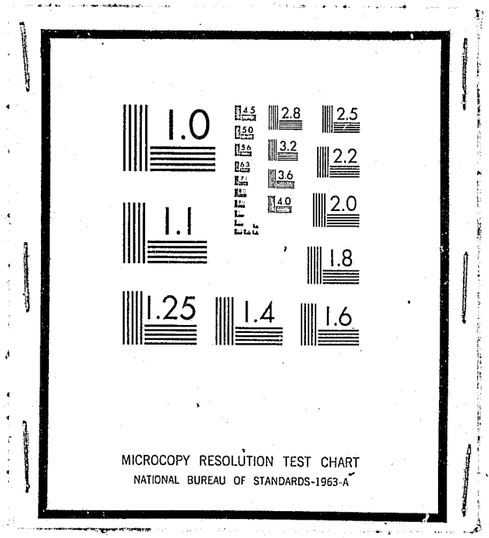


R-76-172

LAW ENFORCEMENT ASSISTANCE ADMINISTRATION
POLICE TECHNICAL ASSISTANCE REPORT

SUBJECT: Rhode Island; Requirements Analysis for a Statewide Law Enforcement Telecommunications Plan

REPORT NUMBER: 76-143

FOR: Rhode Island Statistical Analysis Center

.CTOR: Westinghouse Justice Institute

.TANT: A. Robert Patzlaff

.CT NUMBER: J-LEAA-003-76

September 1976

TABLE OF CONTENTS

APPENDICES

LIST OF TABLES

LIST OF ILLUSTRATIONS

FOREWORD

This request for Technical Assistance was made by the Rhode Island Statistical Analysis Center. The requested assistance was concerned with assisting the Center in clarifying the goals to be met in its development of a long-term, Statewide telecommunications plan.

Requesting Agency:	Statistical Analysis Center, Mr. Donald Flemming, Director
State Planning Agency:	Governor's Justice Commission, Mr. Patrick Fingliss, Executive Director
Approving Agency:	LEAA Region I (Boston), Mr. John M. Keeley, Police Specialist; Mr. Alfred G. Zappala, Systems Specialist

1. INTRODUCTION

The Consultant's onsite time was spent in discussions with Mr. Donald Fleming, Director of the Rhode Island Statistical Analysis Center, reviewing the existing plan and some previous studies on Telecommunications made for the Criminal Justice Department. A brief visit was made to the nearby temporary quarters for the East Providence Police Department. Time was also spent in the Rhode Island Public Utility Commission office gathering some basic information that would have a bearing on the possible future introduction of the universal 911 emergency telephone number into the dispatch centers. Technical assistance provided previously by the Consultant to South Kingston, Rhode Island, provided additional background information that was also helpful in evaluating the present requirements for the development of a Statewide Telecommunications Plan.

2. UNDERSTANDING OF THE PROBLEM

The Consultant's review of the proposed and in progress Rhode Island Telecommunications Plans gave him the impression that a series of individual local problems are being solved through requests for equipments, without there being an overall Statewide coordinated plan with which individual systems must comply. For example, separate communications plans directed at problems unique to the towns of Smithfield, Little Compton, Newport, and Providence are underway. While reference is made to a standardized radio frequency channel plan, there is no specific frequency plan established, and problems of crossband communications are already being recognized (see Providence Radio System Plan).

In the Consultant's opinion, the key factor lacking is a detailed plan that clearly defines how the regional data or dispatch centers will operate. If these centers are devoted only to data, and not dispatching, there would be a need for individual dispatch facilities at each department; this would result in unnecessary channel interference and the need for more frequencies and greater expenditures for dispatch personnel.

Furthermore, great benefit is offered to the general public when a dispatch center for all emergency services can be reached by dialing a single, easily remembered telephone number such as "911," the nationwide emergency number.

Therefore, a priority need at this stage of Rhode Island's Communications planning is to clearly define the goals, requirements, and intended usage of the regional dispatch center, addressing such questions as:

- Will regional centers be established for dispatching, police, fire, and ambulance?
- Will State Police communications be separate from day-to-day municipal dispatching?
- Who, or what provision will be made for managing each regional unit?
- What will be the criterion for a center to be established?
- What cities could profit from shared dispatch services? (A problem observed in the Kingston study was the destructive cochannel interference between two dispatch centers within a short distance of each other.)
- What effect do telephone exchange boundaries have on the area served by the dispatch center?

- How will the operation of the individual regional centers be coordinated to ensure compatibility with other centers in the State?

- What is the frequency plan that a region should follow? What specific frequencies are to be used?

- What is a logical timing sequence for an orderly implementation of a series of regional dispatch centers?

A second need in the Rhode Island Plan is to provide a department, or organization, which can objectively manage the State's telephone and teletype networks; be consistently alert for finding new applications for effective use of the Microwave; provide service support; coordinate activity with telephone companies; and provide consultation and advice on communications problems to State departmental needs. A prime responsibility of the department would be to analyze how communications system expenditures can be reduced by taking advantage of the excellent multichannel, point-to-point communications capability available in the State Microwave network.

The State of Rhode Island has an extensive Microwave system that has many potential uses in contributing toward more economical, effective, and unique Telecommunications for the State. The Microwave system is presently controlled primarily by the State Police organization. Nevertheless, with the tremendous capacity it offers for multichannel voice, data, video, signalling, facsimile, or teletype communications, all departments of the State should be considered in how this investment can be applied for most effective usage. This is a fact that has not gone unrecognized by many State officials, and many programs and plans and ideas have been advanced for using the Microwave system. However, it appears that one of the things hindering faster progressive use of the Microwave system is lack of a central agency that can evaluate the most effective programs to pursue among the many alternatives.

This is not to lessen a very primary purpose of the Microwave system, which is to tie together the law enforcement agencies in a comprehensive dispatching and data information program. It is intended, however, to emphasize the fact that more specific and objective looks at the overall Telecommunications problem of the State, not necessarily confined to a single department, could be of much benefit.

Within the frame work of these two areas -- (1) defining the regional dispatch center functions and purpose, and (2) a program for Statewide Telecommunications management -- many subprograms will come forth as end goals are implemented stage by stage.

Telecommunications management may not relate solely to law enforcement, and its place in an LEAA program plan may be questioned. Nonetheless, the larger task of more effective management of the State communications program will have support activities that will benefit law enforcement communications; and because of the complex intertwining of all State communications, specific programs effecting law enforcement will result. The important pitfall for the State to avoid is a series of divergent efforts in communications activities by the various emergency services that independently and without coordination would tend to fragment what could be a coordinated, effective network that renders all emergency services.

3. ANALYSIS OF THE PROBLEM

3.1 Dispatch Center Concept

Two law enforcement radio dispatch networks are planned: One that serves the State Police and one that serves city and township police departments. Excellent coordination between all law enforcement departments is possible through the Microwave System, since the planned location for each regional center will have connection into the Microwave System.

A detailed study of existing facilities was not conducted during the course of this assignment. However, the printed material reviewed pertaining to the report shows plans to activate a central State Police dispatch center, the necessity of which is agreed to by the Consultant. Based on the size of Rhode Island, the present six Console Command Centers should very adequately be able to handle the entire State Police dispatching. This centralization of State Police dispatching would further simplify the flow of information from the regional dispatch centers to the State Police.

The concept recommended is one of a State Police network separate from the municipals but fully coordinated with them for supportive information flow via the Microwave interconnection. The State Police Center would coordinate activities on the RISPERN frequency with a network of stations controlled by the Microwave.

Figure 3-1 illustrates the supportive role the State communications organization could provide to the municipal dispatch centers in a properly coordinated and planned dispatch network and how the Microwave system provides the means for information flow among the centers.

3.2 Regional Center and Areas Serviced

3.2.1 Regional Dispatch Centers

Present plans are to establish regional centers that would be used to obtain data from the State computers, NCIC, and other sources such as the State Motor Vehicle Department. Police mobile radio units, or local police departments within a region would have a regional radio data channel. Each region would use a separate channel for data. Voice requests and response would be made between field units or local police headquarters and the regional center. As long as only data is being considered, and no means for regional telephone reception of citizens' complaints is involved, the geographical makeup of a given region is not particularly significant. However, the State should plan now for the eventual use of the 911 emergency telephone number. When the 911 telephone service number is considered, the makeup of the region takes on greater significance. Figure 3-2 illustrates the boundary lines for the telephone exchanges serving Rhode Island. Any one of the exchanges converted for 911 calls means that when the citizens

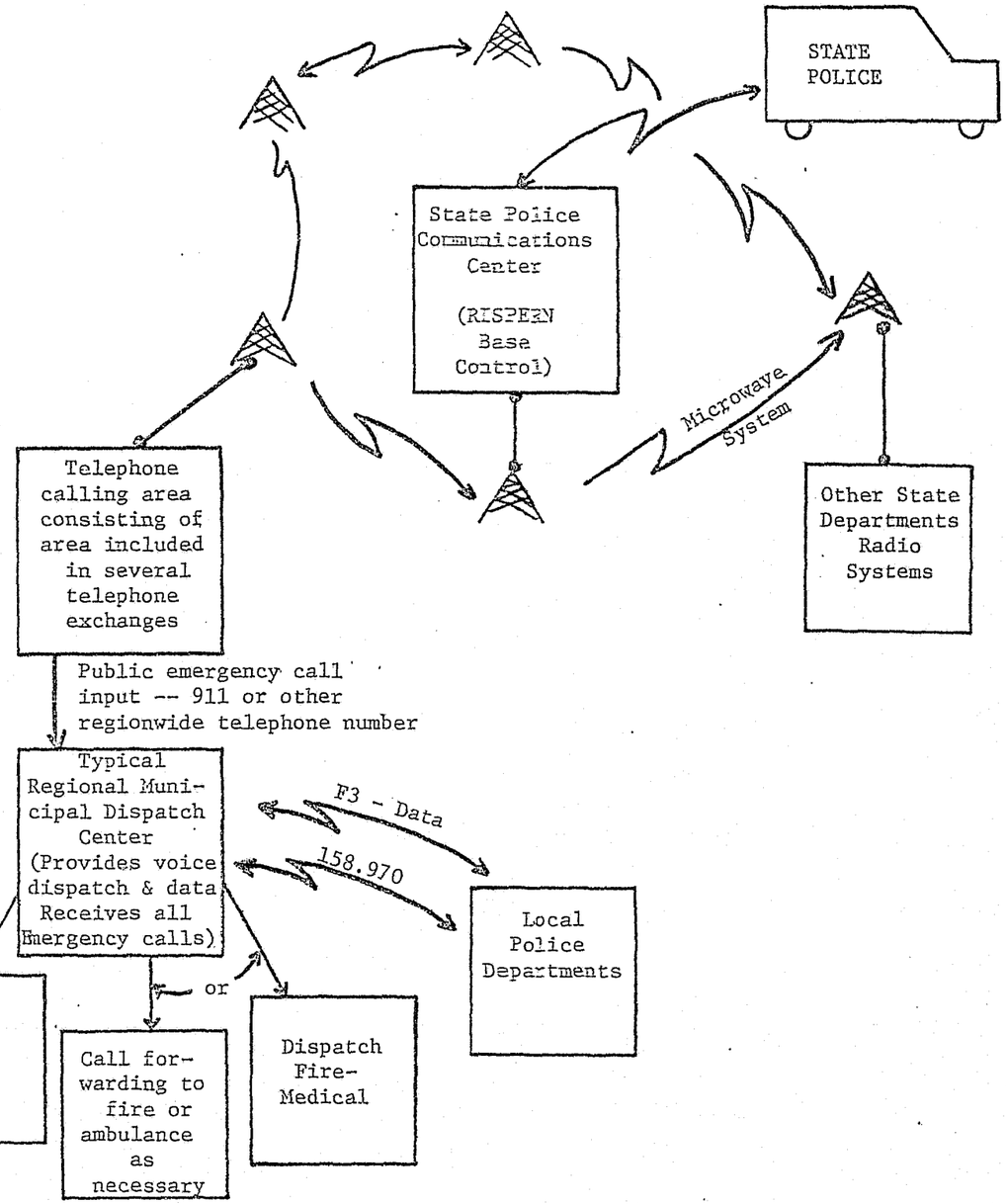


Figure 3-1. Dispatch Center Concept

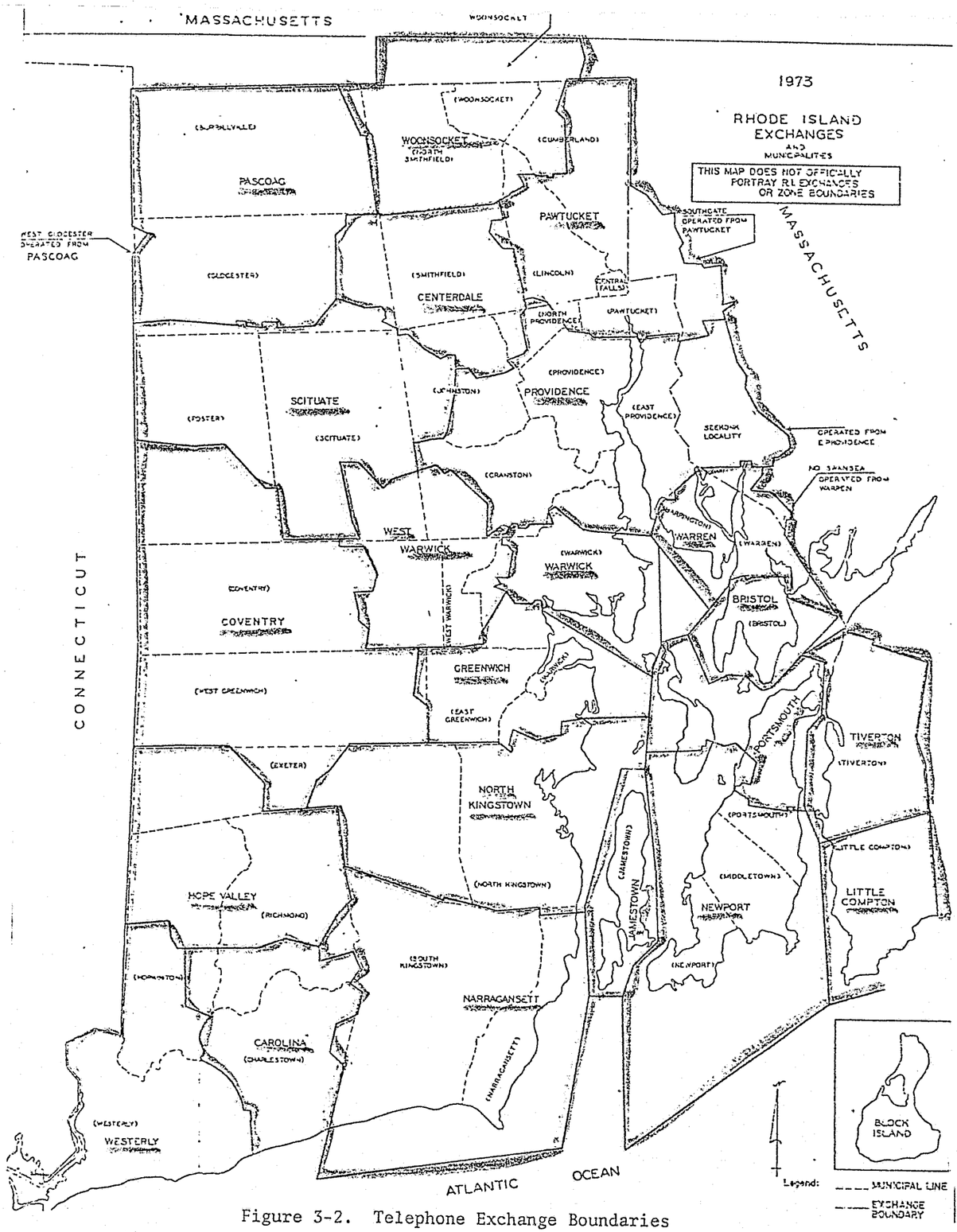


Figure 3-2. Telephone Exchange Boundaries

within a given telephone exchange dial that number, all of the calls must route to a particular and single point. The exception to this may be the Providence exchange, which covers several large cities and large areas of population. The Providence exchange consists of several individual prefix centers, which the telephone company may be able to separate out geographically. This would have to be discussed in detail with telephone company representatives.

When a comparison is made of the telephone exchange boundaries with the presently planned jurisdictional boundaries for the regional centers, it shows that some adjustment should be considered early in the planning stages. For example, the town of North Smithfield, now intended for inclusion within the Johnston regional center, is actually served by the Woonsocket telephone exchange. It might be more reasonable to direct North Smithfield calls to the Cumberland center rather than have Woonsocket and North Cumberland calls go to Johnston; this would be the case if the Woonsocket telephone exchange was set up for all 911 calls to go to Johnston.

Figure 3-3 illustrates possible grouping of the telephone exchanges to approximate, as closely as possible, the regions already established. However, no determination has been made whether this is the best grouping at this time. Figure 3-3 is merely shown as an example and to illustrate that adjustments are definitely necessary. The lack of agreement between the telephone boundaries and political boundaries need not create an insurmountable problem; fortunately, the State boundary lines very closely approximate the telephone company boundary lines with a few exceptions. Thus, it appears the entire State could be easily served by a 911 network, which would be a direct benefit to the citizens of the State in obtaining quicker access to an emergency center.

Therefore, the State plan should include a study to determine the composition of the regional centers, based on eventually using 911. The population served by a center, and whether it is primarily urban or rural, determine the call traffic volume that can be expected.

Based on the 1970 Census, the population that would be served in the areas now determined strictly on the basis of town lines (no reference to telephone boundaries) is as shown in Table 3-1.

Arrangements that would more evenly balance the regional centers should be considered. The Johnston area could be divided. Moreover, considerable thought must be given to the Warwick Center, since three telephone exchanges serve the town. In Figure 3-3, Jamestown was shown in the South Kingstown region when the telephone factor was considered. Telephone boundaries would permit Jamestown to be served either by Kingstown or Newport. This again illustrates the thinking that must be devoted to this question early in the planning stage before going too far with existing regions and finding it difficult to later accommodate 911.

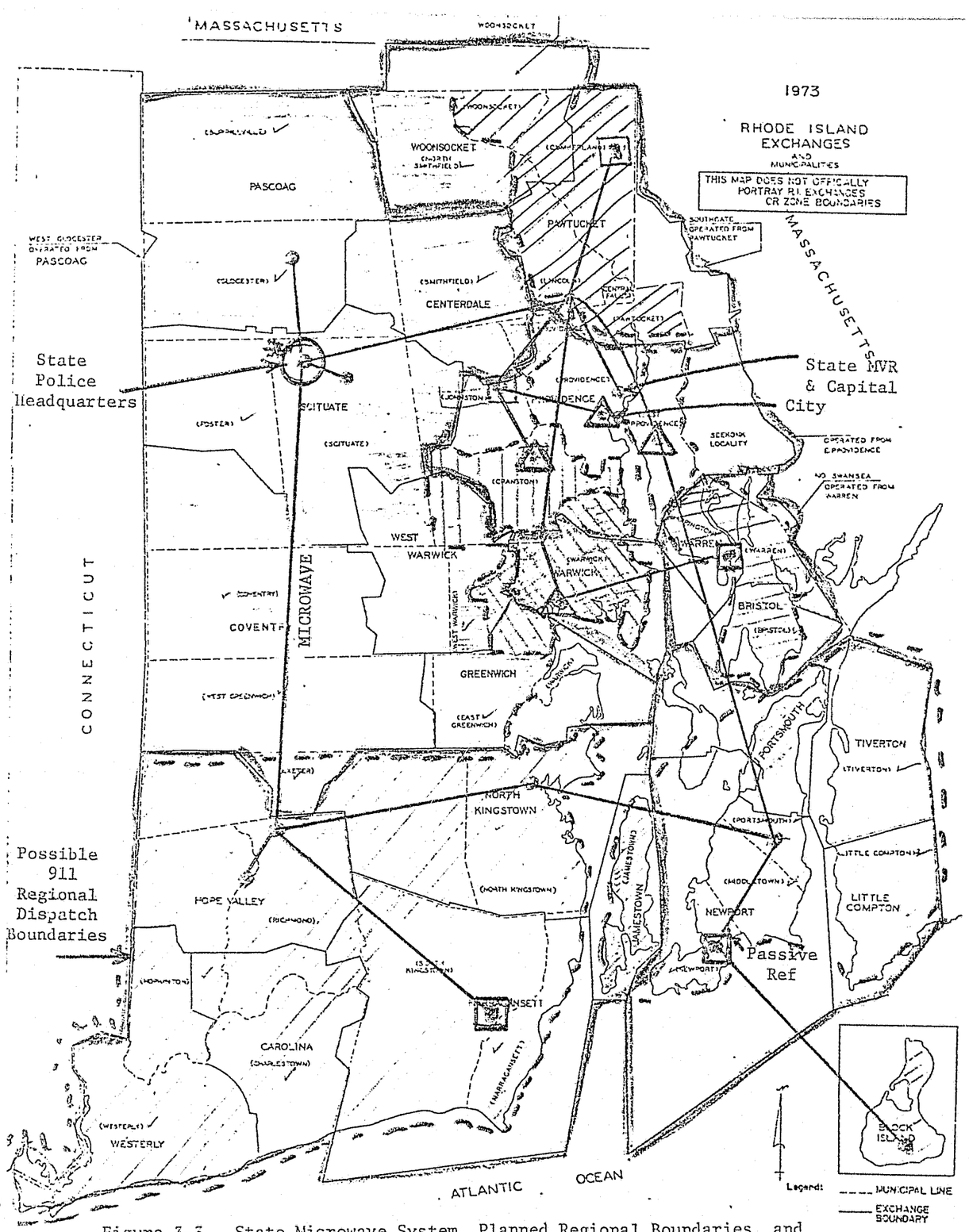


Figure 3-3. State Microwave System, Planned Regional Boundaries, and Possible 911 Regional Boundaries

TABLE 3-1

Dispatch Centers and Population Served

Dispatch Center	1970 Population
South Kingstown	83,097
Newport	94,559
Johnston	148,401
Cumberland	97,457
Warren	45,937
Providence	179,213
Cranston	73,037
East Providence	48,157
Warwick	83,694

3.2.2 Frequency Plan

The frequency plan detailed below is based on the following assumptions:

- All emergency calls within a region will be dispatched from the emergency center and not from several local departments.

- Regional area size will be so selected, that a single transmitter site will provide adequate "talk-out" coverage to mobile and portable units. Base station power output and antenna gain, type, or height will be adjusted to accomplish this.

- Some local departments within a region may want to retain a capability to contact their local cars by radio, but any car receiving a call locally will immediately report his assignment to the regional dispatch center. All towns doing this will share the same frequency pair within a region.

- All cars will either have a personal portable or mobile that operates on RISPERN.

- No other base station within a region will transmit on the main Regional Dispatch frequency.

- Frequency 158.970 shall be a point-to-point, statewide frequency.

Under these conditions a frequency plan involving seven frequencies could be established as a standard pattern if used as follows.

- Frequency Pattern in Dispatch Regions

  - Frequencies 1 and 2 -- Regional dispatch frequency pair that provides for repeater operation under control of the dispatch.

  - Frequency 3 -- Data request channel.

  - Frequency 4 -- RISPERN.

  - Frequencies 5 and 6 -- A statewide, car-to-car, and/or special event channel pair to permit local

departments to contact cars in the two-frequency Simplex mode (T6R5), but Simplex car-to-car (T6R6).

- Frequency 7 -- Point-to-point channel (158.970).

Thus, three frequencies are unique to a region; four are common throughout the State. If all 150 channels were used, 31 frequencies would be needed for the nine dispatch areas. One common statewide squelch code for all public safety units is recommended.

The frequency plan is similar to that recommended in a Rhode Island Justice Commission study for the Newport/Portsmouth region, with these notable exceptions:

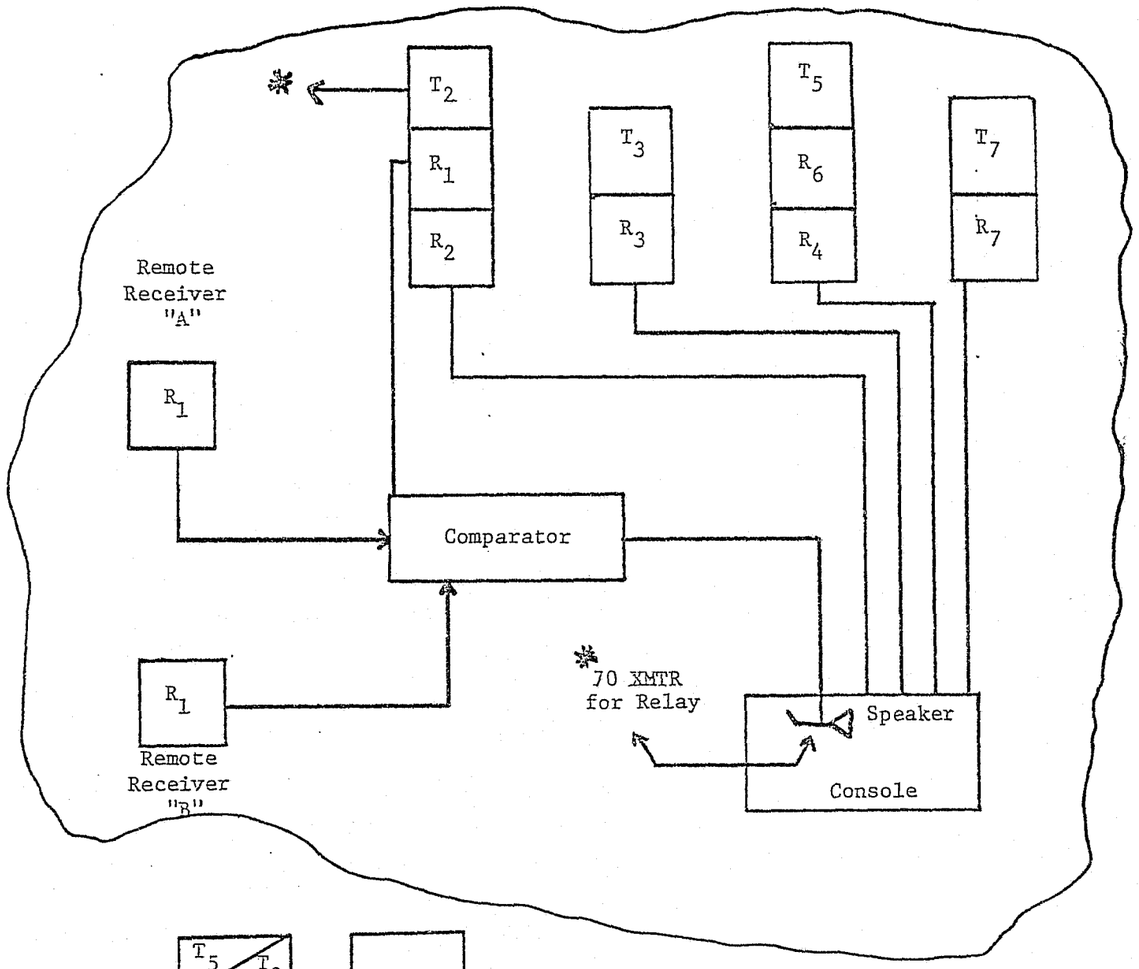
- The use of multiple tone-coded squelch is discouraged because of complexity, added cost, and, for areas properly defined, one transmitter site per region would be sufficient.

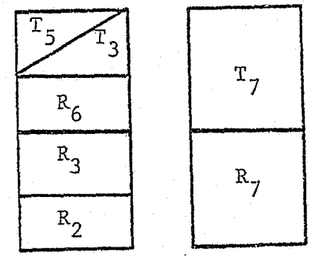
- Individual town departments are accommodated on a separate statewide channel pair -- not on the dispatch channel; therefore, a fifth channel position would be needed in all mobiles and portables.

The Vehicular Channel Plan could be similar to that spelled out for Newport/Portsmouth, plus a Channel 5 and 6.

- Channel 1 -- Dispatch (T1, R2).
- Channel 2 -- Talk around (local car-to-car) (T2 R2).
- Channel 3 -- Data (T3 R5).
- Channel 4 -- RISPERN.
- Channel 5 -- Town Local (T5 R6).
- Channel 6 -- Statewide routine car-to-car, or special event.

Figure 3-4 shows generically the typical station frequency plan at a regional municipal center.





Local Police Department
No Dispatch

NOTE: See text for frequency use.

Figure 3-4. Typical Regional Station Plan

Some departments are already using UHF (450 MHz) for dispatch. Thus, Channels 1, 2, and 3, above, could be a UHF mobile. Their portables could be 150 MHz-type to give them RISPERN capability and a VHF portable repeat frequency with talk-around capability. With use of portable adaptors in the cars, the portables would give RISPERN monitoring capability when in the car.

Based on data gathered by the Governor's Justice Office, plus a review of FCC listings, the frequencies shown in Table 3-2 are presently used in the existing regions or cities. Table 3-3 lists, in order, the 150 MHz police frequencies now in use.

With the scarcity of frequencies, some "give and take" will have to occur among the regions for using these channels in the region. It should be noted that the 25 VHF frequencies listed in Table 3-3, plus the use of some UHF channels, could meet the needs for the 31 frequencies referred to above. Exact recommendations on a firm regional channel plan would require a more indepth study than performed herein. Some possible approaches to be considered are:

- Use 155.475 for RISPERN (the national emergency frequency) and thereby free 155.190 for possibly the statewide routine mobile frequency. (F5 as described and illustrated.)

- Use UHF (450 MHz) talkout at all Regions with a UHF receiver (450 MHz) in car, and VHF (portable) for talkback. This would save one VHF (150 MHz frequency) per region and still retain the State basically in a 150 MHz network configuration for intercommunication between the State Police and other regions and RISPERN. In this application, the State might want to consider using portables with dual-band receive capability (150 MHz and 450 MHz), but with all transmitter frequencies in the 150 MHz band. This is a product on which further information could be obtained from the equipment vendors. Cars would be equipped with an adaptor for the portable to connect it to an outside antenna, audio amplifier, and microphone.

- Use UHF (450 MHz) for F1, F2, and F3 in each region; but use portables on the 150 MHz band with a regional portable frequency (an F7 channel, added to previous listing). The dispatch center operators could cross patch the VHF and UHF. Portables would thus retain the ability for RISPERN operation.

TABLE 3-2

State of Rhode Island Police Services -- Present Frequency Summary (Licensed or Intended)

REGION	INFO.CHAN.	DISPATCH	DET. TACT.	RISPERN	INTER CITY	OTHER
Blackstone Valley (Cumberland Center)	155.430 155.655 (Woonsocket)	156.210 154.830M 155.43 156.33* *While reported by Region this is not a Police Freq.	155.655 482.8375 (485.8375 Woonsocket)	155.190	158.970	
South County (Kingstown)	154.815	154.875 156.210 155.580		155.190	158.970	
Western R.I. (Johnston Center)	154.725	155.53T (?) 156.09 155.625 155.535 156.090 156.150		155.19	158.970	
Warren	155.49	155.370	155.805 (?)	155.19	158.970	
Newport	155.790	155.730 154.710 T.B.		155.19	158.970	39.560(Little Compton) 46.60 (Middleton)
Warwick	None reported as now assigned	155.130T 154.89R	458.475) 453.475) This is a Water Dept. Freq. used occasionally by Police.			
E. Providence		155.01	154.77	155.19	153.800	
Cranston		482.4125	482.5625 Admin.482.4625	155.19		155.97 Reserve
Providence	(One of the UHF Channels may be for data requests. Info. not available.)	460.100 465.100 460.200 465.200 460.275 465.275 460.325 465.325 460.425 465.425 155.610* 156.150* *These may no longer be used.				

TABLE 3-3

150 MHz Police Frequencies Now in Use

FREQ.	TYPE	REGION OR CITY USED BY	REMARKS
154.710	M	Newport	
154.725	B/M	Western	
154.710	M	E. Providence	
154.815	B/M	South County	
154.830	M	Blackstone	
154.875	B/M	South County	
154.890	M	Warwick	
155.010	B/M	E. Providence	
155.130	B/M	Western Warwick	
155.190	B/M	RISPERN	This frequency not restricted for State)
155.370	B/M	Warren	
155.430	B/M	Blackstone	
155.490	B/M	Warren	
155.580	B/M	South County	
155.610	B/M	Providence	
155.625	B/M	Western	
155.655	B/M	Blackstone	
155.730	B/M	Newport	
155.790	B/M	Newport	
155.970	M	Cranston	
156.030	M	Western	
156.090	M	Western	
156.150	M	Western Providence	
156.210	B/M	Blackstone South Co.	
158.970	M	Statewide Point-to-Point	
TOTALS: -	9 M 16 B/M		

This frequency arrangement would save two 150 MHz frequencies per region, but add three 450 MHz: One pair-spaced 5 MHz and one simplex frequency.

Figure 3-5 illustrates the first two options.

3.2.2.1 Sample Region

The State plan should include a program to fully equip a regional center, along the lines mentioned, to be used as a model for other regions to follow. It should receive all calls for police, fire, and ambulance, and work out details of direct dispatch or call forwarding plans for fire and ambulance. Local situations will cause this to vary. This will also provide the incentive to start a 911 program in the State. A trial center will provide valuable operational experience for how best to proceed with the other centers in areas of uncertainty.

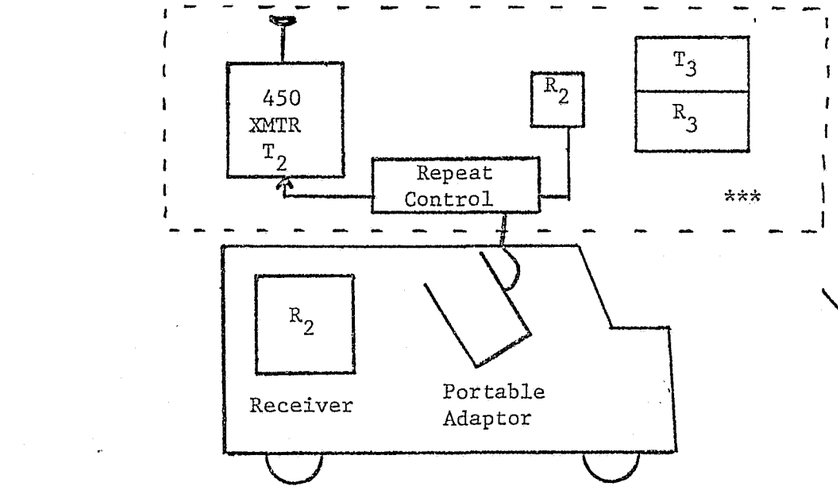
3.2.2.2 Significance of the Regional Dispatch Centers

It is important that the concept of the regional dispatch centers be understood. The centers would receive all calls for emergency services from the citizens. Any needs for State Police services would be phoned directly to the State Police by the citizen on separate numbers listed for State Police. However, the citizen requesting assistance is not usually particular about whom he calls but is merely in need of an easily remembered number that can get him to a dispatch center to provide some assistance. A dispatch center receiving a request, which looks like a complaint needing State Police attention, could immediately forward this information to the State Police. Exact details on call forwarding for the various services being requested can be worked out, as each Regional Center develops. The State Police dispatching network would be visualized as one being responsible for statewide coordination of all State Police vehicles, as well as other statewide communications functions.

3.2.2.3 Telecommunications Department

Formation of a State Telecommunications Department should be considered, having the overall responsibility for:

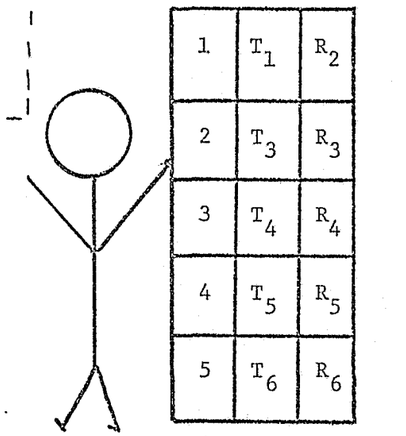
- Training, planning, and engineering support to the various towns throughout the State.
- Providing State emergency services and radio frequency coordination.
- Providing telephone services, management, and cost-control analysis



*The 450 MHz (R_2) in portable would have "priority" in scan or search.

**Subscripts for frequencies are as identified in the text.

***Only dispatch and data frequencies shown.



Portable with dual R.F. for receiving 150 MHz & a 450 MHz channel.

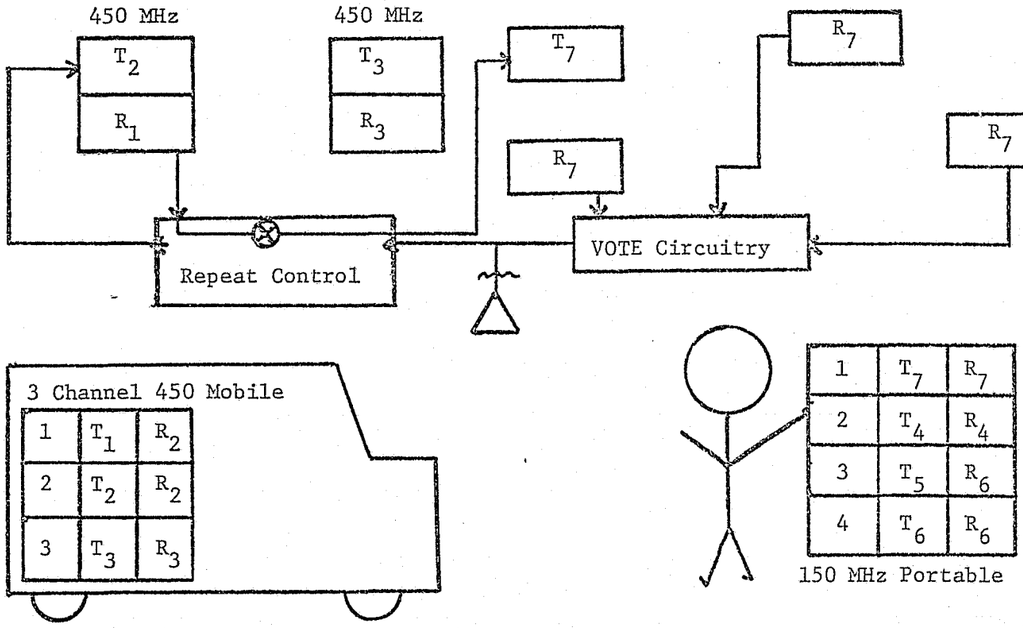


Figure 3-5. Optional Channel Plans That Use Fewer 150 MHz Frequencies

- Providing a statewide radio and Microwave maintenance services organization.

- Providing for comprehensive future planning programs for effective usage of the capacity in the State Microwave system.

Many programs now being talked about will never get beyond that stage until a department with the responsibility to study the programs, and set priorities on them, is established. This department would not be responsible for the operations of the individual municipal communications networks, but would be an overall State liaison and support activity responsible for standards, support, and analysis. It could provide a central basis for uniform training of dispatchers and operators throughout the State. It could work closely with all departments of government having a communications problem to counsel them on the availability of existing services and provide coordination amont the various services sharing the various communications facilities.

Telephone operating companies across the Nation are reluctant to provide any firm plans for 911 services to a community until there is a responsible spokesman and a positive plan for reception of emergency calls. The Telecommunications Department could provide such a central clearinghouse for progress in these areas. It would also provide a coordinating center for getting the police, fire, and ambulance systems together to discuss the various problems that they could solve mutually in the areas of communications.

This department could also be a clearinghouse for considering new ways for utilizing the Microwave channel capability now available. One use of the Microwave System that could receive attention from the Telecommunications Department would be the establishment of a statewide mobile telephone network for use by various State departments. The mobile units could be patched via the State Microwave system directly into the State telephone network, so that any mobile could reach any State telephone. Equipments are available from the various regular equipment manufacturers to make the interface between the mobile unit and the telephone network. Negotiations with the telephone company on interconnection would, of course, be required. However, the fact that the State does have the Microwave system encircling the State would make such a system easily practical from a technical point of view and provide excellent coverage throughout the State.

3.3 Sequential Planning

During the Consultant's onsite visit, the various programs being considered by the State Governor's Justice Commission were all listed

and considered with respect to their dependence upon one another. This is commonly known as a "Pert" Chart. In this analysis, a very interesting conclusion was reached that revealed that while there are various programs under way, they could lead to the following easily identifiable benchmarks.

- Completion of a firm plan for the present voice-radio VHF communications system from a system's engineering and frequency standpoint.

- Implementation of operational regional data centers and a centralized State Police dispatch center.

- Implementation of regional centers that can receive all emergency calls from the citizens over a wide area, using the universal 911 emergency telephone number, and response with police, fire, or ambulance.

- Expansion of the regional communications centers to use techniques known as computerated dispatch, which enables the dispatcher to accurately keep track of his units and provide a simplified method for logging sequential events.

The Telecommunications Department mentioned previously would provide coordination and supportive activities needed for some of the tasks in these programs. The use of the method for placing the complex series of programs in proper relationship is recommended. The "Pert" program planning method gives useful information on program timing when carefully prepared. It forces a thorough thinking through each step needed in an orderly program implementation. It also helps detect programs requested that do not fit into the overall plan.

4. FINDINGS AND CONCLUSIONS

- While much emphasis is being given in the Telecommunications plan to corrections in the hardware and individual equipment requirements, there is a definite need for careful planning regarding exactly how each communications center will operate, and how calls will be received from the citizens. Early attention must be given to the effects that 911 telephone service would have on the regional dispatch centers. The size of the individual regions, and the number of regions should be carefully considered at this time.

- A study to conclude a firmly established radio plan, and associated equipment configurations at each center is needed. Because of limited availability of frequencies, sharing of dispatch is essential.

- It is recommended that the State plan include a Pert diagram that places in sequence the various tasks being considered, which will automatically show the benchmarks and goals towards which the plan is being directed. Timing placed on each activity will also give an estimate of the overall time of accomplishment for reaching each significant benchmark.

- The vast amount of effort, money, and attention directed to Telecommunications projects in the State, leads to a conclusion that a home for these activities should be provided in a Department of Telecommunications. Fiscal analysis, training programs, and communications system engineering and service support are some of the activities common to all systems that could be best standardized and coordinated on a statewide basis by this Department.

APPENDIX A

Emergency Telephone Number Directory

The information contained on the following page is copied from a telephone directory to show the numerous numbers a citizen must sort through to find the proper one to meet his need for an emergency. The State should start to plan for simplifying this situation through use of a single number into the regional dispatch centers. Note that ambulance numbers are not listed.

fire

police

state police

State Police Hdqtrs.	647-3301
Chepachet Barracks	568-3011
Hope Valley Barracks	539-2323
Howard Barracks	463-7222
Lincoln Woods Barracks	728-2211
Portsmouth Barracks	849-4444
Scituate Barracks	647-3301
Wickford Barracks	294-3322

ambulance

doctor — office

home

FBI — 272-8310
[Federal Bureau of Investigation]
if no answer, call Boston, 1 + 617-742-5533

U.S. Secret Service — 331-6456

coast guard — Bristol 253-8586
Newport 846-3675
[Search and Rescue]

poison information centers

R.I. Hospital	277-4000
Roger Williams Gen'l. Hospital	456-2121
Memorial Hospital (Pawtucket)	724-1230

or dial "OPERATOR" in any emergency and say for example
"I want to report a fire at—" or
"I want a policeman at—."
If you cannot stay at the telephone, give the "OPERATOR" your city or town as well as your street and number or the exact location where help is needed.

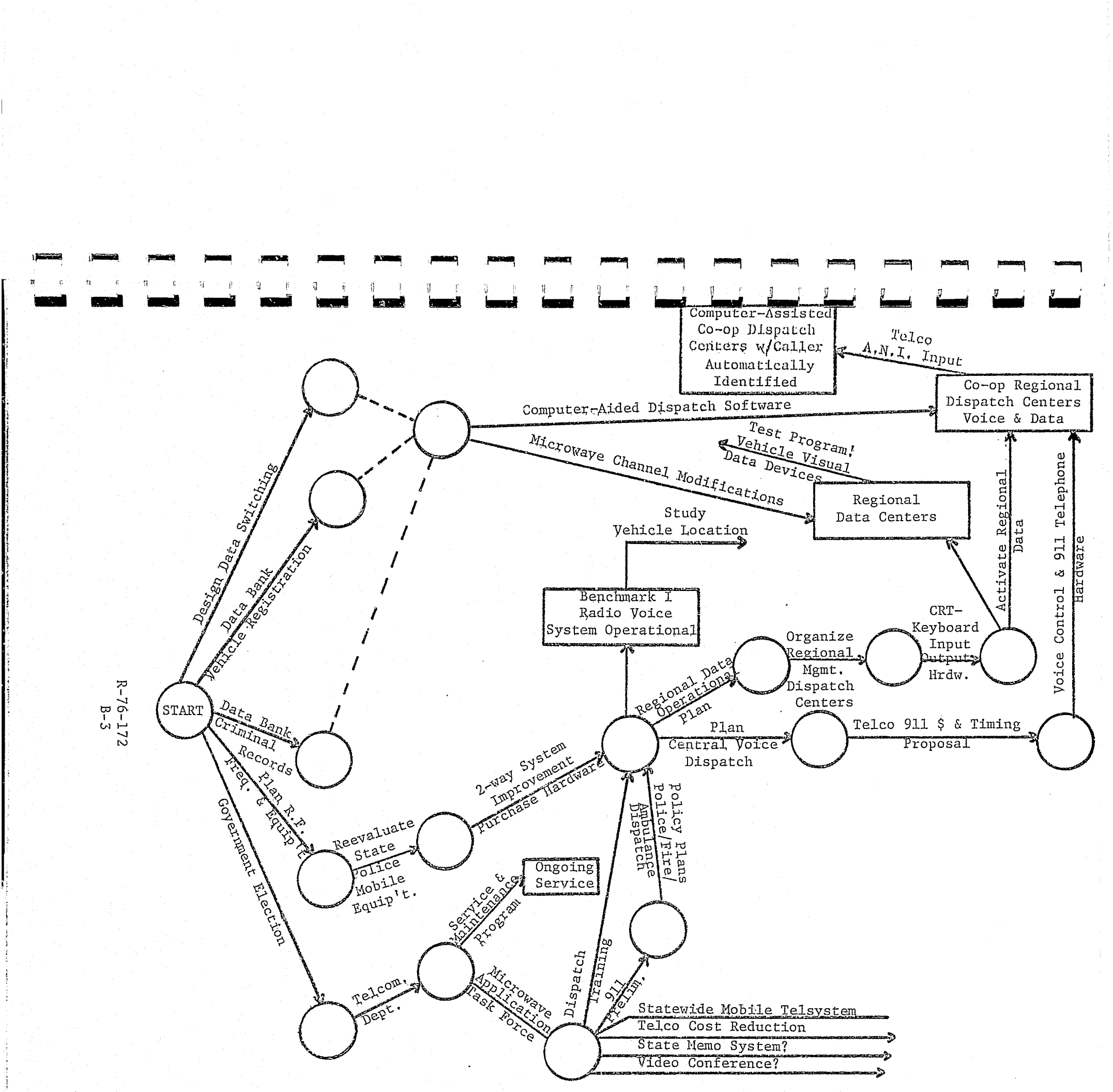
localities	fire	police
Barrington	245-3100	245-3101
Bristol	253-6611	253-6900
Coventry	821-3456	821-6633
Cranston	461-5000	942-2211
East Greenwich	884-4211	884-2244
East Providence	434-3131	434-2122
Exeter		
Ten Rod Corners	397-7802	
Victory Highway	294-2233	
Foster	397-3331 647-3333	647-3334
Glocester [Harmony]	949-0101	568-2043
Johnston	274-1111	351-6200
North Kingstown	294-3344	294-3311
North Providence	231-8500	231-4533
Providence	274-3344	272-1111

localities	fire	police
Rehoboth, Mass.	252-3727	252-3727
Scituate		821-5900
Chopmist Hill	647-5700	
Hope Jackson	821-4422	
North Scituate	647-3345	
Potterville	647-5543	
Seekonk, Mass.	336-8111	336-8123
Smithfield	949-1233	231-2500
Swansea, Mass.	dial "OPERATOR"	dial "OPERATOR"
Warren	245-3411	245-1311
Warwick	737-4211	737-2244
West Greenwich		397-7191
Fire Co. No. 1	397-7830	
Hianloland	397-7502	
Lake Mishnock	397-7601	
West Warwick	821-4211	821-4323

APPENDIX B

Sequential Telecommunications Plan and Milestones

The following is an example of how a PERT chart may be helpful in putting the various programs into proper prospective. A similar chart was created as an example during the Consultant's onsite visit.


START
Design Data Switching
Data Bank
Vehicle Registration
Data Bank
Criminal
Records
Plan R.F.
Freq. & Equip't
Government Election
Reevaluate
State
Police
Mobile
Equip't.
2-way System
Improvement
Purchase Hardware
Telcom.
Dept.
Microwave
Application
Task Force
Service &
Maintenance
Program
Ongoing
Service
Dispatch
Training
911
Prelim.
Ambulance
Dispatch
Policy Plans
Police/Fire/
Benchmark I
Radio Voice
System Operational
Regional Data
Operational
Plan
Plan
Central Voice
Dispatch
Organize
Regional
Mgmt.
Dispatch
Centers
CRT-
Keyboard
Input
Output
Hrdw.
Telco 911 $ & Timing
Proposal
Voice Control & 911 Telephone
Hardware
Activate Regional
Data
Computer-Assisted
Co-op Dispatch
Centers w/Caller
Automatically
Identified
Telco
A.N.I. Input
Co-op Regional
Dispatch Centers
Voice & Data
Computer-Aided Dispatch Software
Test Program!
Vehicle Visual
Data Devices
Microwave Channel Modifications
Regional
Data Centers
Study
Vehicle Location
Statewide Mobile Telsystem
Telco Cost Reduction
State Memo System?
Video Conference?

R-76-172
B-3

END

7 attachments