emergency medical service, or it might be collocated with a single agency providing one type of emergency service. Transmission of information from the answering center to any of the agencies not collocated with the answering center can be effected by using one of or a combination of the remaining three operational methods: call transfer, call relay, or call referral.

If there were no boundary mismatch between telephone exchanges and public safety agency jurisdictions, and if all the emergency communications--police, fire, and emergency medical--could be dispatched from a single location, there would be no need for any other 911 operational method. Direct dispatch would be universal. For many reasons--operational, technical, and political--as already discussed in this chapter, a single location for answering and dispatch is not feasible in most cases. Since law enforcement receives the largest number of 911 calls--typically, 85 to 90 percent in most core cities--it is common to have direct dispatch for core-city law enforcement. Other emergency service agencies--(e.g., core-city fire, county or adjacent-city law

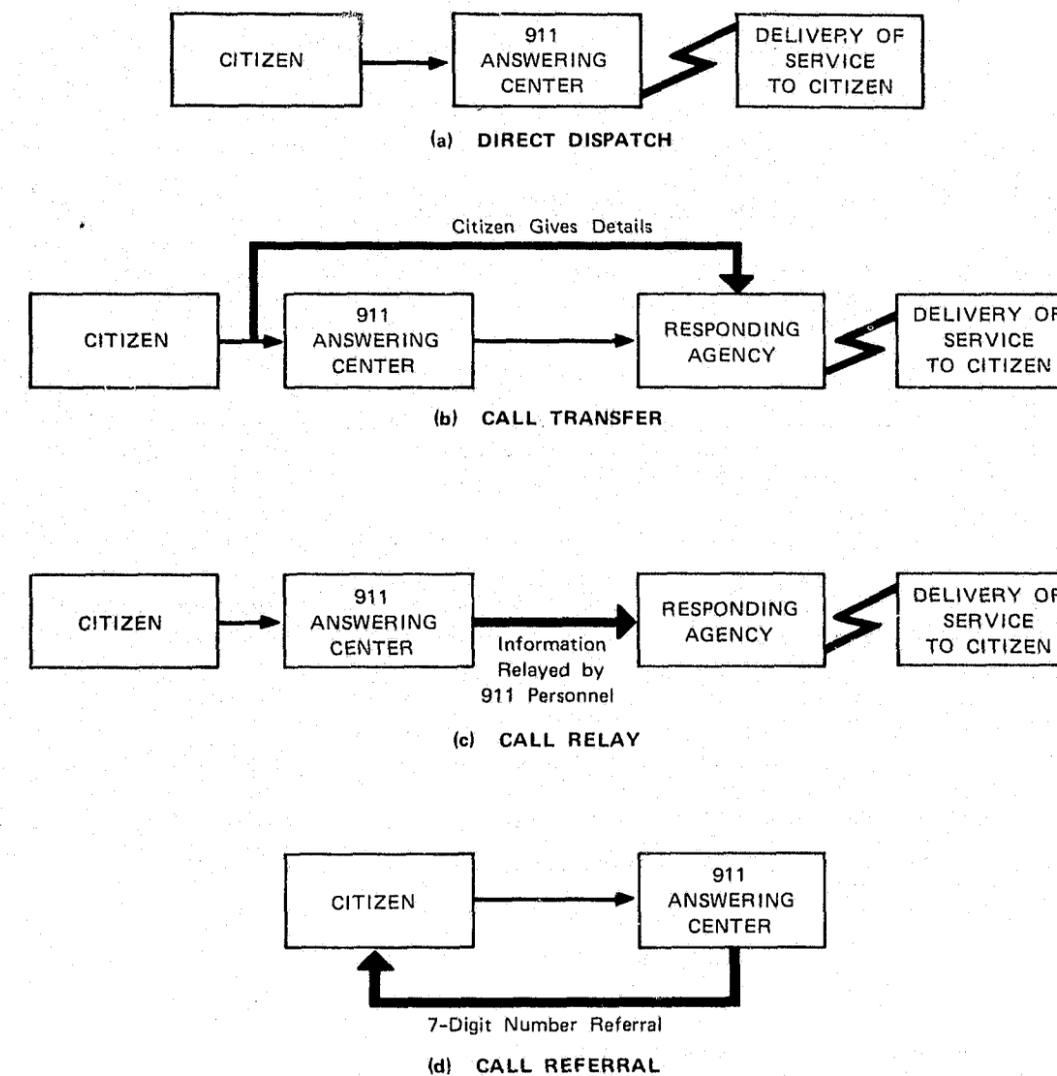


FIGURE 3 911 OPERATIONAL METHODS

Table 5

COMPARISON OF 911 OPERATIONAL METHODS

<u>Method</u>	<u>Typical Applicability</u>	<u>Advantages</u>	<u>Disadvantages</u>
Direct Dispatch	Core-city law enforcement	Fast response time	Requires explicit call-answering policies to be established
Call Transfer	Core-city fire; small-city and sheriff law enforcement and fire	Minimum need for interagency cooperation	Increases response time to some agencies; more frustrating to citizen
Call Relay	Cooperative public safety communications systems	Fast response time while preserving dispatch autonomy	Requires closest interagency cooperation to implement
Call Referral	To discourage nonemergency calls to 911	Prevention of 911 overload by non-emergency calls	Requires citizen to redial 7-digit number

enforcement)--want to preserve their own "identity" and not be "swallowed up" by the core-city law enforcement communications center. Unless explicit call-answering policies are established, other 911 means must be added.

b. Call Transfer

As depicted in Figure 3, call transfer requires that the citizen first dial 911 to obtain the answering center. The answering center determines which public safety agency should respond to the citizen's problem. Determination of the proper agency by the 911 answerer essentially involves getting, as rapidly as possible, the location of the problem and the nature of the problem. The answerer then determines the appropriate agency and by direct line connects that agency with the citizen. The answering center thus performs the function of a switchboard, with the citizen repeating his problem to the proper agency.

The major advantage of call transfer is the lack of coordination required to implement it operationally. Its greatest application is for situations involving core-city fire agencies, county sheriffs, and public safety for outlying cities--situations where the particular emergency service agencies want to perform their own screening of calls and preserve their identify, organizationally, as seen by the public. The major disadvantages are, first, that the response time is lengthened compared to direct dispatch and, second, that the need for repeating parts of the problem is often frustrating to a citizen under stress. The actual response time is still in most cases considerably less than with the present 7-digit emergency system, but not as short as with direct dispatch. The training of the 911-answering center personnel makes them more familiar than telephone company operators with the responsibilities of local public safety agencies.

c. Call Relay

Call relay is similar to call transfer in the facilities required, except that the information rather than the caller is transferred to the

proper agency. The citizen does not perceive any difference, since he gives the information to the 911 center, which, in turn, relays the information to the proper agency, without the necessity for the citizen repeating, or giving additional details.

The major advantage of call relay, then, is that with response time essentially that of direct dispatch, citizen frustration under stress is eliminated. Proper operation of call relay does require that explicit call-answering policies be established between the various agencies. Such policies are in some cases difficult to establish. Many law enforcement agencies would resist making policies on call answering and dispatch explicit, preferring that decisions be made on a short-term basis, for essentially organizational and political reasons.

Call relay does have the advantage of leaving dispatch operations under the control of individual agencies, who view the dispatch function as a management and control function rather than a more neutral "resource allocation" function.

d. Call Referral

The call-referral method, in which the 911 answering center gives the citizen a 7-digit number to dial, is used for two purposes. First, certain agencies do not have the volume of calls to warrant call transfer or call relay, which require the expense of dedicated or direct lines from the 911 center. Examples are, typically, Coast Guard, poison control, and the FBI. Second, it may be necessary to discourage citizens from using 911 for nonemergency calls. Call referral is therefore a means of informing the public that they should not use 911--in a polite and professional manner.

3. Sophisticated 911 Methods

The preceding operational methods, taken either singly or as a group, are often called "basic 911." There are other operational features that are often called "sophisticated." The four most important of these are:

- Called-party hold
  - Automatic forced disconnect
  - Selective routing
  - Automatic number or location identification.
- a. Called-Party Hold

Called-party hold enables the 911 answering center to hold a connection through the local central office by remaining in an off-hook position. The connection is held regardless of the status of the originating party's telephone; that is, if the caller hangs up, the answering center can trace the call. To implement called-party hold, however, dedicated trunks from each central office serving a 911 answering center must be installed. Without called-party hold, tandem rather than dedicated routing may be used; with tandem routing the telephone charges to local governments are from the nearest central office to the answering center based on the number of lines and distance. Called-party hold, although it is a desirable operational feature, raises the recurring telephone costs considerably.

For Florida, we believe that the decision on called-party hold should be made exclusively by local officials on the basis of their perception of its need and applicability, rather than by the state. Concomitantly, the cost of called-party hold over and above that required for tandem routing should be borne entirely by local governments regardless of state subvention policies for basic 911. We base this recommendation on called-party hold being a feature that is not essential on a statewide basis for the safety of life and property, but rather a feature for which need might be felt in particular communities.

b. Automatic Forced Disconnect

Automatic forced disconnect enables automatic release of an incoming 911 trunk on disconnect by the answering center, regardless of the action of the caller. This provision is designed to enable the 911 answering center to avoid tieup or intentional jamming. As with called-party hold, we feel that this feature should be a local option, financed by local governments.

c. Selective Routing

Selective routing is a feature by which the 911 call is automatically routed to an answering center that is predesignated on the basis of the location of the telephone. Selective routing thus solves the largest problem of jurisdictional boundary telephone exchange mismatch. If, in addition, all emergency service agency dispatching can be consolidated within each jurisdiction, it makes possible direct-dispatch 911 for an entire metropolitan area. Selective routing thus makes possible a technical solution for what are essentially political, organizational, and intergovernmental problems. Selective routing does not solve the fire and law enforcement intragovernmental problems.

At present, selective routing is not operational anywhere in the United States. A pilot study, financed by the Law Enforcement Assistance Administration with the cooperation of AT&T, is being performed in Alameda County, California, under a \$150,000 grant.

The greatest obstacles to implementation of selective routing, in our view, would be the cost and the regulatory policies. AT&T, in its presentation to LEAA, estimated that for Alameda County the installation cost would be \$620,000, with continuing annual costs of \$305,000 for 20 years on a tariff basis. Of the installation cost, \$545,000, representing the development cost, need not be repeated in other parts of the nation. Alameda County has a population of 704,000 people, and 340,000 telephone subscribers. The estimated costs include automatic number and location identification, discussed below. Without automatic location identification, the costs might be reduced by 40 percent.

In any case, the cost, relative to the basic 911 described earlier, is quite high. Further, it is unlikely that state regulatory agencies would allow inclusion of these costs on the overall telephone company rate base or would grant special rate increases for the areas

included in a selective-routing 911 system.\* Doing the former would mean subsidization of one area of a state by the subscribers in other areas, simply to solve organizational problems. This means that the local governments participating would have to bear the incremental costs associated with selective routing. We believe then, for Florida, that selective routing should be considered, within the timetable for the entire state plan, at the option of the participating local governments, with the local governments paying any charges over and above basic 911 directly.

d. Automatic Number and Location Identification

Automatic Number Identification (ANI) and Automatic Location Identification (ALI) are often lumped together with selective routing. We believe that it is quite important to consider these features separately. The Alameda County project previously discussed is investigating various options to provide public safety agencies with real-time information on either the caller's telephone number or his location, or both. We believe that ANI and ALI are desirable features in and of themselves, but do not believe that either is critical to the feasibility or implementation of 911 in Florida. ANI and ALI would not be any less or more desirable if the present 7-digit system were retained; their benefit is primarily operational to public safety agencies and does not affect the institutional form of 911.

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\* Selective routing would require the installation of an electronic switching system (ESS) sooner than would be required to meet the demand of normal telephone plant expansion due to increasing population usage.

### III NATIONAL EXPERIENCE WITH 911

#### A. Methodological Considerations

In this chapter, our objective is to draw upon national experience with 911 in order to provide specific policy guidance to Florida. Over 250 communities have operational 911 systems. On the face of this experience, we might expect that all the problems that might be faced in Florida have been solved successfully somewhere, that the aggregate of national experience provides a "kit" from which specific solutions can be extracted to meet the situations to be found in Florida.

Unfortunately, this does not seem to be the real situation. While much useful operational information on 911 is available from the experience of communities that have implemented it, and much technical information is available from various users, telephone companies, and the federal government, this information reflects the limitations of the institutional form by which 911 has grown.

Specifically, since the announcement of 911 by AT&T on 12 January 1968, the decision for implementation of 911 by a community has been made within the community. In no case, to our knowledge, has 911 been imposed on a local government by a state government (or the federal government). This situation will change dramatically in the next few years as other states besides Florida--California, in particular--make statewide 911 mandatory.

The present status of 911 can be termed pocket implementation. Within a community, one or more elected officials believe that 911 services would be in the best interest of the community. These officials stimulate the interest of their colleagues--typically other local legislators or elected executives--and request information from the local telephone company. Their initial belief is that 911 is a service provided and packaged by the phone company. The telephone company makes a presentation where three salient facts are made explicit during the discussion:

- The community interested in 911 shares telephone exchanges with adjoining communities. Usually it is not possible to provide 911 without taking in outlying areas served by other public safety agencies.
- The community (and not the telephone company) must select the answering point for 911. This answering point gives the agency that controls it higher visibility (at least in the opinion of the public safety agencies that do not control the answering point).
- While most emergency calls are for police, some procedure of operational cooperation must be worked out with fire protection, emergency medical, and other agencies.

It appears that these three facts discourage many elective officials from further planning. Unfortunately, the public service posture of the telephone company representatives emphasizes the benefits of 911 to citizens but precludes solving the real institutional and intergovernmental problems of 911. Those who are not discouraged proceed to solve these problems and provide 911 for their citizens.

Those who have been deterred take the following positions:

- 911 must wait until the telephone company can solve by technical means the problem of telephone exchange jurisdiction overlap.
- 911 will only be feasible when certain local institutional or personnel changes have been made, for example, city-county consolidation; rural fire district consolidation; or retirement of the police chief, fire chief, or sheriff.
- 911 is not practical in any case. There should be a "universal" number for police, another for fire, another for medical emergency, and so on.
- Citizens should continue to dial "0".

Pocket implementation, then, means that the communities that have already achieved 911 are probably not typical communities, in that one or more of the following situations was fortunate:

- The geographical situation was such as to give congruence between telephone and jurisdiction boundaries. This means that 911 planning could be done without including outlying jurisdictions. The decision to implement could be made entirely within the community.
- The public safety agency heads were favorably disposed to 911, to the extent that decisions by elective officials to implement 911 received their cooperation.
- One or more elected officials had sufficient belief in the benefits of 911 coupled with the appropriate courage to make decisions against the views of public safety agency heads.

These circumstances in communities that have implemented 911 should be considered in evaluating the national experience with 911.

## B. Local 911 Experience

### 1. Sources of Data

Given the limitations of applicability of pocket implementation to statewide implementation, we believe that the experience of other 911 communities will be useful to Florida. To provide this experience, we rely on the following sources of data:

- Direct personal visits to communities that have 911. SRI staff have visited the cities of Alameda, California; Seattle, Washington; Omaha, Nebraska; Sunnyvale, California; Gainesville, Florida; Albuquerque, New Mexico, and New York City, New York. In these cities they have observed the 911 operation and discussed implementation with local officials.
- A survey of local experience with 911, initiated by Assemblyman Charles Warren of California in March 1972. Exhibit 1 gives the text of a letter sent to communities across the nation that had installed 911. Twenty-two replies to this letter were made available to SRI by Mr. Harold Eisenberg, of the Assembly Judiciary Committee staff.\* Our visits (e.g., Washington, D.C.) and discussions have not shown any non-operational systems with any significant differences or innovation in the past two years.

\* The replies made available to SRI came from the following communities:

Bradford, Pennsylvania	Denver, Colorado
Worcester, Massachusetts	San Clemente, California
Nashville-Davidson, Tennessee <sup>†</sup>	New York City, New York
Gustine, California	Omaha, Nebraska
New Britain, Connecticut	Baton Rouge, Louisiana
Galveston, Texas	Boulder, Colorado
Evanston, Illinois	Vicksburg, Mississippi
Camden, Maine	Eau Claire, Wisconsin
Macon, Georgia	Bloomington, Indiana
Jackson, Mississippi	Rancho Santa Fe, California
Seattle, Washington	

<sup>†</sup> Not yet operational.

EXHIBIT I

SURVEY LETTER SENT BY ASSEMBLYMAN CHARLES WARREN OF CALIFORNIA

Dear \_\_\_\_\_

I have introduced legislation this 1972 session to establish a single 911 emergency telephone number state wide. I am informed your city has established a 911 emergency phone system. In order to clarify my thinking and expedite implementation of a 911 system, would you be so kind as to answer the following questions.

- (1) What type of 911 system do you have?
  - (a) Direct Dispatch--call a specific unit and give it detail
  - (b) Relay--take the information and give it to the agency responsible
  - (c) Transfer--transfer the calling party directly to the responsible agency
  - (d) Referral--refer the calling party to the responsible agency.
- (2) What public safety agencies are served by your system? (City, County, State, Federal, etc.)
- (3) How many emergency phone numbers were there in use in your 911 area prior to installing 911 system?
- (4) Does your system serve more than one political area?
- (5) How many phone exchanges are serviced by your system? Do these exchanges correspond or overlap political and public safety jurisdictional boundaries?
- (6) What is the population figure served by your system?
- (7) What is the volume of calls received approximately weekly, monthly, yearly?
- (8) How have you worked out problems of handling emergencies beyond the geographic boundaries of agencies?
- (9) What governmental level, and what agency within the area manages the facility or facilities?
- (10) Has your local legal counsel rendered an opinion on the liability of the operating agency? If so, please forward copy of same.
- (11) What was the time required to implement your system from the time conceived through planning and installation?
- (12) What was the cost of implementation?
- (13) Who paid for the costs of implementation? (i.e., source of funds)
- (14) What is the on-going costs of the system?
- (15) What difficulties existed or still exist with respect to training and staffing emergency center or centers?
- (16) What has been the results of implementation of your system in regards to:
  - (a) Operating costs and efficiency of public safety agencies
  - (b) Services to the public
  - (c) Response and acceptance of system of public?
- (17) What recommendations or comments would you make to help implement 911 in California?

While I realize I have asked many questions, your early reply to these questions will be greatly appreciated. The early reply is necessitated due to legislative calendar. Please respond to Mr. Harold Eisenberg on the Judiciary Committee staff in my office.

Sincerely,

CHARLES WARREN

- The publication "911--The Emergency Telephone Number--A Handbook for Community Planning," published by the Office of Telecommunications Policy, Executive Office of the President, assisted by the Office of Telecommunications, U.S. Department of Commerce, under contract with the Franklin Institute Research Laboratories, Philadelphia, Pennsylvania.
- Various publications of the National Service to Regional Councils, Washington, D.C. (now the National Association of Regional Councils), including those from the 1970 Emergency Telephone Communications Workshops, held in January and December 1970. SRI representatives attended the latter workshop.
- Newspaper or magazine articles reporting the experience of a particular community. Magazine articles were generally the least useful, since they were usually one-sided, presenting the desirable features of 911 without discussing the problems.

In evaluating the 911 systems in use by local governments, we specifically consider the following features:

- The Operational Methods Used--In making this evaluation, we try to consider explicitly how the community solved the problems of jurisdiction, telephone boundary, lack of coincidence, and interagency cooperation in order to meet the needs of its citizens.
- Call Volume--Here we are interested in comparing the call volume on a per capita basis between communities of similar size that have 911 and also between 911 and non-911 communities of the same size. We further want to determine whether there has been any dramatic increase in calls from 911.
- Costs of 911--The best-documented costs available are direct installation or monthly charges by the telephone company to the community. Additional personnel costs are often available. Unfortunately, costs for new buildings and equipment are often associated with other improvements to public safety communications which are coupled with, but not attributable directly to, the implementation of 911.
- Feelings of Agency Officials--We compare the feelings of agency officials in communities with a central emergency 7-digit number with officials from communities not having such a number. This comparison is based on the Franklin Institute survey performed in 1970. In addition, we give the opinions of officials in communities that have 911 as derived from the Warren Questionnaire.
- Time To Implement--To provide some benchmarks for implementation in Florida, we compare the implementation times of various communities.

2. Operational Methods Used

Table 6 shows the various 911 operational methods used by local governments across the nation. The data were obtained from the Warren Questionnaire. Examination of Table 6 shows that we can construct, for methodological purposes, three 911 system concepts. The police-direct-dispatch 911 system concept consists of the 911 answering being collocated with, and organizationally under the control of, the police department in the major city; call transfer to the fire department and perhaps to the sheriff of the county; and minimum call relay. Systems based on the police-direct-dispatch concept include those of Alameda, California; Baton Rouge, Louisiana; Bloomington, Illinois; Worcester, Massachusetts; Vicksburg, Mississippi; Jackson, Mississippi; Bradford, Pennsylvania; San Clemente, California; New York City, New York; and Seattle, Washington.

The second 911 system concept we call switchboard 911. Here the 911 system functions as a central switchboard, transferring or relaying emergency calls to the proper agency. Examples of switchboard 911 systems include those of Boulder, Colorado; Macon, Georgia; Denver, Colorado; and Rancho Santa Fe, California.

The third 911 system concept we call consolidated 911. In such a system, direct dispatch is performed either for more than one agency within a community--most often police and fire--or, alternatively or in addition, for more than one community. Examples of consolidated 911 systems are those of Eau Claire, Wisconsin; Evanston, Illinois; Galveston, Texas; Camden, Maine; and Omaha, Nebraska.\*

\* This leaves the system of New Britain, Connecticut as the only one in Table 6 not included. In New Britain, the 911 system terminates in the fire department, where direct dispatch is performed. Florida's operating 911 system in Gainesville is also of this form.

Table 6

OPERATIONAL 911 METHODS IN USE BY LOCAL GOVERNMENTS

<u>Governmental Entity or Entities Served</u>	<u>Direct Dispatch</u>	<u>Call Transfer</u>	<u>Call Relay</u>	<u>Call Referral</u>
Alameda, California	Police	Fire	No	Yes
City of Baton Rouge, Louisiana; Parish of East Baton Rouge; Parish of West Baton Rouge	Police	Fire Sheriff (two parishes) State police Ambulance	Yes	N/A
Bloomington, Illinois	Police	Fire	No	No
New Britain, Connecticut; Town of Berlin (part of)	Fire	Police	Yes	N/A
Worcester, Massachusetts	Police	Police	To other police and fire agencies for emergencies	Other police and fire for routine calls
Boulder, Colorado	No	City police City fire County sheriff Ambulance	County fire districts Ambulance	N/A
Vicksburg, Mississippi	City police	No	Other city agencies	N/A
Macon, Georgia Bibb County	No	No	City police City fire Sheriff Medical center Civil defense State police State forestry	N/A

Table 6 (Continued)

<u>Governmental Entity or Entities Served</u>	<u>Direct Dispatch</u>	<u>Call Transfer</u>	<u>Call Relay</u>	<u>Call Referral</u>
Eau Claire, Wisconsin Eau Claire County	Eau Claire police Eau Claire fire department County sheriff Altoona city police	No	Private ambulance	
Galveston, Texas	City police City fire	Sheriff West Isle fire	None	N/A
Jackson, Mississippi	City police	City fire	Hinds County sheriff Ambulance	N/A
Denver, Colorado	No	City police City fire City ambulance	To outside agencies	N/A
Bradford, Pennsylvania	City police	No	Others	N/A
Evanston, Illinois	City police City fire	No	No	No
San Clemente, California	City police	No	City fire	No
New York City, New York	City police Police ambulance	City fire	No	Other agencies
Seattle, Washington	City police	City fire Fire department rescue County sheriff Washington State Patrol	No	Has primary and secondary
Omaha, Nebraska	City police City fire	Regional police agencies Other emergency services	No	Yes
Rancho Santa Fe, California (Association)	No	Fire district County sheriff California Highway Patrol	No	No
Camden, Maine	Police Fire Medical	No	No	No

In making this system concept distinction, we make no claim that the numerous 911 systems nationwide that might be classified according to each concept are represented by our small sample. We do claim, however, that each 911 system concept does correspond to a broadly defined type of community.

In particular, the police direct dispatch 911 system concept is oriented to large cities. In such cities, emergency problems tend to be defined as police problems. Fire departments recognize this and, although they are concerned with reducing response time, are also concerned with preserving their control. This situation leads directly to the call transfer capability for fire.

The switchboard 911 system concept is--from our knowledge of several of the communities--used where response time is not a critical problem, or where cooperation between police and fire departments cannot be achieved. It represents a form of consolidation of 911 answering, but gives each agency or jurisdiction control over the dispatch of its own resources.

The consolidated 911 system concept represents the situation where interagency and/or interjurisdictional cooperation has been carried the farthest; the dispatch function has been rationalized to the extent that it is a resource control rather than a supervisory or disciplinary function. Omaha, where the police and fire dispatch are consolidated and 34 cities in three counties cooperate on a call transfer basis, is perhaps the best-known example of this system concept. Eau Claire, Wisconsin, where the city and county have cooperated in a joint dispatch and 911 system, is another excellent example. Eau Claire also includes an advisory board made up of users to maintain ongoing cooperation.

### 3. Call Volume

Table 7 shows the call volume, call increase, and telephone and personnel costs obtained from the Warren Questionnaire. Only two cities reported any increase in calls from 911: Jackson, Mississippi, and Seattle, Washington. After the questionnaire had been distributed, there was considerable local and national publicity on call increases for a third city,

Table 7

## CALL VOLUME AND COST DATA FOR OPERATING 911 SYSTEMS

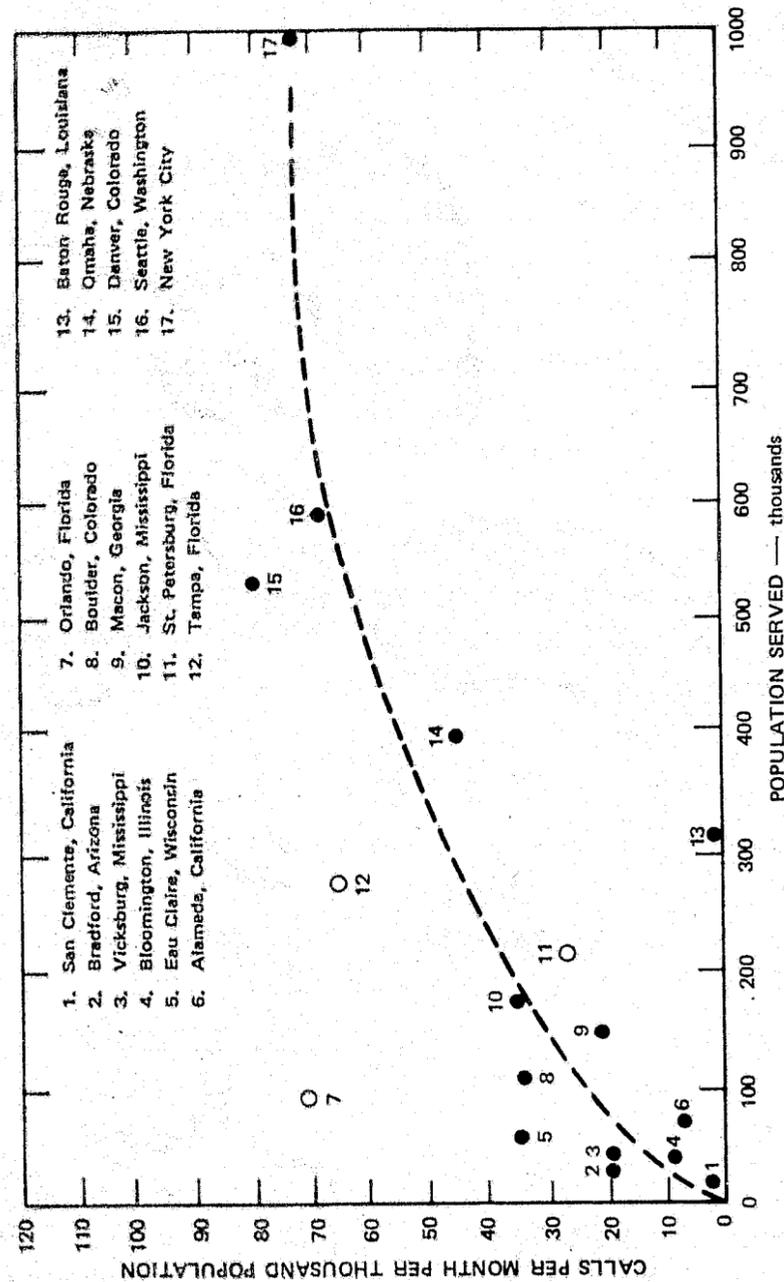
Governmental Entity	Number of Governments Served	Population Served	Number of Calls Per Month (approximate)	Call Increase (percent)	Telephone Costs Per Month (approximate)	Telephone Cost Increase	Personnel Cost Increase (thousands of dollars)
Alameda, California	1	71,000	550		\$10		
Baton Rouge (City and Parish)	2	310,000	300		\$292	\$2,200/yr	
Bloomington, Illinois	1	43,000	375				
New Britain, Connecticut	1	85,000			\$72		
Rochester, Massachusetts	1	176,000			\$340		\$50
Boulder, Colorado	1	110,000	3,400		\$450	\$250/mo	
Nashville/Davidson Tennessee	1	500,000	Not in operation when reported		\$200		
Vicksburg, Mississippi	1	45,000	866		\$14		
Macon, Georgia	2	148,000	3,000		--		\$12
Eau Claire, Wisconsin	2	57,000	2,000		\$50		
Galveston, Texas	1	62,000	14,400		\$222		
Jackson, Mississippi	1	175,000	6,067	5	\$150		
Denver, Colorado	1	530,000	42,500		\$658		\$22
Bradford, Pennsylvania	1	25,000	510				
Evanston, Illinois	1	80,000			\$313		
San Clemente, California	1	20,000	40		\$30		
New York City, New York	1	5,000,000	567,978		\$10		
Seattle, Washington	1	585,000	40,000	12			
Omaha, Nebraska	13	400,000	18,000		\$3,330		
	2						

New York. Comments to SRI from various 911 communities continually stress that the call volume to law enforcement agencies is to a great extent controllable by the agencies. The majority of calls to law enforcement agencies are not defined by these agencies to be real emergencies. The action of the law enforcement agencies in dealing with these calls determines the volume to be expected. If law enforcement agencies discourage action from certain kinds of calls, citizens will be dissuaded from making them. If, on the other hand, law enforcement agencies take some kind of action on almost every call, the volume will increase, as citizens perceive law enforcement as a universal emergency service agency.

The increase in call volume for Seattle reflects, in our view, the unique feature of this system: its primary-secondary structure. Calls that, in the opinion of the primary operators, require the dispatch of a police unit are handled as such. If, on the other hand, the primary operator believes that the call is a valid police incident but does not require an immediate dispatch, then the call is immediately transferred to a secondary operator who obtains more information from the citizen and makes some arrangements for disposition. The advantage of this system--in which the number of primary and secondary operators is flexible up to a combined maximum of 14--is that it gives the citizen a high level of service while still making good use of police field resources.

The OTP handbook on 911 reports similar findings. Additionally, the OTP study found that the ease of access to emergency service agencies will often increase the number of calls on the same incident, as citizens feel a greater participation with the agencies.

Figure 4 shows the per capita call volume--measured in calls per month per thousand population--as a function of population. This figure, based on the Warren Questionnaire, shows that the per capita call volume increases almost monotonically with increasing population. This strongly suggests that 911 tends to reflect "real need" in that large cities tend to produce more emergency situations than small communities. We have plotted the estimated call volumes for several Florida cities, from the Division of Communications State Plan for Law Enforcement, performed under contract to



SOURCE: Warren Questionnaire.

SA-3101-1R

FIGURE 4 PER CAPITA 911 CALL VOLUME

the Division by Atlantic Research Corporation. Actual 911 calls per capita are not necessarily higher than the estimates of law enforcement calls for 7-digit numbers. From this we tentatively conclude that 911 will not create a significant increase in call volume for Florida communities.

4. Costs of 911

a. Costs to Local Agencies

In the telephone costs in Table 7 two findings are evident: First, the absolute as well as increased costs are small, and, second, these costs bear little relationship to the population served. Similar findings are given in the OTP report; this report, in fact, cites two communities which have actually saved money in telephone charges by consolidation when 911 was implemented. Suffolk County, New York saved \$1,900 per month from the consolidation of 40 7-digit numbers into one answering point; Springfield, Massachusetts saved \$300.00 per month when old telephone lines were removed.

Personnel costs showed increases in Worcester, Massachusetts; Macon, Georgia; and Denver, Colorado. In the latter two systems--classified by us as switchboard 911--these increases appear to us to be due to adding operators to an existing non-emergency switchboard in order to handle emergency calls for the first time. We would expect corresponding reflections in call answering by the separate agencies if the switchboards were able to screen non-emergency calls effectively.

Not given in any of our data are the savings from consolidated 911 systems. We would expect considerable economy of scale to result from consolidation of communications as such, over and above the implementation of 911. In our recommendations for statewide 911 in Florida in our final report, this scale economy savings will be explicitly considered.

To make an estimate of the total expected statewide telephone costs, both installation and recurring, we supplemented the data given in Table 7 with additional data made available by the California Division of Communications\* from across the nation. Histograms showing the costs are

\*Personal correspondence, from Mr. William Brandenburg, California Division of Communications.

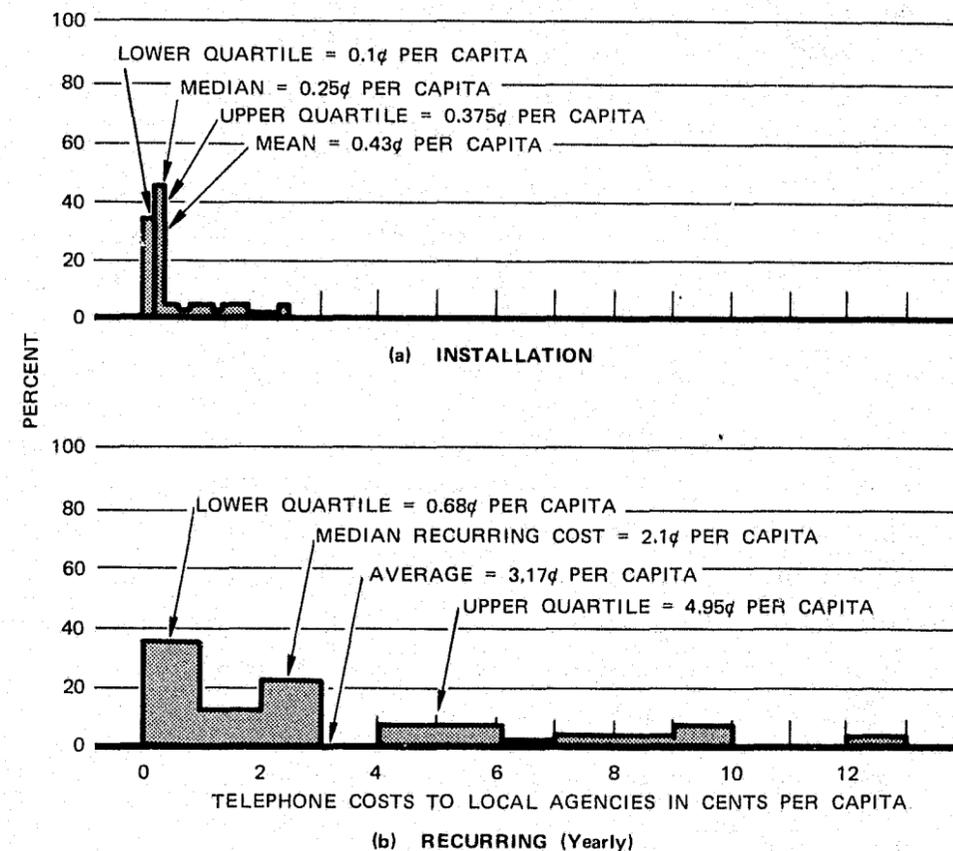
given in Figure 5, with installation costs being given in Figure 5(a) and recurring costs in Figure 5(b).

Applying these per capita figures to the State of Florida, with an estimated population of 7.9 million, we obtain an average of \$33.9 thousand for one-time installation costs and \$250 thousand per year operating costs. For installation costs the lower and upper quartile ranges are \$7.9 thousand and \$29.6 thousand; for yearly operating costs the two quartile ranges are \$53.7 and \$391 thousand.

It should be understood that these estimates are given only to serve as a guide--based on national experience--to the range of telephone costs to be expected in Florida. Again, other expenses, such as those for personnel, equipment, and buildings, will add to the costs, both initial and operating. Regarding personnel costs, national data show that few if any additional personnel are required. However, we believe, as stated in the first section of this chapter, that pocket implementation does not relate directly to statewide 911. We would expect that, if all personnel currently answering 7-digit telephones for public safety agencies could be "reshuffled," no additional people would be required. Local institutional and political decisions would not, in most cases, permit such perfect "reshuffling"; therefore, additional personnel would be required. To estimate how many would be required would necessitate estimating personnel on a county-by-county basis.

Similarly, additional buildings and facilities may be required. Many such facilities and buildings are being planned for law enforcement dispatch centers as part of the state program directed by HR 3937. These costs, while benefiting the 911 program, would not be directly attributable to this program. We must estimate the costs for 911 as over and above those required for other objectives.

Local area costs for the entire state will be provided in our final report, for various alternatives. These will include personnel, facilities, and equipment, in addition to telephone costs. Our methodology will be to recommend the most cost-effective system for each local area; adding the costs of each recommended system will provide the total state cost. As an upper bound on costs, the aggregate of the most costly local area alternatives will be used.



SOURCE: California Division of Communications.

SA-3101-6

FIGURE 5 HISTOGRAMS OF 911 COSTS TO LOCAL AGENCIES

b. Costs to Telephone Companies

Telephone company central office switching equipment is usually classified as belonging to one of two general categories or types of equipment: common-control or direct/progressive control.

In common-control equipment the dial pulses from the calling telephone are registered, analyzed, and resent in the form of a routing code to operate switches as required to establish the desired connection. Such equipment has logic circuits built into it and is sometimes described as being "semi-intelligent." Common-control equipment, which includes crossbar, electronic, and certain modified step-by-step equipment, is the simpler and less expensive of the two types to condition (or modify) for accepting and routing 911 calls. The primary work that must be done to this equipment is related to software nature; i.e., a reprogramming of logic functions must be accomplished. A minimal amount of wiring changes may be necessary.

In direct- or progressive-control equipment the dial pulses from the calling telephone directly control the switches that establish the desired connection. This type of system might be described as a slave to the digits that are dialed. Modification of direct-control equipment, which includes step-by-step, XY, all-relay, and motor-switch equipment, has different problems and solutions, depending on whether a telephone number prefix beginning with 9 is involved.

In a central office where there is no prefix starting with the digit 9, and whose calls are not routed to an office where this situation exists, the first problem in modifying the equipment to accept and route 911 calls is to clear (i.e., make available) the ninth level of the first selector. A selector is an electromechanical switch that connects an incoming call to one of many (usually 100) output circuits. Two principal things must be done to clear the ninth level of the first selector: First, the dial speed test, revertive call, and other administrative functions assigned to this level must be reassigned; second, the absorb and blocking class marks must be removed from this level. These two actions require considerable rewiring. Further, an additional bank of second or third selectors might have to be purchased and installed.

Central offices having a prefix beginning with 9, or whose calls are automatically routed to an office having a 9 prefix, are sometimes more expensive to modify for the receipt of 911 calls. Modification may require only that a bank of second selectors be bought and installed, or it may require that the office be directorized (senderized). The latter means adding additional special equipment that will provide the direct-control equipment with some common-control capability.

To make such modifications to the switching equipment in the 404 central offices owned and operated by Florida's 20 telephone companies will cost the telephone companies an estimated total of \$8-10 million. This cost estimate is predicated on the fact that many of the companies have already scheduled a program for the replacement of much of their old equipment with newer, more modern equipment over the next five to ten years. As has been mentioned, the newer types of equipment are less costly to modify for the acceptance and routing of 911 calls. If these companies were to make their offices capable of handling 911 before the installation of the newer, common-control equipment, the cost to the telephone companies could run as high as \$25-30 million.

The expense of modifying or conditioning central office equipment will be averaged over all the telephone company's rate payers and will not be passed on directly to the public safety agencies being served. The direct telephone costs that the public safety agencies will have to pay will be only for the tariffed items, such as telephone lines, terminal equipment, and certain special service features that might be ordered.

5. Feelings of Agency Officials

Under contract to the National Science Foundation, Franklin Institute Research Laboratories published in March 1970 the results of a survey of heads of public safety agencies on the feasibility of a single nationwide emergency number. Five hundred forty-six responses were returned, from large and small city police and fire chiefs, sheriffs, and poison control centers. About 19.4 percent of the respondents were from jurisdictions having a single emergency number, not necessarily 911. From the jurisdictions having a single emergency number, the benefit most often specified was coordination of activities that required more than

one agency. The greatest objection was fear of "petty jealousies" and "empire builders." From the agencies without a single emergency number, only 28.6 percent felt there would be any benefit. Of those who favored a single number, 88.7 percent felt that improved response time would be the major benefit, along with increase in area coverage for the emergency resource.

The Franklin Institute concluded that those who had experience with a single number favored it, while those who lacked experience opposed it. Franklin recommended public education and self evaluation by public safety agencies of their own organizational structure.

An excellent journalistic survey of opinion in large cities was conducted by Donald Janson, in a New York Times feature story on 31 March 1970. In surveying large cities across the country, Janson found that control over their own resources was the largest reason that public safety agency heads opposed 911. New York City, for example, operated 911 for many months without a direct transfer line to fire, since the New York Fire Department wanted control of their own resources.

The Warren Questionnaire received no negative comments about 911 from any respondent. The benefit most frequently cited was improved participation and acceptance by the public, followed by decreased overall response time.

Perhaps the most significant viewpoint, expressed consistently and unanimously by respondents to the Warren Questionnaire--mayors, city managers, police and fire chiefs--was the degree of personal identification of these officials with the problems of citizens as opposed to the problems of governments or public safety agencies. Both in giving comments on the success of 911 in their own communities and in making recommendations for California, the officials stressed such things as public education, regional 911 systems for better service, and decreased response time to the citizen. The most succinct statement of all was given in the response of Bob Belmont, Chief of Police of Gustine, California, population 6,000, who replied to the question on recommendations: "Ask a citizen which he would like to call in a personal emergency, 911 or a 7-digit number."

## 6. Time to Implement

From the Warren Questionnaire, we compare in Figure 6 the responses from various cities to Question 11: "What was the time required to implement your system from the time conceived through planning and installation?" Note that this time included both planning by the community and installation by the telephone company. It is therefore not a benchmark for telephone company performance. We presume that there was interaction between the community officials and the telephone company, with several iterations in most cases. That is, we believe it is overly simplistic to assume that the community developed explicit requirements without telephone company participation and then placed a "firm order" to the telephone company. The time given, then, is time for the overall process, and not a guide to either community planning time or telephone company installation time, considered separately or additively. For example, New York City installed 911 in July 1969, six months after announcement by AT&T of the service, yet officials gave four years as the planning period. We speculate that much coordination and planning was performed between the city and New York Telephone Company during this four-year period, and that the telephone company was aware of the city's plans before the 12 January 1968 announcement.

In Figure 6 the responses of planning and implementation time have been categorized according to the concepts given earlier, with the responses within each category ordered by ascending population. This ordering was done to test the supposition that larger cities should take more time to plan and implement than smaller cities. Again, we stress that our sample is small and intended to be illustrative rather than representative.

For the police direct-dispatch 911 concept, we see that our supposition is essentially validated--there is a more or less monotonic increase of implementation time with increasing population. For switchboard and consolidated 911, the implementation times are somewhat shorter and show no monotonic increase with increasing population. For consolidated 911, Eau Claire, Galveston, and Evanston are all within the 50 to 100 thousand population range and have implementation times comparable to the police

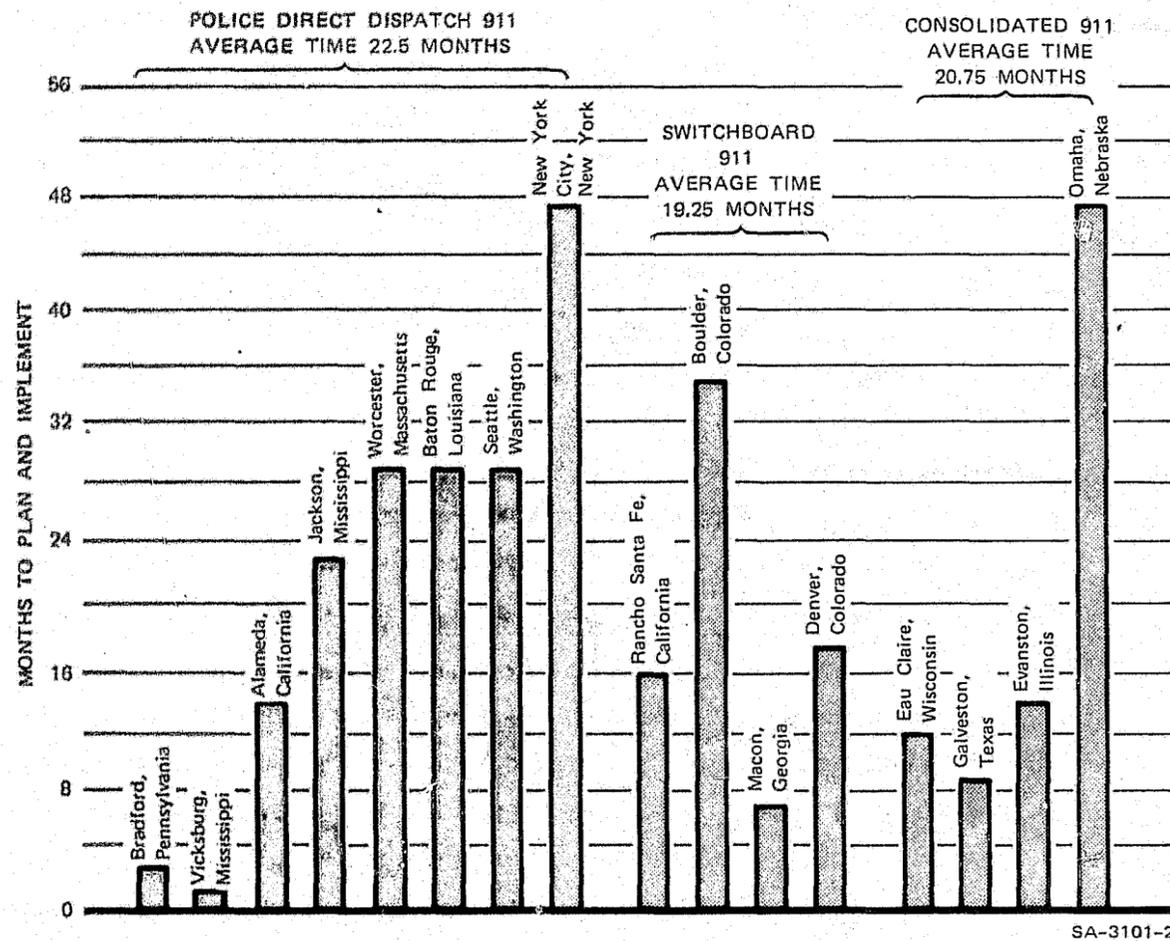


FIGURE 6 911 PLANNING AND IMPLEMENTATION TIME ORDERED BY TYPE AND POPULATION

direct-dispatch systems of comparable population, such as Vicksburg, Alameda, and Jackson. Omaha, perhaps the most elaborate 911 system in operation, measured in terms of number of governmental entities participating, attributes its four years of implementation to planning of new radio dispatch along with 911 telephone answering. We speculate that most of this time was for planning by the city and surrounding jurisdictions, with a comparatively small time devoted to actual telephone company installation.

C. State 911 Policies and Action

1. State Legislation

The number of states in which 911 policies of action have been formulated is surprisingly small. A recent report, entitled "A Staff Regulatory Viewpoint of the Universal Emergency Telephone Number," by Louis A. Ceddia of the New York Public Service Commission staff, gives the status activity up to May 1973. Ceddia considers both legislative action and rulings of state regulatory agencies. Legislation has been enacted in Massachusetts and California, with the California legislation perhaps the most comprehensive to date. The Massachusetts legislation, similar to Florida's existing Statute 365.17, directs all telephone companies to provide 911 service when requested by local governments or public safety agencies. The California law is unique at this time, since its provisions are binding on local governments and public safety agencies, in addition to the telephone companies. The main features of the California law, passed in 1972, are that:

- Every local public agency must have a basic or sophisticated 911 system in use by 31 December 1982.
- Maximum centralization of 911, to the extent feasible, should be implemented.
- Police, fire fighting, and emergency medical and ambulance service are to be included, at a minimum.
- All pay telephones must be equipped to dial 911 without a coin by 31 December 1982.
- Mutual aid agreements are to be signed between jurisdictions to allow for completion of service of dispatched vehicles, regardless of the jurisdictional boundaries determined after dispatch.
- All the systems established are to use three of the four basic operational methods: direct dispatch, call relay, call transfer, or call referral.

The law gives the California Division of Communications the responsibility for the development of technical and operational standards for local governments, the approval of local government plans, and the development of plans for finance. Significantly, there will be no state-wide plan except for the aggregate of local plans. The law specifies consideration of state subvention during the 1975 session of the legislature. The Attorney General is given authority, with the advice of the Division of Communications, for enforcement of the provisions of the act on local governments and public utilities within the state. A copy of the law is given in Appendix A.

## 2. State Regulatory Agencies

The most comprehensive regulatory agency policy and order on 911 to date was made by the New York State Public Service Commission on 20 November 1973. The Commission provided a Statement of Policy and an order on all telephone companies within the state. The statement and order are given in Appendix B. The specific order, given as Case 26443, specified that all telephone companies should provide, within two years from date of order for common control central offices and by 1 January 1978 for others, 911 service to existing emergency reporting centers. Where no such reporting centers exist, the telephone companies should provide the means of reaching a telephone company assistance operator.

We believe it is important to interpret this order in the light of two significant facts. First, the State of New York has passed no legislation that would mandate local governments to create emergency reporting centers. The State Public Service Commission noted that any further expansion of 911 is beyond its jurisdiction, but stated that it would support legislation that would stimulate such expansion. Second, New York state already has 12 operating 911 systems, serving a total of 11.1 million people, over half the population of the state. Among these systems are five relatively large ones: New York City, Buffalo, Nassau County, Suffolk County, and Broome County. There is thus considerable statewide experience with 911. The specific order of the Commission on telephone companies, with respect to these companies providing operator intercept assistance, should serve to accelerate what is evidently a statewide trend

to 911, by making the telephone companies advocates for local governmental 911 action that would relieve them of the intercept responsibility.

By comparison, Florida has scarcely any 911 experience, and an order such as New York's might have very different effects.

The New York State Public Service Commission's Statement of Policy, based on the staff report referred to earlier, is quite far-reaching. Some of the most significant points of this statement (all 19 points appear in Appendix B), in terms of possible national precedent, are:

- The specification that 911 should be a free number, and where coin-free operation of coin telephones is planned, the caller should be able to dial 911 without the use of a coin. Significantly, the Commission did not order coin-free telephones statewide but did ensure that 911 would be a free call statewide.
- The specification of a one-busy-in-a-hundred grade of service as a standard, subject to prior agency-company agreements.
- Discouragement of selective routing, by releasing the telephone companies from the obligation to provide such routing in central offices serving more than one jurisdiction. Further, and perhaps most important for the national future of 911, the Commission stated its policy that selective routing or automatic location identification would be charged to agencies at a rate fully compensatory to the telephone company. Telephone companies, thus, cannot provide selective routing in areas of the state where public safety agencies want individual autonomy in controlling 911 and at the same time expect lower costs by passing the real costs to the state ratepayers. Autonomy, then, in controlling 911 is likely to be quite costly, and governments must pay for it explicitly. While not endorsing nor even mentioning any local government institutional forms of 911, the Commission's policy, in our opinion, favors cooperative or regional 911 by ruling out ratepayer cross subsidy to selective routing.

#### IV 911 REQUIREMENTS IN FLORIDA

Our experience indicates that certain 911 system requirements are mandatory regardless of where 911 is implemented. Additionally, our early work in Florida has enabled us to make recommendations of specific system requirements. This chapter presents a number of broad system requirements and then addresses alternative components for a state subvention policy.

##### A. 911 Availability

As has been mentioned in Chapter I, on the basis of the history of legislation by the state (H.B. 205 and H.B. 3937) and by the federal government (Emergency Medical Systems Act geared to 911), it is in the best interest of Florida citizens that a statewide 911 system be implemented. It is not sufficient that 911 be implemented in only a few areas where a high degree of public and official desire and ideal implementation conditions exist. As a matter of state policy, all citizens, those living in cities as well as those in rural areas, and those in incorporated areas as well as those in unincorporated communities, should have access to the benefits of 911. There are three primary reasons for total statewide 911 service:

- 911 emergency telephone service can save lives and property; it is in the best interest of all citizens.
- Initial 911 service will probably be accompanied by a massive formal public awareness campaign. If 911 service were not statewide, it would be difficult, if not impossible, to describe the pockets where 911 was and was not available. This could result in considerable public confusion, making newspaper, television, and radio publicity difficult.
- Planning for total 911 service availability will enable service consolidations, thus enabling significant economies of operation.

##### B. Specific Service Provisions

By dialing 911, a citizen should be able to expect police, fire, and emergency medical assistance, at a minimum. Consistency of service

provisions among 911 centers is important. Calls for these three services make up a very high percentage of the total calls for emergency assistance. Calls for other services, such as poison control, suicide prevention, Coast Guard assistance, FBI, and so forth, are minimal, but they may warrant 911 status. Each service must be considered separately in the light of the total calls for the service, operational concerns, and the agency's desire to be connected with a 911 center.

It is important that a minimum 911 capability be defined and that all citizens of the state have such minimum 911 capability--or better--available for reporting emergencies and requesting assistance. As a recommended state policy, we define that minimum capability as follows:

Upon dialing the three digits, 911, universally known to be the emergency telephone number, a citizen of Florida must be able to contact the dispatch point for police, fire, or emergency medical assistance, with no more than one call transfer apparent to the citizen.

This statement of minimal service is required for definitional purposes--to maintain consistency of minimum capability among all governments and public safety agencies in the state. These public bodies should, however, be free to add more sophisticated capabilities on the basis of local needs (as defined locally), in addition to the previously defined minimum capability.

#### C. Minimum Standards of Citizen-Perceived Operational Performance

Response time is defined here as the portion of the total response time (the time required from perception that an event requires emergency assistance to the arrival of the proper emergency service on the scene) that is controlled by the telephone system and its interactions with the public and public safety agencies. It is evident that the availability of 911 to an informed public can significantly reduce the amount of time that occurs between perception of emergency events and contact with the emergency services operators through the 911 system. It is important that minimum operational standards for the telephone equipment portion of 911 service be set, to ensure the consistency among public safety agencies that citizens will expect. We suggest the following standards:

- A grade of telephone service such that a busy signal is encountered no more than 1 percent of the time during the busiest hour (grade P.01).
- Recorded announcement capability where automatic call distribution is employed, to inform the citizen who encounters a busy signal that he has reached the emergency services center and should hold the line.
- Sufficient answering personnel at each 911 answering center such that 90 percent of all calls will be answered within 10 seconds (ring-down time).

In addition, the relatively large Spanish-speaking population of Florida requires that a foreign language capability be available in areas having a significant non-English-speaking population.

#### D. Subvention Policy

Consideration of statewide 911 poses interesting questions regarding possible funding mechanisms. If we look at the general objectives of 911 in Florida--reduction of response time and general enhancement of a citizen's ability to request emergency assistance--it is clear that the benefits would not be associated only with the local jurisdictions or public safety agencies. The benefits would accrue to Florida citizens at the time of an emergency, regardless of where they reside. As a service, 911 can therefore be viewed as an extra-local function--one having statewide as well as local attributes (i.e., having secondary effects on citizens residing outside any given local jurisdiction). While local governments are better suited for providing 911 service, the state may find it in its interest to provide a relatively large share of the funds required for 911, to stimulate:

- Local compliance with the state's desire for 911 for all Florida citizens.
- Local compliance with statewide 911 minimum-service levels, in the best interest of Florida citizens.
- Operational efficiency of local government in general.

Examples of other extra-local service functions, in this case historical developments, include the construction of roadways and the provision of formal education. The similarity of 911 as a social development having

extra-local significance provides a fundamental rationale for state and local sharing of certain 911 costs.

The state is currently (fiscal 73-74) providing assistance totaling \$177 million to cities and \$237 million to counties,\* for various programs. This indicates that the state views a large number of the current Florida governmental programs to be extra-local in nature.

Earlier in this chapter we have recommended 911 service minimums that all Florida citizens should have the right to expect. The state subvention policy should be closely geared to the extent to which 911 services are provided to the citizen. It is important, therefore, to define, on a continuum, variations of 911 service as the variations may be tied to levels of subvention. The listing below can be viewed as such a continuum. It indicates 911 service levels from a minimum requirement (basic 911) through increasing degrees of better service (to multiagency, multifunction 911):

- Basic 911 is defined as operationally involving a single law enforcement agency with one or more of the following:
  - Call transfer to fire, emergency medical, and other public safety agencies.
  - Call relay to fire, emergency medical, and other public safety agencies.
  - Direct dispatch for fire, emergency medical, and other public safety agencies.
- Multiagency 911 is defined as operationally involving more than one law enforcement agency with one or more of the following:
  - Call transfer to fire, emergency medical, and other public safety agencies.
  - Call relay to fire, emergency medical, and other public safety agencies.
  - Direct dispatch for fire, emergency medical, and other public safety agencies.
- Multiagency, multifunction 911 is defined as fully cooperative 911 and radio dispatch (collocated) for numerous public safety agencies of an area.

\* Legislator's Tax Handbook, 1973 (Tallahassee, Florida, April 1973).

We have recommended minimum 911 service standards that all Florida citizens have the right to expect. Implementation of these minimum provisions will often require additional telephone expense. The state may want to subvent to local government the incremental cost of certain 911 provisions, to stimulate local activity. The broad categories or components of 911 costs, portions of which may be paid for by the state, are:

- 911 installation costs:
  - 911 telephone costs to public safety agencies (and then to citizens as taxpayers).
  - Costs of upgrading other equipment or facilities specifically for 911 installation.
  - Costs of upgrading other equipment or facilities only for complementing 911 (radio and other electronic equipment, for instance).
- Operation costs:
  - Ongoing costs for public safety personnel and for equipment amortization (costs to citizens as taxpayers).
  - Ongoing telephone costs to citizens as tariff ratepayers.

Although these are the cost components that must be paid for by the public, we would not expect the state to subvent the total cost of 911. The state policy should act to draw local jurisdictions together for efficient and economic provision of 911, and subvention should be consistent with good service to the citizen. Therefore, the following four points, each related to 911 benefits to the Florida citizen, should be considered for state subvention policy on a case-by-case basis:

- Meeting 911 Minimum Standards--As an eligibility criterion, the fact that a local jurisdiction meets minimum 911 standards should be sufficient grounds for state assistance.
- Population Size of the 911 Service Catchment Area--The extent of state assistance to each local 911 operation should be based in part on population. A direct relationship exists between (1) population, calls for service, and personnel and equipment costs and (2) total 911 costs. The size of the population served indicates to a certain extent the scale economies of operation.
- 911 Operational Efficiency--The extent to which local officials cooperate in combining resources for 911 operation should be a factor in subvention. This could be measured by the number and relative size of the agencies participating in a cooperative areawide 911 service.

- Complementary 911 Attributes--Additional 911 capabilities, resulting in improved citizen service, such as collocated 911 answering and radio dispatch operations, computer-aided dispatch equipment, and generally up-to-date facilities and equipment should be a factor.

In summary, recommendations for a specific state subvention policy do not seem to be appropriate in this report. Rather, we have provided a basis for consideration of state subvention, as well as factors on which cost-sharing mechanisms can be formulated. The state policy finally agreed upon will probably reflect the factors we have presented and others rooted deep in the political process.

## V PRELIMINARY 911 SYSTEM AREA ALTERNATIVES FOR FLORIDA

This chapter develops preliminary alternative 911 system concepts or configurations for specific areas throughout the state. As the ground-work for this development, a general discussion of alternative 911 system configurations is provided, together with an explanation of the rationale used in developing the local 911 solutions for Florida.

Our primary purpose in presenting these preliminary 911 alternatives here is to elicit comments from the various stakeholder groups and to stimulate discussion in the Task Force meetings. We encourage such interchange, particularly where it brings forth relevant issues or influencing factors that have not been taken into consideration. These insights will feed back into our analysis of alternatives and may lead to modifications. The final report will provide detailed alternative 911 system operational descriptions for each generic area configuration. Analysis and comparison of these alternatives will narrow the candidate 911 techniques and generic area 911 systems to those that appear to be logical plans for statewide implementation. A cost-benefit analysis of alternative statewide 911 systems will result in a recommended 911 system for statewide implementation.

### A. Alternative 911 System Configurations

We define a 911 system configuration in terms of the organizational and functional structure of the system between the answering center and the dispatch center of the participating public safety agencies. Variations in configuration result from varying levels of centralization of the answering center (i.e., the number of jurisdictions and public safety agencies included in one system) and from varying levels of centralization and consolidation of the dispatch centers. The range of configuration alternatives, then, can be defined by two limits: (1) completely fragmented and localized answering and dispatch and (2)

extensive centralization of authority and of 911 answering and dispatch. Within this range, the alternatives chosen for a particular area are a function of the area's special requirements and characteristics.

There are, of course, advantages and disadvantages associated with each level of centralization and consolidation in a 911 system. With a single-jurisdictional or localized 911 system, the agencies retain the greatest degree of control over the level and quality of emergency service, and, providing there is little boundary mismatch, the associated cost and implementation time--from the local point of view--may be relatively small. However, in terms of a statewide 911 system, this fragmented implementation could potentially be the most costly to provide and might result in the poorest service to the citizen. This kind of system also depends on a great deal of local coordination to overcome boundary mismatch problems and to ensure at least a minimum level of service being uniformly provided to all citizens.

In contrast, the multijurisdictional approach in which one 911 answering center and possibly dispatch center, as well, replaces many small ones, can--from the state's point of view--save costs through consolidation and can--from the local point of view--increase the emergency services available to the citizen through coordination and effective utilization of the resources. However, as the number of jurisdictions in the system increases, the requirement for intergovernmental and inter-agency cooperation also increases. For this reason, the multijurisdictional approach is often perceived as a threat to local control.

#### B. Rationale for Local 911 Solutions

In the conceptual design of the 911 configurations we took into account two points of view: (1) that each local 911 configuration should function as part of the total statewide system and (2) that each local 911 configuration should function itself as a total system. This means

that the configuration design should maintain consistency and uniformity among the local 911 systems but be flexible enough to take into account the local characteristics and requirements within each 911 system.

The boundaries of the alternative areas to be served by 911 systems were chosen after considering several different contributing factors. The primary factors considered were geographic, demographic, and telephone exchange boundary information, as well as the state's communication plan.

Topographical features, as indicated in Figure 7, such as national forests, swamp areas, rivers, and lakes were considered in regard to whether they would favor or inhibit the cooperation of adjacent counties in a combined system or whether, because of their presence, it would be more feasible to divide a county into two or more systems. The geographical size and shape of each county was also taken into consideration, especially in regard to how this factor would affect the potential cost of telephone lines.

Population statistics were evaluated to determine population size and distribution. The distribution is important in two ways. First, it indicates the areas where no citizens or very few reside; second, and perhaps more important, it indicates the locations of the areas within each county where population is concentrated. The map in Figure 8 illustrates the variations in population concentrations and densities throughout the state. Of special interest are the areas where adjacent counties have major population concentrations in such close proximities that they tend to behave economically and socially as a unit. Such units can often be better served if they are in a common 911 system.

The state's communication plan provided the input factor of how many law enforcement radio dispatch centers exist or are proposed for each county, their locations, and the areas served by each. This information is particularly important for cases where a county may be subdivided into two or more 911 systems, since the number of emergency calls that must be transferred should be minimized.



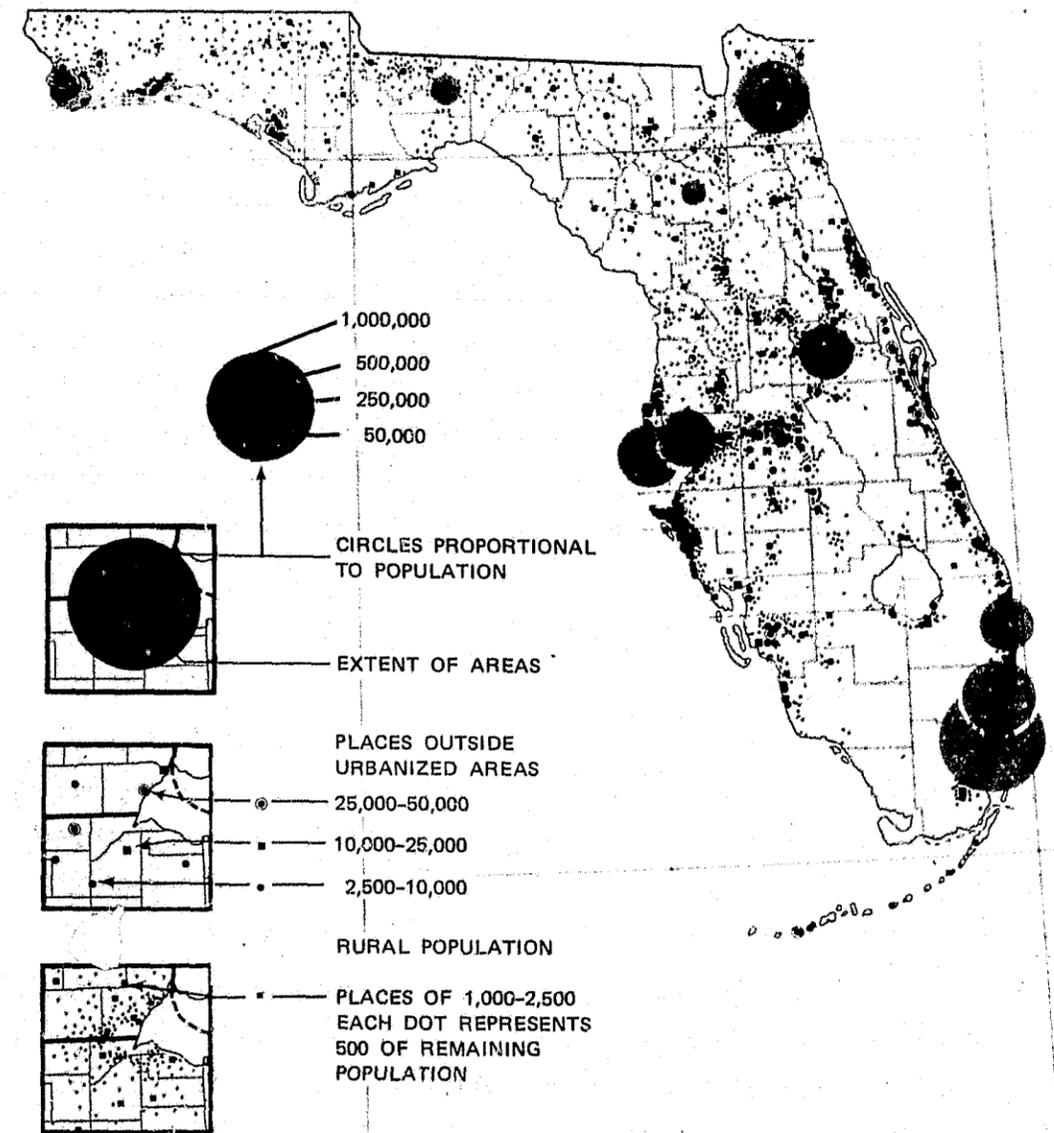


FIGURE 8 VARIATIONS IN POPULATION CONCENTRATIONS AND DENSITIES

The telephone exchange boundaries had the least impact on determining the gross 911 system area boundaries. The telephone exchange information will be used more extensively in the finer-detailed conceptual systems design work.

### C. Local Alternatives

In Florida, 49 of the 67 counties have a population of less than 100,000, and 42 counties have a population of less than 50,000. It is apparent from Figure 8 that in several of the counties the population is concentrated in one or two areas rather than being evenly distributed throughout the county. Because of these factors, our initial approach to the 911 configurations was at the county level. Closer inspection of local requirements and characteristics led us to additional variations. The 911 configurations that were developed can be grouped into three categories of 911 answering system area alternatives:

- Single-county
- Multicounty
- Partial-county.

For the single-county alternative, there would be one 911 answering center for the whole county; for the multicounty alternative, one 911 answering center would serve two or more counties; and, for the partial-county alternative, there would be two or more 911 answering centers within the county.

Our preliminary statewide 911 conceptual design includes a total of 99 local system area alternatives. One alternative for each county is a countywide system with a single 911 answering point. The remaining 32 alternatives include 21 multicounty configurations and 11 partial-county configurations. These 99 alternatives can be summarized as follows:

- 67 single-county
- 21 multicounty
  - 11 two-county
  - 5 three-county
  - 4 four-county
  - 1 five-county
- 11 partial-county.

Figure 9 gives an overview of the multicounty alternatives. The approximate boundaries of the area that would be served by each system alternative are indicated on a state map.\* On Table 8 the counties involved in a multicounty or a partial-county configuration are listed alphabetically. Forty-six counties are included in one or more of the various multicounty alternatives (Table 8); seven counties have alternatives in which they are partitioned into two or more 911 systems (Table 8); and for 14 counties only one alternative is postulated, the single-county system.

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\* Two maps are used in order to present all the alternatives. Neither map is to be considered an overall plan.

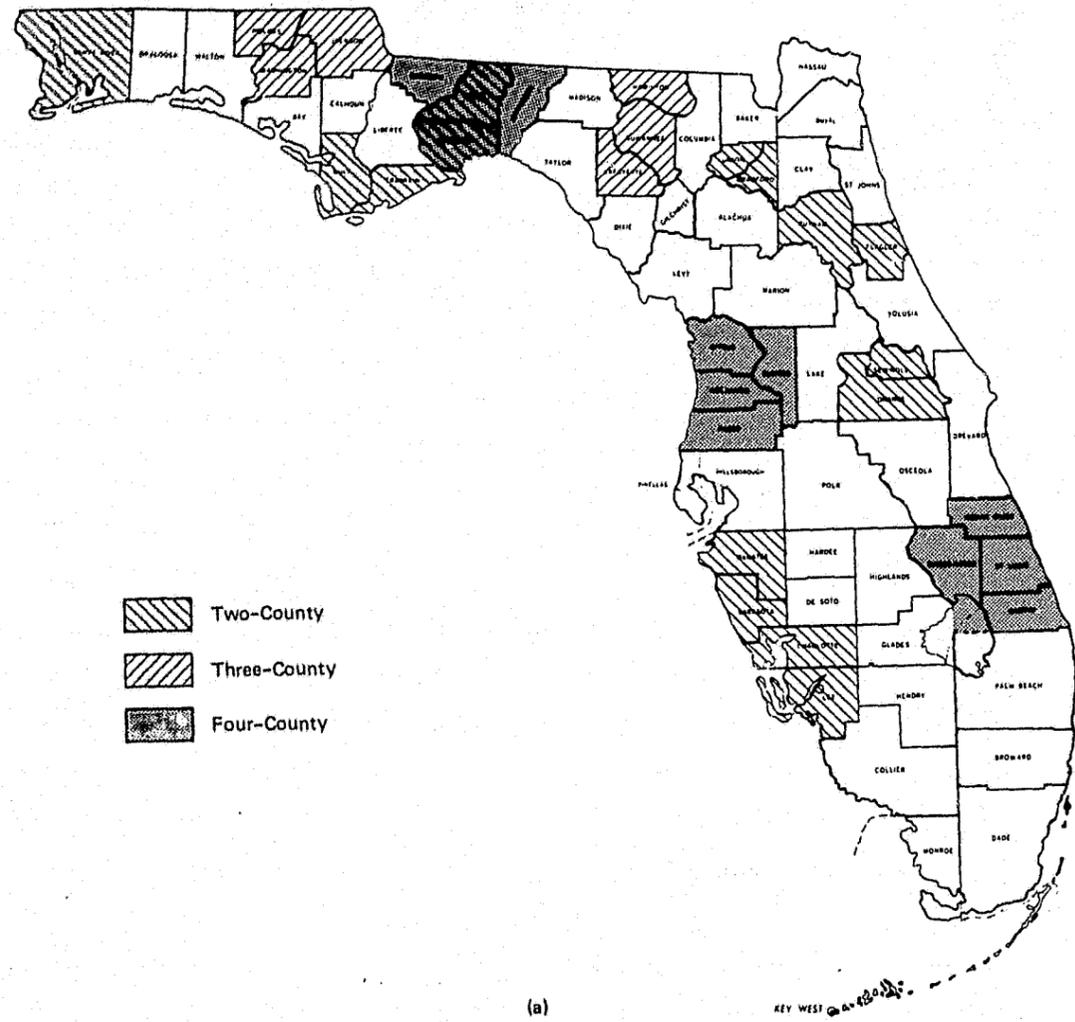


FIGURE 9. MULTICOUNTY 911 SYSTEM AREA ALTERNATIVES

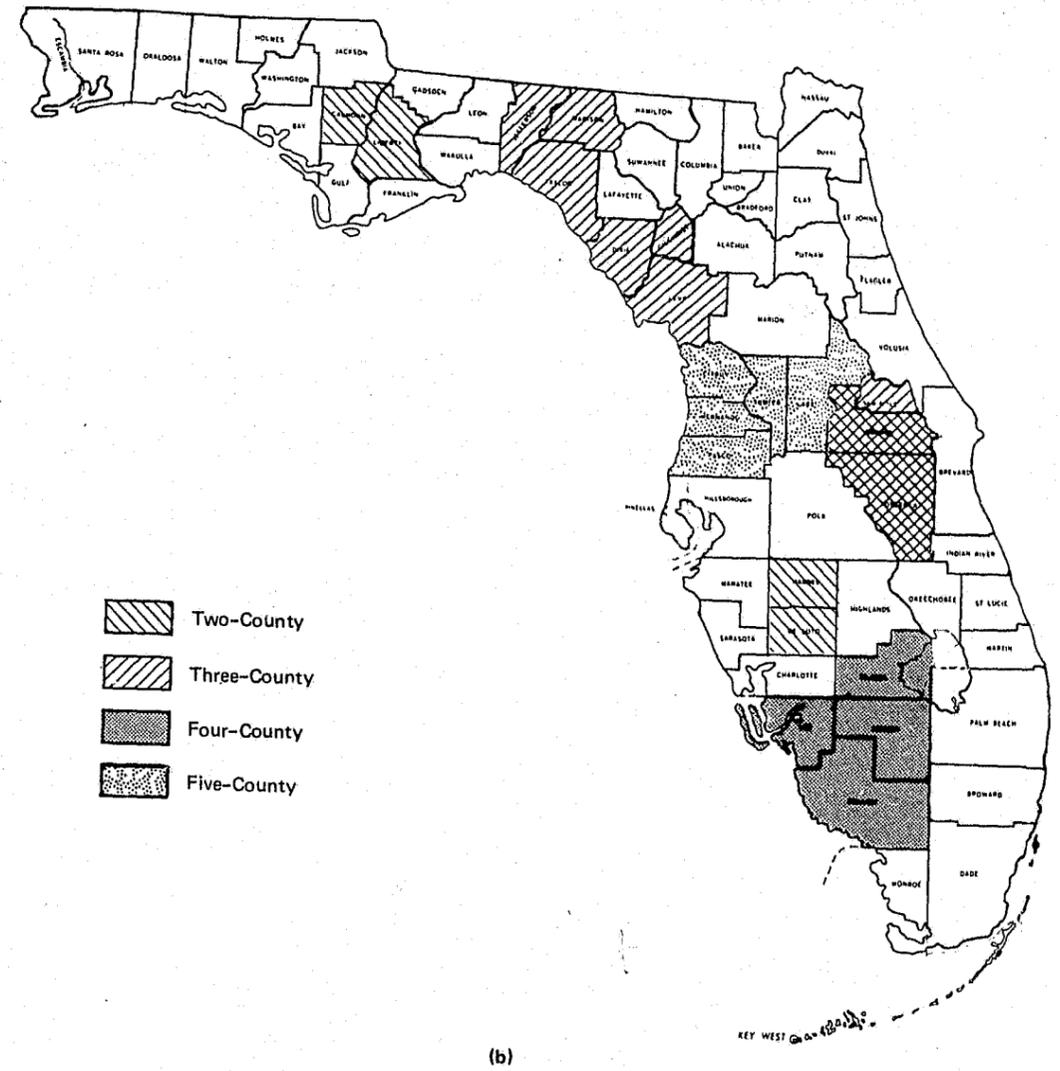


FIGURE 9 MULTICOUNTY 911 SYSTEM AREA ALTERNATIVES (Concluded)

Table 8

MULTICOUNTY AND PARTIAL-COUNTY 911 SYSTEM ALTERNATIVES

<u>County</u>	<u>Alternative</u>
Bradford	Bradford and Union Counties in a combined 911 system.
Brevard	Three 911 systems in the county: covering the north third, the middle third, and the south third.  Four 911 systems in the county: one covering the north third, one covering the south third, one covering the area served by the CDC of the Cape Canaveral Police Department (PD), and one covering the area served by the Cocoa PD CDC.1*
Broward	Three 911 systems in the county: one for the area covered by CDCs 1 and 2, one for the area covered by CDC 3, and one for the area covered by CDC 4.2  Four 911 systems in the county: one for each of the four areas that will be covered by the county's four CDCs.
Calhoun	Calhoun and Liberty Counties in a combined 911 system.
Charlotte	Charlotte and Lee Counties in a combined 911 system.
Citrus	Citrus, Hernando, Lake, Pasco, and Sumter Counties in a combined 911 system.  Citrus, Hernando, Pasco, and Sumter Counties in a combined 911 system.
Collier	Collier, Glades, Hendry, and Lee Counties in a combined 911 system.

\* Footnotes are given at the end of the table.

<u>County</u>	<u>Alternative</u>
Dade	Three 911 systems in the county: one for the area covered by CDC 1, one for the area covered by DC, 2, 3, and 4, and one for the area covered by DC 5.3  Two 911 systems in the county: one for the area covered by CDC 1 and one for the area covered by the other four dispatch centers.
De Soto	De Soto and Hardee Counties in a combined 911 system.
Dixie	Dixie, Gilchrist, and Levy Counties in a combined 911 system.
Escambia	Escambia and Santa Rosa Counties in a combined 911 system.
Flagler	Flagler and Putnam Counties in a combined 911 system.
Franklin	Franklin and Gulf Counties in a combined 911 system.
Gadsden	Gadsden, Jefferson, Leon, and Wakulla Counties in a combined 911 system.
Gilchrist	Gilchrist, Dixie, and Levy Counties in a combined 911 system.
Glades	Glades, Collier, Hendry, and Lee Counties in a combined 911 system.
Gulf	Gulf and Franklin Counties in a combined 911 system.
Hamilton	Hamilton, Lafayette and Suwannee Counties in a combined 911 system.
Hardee	Hardee and De Soto Counties in a combined 911 system.
Hendry	Hendry, Collier, Glades, and Lee Counties in a combined 911 system.

<u>County</u>	<u>Alternative</u>
Hernando	Hernando, Citrus, Lake, Pasco, and Sumter Counties in a combined 911 system.
	Hernando, Citrus, Pasco, and Sumter Counties in a combined 911 system.
Holmes	Holmes, Jackson, and Washington Counties in a combined 911 system.
Indian River	Indian River, Martin, Okeechobee, and St. Lucie Counties in a combined 911 system.
Jackson	Jackson, Holmes, and Washington Counties in a combined 911 system.
Jefferson	Jefferson, Madison, and Taylor Counties in a combined 911 system.
	Jefferson, Gadsden, Leon, and Wakulla Counties in a combined 911 system.
Lafayette	Lafayette, Hamilton, and Suwannee Counties in a combined 911 system.
Lake	Lake, Citrus, Hernando, Pasco, and Sumter Counties in a combined 911 system.
Lee	Lee and Charlotte Counties in a combined 911 system.
	Lee, Collier, Glades, and Hendry Counties in a combined 911 system.
Leon	Leon and Wakulla Counties in a combined 911 system.
	Leon, Gadsden, Jefferson, and Wakulla Counties in a combined 911 system.
Levy	Levy, Dixie, and Gilchrist Counties in a combined 911 system.
Liberty	Liberty and Calhoun Counties in a combined 911 system.
Madison	Madison, Jefferson, and Taylor Counties in a combined 911 system.

<u>County</u>	<u>Alternative</u>
Manatee	Manatee and Sarasota Counties in a combined 911 system.
Martin	Martin, Indian River, Okeechobee, and St. Lucie Counties in a combined 911 system.
Monroe (The Keys)	Three 911 systems in the county: one for each of the sheriff's three service areas.
Okeechobee	Okeechobee, Indian River, Martin, and St. Lucie Counties in a combined 911 system.
Orange	Orange and Osceola Counties in a combined 911 system.
	Orange and Seminole Counties in a combined 911 system.
	Orange, Osceola, and Seminole Counties in a combined 911 system.
Osceola	Osceola and Orange Counties in a combined 911 system.
	Osceola, Orange, and Seminole Counties in a combined 911 system.
Palm Beach	Three 911 systems in the county: one for each of the three areas that will be covered by the county's three CDCs. <sup>4</sup>
	Two 911 systems in the county: one for the area near Lake Okeechobee and one for the coastal area.
Pasco	Pasco, Citrus, Hernando, Lake, and Sumter Counties in a combined 911 system.
	Pasco, Citrus, Hernando, and Sumter Counties in a combined 911 system.
Pinellas	Two 911 systems in the county: one covering the north part and one covering the south part.
Putnam	Putnam and Flagler Counties in a combined 911 system.

<u>County</u>	<u>Alternative</u>
St. Lucie	St. Lucie, Indian River, Martin, and Okeechobee Counties in a combined 911 system.
Santa Rosa	Santa Rosa and Escambia Counties in a combined 911 system.
Sarasota	Sarasota and Manatee Counties in a combined 911 system.
Seminole	Seminole and Orange Counties in a combined 911 system.  Seminole, Orange, and Osceola Counties in a combined 911 system.
Sumter	Sumter, Citrus, Hernando, Lake, and Pasco Counties in a combined 911 system.  Sumter, Citrus, Hernando, and Pasco Counties in a combined 911 system.
Suwannee	Suwannee, Hamilton, and Lafayette Counties in a combined 911 system.
Taylor	Taylor, Jefferson, and Madison Counties in a combined 911 system.
Union	Union and Bradford Counties in a combined 911 system.
Volusia	Two 911 systems in the county: one covering the coastal area, and one covering the rest of the county.
Wakulla	Wakulla and Leon Counties in a combined 911 system.  Wakulla, Godsdon, Jefferson, and Leon Counties in a combined 911 system.
Washington	Washington, Holmes, and Jackson Counties in a combined 911 system.

Footnotes

1. CDC stands for Cooperative Dispatch Center.
2. CDC 1 is operated by the Broward County Sheriff's Office  
CDC 2 is operated by the Fort Lauderdale Police Department (PD).  
CDC 3 is operated by the Hollywood PD.  
CDC 4 is operated by the Pompano Beach PD.
3. CDC 1 is operated by the Dade County Public Safety Department.  
Dispatch Center (DC) 2 is operated by the Hialeah PD.  
DC 3 is operated by the Coral Gables PD.  
DC 4 is operated by the City of Miami PD.  
DC 5 is operated by the Miami Beach PD.
4. The three CDCs are operated by the Palm Beach County Sheriff's Office, the Boca Raton PD, and the Sheriff's substation at Belle Glade. Whether or not a fourth CDC will be operated is still to be determined.

**CONTINUED**

**1 OF 2**

Appendix A

CALIFORNIA ASSEMBLY BILL 515

**Assembly Bill No. 515**

**CHAPTER 1005**

*An act to add Article 6 (commencing with Section 53100) to Chapter 1 of Part 1 of Division 2 of Title 5 of the Government Code, relating to local emergency telephone systems, and making an appropriation therefor.*

[Approved by Governor August 17, 1972. Filed with Secretary of State August 17, 1972.]

**LEGISLATIVE COUNSEL'S DIGEST**

**AB 515, Warren.** Local emergency telephone systems.

Declares that the establishment of local emergency telephone systems is in the public interest and a matter of statewide concern.

Requires establishment by public agencies, as defined, of specified uniform emergency telephone services by December 31, 1982. Provides for prior submission of tentative and final plans to telephone companies and Communications Division of Department of General Services.

Specifies that Communications Division of Department of General Services shall establish technical and operational standards for such services, and provides such plans shall conform to such minimum standards.

Authorizes Attorney General, in behalf of Communications Division or on his own initiative, to commence judicial proceedings to enforce performance of duties imposed on public agencies with regard to establishment of such services. Specifies that Communications Division, with advice and assistance of the Attorney General, shall submit reports and recommendations to Legislature, Governor, and Department of Finance, as specified.

Provides that public agencies, as defined, in same telephone emergency service system shall enter into joint powers agreements or cooperative agreements requiring emergency service units, once dispatched through telephone emergency service system, to respond whether or not requester is in such unit's jurisdictional boundaries. Requires such agreements to be entered between public agencies and public safety agencies, as defined, which belong to different systems, but have contiguous boundaries. Provides such agreements shall be filed with Attorney General and Communications Division. Requires Attorney General to commence judicial proceedings to enforce specified provisions relating to such agreements, where public agency or public safety agency fails to timely enter into or file such agreement.

Renders act inoperative, if Legislature fails to provide specified subvention during 1975 Regular Session, until Legislature enacts such legislation. Postpones respective dates for submission of plans or reports, implementation of local emergency telephone systems, or

performance of other duties required by act, if Legislature fails to enact such legislation, for the same number of years after respective dates specified for performance of such duties as elapse between 1975 and date Legislature enacts such legislation.

Makes related changes.

Appropriates \$35,000 to Department of General Services during 1972-73 fiscal year to carry out purposes of act.

*The people of the State of California do enact as follows:*

SECTION 1. Article 6 (commencing with Section 53100) is added to Chapter 1 of Part 1 of Division 2 of Title 5 of the Government Code, to read:

#### Article 6. Local Emergency Telephone Systems

53100. The Legislature hereby finds and declares that it is in the public interest to shorten the time required for a citizen to request and receive emergency aid. There currently exist thousands of different emergency phone numbers throughout the state, and present telephone exchange boundaries and central office service areas do not necessarily correspond to public safety and political boundaries. Provision of a single, primary three-digit emergency number through which emergency services can be quickly and efficiently obtained would provide a significant contribution to law enforcement and other public service efforts by making it less difficult to quickly notify public safety personnel. Such a simplified means of procuring emergency services will result in the saving of life, a reduction in the destruction of property, quicker apprehension of criminals, and ultimately the saving of money. The Legislature further finds and declares that the establishment of a uniform, statewide emergency number is a matter of statewide concern and interest to all inhabitants and citizens of this state. It is the purpose of this act to establish the number "911" as the primary emergency telephone number for use in this state and to encourage units of local government and combinations of such units to develop and improve emergency communication procedures and facilities in such a manner as to be able to quickly respond to any person calling the telephone number "911" seeking police, fire, medical, rescue, and other emergency services.

53101. "Public agency," as used in this article, means the state, and any city, county, city and county, municipal corporation, public district, or public authority located in whole or in part within this state which provides or has authority to provide firefighting, police, ambulance, medical, or other emergency services.

53102. "Public safety agency," as used in this article, means a functional division of a public agency which provides firefighting,

police, medical, or other emergency services.

53103. "Direct dispatch method," as used in this article, means a telephone service providing for the dispatch of an appropriate emergency service unit upon receipt of a telephone request for such services and a decision as to the proper action to be taken.

53104. "Relay method," as used in this article, means a telephone service whereby pertinent information is noted by the recipient of a telephone request for emergency services, and is relayed to appropriate public safety agencies or other providers of emergency services for dispatch of an emergency service unit.

53105. "Transfer method," as used in this article, means a telephone service which receives telephone requests for emergency services and directly transfers such requests to an appropriate public safety agency or other provider of emergency services.

53106. "Referral method," as used in this article, means a telephone service which, upon the receipt of a telephone request for emergency services, provides the requesting party with the telephone number of the appropriate public safety agency or other provider of emergency services.

53107. "Basic system," as used in this article, means a telephone service which automatically connects a person dialing the digits "911" to an established public safety answering point through normal telephone service facilities.

53108. "Sophisticated system," as used in this article, means a basic system with the additional capability of automatic identification of the caller's number, holding the incoming call, reconnection on the same telephone line, clearing a telephone line, or automatic call routing or combinations of such capabilities.

53108.5. "Communications Division," as used in this article, means the Communications Division of the Department of General Services.

53109. Every local public agency within its respective jurisdiction shall establish and have in operation by December 31, 1982, a basic or sophisticated system as specified in this article.

The establishment of such systems shall be centralized to the extent feasible. Nothing in this article shall be construed to prohibit or discourage in any way the formation of multijurisdictional or regional systems, and any system established pursuant to this article may include the territory of more than one public agency or may include a segment of the territory of a public agency.

53110. Every system shall include police, firefighting, and emergency medical and ambulance services, and may include other emergency services, in the discretion of the affected local public agency, such as poison control services, suicide prevention services, and civil defense services. The system may incorporate private ambulance service. In those areas in which a public safety agency of the state provides such emergency services, the system shall include such public safety agencies.

Communications Division on or before December 31, 1973, after consultation with all agencies specified in Section 53114.1.

53115. (a) On or before January 31, 1975, all public agencies shall submit tentative plans for the establishment of a system required by this article to the public utility or utilities providing public telephone service within the respective jurisdiction of each public agency. A copy of each such plan shall be filed with the Communications Division.

(b) On or before January 31, 1977, all public agencies shall submit final plans for the establishment of the system to such utilities, and shall make arrangements with such utilities for the implementation of the planned emergency telephone system no later than December 31, 1982. A copy of the plan required by this subdivision shall be filed with the Communications Division.

(c) If any public agency has implemented or is a part of a system required by this article on a deadline specified in subdivision (a) or (b), such public agency shall submit in lieu of the tentative or final plan a report describing the system and stating its operational date.

(d) Plans filed pursuant to subdivisions (a) and (b) shall conform to minimum standards established pursuant to Section 53114.2.

53116. The Attorney General may, in behalf of the Communications Division or on his own initiative, commence judicial proceedings to enforce compliance by any public agency or public utility providing telephone service with the provisions of this article.

53117. (a) On or before February 16, 1975, and again on or before February 16, 1977, the Communications Division shall report to the Legislature the progress in the implementation of systems required by this article. Such reports shall contain his recommendations for additional legislation.

(b) In December of 1973 and in December of 1974 the Communications Division, with the advice and assistance of the Attorney General, shall submit recommendations to the Department of Finance and to the Governor specifying amounts necessary to further implement the organization of telephone systems specified in this article during the succeeding fiscal year. The report specified in this subdivision shall contain, in addition, an estimate of the fiscal impact to local public agencies which will be caused by implementation of the provisions of this article.

53118. The Legislature declares that a major purpose in enacting this article is to eliminate instances in which a responding emergency service refuses to render aid to the requester because the requester is outside of the jurisdictional boundaries of the emergency service. Therefore, in implementing systems pursuant to this article, all public agencies in a single system shall annually enter into a joint powers agreement or any other form of written cooperative agreement which is applicable when need arises on a day-to-day basis. In addition, such agreements shall be entered into between public agencies and public

53111. The digits "911" shall be the primary emergency telephone number within the system, but a public agency or public safety agency may maintain a separate secondary backup number, and shall maintain a separate number for nonemergency telephone calls.

53112. All systems shall be designed to meet the specific requirements of each community and public agency served by the system. Every system, whether basic or sophisticated, shall be designed to have the capability of utilizing at least three of the methods specified in Sections 53103 to 53106, inclusive, in response to emergency calls. The Legislature finds and declares that the most critical aspect of the design of any system is the procedure established for handling a telephone request for emergency services.

In addition, to maximize efficiency and utilization of the system, all pay telephones within each system shall, by December 31, 1982, enable a caller to dial "911" for emergency services without the necessity of inserting a coin.

53113. The Legislature finds that, because of overlapping jurisdiction of public agencies, public safety agencies, and telephone service areas, a general overview or plan should be developed prior to the establishment of any system. In order to insure that proper preparation and implementation of such systems is accomplished by all public agencies by January 1, 1982, the Communications Division, with the advice and assistance of the Attorney General, shall secure compliance by public agencies as provided in this article.

53114. The Communications Division, with the advice and assistance of the Attorney General, shall coordinate the implementation of systems established pursuant to the provisions of this article. The Communications Division, with the advice and assistance of the Attorney General, shall assist local public agencies and local public safety agencies in obtaining financial help to establish emergency telephone service, and shall aid such agencies in the formulation of concepts, methods, and procedures which will improve the operation of systems required by this article and which will increase cooperation between public safety agencies.

53114.1. To accomplish the responsibilities specified in this article, the Communications Division is directed to consult at regular intervals with the State Fire Marshal, the State Department of Public Health, the Governor's Office of Traffic Safety, the Office of Emergency Services, the California Council on Criminal Justice, the public utilities in this state providing telephone service, the Associated Public Safety Communications Officers, the Bureau of Emergency Medical Service, the California Highway Patrol, and the State Division of Forestry. Such agencies shall provide all necessary assistance and consultation to the Communications Division to enable it to perform its duties specified in this article.

53114.2. Technical and operational standards for the development of the local agency systems shall be established and reviewed by the

Appendix B

STATE OF NEW YORK PUBLIC SERVICE COMMISSION:  
PROPOSAL FOR THE PROVISION OF 911--CASE 26443

Attached statement of policy  
adopted. Order adopted in  
Case 26443.

Appendix B

STATE OF NEW YORK  
PUBLIC SERVICE COMMISSION

September 7, 1973

TO: THE COMMISSION

FROM: COMMUNICATIONS DIVISION

SUBJECT: Proposal for the provision of Universal Emergency  
Telephone Number "911" by telephone companies -  
Case 26443

On May 15, 1973, the Communications Division submitted a report entitled "'911' - A Staff Regulatory Viewpoint of the Universal Emergency Telephone Number" to the Commission for its consideration. By notice issued May 23, 1973, the Commission distributed approximately 300 copies of the report to interested parties and requested comments, particularly in regard to the report's Conclusion and Proposal for New York State, by August 1, 1973. Nearly 100 copies of the report were subsequently requested, including those requested by A.T.&T. Company for distribution to their affiliated companies.

To date, comments have been received from a member of the United States Congress, the Chairman of the Federal Communications Commission, nine New York State Telephone Companies, a state regulatory agency, three New York State municipalities, and two members of firefighting organizations.

All comments received have been considered, resulting in minor revisions to the Division's Proposal Justification for these revisions is shown, and the Communications Division requests the Commission's concurrence and adoption of its Proposal as revised, at this time.

COMMENTS OF A GENERAL NATURE

Comments on the general content of the staff report were received from:

Congressman J. Edward Roush of Indiana, the principal proponent in Congress of the National use of "911" as the single number to be dialed in an emergency.

"I found the report's content very thorough. I was especially pleased with one of your conclusions, it is something I have mentioned to AT&T, namely your encouragement that 'every 911 call originated within the State of New York completes to an emergency report center or in the interim, a telephone company operator.'

"I know there is hesitation to advertise '911' too much for fear people will call '911' where it is not connected. Your recommendation fits mine exactly; make sure that '911' everywhere connects at least to an operator while we are in the process of securing '911' as the emergency number everywhere.

"I wish you every success and hope that the state of New York will undertake efforts to make this number state-wide."

Chairman Dean Burch of the Federal Communications Commission.

"We consider the staff report to be a timely and worthwhile contribution in an area of vital importance. Its comprehensive treatment of the subject, including pending Congressional bills, as well as the California Law directing the implementation of '911' in that state by 1982, should make the Report valuable to the regulatory commissions of other states in their determination of the appropriate 911 public policy within their own jurisdictions.

"The fact that it is a local telephone service certainly makes 911 a matter of substantial concern to the state regulatory commissions, and we welcome the contribution of the PSC Staff."

James M. McCraney, Chief Communications Engineer,  
California Public Utilities Commission.

"As noted in your report, California now has a requirement to provide '911' in all political subdivisions by the end of 1982. As a result there is a growing interest in getting the program on the track and our Communications Branch staff will no doubt be very much involved in the near future. We plan to use this (report) as our bible in pursuing the '911' problems in the future."

Kermit E. Hill, City Manager, City of Rochester, New York.

"After a review of your report '911' Emergency Telephone Number, we are proud to endorse such a report which expresses our desires for emergency service requests on a statewide basis."

There were a few negative comments on the overall effectiveness of "911" service:

Neil Ellson, Secretary, East Aurora Fire Control  
Mutual Aid Chiefs.

"If '911' were to be put in effect (in the area) seven (7) other exchanges would be involved, three (3) of them in other counties with no direct communication with East Aurora Fire Control Central Alarm office. This would result in greatly reduced first alarm services to the residents of our fire districts. We will repeat again, a greater loss of property and lives can be the only result of '911' in our area."

John J. Komar, Town Supervisor, Orangetown, New York.

"Since there are now fourteen (14) Police Departments in the County of Rockland, the calls going to one central office would be delayed, the main dispatcher would have to take down the data and then transmit this to the proper Police Department. It has been found that in these transmissions, which are duplications, some information is lost and certainly time is wasted."

Arnold E. White, Mayor, East Rockaway, New York.

"We work on two or three minute service, and I doubt that we have ever been more than five minutes from the time of call until our ambulance is in front of any home in this mile square village. No Nassau County Police or hospital ambulance can compete with this service."

"We are not too happy with this '911' number or anything that might break down due to involved mechanical operations. '911' may be an advantage in some areas, but not necessarily in all areas "

Comments of this sort are not new to the Communications Division. They reflect the sincere reservations of public safety agencies regarding the use of "911" and its effect on their overall performance in protecting the public. It is evident that in measuring the effectiveness of emergency response, these public safety agencies consider the critical time period to

be that between the receipt of an emergency call and the arrival of emergency assistance at the scene. This was discussed at some length in the report, pages 39 to 42, with the conclusion that "total response time then, would more properly include the time interval between detection (of the need for assistance) and notification (of the assistance agency). where the use of the "911" emergency number has a significant effect."

Staff remains convinced that overall response time is reduced with "911" service, and thus conveys a real benefit to the public

#### COMMENTS ON THE DIVISION'S PROPOSAL

The Communications Division's Proposal for New York State suggested action that would ensure that every "911" call originated within the State of New York completes to an emergency report center or, in the interim, a telephone company operator. A number of comments were directed toward specific areas of the Proposal, including objectives numbered 2, 3, 4, 6 and 15. There were no substantive comments on the objectives which are not hereafter discussed. (The Proposal as originally proposed is submitted with this memorandum as Attachment I.)

OBJECTIVE #2

2. No other digit of code shall be used as a prefix to "911".

Proposing a solution to the problem of the non-coincidence of telephone central office and jurisdictional boundaries, Mr. Stuart Dean, a volunteer fire chief, commented on objective #2 of the Proposal:

"...expand 911' to a four-digit number. For example, using the map shown on page 33 of the report, callers in Community 'A', Central Office District 'a', would dial '9-1-1-1', callers in 'A' . 'b' would dial '9-1-1-2'...etc. Calls... would be routed directly by equipment responsive to the fourth digit. This, of course, would require the correct number to be displayed on each and every telephone, a major task, but not impossible to accomplish. Also, if the public can be taught '911', it can also be taught to look at the telephone instrument to verify the fourth digit."

Over and above the technical difficulties of the solution proposed by Mr. Dean, any expansion of the number "911" to four-digits would diminish the effectiveness of the emergency number. There would be more than a single emergency number used in the area, making the appropriate number more difficult to remember and use. In addition, this solution would apply to only one segment of emergency service. A subscriber may well be in one jurisdiction for fire assistance, and another for police aid. For these reasons no revision of this objective is recommended.

OBJECTIVE #3

3. All trunk groups carrying emergency traffic shall be engineered to the probability that only one call in a hundred will encounter all trunks busy.

The comment submitted by the Chenango & Unadilla Telephone Corporation in regard to the design of trunk groups carrying emergency traffic as stated in objective #3 of the Proposal, is representative of the comments offered by five other New York State telephone companies on the same subject:

"The required engineering of trunk groups carrying '911' traffic to the probability that only one in a hundred will encounter an 'all trunks busy' condition is impractical and unmanageable for several reasons including:

- a. Inability to predict traffic volumes generated during emergency conditions.
- b. Control of circuit volumes being beyond the control of the telephone company and resting with the central receiving agency - usually by way of foreign exchange lines."

It was not intended that the provision of trunking facilities to conform to this objective would be based on data for non-recurring emergency traffic volumes, or artificially inflated traffic volumes resulting from abuse of the network. It was intended however, to set an objective level of performance in "overflows" of emergency calls which all companies would strive to attain during "normal" heavy volume periods.

To the extent that quantities of circuits are affected by 1) the number of answering personnel available, 2) the extent of the delay in answer and, 3) the holding time of emergency calls, the control of circuit quantities does rest with the receiving agency rather than the telephone company. It is expected that the aforementioned variables, among others, will be considered in the formulation of any agreement between telephone company and receiving agency for the provision of "911" service in accordance with objective #16 of the Proposal.

To the extent that public safety agency performance in servicing emergency calls does not attain the levels agreed upon by company and agency, there may be an adverse affect on company performance in regard to objective #3.

The objective therefore should be revised as follows:

3. All trunk groups carrying emergency traffic shall be engineered to the probability that only one call in one hundred will encounter all trunks busy during normal busy period conditions, provided that the answer performance of the public safety agency is in accordance with prior agency-company agreements.

OBJECTIVE #4

4. Any seven-digit numbers replaced by "911" shall be operator intercepted, for at least one year.

Commenting on the operator intercept of seven-digit numbers replaced by "911" as stated in objective #4 of the Proposal, the General Telephone Company of Upstate New York, Inc. stated:

"Many small offices are not equipped with operator intercept capabilities and the cost of providing the necessary central office equipment and outside plant facilities for this service would be excessive. The widespread and extensive publicity associated with "911" implementation should preclude the necessity for live intercept.

"It is recommended that this proposal be modified to provide for operator intercept where available and recorded intercept at other locations."

While the Rochester Telephone Corporation suggested:

"... that recommendation #4 be modified to provide for agency interception of calls to seven-digit numbers replaced by '911'."

The intent of this particular objective is to ensure that any call placed to a "vacant" seven-digit emergency number will be answered by an individual with the capability of forwarding the request for emergency aid. The intent of the objective cannot be satisfied with recorded intercept but can be accommodated with either the telephone company operator or agency intercept method. Therefore, objective #4 is revised to reflect both acceptable methods. The proposed wording is as follows:

4. Any seven-digit numbers replaced by "911" shall be intercepted by either a telephone company assistance or a public safety agency operator for at least one year;

OBJECTIVE #6

The normal routing for calls overflowing "911" emergency report center trunks will be to a telephone company assistance operator.

The Rochester Telephone Corporation suggested that objective #6 of the Proposal, relating to the routing of "911" overflows to telephone company operators, should include "...provision for direct access from the operator to the emergency report centers."

While there is merit to this suggestion, telephone companies would not be required to provide what would essentially be a private line service from their operators to the emergency report center, to service the one call in a hundred routed to overflow in normal peak periods. The telephone company assistance operator would still have the capability of forwarding the call via "911" with a .99 probability of completion.

Telephone companies would not be prohibited by objective #6, however, from providing this direct access if they so desired.

OBJECTIVE #15

Five telephone companies, all members of the Continental Telephone System in New York State, commented identically on objective #15 of the Proposal which would restrict the provision of "911" service to only those report centers where law enforcement was a participant:

"Any refusal to provide 911 service to central receiving agencies not encompassing law enforcement would seem to be beyond the discretionary power of a serving telephone company."

Previous experience has shown that "911", when implemented, will be used by the public as an "all emergency" telephone number rather than an emergency number solely for police, fire or ambulance assistance.

Because police emergencies account for a great majority of the requests for emergency aid, any "911" report center without a participating law enforcement agency may experience unanticipated emergency traffic volumes, through misdirected calls. The resultant delays in servicing requests for emergency aid, should this occur, would at best diminish public confidence in an emergency report system that would otherwise be effective.

Although the Communications Division suggests that this objective remain part of the Proposal, current federal legislation, if passed, may require that "911" be provided for emergency medical services with or without the participation of law enforcement agencies.

Senate Bill S.504, the Emergency Medical Services Act of 1973, contains a provision for a central communications system utilizing the universal emergency number "911". The bill, passed by the Senate and the House, was vetoed by the President.

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On August 2, the Senate overrode the President's veto by 77 to 16, 15 votes more than the required two-thirds majority. The House has scheduled its vote on the veto for September 12.

Should this bill become law, telephone companies may be required to prepare for "911" service without the participation of law enforcement agencies, in apparent conflict with objective #15. Should this occur, relief from the provisions of this objective could be considered, the basis for such consideration being provided in paragraph two of the Proposal.

ROUTING TO "OPERATOR" IN NON-SERVICE AREAS

All responding telephone companies commented on that portion of the Proposal which suggests a schedule for the provision of facilities by telephone companies that would allow them to route "911" calls originated in an area where emergency report centers do not exist, to a telephone company assistance operator:

Chenango & Unadilla, Iroquois, Red Hook, Southern Counties and Western Counties telephone companies:

"The routing of all 911 calls to an operator, regardless of the availability of a central receiving agency, serves only as a replacement for the existing less complicated service, long available to the public and listed in its directories - 'in an emergency dial "0" (Operator).' Most importantly we question the wisdom of forcing major office modifications to accomplish this end."

Empire Telephone Corporation:

"... pending solution of the political and jurisdictional problems involved, it is premature and injudicious to set a specific time by which telephone companies are required to be 'ready' unless the public safety agencies are similarly required to be ready. The objective of telephone company timely readiness can be achieved by the simple requirement that 911 be preserved as an unassigned facility, or so established at the first opportunity in the reasonable growth and expansion of the existing facilities."

General Telephone Company of Upstate New York:

"It is not uncommon to find common control offices intermixed with progressive control offices in EAS networks. The connection of '911' to assistance operators for portions of such areas (common control offices) could result in confusion to the public and should not be required.

"In addition, the requirement for implementation in all other central offices by 1/1/78 does not provide adequate time for the orderly and economical completion of this project. A minimum five-year period from the date of adoption of rules for completion of such a program, which would cost this Company in excess of \$400,000 for central office rearrangements and changes, would be far more reasonable.

"It is recommended that the requirement for early implementation in common control offices be eliminated and that the proposal for complete implementation not be earlier than 1980."

New York Telephone Company:

"Our present approach of scheduling '911' modifications is to do the necessary conversions on a next job basis - that is, at the next time we are working in an office to perform some other necessary central office modification. This policy seems all the more prudent considering our concern, and that of the Commission, for the level of our construction expenditures. This concern suggests strongly that forced construction outlays associated with non-revenue producing services ought to be scheduled in consort with normal equipment modifications."

Rochester Telephone Corporation:

"We are apprehensive that the interim plan will end up being the final '911' service, with telephone companies then being required to furnish equipment or make modifications to improve the service. We are definitely opposed to the prospect of permanently taking over the function of relaying emergency calls.

"However, with the growing awareness of '911' as an emergency number in the state and nationwide, and in the absence of an emergency report center, we recognize a responsibility to provide transients or inadvertent users of this number access either to a recording informing the caller that '911' is not in service and directing him to call the operator or directly to an operator who can assist in the dispatch of emergency services. In order that this be limited to transients and inadvertent users we would not contemplate providing this service if '911' was locally publicized."

A two year interval for the completion of this portion of the Proposal was chosen for all common control central offices, and in those progressive control central offices where no major modifications are required, by virtue of the fact that the majority of telephone central offices will have some equipment installation activity taking place within them at some time during this period. This would permit the modifications necessary, usually of a minor nature in such offices, to be made in conjunction with installation work required for normal growth

In all other central offices it may be necessary to change the telephone numbers of existing subscribers in order to make the "911" code available. In addition, many of these remaining offices are small, and may not have relief jobs scheduled within a two or three year period. The four year

interval proposed, until January 1, 1978, would permit an orderly schedule for changing numbers, intercepting those numbers for a substantial period of time, and would provide an opportunity to make the necessary physical rearrangements in an orderly and efficient manner. These requirements cannot be fulfilled if the procedure is delayed until the public safety agencies are ready, as suggested by Empire.

The Proposal therefore, does not advocate company expenditures in advance of normal relief schedules, the interpretation of the New York Telephone Company, but merely sets the dates by which central offices with relief scheduled within these time intervals will be arranged to receive "911" calls. Where normal activity for growth or modifications in any central office falls beyond the suggested time interval, as suggested by the General Telephone Company of Upstate New York, application for relief from the Proposal could be considered.

In addition the Proposal states:

"This program is intended as an interim step taken while awaiting statewide provision of service through emergency report centers. It therefore should not include (but would not prohibit) publicizing '911' as the number to call in an emergency..."

Where emergency report centers do not exist, it is unlikely that "911" would replace the existing method of dialing "OPERATOR", or cause confusion in EAS free calling areas, without local publicity promoting "911" use.

#### CENTRAL OFFICE MODIFICATIONS

The five member telephone companies of the Continental System, commenting on that portion of the Proposal which suggested that telephone companies provide the central office modifications, additions, and inter-office trunking necessary for "911" service without charge to the served agencies, stated:

"Absorption of all the costs associated with office rearrangements and modifications for the provision of 911 is contrary to present Continental policy - we have held that the cost could be more fairly allocated to those benefiting, through payment of the charges actually incurred by the requesting agency."

Although they do not agree with this portion of the Division's Proposal, they indicate no real difficulty if it were adopted:

"The reversal of this policy would obviously present no great obstacle to the serving companies - it would however change our rate philosophy by transferring the recovery of these governmental initiated costs from tax to the telephone ratepayer."

#### STATE LEGISLATION

The Rochester Telephone Corporation made the following comment on the suggested use of state legislation as the means of "911" implementation in New York State:

"In the final analysis, the solution seems to lie in legislation that would mandate provision of '911' service with deadlines for implementation. It would be our hope that the Public Service Commission would play an active role in focusing public attention to this end."

The statewide use of "911" as the telephone number to be dialed in an emergency requires the cooperation and consent of every political subdivision, and every public safety agency within each subdivision, in the state of New York. This cooperation and consent could not be expected to occur in unanimity without the influence of a single authoritative body directing the actions of all participants to this end.

The State Legislature can act in this capacity, and may decide to do so with the influence and support of responsible organizations both within and outside government.

#### CONCLUSION

In consideration of the foregoing discussion, minor revisions to the Division's Proposal are suggested:

- A. Objective 3 and 4 should be revised to read as shown on pages 8 and 9 of this memorandum.
- B. All other components of the Proposal remain unchanged.

#### RECOMMENDATIONS

The Communications Division recommends that the Commission adopt the Proposal for New York State, as revised (included as Attachment II of this memorandum), as its policy regarding the "911" emergency telephone number, thereby:

PROPOSAL FOR NEW YORK STATE

(AS ORIGINALLY PROPOSED)

To encourage the use of "911" as a statewide universal emergency number, the Communications Division suggests action that will ensure that every "911" call originated within the State of New York completes to an emergency report center or in the interim, a telephone company operator.

First, the following objectives are recommended by the Communications Division to be followed by New York State telephone companies in the absence of excessively burdensome influences to the contrary.

1. In all instances "911" should be a free number;
2. No other digit or code shall be used as a prefix to "911";
3. All trunk groups carrying emergency traffic shall be engineered to the probability that only one call in a hundred will encounter all trunks busy;
4. Any seven-digit numbers replaced by "911" shall be operator intercepted for at least one year;
5. The normal routing for "911" calls dialed in an area without an emergency report center shall be to a telephone company assistance operator;
6. The normal routing for calls overflowing "911" emergency report center trunks will be to a telephone company assistance operator;

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1. Adopting the objectives, as revised, as the objectives to be sought by all telephone companies in regard to the provision of "911".
2. Directing all New York State telephone companies to revise their tariffs to include the provision of "911" service to emergency report centers and to arrange their facilities, in accordance with the Proposal, so that throughout the state, "911" will become the telephone number for an operator at an emergency report center where such a facility exists, and in the event that no such facility exists in that area, that "911" will become a number for a telephone company operator who could then handle the call in the same manner as a dial "0" emergency call.
3. Supporting appropriate legislation when submitted, that is designed to stimulate development of public safety agency emergency report centers.

Respectfully submitted,



ROGER L. SUTLIFF  
Chief System Planner

APPROVED:



NEIL A. SWIFT  
Director of Communications Division

LAC:bvb

7. Where "911" is implemented in a central office serving more than one jurisdiction, the telephone company need not provide selective routing of the calls of the customers in the various jurisdictions;
8. Wherever "coin-free" operation of coin telephones is planned for implementation, "911" shall be able to be dialed without the use of a coin;
9. "Called party hold" or some similar arrangement should be provided for agency trunk-lines wherever practicable;
10. All "911" emergency report center trunk-lines shall be arranged for incoming traffic only;
11. Agencies should maintain a separate seven-digit number for administrative calls;
12. "911" calls will be routed, free of charge, to no more than one emergency report center per central office;
13. The determination of the participants in a "911" system shall be the responsibility of public safety agencies;
14. The control and staffing of the emergency report center shall be the responsibility of public safety agencies;
15. No "911" service shall be provided to an emergency report center where a law enforcement agency is not a participant;
16. The telephone company shall recommend the type and quantity of trunk-lines and answering equipment to be used;

17. Agency trunk-lines and answering equipment associated with "911" will be charged to the agency at the existing tariff rates;
18. Where Selective Routing or Automatic Location Identification is employed, it shall be charged to the agency at a rate that is fully compensatory to the company;
19. Telephone companies will not bill participating agencies separately for "911" service.

Secondly, the Division suggests that all New York State telephone companies develop and implement a program to provide for the routing of "911" calls to an assistance operator in areas where "911" report centers do not exist;

- a. within two years in all common control central offices and those progressive control central offices where no major modifications are required;
- b. on a programmed basis in all other central offices so as to insure the completion of this project by 1/1/78.

This program is intended as an interim step taken while awaiting statewide provision of service through emergency report centers.

It therefore should not include (but would not prohibit) publicizing "911" as the number to call in an emergency, and should not delay the provision of the service where firm orders for its implementation are received.

The Division also suggests that all New York State telephone companies provide, without charge to the served agencies, the central office modifications, additions, and interoffice trunking necessary for "911" service. This action will ensure that the cost of central office modifications for "911" will no longer be an obstacle, however small, to "911" implementation. The provision of these modifications and additions shall:

- a. include that which is necessary to direct "911" calls to no more than one receiving location per central office;
- b. not include agency trunk-lines or answering equipment, such facilities to be charged for at the existing tariff rates.

Relief from this proposal may be considered in those cases where compliance would impose a significant financial or other burden on either the telephone company or the ratepayer, and any relief granted would ordinarily be in the nature of a limited extension of the date for compliance.

It should be noted that, in addition to the previously mentioned benefits, deliberate accomplishment of the foregoing proposal will cause certain other desirable results.

For example, while the telephone companies have generally expressed willingness to provide "911" service in the face of a firm order, intervals from order to service can be in excess of 12 months. To the extent that this interval is a result of the time required to add or modify central office facilities or trunking, it will ordinarily be reduced after accomplishment of the Division's proposal.

Where conflicts exist between numbers assigned to customers, and numbers required for routing of "911" calls, the customers' number must sometimes be changed. This will also be true in the process of implementing the proposal. The difference lies in the ability to schedule the steps toward accomplishment of the proposal over a longer period of time where necessary. Proper scheduling will permit the telephone companies to provide substantial periods of intercept and call transfer service for those subscribers whose numbers must be changed, which would not always be possible when attempting to expedite provision of "911" service in the face of a firm order.

#### STATE LEGISLATION

Any further expansion of the "911" emergency number concept is beyond the jurisdiction of the Public Service Commission. This responsibility lies with the public, their elected representatives, and the public service agencies established to meet their needs. If these parties conclude that such expansion is desirable, legislation might be used as the means for "911" implementation in New York State.

#### CONCLUSION

The Communications Division is convinced that the use of "911" is beneficial to the general public, in that it eliminates the need to determine the appropriate seven-digit number to dial in an emergency, and eliminates the need to dial the "Operator" for emergency assistance.

The Division believes that every emergency call dialed with "911", throughout the state, should be answered either by an emergency report center, or telephone company operator.

The Division also believes that, in the majority of cases, the problems associated with "911" implementation can be solved, and for this reason we conclude that the statewide, and nationwide, use of "911" is a practical means of improving the effectiveness of public emergency reporting, and is therefore in the interest of public safety.

STATE OF NEW YORK  
PUBLIC SERVICE COMMISSION

STATEMENT OF POLICY  
ON PROVISION OF  
UNIVERSAL EMERGENCY TELEPHONE NUMBER "911"  
BY TELEPHONE COMPANIES  
(ISSUED NOVEMBER 20, 1973)

The Commission has reviewed the development of the Universal Emergency Number "911" from its origin to its current status, identifying the regulatory considerations of its statewide, and nationwide use. In the process the Commission has examined those considerations outside the regulatory milieu, obtaining a general overview of the concept.

As a result, the Commission is convinced that the use of "911" is beneficial to the general public, in that it eliminates the need to determine the appropriate seven-digit number to dial in an emergency, and improves emergency response time in comparison with dial "0" emergency calls.

The Commission also believes that, in the majority of cases, the problems associated with "911" implementation can be solved, and for this reason it concludes that the statewide, and nationwide, use of "911" is a viable means of serving the interests of public safety.

Therefore, to encourage the use of "911" as a statewide universal emergency number, and to ensure that every "911" call originated within the State of New York completes to an emergency report center or, in the interim, a telephone company operator,

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the Commission first concludes that the following objectives should be followed by New York State telephone companies in regard to the provision of "911" service in the absence of excessively burdensome influences to the contrary.

1. In all instances "911" should be a free number;
2. No other digit or code shall be used as a prefix to "911";
3. All trunk groups carrying emergency traffic shall be engineered to the probability that only one call in a hundred will encounter all trunks busy during normal busy period conditions, provided that the answer performance of the public safety agency is in accordance with prior agency-company agreements.
4. Any seven-digit numbers replaced by "911" shall be intercepted by either a telephone company assistance or a public safety agency operator for at least one year;
5. The normal routing for "911" calls dialed in an area without an emergency report center shall be to a telephone company assistance operator;
6. The normal routing for calls overflowing "911" emergency report center trunks will be to a telephone company assistance operator;
7. Where "911" is implemented in a central office serving more than one jurisdiction, the telephone company need not provide selective routing of the calls of the customers in the various jurisdictions;

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8. Wherever "coin-free" operation of coin telephones is planned for implementation, "911" shall be able to be dialed without the use of a coin;
9. "Called party hold" or some similar arrangement should be provided for agency trunk-lines wherever practicable;
10. All "911" emergency report center trunk-lines shall be arranged for incoming traffic only;
11. Agencies should maintain a separate seven-digit number for administrative calls;
12. "911" calls will be routed, free of charge, to no more than one emergency report center per central office;
13. The determination of the participants in a "911" system shall be the responsibility of public safety agencies;
14. The control and staffing of the emergency report center shall be the responsibility of public safety agencies;
15. No "911" service shall be provided to an emergency report center where a law enforcement agency is not a participant;
16. The telephone company shall recommend the type and quantity of trunk-lines and answering equipment to be used;
17. Agency trunk-lines and answering equipment associated with "911" will be charged to the agency at the existing tariff rates;
18. Where Selective Routing or Automatic Location Identification is employed, it shall be charged to the agency at a rate that is fully compensatory to the company;
19. Telephone companies will not bill participating agencies separately for "911" service.

Secondly, the Commission will encourage all New York State telephone companies to develop and implement a program to provide for the routing of "911" calls, so that throughout the state "911" will become the telephone number for an operator at an emergency report center where such a facility exists, and in the event that no such facility exists in that area that "911" will become a number for a telephone company operator who could then handle the call in the same manner as a dial "0" emergency call:

- a. within two years in all common control central offices and those progressive control central offices where no major modifications are required;
- b. on a programmed basis in all other central offices so as to ensure the completion of this project by 1/1/78.

This program is intended as an interim step taken while awaiting statewide provision of service through emergency report centers. It therefore should not include (but would not prohibit) publicizing "911" as the number to call in an emergency, and should not delay the provision of the service where firm orders for its implementation are received.

The Commission will also encourage all New York State telephone companies to provide, without charge to the served agencies, the central office modifications, additions, and interoffice trunking necessary for "911" service. The provision of these modifications and additions shall:

- a. include that which is necessary to direct "911" calls to no more than one receiving location per central office;
- b. not include agency trunk-lines or answering equipment, such facilities to be charged for at the existing tariff rates.

Relief from this proposal may be considered in those cases where compliance would impose a significant financial or other burden on either the telephone company or the ratepayer, and any relief granted would ordinarily be in the nature of a limited extension of the date for compliance.

#### STATE LEGISLATION

Any further expansion of the "911" emergency number concept is beyond the jurisdiction of the Public Service Commission. This responsibility lies with the public, their elected representatives, and the public service agencies established to meet their needs. If these parties conclude that such expansion is desirable, responsible legislation might be used as the means for "911" implementation in New York State. Such legislation, designed to stimulate the development of public safety agency "911" emergency report centers will be supported by the Public Service Commission.

STATE OF NEW YORK  
PUBLIC SERVICE COMMISSION

At a session of the Public Service  
Commission held in the City of  
Albany on November 20, 1973

COMMISSIONERS PRESENT:

Joseph C. Swidler, Chairman  
William K. Jones, Deputy Chairman  
Edward P. Larkin  
Carmel Carrington Marr  
Harold A. Jerry, Jr.

CASE 26443 - Proposal for the provision of Universal Emergency  
Telephone Number "911" by telephone companies.

The Commission, on this date, having adopted a statement  
of policy with regard to the provision of Universal Emergency  
Telephone Number "911" by the telephone companies of this state,  
which provides among other things, that said companies implement  
procedures for the institution of this service, it is

ORDERED:

1. That all New York State telephone companies are  
directed to revise their tariffs to include the provision of  
"911" service to emergency report centers and to arrange their  
facilities, in accordance with our statement of policy, so that  
"911" will become the statewide telephone number for reaching an  
operator at an emergency report center, where such facilities  
exist, or reaching a telephone company assistance operator where  
no such emergency report centers exist;

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2. That in all common control central offices, as well  
as in all progressive control central offices where no major  
modifications are required, said service shall be instituted  
within two years from the date of this order:

3. That in all other central offices, said service shall  
be instituted on a programmed basis so as to insure completion  
by January 1, 1978.

By the Commission,

SAMUEL R. MADISON  
Secretary

(SEAL)

(SIGNED)

**END**